Sub-National Measurement and Economic Analysis of Tourism - Smart and Sustainable Urban and Rural Tourism

Interim Proceedings of the 5th International Conference in Pamplona, Navarra, Spain, November 22 – 24, 2017
Sub-National Measurement and Economic Analysis of Tourism - Smart and Sustainable Urban and Rural Tourism

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The present document compiles the papers and presentations presented to MOVE2017 – 5th International Conference on the Measurement and Economic Analysis of Smart and Sustainable Urban and Rural Tourism, organized by the Government of Navarra, with the contribution of in2destination, within the framework of INRouTe, and with the participation of UNWTO.

The conference took place November 22nd, 23rd and 24th 2014 at Palacio Baluarte, Navarra, Spain.

The Programme of the Conference and the present proceedings have been designed by in2destination and the Scientific Committee has been chaired by in2destination’s CEO.

The present interim version has been published November 14th 2017, Pamplona, Spain.
## Contents

MOVE 2017 Scientific Committee ................................................................. 5
MOVE 2017 Organizing Committee ................................................................. 5
MOVE 2017 Programme .................................................................................. 7

### The importance of delimiting local tourism destinations
Yurena Rodríguez Rodríguez, Raúl Henández Martín, Manuel Ángel Santana Turégano and
Javier Mendoza Jiménez.................................................................................. 10

### Local Tourism Destination Carrying Capacity Measurement Challenges
Nagore Espinosa Uresandi, Asunción Fernández Villarán Ara, Ana Goytia Prat and Marina Abad
Galzacorta.................................................................................................... 26

### Measuring sustainable tourism at local level, a methodological proposal
Raúl Hernández-Martín, Javier Mendoza-Jiménez, Yurena Rodríguez-Rodríguez .................. 42

### Monitoring Eco-Tourism in Mediterranean Protected Areas: the Ecological Footprint
Approach
Maria Serena Mancini, Alessandro Galli, Carla Danelutti, Katsunori Iha, Jeremy Sampson and
Luca Santarossa ............................................................................................. 59

### Tourism Impacts on the Labor Market at the Municipal Level in Tenerife
Naomi Álvarez Waló and Raúl Hernández Martín............................................. 73

### Points of interest: Concept, identification tools and practical implications
Hugo Padrón-Ávila and Raúl Hernández-Martín ............................................ 87

### Analysis on the Local Residents’ Attitudes, Behaviour and Involvement in the Tourism Development of Bangladesh and Its Sustainability
Dilip Kumar Bhadra......................................................................................... 106
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Ulf SONNTAG, NIT, Germany
# MOVE 2017 Programme

## 22nd November - Wednesday

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 - 9:00</td>
<td><strong>Conference Registration. Welcome and Conference Opening</strong></td>
</tr>
<tr>
<td>9:00 - 9:15</td>
<td>Official Welcome by Manu Ayerdi Olaizola, Vice President Economic Development, the Government of Navarre</td>
</tr>
<tr>
<td>9:15 - 9:45</td>
<td><strong>Opening Address:</strong></td>
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<tr>
<td></td>
<td>Dr. Nagore Espinosa, <em>CEO of in2destination, Spain</em></td>
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<td></td>
<td>Mr. Antonio Massieu, <em>Chair of INRouTe</em></td>
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<td>Mr. Márcio Favilla, <em>Executive Director for Operational Programmes and Institutional Relations at the United Nations World Tourism Organization (UNWTO)</em></td>
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<td></td>
<td>Ms. Maitena Ezkutari, <em>General Director of Tourism and Commerce, Government of Navarre, Spain</em></td>
</tr>
<tr>
<td>9:45 - 10:30</td>
<td>INRouTe Keynote Session: Tourism, Territory and Sustainability at Subnational levels: fostering credibility for its measurement and supporting key stakeholders:</td>
</tr>
<tr>
<td>10:30 - 11:00</td>
<td><strong>Coffee Break</strong></td>
</tr>
<tr>
<td>11:00-13:00</td>
<td><strong>Session 1: Advancing on Subnational Measurement of Tourism from Official Statistics</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Moderator:</strong></td>
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<tr>
<td></td>
<td>Mr. Antonio Massieu, <em>Chair of INRouTe</em></td>
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<tr>
<td></td>
<td><strong>Panelists (6):</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Dr. Tad Hara, <em>University of Central Florida, USA</em></td>
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<tr>
<td></td>
<td>▪ Dr. Mara Manente, <em>CISET, Italy</em></td>
</tr>
<tr>
<td></td>
<td>▪ Dr. Claudia Nobis, <em>DLR Institute of Transport Research, Germany</em></td>
</tr>
<tr>
<td></td>
<td>▪ Mr. Edison Restrepo, <em>Ministry of Tourism, Colombia</em></td>
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<tr>
<td></td>
<td>▪ Mr. Alfredo García, <em>Instituto Movatur, Spain</em></td>
</tr>
<tr>
<td></td>
<td>▪ Mr. Fernando Cortina, <em>Spanish National Statistics Institute, Spain</em></td>
</tr>
<tr>
<td>13:00 - 14:00</td>
<td><strong>Lunch</strong></td>
</tr>
<tr>
<td>14:00 - 15:45</td>
<td><strong>Session 2: Remarkable Subnational Case Studies advancing on subnational tourism measurement beyond Official Statistics</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Moderator:</strong></td>
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<td></td>
<td>Mr. Ulf Sonntag, <em>Head of Market Research, Institute of Tourism Research in Northern Europe, Germany</em></td>
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<td><strong>Panelists (5):</strong></td>
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<td></td>
<td>▪ Jean Luc Boulin, <em>Nouvelle-Aquitaine Tourism Office Mission, France</em></td>
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<td>▪ Terry Stevens, <em>Stevens &amp; Associates, Wales</em></td>
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<td>▪ Amaia García, <em>Gernika-Lumo Tourism Office, Spain</em></td>
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<td>▪ Nagore Espinosa, <em>in2destination, Spain</em></td>
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<td>▪ Humberto Bustince, <em>Public University of Navarra, Spain</em></td>
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<td>Time</td>
<td>Session</td>
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<td>15:45-16:45</td>
<td><strong>Discussion</strong>&lt;br&gt;<strong>Continued Session 2: Remarkable Subnational Case Studies advancing on subnational tourism measurement beyond Official Statistics</strong>&lt;br&gt;<strong>Panelists (3):</strong>&lt;br&gt;  - Dr. Yurena Rodríguez, <em>La Laguna University, Spain</em>&lt;br&gt;  - Dr. Asunción Fernández, <em>Deusto University, Spain</em>&lt;br&gt;  - Mr. Dilip Kumar, <em>Bangladesh</em>&lt;br&gt;<strong>Discussion</strong></td>
</tr>
<tr>
<td>16:45 – 18:30</td>
<td><strong>INRoute network private meeting by invitation only</strong></td>
</tr>
<tr>
<td><strong>23rd November - Thursday</strong></td>
<td></td>
</tr>
<tr>
<td>9:00 - 11:30</td>
<td><strong>Session 3: How to contribute to achieving the 2030 SDGs from a subnational perspective?</strong>&lt;br&gt;<strong>Moderator:</strong>&lt;br&gt;  - Dr. Mara Manente, <em>CISET, Italy</em>&lt;br&gt;<strong>Panellists (8):</strong>&lt;br&gt;  - Ms. Ana Moniche, <em>NECSTOUR, Belgium</em>&lt;br&gt;  - Dr. Christoph Schröder, <em>Universidad de Málaga, Spain</em> and Dr. Francesc Romagosa, <em>Universidad Autónoma de Barcelona, Spain</em>&lt;br&gt;  - Dr. Inma Gallego, <em>SAETA Andalusia Government, Spain</em>&lt;br&gt;  - Dr. Calvin Jones, <em>Cardiff Bussines School, Wales</em>&lt;br&gt;  - Ms. Maitena Ezkutari, <em>Government of Navarre</em>&lt;br&gt;  - Dr. Raúl Hernández, <em>University La Laguna, Spain</em>&lt;br&gt;  - Mr. Alvaro Carrillo de Albornoz, <em>Hotel Technological Institute - ITH, Spain</em>&lt;br&gt;  - Mr. Ulf Sonntag, <em>Institute of Tourism Research in Northern Europe, Germany</em>&lt;br&gt;<strong>Discussion</strong></td>
</tr>
<tr>
<td>11:30 - 12:00</td>
<td><strong>Coffee Break</strong></td>
</tr>
<tr>
<td>12:00 - 13:30</td>
<td><strong>Session 4: From Tourism-phobia to a Proper Understanding of Tourism Impacts</strong>&lt;br&gt;<strong>Moderator:</strong>&lt;br&gt;  - Ms. Antonio Massieu, <em>Chair of INRouTe</em>&lt;br&gt;<strong>Panellists (3):</strong>&lt;br&gt;  - Mr. Oscar Perelli, <em>EXCELTUR, Spain</em>&lt;br&gt;  - Mr. Juan Requejo, <em>Asistencias Clave, Spain</em>&lt;br&gt;  - Dr. Salvador Antón, <em>Rovira i Virgili University, Spain</em>&lt;br&gt;<strong>Discussion</strong></td>
</tr>
<tr>
<td>13:30 - 14:30</td>
<td><strong>Lunch</strong></td>
</tr>
<tr>
<td>13:30 - 15:00</td>
<td><strong>Session 5: Front-runners of a challenging sustainable tourism management</strong>&lt;br&gt;<strong>Moderator:</strong>&lt;br&gt;  - Dr. Nagore Espinosa, <em>CEO of in2destination, Spain</em>&lt;br&gt;<strong>Panellists (4):</strong>&lt;br&gt;  - Dr. Mara Manente, <em>CISET, Venice, Italy</em>&lt;br&gt;  - Mr. Damia Serrano, <em>Barcelona Tourism Observatory, Barcelona, Spain</em>&lt;br&gt;  - Ms. Áshildur Bragadóttir, <em>Visit Reykjavik, Reykjavik, Iceland</em>&lt;br&gt;  - Dr. Tad Hara, <em>University of Central Florida, Orlando, USA</em>&lt;br&gt;<strong>Discussion</strong></td>
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<tr>
<td>Time</td>
<td>Session Title</td>
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</tbody>
</table>
| 9:00 - 10:30 | Session 6: Environmental Perspective: Measuring Sustainability in Tourism at subnational levels | **Moderator:**  
**Dr. Claudia Nobis**, Researcher and Team Leader at DLR Institute of Transport Research | § Dr. Alessandro Galli, *Foot Print Network, Italy*  
§ Dr. Ainhoa Serna, *Mondragon University, Spain*  
§ Dr. Naomi Álvarez Walo, *La Laguna University, Spain*  
§ Dr. Raúl Hernández, *La Laguna University, Spain*  
§ Dr. Hugo Padrón Avila, *La Laguna University, Spain* | 11:30 - 12:00 |
| 11:30 - 12:00| Coffee Break                                                                 |                                                                                               |                                                                          |                 |
| 12:00 - 13:30| Session 7: Sustainable, Inclusive, Innovative Entrepreneurship in Tourism | **Moderator:**  
**Ms. Carlota Cazalla**, Researcher at *in2destination* | § Mr. Paco Irizar, *Rural Suite, Cascante, Spain*  
§ Ms. Beatriz Ochotorena, *Ultzama Farm School, Lizaso, Spain*  
§ Mr. Carlos Piñeyroa, *Initland La Ronda, Zaragoza, Spain*  
§ Ms. Susana Conde, *Agrotravel, Vitoria-Gasteiz, Spain* | 12:30 - 13:00 |
|              |                                                                              |                                                                                               |                                                                          |                 |
|              |                                                                              | **Conference Closing**                                                                        | **Ms. Maitena Ezkutari**, General Director of Tourism and Commerce, Government of Navarre, Spain  
**Ms. Isabel Garaña**, Regional Director for Europe of United Nations World Tourism Organization (UNWTO) |                 |
The importance of delimiting local tourism destinations

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Abstract

This paper is the result of a research problem that is becoming increasingly important in the field of tourism. This problem is the measurement of tourism at the local level for decision-making. In order to collect tourism statistical information, the municipality is usually used, at the maximum level of disaggregation. But this administrative unit does not always prove to be a useful or relevant unit of analysis, especially in those places of high tourism concentration. This document synthesizes a literature review on tourism statistics, the concept of tourism destination as unit of analysis and functional areas delimitation in social sciences. This work contributes to the development of methodologies, in order to identify tourism areas at the local level, for which statistical information useful for decision-making can be obtained. Areas we have called micro.destinations or local tourism destinations.

Keywords: micro-destinations; local tourism destinations; tourism statistics; decision-making.

1 Introduction

This paper is the result of a research problem that is becoming increasingly important in the field of tourism. This problem is the measurement of tourism at the local level for decision-making. In order to collect tourism statistical information, the municipality is usually used, at the maximum level of disaggregation. But this administrative unit does not always prove to be a useful or relevant unit of analysis, especially in those places of high tourism concentration.

This is why the objective of this work is to contribute to the development of methodologies, in order to identify tourism areas at the local level, for which statistical information useful for decision-making can be obtained. Areas we have called micro-destinations or local tourism destinations.

The academic literature on tourism raises the need for public intervention and private coordination as a means of addressing the improvement of destinations competitiveness and sustainability. It requires having abundant and accurate information. However, there is a significant lack of tourism information at the local level.

This research is framed in INRouTe activity. INRouTe is the International Network on Regional Economics, Mobility and Tourism, that was created in 2009. It is a research network linked to the UNWTO. This network provides support for the development of new statistical methodologies for tourism at the subnational level, as the UNWTO initiative on measuring sustainable tourism.

This work is also included in the activity carried out by TURISTAT, within the UMI (mixed unit of methodology and research in public statistics between ISTAC –Canary Islands Statistical Office- and the

\textsuperscript{1} Este trabajo ha sido realizado en el contexto del proyecto de investigación Sistema de Información para la medición de los impactos del turismo (2016TUR06) financiado por la Fundación CajaCanarias y con el apoyo de la Unidad Mixta de Metodología e Investigación en Estadística Pública entre el Instituto Canario de Estadística y la Universidad de La Laguna.
University of La Laguna). And it is linked with other works that are being carried out in this research group on the identification of points of tourist interest, the development of indicator systems for measuring tourism sustainability, and measuring tourism impacts at the local level. Part of the methodology presented in this paper is being applied since March 2015, at which point the Canary Islands Statistical Office begins to publish indicators of supply to tourism micro-destinations.

2 Research foundations

For the accomplishment of this work a great amount of literature in the matter has been reviewed. Specifically: previous works on methodologies on tourism statistics at the international level, and the role of the local level; the concept of tourism destinations as unit of analysis; and the delimitation of functional areas in the social sciences.

2.1 Methodologies on tourism statistics at the international level. The role of the local level

Tourism is an economic, social and cultural phenomenon that involves the movement of people in the territory and has become an important driver of economic growth (UNWTO & International Labour Organization, 2014). Tourism can be analysed from a double perspective (UNWTO, 2010b). From a demand perspective, focusing on the activities carried out by visitors and the goods and services they acquire. It can also be considered from a supply perspective, understanding tourism as a set of productive activities.

The importance of the impacts generated by tourism in destinations has increased the interest in measuring their economic contribution, and their relationship with other economic and social activities, as well as obtaining indicators that allow international comparability. To make possible to measure tourism's contribution to destinations, many countries and international organizations began decades ago to seek consensus on the definition of concepts, frameworks, databases and techniques. This work concentrated more efforts, especially since the 1980s, by international organizations (UNWTO, OECD, and EUROSTAT) and pioneer countries such as Spain, France, Canada, Australia and Italy (Quevedo, 1999).

In the period between 1937 and 1980, definitions and classifications on international tourism are established, but these definitions are inconsistent with other statistics (Quevedo, 1999). In 1937 the Council of the League of Nations recommended a definition of an international tourist for statistical purposes. This definition was assumed with some modification by the International Union of Official Tourism Organizations (IUOTO) in 1950 (UNWTO, 2010a).

In the 1980s the perception of the economic and social importance of tourism increased. In this context, UNWTO together with the United Nations Statistics Division began to review the concepts and classifications used in tourism statistics. Its objectives were to make them compatible and consistent with those of national and international statistical systems, and to incorporate tourism in the analytical framework of national accounts (Quevedo, 1999; UNWTO, 2010a).


In the following years, the WTO further emphasized the need to develop tourism statistics based on a rigorous and consensual international framework. Numerous forums, seminars and workshops were organized to provide guidance for the implementation of the 1993 Recommendations. In 2003, a fact of considerable institutional importance in the field of international tourism statistics occurs. That year, WTO became the specialized agency of the United Nations in the field of tourism and became part of the coordinating...
mechanism of agencies that produce tourism statistics within the United Nations system (United Nations, 2003).

During the first decade of the 2000s a framework was created for the updating, revision and homogenization of international statistical standards related to tourism statistics. Among others documents, The 1993 System of National Accounts, the Balance of Payments Manual, the Central Product Classification, the International Standard Industrial Classification of All Economic Activities, and the International trade in services were reviewed. In that context, it was also decided to revise the Recommendations on Tourism Statistics, 1993 and the Tourism Satellite Account: Recommendations on the Conceptual Framework, 2000, with the aim of maintaining conceptual and methodological coherence among all these documents, which share many contents. This review process resulted in the preliminary draft of the International Recommendations, 2008, which was submitted for global consultation and subsequently revised by the ad hoc Group of Experts on Tourism Statistics of the United Nations in New York in June 2007. The final text of the International Recommendations for Tourism Statistics, 2008 was published in 2010 (UNWTO, 2010a). The revision of Recommendations on Tourism Statistics 1993 involved changes in certain definitions, in particular as regards forms of tourism, categories of tourism consumption and classifications of tourism products and activities. These modifications implied the need to also revise the Tourism Satellite Account: Recommendations on the conceptual framework, 2000, giving rise to the document Tourism Satellite Account: Recommendations on the conceptual framework, 2008 (UNWTO, 2010b). These latest publications, the International Recommendations for Tourism Statistics, 2008 (UNWTO, 2010a) and the Tourism Satellite Account: Recommendations on the Conceptual Framework, 2008 (UNWTO, 2010b) are currently internationally relevant references when designing National Statistical Systems.

In recent years, the focus has been on the measurement of tourism at the subnational level. In this context emerges INRouTe (International Network on Regional Economic, Mobility and Tourism). INRouTe is an initiative promoted by the World Tourism Organization. This network aims to promote the measurement and analysis of tourism in order to establish an operational framework for entities involved in regional and local tourism destinations (INRouTe & UNWTO, 2012). In 2012 INRouTe published, in collaboration with UNWTO, the document A Closer Look at Tourism: Subnational Measurement and Analysis. Towards a Set of UNWTO Guidelines (INRouTe & UNWTO, 2012). This document is intended to provide guidance for a Regional Tourism Information System (R-TIS) configuration. A Regional Satellite Tourism Account is considered the first step in generating basic statistical information for regions and other subnational territorial aggregations. INRouTe also provides in this document some guidelines for local data collection.

INRouTe considers that the measurement of tourism at the regional level does not consist solely of transposing national data to subnational levels. Given that tourism is unevenly distributed throughout the national territory, better understanding of tourism development at the subnational level is essential for a more efficient design of national policies.

Analysis of tourism at the regional level requires the creation of basic information. Since only statistical information allows comparability between regions, both within a country and between regions of different countries. However, not all territorial levels have the same type and quantity of statistical information. This is not due to a question of size, but rather to the fact that statistical sources do not usually produce information for all administrative units, and / or that the sample sizes of surveys do not allow reliable data to be obtained at all territorial levels (INRouTe & UNWTO, 2012). Sometimes also the official administrative units are not useful or relevant units of analysis, particularly in those regions where there is a high concentration of tourism activity (Hernández-Martín et al., 2016).

To achieve comparability it is imperative to define the boundaries of tourist destinations. This is a very important issue when designing databases that allow comparability between the national and regional scales, and between the regional scale and other subnational scales. In addition, it must be taken into account that the
2.2 Tourism destinations as unit of analysis

Tourism has much to do with places and spaces integrated in communities’ culture, economy and social life. In this activity production, experiences and consumption are interconnected in a certain place. For this reason, destination is commonly used as a unit of analysis in tourism (Saraniemi & Kylänen, 2011). This paper addresses the definition of destination to get to define the tourism micro-destinations. Then, a tour is made on destination management literature and destination management organizations, since the delimitation of micro-destinations is done with the aim of contributing to improve management and decision making in tourism.

In order to define the concept of a local tourism destination or tourism micro-destination, before is necessary to define the tourism destination. This is not a simple task if we consider that, despite being one of the main concepts in tourism analysis, researchers and tourism organizations have not yet agreed on its definition (Candela & Figini, 2012; Saraniemi & Kylänen, 2011). The use of the term destination in the International Recommendations for Tourism Statistics 2008 (UNWTO, 2010a) does not provide much support to clarify the precise scope of the concept, by identifying the main destination of the trip as the place where the tourist spends the most part of your time.

Many researchers in the field of tourism define the destination as a mere geographical area (a city, a region or a country) that is the main objective of the visitor (Bull, 1991; Nadeau, Heslop, O’Reilly, & Luk, 2008). Other studies go further, and introduce in their definitions tourism resources and supply (Buhalis, 2000; Cooper, 2008; Gunn & Var, 2002; Kim, 1998; Murphy, Pritchard, & Smith, 2000). Tourism experiences have also played an important role in defining tourism destination, as is evident in the works of Bornhorst, Ritchie & Seehan (2010), Murphy et al. (2000) and Buhalis (2000). Other researchers point out that destinations are networks by nature, open systems where the different stakeholders involved interact (Baggio & Cooper, 2010; Candela & Figini, 2012; Jackson & Murphy, 2006; Rodriguez-Díaz & Espino-Rodríguez, 2008). The destination is increasingly recognized as a perceptual concept that is related to the subjectivity of the tourist (Bornhorst et al., 2010; Buhalis, 2000; UNWTO, 2007).

So far, few authors have addressed the definition of destination from a local perspective. Dredge (1999) refers to this type of tourism areas as subdestinations; the World Tourism Organization (2007) and Lew & McKercher (2006) use the concept of local destination; and INRouTe and UNWTO (2012) refer to this type of tourism area as a local micro-destination. Only Papatheodorou (2006) uses the term micro-destination, although with a somewhat different meaning; the example that uses to apply this concept is a business tourist that travels to Athens (Greece), the micro-destination, in this case, is the city of Athens.

Lew and McKercher (2006, p. 405) consider that a local destination can be defined as “the area containing the products and activities that could normally be consumed in a daytrip from the heart of the destination and that are normally promoted by the destination as part of its overall suite of products”. Dredge (1999) goes further, addressing the question of the existence of destinations within destinations, defining local subdestinations as clusters of attractions and services. Along the same lines, the World Tourism Organization (UNWTO, 2007) considers that local destinations can be joined to form larger destinations. The importance of tourism analysis at the local level has also been highlighted by Weidenfeld et al. (2011) who complain that the study of clusters in tourism has been approached from the macro-regional level and not from within a local tourist production system where companies create synergies. In short, the concept of destination on a local scale is not sufficiently clear, and as a consequence, delimiting micro-destinations is far from an easy task, although it is very necessary for statistical purposes.

In this work, the concept of micro-destination is used as a small functional area that is highly dependent on tourism. This unit is composed of a wide range of tourism facilities and has a differentiated image and tourism typology (tourism products). A micro-destination should be an individual unit useful for decision-making in...
tourism management and planning. For a more operational definition, a micro-destination is a spatial unit of statistical analysis characterised by a high density of establishments of tourism characteristic industries, homogeneous statistical tourism information and a spatial continuity (Hernández-Martín et al., 2016).

Tourism is an economic activity that requires special attention from public administrations, both in management and in regulation. Tourism management no longer rests exclusively on tour operators through the creation of packages of products, in the last decades this responsibility is being transferred to the destination and to its actors, public and private (Rodríguez & Fernández, 2009). Following Dredge (2016), the need for public policies in tourism is related to: a) policies to expand the market (marketing, promotion, branding, etc.); b) policies for the promotion of products (promotion of new products in niche markets, investments attraction, etc.); and c) policies related to market failures (coordination among agents, congestion externalities, impacts on residents, depletion of resources, etc.).

Tourism destinations management is undergoing major changes in recent years. Some of these changes relate to the concept of smart destinations using information and communication technologies and the promotion of human capital to improve the experience of tourists (Buhalis & Amaranggana, 2013). Other changes are related to DMOs new functions, related to the diffusion of knowledge and intelligence for decision making in a competitive environment (Sheehan, Vargas-Sánchez, Presenza, & Abbate, 2016). In all these areas, tourism destinations management is related to public and private decision-making at the local level. Such decision-making requires huge amounts of information for delimited areas, which is why delimitation of local tourism destinations is a fundamental part of the development of a statistical information system at the micro-destination scale that promotes more successful decision-making.

Similar to tourism destination, the research community has not reached a consensus on the definition of tourism destination management (Laesser & Beritelli, 2013). Research in the field of destination management is characterized by very varied definitions and perspectives (Laesser & Beritelli, 2013; Longjit & Pearce, 2013). Considering the classification by Pearce and Schänzel (2013), in the literature on destination management, some authors have focused on the activities necessary to achieve the competitiveness and sustainability of destinations (Crouch & Ritchie, 1999; Dwyer & Kim, 2003; Jenkins, Dredge, & Taplin, 2011; Longjit & Pearce, 2013; Presenza, Sheehan, & Ritchie, 2005). Other works focused on the structures and processes required to effectively manage destinations (Anderson, 2000; Bieger, Beritelli, & Laesser, 2009; Laesser & Beritelli, 2013; Longjit & Pearce, 2013; Minguzzi, 2006; Morrison, 2013; Sainaghi, 2006; UNWTO, 2007). Some authors emphasize activities aimed at meeting the needs of tourists (Buhalis, 2000; Fuchs & Weiermair, 2004; Laesser & Beritelli, 2013; Pechlaner, Hedorfer, & Tödter, 2008; Zehrer, Pechlaner, & Hölzl, 2005) or a wider set of stakeholders (Bornhorst et al., 2010; Buhalis, 2000; Longjit & Pearce, 2013; Morrison, 2013; Wang, 2011). And finally, other works define the intelligent management of destinations (Sheehan, Sánchez, Presenza, & Abbate, 2015).

An effective tourism destination management brings numerous advantages. The first of these benefits is to establish a competitive advantage, either by achieving a strong and unique positioning, or by providing excellent quality experiences and superior value. Another advantage of a proper management and planning is to ensure the sustainability of the tourism destination. Third, a wider distribution of the benefits of tourism through, for example, support for the consumption of local goods, the development of the destination business fabric, etc. Another advantage, is the improvement of tourism performance, an adequate destination management can increase tourists’ average stay, expenses, etc., and even reduce seasonality. Finally, effective management allows building a powerful brand image (UNWTO, 2007).

Destination management is done through specialized organizations, called Destination Management Organizations (DMOs). These organizations coordinate the efforts of stakeholders to achieve the objectives of tourism destination (Morrison, 2013). In this paper we consider a broad concept of DMOs as they are understood as Destination Management Organizations, instead of Destination Marketing Organizations, as is done in various works (Pike, Murdy, & Lings, 2011; Pike & Page, 2014; Ritchie & Ritchie, 2002). The concept of Destination Management Organization is a broader concept than the Marketing Organization, since marketing is just one of the tasks of a destination management organization. This broader view considers
DMOs to be responsible for the performance of all destinations of the destination, emphasizing that these organizations must exercise the destination leadership and those that foment the team work within the initiatives coordinated (Crouch & Ritchie, 1999).

DMOs are born of the need to coordinate the planning, development and marketing tasks of tourism destinations (Morrison, 2013). Buhalis (2000) defines DMOs as the organizations responsible for destination planning and marketing. For this author, these organizations tend to be part of local, regional or national government, and have the political and legislative power and resources to take action towards the achievement of the strategic objectives. This work considers marketing a strategic mechanism that must be coordinated with the planning and management of the destination.

The World Tourism Organization, in its practical guide for tourism destination management (UNWTO, 2007), considers that the destination management requires the coordinated work of organizations and interests to reach a common goal. In this document UNWTO highlights the role of DMOs, which it considers should be the bodies responsible for directing and coordinating the activities to be carried out under a coherent strategy. These organizations, UNWTO adds, must gather resources and expertise, and maintain a degree of independence and objectivity that allows them to mark the best way to follow destinations. In the aforementioned document, the UNWTO recognizes three types of DMOs: national tourism authorities or organizations responsible for tourism management and marketing at national level; regional, provincial or autonomous destination management organizations (and their equivalents in different countries), which will assume management and/or marketing tasks in a geographic region defined for this purpose normally, but not always, an administrative unit; local destination management organizations, which are responsible for managing and/or marketing tourism in smaller geographical areas such as cities and municipalities. Whatever the type of DMO of the three previous ones highlighted by the UNWTO, the most important quality they should have is their credibility as a strategic leader in the marketing and development of tourism destinations and be able to foster the collaboration of the sector to reach a goal strategy (UNWTO, 2007).

There are numerous references to the regional scale in DMOs literature. DMOs at the regional level have as main functions: maximize long-term strategy in collaboration with local organizations; representing region interests and businesses at national level; maximizing the profitability of local companies and their multiplier effects; projecting a homogeneous and coherent region image; optimizing the impacts of tourism, i.e. ensuring a sustainable balance between economic benefits and socio-cultural and environmental costs (Minguzzi, 2006). Bieger, Beritelli and Laesser (2009) used the term local DMO. These authors considered that destination size influences DMO functionality, generating a conflict between different optimal frontiers, since for internal functions destination size is desirable to be smaller, whereas, for external functions much larger, which is a major challenge for DMOs. Therefore, the authors concluded that DMOs tasks are defined according to destination limits.

In this research we consider that the local level contributes great value to the decision making, and to tourism destination management. We agree with Bieger, Beritelli and Laesser (2009) that there are certain tasks of destination management, carried out by the DMO, which will be more effective if carried out on a wider scale, i.e. at the provincial, regional and even national level. These tasks are, above all, those of promotion, marketing, brand creation, etc. But we consider that for other types of tasks, such as information generation, destination analysis and study, impacts and policies evaluation, etc. local management can be much more effective. Therefore, proper destination management should seek balance with respect to which tasks are developed at which levels.

2.3 Delimitation of functional areas in the social sciences

Since the purpose of this research is to contribute to a methodological development in relation to local tourism destinations delimitation, it is necessary to summarize the works that have addressed a similar theme, although for other purposes. In the scientific literature on the delimitation of geographic areas in the social
sciences field, there are not many works that identify internally homogeneous areas in terms of certain characteristics but heterogeneous with respect to adjacent areas. However, in some specific disciplines there exists a certain tradition of functional geographical areas delimitation. These works have been developed mainly in the fields of sociology, public health, urban planning and geography, and they allow delimiting areas in cities, in some cases neighbourhoods, for certain research purposes. These functional areas have been identified in the literature based on nine main criteria: the most repeated is subjectivity and consensus, both of authorities and local population (Coulton, Korbin, Chan, & Su, 2001; Flowerdew, Feng, & Manley, 2007; Sampson, Raudenbush, & Earls, 1997; Suttles, 1972); followed by physical and social barriers (Cutchin, Eschbach, Mair, Ju, & Goodwin, 2011; Flowerdew et al., 2007; Sampson et al., 1997; Suttles, 1972); enacted boundaries (Chasin, 1997; Suttles, 1972); homogeneity of population or households characteristics (Flowerdew et al., 2007; Riva, Apparicio, Gauvin, & Brodeur, 2008; Sampson et al., 1997; Spielman & Logan, 2013); land use (Cutchin et al., 2011; Dredge, 1999; Suttles, 1972); the research purpose (Chaskin, 1997; Dredge, 1999; Flowerdew et al., 2007); size (Blasco, Guia, & Prats, 2014; Clapp & Wang, 2006; Flowerdew et al., 2007) and spatial continuity (Cutchin et al., 2011; Flowerdew et al., 2007; Sampson et al., 1997).

In the matter, it is important to emphasize the contribution of Suttles with his work, The social construction of the communities (1972). In this work the author has a multilevel spatial view of the neighbourhood, and argues that urban households identify four neighbourhood scales: the block, the defended neighbourhood, the limited liability community, and the extended limited liability community.

There are multiple trends and methods in the literature on defining and delimiting neighbourhoods. Deng (2016) identified six categories in which neighbourhood identification and delineation methods are grouped: perception-based methods that delimit neighbourhoods based on residents’ mental maps; in physical limits, that is to say, accidents, streets, etc.; in inference; pre-existing areas, such as census blocks, administrative or electoral districts, municipalities, etc.; aggregate limits, and automated zone design, which is the automation of the neighbourhood delineation process by means of criteria specified by stakeholders.

As for attribute based neighbourhoods delimitation methods, it is worth noting the contribution of Galster (2001), who defined neighbourhood as a set of spatial attributes associated to residential groupings, sometimes together with other land uses. Spielman and Logan (2013) conceptualized the neighborhood in terms of space and social composition, defining it as a contiguous territory characterized by a bundle of social attributes that distinguish it from the surrounding areas. The authors pointed out those boundaries of neighbourhoods are defined by changes in the set of attributes between adjacent territories. Other neighborhood delimitation works emphasized social relations. Hipp, Faris and Boessen (2012) created neighborhoods based on density of social ties and physical distance between adolescents, obtaining networks that show considerable spatial continuity.

Numerous authors highlighted the importance of mental maps produced by neighbours, that is, the subjectivity of individuals, when identifying neighbourhoods (Chaskin, 1997). There are different studies comparing neighbourhoods identified by subjectivity or mental maps of individuals, with other areas automatically generated by computer software used in the application of certain methodologies (Clapp & Wang, 2006; Cutchin et al., 2011; Haynes, Daras, Reading, & Jones, 2007). The literature shows a varied number of works that used pre-existing zones for the creation of new neighbourhoods. An example of this could be the work of Riva et al. (2008).

As is the case with this research, in many articles neighbourhoods with statistical purposes are delimited. This is the case of Flowerdew et al. (2007) who build a zonal system for the publication of scaled-up neighbourhood statistics in Scotland. The following criteria were used for the construction of these zones: population size, form compactness, population homogeneity in terms of social and economic variables, and physical and social environment elements that may affect areas degree of significance for the local population. The need for human intervention was emphasized given the subjective nature of the areas identified therein. In this work, a consultation process was carried out, which took into account the opinion of some local authorities at the same time. The consultation consisted of sending the draft of the identified areas
to these authorities for comments and suggestions. These authorities proposed specific changes, some important, sometimes suggesting their own zones. Changes that did not violate the principles used were incorporated.

There are few examples of zoning in the literature related to tourism. In this sense, it is possible to emphasize the contributions of Dredge (1999), that treats the spatial design of tourism destination; Vasiliadis and Kobotis (1999), who analyze tourist attractions clustering in Macedonia; and Chhetri and Arrowsmith (2008), who identify areas with high recreational potential in Australia.

More broadly, Dredge (1999) addressed the spatial design of destination, and sought to improve the conceptualization of the basic elements of target regions by modeling from existing models and concepts. This work integrated tourism in land use planning. Work that was carried out at a local or regional level, unlike the market-oriented tourism planning that is usually carried out at a regional or higher scale. This paper proposed a spatial model for the planning and design of target regions. It was intended to be applicable to different destinations and scales. This planning and design model consisted of a destination region, source markets, nodes, districts, circulation routes and footbridges.

In a paper published the same year, Vasiliadis and Kobotis (1999) applied the nearest neighbor analysis to analyze tourist attractions clusters in Macedonia. They developed a methodology for identifying geographical areas of potential tourism development. This methodology involved: the analysis of the geographical space distribution through an analysis of the nearest neighbor; an analysis of points through functional diagrams that deepened tourism strategies; finally, the mixture of the tourism product of the chosen points with the characteristics of the attitude of the visitors seems to have constituted a useful and easy way of collecting information for the administrative assistance. It therefore concluded that closer neighbor analysis could serve both to better understand the nature of tourism areas and to assist in planning for better use of those areas.

Another zoning work was done by Chhetri and Arrowsmith (2008), where they identified areas with high recreational potential in Victoria, Australia, using geographic information systems (GIS). They stored geometric properties within the GIS, including position, size (width, length and perimeter), shape and structure of recreational features. Topological properties provide information on continuity, adjacency, connectivity, and containment. The GIS allowed to process data for the geostatistical analysis by means of which several statistical and mathematical operations can be applied, both spatial and stored data in the database.

Finally, Blasco et al. (2014) proposed a method to identify alternative tourism zones based on consumption. This method combined geographic information systems with hierarchical grouping techniques, based on space-time distance, in the Pyrenees. With the proposed method, the larger areas were divided into small local tourism destinations, which might otherwise be difficult to detect. It is argued that these smaller areas have a range of distances within destination, which, in the context of tourism development in mountain regions, are better adapted to the hub-and-spoke mobility pattern.

3 Methodology

After examining the analytical foundations of the work, both in terms of the development of tourism statistics, the concept of tourism destination and the importance of tourism management, as well as the methodologies of territorial delimitation in social sciences, the next issue is to identify and delimit the micro-destinations.

The first step to delimit the tourism local destinations it is to establish a set of criteria, from which to group establishments of tourism characteristic industries. These criteria will be applied on the basis of the consensus of experts in tourism matters with explicit knowledge about the destination in which they are working. The criteria proposed in this work have been developed in the research group Turistat, and published in Hernández-Martín et al., (2016).

(1) *Concentration of establishments from tourism characteristic industries*. Micro-destinations can be established by focusing on the density of one, or equally several, tourism characteristic industries.
destinations must be driven by economic policy, marketing, planning and social inter usefulness of the effort of offering tourism information at this level. The catalogue of micro
destinations may be more than sufficient for the needs of certain projects. To compensate the effort required to gather
boundaries of micro
take into account when carrying out their delimitation. Data protection laws affect the
boundaries should also be as consistent as possible. For this reason, demand-side characteristics
than demand-side features, as the former are more stable than the latter. Nevertheless, both approaches are
and flexibility. Continuous changes in the boundaries of micro-destinations should be
and the criteria used to define these, should be dynamic and flexible enough
to allow for changes in tourism over time, and enable statistical offices to recalculate previous
definition may relate to the places that are visited by tourists (e.g. restaurants, beaches, natural parks,
cultural heritage sites, etc.). However, the most feasible way of delimiting the boundaries of a micro-
destination is to use tourism accommodation. Not only is it the most straightforward method, but there are also several advantages to using tourist accommodation to establish the locations of a
- Homogeneity of tourism typologies and tourism supply. The criteria used for dividing a tourism area
more than one micro-destination are the nature of tourism typologies, defined as tourism products by United Nations (2010a), and the characteristics of tourism supply in each zone. Companies located in a geographical area have similar values, rules and language, so the social
- Stability of boundaries over time. One advantage of using municipalities as a reference for tourism
statistics is the stability of their geographical boundaries. In the case of micro-destinations, the
boundaries should also be as consistent as possible. For this reason, demand-side characteristics
should not be taken into account when defining a micro-destination because the attributes of tourism
demand may change very quickly.
- Dynamism and flexibility. Continuous changes in the boundaries of micro-destinations should be
avoided as far as possible to enable statistical comparisons to be made over time and space.
Moreover, at the same time, it is necessary to have criteria in place that can be used to adapt
the boundaries of micro-destinations as they evolve. A tourism destination is a dynamic system that
changes over time and it passes through different phases (Scott et al., 2011), so the design of micro-
destination boundaries, and the criteria used to define these, should be dynamic and flexible enough
to allow for changes in tourism over time, and enable statistical offices to recalculate previous
- Feasibility and relevance. The identification of micro-destinations must take feasibility issues into
account. As this type of destination is based on an interest in improving statistical information, many
aspects such as statistical confidentiality and the statistical significance of available data at this level,
must be taken into account when carrying out their delimitation. Data protection laws affect the
confidentiality of information pertaining to micro-destinations, and the statistical significance of data
must be checked when working with data obtained from any sample. To avoid areas that are too
small, micro-destinations should only be considered when tourism figures for them are high enough
to compensate the effort required to gather the relevant data. Sometimes, tourism data obtained at the
municipal level may be more than sufficient for the needs of certain projects.
- Public and private support. There must be a consensus between public and private stakeholders on
where the boundaries of the micro-destinations are located, this is the only way to guarantee the
usefulness of the effort of offering tourism information at this level. The catalogue of micro-
destinations must be driven by economic policy, marketing, planning and social interest. This

(UNWTO, 2010a) at the destination. Location within a concentrated geographical area is a source of
cooperation and knowledge diffusion (Scott, Baggio, & Cooper, 2011) and a source of similar and
shared characteristics. The minimum level of concentration or density of tourism activities that a
micro-destination must exhibit cannot be established a priori and should be adapted according to the particular characteristics of a destination. In Canary Islands, we have identified tourism micro-
destinations that usually contain, at least, 1,000 beds. The definition of the boundaries of a micro-
destination may relate to the accommodation establishments where tourists stay, or equally, the
definition may relate to the places that are visited by tourists (e.g. restaurants, beaches, natural parks,
cultural heritage sites, etc.). However, the most feasible way of delimiting the boundaries of a micro-
destination is to use tourism accommodation. Not only is it the most straightforward method, but there are also several advantages to using tourist accommodation to establish the locations of a
micro-destination.
support can be enhanced if micro-destinations’ boundaries are coherent with urban and territorial planning and if they are sensitive to social and environmental interests (Coulton et al., 2001; Sampson et al., 1997; Suttles, 1972).

The aforementioned criteria must be applied in a sequential process over three phases. Phase 1: delimiting tourism areas from non-tourism areas. Tourism areas must be delimited in a process in which the objective is to distinguish between tourism areas and non-tourist areas, i.e. areas where tourism concentration or density is low. Phase 2: delimiting micro-destination boundaries. Each tourism area will include either one or several micro-destinations. In the latter, the area would be divided into more than one relevant, viable and differentiated micro-destination. The basic criterion to delimit tourism areas is the concentration of tourism characteristic activities (criterion 1), while the basic criterion used to divide a tourism area is the homogeneity of tourism products and tourism supply in each micro-destination (criterion 2). Phase 3: checking the results. The micro-destinations obtained must be checked in order to analyse whether they also fulfil the next four criteria: stability, dynamism-flexibility, feasibility-relevance and support. If they do not fulfil these requirements, the process of delimitation must be repeated again from the very beginning.

Once the micro-destinations have been delimited, the next step is to link statistical information to each micro-destination. In this process, tourism establishments and tourism statistical information must be geolocated. In the case of using accommodation as the central type of tourism activity of this process, the first task is to develop a Directory of Collective Tourism Accommodation Establishments. The directory lists all of the accommodation establishments and uses geolocation to map their positions. This directory must be used by the System of Tourism Statistics to geolocate demand-side and supply-side tourism surveys, which means they are capable of providing statistical data for micro-destinations. Therefore, the statistical information that can be obtained for micro-destinations is not new and costly. It is the result of rearranging existing information with the help of geolocation of tourism establishments.

Two relevant characteristics of the proposed method are that it is flexible and it is low cost: micro-destinations’ boundaries may change over time, however the task of redesigning their boundaries and providing a new time series of tourism indicators is quite an inexpensive and straightforward process once all tourism data have been geo-referenced.

4 Results
As result of applying this methodology in the Canary Islands, have been identified 47 tourism micro-destinations in the archipelago. These areas occupy 1.7% of the islands territory and 94% of the island’s collective tourism accommodation bed-places are located inside their boundaries.

A large amount of statistical information has been generated for these local tourism destinations. To show some examples, from now on, we focus on the municipalities of Adeje and Arona in the south of Tenerife, where we have identified nine micro-destinations. Starting in the south and moving north, which reflects to a certain extent the chronology of their development, the nine micro-destinations identified in the pilot study were: Costa del Silencio, Los Cristianos, Las Américas - Arona, Las Américas - Adeje, Costa Adeje, Torviscas-Fañabé Alto, Playa del Duque, Playa Paraiso and Callao Salvaje.
The nine micro-destinations of the municipalities of Adeje and Arona represent around 1% of the island’s surface area. Tourism-related statistical information that can be obtained at the micro-destination level is similar in quality and variety to the information available for each municipality or even each island. Tourism figures and the size of the sample for each micro-destination have been big enough to allow statistical significance and information confidentiality.

Despite their relatively small surface area, 66.3% of the island’s collective tourism accommodation bed-places are located inside their boundaries. In 2016, there were a total of 136,922 tourism bed-places in these nine micro-destinations (ISTAC), which represents 10.7% of the surface area of the two municipalities. The population living in the two municipalities, primarily outside the boundaries of the micro-destinations, reached an official total of 126,488 inhabitants for that same year.

The statistical data obtained for the micro-destinations allow us to affirm that each of the resulting units exhibit a sufficient number of differential characteristics to justify producing specific tourism information for them. There are relevant differences between the age and the type of accommodation establishments of different zones. For example, the three oldest micro-destinations, Los Cristianos, Costa del Silencio and Las Américas – Adeje, together with the zones of Fañabé – Torviscas Alto and Callao Salvaje were shown to contain a remarkable number of apartments, whereas the remaining four micro-destinations were shown to contain a higher proportion of hotel beds. The nine micro-destinations generated 25.7 million overnights in tourism establishments in 2016. This represents 68.2% of overnights made by tourists in the island. The number of overnights in 2016 by micro-destination ranges from approximately 562 thousand to 7.9 million following ISTAC. There are also relevant differences number of tourists staying, average stay, occupancy rate, and employment as shown in Table 1.

**Table 1. Tourism statistics for micro-destinations in 2016.**

<table>
<thead>
<tr>
<th>Micro-destination</th>
<th>Overnight stays</th>
<th>Tourists</th>
<th>Average stay</th>
<th>Occupancy rate per bed</th>
<th>Jobs by 100 beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Callao Salvaje</td>
<td>572,844</td>
<td>70,098</td>
<td>8.3</td>
<td>61.9%</td>
<td>10.3</td>
</tr>
<tr>
<td>- Playa Paraíso</td>
<td>1,193,621</td>
<td>168,294</td>
<td>7.2</td>
<td>84.9%</td>
<td>17.9</td>
</tr>
<tr>
<td>- Playa de El Duque</td>
<td>3,692,973</td>
<td>472,672</td>
<td>8.0</td>
<td>85.9%</td>
<td>27.9</td>
</tr>
</tbody>
</table>
As an example of statistical information for micro-destinations, in the following map (Figure 2), the average revenue per available room for each area is observed. It can be seen how border areas present very different results in terms of the analysed variable. For example, the revenue per available room of the accommodation establishments of Playa de El Duque is twice that of Torviscas and Fañabé Alto.

![Revenue Per Available Room (RevPAR) 2015.](image)

The relevance of dividing the municipalities of Arona and Adeje into several micro-destinations becomes clear when we look at data provided by ISTAC for the average daily rates (ADRs): in Playa del Duque the ADR reaches 132 €, while in Torviscas-Fañabé Alto it reaches 55 €. In other words, in Playa del Duque the ADR is more than double the value for the cheapest zone within the same municipality. What this means is that the value of ADR for the municipality of Adeje (85 €) is not a good indicator of what is happening in the municipality due to the high variance of results among the different micro-destinations. Differences between micro-destinations are also observed in lots of indicators.

5 Conclusions

Evidence from several fields of research shows us that the delimitation of boundaries of social communities is not a straightforward process. The potential criteria used for establishing boundaries are diverse and there is currently no consensus on a universal method. The delimitation of community boundaries can arise as a result of a more general set of interests or it may arise in response to a particular set of interests, such as for tourism analysis, as is the case in this paper. The problems faced when trying to establish the boundaries of
destinations at the very local level are very similar to those faced in any other field of research, the main difference being the social dimension. Neighbourhoods tend to have clearer, stronger and more stable social relationships than those of tourism micro-destinations.

The method proposed in this paper for delimiting the boundaries of tourism micro-destinations contains six criteria that were tested in a pilot study in Tenerife, one of the seven Canary Islands. A crucial role was played by two criteria in particular, the first being the concentration of tourism establishments (so as to identify tourism areas from areas not heavily dependent on tourism) and the second being the tourism typologies and characteristics of tourism supply (so as to distinguish one micro-destination from another). The pilot study and its results can be viewed as a contribution towards defining a standardised inter-national methodology for delimiting tourism destinations at the very local level and providing statistical information for these analytical units.

In the pilot study, tourism collective accommodation establishments have been used to delimit the boundaries of the micro-destinations. There are several advantages to using them as a starting point which is why they have played such a central role in the method-ology developed in this paper: in addition to facilitating the geolocation of tourists, they also provide researchers with access to huge amounts of statistical information that is linked to and already available for collective accommodation establishments that can also be geolocated. Therefore, the results presented in this paper provide an example of the potential of this methodology even when only information that is already available is being used. The combination of information from demand-side and supply-side surveys is a by-product of this study, but it is a by-product that holds huge potential for improving tourism information in the case of micro-destinations.

The methodology has proven useful in identifying the micro-destinations, while the results prove the usefulness of obtaining tourism statistical information at this level based on the heterogeneity of the data gathered for micro-destinations, even when they are located within the same municipality. The aggregated figures for the municipalities of Arona and Adeje do not represent what is happening in the micro-destinations.

The application of this method in the south of Tenerife has been possible given the quality and availability of tourism statistics. It has not involved costs as it is based on existing information on accommodation and expenditure surveys that has been rearranged with the help of geolocation. In addition, the results can be extended to obtain time series of data for micro-destinations.

The proposed methodology can be applied to any kind of region, but is particularly suitable for places with a high concentration of tourism establishments, as is typically found in coastal mass tourism destinations. The characteristics, objectives and needs of each destination must be taken into account whenever this methodology is applied to other kind of tourism regions. The particular methodological decisions taken in the case of the Canary Islands (especially that of using accommodation as our cornerstone) may not necessarily match the exact characteristics of all urban or rural tourism destinations, or those destinations that are dependent on cruise passengers or same-day visitors in general. In places where collective accommodation facilities are disperse or may not play a central role in tourism, the method used in this paper will need to be adapted accordingly. In such circumstances, micro-destinations should be delimited by the concentration of other tourism establishments in the places most visited by tourists, rather than using accommodation establishments as a starting point. However, it should be pointed out that if there is a complete lack of concentration of tourism establishments or tourism activity in any given geographical area (however these are measured) then it makes no sense to try to establish micro-destinations, and thus it would make no sense to try to use this methodology.

The introduction of geographic data opens new possibilities in the analysis of tourism. Both tourism accommodation and the places visited by tourists are very important in tourism management and planning, as they provide data on tourist mobility. Analysing mobility can be a natural development of establishing micro-destinations. However, in the case of Tenerife, available information does not allow now an analysis of places visited by tourists. In addition to analysing mobility, future extensions of the method could involve expanding
the tourism statistical system by adding geolocated information (when available) that relates to revenues, environmental indicators, labour statistics, prices from online intermediaries (see Papatheodorou, 2003), or even real-time data for electricity consumption, traffic, public transport, etc., in order to improve the decisions taken by destination management organisations and stakeholders.

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**Acknowledgements**

We thank the Canary Islands Institute of Statistics (ISTAC) for its collaboration, advice, support and data transfer for this work.
Local Tourism Destination Carrying Capacity Measurement Challenges

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Extended Abstract

Keywords: carrying capacity; measuring tourism; sustainability; data disaggregation; local destinations; Introduction

Introduction

Sustainable tourism has been a topic for discussion in tourism circles since the early 1990s. Interest has been motivated mainly by two factors. On the one hand, one can point out the influence of the Brundtland report, "Our Common Future" (UN, 1987), and on the other hand, one cannot forget the role of the Rio Summit (1992) on sustainable development. More recently, the challenge of being a sustainable and responsible destination is part of the logic of smart destinations and this idea is also considered as goal definition into the United Nations 2030 Sustainable Development, into the UNFCCC COP22 and into the Global Covenant of Mayors for Climate & Energy.

However, despite some progress made regarding discussions, from those milestones until 2016, on the threshold of the Year of Sustainable Tourism declared by the United Nations, there is still no consensus on how sustainable tourism should be measured (UNWTO, 2016). There is not only a gap in terms of consensus in its measurement, but also tourism measurement standards only exist at the national level, thanks to the international recommendations promoted by UNWTO in 2008 and ratified by the United Nations. The UNWTO is currently undertaking work in this direction with the project Measuring Sustainable Tourism (MST), as well as the International Network on Regional Economics and Mobility, INRouTe. The present research work has addressed the concept of tourism carrying capacity for six Basque municipalities from five dimensions: Governance, Economic, Environmental, Social, and Territorial.

In this sense, the purpose of the present research paper is to showcase in detail the room for improvement in measuring indicators for tourism at municipal level regarding all five dimensions.
The paper is broadly structured in three main sections. The first one corresponds to the literature review regarding tourism carrying capacity. The second section explains the methodology used to measure tourism carrying capacity in local inhabited destinations, the dimensions addressed. The third section refers to the results and limitations encountered to obtain the data or the characteristics of the data available.

**State of the art about empirical analysis of carrying capacity**

**Analysis of carrying capacity**

The literature review shows how the orientation regarding the study of the carrying capacity has changed. According to Butler (1996), the study of the carrying capacity has gone through several stages, which comprehend from the search of a specific amount that represents the number of tourists that an area can host, to the management approach based on the social and experience expectations. Firstly, we can affirm that the methodologies to measure carrying capacity of a territory are designed based on the approximation to their own interpretation of the concept carrying capacity. In this sense, it is of interest the approach to the concept and its measurement which Cifuentes et al. (1992) have done and has been profusely used (Amador y col., 1996; Cifuentes y col., 1999; Dias e Cordeiro, 2012) for measuring the touristic destinations carrying capacity. Authors differentiate between physical carrying capacity and management capacity.

Physical Carrying Capacity (PCC) seeks to indicate how many visitors an area can receive per day, considering only its biophysical characteristics. The calculation considers the size of the place; the length of time the place remains open to visits and the space occupied by each visitor.

The Management Capacity (MC) of the area refers to the sum of the conditions that the administration of the protected area needs to be able to fulfil its functions and objectives (Cifuentes et al; 1992: 11). Secondly, the measurement of the carrying capacity is defined based on the pillars of the sustainability, which conform the concept of the capacity to evaluate. For instance, Wagar (1964) defines carrying capacity from an environmental perspective, as the level of recreational use of a natural protected area that preserves the sustainability of its environment and the quality of the leisure experience of visitors.

Thirdly, it is important to consider the context to evaluate. Thus, it can be stated that the tourism carrying capacity definition and empirical methodologies for its measurement vary depending on its subject of study. When it is studied for tourism resources, such as museums, theme parks, or protected parks or reserves where entrance and exit is under control the definition is tightly connected to the concept of number of visitors it can host (Alvarez, 2010; Armador et al 1996, University of the Aegean, 2001 & 2002).

However, if the object of study are local tourism destinations, such as cities, where the flows of resident and floating populations are free, with not check point, the
analysis of tourism carrying capacity turns more complex. Therefore, in open spaces, cities, towns, the concept cannot be reduced to adding up to a maximum volume of people.

Although studies of carrying capacity do have a long academic history, to date there are few scientific reports that can be found regarding its application to inhabited tourist destinations, where free circulation of people exists.

Fourthly and lastly, the analysis of the capacity has been approach from the perspective of whom assesses it. In fact, tourism carrying capacity when applied to tourism destinations, with no entry/exit check points, the literature recommends taking into account the resident and the visitors’ perspectives (O’Reilly, 1986). Regarding the former, according to Shelby & Heberlin (1986) tourism carrying capacity refers to the level of use beyond which the generated impact by tourism exceed the acceptable limits set under consensus beforehand”. Concerning the latter, would occur when visitors perceive that the quality of services is less than expected, due to too many people, to non-compatible demand types or other variables, and decides to search for other alternative destinations (O’Reilly, 1986).

Therefore, tourism carrying capacity is far from being measured in local tourism destinations as volume of visitors, it requires looking into different perspectives and dimensions.

**From sustainability to carrying capacity**

Based on the concept of sustainable development and sustainable tourism development definitions (UNWTO, 2016) we can observe that both are based on three fundamental pillars: social, economic and environmental.

Bramwell et al. (1996) introduce a fourth element to the 3 basic pillars of sustainability: politics. According to UNWTO (2010) governance becomes a key element at the moment, as it refers to the changes that are occurring in the social, economic and administrative fields. To this end, the European Commission (COM, 2017) set into motion the European Tourism Indicators System (ETIS) in 2013, with the aim of helping destinations to control and measure the results of its sustainable tourism, using a common approach comparable, based on 4 pillars: Destinations Management; Social and Cultural Impact; Economic Value and Environmental Impact.

Rivas, Leiva and González (quoted by Rivas and Magadán, 2007) elaborate adaptations of existing indicators systems, grouped into four categories: Environmental and use of the Territory; Economic; Socio-cultural; and of Management and Participation.

As López Bonilla and Lopez Bonilla (2008) claim the concept of carrying capacity is frequently used in the application of the sustainable tourism model. Thus, implying that tourist places possess certain limits on the volume and intensity that a specific geographic zone can support, without causing irreparable damage. However, there is still no widely accepted definition nor a systematic procedure for assessing it.
Salerno et al. (2013) point out that the change of focus has gone from a unidimensional approach to an approach that incorporates environmental, social and political aspects.

Some researches regarding the carrying capacity have focused on a single dimension (biological, ecological or social). However, most of the authors that have carried out researches about this concept point out that a single carrying capacity should not be considered, but several, depending on the impact that tourism produced. In this sense, the latest research on this concept, highlight the necessity of approaching its side from a multidimensional perspective combining both quantitative and qualitative aspects.

The existence of three different types of carrying capacity – environmental, physical and perceptual or psychological – of an area has been suggested by Pearce (1989) and it is aligned with the three fundamental pillars of sustainable tourism development pointed out by the UNWTO.

In 1993, Moore, calculated the touristic carrying capacity through a complex process where a series of ecological, physical, social, economic and cultural factors should be considered.

Watson and Kopachevsky (1996) distinguish up to five types of carrying capacity: Ecological-environmental, physical, socio-perceptual, economic and psychological.

García Hernández (2000) considers an ecological dimension with the natural environment, a physical dimension, an economic dimension, the perspective from the residents’ community, the visitors’ perspective and, finally, there also exists a political dimension related to the Capacity Management.

López Bonilla and López Bonilla (2008), consider 7 dimensions of the carrying capacity: Ecological, urbanistic, cultural, economic, institutional, resident psychological, and tourist psychological, which revolve around the three basic components (physical, economic and social).

Ghada et al. (2011), develop a model that considers the dimensions classified into 3 areas; ecologic physics, administrative and economical, socio-cultural and psychological.

In consequence, in order to approach the study of the carrying capacity on this paper, 5 dimensions have been considered, that comprehend the ones developed by the previously mentioned authors: governance dimension, territorial dimension, economic dimension, social dimension and environmental dimension.

**Methodological approach developed for measuring tourism carrying capacity in local inhabited destinations**

Therefore, the methodological proposal developed in this project to assess the carrying capacity is based on four main components of the concept:

The carrying capacity is considered to include the five basic pillars of the sustainability: environmental, economic, sociocultural, territorial and governance.
The tourism context in which carrying capacity is evaluated are local destinations, urban inhabited public spaces.

The analysis of the methodology is thought to evaluate the carrying capacity from the residents’ and the visitors’ point of view.

The literature review regarding the carrying capacity (Biosphere Destination, 2014; COM, 2001 and 2017; EOI, 2015; Espinosa and Alzuá, 2014; Exceltur, 2013,2016; Faulkner & Tideswell 1997; GSTC, 2013; INRouTe, 2016; SAETA, 2015; UNSD 1985, 2012; UNWTO, 2008a, 2008b, 2008c, 2008d, 2016) has allowed to identify the indicators susceptible to be analyzed for the evaluation of the carrying capacity, understood based on the elements proposed. The information gathered has been categorized taking into consideration the five dimension of the sustainability (political or governance dimension, economic dimension, territorial dimension, environmental dimension and social dimension) and three elements that allow its empirical application:

1. Theoretical construct that defines the carrying capacity dimension to be evaluated.
2. Theoretical variables or elements that compose the object of the study dimension and its corresponding source.
3. Indicator or indicators that allow the assessment of each of the variables that compose the dimension.

The following is a summary of each of the dimensions studied.

**Governance Dimension**

Governance dimension of a destination’s carrying capacity is to be understand as the making decisions process and the process through which decisions are implemented or not. The context in which this carrying capacity dimension occurs is composed of two developments: the competence development, this is, the construction of institutional capacities that guarantee the effectiveness of the public politics necessary on the process, and the organizational development, understood as the existence of channels that allow the participation of citizens. And its study is composed of two other developments: the normative development or normative existence and the legislation to regulate the impact and the guarantee of the destination sustainable management and the executive development includes the forms of planning, management strategies, monitoring processes implantation and evaluation.

To measure this dimension 8 indicator have been identified, being the following the main constructs of this dimension:

**Competence Development**

- Tourism competences by public agents
- Tourism competences by private agents
- Tourism competences by public and private agents
• Tourism competences by civil society
• Organizational Development Public-private, public-public, private-private cooperation.
• Areas of cooperation
• DMO (Destination Management Organization)
• Sustainability Strategy (Land use and resource planning)
• Crisis and Emergencies Management

Normative Development
• Sustainability Strategy (Land use and resource regulation)
• Health and Safety

Executive Development
• Emergency measures (if necessary) on carrying capacity, or attraction of predatory public of destinations or other casuistic
• Mitigate and prevent seasonality
• Health and Safety
• Accessibility
• Crisis and Emergencies Management
• Promotion that does not lead to deceive and in line with the parameters defined in the sustainability strategy.
• Responsible Marketing
• Sustainable destination strategy (Land use and resource planning)
• Sustainability strategy (Land use and resource planning)
• Monitoring/Sustainability strategy observatory

Territorial Dimension
The tourism economic activity occurs on a territory, within, in part or beyond an administrative unit. This dimension aspires to gather the distribution and the concentration, if any, of the touristic activity in the territory and its relation with the resident population.

This dimension is measured through 17 indicators. The areas of measurement of this dimension are:
• Characteristics and Dimension of the Offer
• Territorial cohesion
• Public transport
• Study of tourist profiles and their distribution of the activity starting from a sample of tourists accommodated in the capitals. GISflow®

Economic Dimension
This dimension analyzed the usefulness of the Basque touristic sector through its key aspects: income generation, employment and the multiplier effect on other sectors. In addition, it analyzes the socioeconomic impacts on the host community in terms of vulnerability and profitability.

To develop this dimension we start with the following definitions:

On the one hand, this dimension is defined by the UNWTO on its webpage (http://sdt.unwto.org/content/about-us-5) as those that ensure long-term viable economic activities, that provide well-distributed socio-economic benefits to all agents, including stable employment opportunities and earning income and social services for the host communities, that contribute to the poverty reduction.

On the other hand, SAETA (2014:11) when defining this dimension considers sustainability as an efficient and equitable process of production of tourist services, which should foster the development of the business fabric, ensuring the profitability and the competitiveness of the companies that are the ones that manage tourist products, with special relevance in the stability and quality in the employment.

From both definitions the main constructs or areas to be evaluated are obtained, which are assessed through 24 indicators:

Favor the local economic development
• Tourism economic impacts
• Business profitability
• Business competitiveness
• Foster the development of the business fabric
• Stable and quality employment

Socio economic benefits for the host community/Favor the poverty reduction.
• Local tourist companies
• Community support programs
• Tourism seasonality
• Dependence on Tourism
• Unequal distribution of economic benefits generated by tourism
• Cost of living

Social Dimension
This study understands the social dimension as one that takes into account aspects of the development of a tourist activity that in no case generates deterioration and loss of
quality of the tourist experience for the visitor. As well as being associated with the effects that residents’ perceptions can have regarding the possibility of the tourism improving or deteriorating their quality of life. That is to say, to what extent a model that fosters social participation (communities and citizenship) is followed in decision making. Becoming a fundamental part of the development process and, therefore, does not perpetuate and deepen poverty or social exclusion.

To measure this dimension 13 indicators have been identified and their measurement areas are as follows:

- Tourists / visitors Access for all
- Tourist satisfaction
- Acceptable change limit
- Host capacity

Residents
- Resident profile
- Resident perceptions
- Local participation regarding tourism planning
- Society knowledge about Tourism and Education
- Safety
- Gentrification
- Support for local entrepreneurship and fair trade
- Pressure on the local population / Congestion level of tourist destinations

**Environmental Dimension**

The present dimension studies anomalies or overcoming standards related to tourist activity such as consumption of energy, potable water, waste generation, noise pollution, etc. It also contemplates the existence and implementation of sustainability regulations, politics and protocols both in the public and private sectors.

The environmental dimension is measured through 19 indicators from the following areas:

- Adaptation to climate change
- Environmental Sustainability Standards
- Protection of tourist attractions
- Management of visitors and their behavior
- Risk assessment against the Environment and Protection Systems
• Greenhouse gas
• Energy consumption
• Consumption, Safety and Quality of Water
• Waste Management
• Light and noise pollution
• Low impact transport
• Quality of Air

Pilot study’s methodology

The local tourism destinations chosen for the study were: Vitoria-Gasteiz, Laguardia, Bilbao, Gernika-Lumo, Donostia / San Sebastián and Zarautz, all in the Basque Country, Spain. The choice of destinations was based on the priorities of the Basque Government in line with the mixture of destinations the Basque Country has: cities, coast, interior, nature, culture, gastronomy and wine. Three of them are capitals of their respective provinces (Vitoria-Gasteiz, Bilbao, and Donostia / San Sebastián), and the rest are smaller in size with different key elements: interior but close to the coast, part of a UNESCO Biosphere reserve: Gernika; interior destination known for wine: Laguardia, coastal destination known for the beach and surfing: Zarautz.

As mentioned before the dimensions through which the measurement of tourism carrying capacity in this research is conducted are: Governance, Economic, Environmental, Social, and Territorial. Measuring all of them resulted in more than 140 indicators gathered via primary and secondary sources. The methodology aimed at detecting presence or absence of alerts per each indicator or per clusters of indicators. For that purpose, prior to the data collection, a literature review was conducted on the ranges’ per each indicator that would indicate no motive for alert, some or a clear alert.

Concerning primary data, two techniques were implemented:

a) interviews to different representatives of public entities and private businesses. These interviews contribute to all five dimensions.

b) surveys to visitors and residents to feed the following dimensions:
   Territorial, Economic and Social.

b.1. The method in2GISflow, designed by in2destination, has been used to collect data on tourists’ profiles and cross it with the GPS tracked of those tourists’ itineraries across the destination and beyond. The results of these field work feed the territorial dimension.

These ranges are not included in this paper as these are the main content of another publication. This present publication focuses on the limitations of the data.
b.2. Another survey was conducted to visitors and residents aiming at identifying the relative weight of residents, tourists, excursionist in POIs within the six municipalities under study. The survey included variables regarding resident’s attitudes to tourism and the choice of accommodation including peer to peer platforms.

Regarding secondary sources, all key main official data sources, such as the Basque Statistics Institute, Water Agency, Energy Agency, etc. were used to feed all five dimensions.

**Results and Limitations**

From the 81 indicators theoretically identified to measure the five dimensions of our model, the following 24 have not been able to be used in our case study. The following table summarized the reasons for this limitation, which have been diverse:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Issue</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Destination perceived image</strong></td>
<td>There is no record that data from all the municipalities exists.</td>
<td>Governance</td>
</tr>
<tr>
<td><strong>Target towards the destination is positioned</strong></td>
<td>There are not enough reliable data to set alerts.</td>
<td>Governance</td>
</tr>
<tr>
<td><strong>Support to tourism entrepreneurship</strong></td>
<td>This indicator has been used to put municipalities into context but not to generate an alert in itself. There are no disaggregated or qualitative data for each municipality analyzed.</td>
<td>Economic</td>
</tr>
<tr>
<td>Indicator</td>
<td>Issue</td>
<td>Dimension</td>
</tr>
<tr>
<td>-----------</td>
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</tr>
<tr>
<td><strong>Entrepreneurship rate.</strong> Quantify the weight of self-employed or entrepreneurs over the total number of people employed in the Basque Country tourism industry.</td>
<td>There are no disaggregated data for each municipality analyzed.</td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Tourism companies growth</strong>&lt;br&gt;<strong>Participation by employees’ rate.</strong> Weight of the tourism industry within the employed population in the Basque economy.</td>
<td>There are no disaggregated data for each municipality analyzed.</td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Tourism and Hospitality CPI fluctuation as compared to General CPI fluctuation</strong></td>
<td>There are no disaggregated data for each municipality analyzed. INE published data by historical territory. <a href="http://www.ine.es/jaxiT3/Tabla.htm?t=10024&amp;L=0">http://www.ine.es/jaxiT3/Tabla.htm?t=10024&amp;L=0</a></td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Home rental CPI fluctuation as compared to General CPI fluctuation</strong></td>
<td>There are no disaggregated data for each municipality analyzed. INE published data by historical territory. <a href="http://www.ine.es/jaxiT3/Tabla.htm?t=10024&amp;L=0">http://www.ine.es/jaxiT3/Tabla.htm?t=10024&amp;L=0</a></td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Contract type</strong></td>
<td>There are no disaggregated data for each municipality analyzed.</td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Work dedication</strong></td>
<td>There are no disaggregated data for each municipality analyzed.</td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Labor seasonality</strong></td>
<td>There are no disaggregated data for each municipality analyzed.</td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Quantify the Basque population who benefits from planned tourism activities.</strong></td>
<td>This indicator has been used to put municipalities into context but not to generate an alert in itself.</td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Demand that can</strong></td>
<td>There are no disaggregated data for each municipality analyzed.</td>
<td>Economic</td>
</tr>
<tr>
<td>Indicator</td>
<td>Issue</td>
<td>Dimension</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>address seasonality</strong></td>
<td>municipality analyzed.</td>
<td></td>
</tr>
<tr>
<td><strong>Main client</strong></td>
<td>Lack of parameters to set alerts.</td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Main segment</strong></td>
<td>There are no disaggregated data for each municipality analyzed.</td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Tax rise as a result of tourism to maintain the infrastructures, safety, health, etc.</strong></td>
<td>There are no disaggregated data for each municipality analyzed.</td>
<td>Economic</td>
</tr>
<tr>
<td><strong>Satisfaction with the locals</strong></td>
<td>This indicator is proposed from the secondary data gathered throughout the different reports. However, the existing differences between the geographic brands (provinces and municipalities) and even between the valuation scales have made it impossible for alerts to be set.</td>
<td>Social</td>
</tr>
<tr>
<td><strong>Number of visitors in Tourism Offices</strong></td>
<td>This data is not public.</td>
<td>Social</td>
</tr>
<tr>
<td><strong>Number of tourism offices and volume of staff members</strong></td>
<td>A clear indicator is not identified within the destination loading capacity, beyond the loading capacity of the offices themselves.</td>
<td>Social</td>
</tr>
<tr>
<td><strong>Number of visitors at POIs</strong></td>
<td>There are no uniform and longitudinal data regarding the different POIs from which to set alerts.</td>
<td>Social</td>
</tr>
<tr>
<td><strong>Image and capacity of prescription</strong></td>
<td>This indicator is suggested from the analysis of the media content. (e.g. local press) but it would be a content analysis case study on its own.</td>
<td>Social</td>
</tr>
<tr>
<td><strong>Return rates (loyalty)</strong></td>
<td>This indicator has been used to put municipalities into context but not to generate an alert in itself. No correlation between the current data and the loading capacity of a destination exists.</td>
<td>Social</td>
</tr>
<tr>
<td><strong>Quality of life and accessibility to tourist products</strong></td>
<td>This indicator has been used to put municipalities into context but not to generate an alert in itself. No correlation between the current data and the loading capacity of a destination exists.</td>
<td>Social</td>
</tr>
<tr>
<td>Indicator</td>
<td>Issue</td>
<td>Dimension</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Participation mechanisms from different agents in the public management of tourism</td>
<td>Where applicable, this indicator has been used to put municipalities into context but not to generate an alert in itself.</td>
<td>Social</td>
</tr>
<tr>
<td>Existence of awareness programs regarding tourism in communities, schools, institutions, etc.</td>
<td>Where applicable, this indicator has been used to put municipalities into context but not to generate an alert in itself.</td>
<td>Social</td>
</tr>
<tr>
<td>Existence of a system that prevents from the introduction of invasive species</td>
<td>There are no publicly available disaggregated data for each municipality analyzed.</td>
<td>Environmental</td>
</tr>
<tr>
<td>Energy consumption fluctuation per day</td>
<td>There are no disaggregated data per day or even per month, it is only available per year.</td>
<td>Environmental</td>
</tr>
<tr>
<td>Water consumption fluctuation per day</td>
<td>There are no disaggregated data per day or even per month, it is only available per year.</td>
<td>Environmental</td>
</tr>
<tr>
<td>Percentage of days per year during which the air quality is not good or admissible</td>
<td>A most relevant indicator would be checking correlation between days that air quality is not good with tourism peak days</td>
<td>Environmental</td>
</tr>
</tbody>
</table>

There are many challenges when measuring tourism at subnational levels (INRouTe, 2017), this research work shows there are even more when measuring sustainable tourism and tourism carrying capacity at local levels. A brief summary of the key challenges that this paper would like to highlight are:

- Shortage of data for the municipal level.
- Scarce availability of data disaggregated per day for many indicators (water consumption, energy consumption, etc.).
- Data is dispersed across numerous branches or agencies of government at different levels (national, autonomous community level, province, and municipality).
- Some indicators will always depend on interviews or surveys.
• Additionally, many of the indicators that regard existence of sustainable
tourism plans, systems to monitor reduction of water consumption, systems
to monitor reduction of energy consumption, etc. reflect on the existence of
such plans or systems, but it is in many cases unclear the extent to which
these have been implemented. Many entities do count with or do not share
KPIs that could report on progress.

Despite these challenges, we believe that this research significantly contributes to the
literature with a tested methodology for measuring tourism carrying capacity for local
tourism destinations and demonstrates the suitability of a broaden approach to tourism
carrying capacity.

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Acknowledgements

This project has been financed by the Tourism Department of the Government of the Basque Country and the Basque Agency for Tourism, Basquetour.
Measuring sustainable tourism at local level, a methodological proposal

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Abstract
Despite of the growing importance of the sustainability in tourism, the measurement of this concept does not have yet a methodology with a broad international consensus. This work poses a methodology to create a set of indicators on tourism sustainability at a local level including not only the internationally comparable aspects of the sustainability but also the local aspects. As most significant feature, the territorial dimension as a fundamental element for the analysis of the sustainability has been incorporated and the methods to receive assessments from different agents through an IPA analysis are specified.

Keywords: tourism and development, tourism data, sustainability, development planning

1. Introduction
The key issues in sustainable tourism are defined by the fundamentals of sustainability, external to the literature of tourism research (Buckley, 2012). Therefore, it is not surprising that the term tourism sustainability was introduced after sustainability was defined at global level.

The recent trends show an emerging disquiet about how sustainable tourism research and policies can often concentrate more on understanding and altering the attitudes, behaviors and choices of individual actors (Bramwell, Higham, Lane, & Miller, 2017).

The research in the XXI century has been enriched with an enormous variety of topics. Some of them have progressively gained more importance such as the analysis of the relationship between tourism and climate change (Becken & Hay, 2007; Scott, Hall, & Gössling, 2016), impacts on different issues like water (Gössling, 2015) and growth strategies (Gössling, Ring, Dwyer, Andersson, & Hall, 2016). A clear example of the importance of tourism for global sustainability is its consideration inside the 17 Goals for Sustainable Development (United Nations, 2015), together with the efforts to develop an internationally accepted methodology for measuring tourism sustainability. Despite of that, there is not yet a conclusive result as Badenau et al. (2016) state in their review about tourism sustainability. Therefore, the two questions
posed by Liu, (2003) about what is exactly the sustainable level of tourism development? and how can this level be measured? are still unresolved.

Following Bramwell, Higham, Lane, & Miller (2017), the study of sustainability should focus more frequently on understanding and modify the attitudes, behaviors and choices of individual actors. To do so, it is necessary to have indicators that allow measuring the evolution of different dimensions of sustainability over time. Objective indicators have been most frequently employed for building statistical systems to measure tourism sustainability. Still, the lack of consensus is an obstacle that has not yet been overcome as the study of Tanguay, Rajaonson, Lefebvre, & Lanoie (2010) highlights. In addition, as McCool (2016), points out, measuring, although important, has been put aside in the academic discussion of tourism sustainability.

There have been several attempts to build an internationally agreed system of indicators for tourism sustainability. The UNWTO has promoted several initiatives to define those aspects and indicators of tourism related with its sustainability. In a first effort, 13 different areas were established and divided in sections to which indicators were assigned (UNWTO,2004). Other two relevant international methodological initiatives in this context are the European Tourism Indicator System for sustainable destinations (ETIS), which includes 18 criteria focused on destination management (European Union, 2016) and the System of Environmental-Economic Accounting (SEEA) from United Nations, that has mainly an environmental perspective and is not centered in the tourism sphere. Nevertheless, the last contains useful definitions and approaches, for example about territorial delimitation (FAO, European Commission, OECD, United Nations & World Bank, 2014).

The SEEA proposes a pyramidal scheme for the stages from information gathering to elaboration of key indicators as figure 1 shows:
The complication that normally arises is the massive number of indicators they have. As a way of example, the local initiative in Andalusia is formed by more than 300 indicators (SAETA, 2007). Sustainability is not easy to measure – neither is tourism a straightforward sector to define – and that makes necessary to consider many aspects. However, working with too many indicators complicates aspects such as the calculation – due to the amount of data needed – the interpretation of the variations, which can be obscured by crossed effects, the weight assignment or the optimal thresholds just to cite some of them.

The above-mentioned systems are mostly – or completely – based on quantitative indicators built from information drawn from statistical systems. Ko (2005) points out the difficulty of building qualitative indicators as one of the main obstacles to measure sustainable development, which leads to a excessive weight given to the quantitative ones. Nevertheless, indicators based on perceptions, specially through the different stakeholders, have progressively increased its importance and relevance. In the last years, a certain acceleration can be observed. Perez et al. (2017) developed a system based on the stakeholders’ opinion on different aspects of sustainability. Randle & Hoye (2016) used a similar methodology on the definition of tourism sustainability in Australia while Poudel, Nyauapne & Budruk (2016) applied it in the case of sustainable tourism in protected areas.

Despite of the three decades of research in sustainable tourism, there is not yet an international consensus on the methodology for measuring this concept. This lack of
consensus is especially evident at sub-national level, since most of the international methodologies in place limit their level of analysis to the nations or, at maximum, to the regions. One of the contributions of this article is to emphasize that administrative borders (national, regional or local) are not an appropriate framework to measure sustainability, especially when analyzing an economic activity or a kind of consumption, that normally does not adapt to those artificial limits.

The territorial dimension inside sustainability measuring has been barely considered and the problem has been addressed mostly as a global concept. The Local Agenda 21, was an effort to introduce local variables on sustainability under the idea of *think global and act local*. This approach took into consideration local aspects relevant for tourism. Unfortunately, this initial impulse from the Rio Conference did not have continuation due to a limited public participation and the strong influence of governmental authority inside the local structures, which can inhibit the development of sustainable tourism (Ruhanen, 2013).

Inskeep, (1991) enounces that sustainability [in tourism] depends on how well the planning is formulated relative to the specific characteristics of an area. From a managerial point of view, the smaller the identifiable region, the simpler it may be to implement sustainable tourism strategies at that level (Miller & Twining-Ward, 2005).

Tourism sustainability is clearly related with business profitability, not only from the cost perspective (more efficient processes) but also from the income perspective (more attractive products). Therefore, sustainability is every time more associated with competitiveness and several studies evaluate the market demand for sustainable tourism (Hardeman, Font, & Nawijn, 2017). This results on the concept of sustainable or green destination being more used on promotional strategies.

A universal system of indicators to measure tourism sustainability might neither be possible nor desirable. Obviously, there is a set of common factors to every destination but its importance might vary among them. The recent trend of elaborate rankings classifying destinations by their sustainability keeps out the local characteristics of them, which are capital to understand and promote the development of sustainable tourism (Mowforth & Munt, 2015). An obstacle to do so, is the lack of reliability and proper data that still suffer he statistics at subnational levels, which complicates the task of building a consistent statistical framework.

Among the initiatives arose to tackle this problem, it can be highlighted the proposal of *International Network on Regional Economics, Mobility and Tourism* (INRouTe) for a Regional Tourism Information System (R-TIS), which includes (among others) guidelines for measuring the relation between tourism and sustainable development (INRouTe & UNWTO, 2012).
The current initiative of the UNWTO - Measuring Sustainable Tourism (hereafter MST) is aimed at developing a common language around measurement but, to do so, a first objective is reaching a collective understanding of sustainable tourism to serve as a basis for further discussion (UNWTO, 2016a). The MST approach is conceived to measure sustainability at national level. Thus, more disaggregated levels still lack attention and an adapted methodology. At that extent Hernández-Martín et al., (2016) introduced the concept of micro-destinations defined on the bases of two primary criteria: the concentration of establishments and tourism typologies and supply characteristics. Therefore, this is a concept going further form the purely administrative boundaries, which normally do not coincide with the area where tourism activities are developed.

This study seeks to elaborate a methodological framework to close some of the gaps explained above. It combines internationally recognized methodologies but also considers local aspects and gives a central role to the stakeholders in defining the important aspects of sustainability.

After this introduction, the next section exposes the proposed methodology, from a combination of different international existing methodologies and the process of selection of the factors to measure tourism sustainability. Lately, the expected results for the proposed methodology are presented and the study finalizes with conclusions section.

2. Methodology:

This section explains the fundamental criteria needed to measure tourism sustainability at local scale.

2.1 The definition of the variables.

As previously stated, this methodological proposal is aligned with the MST initiative of the UNWTO and stands in previously recognized international methodologies. The first question to address is the aim of sustainability measure. In this approach, this is a tool for decision-making. Consequently, the concept of governance and the institutional framework must be carefully considered. Although there is no a clear definition on what is governance in the tourism sector (Duran-Fuentes, 2013), it would seem evident that the connections and relations among the different stakeholders play a key role for the definitions and actions on sustainability.

Most of the studies consider sustainability from three points of view: economic, socio-cultural and environmental. However, the existence of different definitions of sustainability influences the factors to be considered about it (Ko, 2005). In this study, following the already-mentioned aim towards decision-making, the 12 issues that form the agenda for sustainable tourism proposed by UNEP and UNWTO (2005) have been taking as the base for that.
The next step is the definition of the analytical questions (UNWTO, 2016a), meaning those questions that the system for measuring tourism sustainability should answer and that are the base for future decisions. The next table shows a proposal of questions that, lately, should be adapted to the indicators allocated in the 12 proposed issues.

### Table 1: Variables of tourism sustainability and analytical questions.

<table>
<thead>
<tr>
<th>1. Economic viability</th>
<th>Is the destination competitive?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Local Prosperity</td>
<td>How much does tourism contribute to the local economy?</td>
</tr>
<tr>
<td>3. Employment Quality</td>
<td>How much does tourism contribute to employment and workers welfare?</td>
</tr>
<tr>
<td>4. Social Equity</td>
<td>Are the tourism impacts on the local welfare shared in a balanced way?</td>
</tr>
<tr>
<td>5. Visitor Fulfilment</td>
<td>Are visitors satisfied with the destination?</td>
</tr>
<tr>
<td>6. Local Control</td>
<td>How much is the population involved in the public and private decision-making about tourism?</td>
</tr>
<tr>
<td>7. Community Wellbeing</td>
<td>How much does tourism contribute to local population welfare?</td>
</tr>
<tr>
<td>8. Cultural Richness</td>
<td>How does tourism impact in the cultural heritage?</td>
</tr>
<tr>
<td>9. Physical Integrity</td>
<td>How much pressure does tourism put over the destination?</td>
</tr>
<tr>
<td>10. Biological Diversity</td>
<td>How is tourism affecting to the natural resources endowment?</td>
</tr>
<tr>
<td>11. Resource Efficiency</td>
<td>Are the resources being used efficiently?</td>
</tr>
<tr>
<td>12. Environmental Purity</td>
<td>Which is the public and private answer to environmental problems?</td>
</tr>
</tbody>
</table>

#### 2.2 The territorial units of analysis.

Tourism has been defined traditionally through two perspectives: the demand and the supply. The Tourism Satellite Account (UN, EUROSTAT, & OECD, 2008) establishes concepts and definitions to both. From the demand side, the economic contribution of tourism must be approached from the tourists’ activities and their impact in the acquisition of goods and services. The supply side characterize tourism as the together of productive activities that provide mainly the visitors or are consumed mostly by them (United Nations, 2016b).

There is a third perspective, however, that has been much less developed. The definition of the spatial levels of analysis for tourism is blurry, as proved by the fact that there is not a satisfactory and widely accepted definition of tourism destination. The already mentioned (SEEA) proposes three unit of spatial analysis: basic spatial units (BSU), land cover/ecosystem functional units (LCEU) and ecosystem accounting units (EAU). This classification is the starting point of this study aiming to propose a hierarchy among the units of analysis standing, among others, on the previous works of Manning (1996) and INRouTe (2017).

The basic unit for this classification is the tourism establishment following the definition given by the United Nations (2010). That unit fits, in addition, with the
definition of the BSU of SEEA as land parcels delimited by the cadaster (FAO et al. 2014).

Those units might be grouped into a second level which would be the tourism destination. As remarked above, there is not a clear definition of such concept. Following INRouTE (2017), the object of measuring should be those territorial units where tourism is economically significant. This is associated with the concentration of establishments belonging to tourism characteristic activities which definition is present in United Nations (2016).

This second category is not a simply aggregation of the first one, any time that it includes different tourism products and services and other resources not including on the tourism establishments. To define the last category, it should be considered that, following the significance criteria, not every area in a region qualified as tourism. The adjacent area of the destinations influence and, especially, are influenced for tourism development. Those spaces are the tourism area of influence (INRouTe, 2017), which can be defined – analogue to SEAA – as the ecosystem where tourism coexists with the rest of economic, social and environmental activities. A different aspect are the indirect impacts of tourism through inter-enterprise relationships, that can spread out through the whole territory of the country (region) and other countries (regions) (Badenau et al., 2016). Those impacts affect mostly to the global approach of sustainability and, not so much, to the local approach, as will be defined lately.

The tourism area of influence is hardly delimitable, particularly on the case of the continental destinations. Nevertheless, in some regions like the small islands, and according to Carlisen & Butler (2011), the whole island or regions could be fitted for that definition.

Therefore, to measure tourism sustainability at the destination level must be articulated around three units with different scale in the territory but with clear interconnections. On the one hand, sustainability analysis of tourism establishments, including its productions processes, on the other hand, the analysis and sustainability measuring of tourism destinations, as spaces of high concentration of tourism activities, duly delimited; and, finally, the analysis of tourism influence areas, understood as the close zones to local tourism destinations, which are frequently visited by tourists and are relevant to sustainability measuring. To identify those areas different criteria can be applied, for example, distance from tourism destinations, or whether administrative criteria more easily applicable as could be a group of municipalities, a province, a region, etc. It is important to highlight that delimitating zones does not end the impacts and measuring of tourism sustainability, since there are direct impacts that do not happen in the destinations and its areas of influence, like those from air transportation. In addition, there are direct impacts of tourism consumption and production that spread over the territory through the providers chain and have a dim location geographically, including the destination country, the emitting country and other countries of the tourism chain value.
2.3. Global approach vs local approach.

Tourism is, undoubtedly, a global industry and so are its impacts. Consequently, sustainability measuring cannot be referred only to the internal factors, but also the influence of external factors in the unit of analysis and vice versa must be taken into account.

From this point, this study suggests the existence of three different approaches to measure tourism sustainability, which are normally confused and that are summarized in the next figure:

Fig. 2: Three approaches for sustainability analysis of the destinations.

The first approach refers to the impact of tourism development in a destination over global sustainability. In this line, the main object of analysis has been transportation – especially air transport – and the possible CO₂ emissions effects (Becken, 2007; Becken & Hay, 2007; Gössling et al., 2007).

The second line of analysis focused on how the global sustainability affects the destination. This is mostly related with the studies on the climate change and tourism – where the first is perceived as a threat to the second (Elsasser & Bürki, 2002; Gössling & Hall, 2006; Scott, Hall, & Stefan, 2012).

The third category are the impacts of tourism development in the destination over its own sustainability. The political attention has been driven mostly to this category. However, from the academic point of view, there is yet a much work to do to define the measuring the long-term consequences of destinations’ development over their own viability. The importance of tourism measuring from a local perspective is supported by McCool (2016) who points out that the local level is not one the place where tourism happens but also where the development and interaction of different actors take place.
2.4. The indicators.

Comparability has been the first criteria considered to build a statistical system. This study proposed the use of the twelve aspects of tourism sustainability to create a framework comparable internationally. To this a series of locally relevant question must be add, taking into consideration the distinctive characteristics of the destination (for example, management of some resources, social situations, unemployment, etc.) that could have incidence and relevance in each destination.

Two types of indicators are necessary to measure sustainability. On one hand, the objective indicators, which data are extracted from measurements of different magnitudes, as it could be water quality on a beach from chemical parameters.

In this article, the objective indicators are based fundamentally in two methodologies, following the design of the MST initiative at global level (UNWTO, 2016c). Those two methodologies are the UNWTO study (2004), where 13 areas are identified - and indicators allocated into them – and inside them baseline issues are remarked, and the European Tourism Indicators System (ETIS), which identifies 18 criteria that are relevant for a sustainable management of the destination (European Union, 2016). Complementary, other international methodologies have been also explored like the World Tourism Competitiveness Index (World Economic Forum, 2017), the Municipal System of Sustainability Indicators (Ministerio de Medioambiente y Medio Rural y Marino, 2010) and the Global Reporting Initiative Standards (Global Reporting Initiative, 2015).

After a first selection process that filtered the indicators to avoid repetition, a Delphi process took place, based on the recommendations of the UNWTO (2004), where a group of experts valued from 1 to 5 the following aspects of the indicators: relevance, viability, credibility, clarity and comparability. The result is shown in the table 2.

Table 2: Selection of indicators by sustainability issue.

<table>
<thead>
<tr>
<th>Issues of sustainability – UNEP/UNWTO 2005</th>
<th>Proposed Indicators</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Economic Viability</td>
<td>Number of tourist nights per month</td>
<td>ETIS</td>
</tr>
<tr>
<td></td>
<td>Average length of stay of tourists (nights)</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>Hotel profitability (REVPAR)</td>
<td>Other</td>
</tr>
<tr>
<td>2. Local Prosperity</td>
<td>Revenues generated by tourism as % of total revenues</td>
<td>UNWTO</td>
</tr>
<tr>
<td></td>
<td>Number of local people employed in tourism</td>
<td>UNWTO</td>
</tr>
<tr>
<td>3. Employment Quality</td>
<td>Direct tourism employment as % of total employment.</td>
<td>ETIS</td>
</tr>
<tr>
<td>Topic</td>
<td>Indicators</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>4. Social Equity</td>
<td>% of men and women employed in the tourism sector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of residents who believe that tourism has helped bring new services or infrastructure</td>
<td></td>
</tr>
<tr>
<td>5. Visitor Fulfilment</td>
<td>Level of satisfaction by visitors on exit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of returned visitors</td>
<td></td>
</tr>
<tr>
<td>6. Local Control</td>
<td>% of area subject to control</td>
<td></td>
</tr>
<tr>
<td>7. Community Wellbeing</td>
<td>Residents’ satisfaction level with tourism and with specific components of tourism</td>
<td></td>
</tr>
<tr>
<td>8. Cultural Richness</td>
<td>% of residents that are satisfied with the impacts of tourism on the destination’s identity</td>
<td></td>
</tr>
<tr>
<td>9. Physical Integrity</td>
<td>Ratio of tourist to local (average)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Incidence of HIV</td>
<td></td>
</tr>
<tr>
<td>10. Biological Diversity</td>
<td>% of territory dedicated to tourism activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of the coast occupied by tourism activities</td>
<td></td>
</tr>
<tr>
<td>11. Resource Efficiency</td>
<td>Number of species of endemic plants and animals presented at the destination (biodiversity)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Per capita consumption of energy from all sources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(overall, and by tourist sector – per person day)</td>
<td></td>
</tr>
<tr>
<td>12. Environmental Purity</td>
<td>% of energy consumption from renewable resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(at destinations, establishments)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water use: (total volume consumed and litres per tourist per day)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water saving (% reduced, recaptured or recycled)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percentage of sewage from the destination/site receiving treatment (also break out sewage from tourism sector if possible)</td>
<td></td>
</tr>
</tbody>
</table>

**Sources:**
- ETIS
- UNWTO
- Other
12. Environmental Purity

- Waste volume produced by the destination (tons) (by month)  
  UNWTO
- Volume of waste recycled (m3) / Total volume of waste (m3) (specify by different types)  
  UNWTO
- Quality of the air  
  Other

For the local variables selection, a similar process is set up, where the Delphi method is applied to select a set of variables that were previously enounced in strategic documents of the destination about sustainability. Obviously, there will be variables common to most of the destinations, however, the aim of defining them is not the comparability but to specify the concrete aspects on which the sustainability management should focused for the concrete territorial unit of analysis.

In addition to the objective indicators, this study uses the perception of the stakeholders. This approach has been used in numerous studies to measure sustainability (Mascarenhas, Nunes, & Ramos, 2014; Poudel et al., 2016; Randle & Hoye, 2016) being the residents the most frequently analyzed group. The perceptions to build indicators are already used in the above-mentioned methodologies, for example on indicators related with quality and satisfaction. This proposal references again to the twelve issues of the agenda for tourism sustainability and over them is intended to analyze the stakeholders’ perceptions.

The advantage of this system, as can be seen in the next figure, is that it does not only allow knowing such perceptions, which gives a valuable information for the decision-making, but also allow making comparison on space, time and among the different categories of stakeholders.
To the problem of the definition of the tools to measure sustainability (including the tourism one) can be added the existing undefined about the relative importance of each of the selected indicators. In that way, the general tendency is to consider that all the parts of sustainability measuring have the same importance, building a sort of general model that does not take into consideration the particular characteristics of the destinations.

The establishment of the weights of each part of the system has been resolved on different manners. Pulido-Fernández & Sanchez-Rivero (2009) and Peral, Lozano, Casas, & Oyola (2010) solved it through the factorial analysis. This study, which does not aim for a synthetic vision of tourism sustainability but for a panoramic vision useful for the decision-making, looks for the involvement of the stakeholders by using the Importance Performance Analysis (here in after IPA) as the method to assign the relevance and weights of each of the defined indicators, both internationally comparable and the specific of the destination.

Following Server (2015), IPA is a very useful analysis to diagnose the deficiencies and establish priorities on the tourism development aiming to increase the tourists’ satisfaction and the destinations’ competitiveness. Although several limitations have been pointed out (Dwyer, Cvelbar, Edwards, & Mihalic, 2012), IPA has been considered as a robust method that can be applied with relative easiness to empirical studies (Azzopardi & Nash, 2013). Regarding the application of IPA to tourism sustainability, among other can be cited the studies of Sörensson & von Friedrichs, (2013) or the experience of Ziegler, Dearden, & Rollins, (2012).

This work proposes a similar methodology to the one employed by Dwyer et al. (2014) in the case of tourism in Serbia. It is proposed to design surveys in order to collect the opinion of the stakeholders about the importance and performance of the twelve issues of tourism sustainability already mentioned and local factors previously design that are classified into them.

The instrument used for the surveys is a Lickert scale from 1 to 7. Which is one of the most frequently used methods in research through surveys (Awang, Afthanorhan, & Mamat, 2016). Among the advantages of the use of IPA are the reduction of the researchers’ subjectivity, to define a map about the stakeholders’ opinion that later can be disaggregated based on diverse criteria, and to favor the comparison on time and space both inside and outside of the destination.
3. Expected results:

The expected results for every of the quadrants proposed in the methodology are shown in the following table:

Table 3: Expected results for the proposed methodology.

<table>
<thead>
<tr>
<th>Scope/Methods</th>
<th>With general relevance</th>
<th>With local relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective Indicators</td>
<td>List of indicators from UNWTO 2004 + ETIS, the importance to be given by international experts</td>
<td>List of locally relevant indicators from local strategic documents. Importation given by local stakeholders</td>
</tr>
<tr>
<td>Perceptions</td>
<td>Proposal for measuring the performance of the 12 policy issues from UNEP and WTO, 2005</td>
<td>Perception of islands’ stakeholders on local issues through the IPA</td>
</tr>
</tbody>
</table>

The upper left quadrant contains represents the objective indicators with general relevance whose weight has been assigned by using IPA. Although this methodology does not intend to establish a ranking among destinations regarding sustainability, it is also true that in the decision-making process to know position of the competitors is needed. Having a reference useful to compare destinations might also help to establish strategies in a bigger scale than the territorial unit object of the analysis.

The upper right quadrant is similar to the former one but focused on the characteristic aspects of the territorial unit analysed. Consulting the local stakeholders would allow knowing the importance of each one of the aspects and which of those should be given more attention when designing the destination strategies.

The lower left quadrant complements the first of the quadrants analysed and offers a clear representation of the perception of the different stakeholders in the already defined 12 topics of sustainability. Therefore, this is a tool permitting not only to
know the perceived performance of the destination on each one of those aspects but also to make comparisons about which aspects should be addressed on the political decision-making.

Lastly, the lower right quadrant shows the Importance Performance Analysis on the local variables selected. That analysis would allow knowing if the distribution of efforts and resources of the destination is right or whether it must be adapted in future strategies.

4. Conclusions:

Despite of the recent importance of tourism as field of investigation in the last decades, the analysis of tourism sustainability (especially its measuring) does not have yet a methodology with a wide international consensus.

In this study has been proposed a methodology that does not consider sustainability as a competition among destination and neither reduces it to a unique value. Its measuring must not, of course, ignore the issues of comparability and it is necessary to establish common parameters to every analysis unit. However, the local aspects must be considered for a correct definition and measuring of tourism sustainability.

Considering the territory is capital to define the activities and the parameters of tourism. Most of the developed initiatives about sustainability measuring have a global approach, that’s it, the relation among the parameters of global sustainability and tourism development, while the local part is frequently left behind. The participation of the stakeholders in measuring the sustainability of a destination is also important especially for the implications derived for the later implementation of tourism policies in the destinations.

The MST initiative of the UNWTO is a first step to define the necessary common language allowing to establish a reference framework for measuring the sustainability of tourism. The methodological proposal stands on those works and incorporates the local considerations which are key not only to define sustainability but also the strategies to address it.
References:


Monitoring Eco-Tourism in Mediterranean Protected Areas: the Ecological Footprint Approach

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Abstract

Although being a great source of revenues, conventional tourism in the Mediterranean poses a noticeable impact on the regional environment, and especially in coastal protected areas. Ecotourism can represent a viable alternative but needs standardized ways to monitor and manage its related impacts. This paper presents the development of a monitoring system based on the standard Ecological Footprint methodology and its specific customization for the application to ecotourism packages specifically designed in selected Protected Areas (PAs). Along with regional Footprint analysis of the destinations based on a top-down approach, the proposed method applies a bottom-up approach for the Footprint assessment of ecotourism packages. It is based on an ad-hoc survey used to collect on-the-ground data relative to the full supply chain of all the services included in the packages. The ultimate objective is to ensure that each ecotourism package poses the lowest pressure on the environment.

Keywords: ecotourism; Ecological Footprint; sustainability; monitoring system; sustainable tourism; protected areas; Mediterranean.

Introduction

Tourism in the Mediterranean region is highly concentrated, both spatially and seasonally, with most visits occurring during the summer months. While tourism undoubtedly represents an important source of revenues and employment in the Mediterranean area, contributing 11.3\% of the regional GDP (WTTC, 2015), it also causes noticeable impacts on nature and society. Coastal and marine areas are those experiencing most of the tourism inflow, receiving half of the 300 million International Tourist Arrivals (ITAs) in the region (Plan Bleu, 2016); most of the
visits occur within natural and protected areas, as they represent reservoirs of natural beauty in a highly urbanized territory.

Ecotourism is seen as a potentially viable alternative in the region (De Juan Alonso, 2010); however, despite international efforts to create harmonized concepts, agreed definitions and quality and sustainability standards for ecotourism (e.g., EU, 2016; GSTC, 2016a, b), the Mediterranean region still lacks common methods and systems for managing and measuring tourism impacts. As a result, the level of knowledge and capacity in addressing and reducing negative impacts varies widely across protected areas and tourism-focused organizations, and there is no consistently understood baseline of acceptable performance (Drumm et al., 2016). As such, it is urgent to work towards the establishment of a coherent and functional monitoring system at Mediterranean level, for ensuring the sustainability of ongoing tourism activities in the area and the safeguarding of the very resources they depend on.

This paper thus aims at defining and developing a monitoring system for assessing the sustainability of ecotourism products in the Mediterranean basin. While acknowledging that a comprehensive monitoring system should comprise the assessment of all dimensions of sustainability – economic, social-cultural and environmental – this paper sets out to solely focus on the use of natural resources and services by introducing the Ecological Footprint methodology as a measurement and monitoring tool to actively reduce the pressure that tourism places on local and regional ecosystems. The paper will present a customized version of the standard Ecological Footprint methodology designed specifically for the tourism sector, in order to address its specific requirements and complexities, while properly evaluating the consumption of natural resources.

Specifically, the case study for the Footprint application is a transnational cooperation project called DestiMED, which will be operational from January 2017 to June 2019. The project, which is funded by the EU through the Interreg Med Programme, brings together a network of 13 Protected Areas (PAs) in six Mediterranean countries (Albania, Croatia, France, Greece, Italy and Spain) to collectively develop, manage, and promote ecotourism that inspires transformative nature experiences and cultural exchange. Project Partners include: Lazio Region (Lead Partner), IUCN Centre for Mediterranean Cooperation, Federparchi, WWF Adria, WWF Mediterranean Programme, and the National Agency of Protected Areas in Albania.

The specific targets of this Footprint monitoring system are ecotourism packages, which are designed by local tourism and conservation actors in the participating communities. The packages are designed first and foremost to contribute to protected areas by building awareness of their conservation objectives while supporting development of the local tourism economy during tourism off-seasons, thereby generating increased value of natural resources through potentially non-extractive
industry. The ultimate goal is to develop guidelines for tourism management, while testing practical ecotourism standards and monitoring methods that result in well-managed tourism which successfully addresses the delicate balance between the industry and the natural resources it depends on.

The packages developed during DestiMED will eventually be part of the Mediterranean Experience of Ecotourism (MEET), a non-profit association and Destination Management Organization (DMO) established with the intent of fostering a regional governance system able to coordinate, enhance and promote ecotourism across PAs of the Mediterranean Basin.

Since the project is currently in its first phase of testing the packages, Footprint results are not yet available; as such, this paper focuses on describing the specific approach and Footprint methodology that has been designed for implementations in the DestiMED project.

Theory / issues

The Ecological Footprint is an environmental accounting tool conceived in the early 1990s by Mathis Wackernagel and William Rees at the University of British Columbia, to account for the human appropriation of the biological regenerative capacity of the biosphere – its capacity to provide life-supporting and regulatory ecosystem products and services (Wackernagel and Rees, 1996; Wackernagel et al., 1999).

The standard Ecological Footprint methodology aims at quantifying the demand for and the annual supply of key provisioning and regulating ecosystem services by means of two main metrics: Ecological Footprint (EF) and biocapacity (BC).

The Ecological Footprint measures the biologically productive land and sea areas (also referred to as ecological assets) required by any population to produce the natural resources and services it consumes. This includes plant-based food and fiber products, livestock and fish products, timber and other forest products, sequestration of waste (CO₂ from fossil fuel burning), and space for urban infrastructure. The bioproductive areas providing such resources and services are associated with six land types, which constitute the main components of the methodology: cropland, grazing land, fishing grounds, forests, carbon uptake land – usually referred to as carbon Footprint, and built-up land. On the supply side, biocapacity tracks the same biological productive areas available and their productivity; however, as human demands for forest products and carbon uptake capacity are both competing for forest land, only 5 land types are included in the biocapacity calculation (see Figure 1) (Borucke et al. 2013).

Since average biological productivity differs between various land use types, as well as between countries for any given land use type, Ecological Footprint and biocapacity are expressed in mutually exclusive units of world-average bio-productive area calculated through two key coefficients: yield factors (YF) and equivalence factors (EQF). This unit of measure is referred to as a global hectare (gha) and allows
for comparability across land use types and countries (Galli, et al., 2007). Global hectares are not physical measures of surface, but rather each global hectare reflects the capacity of a hectare of land of world-average productivity to provide ecosystem services useful to people, thus being an area-equivalent unit (Galli, 2015).

Fig. 1: Land use categories comprising the Ecological Footprint and biocapacity metrics.

Applications of the Footprint methodology are usually conducted at scales ranging from individuals to activities and sectors, to cities and regions, and up to countries.
and the world as a whole, although national-level assessments are often regarded as the most complete (Kitzes et al., 2009). National Footprint Accounts (NFAs) are published annually by Global Footprint Network and includes Ecological Footprint and biocapacity assessments for the whole world, as well as approximately 200 countries, for a period of nearly 50 years from 1961 to 2013, the latest year for which results are available (Lin et al., 2017). When applied at country level, Ecological Footprint accounting provides an ecological balance statement for countries, assessing the presence of an ecological deficit (EF > BC) or reserve (EF < BC) situation. This kind of assessment can be used to highlight resource demand and supply trends of countries and their potential economic and social consequences (Galli and Halle, 2014).

Depending on the scale level, Ecological Footprint applications use either a top-down (compound) or a bottom-up (component) approach. Going from national to city level Footprint assessments, the methodology applies a multi-steps top-down approach by processing national Footprint data on production, import and export and breaking them down by consumption categories via monetary multiregional input-output tables (MRIO) or actual materials and energy flows; results by consumption categories are then calibrated for the city level by means of household expenditure survey data (Baabou et al., 2017). This approach allows comparing multiple cities across different countries and numerous city-level studies have been performed since 2000s using this method (see for instance Wilson and Anielski, 2005; Collins et al., 2006). Conversely, the bottom-up approach starts directly from city-level data by using monetary input-output tables or physical flows of material and energy (see Global Footprint Network, 2007; Bagliani et al., 2008) to calculate a city’s Footprint. This method benefits from a high resolution of relevant data and it is able to better represent the local situation. However, it requires a long and resource-intensive collection of data and processing time, and risks providing incomparable results due to the different data sources and the necessary assumptions within different cities’ calculations (Baabou et al., 2017).

The Mediterranean region has been object to several top-down Ecological Footprint assessments, both at national and cities level (Global Footprint Network, 2015; Galli et al., 2015; Baabou et al., 2017). The most recent results show that the entire region is running an ecological deficit, using approximately 2.5 times more natural resources and ecological services than their ecosystem can provide (Global Footprint Network 2015). According to latest analysis for the year 2013, food and transportation are the top two drivers of the total Mediterranean Ecological Footprint value, contributing to 28% and 22% respectively of the overall resource and services demand in the region (Galli et al., 2017). Similar outcomes have been found through the Footprint assessment of major Mediterranean coastal cities, reflecting a great demand for energy-intensive goods and greater use of transportation. Furthermore, it resulted that most of the cities, where usually wealth and investments are concentrated, have a per capita Footprint higher than that of their hosting country, reflecting a higher level of consumption than the national average (Baabou et al., 2017). Such Footprint “concentration” in cities might be due, together with residents’ higher affluence, to noticeable tourists’ arrivals and presences in Mediterranean coastal cities.

Over the last decade, assessing the Ecological Footprint of tourism has represented a new field of application gaining increasing interest among researchers (Hunter and
Studies in the literature have emphasized the key role that Ecological Footprint accounting has in assessing and communicating the environmental impact of tourism (Hunter and Shaw, 2007; Patterson et al., 2008).

However, most of these studies (Castellani and Sala, 2012; Patterson et al., 2007; Gossling et al., 2002; Hunter and Shaw, 2007) have acknowledged the lack of site-specific data, tourism-focused statistical databases as well as reliable data on the resource consumption of tourists; this might result in the use of different Footprint approaches and data aggregation methods by researchers, thus rendering comparison among different studies inconsistent.

Properly identifying the contribution of the tourism sector and distinguishing it from other consumption categories has been acknowledged as a methodological challenge within mainstream top-down Footprint accounting (Kitzes et al., 2009) due to the lack of international standardized tourism dataset as well as specific tourists expenditure data.

For the above reasons, this paper proposes a bottom-up approach for the Ecological Footprint assessment of the tourism sector. To do this, the standard Ecological Footprint methodology is customized for the specific assessment of ecotourism packages that are being developed within the DestiMED Project for 13 Protected Areas (PAs). Such bottom-up component approach implies the design of ad-hoc surveys to be circulated in all 13 PAs for data collection from all the service providers involved in the ecotourism packages as well as the use of Footprint intensity values and conversion factors to be drawn from NFA calculation workbooks (GFN, 2009).

By using a life-cycle approach, the Ecological Footprint is intended to evaluate the full supply chain of each service provided to visitors, including accommodations, food, transportation, and activities providers.

The objective is to test the Ecological Footprint as an effective monitoring tool that can help define and calibrate the various tourism packages to ensure they place as a low pressure on the ecosystems as possible.

Methods / procedures

DestiMED project Footprint Methodology

The Ecological Footprint method proposed for the development of the quantitative sustainability monitoring system of DestiMED eco-tourism packages envisions three main analyses:

1. Ecological Footprint assessment of ecotourism packages in each PA involved in the DestiMED Project;
2. Ecological Balance assessment of the destination territories hosting the PAs;
3. Ecological Footprint assessment of regular tourists vacationing in the same PAs.

While point 1 represents the primary analysis and the main focus of applying the Ecological Footprint in the DestiMED project, the analyses listed under points 2 and 3 represent two baselines assessments intended to provide benchmark values against which to compare the Footprints of the ecotourism packages. Figure 2 provides a
schematic overview of these three analyses and their interconnections within the DestiMED project.

**Fig. 2:** Overview of the three analyses which will be used for assessing the Footprint of ecotourism packages.

In the first analysis, the bottom-up approach for the Ecological Footprint assessment of the 13 ecotourism packages will build on an ad-hoc survey specifically designed to collect on-the-ground data. This survey – developed during the DestiMED project and based on the Footprint assessment – is aimed at gathering detailed information on resource consumption from all the service providers involved in each package. Based on such collected data, the Ecological Footprint of each DestiMED package will be calculated by adding up into a single value the Footprint of each individual service provided. The Footprint of each service, in turn, will be calculated using the standard Ecological Footprint method (Borucke et al., 2013). Quality assurance analysis of the collected data will be performed by staff at Global Footprint Network prior to conducting the Footprint assessment.

As each package will be tested twice by international sustainability experts, qualitative evaluations provided by the testers after the first test will be used together with quantitative Ecological Footprint assessments to derive recommendations. As such, initial data and related results will be used to assess the major drivers of each package’s Footprint; such information will be then used in an iterative process to provide feedbacks for the refinement of the packages ahead of the second round of tests. Expected Ecological Footprint results will quantify the amount of bioproductive area needed to support all the activities conducted by the tourists during their stay in the destination area in hectare-equivalent units of land (gha); we plan to provide data in terms of both gha required per day spent on the location as well as for the whole ecotourism package.

The second analysis envisions a Footprint assessment of the territories in which the ecotourism packages are located. This calculation will provide an assessment of the Ecological Balance (deficit or reserve) of the administrative territories within which
the 13 Protected Areas of the DestiMED project are located. The objective of this assessment is to show the context – from a resources viewpoint – within which the ecotourists will be having their vacation. For this evaluation, the top-down approach to Footprint accounting will be used, as mentioned above. Specifically, country-specific Ecological Footprint values from the NFAs will be used in combination with Multi Regional Input-Output (MRIO) tables drawn from the Global Trade Analysis Project (GTAP 9, see Narayanan and McDougall, 2015) to derive the Consumption Land Use Matrix (CLUM) for each of the six countries involved in the DestiMED project (Albania, Croatia, France, Greece, Italy and Spain). Subsequently, household expenditures data of the territory under study will be used to calibrate CLUMs at the relative scale. Selection of the sub-national level at which this analysis will be conducted (regional, provincial or municipal) will depend on data availability and will be decided case-by-case during the project and in coordination with project partners. The aim of such analysis is to understand which of the 13 Protected Areas are in need of further promotion of ecotourism activities as already characterized by negative ecological balances (i.e., ecological deficits).

The third analysis will deal with “regular” tourists vacationing in the same territory and using the same hotels, but not experiencing the DestiMED ecotourism packages. Such analysis will be performed by combining top-down and bottom-up approaches. The top-down approach will employ a Multi-Regional Input-Output (MRIO) model based on available national data of expenditure for the tourism sector and will be used to derive the Ecological Footprint of consumption for the average tourist in that country. Simultaneously, the bottom-up approach will supplement national data through the use of surveys (different from those used for eco-tourists), which will be distributed to a sample of tourists staying in the same hotels involved in the ecotourism packages. These additional surveys are intended to be distributed by the service providers (i.e. hotels) involved in the project and will be used to calibrate the top-down results generated through the MRIO analysis. Expected results should help demonstrate, from a quantitative viewpoint, that ecotourists place a lower pressure on the environment compared to average traditional tourists.

Role of DestiMED stakeholders in the Footprint analysis

Active participation of the multiple stakeholders involved in the DestiMED Project is needed to successfully design and distribute survey, collect and process data for the Footprint assessment.

In the main assessment of the ecotourism package Footprint, Global Footprint Network has been responsible for drafting – also according to feedback received from IUCN and the International Institute of Tourism Studies at George Washington University – the survey through which the data necessary for the Footprint analyses are going to be collected. Data collection is currently ongoing; once completed, it will be the role of Global Footprint Network to perform the Ecological Footprint assessments of the 13 ecotourism packages.

Surveys were made available through an online system to facilitate and streamline data collection. In collaboration with Global Footprint Network, partners such as IUCN and the International Institute of Tourism Studies at George Washington
University have been responsible for developing the online data collection system and making it available for use by Local Ecotourism Cluster (LEC) representatives. LEC represents the local staff created out of the park body institution and one selected Inbound Tour Operator (ITO) in each destination to design and manage the ecotourism package; LECs in the 13 PAs are committed to actively participate in the Ecological Footprint assessment of both ecotourism packages and regular tourist.

A representative for each LEC has been identified (“the surveyor”) and appointed for ensuring the proper compilation of the survey. The surveyor was encouraged to liaise with the service providers to ensure data is collected as precisely as possible and surveys are completed. To ease the survey compilation process, project partners in charge of the Footprint analysis suggested that the surveyor pays in-person visits to each service provider and that a copy of the survey is sent to each provider in advance of such meeting. This should allow service providers to check internally among managers, workers and/or technicians for gathering precise information and collecting the exact requested data.

Service providers are committed to ease the data collection procedure. Their responsibility is to identify, collect and communicate to the LEC representative the requested data, in a timely manner and according to the procedure indicated by the surveyor.

For the assessment of the Ecological Footprint of “regular tourist” (i.e. the third analysis), a second survey has been specifically conceived and designed by Global Footprint Network; opposite to the survey above for ecotourism packages, this survey is supposed to be filled directly by the tourist vacationing in the same accommodations and periods of the DestiMED tourists. George Washington University and IUCN have developed the online platform hosting the tourists’ survey and have made it available for use by LEC representatives. Also, IUCN has been liaising with LEC representatives to find ways to incentivize tourists’ filling of the survey. LEC representatives are now sharing the survey with selected hotels and making sure that filled surveys will be sent back to Global Footprint Network after a period of six months. Finally, hotels are responsible to promote the project and the survey to the tourists staying in their premises and to facilitate their filling of the survey.

Finally, assessing the second benchmark – the Footprint assessment of the territories involved in the project – does not require the involvement of any partner or stakeholder other than Global Footprint Network.

Results
The main result of this project has been so far the finalization of the surveys. In the first half of 2017, a first draft version of the survey for ecotourism packages has been designed to collect data in 4 different sections: 1) accommodation; 2) food and drinks; 3) mobility and transfer; and 4) services and activities. General information on each single PA territory and the related package is also gathered in an introductory section. Additional info on the specific section and data collection guidance was also provided in each survey section.
Based on such draft, Global Footprint Network has conducted on-site training in the PAs where the packages are tested. At this stage of the project, trainings have been delivered in 4 out of the 6 countries involved in the DestiMED project (Croatia, Greece, Italy and Spain). Trainings were primarily intended to benefit LEC representatives in charge of collecting data for Footprint analyses, under the guidance of Global Footprint Network and in cooperation with the service providers involved in the ecotourism packages. Participants received insight on the basic theory of Ecological Footprint accounting, learnt how to interpret Footprint results and, most importantly, got to know the kind of data needed to conduct an Ecological Footprint assessment of an ecotourism package and how to collect such data. Specifically, the training was useful to calibrate and validate the specific questions with the direct users (i.e. the LEC): consultations with PA representatives have allowed refining a few aspects and questions in the survey thus enabling the finalization of the survey. The final survey has been uploaded on the online platform and shared with all the PAs for starting the data collection process. This task is ongoing and scheduled to be completed after two weeks from the end of the first package test. Figure 3 below shows the general structure of the survey; each section is structured as follow:

**Accommodation:** this section enquires about the hosting facilities involved in the eco-tourism package, where the tourists will accommodate. Accommodations constitute a fundamental part of the tourist industry and they can be a high source of environmental impacts depending on the amount and kind of energy and resource consumed for providing comfort and services to guests. As such, this section contains 55 questions dealing with the type of hosting facility and its characteristics, energy consumption (including electricity, water consumption, heating and cooling system, hot water production), electronic equipments and their energy efficiency, furniture, and the good and services provided.

**Food & Drinks:** this section enquires about the main meals envisioned in the ecotourism package (breakfast, lunch, dinner). Depending on the type, origin and quality, food could be an important category of consumption, likely to cause major environmental impacts in the tourism sector. 35 questions are listed in this section of the survey to collect detailed information about the menu, origin (e.g., local, national or international) and production mode (conventional or organic) of food products, portion sizes and meals preparation procedure.

**Mobility & Transfer:** this section deals with the mobility and transfer services envisioned in the package, day by day. Each transfer is considered as a single route to move tourists (or equipment) from one place to another. 15 questions are reported in this section to collect data on the distance travelled, the type of vehicle used and, for motor vehicles their fuel type and fuel efficiency. It should be noted that this section does not include the international travel needed to bring tourists to the PA locations as the goal of our analysis is to provide an assessment of the Ecological Footprint of the package, irrespective of the place of origin of the tourist.

**Service & Activities:** this section enquires about the services and activities included in the eco-tourism package. For each service and activity, 12 questions are used to collect detailed information about the kind of activity carried out and the energy or resources needed to perform the activity. Eventual transfers necessary to reach the place of an activity (e.g., tourists’ transfer from the hotel to the start of a biking
tour) or to move equipments from their storage to the activity venue (e.g., bringing bikes to the starting location of the biking tour) are not included in this section as already tracked in the Mobility & Transfer section. However, for activities requiring a distance to be covered (e.g. biking or boat sailing), the length of such distance should be reported in this section as this constitutes an activity in itself rather than a transfer. Details of activities including beverage or food (e.g. wine and food tasting), are also excluded from this section and data collected via the Food & Drinks section of the survey.

![Fig. 3: Structure of the survey for assessing the Ecological Footprint of DestiMED packages.](image)

The survey for the assessment of the Ecological Footprint of “regular tourist” was designed to contain the same five categories of questions (i.e. general info, accommodation, food, mobility and service) but enquiring into more qualitative aspects of tourists’ vacation in the PA. This survey is going to soon be distributed to “regular” tourists at the hotels and will remain available for a period of approximately 6 months, until the second round of ecotourism packages’ test is completed in spring 2018. To ensure high participation rate and statistical significance of the data collected through this survey, it is expected hotels will be available to collaborate in the distribution of the survey; moreover, incentives have been envisioned for tourists willing to complete the survey, such as participation in a lottery to win a free package test. Similar to the ecotourism survey, the compilation is made available through an online system to facilitate and streamline data collection. Should the use of an online system not be possible, the above identified LEC representatives (surveyors) are responsible for proving the hotel with printed copies of the survey and to collect the completed surveys.
Once data will be collected, Global Footprint Network will perform the Ecological Footprint assessments of the regular tourists as a benchmark for the ecotourism products.

Both surveys developed by the DestiMED project – that for ecotourism packages and the one for “regular” tourism – are available and can be requested to the corresponding author of this paper.

Conclusion

Within the DestiMED Project, the application of the Ecological Footprint methodology as a monitoring tool for quantitatively assessing the sustainability of ecotourism packages is going to be tested in an iterative process with active participation of the main actors and stakeholders involved. Results of the proposed Ecological Footprint methodology and its applications at the protected area level will represent a first step in defining and setting quantifiable environmental standards for protected area ecotourism in the Mediterranean; it will also provide a quantitative assessment of the eventual benefits of ecotourism by monitoring the natural resource dimension of tourism sustainability. This analysis will help build an integrated, transversal and territorial-based cooperation approach as a preparatory framework for the newly-established Destination Management Organization focused on Mediterranean Ecotourism in Protected Areas.

The successful implementation of the Ecological Footprint methodology as a monitoring tool applied and tested in marine and coastal areas, will then represent the precondition to advance steps towards an online Tourism Footprint calculator intended to favor a sustainability transition in the tourism sector. This will allow the replication of the Footprint tourism analysis in any other type of territory and should ideally be coordinated at regional scale.

The ultimate scope is to find solutions to common territorial challenges related to tourism that could be identified and managed in an integrated way. A shared monitoring system applied at destination level for protected areas throughout the Mediterranean is also paramount to minimize the negative impact of tourism activities on the regions’ ecosystems and the biodiversity that inhabits them.

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Acknowledgements

Authors would like to acknowledge the EU’s Interreg MED Sustainable Tourism Programme for financing the DestiMED project. AG and SM would also like to thanks MAVA Foundation pour la Nature (Grant No. 13/09) for its support to Global Footprint Network’s Mediterranean-Mena Program.
Tourism Impacts on the Labor Market at the Municipal Level in Tenerife

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Abstract
In recent years, interest in the measurement of tourism at subnational levels has been growing steadily, as has the recognition that statistics at the national level are not sufficient to respond to the information requirements to support the decision-making process in the tourism sector. In this context, the present paper has a double objective. On the one hand, the analysis of the availability of information at the municipal level regarding employment in the tourism sector. On the other, the collection and study of said information for an analysis that reflects the reality of employment in the tourism sector in the municipalities of the Canary Islands, structured by islands and including sections dedicated to municipalities, providing context and individualized information. Given the space limits, the analysis cannot be included in its entirety in this document, so it is restricted to the analysis carried out for the island of Tenerife.

Keywords: Employment; tourism impacts; measurement; subnational level

Introduction and objectives
While there is a growing interest in measuring tourism at subnational levels, it is not a concern that has only arisen in recent years. Authors such as Dredge (1999), Pearce (1999, 2001) and Lew & McKercher (2006) pointed out the importance of the local area in tourism more than ten years ago, setting the unit of analysis on this scale. In this regard, and reflecting the sector’s concern for this issue, the World Tourism Organization (UNWTO) published in 2008 the International Recommendations for Tourism Statistics (UNWTO, 2010a) and Satellite Tourism: Recommendations on the conceptual framework (UNWTO, 2010b), where activity analysis at the subnational levels begins to gain strength, especially with the adaptation of the Tourism Satellite Account to regional levels.

Along the same lines, with a focus on measuring tourism at a sub-national level, the International Network on Regional Economics, Mobility and Tourism (INRouTe) was created as an association that supports UNWTO and provides technical support in the development of a conceptual framework that allows the measurement, monitoring and analysis of tourism at the subnational level as a basis for the formulation of policies that will allow the sector to face the current challenges and opportunities (INRouTe & UNWTO, 2013).
As UNWTO points out in its publication Measuring Employment in the Tourism Industries (UNWTO & ILO, 2014), statistical information is an indispensable tool for decision-making, planning, implementation and control of any policy or program, not being the tourist sector exception to this. As pointed out by Saralegui Gil & González Olmos (2013), it is increasingly common for governments, companies and other stakeholders to request such information for the development of their activities and action plans, especially in a sector that can foster economic and social development of the regions in which the activity takes place, highlighting the importance of having statistical systems that make it possible to study and understand the sector. Given the transversal nature of the tourism industry, the detail and reliability of these statistics is even more relevant, having a direct effect on the results of the programs in this area. In many cases information at the national and even regional level is insufficient to support the decision-making of Destination Management Organizations (DMOs) and other stakeholders in the sector. Each place has its peculiarities, which are often not reflected in the results at national and even regional levels of study.

The statistics on the tourism sector and, especially, employment in it, given that it is an industry intensive in labor, are essential in analyzing this sector, making it possible to articulate adequate employment creation policies and training for the adequacy of human resources’ skills to the needs of the market, among others.

However, one of the conclusions of the aforementioned Measuring Employment in the Tourism Industries (UNWTO & ILO, 2014) is that statistics on employment in tourism as well as the job creation capacity of the sector are inadequately measured and insufficiently analyzed.

In Spain, and especially in the Canary Islands, various studies are carried out analyzing employment in tourism, such as the Barometer of profitability and employment of Exceltur, the annual report IMPACTUR Canarias, employment reports in tourism by the Institute of Tourism of Spain (IET) or the monthly employment reports of Turismo de Tenerife, among others. However, most of these reports do not carry out an analysis of employment in the sector at the municipal level, or, if applicable, do so only for a few municipalities. For this reason, the question arises whether there is sufficient information to carry out this analysis in a suitable way at the municipal level for the 88 municipalities of the Canary Islands, in addition to the question about the ease of access to it.

In the context of an autonomous community such as the Canary Islands, where tourism accounts for 31.9% of GDP and 37.6% of employment (Excultur, 2016), this paper has a double objective. On the one hand, to make an analysis on the availability of data at the municipal level in terms of employment in the tourism sector. On the other hand, the collection and study of these data for the elaboration of an analysis that makes it possible to reflect the reality of employment in tourism in the municipalities of the Canary Islands, structured by islands and including detailed sections for municipalities. This structure allows the analysis of the different municipalities in the context of the island to which they belong, to later provide an
individualized analysis that supplies specific information for decision making in employment in the sector.

**Methodology**

The first stage of this project consisted in the search for variables related to employment and the analysis of their availability for all the municipalities of the archipelago (territorial disaggregation), as well as the level of temporal disaggregation of the data.

The analysis of employment in an economic activity such as tourism, given its multidisciplinary nature, can be done from the supply-side approach or from the demand-side approach. The first involves the study of those jobs associated with tourism characteristic activities, while the second involves the study of employment derived from consumption by visitors, which may be employment generated as a direct consequence of tourism consumption (direct) or through the expenditure of income derived from such consumption (indirect) (Hernández Martín, 2006, Vázquez Calero & Hernández Martín, 2016). Exceltur, in its Impactur reports, analyzes the impacts of the activity through the demand approach, while reports by the Institute of Tourism Studies (IET) use the supply approach.

Given the difficulty of identifying the jobs generated by the sector from the demand approach and the availability of information in this sense, statistical series that would allow for the study different components of the reality of employment in the tourism characteristic activities (supply approach) were identified, understanding said activities as those recommended internationally by UNWTO and identified as such by the Spanish Institute of Tourism Studies (IET) in their tourism employment reports.

- 55. Accommodation services
- 56. Food and beverages services
- 491. Passenger rail transport, interurban
- 493. Other passenger land transport
- 501. Sea and coastal passenger water transport
- 503. Inland passenger water transport
- 511. Passenger air transport
- 522. Support activities for transportation
- 791. Travel agency and tour operator activities
- 771. Rental and leasing of motor vehicles
- 773. Rental and leasing of other machinery, equipments and tangible goods
- 799. Other reservation service and related activities
- 900. Creative, arts and entertainment activities
- 910. Libraries, archives, museums and other cultural activities
- 931. Sports activities
- 932. Amusement and recreation activities
Several sources were checked, including but not limited to the Canary Islands Institute of Statistics (ISTAC), Canary Islands Employment Observatory (OBECA) and the State Public Employment Service (SEPE). It was concluded that there is only enough information accessible for the analysis of the accommodation and food services sector, which accounted for 133,271 of the 187,524 affiliations to the Social Security system in activities characteristic of tourism in the archipelago in 2016, or 71%. Nonetheless, information was collected for 67 variables, which were basis for 53 other variables derived from the previous ones, resulting in a total of 120 variables, analyzed for the last five years. The data was collected for 103 cases, composed of the municipalities of the Canary Islands (88), a total for each island (7), a remainder for each island when data for all municipalities was not available (7) and a total for the Canary Islands (1). This involved the construction of a database that has a total of 61,800 values for the variables collected.

Given the volume of data that was to be introduced, a small Visual Basic for Applications (VBA) application was developed that greatly automates the work of entering the data collected into the database.

The application collects the data from an Excel workbook and assigns its corresponding code to each municipality (regardless of the order of appearance and the denomination chosen for it), to later contrast it with the code already assigned in our database (a function also performed by the application for the user if desired), thus adding the new data to the corresponding municipality in the variable you indicate. This allowed a task as arduous and prone to human error as the manual introduction of data to be carried out in a much more agile and error-free way.

Since the application code works by asking the user for input on the names of the books, sheets and columns of destination, it is suitable for use in any collection of data at the municipal level in its current state, being even adaptable to other levels of study and other areas with minimal modifications. In fact, and although the application has certain user interface elements that make its use by the average user easy, it is possible to introduce a series of modifications that would allow users who do not know the programming language (VBA) to adapt the program for their own personal uses straight from the user interface. Subsequently, it would be possible to export it as a plug-in for Excel, so that its distribution and use are even simpler.

Once all the data was collected, it was analyzed using different statistical techniques in Excel and SPSS. In addition, to facilitate the interpretation of the results, certain variables of the database were georeferenced, presenting the results in individual maps for each of the islands from which a series of graphs were extracted that provide a context to the data that the municipal values separately do not offer. For the elaboration of the mentioned cartograms QGIS 2.18.9, a free and open-source geographic information system similar to ArcGIS, was used.

To carry out and present the results of this analysis several resources were used as a reference: the Barometer of profitability and employment produced by Exceltur, the
monthly unemployment and contracts reports by Turismo de Tenerife and various publications in the Canarias Emplea Digital Magazine, among others.

Given the limitations that have been found, as well as the space constraints, this paper will refer to the study carried out for Tenerife and the detailed analysis corresponding to the three municipalities of greater tourism relevance of the island: Adeje, Arona and Puerto de la Cruz.

Analysis and results

Although the extended analysis, 56 pages long, has 34 graphs and charts that allow a very visual presentation of the information for its subsequent analysis at insular and municipal level, this section has been modified to convey the analysis made without such charts for space limitation reasons. Likewise, given that the readers of this document may not be familiar with the municipalities analyzed, it was deemed positive to omit the particularities of said municipalities that have been discovered in the analysis, presenting in this section said analysis and the results achieved in a very general manner.

Regarding the analysis of the availability of information on employment in the tourism sector, as mentioned in the methodology, it was decided to check which statistical series would allow the analysis of employment in tourism characteristic activities. Relevant information was found at the Canary Islands Institute of Statistics (ISTAC), the Canary Islands Employment Observatory (OBECAN) and the Public Employment Service (SEPE). The available information presents different problems, due to the lack of either territorial, temporal or, especially, CNAE-code disaggregation, which must appear with a disaggregation of three figures to be able to correctly analyze all tourism characteristic activities, since otherwise employment in the sector would be either over- or underestimated.

Social security affiliation data, which was available at a municipal level, was analyzed, distinguishing between affiliations by place of contribution (workplace) and place of residence. This allowed for the plotting of a series of bubble charts and cartograms in which it is easy to distinguish different types of municipalities, some with a more residential character, which have been called called "employee emitting municipalities", and others with a greater business activity, or "job generating municipalities". This exercise was carried out for the economy as a whole as well as for the accommodation & food services sector, adding an analysis of the percentage of affiliations per residence and contribution of each municipality that are tied to the accommodation & food services sector to try to identify where the sector has a more predominant role (under the diagonal in Fig. 1) and which municipalities are acting more like dormitories (over the diagonal in Fig.1).
Fig. 1. Affiliations to the Social Security in the Food and Accommodation services in Tenerife by place of contribution account and by place of residence, 2016. Base data from ISTAC, derived from data provided by the Social Security National Institute.

Fig. 2. Difference between affiliations by place of contribution account and by place of residence, Food and Accommodation Services, Tenerife, 2016. Base data from ISTAC, derived from data provided by the Social Security National Institute.
The percentage of residents who must leave their municipality of residence to go to their workplace, as well as the percentage of jobs in a municipality that are covered by people living in another were also studied. If we take into account the economy as a whole, 11 of the 31 municipalities of the island have more than 40% of their occupied residents leave the municipality to work. The same happens when analyzing the food and beverages industry, where two municipalities where more than 45% of the jobs in the industry are covered by people living in other municipalities can be found.

In this sense, a very interesting result was the estimation of the minimum number of intermunicipal commutes in the island for employment reasons, having estimated 205,884 commutes for the total of sectors of the economy and 40,989 only in the accommodation & food services sector, which greatly contributes to the traffic problem the island has been facing in recent years.

However, affiliation data does not provide enough information to distinguish which sub-sector in the accommodation & food services sector is generating more jobs, which is information that the analysis of registered employment data does give us. Therefore, the distribution of legally covered jobs in the accommodation & food services sector in its subsectors 55. Accommodation Services and 56. Food and Beverage Services was studied, creating a ranking of municipalities that clearly emphasizes the municipalities with the highest population and tourist affluence.

![Fig. 3. Registered employment ranking, Accommodation and food services sector, Tenerife, 2016. Base data from ISTAC, derived from data provided by the Social Security National Institute.](image-url)
To try to correct this, the research team decided to generate the same ranking, but studying the jobs registered in accommodation services for every 100 beds. Very interesting results ensued, such as municipalities which, having a great number of hotel beds, had no registered employment in the sub-sector. The most reasonable explanation for this can be found in the very nature of the data, since companies are only required to have a contribution account by province, and not by workplace, which means that workers in the accommodation services subsector for the aforementioned municipalities are probably registered at the company’s headquarters in another municipality in the province.

![Fig. 4. Registered employment in the accommodation services subsector per every 100 beds, Tenerife, 2016. Base data from ISTAC, derived from data provided by the Social Security National Institute, and TURIDATA for bed data.](image)

The previous analysis drove the research group to hypothesize that there is a positive correlation between the number of beds in a municipality and the number of jobs registered in the accommodation and food and beverages subsectors, as well as between said subsectors, which is much greater in the case of the accommodation services subsector, as one would expect. However, it is necessary to take into account that is indeed a small sample, conformed by the 31 municipalities of the island.

Analyzing the registered employment data, the distribution of these jobs in those for self-employed and employees was extracted, allowing for the comparison between this distribution in the case of the economy as a whole and the accommodation and food services sector, as well as compare the municipalities with the total of the island and the archipelago.

Furthermore, both registered employment in the accommodation and food services sector and its variation between 2012 and 2016 were plotted in a bubble chart (placing the number of beds as the bubble area for context), giving an idea of the evolution that
the sector has had in the archipelago in terms of employment. In addition, registered employment and RevPAR of these same municipalities were plotted in another bubble chart, classifying them into four quadrants based on the means (averages) of both variables, making it possible to classify them by their behavior for said variables.

![Bubble chart showing RevPAR vs. registered employment in the accommodation and food services sector, Canary Islands, 2016. Base data from ISTAC, registered employment derived from data provided by the Social Security National Institute. Number of beds as bubble area.](image)

**Fig. 5.** RevPAR vs. registered employment in the accommodation and food services sector, Canary Islands, 2016. Base data from ISTAC, registered employment derived from data provided by the Social Security National Institute. Number of beds as bubble area.

Interesting results also emerged from the analysis of contract data, which made it possible to create a chart analyzing the number of contracts signed in the island of Tenerife in the last five years, comparing the whole of the economy with the accommodation and food services sector, establishing that, for both, the number of contracts signed is clearly on the rise. The study of the number of contracts signed by municipality in 2016 revealed that 84% of the contracts were signed in 8 of the 31 municipalities of the island. In the case of the accommodation and food services sector, 4 municipalities accounted for more than 71% of contracts.

However, when analyzing hiring and contracts, the number of contracts signed is clearly insufficient, making it necessary to study the characteristics of said contracts. Unfortunately, much of this information is not available at levels lower than the province, or it is not disaggregated by economic activities, so it was not possible to study the modality or duration of contracts at the municipal level. What is available is the type of contract, that is, whether it is a fixed-term or indefinite contract, which was have analyzed for both the economy as a whole and for the accommodation and
food services sector, a sector for which all municipalities have a fixed-term percentage of 75%, which is logical, since such contracts have to be renewed, whereas indefinite contracts do not.

Regarding the study of registered unemployment, its evolution in Tenerife month by month for the last three years was analyzed, comparing the total of sectors of the economy with the accommodation and food services sector, revealing, in general, that the unemployment is slowly decreasing. As for the data that would be obtained from the Survey of Active Population (EPA), it is not available at the municipal level (obvious methodological reasons), so there is no information about the employed population nor the active population, and, therefore, neither is there any information about the unemployment rates, all of which are extremely important when analyzing the labor market. Thus, the research group decided to estimate the unemployment rates using the affiliations by place of residence and the registered unemployment in a given municipality, with the methodological problems involved, explaining said problems and emphasizing that this is but an approximation to the unemployment rate. The municipalities of the island were placed in a ranking, allowing the reader to verify the differences between them, also giving a general idea of the state of the labor market in the island of Tenerife.

Fig. 6. Approximate unemployment rate by municipality, Tenerife, 2016 average. Derived from registered unemployment data in OBECAN.
Once the analysis of the municipalities in the context of the island was completed, a more in-depth analysis was carried out of the three most characteristically touristic municipalities of the island: Puerto de la Cruz, Adeje and Arona. This analysis examines the same variables already mentioned, expanding the conclusions drawn for each municipality, studying the characteristics of their accommodation and food and beverages offer and giving much more detailed information, useful for decision making at the municipal level, and including an infographic summary that provides the key indicators in a very brief and visual way.

Conclusions and implications

As mentioned in the introduction, tourism is an economic sector that can bring large levels of economic and social development for the regions in which the activity takes place. However, in order to measure the impacts of tourism, reducing those that are negative and maximizing the positive, it is necessary to have information that makes it possible to design and carry out policies and action plans, as well as to monitor them throughout the entire process. This allows DMOs, as well as other stakeholders in the sector, to take advantage of current opportunities and overcome the challenges they face.

In the case of the Canary Islands, although the availability of data at the municipal level is much higher than in other parts of the world, it is still far from ideal. The information available is in “separate compartments”, which does not facilitate the user's access or enable the creation of interrelations that are of their particular interest (personalized queries accessing and mixing different variables).

The current environment is changing very rapidly, motivated in part by technological change, which implies a need for data to support decision making almost in real time. In addition to the time scale, the territorial scale is of utmost importance, since the different regions at the subnational level present differences that data at the national level cannot reflect, hampering the work of decision makers and even leading to erroneous conclusions. In this sense, it would be interesting for stakeholders to have access to the data with the greatest possible disaggregation, for example, in the information corresponding to the distribution of registered jobs at the municipal level.
by CNAE-2009 code in three figure levels, allowing the complete analysis of tourism characteristic activities, which are otherwise overestimated or reduced to the accommodation and food services sector.

In this same line of thought, it is necessary that data related to matters as relevant as employment is readily available in open access in its entirety (always protecting statistical secrecy), available for queries and disaggregated as deeply as possible, since information can always be aggregated, but disaggregating without the baseline data is impossible.

There is a large number of relationships between variables left to be explored, such as that between the number of employees per bed and the satisfaction of the visitor, both at the municipal and even the micro-destination level, or the study of disaggregated tourist expenditure and the number of employees in each tourism characteristic activity, among others, that are impossible to analyze with the current openly available data.

On the other hand, although the initial intention was for the report to include an analysis per island and an in-depth study for each of the municipalities that comprise them, due to space restrictions, this document had to be limited to the analysis of the data collected for Tenerife. In 2016, this island had an average of 76,162 affiliations in tourism characteristic activities, 41% of the affiliations by place of contribution of the archipelago. Since the focus was placed on the study of the accommodation and food services sector, this means the analysis of 53,825 affiliations, or 71% of the affiliations by place of contribution registered in 2016 for the island of Tenerife in tourism characteristic activities.

As for the conclusions of the analysis of the collected variables, the study of the affiliations by place of contribution and by place of residence on the island made it possible to identify a series of municipalities that generate employment, such as Adeje, Santa Cruz and Puerto de la Cruz, and others that are issuers of employees, as is the case of Granadilla, Los Realejos and La Orotava. In the accommodation and food services sector, the situation does not change much, given the importance of tourism on the island. It seems important to emphasize the effect that these flows of employees can have on mobility in Tenerife, because, as pointed out in the analysis, there are a minimum of 205,884 commutes for work reasons in the total of the economy of Tenerife, with at least 40,989 commutes in the accommodation and food services sector.

Santa Cruz, La Laguna, Adeje and Arona account for 68% of all registered jobs on the island. The weight of the accommodation and food services sector on the island is of around 16.63% of registered jobs, with 41.3% of them belonging to accommodation services and 58.7% to food and beverages services. The municipalities with the highest amount of registered employment are, as one might expect, Adeje and Arona, followed by Santa Cruz and Puerto de la Cruz. As for the proportion of employees, compared to those who are self-employed, these account for 84.7% of total employment, while in the accommodation and food services sector it amounts to
87.3%. Above the island average in this sector are the municipalities of Adeje, Arona, Puerto de la Cruz, Santiago del Teide and Santa Cruz de Tenerife.

The analysis of contract data made it possible to conclude that, although the evolution in the number of contracts might seem hopeful to some, the study of the characteristics of the contracts reveals that the temporality is high (88.4% of all contracts and 89.3% in the accommodation and food services sector, with many municipalities above these values), their average duration quite low and the rest of conditions impossible to study at this level, given the lack of information.

The registered unemployment, in general terms, is marked by downward trends, with the low unemployment rate of municipalities such as Adeje, San Miguel, Santiago del Teide and Vilaflor, all below 20%.

The purpose of this analytic exercise was to prove that it is possible to analyze the labor market at the municipal level with data available to the public in the Canary Islands, as well as the different economic sectors. Thus, one can say with confidence that the Canary Islands are very close to being able to create a Regional Tourist Information System (R-TIS), in the line promoted by INRouTe and the UNWTO, since not only does the archipelago have most of the necessary data, it also has highly qualified institutions that have already made great progress in this direction.

References
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Points of interest: Concept, identification tools and practical implications

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Abstract
The concept of point of interest is a new concept that has recently begun to be used in scientific research of tourism. This concept refers to the places that tourists visit during their stays at a destination. Since it is a novel concept, it has not been properly defined yet. In the same way, it has not been established how this concept differs from others commonly used in tourism research. This paper defines the concept of point of interest and differentiates it from previous terms. In addition, a review of the scientific literature has been carried out to know what tools can be used to identify the points of interest of a destination. Some of these tools are applied to identify the points of interest of the island of Lanzarote. Finally, the future practical implications that could have the identification of points of interest for the managers and companies of the tourist destinations are discussed.

Keywords: points of interest; identification; definition; Lanzarote; tracking tools.

Background
Being able to know how visitors move has been an interest for researchers for several years (Shaw, Agarwal, & Bull, 2000). Despite this, and the many implications that could result from this type of analysis (Asero, Gozzo, & Tomaselli, 2016; Kadár, 2014), there have not been numerous studies on how tourists consume in tourism destinations (McKercher & Lau, 2008; Shoval, McKercher, Ng, & Birenboim, 2011). According to McKercher & Lau (2008), this is due to the complicated task of collecting and analyzing visitor’s movement data. However, this problem is currently being addressed in greater depth thanks to the possibility of accessing to new sources of information (Rauh, Ahas, & Tiru, 2016). This has led to the publication of a growing number of studies analyzing the patterns of tourist displacement in tourism destinations (Smallwood, Beckley, Moore, & Kobryn, 2011).

Kádár (2014) states that statistical instruments can only measure controllable agents, but in tourism few of these agents exist. It is possible to measure the influx of visitors to points of interest that have some kind of visitor control system, through techniques such as the analysis of the number of tickets sold at certain tourist attractions (Zoltan & Masiero, 2012; Zoltan & McKercher, 2015). However, the most interesting phenomena to be studied and the conflicts related to tourism activity, usually take place in public spaces (Kádár, 2014; Shoval & Isaacson, 2007). In addition, it seems that the use of tracking techniques allows the accounting and comparison of visitor’s flows in these spaces (Kádár, 2014; Shoval & Isaacson, 2007).
Traditionally, travel journals and maps were used as the main tool for collecting data to obtain information about the movements of visitors (Thornton, Williams, & Shaw, 1997). However, according to Eurostat (2014), three recent changes have modified the generation of tourism statistics: the continuous geopolitical change; the emergence of a technological environment based on new tools and devices that are used daily by people; and the changes in the type of statistics demanded by the agents involved in the activity. This has led to methods of collecting information based on the systematic recording of the visitor's spatial and temporal displacement over a given period of time (Shoval & Isaacs, 2007).

The Valencian Institute of Tourism Technologies (Invat.tur) has analyzed the relevance of Big Data to obtain information related to the displacement of visitors (Invat.tur, 2015). Given the difficulty of processing this type of information, Invat.tur (2015) proposes the use of a series of techniques as sources for obtaining it. In particular, the sources proposed for this process have been: conducting interviews with managers of tourism organizations and companies; the anonymous surveys to professionals of the sector; analysis of official statistics and documentaries; and national and international reference publications.

Shoval et al. (2011) support the use of surveys as a source of information regarding the places visited or the stops made during an itinerary. However, they stated that surveys are not a useful tool for collecting information about routes taken by visitors. McKercher & Lau (2009) do not consider them an adequate technique for tracking visitor movements by destination, arguing that they have several operational limitations. Shoval et al. (2011) employ surveys in their study of the different patterns of movement of visitors depending on the location of the accommodation in which they are staying. One of the main drawbacks was the incomplete information found in the responses to the daily survey, resulting in a large number of marginal results. People are not able to remember perfectly all the places visited or the routes taken to connect them. This leads to the loss of much of the information that could be collected (Shoval et al., 2011).

Recently, the interest of researchers has shifted to studies in tourism movements within tourist destinations (McKercher & Zoltan, 2014). Given the limitations of surveys as traditional techniques for collecting data on tourist movements, in recent years other useful tools have been sought (Smallwood et al., 2012). The interest aroused by research on patterns of displacement and the need to employ different information gathering techniques have resulted in the adoption of innovative methods for collecting tourism statistics from non-traditional sources (Alawwad et al., 2016).

Among the techniques used to compile information about travel routes, it is possible to differentiate face-to-face interviews with tourists at exit and entry points (Murphy & Keller, 1990). Another technique has been the method of direct observation, which consists in distinguishing visitors from residents, following their movements in a certain place, observing their behavior and locating their movements on a map (Thornton et al., 1997). Hartmann (1988) used both techniques (interview and follow-up) to study the behavior and spatiotemporal movements of tourists in Munich. However, the research concluded that none were efficient enough to be employed in future research by requiring a large amount of time.
For this reason, other effective tools have been developed to quantitatively measure visitor flows to tourist attractions of the destinations. These tools are linked to the use of different monitoring technologies based on Information and Communication Technologies (ICT) (Raun et al., 2016). Raun et al. (2016) state that the use of this type of technologies has experienced a fast growth in last years. Actually, recent studies have already begun to track visitors and analyze more complex aspects of tourism spatial movement (Dattilo, Radini, & Sabato, 2016; McKercher et al., 2012; Pettersson & Zillinger, 2011; Seynaeve & Demunter, 2016; Shoval et al., 2011).

A number of tracking techniques have been applied to study visitors’ movements, including the analysis of mobile positioning data, Global Positioning Systems (GPS) data, Bluetooth data, user generated data and the georeferenced photos of websites like Flickr (Raun et al., 2016). Dattilo et al. (2016) argue that the use of Big Data represents a source of original information on the spatial movements of individuals and tourist flows. The use of these data for statistical purposes could lead to several advantages in terms of efficiency, promptness, completeness and reduction of costs in the generation of tourism statistics (Dattilo et al., 2016). Tracking techniques seem to be based on the big data analysis available at the destination. Among the main advantages of using big data we find the potential to predict phenomena, behaviors, expectations and future needs of tourism consumers (Invat.tur, 2015).

Among the existing techniques, the most commonly used are GPS tracking of visitors in confined spaces (Xia, Arrowsmith, Jackson, & Cartwright, 2008) and the analysis of the use of mobile phones to cover studies of movements in larger areas (Roose, 2010). Raun et al. (2016) argue that the advantages of using GPS and mobile phone’s tracking systems are allowing tourism to be studied more precisely and efficiently because: they have better spatial and temporal accuracy; the follow-up periods are longer; they allow researchers to follow a tourist during their visit; and the collection and processing of digital data is easier and faster. However, the use of spatiotemporal tracking data always raises moral and legal issues related to the protection of personal data and the privacy of the subjects being followed (Raun et al., 2016). Often the users' consent is required in relation to the use made of their information; in such a way as to allow certain patterns to be identified, but not individuals (Invat.tur, 2015).

In addition, the big data has recently begun to be used to find out how visitors of a given destination are moving. The rise of the use of big data as a source of information is partly explained because it offers the possibility of using free web data extraction tools, which can help the development of indicators on visits of tourist attractions (de Oliveira & Porto, 2016). Invat.tur (2015) points out that the analysis of conversations in social networks allows to relate the characteristics of visitors with factors as diverse as their patterns of consumption, their economic solvency or their health needs. TripAdvisor can be a rich source of data from which to extract the satisfaction of the visitors in relation to the destinations visited and the products consumed (de Oliveira & Porto, 2016). There are also other options, such as the use of statistics of visits to profiles of tourist attractions in Wikipedia (Signorelli, Reis, & Biffignandi, 2016).

On the other hand, Kádár (2014) believes that cameras have become essential devices on tourism and the research indicates that they are instruments capable of recording
data regarding on the position of the visitor if they are shared on the internet. The ability to geolocalize the photographs of a site on a map has made it possible to use this image as an instrument to measure the activity developed in certain spaces (Kádár, 2014). The application programming interface (API) of web pages like Flickr makes possible the analysis of all these images (Popescu & Grefenstette, 2009). According to Kádár (2014), the analysis of geographically positioned Internet photographs can combine the accuracy levels of GPS tracking of visitors and the quantitative advantages of the large accessible datasets of internet communities. This can help to reflect the most visited and preferred places by tourism demand, an element of which information has traditionally been lacking (Pearce & Butler, 1999).

Another technique that has been used is the implementation of control mechanisms on roads or accesses to certain resources and attractions of tourism destinations (Smallwood et al., 2012). The National Institute of Statistics (INE) developed a study on the possibility of using traffic controls to obtain information on the access of foreign vehicles and tourists to Spain (Izquierdo Valverde, Prado Mascuñano, & Velasco Gimeno, 2016). For this study, Izquierdo Valverde et al. (2016) used traffic cameras and records collected at borders to know the type of vehicle entering the country, the nationality of the occupants according to the car registration number and the number of occupants per vehicle. This has allowed the INE to develop indicators of vehicle occupancy rates based on the type of vehicle and the nationality of the vehicles (Izquierdo Valverde et al., 2016).

Beritelli & Humm (2005) have also cited the control of the attractions consumed by destination cards as another useful tool. These are coupons sold by destination management organizations (DMO) that offer the possibility of accessing to a series of attractions of a destination, being the visitor able to decide if he wants to use all the services that incorporates the card or just part of them (Beritelli & Humm, 2005). Zoltan & Masiero (2012) analyzed the usefulness of these cards as mechanisms to stimulate the participation of visitors in less visited attractions. To this end, they encouraged the creation of destination cards in Switzerland, including visits to some of the most visited places in the country and many others with a low influx of visitors (Zoltan & Masiero, 2012). According to Zoltan & Masiero (2012), the technique is employed by DMOs to encourage the redistribution of tourist flows, but its real effectiveness had not been studied in previous research.

**Objectives**

In the present paper, we tried to approach to the concept of points of interest, which conform a field of study not deeply worked in the scientific investigation of tourism. Because of this, there is no abundance of literature mentioning them and it has not been defined what they are or how they can contribute to improve the management of tourism at the local level. Therefore, it is necessary in this study to define what points of interest are, how they can be identified and what utility their study can generate.

When defining what a point of interest is, it is also necessary to clear the definition of certain concepts associated with them and with general tourism research. For this reason, various terms have also been defined. There are concepts widely accepted by tourism researchers that have several similarities to the one that this paper intends to
introduced, special emphasis should be placed on the differences that this new concept presents with respect to others already studied.

In addition, another objective of the work is the development of a list of tools that could identify the points of interest of a destination and explain how to use them. Moreover, in order to justify the relevance of this research, the points of interest of a study case, the island of Lanzarote, will be identified using some of the tools listed. The points of interest identified will be shown in an image of the island to clear where they are located and to see if these techniques are able to identify the areas where tourism activity is developed. Finally, it is intended to reflect how this kind of studies can help to improve the management of tourism destinations and facilitate the decision making process of tourism destination and business managers.

The concept of point of interest

A point of tourist interest can be defined as a specific place, within a tourist destination, to which visitors go because they are interested in enjoying one or more of the tourism resources it contains and to carry out tourism activities from them. The resource that attracts visitors can sometimes be the place or point of interest itself. For example, visiting a church may be interesting for some visitors, what makes this church a point of interest and, at the same time, it is the tourism resource that generates interest and attracts tourists. In other cases, as in the case of festival, the interest is not in the place itself—the point of interest—, but in some of the elements that can be enjoyed in these places—the event, in this case—.

Once the concept has been defined, it is possible to establish the requirements that a place must have to be considered a point of interest. There are a series of characteristics linked to the concept of point of interest that has been defined. Their exposure in a clear and simple list will serve to simplify the definition of the term. In addition, they will serve as a reference to differentiate the concept of point of interest from others that could be confused. Thus, a point of interest needs to be:

- Localizable: It must be a geographic space and, therefore, it has to be possible to locate it on a map.
- Delimitable: It must be possible to establish the space that this place is occupying and to define the limits it presents.
- Accessible: It must be possible to enjoy the space in question, so it must be an accessible place for visitors.
- Tourist’s oriented: It is not enough with the existence of the possibility of accessing to the place, but there needs to be a significant number of people who actually access the place. In addition, it is imperative to receive a proper amount of tourists, and not just local population. If the place is visited by residents of the area and not by visitors, it will not be a point of interest. On the contrary, if it is visited only by visitors and not by locals, it can be considered as such.
- Attractive: The place should generate interest in visitors. This means that the influx of visitors to it should be explained due to the fact that these visitors are attracted and interested in the place itself or in performing some kind of activity within it.
Eligible: Visitors must be able to decide to visit the site or not to do so. Those places that need to be visited due to a need or obligation will not be considered points of interest.

Once the conceptual framework has been established, some of the concepts related with the concept of “point of interest” must be explained. The reason for this is that some of these elements may be confused or considered as points of interest. All these terms are linked and they are elements that can be distinguished in any tourism destination. Occasionally, certain concepts refer to elements of a similar nature and their definition may lead to confusion. Therefore, it is necessary to establish how they differ. This, in turn, helps to highlight the importance of ongoing research and the implications that can be derived from the study of points of interest. The concepts chosen have been considered as those prone to be confused with the elaborate concept of point of interest. For this reason, it has been decided to define the concepts of tourism destination, tourism product, tourism resource and tourist attraction.

First, we found the tourism destination. The concept has certain similarities with the point of interest one. They are geographical areas that can be delimited and, in both cases, there is a certain number of visitors who feel a particular interest to go to them to enjoy some of the tourism activities offered within them (UNWTO, 2015). However, the concept of destination brings together a wide range of elements, such as resources, attractions, activities, etc., and the way they are related (Hong-Bumm, 1998; Buhalis, 2000; Baggio & Cooper, 2010), whereas the concept of point of interest is simpler, referring only to the specific place visitors come to perform a certain activity. In addition, a destination is an abstract element, in spite of being delimitable (UNWTO, 2004; UNWTO, 2007); since each visitor or researcher can consider as a destination a different space (Ahas et al., 2007; Izquierdo Valverde et al., 2016; Roose, 2010; Lew & McKercher, 2002; McKercher et al., 2012; Smallwood et al., 2012). Although the space considered as destination by the visitor coincides with the space actually used by another visitor, both can have a different conception of destination and both conceptions may be right. This would be the case of two visitors who stay in a housing complex and do not visit the rest of the destination, since one of them could consider the complex as their destination and another, the town in which it is located. Points of interest are one of the elements that make up destinations and they keep a relation with the rest of the elements contained within them.

As for tourism products, the potential tourists end up choosing destinations based on the characteristics that attract them to those places. The tourism product shapes the image of the destination that tourists have and it serves as a marketing tool to attract tourists to destinations (UNWTO, 2007). Tourism products and points of interest share the characteristic of being able to motivate the arrival of visitors and of generating interest in them (INRouTe, 2017). In spite of this, the concepts present enormous differences. The point of interest is always a physical place. The product is neither a place nor an event, but a combination of ideas that are generated from the elements that make up the destination (UNWTO, 2007; INRouTe, 2017). The concept product brings together a wide range of elements that are linked to them, including points of interest. However, the concept of tourism product refers to a smaller amount of elements than the destination, since the destination is a geographical space that
includes the population residing in it and other elements not linked to tourism. These elements, on the contrary, does not conform the tourism product.

Another concept to consider is the tourism resource. A tourism resource can allude to a wide range of elements, including the points of interest. In this way, all points of interest are tourism resources. However, not all resources are points of interest. This is because a resource can be a geographical area that generates interest in the visitors –point of interest–, as well as other elements that do not arise such interest in visitors, like certain festivals, the local culture, natural events, the image of the destination, etc (UNWTO, 2007; Xiuli & Zhong, 2005). That is why not all resources can be delimited in a physical space. In addition, not all resources generate interest in visitors, only those that are considered resources from a demand perspective. From a supply approach, there are certain resources, such as the existence of specialized higher education in tourism, that do not generate interest in visitors (UNWTO, 2007). In the same way, it can be a subjective concept, because some people can consider as tourism resource something that is not a resource for others. The tourism product developed by a destination results from the sum of the image of all the resources of a destination and the management that is done with it.

Tourist attractions are a specific type of resource, as are the points of interest. However, attractions are units of analysis superior to the points of interest, since they include all points of interest and, in addition, another series of resources. Speaking of tourist attraction we can refer to a specific place (such as a museum), in which case the element analyzed would be the same as when analyzing points of interest. However, events or certain socio-cultural features of the destination are also tourist attractions (Jafari, 2002). In this case, the attraction would not be a point of interest. Thus, not all attractions can be delimited, although it can be established in which places the attractions are enjoyed or take place. The concept presents similarities to the point of interest since, in both cases; they are elements that attract visitors to the destination. Moreover, both concepts refer to elements that are considered, at the same time, tourism resources.

Fig. 1. Modelling the concept of “point of interest”

Tools for tracking tourists
A total of 36 tools that could enable the identification of points of interest in a destination have been found. It has been possible to classify these tools by categories according to their characteristics. In addition, the techniques have been differentiated between those ones that enable the identification of points of interest from a demand perspective and those that can afford this task from a supply one. From a demand perspective, the techniques are those capable of recording the behavior of the visitors studied to know which sites are visited while travelling. From an offer perspective, the objects studied are the potential points of interest of the destination, to know if they actually receive visitors and if they can be considered as real points of interest.

The 36 identification tools analyzed have been separated into seven different categories. The categories created are: Surveys, Social media, Tracking, Advertising, Sales, Interviews and Micro-tracking. The first three refer to tools to identify points of interest from a demand approach. The last four correspond to techniques focused on their identification from a supply one.

First, we analyze the categories related to the analysis from a demand approach. The category of Surveys encompasses a series of techniques consisting of collecting data from visitors through questionnaires. The techniques included in this category are: tourism expenditure surveys, road surveys, travel journals and spatio-temporal movements’ journals. In Social Networks the techniques that use the analysis of comments, opinions, evaluations, contents, etc. shared by visitors through various web pages are agglutinated. In this category we would find: the control of the use of hashtags, georeferenced comments in social media, engines for processing photos uploaded to the internet and opinion portals. Tracking category contains those tools that allow the following-up of the movements made by visitors during their trips within the destination. The techniques contained are: independent GPS devices, rental cars’ GPS, other means of transport GPS, other electronic devices GPS, mobile phone’s GPS, mobile phone’s radiofrequencies and requesting telephone companies reports.

<table>
<thead>
<tr>
<th>Surveys</th>
<th>Social media</th>
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<tr>
<td>Tourism expenditure surveys</td>
<td>Hashtags use control</td>
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<td>Road surveys</td>
<td>Geotagged Social Media comments</td>
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<td>Travel journals</td>
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<td>Spatio-temporal movements journals</td>
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Tab. 1. Techniques for identifying points of interest (demand approach)

It is also possible to differentiate four categories that group tools to identify points of interest from a supply approach. The advertising category brings together techniques to analyze the marketing campaigns made by DMOs and private companies. The techniques contained in this category would be: the study of the places contained in promotional and tourism information websites, the analysis of the advertising brochures of the destination and the request of official listings of tourist attractions to local public administration. In sales category the techniques related to the collection of data of the tickets, packages, products, etc. sold in tourist attractions are contained. The tools present in the same are: listings of tickets sold in tourist attractions, visitor flow records, the analysis of the sales of destination cards, data of tourist packages sold by intermediaries, the number of bookings made through booking managers and the analysis of visits programmed by travel planners. In interviews category it is possible to appreciate a set of different publics that could be asked to know how the visitors behave within the destination. Micro-tracking category contains tools that allow researchers to establish the movements and behaviors of visitors in confined or small spaces. This category includes: the use of traffic cameras and controls, car controls in parking lots, surveillance cameras in tourist attractions, access to the internet in places with free Wi-Fi, control of the spending made by credit cards, studies of the signage of the destination and the direct observation of the visitors in a given place.
<table>
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<th>Advertising</th>
<th>Promotional websites and tourist information webpages</th>
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<td>Analysis of advertising brochures and similar</td>
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<td>Request for official listings of tourist attractions</td>
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<td>Tickets sold at tourist attractions</td>
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<td>Sale of destination cards</td>
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<td>Tourist packages sold by intermediaries</td>
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<td>Bookings made through reservations managers</td>
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<td>Analysis of visits programmed by travel planners</td>
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<td>Interviews</td>
<td>Interview with tourist informants</td>
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<td>Interview with tour guides</td>
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<td>Interview with land transport and excursion companies</td>
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<td>Interview with hosting companies</td>
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<td>Interview with other tourist companies</td>
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<td>Micro-tracking</td>
<td>Traffic Cameras and Controls</td>
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<td>Controls in car parks</td>
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<td>Surveillance cameras in specific places</td>
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Surveys are the medium traditionally used by tourism researchers to gather information for their studies (Eurostat, 2014). Tourism expenditure surveys consist of a questionnaire made to tourists at the end of their trips to know some of their characteristics, the activities carried out during the trip and the expenses incurred during it. From these, it is possible to obtain information on the sociodemographic characteristics of the visitors, their motivations, the estimated expenditure made during the trip, the place of stay, the activities performed and the degree of satisfaction with them, among others. On the other hand, the road surveys are based on questionnaires related to the itinerary made by visitors during the current day in which they are carried out. They are usually made in places with great confluence of visitors, such as certain tourist attractions, accommodation establishments or parking lots.

Travel journals are a type of survey based on conducting a daily questionnaire to visitors to know what places they have visited, the order of the visits made, how they have moved from one place to another and the time when they have taken place. The journals of space-time movements, on the other hand, are based on the realization of this type of surveys only at the end of the trip. Visitors should answer these surveys by explaining what activities they have carried out each day (Shoval et al., 2011).

Through social media it is possible to share photos, comments, opinions, locations, videos, etc. Analyzing some of these data can be used for tracking visitors through the study of elements like the hashtags used in all those elements. Thus, it is possible to search for hashtags related to the destination in order to know which places are most frequented and what other concepts are linked to them. In addition, the possibility of georeferencing all contents that are uploaded to one of these platforms makes possible to perform a search of all contents uploaded to the network regarding a specific location (Alawwad et al., 2016; Raun et al., 2016). Through the comments and photographs left by the visitors it is possible to know their characteristics and motivations, the attractions they visit, their opinion about certain places or activities and the image they perceive of the destination (Konijn, Sluimer & Mitas, 2016).

Opinion portals have been configured as a type of social media. They are tools used by visitors to write reviews about the places they have visited (Alawwad et al., 2016). In addition, they allow to evaluate the places visited and to know the opinions that

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<th>Free internet</th>
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<tr>
<td>Credit card spending</td>
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<td>Study of the signage of destiny</td>
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<td>On-site monitoring and direct observation</td>
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**Tab. 2. Techniques for identifying points of interest (supply approach)**

Through social media it is possible to share photos, comments, opinions, locations, videos, etc. Analyzing some of these data can be used for tracking visitors through the study of elements like the hashtags used in all those elements. Thus, it is possible to search for hashtags related to the destination in order to know which places are most frequented and what other concepts are linked to them. In addition, the possibility of georeferencing all contents that are uploaded to one of these platforms makes possible to perform a search of all contents uploaded to the network regarding a specific location (Alawwad et al., 2016; Raun et al., 2016). Through the comments and photographs left by the visitors it is possible to know their characteristics and motivations, the attractions they visit, their opinion about certain places or activities and the image they perceive of the destination (Konijn, Sluimer & Mitas, 2016).

Opinion portals have been configured as a type of social media. They are tools used by visitors to write reviews about the places they have visited (Alawwad et al., 2016). In addition, they allow to evaluate the places visited and to know the opinions that
these places have aroused in other visitors. Through the number of comments it is possible to know which the main attractions of the destination are and which ones are secondary.

Currently, there are various electronic devices that are able to track and locate the location of their users (Renenger, 2001; Shoval & Isaacson, 2007). Researches such those carried out by Lau & McRae, (2006), McRae & Lau, (2008), McRae & Zoltan, (2014) or Shoval et al. (2011) have proven that it is possible to give tourists a tracking device with a GPS signal incorporated to make them to carry it during their entire trip. These devices are usually delivered in accommodation establishments and their function is to emit an intermittent signal indicating the position in which it is located, which is registered by a computer program and, thus, located on a map. The knowledge of the exact location of the visitors makes it possible to know the temporal and spatial itineraries made, as well as the connection routes used to connect the places visited.

In addition, it is not essential to give tourists a device that registers their location, but it is possible to use other tools. Shoval & Isaacson (2007) state that it is possible to use the built-in GPS of rental cars to know the roads and car parks mainly used to travel within destination. Likewise, GPS devices present in other means of transport, such as rental bicycles, recreational boats, tablets or smart watches could also be used. This way, these devices make it easier to know which connection routes are used to connect the places visited and the place of stay during the trip.

Although there are several GPS tracking tools, Shoval & Isaacson (2007) point out that the most appropriate one of them is the tracking of mobile phone users. The research points out that there are several methods that can be applied. One of them would be to activate a tracking function in all the phones that belongs to one of the subjects of the study, by installing a tracking application. In fact, there are several investigations in which this technique has been carried out or mentioned (Alawwad et al., 2016, Dattilo et al., 2016, Eurostat, 2014, Raun et al., 2016, Shoval & Isaacson, 2007). Another method described by Shoval & Isaacson (2007) is to trace the origin of the electromagnetic frequencies of the active telephones at the destination during a certain period. The last of the methods described is based on the execution of a request of the database of a mobile telephone company, in which the displacements made by the telephones and the characteristics of their users are contained.

Advertising is used by companies and managers of tourism destinations to promote their products and services. Through the analysis of the adverts made in a destination it is possible to know what places are been visited by tourists. Moreover, massive internet access allows potential tourists to be informed of the places they can visit at a destination. Therefore, Alawwad et al. (2016); Buhalis & Law (2008); Wang et al. (2016) suggest that it is possible to analyze the activities carried out by visitors to a destination through the analysis of access data to tourism promotion portals and web pages with information about tourism destinations.

Advertising brochures are also a tool used mainly by tourism companies to promote their services and motivate visitors to purchase them. The collection of pamphlets and flyers at key points of the destination allows researchers to know which places are promoted. In addition, it is also possible to study the sites promoted through other
elements, such as web advertising, billboards on the destination roads, promotional videos, etc. The analysis of advertising campaigns allows knowing the target public, some of the most visited places of the destination, the price of certain activities and the image projected by the destination. Administrations at regional or local level have information on the most well-known and visited places of the destination and those that are intended to be exploited in the future. Due to that, it is even possible to request an official list of tourist attractions from local public administrations of the destination.

Certain tourist attractions require the payment of a ticket in order to access into them. The income obtained by tourist attractions is recorded and, through them, it is possible to know the number of visitors who have received such attractions (Zoltan & Masiero, 2012; Zoltan & McKercher, 2015). Some companies have also their own affluence registers, in which they collect data related to the characteristics of their customers. These data can help to shape the profile of the visitors of a given destination, the activities they perform to a greater or lesser extent, the price and time for carrying out the activities and the influx of visitors to certain points of interest.

It is even possible to know the connections made by visitors among the places visited through the sale of destination cards (Zoltan & Masiero, 2012; Zoltan & McKercher, 2015). They are a special type of entrance sold by DMO that include, under a single price, the access to various tourist attractions. The price of this unique entrance is lower than the individual cost for accessing to all the attractions contained (Zoltan & Masiero, 2012; Zoltan & McKercher, 2015).

Tourism intermediaries are companies dedicated to the commercialization of tourism activities and services in one or several destinations. In addition, they are able to combine transport, accommodation and activities to be carried out at the destination in the same product called a tourist package. Certain destinations have visitors who are more prone to hire these types of packages. Thus, Hyde & Lawson (2003) point out that it is possible to know the places visited by the tourists of a destination if the itineraries offered by the tourist intermediaries are analyzed.

As with the intermediaries, it is also possible to analyze the places visited by tourists through the activities contracted by them through reservation managers (Alawwad et al., 2016). They are computer applications that companies hire to install them on their web pages. These applications allow the clients of the companies to be able to reserve the day, the time and the activity when they wish to do one of the activities offered. When making the reservation, each one of the companies receives a message informing that the said reservation has been made. In addition, the company that owns the reservation manager has all the information related to the reservations made by the customers of the companies that have contracted their services.

Another similar technique is to request this information to travel planners companies (Zoltan & Masiero, 2012). These web applications allow visitors to choose the places they want to visit from a destination in order to get a proposal of the most efficient way to make the selected visits. They differ from reservation managers because the selection of a place does not entail making a reservation in it. On the contrary, the application acts simply as an aid to the visitors to configure their itineraries before
visiting the destination. The visits chosen by the users of these applications are recorded in the travel planner database (Zoltan & Masiero, 2012).

One of the traditional ways for obtaining information about visitors’ behavior is to interview certain agents of the sector (Murphy & Keller, 1990). The agents involved may vary depending on the purpose of the current study. However, in general they should be people who maintain a direct contact with visitors and who help or accompany them during their visits within the destination. For this study, five types of agents have been differentiated: tourist informants, tourist guides, transport companies and excursions, lodging companies, and other tourism companies.

Finally, we find the techniques that make it possible to study the movement of visitors in specific places of the destination –micro-tracking category–. Traffic cameras and controls are used by Izquierdo Valverde, Prado Mascuñano & Velasco Gimeno (2016) to be able to analyze the registration numbers of the cars that cross the borders in Spain and the time at which they did it. This study could also be applicable to controls and traffic cameras located in a destination to track itineraries made by road. In addition, some car parks have video surveillance systems or sensors that record the vehicles that access them. Shoval & Isaacson (2007) point out that it is possible to use these systems to know the places where visitors stop when they travel. Shoval & Isaacson (2007) also indicate that security cameras can be used to control the way visitors move within a space. It is even possible to know in which places visitors consume and the amount of money spent on them. To do this, it is possible to analyze the spending made by them through their credit cards or devices with access to their bank accounts, such as their mobile phones (Huang, Li, & Li, 2013).

Tourism destinations themselves can have certain tools through which it is possible to know the places visited by the visitors. Access points to free Wi-Fi in certain destinations are able to record the data of the users who have accessed to them and the time at which they have done it. Through it, it is possible to know some of the places visited and the time of stay in those places (Buhalis & Law, 2008; Wang et al., 2016). The destinations also have signs that inform visitors of which way to take to enjoy certain activities. These elements facilitate the arrival to certain tourist attractions, natural sites, historical buildings, etc. which have a significant influx of visitors. By analyzing these elements, it is possible to know some of the most visited places of the destination (Buhalis & Law, 2008; Wang et al., 2016) and, in addition, it is possible to predict how they will tend to carry out their itineraries.

Another technique that allows us to know how the visitors move through a certain area is the in situ follow-up and the direct observation of the visitors in it (Koo et al., 2017; Lau et al., 2017; Smallwood, Beckley, & Moore, 2012). In fact, Thornton, Williams, & Shaw (1997) track visitors in the city of Cornwall to contrast the information about the places visited by these surveyed visitors. It is a technique that can be used locally to know which are the most and less visited points of interest of a specific area, the activities carried out by the visitors in the same, the spatial and temporal itineraries carried out in it and the behavior shown by its visitors.

**Identifying points of interest in Lanzarote Island**
For identifying the points of interest of the island, different means have been used. Some of the main reference means have been government web portals, such as the official tourism portal of the island; as well as public statistical sources, such as the directory of establishments of the ISTAC or the Centers of Culture, Art and Tourism of the Data Center webpage of Lanzarote. Since they are sources that collect points of interest only from the supply perspective, different websites have been analyzed to establish them from a demand approach. Likewise, the reviews in TripAdvisor have been used as a mean to establish which companies sell their products and services to tourists. InstaSights has been utilized to know which the most photographed places of the island are, as it allows establishing certain places as points of interest that would not be collected in other webs.

The following image has been made using QGIS to show the location of the points of interest of the island, differentiating them into four categories: Restoration, Accommodation, Transportation and Leisure, Culture and Nature. The so-called Leisure, Culture and Nature are located in the upper layer of the map, followed by the Transport, after them the Accommodation and in the lower layer, Restoration.

![Map of points of interest](image)

**Fig. 2.** Points of interest identified in Lanzarote Island.

**Practical implications of research on this topic**
The knowledge of the points of interest of a destination has multiple applications. On the one hand, it provides information that can be used to improve the public management of the activity. On the other hand, the investigation of the places visited by tourists provides a series of data that can be used for the creation of products and the development of new management tools by private agents. Despite this, there is a strong limitation to carry out actions aimed at these purposes due to the difficulty of obtaining information in this area. ISTAC’s tourism expenditure survey requests tourists to indicate if they have visited a list of famous attractions of the destination (ISTAC, 2009). However, it is not able to collect all the points of interest that make up a destination. To do it, it would imply the inclusion of the name of all beaches, shops, streets, museums, etc. of the destination in the survey. This would increase the number of tourists who would decide not to answer with real information to the survey, given its length. Even if visitors would respond correctly, it would not be possible to know in what order they have visited these places or how long they have remained in them. In addition, although an extensive list of points of interest could be included, there would be certain places that would not be of interest for visitors, and yet they really would be. It should also be noted that tourists often visit points of interest without knowing how they are called, so they would not point them out in the survey.

It is for this reason that the collection of the information has to be carried out by techniques different from the conventional ones. The use of a survey is valid to collect a series of data, such as age, nationality or main motivations. However, as Kádár (2014), Renenger (2001) and Shoval (2007) indicate, the combination of different techniques is key for obtaining more information, since the deficiencies of one of them can be covered by another. The techniques that can be used to collect such information are varied and each researcher has used one or the other as appropriate. However, they are all strongly linked to the technological progress and the use of mobile phones and similar devices.

For DMO, the knowledge of the points of interest of the destination and the itineraries made by visitors allow to identify which are the most visited areas of the destination and how visitors arrive at them. Knowing this, measures can be implemented that have the purpose of increasing or reducing the influx of said visitors to a certain areas. For example, if DMO want to promote tourism in certain areas and reduce it in others, knowing the routes usually used by tourists helps to know in which places tolls should be imposed. This kind of measures can motivate them to take detours that oblige them to reach the desired areas. In the same way, it given tools make possible to gather information regarding the characteristic of visitors of the points of interest and the average expenditure made in each one of them. In addition, it helps defining the routes and itineraries most commonly made by visitors and the hours when tourists are more prone to visit certain attractions.

For companies, this information can also generate certain benefits, as it can be used to create new tourism products or improve the management of the activities developed. If a lodging establishment knows what places their clients usually visit when staying in it, it can collect a larger number of brochures or maps of these areas with the aim of offering them and improving their stay. The knowledge of the itineraries made by certain visitors can be used by tourism activities companies to know in which places
they should be promoted so that the message is captured by their target audience. In addition, if companies are aware about how visitors link the services offered by each one of them, they can create alliances to improve the experience of their clients, sell services together or to reduce their costs. In addition, signaling the location of points of interest on a map allows certain transport companies to identify strategic locations to sell their services, given their proximity to a significant diversity of points. The research on this topic is even useful for travel agents and tour operators, because it allows knowing about places in which tourists are interested that could be included in their packages.

References


Acknowledgements

This work has been supported by a grant of the Council of Economy, Industry, Commerce and Knowledge of the Government of the Canary Islands, co-financed by the European Social Fund.
Analysis on the Local Residents’ Attitudes, Behaviour and Involvement in the Tourism Development of Bangladesh and Its Sustainability

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Abstract

Bangladesh is not familiar as an internationally tourist destination country, but it has plenty of prospective hidden tourism resources to explore to the global tourists for its unprecedented combination of long rich culture, natural tourism resources and the residents’ quite tolerance & hospitality attitudes. This study paper explores some basic tourism characteristics favourable for the country’s tourism development. The paper analyses the local residents’ attitudes, their volume of various attachments & economic involvement in the tourism industry, roles in influencing the tourism development activities through working together with the government. The significant qualities of the country’s inhabitants relating to acceptance capabilities, tolerance and social interactions with foreign tourists and their supportive role in the perceived tourism development towards the future are remarkable. The survey results present that the cultural festivals/functions are very important for building good interactions between foreign tourists and the local residents that may be a strong weapon to attract the foreign tourists’ flow in the country. The country has some unusual tourism characteristics, under-use tourism resources and residents’ positive attitudes those are the valuable elements for its sustainable tourism development in the future. The country’s local residents are usually found more cooperative and hospitable to foreigners, which encourages and attracts them much to visit Bangladesh despite the recent unexpected terrorism incidents. Besides, the anti-terrorism role of the government and the development efforts undertaken for sustainable tourism are found significant factors for the country’s prospective tourism development.

Keywords: local residents, tourism development, destination, economic involvement, terrorist attacks, attitudes, behaviour

Introduction

Tourists are the vital force for tourism development, while the local residents to play an important ancillary part of the whole process through playing their roles of receiving tourists in the destinations, providing cooperation to the visitors as hosts, displaying the country’s natural beauties, cultural phenomena & traditions and exchanging views with the travelers through interactions. Thus, both parties lie at the heart of tourism. A positive relation between hosts & guests offers the country a great opportunity for enabling environment for easy travel & tourism development and contributes to wealth, help in generating income and employment to diversify the economy and raise the standard of living of the local residents. Today societies are changing with the changing of people’s outlooks, social development and growing of economies & disposable incomes. To generate foreign exchange earnings, income and employment, many countries of the world now bend to cooperate with other countries to keep up tourism development & its sustainability maintaining better understanding and cooperation across borders. Meanwhile, the government of Bangladesh has declared the year 2016 as the ‘Year of Tourism’ and the Ministry of Civil Aviation has set an ambitious target to increase the country’s current tourism status. To evaluate the country’s tourism situation, an attempt has been made to assess the present perceptions, attitudes, behaviour of the local residents and their involvement in the tourism development and maintain its sustainability.

Objectives

The main objective of this paper is to analyse the intentions, attitudes & behaviour of local residents and to explore the factors that affect the residents’ support for tourism development and the roles in the sectoral development. In addition, the research paper analyses some other issues like mental values of local residents, their physical location & attachment in the tourism, the environmental impacts on them and their employments in various economic diversified areas that contribute to this industry. It also examines some other factors like security measures, cultural affiliations to the destinations that affect local residents’ support for tourism development and poverty alleviation of
the country’s MDGs targets. The paper also focuses on foreign travelers’ intention, attitudes and perceptions towards the local residents in consideration of the recent terror attacks in the country, which are very much important for the undertaking of new policy measures for future tourism development and its sustainability. Detailed discussions on these issues are presented in this paper on the basis of two survey results, secondary data sources and other documents.

Survey Methodology

In this study, two different consecutive surveys were carried out. One was conducted at the International Airport and another was done in the tourist destinations namely, Coxes Bazar sadar upazila (sub-district) & Saint Martin Island using two separate sets of questionnaires. In the first survey, a sample frame was designed based on information of Bangladesh tourist arrivals from different continents in 2015 (Source: Bangladesh Parjatan Corporation) considering the year as normal in tourism. Two stage stratified sampling procedures are followed. At the first step a very small fraction \((n/N = 0.00230, 148)\) of the total number of foreign tourists \((N = 643094)\) is estimated. Then the sample number of population is distributed among countries according to the continental ratios of visitors following PPS method and thus sample numbers of tourists are derived from Europe (37), USA (14), Africa (1), Australia (7) and Asia (89). In the second stage of the sample frame, the number of tourists selected from the countries of Asia continent are India, China, Japan, Thailand, Malaysia, Indonesia, Cambodia, Hong Kong, Singapore, Laos PDR, Viet Nam, Sri Lanka, Nepal, Bhutan and from Middle-East countries. A total number of 26 questions were \((Survey\textsuperscript{-1} & \textsuperscript{-2})\) asked to respondents. Ultimately, the total number of 148 sample persons was interviewed at the Hazrat Shahjalal International Airport, Dhaka irrespective male or female. At the airport, only departed tourists were interviewed and a single person from each tourist-family. In the second survey, two popular natural tourist destinations are selected according to the number of foreign tourist arrivals, namely Coxes Bazar and Saint Martin Island. From the listing of households from both areas, a very small fraction \((n/N = 0.0018, 148)\) of the total households \((82,683)\) is undertaken with a breakup of 136 & 12 units. Sample households are randomly selected from nearby the central destination areas of Coxes Bazar resort areas & Saint Martin Island following the PPS method and interviewed to the head of households face-to-face, i.e, one respondent from each selected household irrespective economic status. Data are collected based on the second set of survey questionnaires \((Survey\textsuperscript{-2})\). Some sample households have economic units at the outer portion of their residents. They are not treated separately and is considered as a single unit each.

Analysis on Local Residents’ Attitudes, Behaviour & Perceptions to Tourism Development

Country people and the sample resort selection

Bangladesh is a country of lower middle income status with 163 million people \((WB \text{ report 2016})\) and is familiar as a moderate Islamic country, holding majority the values of Islam, yet being tolerant to other religions and hospitable to foreigners since ancient period. As the local residents are the main stakeholders in tourism development and physical location plays an important role in the general perception of tourism development, Cox’s Bazar, the leading popular destination with scenic beauties was undertaken as the sample survey spot considering the most visiting destination for both foreign tourists and internal visitors. This tourism resort is reputed as the world’s largest unbroken sandy sea beach, which stretches more than 120 km long along the Bay of Bengal. Another is Saint Martin, a tiny adjoining island about 9 km south to Coxes Bazar in the Bay of Bengal with full of biodiversity & unpolluted nature and is characterised by mangrove forests, seaweeds, corals, crabs, sea birds, and excellent nurseries for marine fishes. It is the only Coral Island of Bangladesh and plays the vital role to attract the tourists. Around 90,000 of the total foreign arrivals visit to Coxes Bazar and only 4.28% of them visit the Saint Martin Island annually due to its non-residential characteristics.

Residents’ sense of place and place attachment in tourism development

Place satisfaction is the most relevant to tourism \((Jorgensen \& Stedman, 2005)\) and is closely related to residents who are very much concerned about their place & development. ‘The sense of place is important in the integrative
review of research for providing relevant information on natural resource-based recreation & tourism (Farnum, Jennifer; Hall, Troy; Kruger, Linda E. 2005). People feel more and more attraction to natural places and it creates an effective connection with them. In tourism much attention is given to the role of place attachment in shaping residents’ perceived impacts and support for tourism development (Gursoy & Rutherford, 2004; Lee et al, 2013). Individuals’ choose their residential location in order to maximise utilities (Wolpert 1965), but it may vary depending on satisfaction levels on present location and natural events (Harman 1975). Generally, place attachment is conceived as an affective bond or link between people and specific places. According to Florek, Magdalena, 2011, ‘Place attachment’ is the emotional bond between person and place, and is a main concept in environmental psychology. It is highly influenced by an individual and his or her personal experiences. Today, the concept of place attachment refers to emotional and functional bonds between place and people (Hashem et al, 2014) of an area, which is psychologically important to review the attitudes and perceptions of local residents for tourism development, because it acts on their sense in perception building. In the sample households, questions were asked to the residents about their level of satisfaction in understanding individuals’ mental intention towards the area development.

Generally, place satisfaction is closely related to the quality of place and to the quality of service. Local residents who are highly satisfied and highly attached to the place do not want any changes. Only the residents that are highly attached to the place and are not satisfied with it will try to change it (Farnum et al. 2005). But this survey results reveal an interesting attitudes and intention of the local people. Around 78% (see, Table-3) residents want more change and development of the place, whether they are highly satisfied or not. As expected, residents or individuals are likely to participate in an activity that provides benefits from it and exceeds incurring costs, become very supportive of tourism development. But the survey results imply that overall residents are more devoted to their community and having a good sense of place tended to think that tourism would bring more benefits for them in future. They are agreed to sacrifice their present costs in expectation of better gaining in future through the development. From the data analysis, it is seen that the positive perceptions of local residents and their confidence in tourism, and attachment to the place help communities to enhance their support for tourism development.

From the survey results given in Table-1, it is found that in general perception, 68.92% respondents are satisfied with their present location of residents and remaining 31.08% are not. But while the level of satisfaction is examined referring the words – ‘high’, ‘moderate’ and ‘poor’, surprisingly significant results are seen from the table given below:

<table>
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<tr>
<th>Place satisfaction</th>
<th>Level of satisfaction</th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>Satisfied</td>
</tr>
<tr>
<td>100.00</td>
<td>68.92</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main reasons of place attraction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Proudnss of living area</td>
</tr>
<tr>
<td>100.0</td>
<td>41.22</td>
</tr>
</tbody>
</table>

It is seen that 39.19% respondents are highly satisfied with their present location of residents, whereas 25.0% feel moderate and 18.92% respondents expressed explicitly their poor mental satisfaction. Only 16.89% respondents are not quite satisfied. While the satisfaction level data of residents are examined, a slight deviation is observed. A small portion of non-satisfied (14.19%) respondents has been shifted to a poor satisfaction level showing their slight positive attitudes. It implies that they have some psychological impacts on their mental choice of place attachment or place fascination, which may define as the emotional bond of individuals to the living place. Additionally, to recognise the importance of place image of residents, some other corresponding questions were included in the questionnaire thinking that place image may be more suitable for capturing residents’ reaction toward the changes that to be inflicted by tourism development while the policy is implemented. It will be helpful in understanding tourists’ attitudes and behavior in the tourism literature. The table also presents the main reasons of place attraction.
The pride of the tourist place is seen the highest 41.22%, followed by 22.97% residents having a fascination to natural beauties while personal economic interest, i.e., self livelihood refers by 14.19% respondents, followed by 12.84% liking to crowding of arrivals from different areas & abroad, whereas both significant portions respectively 4.05% and 4.73% respondents refer good social neighbourhood and bond to their living place. It is interesting that total 64.19% respondents have much attraction to their living place due to pride & natural beauties and only 14.19% households mentioned their place attraction owing to economic interest, which seems very natural.

In the survey questionnaire, some questions were kept to investigate about the distance from the residents’ living place to the main tourist resort to understand whether there remains any obstacle to area development or dissatisfaction or necessary utility facilities available in the area or not. The basic reasons of residents disliking to further development have inquired into the study survey. The questions were asked the heads of households to assay their mental attitudes, whether it was positive or negative regarding the development activities initiative. Data in the table below depicts the attitudes of local residents:

Table 2: Residents’ living distance from the tourism resort and reasons of negative attitudes

<table>
<thead>
<tr>
<th>Distance of living area from the tourism facility location</th>
<th>Reasons for disliking the residents’ location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (100.0%)</td>
<td>Reasons for structural development support</td>
</tr>
<tr>
<td>Far-off place (&gt;8 km)</td>
<td>Total (100.0%)</td>
</tr>
<tr>
<td>Not so far (=8 km)</td>
<td>Far distance/bad location</td>
</tr>
<tr>
<td>Nearby the place (&lt;8 km)</td>
<td>Lacking of ancillary facilities</td>
</tr>
<tr>
<td>Within the area (within 5 km)</td>
<td>Hardship of livelihood</td>
</tr>
<tr>
<td>100.0</td>
<td>Threatening /helpless</td>
</tr>
<tr>
<td>27.03</td>
<td>Leave due to development</td>
</tr>
<tr>
<td>39.19</td>
<td>Noisy &amp; irritating</td>
</tr>
<tr>
<td>18.92</td>
<td>Others</td>
</tr>
<tr>
<td>14.86</td>
<td></td>
</tr>
</tbody>
</table>

A remarkable portion of residents (39.19) lives not so far (within 8 km away) from the resort area, while 27.03% residents live far-off places (more than 8 km) from the tourism area and 18.92% residents live nearby within 8 km from the spot. Only 14.86% residents live within 5 km of the tourist area. Although around one-third portions (30.40%) of total residents mention their dissatisfaction about their living area due to different reasons, the major portion (69.60%) is satisfied with their living place. The main reason of their discontent is bad communication & the location (10.81%), which is followed by 8.11% referring lacks of citizens’ proper ancillary facilities & amenities. A small portion (6.75%) of residents mentions their disliking the living place due to insufficient income ability. Both nominal portions of residents respectively 2.03% & 2.70% refer the local area is insured & environmentally backwardness.

As the local residents’ support & cooperation is inevitable for the development and sustainability of tourism in any country, similarly the necessity of understanding the residents’ views and the solicitation of such support has great importance for local government, policy makers and businesses (Dyer, Gursoy, Sharma & Carter, 2007; Lee, 2013; Nunkoo&Gursoy, 2012). Keeping the views in mind, some couples of questions were added to the questionnaire to examine the attitudes and perception of residents towards the tourism development initiatives. Moreover, to provide an insightful explanation and to make a clear understanding the level of support of local residents, analyse their positive or negative mental intuitions with proper explanation or reasons, questions were asked to the respondents directly whether they support the infrastructural development or not. Data in the table below presents that 77.70% respondents show their positive consentient and 22.30% express their negative attitudes toward undertaking of the local tourism development project. The main reasons of such negative attitudes of residents are referred as ‘beauty loss’ 7.43% and ‘property loss’ 6.08%.

Table 3: Residents’ attitudes and perception towards tourism infrastructural development

<table>
<thead>
<tr>
<th>Residents’ support for infrastructural development</th>
<th>Reasons for structural development support</th>
<th>Reasons of negative attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Irritating</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>Dirty &amp; noisy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Property loss</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Beauty loss</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Others</td>
</tr>
</tbody>
</table>
Among all residents holding the positive attitudes (77.70%), 41.22% respondents emphasis the ‘country's welfare’ & foreign currency earnings and 12.84% think ‘more change more development’ of the local area. On the other hand, 10.13% residents give importance on the rise of their incomes and only 2.70% expect ‘easy & better communication’. The analysis indicates that majority of local residents’ attitudes are favourable for infrastructural development initiatives.

4.3 Impacts of local residents’ length of living, mental values, attitudes and perceptions toward tourism

In different studies, it is seen that the length of residents’ living strongly influences the development process. Lankford & Howard (1994) suggest that the longer residents live in a destination, the more they opposed tourism development. Easterling (2004) suggests that residents living further away from tourism facilities and attractions are less likely to have negative perceptions towards tourism than those who live closer to tourism centres. Further, Harrill (2004) suggests that residents who were more attached to the community were less likely to hold positive perceptions towards tourism impacts. According to Milan Ambro (2008), the local residents are deeply concerned about the quality of their life and for the quality of the environment. Considering all these aspects, some information on the ownership status, the length of residents’ living and the quality of main housing structures of the head of households were collected in the questionnaires to focus on housing status and the quality. The attitudes and behaviour of local residents, whether positive or negative to development concern, are not seen much the impact on the residents’ housing status and the length of living. Data on residents’ housing status and length of living are presented in Table-4.

Table-4: Residents’ ownership, length of living and attitudes of developmental change in percent

<table>
<thead>
<tr>
<th>Ownership of residents</th>
<th>Length of living in year of residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Owned</td>
</tr>
<tr>
<td>100.0</td>
<td>56.76</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resident agreed to development change</th>
<th>Consentient to area development change</th>
</tr>
</thead>
<tbody>
<tr>
<td>79.05</td>
<td>46.62</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Negative attitudes of local residents</th>
<th>Negative attitudes of length of living residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.95</td>
<td>10.14</td>
</tr>
</tbody>
</table>

From the table it is observed that 79.05% of residents want development changes of which 56.62% residents are household owners, 30.40% live in rented houses and remaining 2.03% are adopted/sheltered respondents of the locality live in the houses. All the residents those have shown positive attitudes to area development, among them the highest portion is seen 24.32% out of 29.73% residents who are living in the area from 6 to 10 years. Next the highest portion is 19.59% residents out of 22.97% living 3-5 years, followed by 14.19% and 8.78% residents and they are living in the areas respectively 1-2 years & 11-15 years. Only a half portion i.e. 2.03% out of 4.05% residents living more than 20 years has given their consent to development change, while 6.08% out of 8.11% households are agreed to development change and their length of living are only less than a year. It implies that in the tourism area, residents’ attitudes and behaviour are observed a little different compared to other studies. The highest negative attitude of residents toward tourism development is found 5.41% and they are living in the length of 6-10 years, followed by 4.06% in the length of 11-15 years living group.
From the analysis of data illustrated in Table-4, it is seen that a nominal portion from each group of the residents’ length of living and ownership status show their negative attitudes. But in percentage distributions in between the two groups, there does not find any significant difference and it is not consistent with the previous many other studies or cited conclusions. Among the corresponding array of data in percentages, the table presents no significant deviation. In fact, the inhabitants of Bangladesh are now in the emotion of dreaming to be a developed country and almost people are mentally prepared to welcome any initiative of developmental change in the country in exchange of any their sacrifice. A remarkable portion (79.05%) of residents’ positive attitudes is explicitly the evidence or example of their intention. From the data analysis, it seems that whatever the length of their living in the place, short or long, mostly the local people are very much concerned to their area development owing to the patriotic emotion for the country as the inhabitants of Bangladesh have been encouraged by the government for its growing economy anddreaming to be a developed nation.

4.4 Socioeconomic, cultural & environmental impacts and residents’ perceptions & involvement in the tourism

The tourism literature shows that economic, social, cultural and environmental benefits are the key factors affecting residents’ willingness to participate in an exchange or to oppose tourism development (Reisinger & Turner, 2003; Gursoy et al., 2002; Ng et al., 2007). The bigger the cultural distance, the greater the probability that interaction between hosts and tourists will lead to friction and misunderstanding (Sutton, 1967; Reisinger & Turner, 2003; Henderson, 2003) because the more likely they will distort the meaning of each other's behavior (Triandis, 1977; Reisinger & Turner, 1998). According to Fridgen (1991), the local residents’ anger, apathy, or distrust will eventually be conveyed to the tourists and may result in non-repeat visits to destinations where they feel unwelcome. The local residents’ reactions and other factors that influence the attitudes are essential in achieving the goal of favourable support for tourism development. Considering all these issues, this study was carried on to examine whether there is any impact on the behavioural attitude of local residents despite the greater cultural differences between hosts and foreign tourists, hosts’ acceptance & tolerance level towards the arrivals in the country, where Islam is the dominant religion (89% in 2011 census).

While data were collected interviewing the heads of households in Coxes Bazar & Saint Martin Island, careful steps were undertaken by cross checking information on the sensitive questions to reflect the exact image from the study. In the survey, an interesting picture is obtained from data analysis in Table-5 regarding the local residents’ attitudes and perceptions. It is seen from the table that more than 77% residents show their positive attitudes and express their perception of glowing feeling to the place for its special characteristics. On the other hand, only 22.97% residents somehow differ from others and they disagree with the main group. The positive impact is that they all feel proud (35.14%) for living in the resort area (Coxes Bazar) and its worldwide reputation, while 22.97% enjoy the place sharing its pleasant beauties, 10.81% get their better quality of life and 4.05% enjoy their higher incomes in the location. Some residents (3.38%) enjoy the place meeting with interesting tourists from country & abroad and 1.35% residents feel leisure attraction (1.35%) to the place. All these factors have positive impacts on to the local residents in the form of pride that provides a sense of personal growth for better understanding the globe. These positive attitudes may be explained by the fact that the mass tourism resort has become a close contact place for both the communities of the hosts and guests.

| Table-5: Local residents’ attitudes, perception and tolerance towards foreign tourists and reasons |
|---------------------------------------------------|---------------------------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Local resident attitudes to place                  | Reasons for the local destination proud for                                    |
| Total Yes No                                      | Total Famous location Pleasant beauties Better quality of life Shopping complex Leisure attraction Meet with interesting tourists Higher incomes |
| 100.0 77.03 22.97                                 | 100.0 35.14 22.97 10.81 0.00 1.35 3.38 4.05 |

MOVE 2017 5th International Conference on Sub-National Measurement and Economic Analysis of Tourism November 22 – 24th, 2017, Pamplona, Navarre, Spain
This study paper has inquired into the local residents’ tolerance limit to the foreigners as they are the main energy for the global tourism industry. Although the majority of the respondents (89.19%) has expressed indirectly that culturally there is a little difference between the hosts and the tourists by giving their positive consent of tolerance to the foreigners, only 10.81% residents feel embrace believing that there is a significant difference (Table-5). The reasons of their perceived feeling are revealed in Table-5 that out of the total 10.81% disagreed residents, 5.40% respondents have literally expressed their attitude of cultural differences between hosts and tourists, even while 2.70% respondents believe that the presence of foreign tourists are responsible for causing the country’s cultural erosion. The local residents who perceive a negative attitude towards the foreign tourists think that arrivals have led to rise the price (2.03%) of the local products and only 0.68% respondents blame the tourists for the increase of local crimes. According to the research of the National Institute of Statistics (ISTAT) of Italy, ‘crime and tourism seem to move in the same direction: low levels of tourism correspond to low levels of crime and vice versa’. About two decades ago, Coxes Bazar was a sleepy beach town and the place was attracted mostly by the country people who used to escape from their own busy, noisy & polluted city sights for recreational change for a while outside of their daily routine life. Presently, the entire landscape has been changed and turned into a panoramic view with hundreds of high-rise hotel buildings, apartment blocks and restaurants in the area. On the main beach itself, there are dozens of shops selling souvenirs, toys, clothes and fast food. Hotels and restaurants are being erected in almost every part of the town and in nearby beach areas as the construction boom continues. But they all are mushroomed not in a planned way. Still, there are many environmental hazards that act as the drawbacks of the town. Once it to be a developed one like other attractive sea beach sites of the world.

In now-a-days rapid urbanisation in developing countries like Bangladesh is causing the rapid loss of natural resources. At present, all developed countries have environmental laws, whereas most of the developing countries are still adopting it (Lee, 1995). Bangladesh initiated environmental impact assessment (EIA) guidelines in 1992. But it was formally introduced in 1995 and developed as the EIA rules in 1997. But the rules are not always executed and implemented properly. EIA is necessary to enable people to satisfy a better quality of life and provide a sustainable tourism development. To determine the environmental impacts on the local residents of Coxes Bazar, to collect data on their attitudes & perceptions about recent development activities in the locality, a few questions were kept in the questionnaire to focus on the environmental situation of the resort areas. In the last five years the development changes that have been noticed by the local residents are reflected in the table below:

<table>
<thead>
<tr>
<th>The most physical tourism development changes noticed by residents in the tourist resorts over the last 5 years</th>
<th>Is it planned way development ?</th>
<th>Residents’ opinion: major developer role in development activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>High-rise buildings/hotels</td>
<td>Shopping malls/food</td>
</tr>
<tr>
<td>100.0</td>
<td>64.86</td>
<td>20.95</td>
</tr>
</tbody>
</table>
The major portions (64.86%) of the local residents perceive that the tourism landscape has been occupied by the high rise hotel buildings/apartment blocks, 20.95% respondents think that the area has been occupied mostly by the shopping malls/food shops. On the other hand, 8.11% respondents conceive that resort developments are the main activities and only 6.08% respondents presume that the transport & communication is the main development sector. Mostly the residents (52.70%) think that the area development is done in a planned way, whereas 47.30% respondents do not think so. According to the local residents’ opinion, the tourism landscape development initiatives are undertaken by 45.27% public authority and 54.73% private developers. Actually, the development partnership was not confirmed through checking of the official records.

Tourism has the potential environmental impacts on residents because it brings people into closer contact with nature and the environment, which may lead to make inhabitants environmentally conscious in behaviour and practise the activities to protect & preserve the environment as well as create awareness about the value of nature. In the long run it is to be sustainable and helps incorporating the principles and practices of sustainable consumption for the tourism industry. This sustainable consumption again creates the consumers’ demand for products, which includes using innovative & improved production techniques time to time and provides services that indirectly minimizes the negative environmental impacts. In fact, it is a continuous cycle always evolving around the tourism and environment. To determine the environmental impacts on the local residents of Coxes Bazar and to collect data on their perceptions about the tourism resort, many corresponding issues are included in the questionnaire.

Table-7 below shows that nearly a half portion (46.62%) of the local residents does not have any proper idea about the deplorable impacts of the environment like pollution, noise and destruction of the natural ecosystems, while 53.38% residents have positive perception regarding the worst impacts of the environmental distortions.

<table>
<thead>
<tr>
<th>Perception about depletion on environmental impacts</th>
<th>Residents’ perceptions about the environment on Coxes Bazar sea beach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Yes</td>
</tr>
<tr>
<td>-------</td>
<td>-----</td>
</tr>
<tr>
<td>100.0</td>
<td>53.38</td>
</tr>
</tbody>
</table>

* = total 53.38% (sum of adding 24.32 & 29.06%) shows a positive perception and remaining 45.95% are negative perception.

Some questions were also asked to the residents about the environment of the Coxes Bazar tourism resort, particularly to know ‘how they will evaluate the current situation of the sea beach’. From the table it is seen that the total 53.38% residents’ express their positive perception, i.e., the sea beach is referred as pleasant & enjoyable (24.32%), while 29.05% residents seem it ‘moderate & not bad’. Among negative perceived residents, 19.60% respondents refer it as ‘dirty & noisy’ and 12.84% consider the beach as ‘not clean & attractive’. Some respondents hold a quite negative attitude mentioning that ‘over crowded (5.40%)’, ‘uncare & undisciplined (3.38%)’ and ‘unsecured & unsafe (4.73%)’.

In the tourism globe, ‘culture and tourism have a mutually beneficial relationship, which can strengthen the attractiveness and competitiveness of places, regions and countries (OECD report, 2009, OECD)’. In order to make a better understanding of cultural norms between hosts and guests, close cultural interaction is necessary to make the attraction of tourists towards the destination. Many tourist countries arrange a comprehensive cultural programmes, tourism products exhibitions and tourism festivals aiming to promote local cultures, folk-custom activities and entertainments to attract tourists. For achieving and maintaining a sustainable tourism development in any tourist destination, it is important to create a positive interaction between residents and foreign tourists. The quality of
interaction between them contributes to gather experiences and builds clear perceptions of the destinations. It has more positive impacts on tourist behaviour and satisfaction, which builds an intention to revisit the destination. There is no other industry more closely linked with cultural awareness except the travel and tourism industry. In Coxes Bazar, there has not yet been established proper recreational facilities attractive to travelling tourists, well-trained tourist personnel to guide the tourists and other attractive entertainment facilities such as qualitative shopping malls, movie theatres, theme parks, museums, etc, which all are necessary for the quality of interactions with foreign tourists. Bangladesh Tourism Corporation (BTC) arranges 'Beach Carnival' each year in Cox's Bazar, which has become a major tourist attraction and are participated by all ages of tourists from country & abroad. Sometimes, a few other visual programmes, fair and tourism products exhibitions are arranged by the local administration and other organisations. For collecting information about the local residents’ perceptions and interactions with foreigners, data were collected and results are illustrated in the following table:

**Table-8: Participation with foreigners at different cultural programmes attended in the last one year**

<table>
<thead>
<tr>
<th>Participation with foreigners in different cultural programmes</th>
<th>Programme attended in various functions</th>
<th>Types of cultural programmes attended by local residents in the last one year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>-------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>100.0</td>
<td>31.08</td>
<td>68.92</td>
</tr>
</tbody>
</table>

* = Some respondents attended both the programs.

From the table, it is seen that about one-third (31.08%) of the total residents have participated in the cultural programmes/functions with foreign travelers held locally during the last one year, while 68.92% residents do not participate any programme with arrivals. Among all programme attendants, only 7.43% respondents have participated in various functions regularly and 23.65% respondents join irregularly. The highest event of the annual beach carnival is attended by 25.68% local residents. Similarly, tourism products exhibitions are attended by 14.86% respondents, followed by 6.08% residents have interacted with foreigners at shopping centres.

**Analysis on Local Residents’ Involvement In Tourism Development**

**Residents’ economic involvement in the local tourism and poverty alleviation**

Tourism creates important opportunities to diversify the local economy and it offers better labour-intensive and small-scale opportunities than all sectors except agriculture (Tourism and Poverty Alleviation, UNWTO, Madrid, 2002). But the sector in Bangladesh has not been able to reap much benefit despite the immense prospects of the country development. According to World Bank report 2016, Bangladesh has been achieved the status of a lower middle income country with a per capita income of around USD 1400 in 2016. There are numerous reasons that stand as a hindrance to the development of the tourism sector of the country. The report of Travel & Tourism Economic Impact Bangladesh (World Travel & Tourism Council) 2017 reveals that the direct contribution of Travel & Tourism to GDP was 2.2% of total GDP in 2016 and it is supported directly by 1.8% of total employment. It is expected to rise further by 1.8% in 2017. The total contribution of Travel & Tourism to employment, including jobs indirectly supported by the industry, was 3.8% of the total employment in 2016 and expected to rise by 2.7% in 2017. It implies that the local infrastructure of the sector is left behind to be a developed as well. The tourism cities and towns of the country suffer in wanting of adequate number of good quality accommodation facilities, decent public transports, safe & secured roads, well-equipped hospitals and access to clean water. There is also much lag of hygienic foods and an uninterrupted access to electricity. In such an infrastructural condition of Coxes Bazar, the study paper included some questions to investigate the economic involvement of local residents in the tourism because, tourism creates important opportunities of employments for people directly diversifying the local economy
and it has also offered poor & marginal households to engage themselves suitably somewhere to produce additional goods & services according to the local needs. The paper presents that a remarkable portion of local residents is engaged in tourism activities for their livelihood. The breakdown of different economic activities of the local residents is shown in the table below:

Table 9: Resident economic involvement in the local tourism by type and activities

<table>
<thead>
<tr>
<th>Residents’ involvement</th>
<th>Residents’ participation and involvement in the local tourism activities by categories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 9 shows that 42.57% residents are involved in the economic activities related to local tourism, whereas the major portion (57.43%) of local residents is engaged in other than tourism sectors. By category of activities, it is found that the highest portion (15.54%) of residents is involved in hotels/restaurant/food services and the next to it, 11.49% residents are engaged in tourism business. A significant portion (6.08%) of residents maintains their livelihood by selling the tourism products like handicrafts, locally produced tourism clothes, arts, sea-coral goods, etc. in their shops. Only 2.03% local residents maintain their livelihood by providing recreational services, similarly 3.38% residents engage in transport services, whereas the same 2.03% residents are involved in recreational services and tourism development activities, respectively, and 1.35% respondents work as tourist guides/day labourer & other activities related to tourism. A very nominal (0.67%) portion of residents work as irregular, activities, which is not specifically mentioned in the questionnaire. Thus, the local tourism is playing an important role in the socioeconomic development and poverty alleviation in the destination area.

Tourism Sustainability In Bangladesh

Bangladesh tourism sustainability and foreign visitors’ perceptions

Sustainable tourism is a sense, comes out from the sharing of the responsibility to safeguard the world’s cultural & natural resources for future generations. It offers benefits to everyone, hosts & guests through making conscious by using resources in an area that can be preserved for the use of future generations for both locals and tourists following the principles in a systematic manner. Sustainable tourism maintains a high level of tourist satisfaction and ensures a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them (Sustainable Development of Tourism, WTO). Generally, for development & attraction of a tourism destination and maintaining its sustainability, the entire physical environment of the resort area has to be characterised with some basic qualities. According to Laws (1995), a destination’s primary resources consist of climate, ecology, culture and traditional architecture and the secondary resources that added are catering, accommodation, transport and activities. D.N. Lascu, A. Manrai and K. Monroe (1993) identified three broad dimensions differentiating the tourism potential are “necessities”, “attractions” and “environment”. These three dimensions are obviously important to Bangladesh for tourism sustainability. The country has around 50 tourist destinations and only a few of them are attractive to international tourists. These are Coxes Bazar (sea beach), Saint Martin (coral island) and Sundarbans (mangrove forest), which are attractive to foreigners for unusual characteristics. But the tourism development is lagging behind these sustainable dimension concepts. Overall the status & qualities of these tourist destinations are not quite satisfactory to foreigners. The Coxes Bazar resort has more than 400 hotels-motels (including different categories of hotels), guest houses, cottages and around equally the number of restaurants. But they all are not sufficient to capture the tourists’ rush during the peak season (October to April). According local tourism management authority, about 900,000 local & abroad visitors came to join the ‘Beach Carnival’ event at the end of December, 2017 whereas the accommodation capacity is one-third of the total. A sound environmental management and proper uses of resources can give the benefits to people and bring them more closer to nature & environment through making a consensus and creating awareness to the value of nature. To investigate the current status of the resort, some questions were included about services satisfaction of the foreign travelers and results are presented in Table 10.
It is observed from the table that 27.70% foreign travelers visited Coxes Bazar out of total foreigners and only 12.16% visited to Saint Martin Island, while 72.30% respondents did not visit none of these two resorts. Among visitor tourists, 40.74% tourists stayed one night in Coxes Bazar, 25.93% stayed 2-nights and 11.11% tourists 3-nights. Only 22.22% visitors did not stay at night and returned back the same day. On the other hand, none stayed more than 3-nights. Local services provided to foreigners were quite satisfactory to 40.74% visitors; while it was partially satisfactory to 48.15% and only 11.11% tourists were not satisfied at all with the services. In the study, the reasons of customers’ dissatisfaction are investigated and the results are presented in Table-10. The highest 31.71% tourists have expressed their dissatisfaction for overall mismanagement in the resort area, followed by 26.83% tourists mentions their dissatisfaction to improper management of environmental sites. Accommodation service facilities are not satisfied to 14.63% tourists, whereas equally the same portion of tourists, i.e, both 9.76% tourists express their discontent to improper maintenance of the sea beach & accuse to unsafe & unsecured tourist resort. The table also presents the tourists’ level of interactions with local people/residents. It shows that 21.62% tourists out of the visited tourists (27.70%) come in touch with the local people/residents anyway and 6.08% visitors either did not get the opportunity or they were unwilling to interact with the local people. But in Table-10, it was seen that almost foreign visitors (83.78%) in the country have informed that they enjoy the country hospitality, whereas only 16.22% tourists denied it.

**Tourism Policy in Bangladesh and Progress**

In Bangladesh, there are many unexplored and unutilised resources. The government has taken the tourism policy in 2010 to make the industry more efficient, effective and credible by achieving some objectives of making the sites environmentally sustainable through increasing employment and developing private initiatives (private partnerships) in the line with the government progress. For sustainable tourism, emphasis is given on infrastructural development in seven regions and site development is considered as the main driving force for attracting tourists and earning...
more. The government is also considering building tourist and entertainment village in Cox’s Bazar, an international-standard tourism complex and a five-star hotel in Sylhet tourist resort areas under Public-Private Partnership (PPP). Recently, a budget of TK. 100 crore (around USD 12.2 million) is allocated in 2016. The Ministry of Civil Aviation has set a target to increase foreign tourist arrivals from 90,000 to 1 million in Coxes Bazar (Tourism in Bangladesh by Kyle Haywood, The WORLDFOLIO) and hope to earn USD 200 million each year till 2018. The government has also planned to take more steps to revitalise the sector for increasing the number of tourists gradually through improving the facilities and expanding the eco-tourism resorts at different places of tourist interests across the country and creating awareness about it at local levels.

**Tourism sustainability: attitudes of the country people & foreign visitors relate to terrorism in Bangladesh**

Safety and security are the vital issue for the tourism industry because tourists are always attracted to areas with peaceful environments in which their lives cannot be at stake (Mayerowitz, 2012). According to Rucker & Upton (2007), civil unrest is a civil disorder, which is a form of a disturbance in the society. The success or failure of a tourism destination in any country largely depends on being able to provide a safe and secure environment for visitors. According to U.S. Congress (2000), tourists cannot to travel in areas where they will always watch their backs based on the political or civil turmoil. They prefer areas with stable governance that assures them of enough security throughout their holidays (Binchy, 2007, p. 41). Bangladesh scenario is found a little bit different in this study through analysing the attitudes of foreign travelers visited the country.

**Terrorism incidents and government policy**

Bangladesh is familiar as a moderate Islamic country and inhabitants are reputed for its warmth hospitality towards foreign nationals since ancient period. Suddenly the ruthless killing of 24 lives, including 17 foreigners at the Holey Artisan Bakery of Gulshan in Dhaka on July 1, 2016 by terrorists, has brought to a new reality for Bangladesh because, the terrorist incident came in the wake of a rising number of attacks targeted at foreigners and minorities, suggesting that the risks of political disruption have risen substantially over the past years. The nature of terrorist attacks by Islamist extremists occurred in Bangladesh by unlawful, violent force started attacking secular elements of the nation and the country first experienced an orchestrated and planned attack on a secular cultural body in 1999. Since then a large number of people were killed by terrorist attacks at different periods till 2016. They have undertaken diversified targets of killing to bloggers, preachers, academics, social & religious minorities, and foreigners aiming to compel the ruling party to create a sustainable space for the so-called Islamists in the political and social arena, and to abandon the ongoing trial of war crimes as the leading portion of them were directly involved in the war crimes. It presumes that terror tactics are also aimed at isolating Bangladesh from global and regional discourse.

As the terrorism in Bangladesh is not a consequence of poverty, inequality or social deprivation, it could not be rooted in the mass-population rather its seeds are artificially sown and nurtured by the vanquished political elements of the Liberation War, so that the acceptance of their terrorist activities is not supported by the mass population. Actually, the nature and trend of violent extremism in Bangladesh are often misperceived. Incorrect perception leads them to inflict the terrorism using religious emotion and faith. Although in the country, there are some lacks in the rule of law and good governance, despite the country is in progress towards the rapid economic growth with its workable democracy and sustainable governance. Meanwhile, the government has adopted tough measures to tackle the terrorism in the country undertaking zero tolerance policy. The insecurity or terrorism acts negatively on tourism development & its sustainability. Considering the situation, how much the country tourism has been affected by the terrorist attacks and having ability to bring the flow of international tourists in the country that has been dissected in this analysis through the collecting of data on the present tourism status of Bangladesh. In this connection, this paper examines carefully the foreigners’ perceptions, their attitudes to local residents and analyses their views on the global terrorism perspective, which findings are very significant for the world tourism development in a civil unrest situation.

**Global tourists’ perceptions, terrorism trap and Bangladesh incidents and government policy**
Globally tourists are more or less known the terror incidents in favour of satellite broadcasting worldwide. Tourists usually keep eyes on their favourite tourist destination countries ahead and consider couples of factors before set to outbound travel. In another study survey, it is seen that 87.16% tourists (author’s article-2, to be presented in Singapore tourism conference, Table-1) are found conscious about their safety & security and they consider many related issues, which act on their changing of attitudes, behaviour & decision-making matters because, “every tourist holds a different personality, attitude and perceives situations in different ways, therefore there is no one way to determine to what extent tourists perceive risk (Pearce, 2007)”. Generally the threat of terrorism at a particular destination is almost uncertain because no one can guess it in advance about the place or time of terrorist infliction. Only an upcoming and possible terrorist attack can be presumed partially by analysing the nature of earlier incidents and targets. In now-a-days, the place and approximate time and the level of catastrophe of a natural disaster risk can be predicted early by using special equipments, but terrorist attacks happen absolutely spontaneously. On the other hand, by nature “travelers are more likely to go to a destination, which in their perspective are ‘safer’ than others and only these will be considered seriously, while those perceived as risk will be rejected (Seddighi and Theocharous, 2002)”. The shocks of terrorism have been in-coming one after another and killing of civilians in different global tourism destinations, cities and towns are not only warnings about the message that more & more of the incidents are on the way. According to Thomas Baumert, professor of economics and statistics at Madrid’s Cardenal Cisneros University, ‘attacking the tourism industry is one of the objectives of jihadist terrorism’. The frequency of the attacks is creating a new situation of uncertainty to most of the travelers and it is going up gradually for example, in 1970 the number of terrorist attacks occurred only in one country and now it rose to 921 incidents only in 2017 (GTD) and spread to 108 countries. To understand the present terrorism sentiment of foreigners in Bangladesh on the global perspective, questions were included in the study survey and the compiled results are presented in the table below:

<table>
<thead>
<tr>
<th>Whether outbound travelers having any terrorism experiences anyhow earlier</th>
<th>Whether terrorism is a major barrier to the sound global tourism or not</th>
<th>Factor(s) given emphasis on positive thinking to ‘no terrorism barrier’ or partially barrier for the global sound travel &amp; tourism</th>
<th>Whether you travel to your destination choice despite the terror incident?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Yes</td>
<td>No</td>
<td>Total</td>
</tr>
<tr>
<td>100.0</td>
<td>18.24</td>
<td>81.76</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The survey results show that a small portion (18.24%) of outbound travelers has mentioned that they have some earlier experiences of terrorism anyhow, while 81.76% respondents do not have. Questions were asked to the respondents whether they think that the ‘terrorism is a barrier to world sound tourism or not’. The majority (68.92%) of the respondents have replied affirmative, but a significant portion (21.62%) respondents do not think so and only 9.46% travelers partially support it. Latter two groups of travelers were again asked, ‘why they do not believe or believe partially that the terrorism is a barrier to sound tourism’. Out of the total 31.08% respondents, 17.57% travelers mention to chose ‘secured alternative destination’, 4.73% suggest to ‘avoid red alert zone’ and 8.78% visitors think terrorism is the ‘global normal incident’ & nothing to fear. Questions were asked to this group again, whether they would visit their destination choice despite terrorist attacks or not. This segment of travelers has mentioned that they are more likely to travel despite being stricken by terror attacks and travel with the risk of it being possible again. This traveler group (8.78%) argued that ‘the incident may occur at any place even in their own country of residence because worldwide people die more in number everyday than terrorist attacks’. They think that ‘usually tourists are more afraid of terrorism, but there are many other unknown risks or incidents lie in witness to kill us every day rather than terrorist attacks’. The earlier ‘no’ barrier group respondents believe (21.62%) that they don’t know when, how & what degree of risks will be attributed to them to take away lives in gruesome ways, for examples, plane crash, road accident, heart disease & stroke, shark attack, etc. Among ‘yes’-barrier group (68.92%),
some of them (10.81%) have passed comments that they are more afraid of human-made dangers than those of with natural causes of deaths, say, earthquakes, solar-radiation, Ebola virus and so on. According to the Global Bureau of Armed Violences 2011 (Geneva Declaration), ‘only 1 out of 10 violent deaths occurs in conflict settings or terrorist activities’. In percentage, ‘87.8% people are killed in non-conflict settings while only 12.2% are killed in conflict settings’. The report reveals that the total global death toll is 526,000, but less than half the deaths occur from road accidents. On the other hand, the current carnage kills ‘only’ about 3,600 a year. On an average world homicides rate (per 100,000 people) is 5.3% in 2014 (UN Office on Drugs and Crime’s International Homicide Statistics database). ‘Latin America has the world’s highest homicide hotspot (UNODC)’. From the World Health Organisation Factsheet Data (January 2017), ‘Of the 56.4 million deaths worldwide in 2015, more than half (54%) were due to the top 10 causes. Ischemic heart disease and stroke are the world’s biggest killers, accounting for a combined 15 million deaths in 2015’. In this survey, some travelers (4.73%) commented nicely, ‘we are more frightened the terror risks as we can see them directly from satellite TV channels, newspapers. They are new & unfamiliar to us than those we have lived with for a long time like other gruesome deaths everyday’. As tourism is very much sensitive and terrorism is concerned to panic, once the terror-fear will not shake the tourists’ mind being accustomed to the frequent incidents of the attacks, and gradually growing of the peoples’ hate to terrorism. The global tourists always like to enjoy the beauties of the globe & pleasures in mind rather than keeping unknown terror panic in the hearts.

The analysis implies that terrorism is not the main barrier for sound tourism development worldwide except some identified war-torn and bloody-conflicts tourist destination countries, which are now considered too dangerous due to high risks and bloody attacks. According to ITB report, ‘the recent terror attacks and political unrest had no impact on the overall volume of worldwide outbound trips this year (ITB WORLD TRAVEL TRENDS REPORT 2016/17)’. Actually, international tourists’ perception is slightly different from the peoples’ common perception. Potential tourists are experienced and their attitudes & outlooks are slightly different from the common perception. In this study survey to inquire about the foreigners’ intention, attitude and perception about the local people, questions were asked and the results are presented in Table-12 below:

Table-12: Foreigners’ perceptions, attitudes and feelings to Bangladesh

<table>
<thead>
<tr>
<th>Have you ever been in Bangladesh before?</th>
<th>How much you feel safe as a traveler in Bangladesh just after the recent terrorist attack?</th>
<th>What characteristics of behaviour you have noticed among the people of BD?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>-------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>100.0</td>
<td>14.86</td>
<td>85.14</td>
</tr>
</tbody>
</table>

Among all respondents, 14.86% foreigners visited Bangladesh earlier and remaining 85.14% came for the first time. At the airport all these departed travelers were asked about their ‘safe-feeling’ in the country. The highest 52.70% respondents do not feel ‘any fear’ throughout their stay and 12.84% foreigners feel ‘quite safe’. On the other hand, 21.62% respondents sometimes ‘feel timorously’ during their stay and 6.08% visitors feel ‘not so safe’. Only 6.76% travelers refrain from passing any comment. From the analysis, it is found that around one-third (65.54%) of total respondents express their positive perceptions about their safety, while 27.70% travelers (adding 6.08% & 21.62%) mention their mixed attitudes and remaining a nominal portion (6.76%) of respondents show their negative attitudes. In this study survey, questions were asked directly to the travelers to know whether they have noticed any annoying behavioural characteristics of the country people or not. The majority of visitors (72.30%) mentions the attractive hospitality of the country people and 16.22% respondents refer them as ‘friendly people’. A little portion (6.08%) of respondents is feelt the country people are cooperative and 5.40% think people hold caring attitude. No
travelers observe any annoying attitude of the local people. This positive relation between hosts & guests implies a good sign for tourism development in the country.

A good relationship between local hosts and tourist is essential for the long term development of tourism destination (AP and Crompton, 1998). The relationship between host community and tourists is mainly affected by the socio-cultural impacts that are caused due to tourism development (Smith, 1995). But the most complicated problems that are associated with tourism development are inherent in the relationship between local residents and tourists (Reisinger & Turner, 2003). Generally, the quality of relationship may find from the status of interactions between the two groups and the frequency of interactions. The study paper has inquired into the quality of relationship between the local people and travelers. The results are shown in Table-13.

### Table-13: Foreign travelers’ participation in the local culture events and limits of interactions

<table>
<thead>
<tr>
<th>Did you enjoy any cultural/local program</th>
<th>Foreigners’ interactions with the local people by category#</th>
<th>Frequency of interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National festivals/rallies</td>
<td>Open street concert</td>
<td>Enjoy local play/drama</td>
</tr>
<tr>
<td>24.32</td>
<td></td>
<td>Cinema/movies</td>
</tr>
<tr>
<td>12.34</td>
<td></td>
<td>Family/personal connect</td>
</tr>
<tr>
<td>4.73</td>
<td></td>
<td>Shopping centres</td>
</tr>
<tr>
<td>4.73</td>
<td></td>
<td>Others (business/office)</td>
</tr>
<tr>
<td>8.78</td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>16.22</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>6.08</td>
<td></td>
<td>1-3 times</td>
</tr>
<tr>
<td>100.0</td>
<td></td>
<td>4+</td>
</tr>
<tr>
<td>34.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.95</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*In Table-11, data are provided from the survey-1.  # = Sum of the figures are not equal to 100%

From the table it is observed that a noticeable portion (65.54%) of foreign visitors enjoyed the cultural association with the local people despite the last terror incidents in the country. Around one-third (34.46%) of total respondents did not get opportunity to join any cultural/local programmes. A significant portion (24.32%) of travelers participated the country’s national festivals/rallies during their stay in Bangladesh, whereas 12.34% respondents joined in the public/street concert, only 4.73% enjoyed local cinema/movies. A remarkable portion (16.22%, 24) of travelers mixed with local people and talked at the shopping centres and 6.08% came in touch with local people at business centres/offices. The number of frequency of their interactions with local people is seen 44.59% and 20.95% tourists at 1-3 times and 4+ times respectively. After 8 months of the Holy Artisan Bakery incident on 1 July 2016, the survey was carried out at the airport. There were some restrictions on the foreigners’ movements in Dhaka city just after the attack despite the picture was obtained during the study survey at the end of February 2017.

### Concluding Remarks

1. From the detailed analysis of the survey results, the study paper shows that the economic involvement of local residents in the tourism creates important opportunities of employments for local people directly diversifying the local economy and it has also offered poor & marginal households to engage themselves suitably somewhere to produce additional goods & services according to the local needs. The paper presents that a remarkable portion of local residents is engaged in tourism activities for their livelihood.

2. The study paper shows that cultural incidents are very much important for the acceptance and creating a good interaction with foreign tourists and the local residents. The perception of tourist's behaviour has been affected much by the decent behavioural attitudes of the local residents as they are closely connected with the tourism. Both socio-cultural interactions of hosts and guests create a positive perception among outbound travelers.
3. Generally, the economic benefit of local residents' is varied with personal benefit, business benefits and community benefits, which are essential to do support for tourism development. In this survey, the country local residents are seen more inclined to country patriotic feelings, which is found above all their personal economic interests. Local people want more change for the country development and they are willing to scarify their personal/economic interests for the sake of the nation’s development. This intention of local residents favours more tourism development and its sustainability.

4. From the analysis of the survey results, the country local residents are usually found more cooperative and hospitable to foreigners and it encourages and attracts travelers much to visit Bangladesh despite recent terrorism incidents. The overwhelming warm hospitality and the degree of local residents’ cooperation in the tourist destination places and overall friendly attitudes of local people have great influences on foreigners and development of tourism in a tourist destination. It may minimise the fear of further terrorist attacks, encourages potential travelers to revisit the country, which are found significant factors for a sound tourism growing in any country despite the isolated incidents of terrorism.

5. The anti-terrorism role of the government and security measures ascertain the foreign tourists’ arrival in the country as they are primarily concerned about the nature of worldwide terrorist attacks and other affected regions. Potential travelers are well-known about the red alert areas and they avoid it for security reason. After a certain period the tourists are willing to forget the incident of isolated terrorism to a particular destination and it becomes less important to them. The paper presents all these findings. It may be one of the reasons for increasing the number of tourists worldwide despite the terrorism incidents all over the globe. According to ITB Travel Trend 2016/17 report, ‘the recent terror attacks and political unrest had no impact on the overall volume of worldwide outbound trips this year’.

6. The research paper presents that despite fatal hits in Bangladesh on 1 July 2016, a significant portion of outbound tourists has taken it as normal. This segment of travelers is more likely to travel despite being stricken by terrorist attacks and travel with the risk of it being possible attacks again because they are aware of the terrorism. The survey results present some vital issues – ‘the socioeconomic involvements of local residents’, ‘their soft attitudes &behaviour’, ‘safety & security’ and ‘local residents warm hospitality’. All these factors are found important to outbound travelers as well as for the host country and the tourism sustainability because it will help to pave the way and create more economic development opportunities for the local residents. It may attract more tourists to visit/revisit the destinations despite the isolated terror attack in the country.

7. Considering the global tourism situation and receiving more tourists, many tourists receiving countries have undertaken a lot of efforts in creating interesting & appealing images and broad awareness in the country. For tourism development & succession of receiving more tourists, worldwide many countries make a compactness or business deals or enhance regional cooperation among themselves. It offers them creating great opportunities for enabling environment for easy travel and tourism development to contribute to wealth, sustainability and better understanding and cooperation across borders. The present global tourism reality has been changed. Outbound travel from Africa, the Middle East and Asia-Pacific is expected to grow exponentially in the coming decade because, governments for the most part around the world can realise that the barriers to travel are not making people and countries safer, rather they are hindering economic growth, job creation and tolerance between countries. So they bent on to cooperate each other in all possible ways.
Conclusion

As the tourism is considered as one of the world’s major and rapidly developing industry of the modern world, for any country the tourism is capable of having a significant influence on economic development. It can add also the extra value for the Bangladesh economy. However, such influx of tourists can only be achieved amidst proper usage of effective marketing plans and to have a long term oriented growth strategy. While most of the neighbouring countries in South Asia and South East Asia have already been successfully operating their tourism industry. Bangladesh is still quite a fresh tourism destination. Bangladesh has an enormous potential to develop tourism primarily because of its attraction unadulterated natural beauty, which can be experienced all throughout the land. A healthy tourism industry, encompassing our entire population to rise up and get noted on a global level to show how far we have developed as a nation. Investments from both public and private levels are required for the tourism sector along regional cooperation amongst relevant stakeholders can bring extraordinary benefits to Bangladesh Tourism Industry.

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