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**Modeling economic monitoring systems of tourism  
impacts at the sub-national level**

**P. Modica<sup>a</sup>, A. Capocchi<sup>b</sup>, I. Foroni<sup>b</sup>, M. Zenga<sup>b</sup>, E. Scanu<sup>a</sup>, S.  
Aledda<sup>a</sup>**

<sup>a</sup>University of Cagliari-Italy, <sup>b</sup>University of Milan Bicocca-Italy

**Dipartimento di Statistica e Metodi Quantitativi**  
Università degli Studi di Milano Bicocca  
Via Bicocca degli Arcimboldi, 8 - 20126 Milano - Italia  
Tel +39/02/64483103/39 - Fax +39/2/64483105  
Segreteria di redazione:  
Andrea Bertolini

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# Modeling economic monitoring systems of tourism impacts at the sub-national level

P. Modica<sup>a</sup>, A. Capocchi<sup>b</sup>, I. Foroni<sup>b</sup>, M. Zenga<sup>b</sup>, E. Scanu<sup>a</sup>, S. Aledda<sup>a</sup>

<sup>a</sup>University of Cagliari-Italy, <sup>b</sup>University of Milan Bicocca-Italy

*Keywords:* Sustainable Regional Tourism; Destination Governance; Stakeholder Approach; Municipal Economic Monitoring Model; Southern Sardinia.

## 1. INTRODUCTION

This paper aims to provide a managerial perspective to the international literature debate regarding sustainable tourism destinations. The globalization of economic dynamics and the standardization of tourism demand drives destinations that are not part of the main tourist systems to plan and create alternative strategic and managerial models in order to attract the incoming flows worldwide. This is the case of many Italian destinations which are not reached by the incoming international flows.

The contribution of this paper is provided through an Italian case study represented by Visit South Sardinia, an emerging Mediterranean local champion committed to sustainable tourism. Southern Sardinia has made much progress in the development of tourism while safeguarding nature and local identity in the last decades, and the success it has achieved in increasing the awareness of destination-based tourism stakeholders has already gained international and European recognition for its efforts conducted in the sustainability path.

In 2013, Southern Sardinia became an Early Adopter of the Global Sustainable Tourism Council (GSTC) criteria and indicators program. Upon selection, Southern Sardinia became one in a group of ten international destinations to demonstrate their pioneering initiatives and progress in sustainable management. In the period of 2013-2014, Southern Sardinia participated in the first pilot phase of the implementation of the European Tourism Indicator System (ETIS), which is promoted by the European Commission with the objective of defining a comprehensive tourism monitoring system for European destinations in order to maintain Europe standing as “the world’s number one tourist destination” (EC, Communication, 2010). When implemented in Southern

Sardinia, the two programs highlighted the high level of environmental and community-based sustainability, but also brought about the realization that the methods of management and monitoring tourism impacts were in need of improvements. In particular, tourism economic monitoring emerged as a real challenge to face in the short-medium term.

Using the South Sardinia experience as a case study, this paper aims to define a methodology that can be recognized at an international level, in order to support local authorities and minor destinations to design and implement alternative models of local economic development.

In this direction, considering the lack of fundamental economic tourism data at a local level in Italy (i.e. tourist daily expenditures, the contribution of tourism to GDP and aggregated enterprises performance data), the aim of the research is to provide an effective and simplistic model for measuring and managing the economic impacts of tourism at a sub-national level – Destination Management Organization/Municipality/Tourism industry.

The two main questions the paper aims to address are: 1) Which model for collecting and correlating fundamental tourism economic data at local level can be appropriate for informing a decision-making process? 2) Which economic indicators are fundamental for monitoring and managing economic impacts of tourism at the sub-national level?

This investigation, in a managerial perspective, is based on an inductive methodology focused around the Southern Sardinia experience.

The key role that destination stakeholders play in the decision making process was a crucial factor to this study's focus on a systematic and cooperative approach in managing and monitoring sustainability at a local level. The stakeholder theory is considered in this study as a theoretical framework that allows to build a possible model for economic monitoring that composes different stakeholders interests. Literature on tourism indicators systems and related data modeling systems are also considered.

## **2. BACKGROUND**

Visit South Sardinia is a recently founded Destination Management Organisation (DMO) that is comprised of five municipalities in Southern Sardinia (see Figure 1), including the city of Cagliari – Capital of Sardinia – and four consortia representing the private sector in the destination.

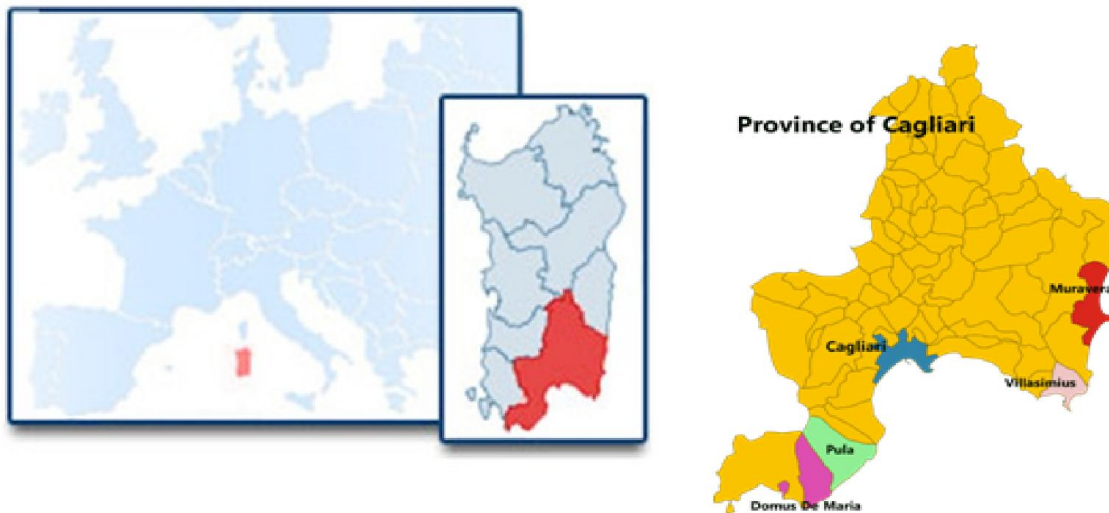


Figure 1. Map of the Province of Cagliari, Sardinia, including the five municipalities of the DMO, Visit South Sardinia.

The following section outlines general features of the destination. South Sardinia has a total area of 473 square kilometers and is characterized by a rocky coastline spotted with sandy and rocky beaches. South Sardinia is also characterized by the presence of large floodplains that support a wide range of agricultural activities, and four large hilly areas where historic districts are located. It is also important to note the presence of wetlands, such as ponds and lagoons. The Mediterranean climate is characterized by mild winters and hot and dry summers. The population density is 395.35 inhabitants for square kilometer but this varies considerably between the different municipalities. Tourism is a key economic driver. In 2013, total annual visitors were 2,032,946 , 1,183,921 of which were domestic tourists.

In regards to the attributes that characterize the destination, it is important to stress that Visit South Sardinia is rich in tourist attractions. The natural, historical and cultural attractions are the destinations largest strengths. Its sea and famous beaches are central to its strong international image. The destination is also home to schools, a university and various tourism infrastructures, such as hotels and other tourism-related businesses. There are 185 hotels of varying sizes (30 with more than 100 rooms, 62 with 25-99 rooms, and 93 with less than 25 rooms), with a total of 24,724 beds. Furthermore, there are 602 other accommodation providers (mostly B&Bs) that provide an additional 15,637 beds. In regards to the destinations accessibility, there are important roads, railways, ports, and an international airport that provide entry points; however, due to the territorial characteristic of the destination transportation costs are very high, It is possible to

classify the destination in a medium price range in the tourism market but tourism package options are available at various price points. Still, transportation costs have a significant impact on tourists' decision to visit the destination.

The DMO is actively engaged in sustainable tourism initiatives and wishes to tell the story of its tourism by tracking its progress over time through international recognized standards.

In Spring-Summer 2013, Visit South Sardinia participated in the Global Sustainable Tourism Council (GSTC) international assessment program for tourism sustainability. The GSTC is an international organization endorsed by the United Nations (UN), the United Nations World Tourism Organization (UNWTO) and the United Nations Environment Programme (UNEP). It is considered the main world authority in defining standards of what can be considered sustainable in the travel and tourism industry. An on-site evaluation was conducted by a third party organization, Sustainable Travel International. The assessment was based on 40 criteria and 81 indicators related to four pillars of tourism sustainability: Destination Management; Social and Economic Benefits; Cultural Heritage; and Environmental protection.

The DMO also underwent the challenge of implementing the European Tourism Indicator System (ETIS) for sustainable destinations, which was launched by the European Commission at the beginning of 2013. From July 2013 to April 2014, Visit South Sardinia participated to the first pilot phase of the implementation of ETIS. The ETIS system is made up of 27 core and 40 optional indicators related to four sections: Destination Management, Economic Value, Social and Cultural Impact, Environmental Impact.

The difference between the GSTC program and the ETIS system is that GSTC measures the current status of the sustainable management of tourism, while ETIS focuses on monitoring the on-going development in the sustainability journey.

During Sustainable Travel International's evaluation and the ETIS pilot phase, it was noted that there was a problematic lack of existing data pertaining to different aspects of sustainability. Specifically, there appeared to be a significant lack of economic data, which is vital for the future and prosperity of the tourism destination in Southern Sardinia.

### **3. THEORETICAL FRAMEWORK, LITERATURE REVIEW AND PROPOSED MODEL**

#### *The Managerial Perspective*

In international literature, several studies deal with different perspectives around the issue of sustainable and regional tourism, and governance and measurement of the economic and social impact of tourism.

This paper does not aim to plunge into a lengthy debate over the definition of sustainable development; it aims to put forward a methodology that is able to define a model for supporting local authorities in the construction of public policies to bring about a better quality of tourism and quality of life in tourism destinations.

The considered managerial perspective allows to collect and link elements that interact and continually affect each other over time, while moving towards a common purpose (after Senge et al., 1994 in Kelly and Baker, 2002). This perspective encourages thinking about cause and effect and inter-relationships between elements. It is very important to approach the issue of sustainability at the regional level in an innovative way.

Whilst this holistic approach of measuring sustainability is valuable, in recognizing that “sustainability is not determined by single components” (Ko, 2005: 436), system theorists are still struggling to suggest a methodology for linking cause and effect in complex systems to adequately analyze direct, indirect and flow-on effects of any one action, and to deal with multiple, tiered temporal and spatial scales.

### *The Measurement*

The managerial perspective needs to define how it is possible to measure the impact of tourism on territories as economic and social phenomenon.

It has been long-since recognized that there is a need for monitoring to ensure a sustainable programme moving towards sustainability. Butler (1998: 16) goes as far to say that without the implementation of monitoring tools, “the use of the term ‘sustainable’ is meaningless”. In 1996, a meeting held in Bellagio, Italy ([www.iisd.org](http://www.iisd.org)) took this matter to heart, concluding with a set of principles for gauging progress towards sustainable development.

The Bellagio Principles express the need for indicators and standardized measurements. Similarly, Agenda 21 in providing an ‘action plan’ for implementing sustainable development at a local level, also highlighted the importance of monitoring progress, and makes explicit reference (in chapter 40) to the use of indicators for sustainable development (UN, 1993). Indicators are far from a new phenomenon; they form the basis of many of our decisions on a daily basis. However, Miller (2001) provides an encouraging argument that: “Although it seems paradoxical to develop indicators for

sustainable tourism when no satisfactory definition of the concept exists, the process of developing the indicators does help in determining the important tenets of the concept.” (Miller, 2001: 361). As Stoeckl et al. (2004) suggest, one can't measure sustainability; therefore indicators can only provide an indication of change and will only ever be partial.

It is important to note that indicators are not intended to accomplish the required change, but rather they act as catalysts for change, providing an 'early warning system', flagging up areas of concern and thus enabling decision-makers to initiate the necessary policy changes and remedial measures. Indicators of sustainable development should provide a continual assessment of the overall sustainability of a system and the indicators themselves will require constant review and updating over time as changes occur. Therefore, implementing indicators is a dynamic process.

#### *Value for stakeholders and value for destinations: the Stakeholder Theory*

Monitoring tourism economic impacts on destinations can be developed through the perspective of the Stakeholder Theory, a diffuse managerial, descriptive, normative and instrumental theory. The theory was applied initially to the business context and considers the management of different business stakeholders and their interaction as central in defining organization aims. Stakeholders are groups or individuals which depends on the company for the realization of their personal goals and on whom the company is dependent (Freeman, 1984). Later, principles and concepts of stakeholder theory were extended to tourism destination management, especially in the context of sustainable tourism development. Indeed, the theory can contribute to explain and regulate relationships between tourism actors at a destination level (Ryan, 2002). Moreover, the definition of sustainable tourism necessarily involves a reference to the stakeholder concept. Sustainable tourism should “make optimal use of environmental resources, respect the socio-cultural authenticity of host communities, providing socio-economic benefits to all stakeholders. Sustainable tourism development requires the informed participation of all relevant stakeholders ... and also should maintain a high level of tourist satisfaction” (WTO, 2004). In particular the notion considers the economic development and its impacts closely related to the community welfare, tourism experience value and environmental protection. In this sense, community, tourists and the environment can be considered stakeholders involved in the sustainable development of tourism destinations<sup>1</sup>. Different disciplines are involved in the definition of stakeholders in the tourism

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<sup>1</sup>According to the WTO definition (2007) the destination is a physical space in which the visitor spends at least one overnight. It includes tourism products such as support services and attractions, and tourism resources within one

context (Aas, C. et al., 2005; Hardy A. et al., 2002; Medeiros de Araujo, L. and Bramwell, B., 1999), and specifically in sustainable tourism (Currie, R., 2009; Robson, J. et al., 1996; McKercher, B., 1993). Sautter and Leisen (1999) identify workers, local enterprises, residents, tourists, local authority, competitors, international chains and activists. Byrd (2007) identifies two stakeholders: community and tourists in the current and future. The World Tourism Organisation identifies the tourism industry, environment, and community as stakeholders involved in sustainable tourism development in destinations. Each group has a different approach to tourism development and has differing needs and conflicting interests and expectations: the tourism industry aims for the maximization of economic performances; environmentalist organisations aim to protect and defend the environment and natural resources; and the community aims to promote social welfare. Sustainable development can be obtained through the involvement of all stakeholders in the planning process of tourism development (Ioannides, D., 1995; Briassoulis, H., 2002; Robson J. et al., 1996), when all their different goals are respected and considered.

In the perspective of Stakeholder Theory, economic activities affect all the different stakeholders positively or negatively. Economic activities can benefit owners and shareholders, but can also produce positive or negative effects on workers and the local community. They can generate revenues and costs for public administrations and produce value for tourists. Monitoring tourism economic impacts represents a condition that is fundamental to assessing how and how much tourism affects all stakeholders in destinations.

### *The Assessment of the economic impact of Tourism*

In order to assess economic effects of tourism activities on destinations, different international organisations elaborated monitoring systems of economic impacts and performances considering all potential stakeholders in a tourism destination.

In 2004, The World Tourism Organisation presented a guidebook for tourism destination in which Indicators of Sustainable Development are outlined and grouped according to specific issues. For each indicator, the reason for its use, the source of data, the means of using the indicator, and benchmarking data are provided.

Economic impacts of tourism in destinations are considered a baseline issue for sustainable tourism development. A specific section of the guidebook entitled Community and Destination

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day's return travel time. Physical and administrative boundaries defines its management, and images and perceptions defines its market competitiveness.



Economic Benefits is organized. The aim of the section is to ascertain if tourism is creating value in a destination and to evaluate the return of investment in tourism, expressed in term of direct and indirect jobs created, tourist spending, taxes from tourism businesses, and asset value. Alternatively, the section also aims to assess if tourism is creating negative externalities like the increase of cost of living or changes in residents' lifestyle. The components of the issues are employment, business investment in tourism, tourism revenue, community expenditures, net economic benefits, and change in cost living. The subsection on Employment aims to assess the measure of tourism employment against total employment and the characteristics of tourism jobs in regards to wages, gender, residence of employees and contract conditions. The subsection on Business investment in tourism ascertains if tourism businesses and investments generates economic value for the community. The subsection on Tourism revenue collects typical tourism indicators like tourism arrivals, tourism expenditure, occupancy rate of tourism accommodations and revenues from fees, taxation and licenses. The rest of the subsections assess the impacts of tourism on community in regards to the expenditure for tourism incurred by locals, the cost of living and the impacts of tourism to other local activities. Some of the indicators contained in this section are suitable for Tourism Satellite Accounts, such as: tourism contribution to local gross domestic product (GDP), the number of jobs created by tourism in an economy, the amount of tourism investment and tax revenues generated by tourism and tourism consumption.

The European Commission recently developed the European Tourism Indicator System for Sustainable Destinations (2013), which provides a toolkit for implementation. The toolkit is organized into four sections, one of which is dedicated to economic value and contains core and optional indicators that make it possible to determine economic impacts of tourism in destinations. Indicators are grouped depending on five criteria: Tourism Flow at Destination; Tourism Enterprises Performance; Quantity and Quality of Employment; Safety and Health, and Tourism Supply Chain. The section in particular outlines how to collect data and information about the contribution of tourism to economic sustainability, that can reveal statistics on local tourism trends such as number of tourist overnights per month, daily spending per tourist, average length of stay of tourists, occupancy rate, direct tourism employment ,relative contribution of tourism to destination's economy as percentage of GDP, average price per room in the destination and percentage of jobs in tourism that are seasonal.

The Global Sustainable Tourism Council (GSTC) also designated a section of the *Global Sustainable Tourism Council Criteria and Suggested Performance Indicator for Destinations* (2013) to indicators

for the assessment of social and economic benefits for the host community that are derived by tourism. Through indicators which capture visitor expenditure, revenue per available room, employment and investment data, the section monitors if tourism contributes economic benefits to the destination's economy.. The approach is different than that of the WTO or ETIS monitoring system. The GSTC system is created to verify the state of sustainability of a tourism destination, the areas that need improvement, the areas in which a destination is excelling and which goals have and have not been achieved. For this reason the indicators contained are aimed to assess if a destination monitors different aspects of sustainable tourism development, considering collectively the environmental, economic, social, cultural, quality, health, safety, and aesthetic issues.

Similarities between the three systems exist; some indicators are shared and many of the issues considered are the same, including: the contribution of tourism to GDP; the characteristics of tourism employment; the return of tourism investment on the local community or business owners; the performance of accommodations, expressed in terms of revenue or operating efficiency; and tourism seasonality and its effects on employment, enterprises performance and destination management. WTO and ETIS monitor systems have the same end goal, but ETIS is more simple and allows for the selection core indicators that are well distinguished from optional indicators. Furthermore, the process of implementation of ETIS system is explained clearly. GSTC monitoring system is a qualitative system that has different aims and can therefore be considered a complementary system of the other two.

### *Economic Indicators in a managerial perspective*

The measurement of the tourism impact – either economic or social – on territories is very important to support a managerial approach to creating public policies that include all the players which are part of the tourism system.

At the national and international level, there are several recognized methods – WTO, ETIS and GSTC – which support national governments in their decision-making process.

At the local or regional level, implement these methods to form a Tourism Satellite Account (TSA). Interest has grown over the years in adapting the TSA model to sub-national geographic areas for a number of reasons as noted in TSA:RMF 2008, Annex n. 8. The main reasons are represented by:

- ✓ The decentralization of political power, decision-making and management of public resources.
- ✓ The role of tourism in rural or minor destination for economic and social development.
- ✓ The unequal distribution of tourism activities within many nations.
- ✓ The labour intensity of the tourism sector which relates to need to measure the productivity of employees.
- ✓ The seasonality of tourism in many regions.
- ✓ Tourism-related business interest in linkages among productive activities.

The specific economic consequences of tourism activities in a national or sub-national area that have been distinguished in various studies are as follows: i) Business Receipts; ii) Employment; iii) Labour Earning; iv) Other Factors Earning; v) Government (Central or Local) Tax Revenue and Other Government Revenue; vi) Government (Central or Local) Spending; vii) Business Investment; viii) Value Added or Contribution to Gross Domestic or Regional Product.

Other studies are focused on visitor spending and visitor consumption: these are very important because they have a direct impact on the economic and social consequences of tourism activities.

In the international literature on this subject, a number of different methods have been developed to estimate the economic consequences of tourism, including regional tourism impact models, cost-benefit models, input-output models and the computable general equilibrium model (Croes and Severt, 2007). Many of these methods have been focused mainly on national economies. Indeed, the TSA has been defined only for national economies. This is the main reason this paper aims to follow an inductive methodology to define a model to measure the social and economic impact of tourism at the regional level.

The presence of visitors and volume of their consumption in a territory; the response of businesses, governments and other suppliers; and the business investment in plants and equipment required to serve future visitors raises important issues for a number of stakeholder groups active in many areas involved in tourism trips. Accurately measuring the economic and social consequences of visitors can shed light on the following issues for the stakeholder groups in a sub-national area:

For public players, the main issues are: i) benefit to residents of investing in tourism promotion; ii) benefit to resident of investing in tourism facilities; iii) benefit to residents of investing in tourism-related infrastructure; iv) importance of salutary visitor policies; v) value of partnership with business; vi) returns on investment in tourism development.

For business owners and managers, the main issues are: i) value of government funding of tourism promotion and development; ii) value of partnerships with the government and other businesses; iii) extent of the network of tourism industries; iv) returns on investment in the past and future.

For employees of tourism establishments, the main issues are: i) role in contributing to economic health of the community; ii) career opportunities in tourism industries.

For other residents or host communities, the main issues are: i) value to the community of receiving visitors; ii) returns on government funding and beneficial policies.

The implementation of TSA at the regional or sub-national level faces many of obstacles: i) there is no conceptual framework specified for sub-national levels; ii) some measures of tourism's economic contribution at the national level are not transferable to the sub-national level; iii) the dearth of acceptable statistical information useful to elaborate the TSA for many sub-national areas; iv) the differing and distinctive characteristics of tourism demand and supply for individual regions.

In this framework, the role of this paper is to combine managerial perspective with statistical evidence.

### *International Models/Systems*

The TSA (Commission of the European Communities et al. 2010 TSA: RMF 2008, United Nations and World Tourism Organization 2010 IRTS 2008) is the culmination of research for measuring tourism's direct economic contribution in a national economy and for moving onto project the indirect and induced economic effects of tourism.

The TSA analyzes in detail the interdependence and relationships between visitor activities and other economic activities by comparing tourism demand with the total supply in an economy. The TSA: RMF 2008 and IRTS 2008, adopted by the United Nations in March 2008, are now accepted worldwide and the main components of the TSA: RMF 2008 are included in SNA 2008 (Ch. 29) as an example of a satellite account. The European Union's regulation was recently adapted with regard to TSA (European Union, 2011).

Hence, it seems reasonable to consider some of the concepts and methods introduced in the TSA project to classify and measure the significance of tourism activity in a local context as well.

As Jones et al. observed in their review on the development of sub-national tourism satellite accounts (see reference) "The various methodological statements on construction of TSAs on a national scale provide little guidance however on how to proceed in developing sub-national

accounts.” As a consequence, different approaches have been undertaken to develop sub-national TSA frameworks in many countries.

A broad classification distinguishes them in ‘top down’ or ‘bottom up’ approaches, depending on the level at which the data is collected.

In Italy, the national TSA is the result of an agreement between the Directorate General for Tourism Policies and the Italian National Institute of Statistics (ISTAT). The first Italian TSA published in 2012 (Istat, 2010), has been realized by a working group composed by members of ISTAT, Bank of Italy, University of Messina, Ciset<sup>2</sup> and the National Tourism Observatory.

Along with the developers, the first Italian TSA would represent a prototype that aims to reconcile internal tourism consumption with domestic supply based on data produced by official sources such as: national accounts data, tourism surveys on “Occupancy in Collective Accommodation Establishments and Trips and Holidays in Italy and Abroad” made by ISTAT and the monthly survey, *International Tourism of Italy*, which conducted by the Bank of Italy.

Being far from complete, the Italian TSA estimates tourism consumption and only its direct economic contribution. Moreover, it does not mention the affect on employment.

The current incomplete status is not the only drawback that prevents the use of a top-down approach to deduce the tourism impact in the municipalities from the aggregated national estimates. In fact, another important issue concerns the difficulties encountered in sub-national data retrieval, as this information is not systematically gathered by official sources, and the weakness of the available national surveys that are necessary to estimate tourism demand for each area.

On the other hand, as pointed out by UNWTO in IRTS 2008 “Having more and reliable statistics is essential for policymakers to make effective decisions. Only with sufficient and adequate data that generate credible statistics it is possible to undertake different types of analysis of tourism. This is essential in order to evaluate the different aspects of tourism and to support and improve policy and decision-making”(IRTS 2008). As the experience of Visit South Sardinia taught us, this necessity becomes impelling in local economies where tourism activities represent a relevant economic resource.

Previous considerations made us aware of the necessity of developing a monitoring model that is easy to apply and sufficiently affordable to be implemented with continuity in sub-regional tourism destinations characterized by similar peculiarities. We have to mention that the development of

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<sup>2</sup>Centro Internazionale di Studi sull’Economia

our project rests on the awareness that the realization of a sub-national system of tourism statistics “would be greatly helped by the creation of a network of bodies, professionals and researchers that have experience and knowledge in the field of measurement and analysis of tourism activity at sub-national levels, as well as in tourism destination management” (Massieu, 2008).

In this direction, Table 1.aims to describe the main important pillars and the structure of the proposed model following the distinction among different typologies of stakeholders. Included for each category of stakeholder are: the economic activities articulated in “production-supply” and “consumption-demand”; the economic impacts with different meanings related to the each stakeholder classification; the economic indicators; and method and source required.

<i>Relevant Stakeholders</i>	<i>Economic Activities: Production-Supply Consumption-Demand</i>		<i>Economic Impacts</i>	<i>Economic Indicators</i>	<i>Methods/Sources</i>
	<i>Supply</i>	<i>Demand</i>			
<i>Private sector</i>	Revenues	External costs	Private added value (direct and indirect effects)	Contribution of Tourism to GDP (WTO- GSTC-ETIS)  % of Tourism enterprises actively taking steps to source local sustainable and fair trade goods and services (ETIS)  Occupancy Rate Average price RevPAR (WTO- GSTC-ETIS)  Number of second homes per 100 homes (ETIS)	Company search, i.e. Amadeus Tourist Survey  Enterprise Survey  Province Database Tourism Enterprises Consortia/ Associations Survey  Municipality Survey

<i>Public sector</i>	Tourism revenues	External costs for tourism services	Public Added Value	Annual expenditures on tourism (% of total tourism revenue) Tourism revenue: Second homes taxation, eco-taxes, user-fees, transfers from public administrations, funding and donations (WTO)	Municipality Survey
<i>Community</i>	Salaries	Induced demand	Social Value	Direct tourism employment/total employment (ETIS- WTO)  Average tourism wage/average wage in community (WTO)	Labour Agency Survey  Company search, i.e. Amadeus
<i>Tourists</i>		Tourist demand	Tourist Demand Value	Daily Spending per tourist Average length of stay Tourist nights (ETIS-GSTC-WTO)	Survey  Province Database

Table 1. Tourism economic value creation monitoring system and stakeholder network at a municipal/destination level

#### 4. METHODOLOGY AND METHODS

This paper follows an interpretive research paradigm and utilizes an inductive methodology. The delineated model arises from investigated facts, ranging from specific to universal. Visit South Sardinia’s experience with the GSTC assessment and the ETIS system implementation produced a detailed knowledge of the lack of some data and information regarding economic impacts of tourism in the destination. This was the starting point to elaborate a model that is able to fill this gap in order to promote sustainable tourism.

The research is qualitative and the analysis is conducted through a case study approach (South Sardinia). The case study investigated is *unique*: the destination is the only in the world that has both been evaluated by GSTC standards for Sustainable Tourism Development and has implemented the ETIS system. It is also *revelatory*. A revelatory case study is prevalently utilized in qualitative and inductive research. It gives the opportunity to investigate a phenomenon that was previously inaccessible. Before the GSTC and ETIS experience, it was not possible to conduct a wide and complete analysis on economic monitoring related to tourism impacts in the destination.

The study is based on different levels of analysis: DMO, Municipality and tourism industry. Community and tourists are also considered as key tourism stakeholders.

Through the literature review on stakeholder theory; the analysis of international and European monitoring and management systems; the analysis of literature and statistical international and national systems for determining the significance of tourism for economies; and the *in field* analysis in Southern Sardinia, a set of indicators was selected. The first group is a general group of indicators related to macro-economic aspects, including tourism contribution to GDP, tourism daily expenditure, tourist nights, average length of stay. The second group of indicators is related to micro-economic aspects, including quality and quantity of tourism employment. The third group of indicators is related to tourism industry performance, including occupancy rate, average price, and revenue per available room. This set of economic indicators relate to tourism stakeholders and their potential to represent economic value production or consumption at a destination level.

The objective of the proposed model is to aggregate and correlate data at different levels (from single enterprise level to DMO level) for decision-making processes and the management of tourism in destinations worldwide. The model also aims to highlight value for stakeholders and for destinations through economic indicators based on the recognition of main statistical information sources.

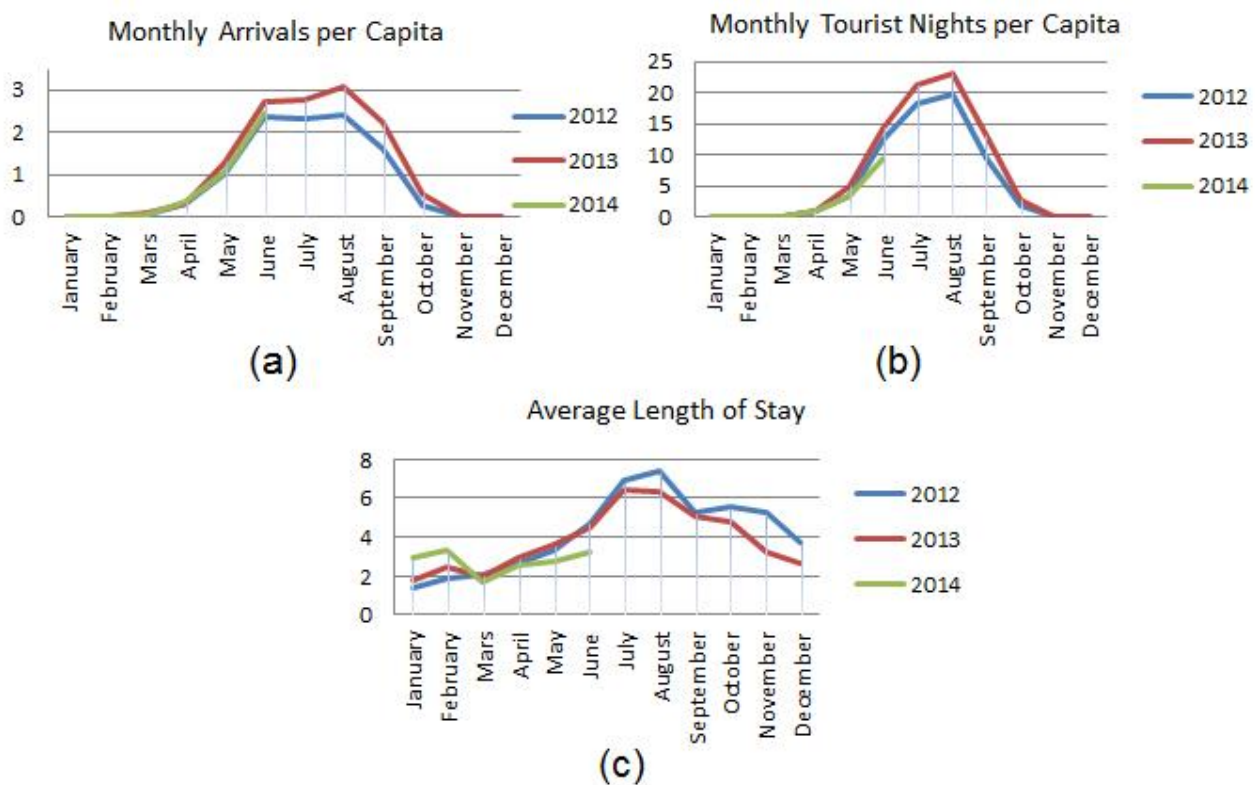
## **5. MUNICIPAL/DESTINATION RESULTS**

In this section we present some preliminary results of the study that we are conducting on the destination Visit South Sardinia. The implementation of our approach is principally based on the years 2012 and 2013; we have only partial information for 2014. It is worth noting that we are now enforcing the early stage of the project and we only outline the methodological tools that we intend to apply for some of the features.



To develop a cost-effective system that might be realistically implementable at a local level and prevent duplications of efforts, we started gathering all the available statistical data of interest for the evaluation of the tourism economic impact. The official sources that provide tourism data in Italy are the ISTAT census surveys “Capacity of tourist accommodation establishments” and “Occupancy of tourist accommodation establishments”. The first survey is conducted each year and provides information at the municipality level for the number of establishments, number of beds, bedrooms and bathrooms for hotels and similar accommodations and the number of establishments and number of beds or other collective accommodations. The second survey is conducted each month and provides data at municipality level on arrivals and nights spent by residents and non-residents at tourist accommodation establishments, divided by category of hotels and similar accommodation, and by type of the other collective accommodation establishments. Data is broken down by country of residence in the case of non-residents, and by region of residence for Italian residents. These census surveys provide the information necessary to measure some components of both the demand and supply side. From the demand side, they are the principal source for measuring the number of tourists that stay in registered accommodations, while from the supply side, they allow the calculation of two of the ETIS indicators, or at least part of them (the occupancy rate and the number of beds available), and of the average length of stay

in commercial accommodation per month. As a first result, Figure 2 (a) and (b) show the time series of the monthly arrivals per capita and tourist presence per capita, respectively, in Visit South Sardinia during 2012, 2013 and the first six months of 2014. Figure 2 (c) shows for the same period the average length of stay. However, it is well known that accommodation is relevant for overnight visitors which represent only one part of tourists and, moreover, not all overnight visitors stay in officially registered accommodations. The official national statistics from the supply side do not



include other kinds of accommodation (such as second houses, boats, relatives and friends houses) which, as a consequence, represents an ignored component of tourism that needs other sources of estimation. As the knowledge of the volume of tourism is essential for the valuation of tourism consumption, it is necessary to use suitable administrative sources to cover the lack of information on the ignored component of the demand side. In our study, we envisage the employment of “non-tourism specific” data collected by the governmental statistics agency, and the statistical offices of public administration and private enterprises as indicators of physical presence (e.g. household census, garbage production, traffic, second houses registers, etc.).

Figure 2: Accommodation supply indicators

“Tourism expenditures benefits local economies through increased output, labor earnings and employment, and these economic contributions are of interest to private businesses, public agencies and individuals living in areas that tourists visit” (Horvath and Frechtling, 1999).

We sketch the methodology that we use to evaluate the direct impact of tourism by means of the following indicators: Tourism Output, Tourism Gross Value Added, Tourism Gross Domestic Product and Tourism Employed Persons.

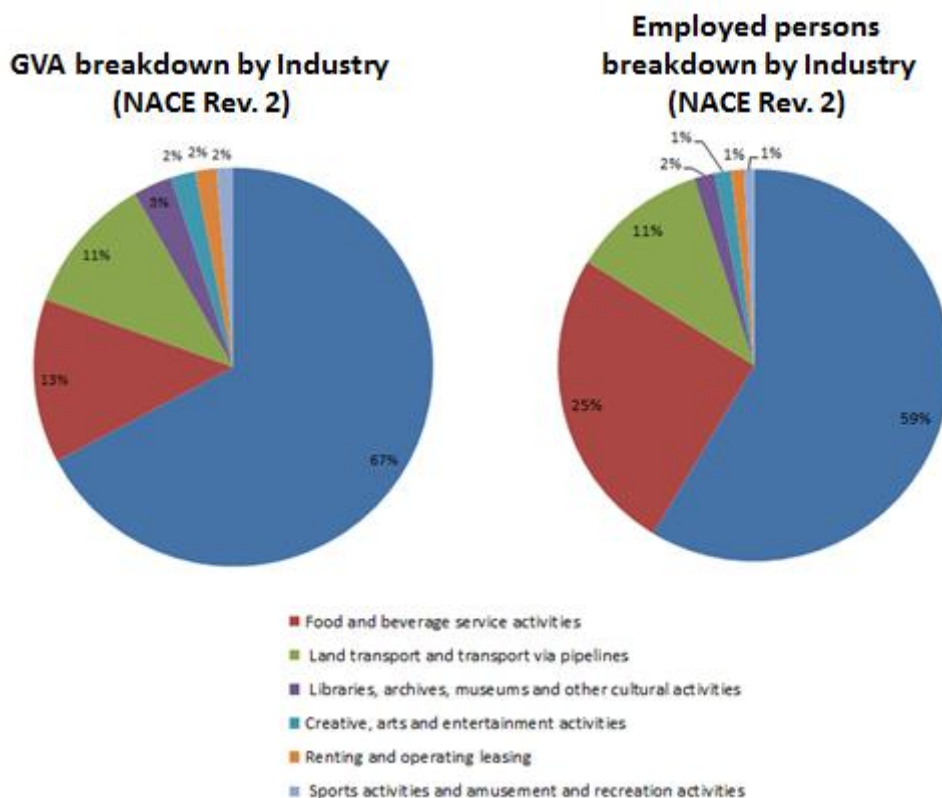


Figure 3: Tourism typical activities’ GVA and Employment breakdown by industry

In the aim of developing economic indicators for the municipalities, we need updated firm-level micro-data that cannot be found in official statistics. Nonetheless, information on the structure and the economic performance of enterprises may be found in the Statistical Register of Active Enterprises, which represents industry and services through statistics. The possibility to have low cost access to commercial firm-level databases (like ORBIS, AMADEUS, BANKSCOPE, etc.) would be an important opportunity for local administrations. For instance, the implementation of a

system in collaboration with a university could provide such an opportunity to the municipality authorities.

As a rough estimation of the direct tourism economic contribution, we initially consider the Gross Value Added and number of employed persons of the sectors that produce goods and services typically consumed by visitors (accommodation, food and beverage, travel agencies, tour operators, etc.) Even taking in consideration that these values are inflated by the presence of the non-tourism component of the expenditures, it appears clear from Table 3 that for the destination Visit South Sardinia, tourism represents a crucial activity.

	<b>Employed Persons (units)</b>	<b>Mean* share of Employed Persons (%)</b>
<b>All</b>	33974	100%
<b>Tourism Activities</b>	6831	40,22%
	<b>Aggregated Wages (th. Euros)</b>	<b>Mean* share of Aggregated Wages (%)</b>
<b>All</b>	806058	100%
<b>Tourism Activities</b>	173975	40,46%
	<b>Gross Value Added (th. Euros)</b>	<b>Mean* share of Gross Value Added (%)</b>
<b>All</b>	1718092	100%
<b>Tourism Activities</b>	282076	37,88%

Table 2: Typical tourism activities economic evaluation. Source: own calculation on Aida database of Bureau van Dijck. (\*The mean is calculated giving the same weight to each municipality's share.)

Moreover, Figure 3 shows which ones among the tourism activities assume a predominant position.

As mentioned before, a part of Tourism Activities Value Added is imputable to non-tourism expenditures that must be removed. Thus a sound estimation of tourism expenditures and of a breakdown of tourism expenditures by category is necessary. The estimation of the expenditure pattern of visitors to a destination needs dedicated local surveys based on a representative sample, as at the European level, information on tourism from the demand side is generally

based on sampling surveys that cannot be used to give local information (DeCantis, S. and Ferrante, M. 2014). Considering the importance of the tourism expenditures estimation, particular attention must be given to the sample method, the method of delivering the survey, and finally to the questionnaire design. (Cooper et al., 1993).

Regarding the survey sampling, due to the mobile nature of tourists and the absence of a complete list of population units, several sampling methods and techniques have been used. They are often mixed, and not immediately recognizable from other units (e.g. in tourism with residents or with other travelers), which make their selection more difficult and expensive. Given this special nature of population, the hypothesized survey is designed as the complex Time Location Sampling (TLS)<sup>3</sup> (Kalsbeek, 2003). Following the approach of DeCantis and Ferrante (2013) and using the official data from several statistical sources (Bancad'Italia, ISTAT, Arrivals of tourist in Visit South Sardinia), we hypothesize a random sample of at least 915 units with unequal probabilities (proportional to estimated tourism flows for each combination of month, place and typology of tourist) Here, for sake of simplicity, the table for the hypothesized sample size for Visit South Sardinia is reported (see Table 3).

	<b>Inbound Tourists</b>	<b>Domestic Tourists</b>
<b>May</b>	45	74
<b>June</b>	73	136
<b>July</b>	90	117
<b>August</b>	89	123
<b>September</b>	87	81
<b>Total</b>	384	531

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<sup>3</sup>The specific TLS for tourism surveys is treated as a two-stage stratified sampling design with unequal selection probabilities for the first-stage units, and with constant selection probabilities for the second-stage units. The first-stage units are constituted by the combination of places, days and hours, i.e. Venue-day-time units. The second-stage units are Italian (not resident) and foreign in the Visit South Sardinia municipalities, in order to collect direct information related to the whole period spent in the location.

Table 3 The hypothesized sample size<sup>4</sup>

Moreover important for the tourism expenditures estimation survey, our questionnaire is inspired by the ETIS Toolkit Sample Visitor Survey.

The realization of the sample survey will represent the next step in the implementation of our project together with the collection of data referring to public expenditure and value added, and the impact of second homes.

## 6. CONCLUSIONS AND RECOMMENDATIONS

The paper, through an inductive method, describes the experience of South Sardinia as a significant Italian case study in developing sustainable tourism initiatives. The innovative contribution of the paper is mainly related to the aim of providing an effective and simplistic model for measuring and managing the economic impacts of tourism at a sub-national level – DMO/Municipalities/Tourism industry. This scope is reached through acquiring fundamental economic tourism data at the local level and information on different stakeholders perspectives on the sub-regional level, and implementing the measurement and monitoring model.

The proposed model moves from the experience of the main monitoring and measuring international systems related to the economic impact of tourism dynamics. For this main reason the proposed model may determine the effects and the value of tourism for each category of stakeholders.

At the same time, the proposed model satisfies the difficulties in collecting information through the national institutional sources. The data collected has an administrative and local nature, and is verified with empirical surveys. Collected data can eventually be aggregated and Integrated into a provincial and regional level platform to bring about a favourable sub-national context, closing the existing information gap on related tourism statistics. This means that the innovative process is bottom–up and not top–down, with a higher coherence within the local dynamics. The proposed model is managed by local authorities and the quality of collected data is

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<sup>4</sup> The sample is a sample stratified for each combination of month, place and typology of tourist. The minimal sample size was calculated hypothesizing an estimated daily tourism expenditure equal to 104 Euros (Crenos, 2014). The minimal sample size is based on an error of 20 Euros for the average of the daily tourism expenditure for a 95% probability.

higher. This increases effectiveness of the impact of the model on the decision-making process.

Being based on recognized International standards, this model can be exported in other International contexts. The strong existing link with the territory assures the quality of the data and the effectiveness in terms of policy-making, without losing the flexibility which is required for the replication of the model around the world.

Finally, regarding the sustainability of this local economic monitoring system, the proposed model is not expensive in terms of time and financial resources. The model is also based on the inclusion and participation of all the stakeholders who are part of the destination or of the tourism system, according to international and European recommendations.

There are two limitations in the methodology for this study. Since the data was collected from local authorities and private companies, sometime it is not possible, or it is at least not easy to collect homogeneous data. Another limitation is represented by the specific characteristic of South Sardinia; each municipality has specific issues that must be considered during the implementation of the proposed model.

Future research should continue with the implementation of the proposed model in Southern Sardinia. This first phase can be considered a pilot test based on the principles and selected indicators of the WTO, GSTC and ETIS systems. The system also has the potential to be implemented in other destinations by replicating the same methodology and incorporating additional economic and social variables.

In summary this study is a pilot for a more comprehensive and larger study of a new methodology to support the decision-making processes in the perspective of collecting and correlating fundamental tourism economic data at local level and to define the fundamental economic indicators for monitoring and managing economic impacts of tourism at a sub-national level.

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