

Regional public policy and tourism life cycle: the case of Sardinia

Manuela Pulina[†] & Bianca Biagi[‡]

[†] Centre for North South Economic Research (CRENoS)
Department of Economics (DEIR)
University of Sassari
E-mail: pullinamanuela@tiscali.it

[‡] Centre for North South Economic Research (CRENoS)
Department of Economics (DEIR)
University of Sassari
E-mail: bbiagi@uniss.it

Abstract: The life cycle approach (LCA) is considered as a useful descriptive and normative tool for analysing the development of destinations and the evolution of markets. A case study of the Island of Sardinia (Italy) highlights the utility of the LCA approach because this region provides a long run indicator, in terms of nights of stay, number of beds and accommodation for approximately fifty years of tourist activity and, through out this span of time, the Island has experienced several stages of the life cycle. One of the aims of this paper is to verify the lag between tourist consumption and tourist supply. An econometric and descriptive approach has detected heterogeneities between the domestic and international tourist life cycle. The main result is that in recent years Sardinian tourism is experiencing a declining stage of domestic demand and a maturity stage for international demand. Supply denotes a stable growth in terms of number of accommodation, whereas since the Seventies capacity has increased more than demand. Moreover, the paper shows that the dynamics of tourist demand are strictly dependent on the local public policy maker's actions and socio-economic changes. Furthermore, the development of the accommodation sector is triggered by several factors. In the last few years numerous changes have occurred in Sardinia in terms of transportation (e.g. low cost airlines), information technology advancements and public policy implementation that have influenced the preferences of tourists; nevertheless, the divergence between demand and supply within the life cycle framework introduces the critical question: what is the importance of a long run economic planning and the sustainability of tourism production?

Keywords: life cycle, demand and supply, policy intervention.

JEL Codes: C22; L83; R58.

1. INTRODUCTION

Internationally, tourism is one of the most important economic activities in terms of income, employment, balance of payments, tax revenues and foreign currency source. The *World Tourism Organization* (2001) reports that international trips have multiplied by 25 since the Fifties; in the year 2000, the income generated by international tourism was 200 times higher than that of 1950. Furthermore, the *World Travel & Tourism Council* (2001) forecasts a annual growth rate for international trips of 4% in real terms until the year 2011. Nevertheless, each tourist destination shows a growth rate that is closely linked with a heterogeneous set of economic variables, social and environmental interrelationships. The quality of the supplied product and the environmental resources are characterised by scarcity and they are neither endless nor renewable. The more tourists are attracted by amenities of a certain location the greater the costs associated with negative external effects (i.e. overuse, pollution, congestion) that compromise the quality of life of its residents and deteriorate the natural ecosystems. In some circumstances, the optimum social solution requires public intervention (Pigou, 1920, Palmer and Riera, 2003).

In this paper, the life cycle approach (LCA) is employed as a useful descriptive and normative tool for analysing the development of marine tourism in the Island of Sardinia (Italy), in terms of nights of stay, number of beds and accommodation for approximately fifty years.

One of the aims of this paper is to verify the interrelationship between tourist consumption and tourist supply. An econometric and descriptive approach has detected heterogeneities between the domestic and international tourist life cycle. The main result is that in recent years Sardinia tourism is experiencing a declining stage of the domestic demand and a maturity stage for the international demand, while the supply in terms of accommodation infrastructure is rather stable and number of beds have increased more than demand. Moreover, the paper shows that the dynamics of tourist supply and demand are strictly dependent on the local public policy maker's actions and socio-economic changes. Furthermore, the development of the

accommodation sector is triggered by different factors as well as tourist demand. In the last few years numerous changes have occurred in Sardinia in terms of transportation (e.g. low cost airlines), information technology achievements and public policy, that have influenced the preferences of tourists; nevertheless, the divergence between demand and supply within the life cycle framework introduces two main critical issues: the importance of long run economic planning and the sustainability of tourism production. The remainder of the paper is organised as follows. In section 2, a brief sketch of Sardinia is presented. In section 3, an account of LCA is described and estimates of the empirical analysis on LCA applied to Sardinian tourism demand. Section 4 reports a descriptive analysis of the main stages of the life cycle both for the demand and supply sides respectively as well as the regional policy issued through the time span considered. In the last section, an account of policy implications and conclusions are given.

2. THE CASE OF SARDINIA¹

Sardinia is the second main island of Italy with a surface of 24,089 square km. (7,9% of the national surface) and a coast line of 1,731 km (Figure 1). Bathing water is safe along 847 kilometres of the coast (17% of the Italian safe coasts). It belongs to a group of Italian regions that have a special statute and a legislative autonomy; administratively, Sardinia was historically divided into four provinces: Cagliari (the regional capital, in the South), Nuoro (in the East), Oristano (in the West) and Sassari (in the North). Since 2005 further four provinces have been created: Carbonia-Iglesias and Medio Campidano (both in the South-West), Ogliastra (in the Centre-East), and Olbia-Tempio (in the North-East). More than one and a half million people were living in the Island in 1999 (2.8% of the Italian population). Fifty percent of people live in the province of Cagliari while 28% in the province of Sassari. The average population density is less than one-third of Italy (67 inhabitants per km² versus 191 of Italy). Sardinia

¹ The information of the first part of the section have been taken by Biagi and Faggian 2004, for the second part see Biagi 2006 and Pulina 2006. For a further discussion see Hospers 2003.

relies upon five ports (Arbatax, Cagliari, Golfo Aranci, Olbia, and Porto Torres) and three airports (Alghero, Cagliari and Olbia).

Figure 1. A Map of Sardinia



In economics terms, Sardinia gross domestic product per head is lower with respect to the Italian regions located in the Centre-North (in the last years the divergence has increased) and higher with respect to the average of the Italian Mezzogiorno². Two third of the regional value added is produced mainly by the service sector, around 20% by industry, and 4% by agriculture. As far as employment is concerned, labour force in the service sector has increased in ten years (from 65% in 1994 to 69% in 2004), while agriculture has diminished at 6% (from 11% of 1994; Meloni *et al.* 2006). The rate of unemployment is 13% (14% in the Mezzogiorno). Sardinia can be regarded as a ‘sea and sun’ tourist destination characterised by a high seasonality in summer with the peak in August. It implies a hotels rate of utilisation that equals to an annual average of 23%. As a consequence, local workers experience an uneven income. From an economic point of view tourism is the most relevant export industry (Paci 1999). According to Touring Club Italiano (2004), tourism expenditure in Sardinia in 2002

² Given the Italian GDP per capita equal to 100, in 2004 the Sardinia GDP is equal to 78, while in the regions of the Centre-North is 117 and in the Mezzogiorno is 70 (Cerina 2006).

were 2,375 million euros (2,9% of national expenditure). Recent estimations measure the impact of total tourism expenditure on regional value added at about 7% (Cao e Usai, 2002). The wider share of tourism expenditure is due to the domestic component (80%). As a tourist destination Sardinia started to be recognised by the foreign market from the sixties thanks to Prince Aga Khan and his massive investment in the so called Costa Smeralda³, localised in North East coastal region of the island. Costa Smeralda has been aimed at an élite type of tourism, this is the reason why the share of international tourism start to increase recently and as a result of the “low cost phenomenon”, namely cheap connections with Germany, Spain, and UK⁴ supplied by the *no frills* airlines. As a result, in 2004 the number of stays of the international demand increased by 5%.

As far as the accommodations industry is concerned in 2004 there were 1,731 firms with a total capacity of 166,751 beds (52% of which were hotels). With respect to the Italian supply of beds in hotels and camp sites, Sardinia’s market share is around 4%; the average capacity of hotels and camp sites is higher with respect to the Italian average, which is typical of destinations that specialise in marine tourism such as Sicily, Calabria, and Basilicata. Around the 96% of accommodation capacity is supplied along the coastline. In recent years alternative types of accommodation have developed rather homogeneously in the island (i.e. agritourism and bed and breakfast). Regarding the demand, since the 1960s, when the tourism industry started developing rapidly, the Northern side of the Region has been the strongest pole of attraction of Sardinia. Nowadays the tourism sector performs well in many others parts of the region, nevertheless, around 50% of tourist nights and tourist beds (hotels, camp sites and tourist villages) are still concentrated in the north.

³ The investment has been called Master Plan, for the case of Costa Smeralda see Piga 2003.

⁴ The 71% of total demand comes from Germany (30%), France (14%), Uk (14%), Switzerland (13%), respectively.

3. METHODOLOGY

In general terms, the life cycle can be defined as the selling evolution of a product when it goes through the phases from its introduction into the market, to its growth, maturity and decline (Cooper, 1990). In the tourism literature, there is no consensus on how many stages characterise a tourist product and they might vary from three to six. Butler (1980) proposes a more detailed product evolution divided into main six phases: exploration, involvement, development, consolidation, stagnation and post-stagnation that can be characterised by a period of decline, rejuvenation or stabilisation. Agarwarl (1992) suggests that the Butler's sixth stage can be defined as re-orientation and occurs whenever decline needs to be avoided. In the present case study, the analysis focuses on the demand and supply side following Gonçalves and Águas (1997) framework. The authors describe in great detail the main LCA six stages under four main elements: demand, supply, distribution and competitors. As reported by Gonçalves and Águas (1997), in the exploration stage, allocentric tourists are attracted by the natural resources, historical and cultural heritage; in this phase, services and infrastructures are not activated to satisfy this new tourism demand. In the involvement stage, tourism demand, characterised by heterogenous groups of visitors, starts growing while the public and private sectors are involved in providing tourist goods and services. The development stage is characterised by a sharp tourists' growth though tourist expenditure experiences a lower growth rate. At the same time, national and foreign enterprises start handling the supply and locals progressively loose control. In the consolidation phase, tourism becomes the main bulk for the local economy and is able to create revenue, value added and jobs but the growth rate of tourists' flows begins to slow down. In this stage, the tourist destination shows the loss of its original appeal and experiences a decreasing level of tourists' flows. The consolidation phase is characterised by psychocentric tourists, risk adverse, who choose the vacation destination on the base either of their own or friends and family past experience; the location starts experiencing decreasing marginal rates of growth. On the

supply side, the tourism activity becomes the main source of wealth and employment. The stagnation stage follows, caused by saturation effects as well as by damage to the environment and to the local social equilibrium. The post-stagnation stage can present three distinct scenarios. The first is a period of stabilisation where there is the tendency to maintain a stable number of tourists together with the same level of goods and services supplied. Secondly, a tourist destination can experience a period of rejuvenation thanks to innovative policies aimed at creating and differentiating tourist products. The third possible scenario sees the decline of the tourist destination and a long run conversion of its infrastructure to alternative uses (Gonçalves and Águas, pp. 13-14, 1997).

As Cooper and Jackson (1989) point out, the utility of the life cycle can be both descriptive and prescriptive. On the one hand, the life cycle as a descriptive approach provides a tool for describing the evolution of a certain destination (Cooper, 1990; Formica and Uysal, 1996; Tooman, 1997; Hovinen, 2002). On the other hand, the life cycle as a prescriptive tool can be used as a guide to develop and evaluate marketing strategy.

In marketing terminology the product's evolution is expressed in terms of growth of product sales (Day, 1981). In tourism literature there is little indication on the notion of which indicators to use. Haywood (1986) proposes visitation and/or expenditure measures though market-share and/or profitability figures could give an indication of a tourist destinations' life cycle. However, one is constrained by the availability of the data and several indicators have been used in the literature (Cooper and Jackson, 1989; Foster and Murphy, 1991; Di Benedetto and Bojanic, 1992; Gonçalves and Águas, 1997; Choi *et al.*, 1999; Volpe, 2004; Pulina *et al.*, 2006).

The aim of the empirical work in this paper is to detect the evolution as well as possible irregularities that have influenced the demand and supply tourist activity in Sardinia. At this aim, one adopts the concepts identified by Haywood (1986), as follows:

- Unit of analysis: Sardinia, as a diversified heritage destination characterised by its rich and unique culture, history, traditions and environmental amenities along the coastline as well as in inner rural areas.
- Relevant market: a demand and supply analysis is undertaken. The former discriminates between national and international demand flows, the latter between the types of accommodation, that is, hotels and camp sites/tourist villages.
- Unit of measurement: on demand side, tourist nights of stay, tourist registered accommodation and beds; on supply side, number of accommodation firms and their capacity (beds).
- Time unit: for the demand analysis, annual data for a span time from 1950 up to 2004, for the supply analysis, data from 1955 to 2004.
- Pattern and stages of tourist-areas life cycle: econometric modelling allows one to identify the shape of the life cycle as the S-shaped curve is only one of a number of possible life-cycle patterns.
- Imitation: via the inclusion of lags of the dependent variable on the right hand side of the equation (based upon statistical significance of the coefficients), it is possible to detect imitation effects.
- Descriptive analysis: one analyses each of the life cycle phases to detect how tourist demand and supply have evolved along the time period under study.

3.1 Econometric Modelling

An econometric approach is a tool able to identify, within a rigorous framework and without a priori belief, the demand's stages in the life cycle, which could be characterised by any shape of curve and not only by an S-shaped curve (Haywood, 1986). This quantitative approach is used to test whether the time trend and irregularities affect the number of tourists

and accommodation along the time span under study. As Gonçalves and Águas (1997) point out, the linear, quadratic and third-order polynomial (or cubic) models seem to be appropriate to describe the characteristics of the tourist product life cycle. The linear trend model suggests a constant unit change in the dependent variable per unit change in time. The generic equation for the linear model is the following:

$$Y_t = \alpha + \beta Trend + \varepsilon_t \quad (1)$$

where, Y is the dependent variable, α is the intercept, β is the coefficient of the time trend ($Trend$) and ε are the residuals that are assumed to be normally distributed with zero mean and constant variance. When a full range of diagnostic statistics suggests a linear model, the main implication is that the tourism product under study is still in a development stage if the coefficient β presents a positive sign. However, a negative sign for the β coefficient implies the existence of a decline stage for the tourism product (Volpe, 2004).

A quadratic (or second-order) model is employed implying the existence of curvature in the graph of the response model relating the dependent variable Y to the time trend. The generic equation employed in this study is the following:

$$Y_t = \alpha + \beta_1 Trend + \beta_2 Trend^2 + \varepsilon_t \quad (2)$$

Given the definitions in Equation (1), β_2 is the coefficient of the time trend ($Trend^2$) in its quadratic specification. Such a specification, based upon econometric evidence, suggests that the tourism product is experiencing a development stage if the function depicts an upward slope and, hence, the coefficient β_2 is positive. However, a decline stage can be identified by a negative coefficient β_2 that implies a downward slope of the function (Sincich, 1989).

The third-order polynomial (or cubic model) hypothesises a non-linear relationship between the time trend and the dependent variable. Chu (2004) employs such a specification in forecasting Singapore's tourism demand. As Chu (2004) argues, the cubic model is

regarded to be a flexible curvilinear model that can be treated as the general linear regression model. In this study, the generic equation used is given by the following:

$$Y_t = \alpha + \beta_1 Trend + \beta_2 Trend^2 + \beta_3 Trend^3 + \varepsilon_t \quad (3)$$

Given the definitions in Equation (1) and (2), β_3 is the coefficient of the time trend ($Trend^3$) in its cubic specification. When a full range of diagnostic statistics suggests a cubic specification, one detects a flattening pattern in the product life cycle. This finding suggests that the tourism product is characterised by a development, consolidation and a stagnation stage. The latter stage could be more evident upon a graphical inspection. In general terms, one might use a polynomial function of order-k wherever the evolution pattern reflects the existence of a primary cycle and a recycle. Choy (1992) gives an in-depth description of the S-shaped models.

In the tourism literature, there is no clear evidence as to which of these models should be employed in fitting trends of tourism variables (Murteira and Black, 1983; Meade, 1984; Martino, 1993). In the present research a time trend will be included in the final restricted model either in its linear, logarithmic, quadratic or cubic form based upon statistically significant coefficients. Moreover, in choosing the final restricted model, one follows the diagnostic statistics and information criteria to assess the goodness of the fit. To this end, several diagnostic tests are presented in Tables 1 and 2 to evaluate the goodness of the fit⁵.

3.2 Empirical Results

An Ordinary Least Squares (OLS) approach is employed to understand the main variables affecting the domestic tourism demand along the time span under study. The two dependent

⁵ The joint statistical significance of the coefficients, excluding the constant (F -test), Durbin-Watson statistic (DW); autocorrelation test (AR); conditional heteroscedasticity (ARCH); normality test (NORM); heteroscedasticity test (HETER); functional form test (RESET). The results are obtained using PcGive Module in GiveWin 2.00 (Doornik, 2001). Problems of non-normality in the residuals are corrected by including impulse dummies. These qualitative variables might detect the existence of irregularities in the residuals. Lags of the dependent variable are added into the equation, upon statistically significant coefficients, in order to correct problems of serial correlation in the residuals.

variables used in this article are domestic and foreigner nights of stay. These variables are stationary in the level (i.e. I(0)) according to the Augmented Dickey-Fuller (ADF) and Phillips and Perron tests. The model used is expressed in logarithmic terms, as suggested by the Box and Cox (1964) test⁶.

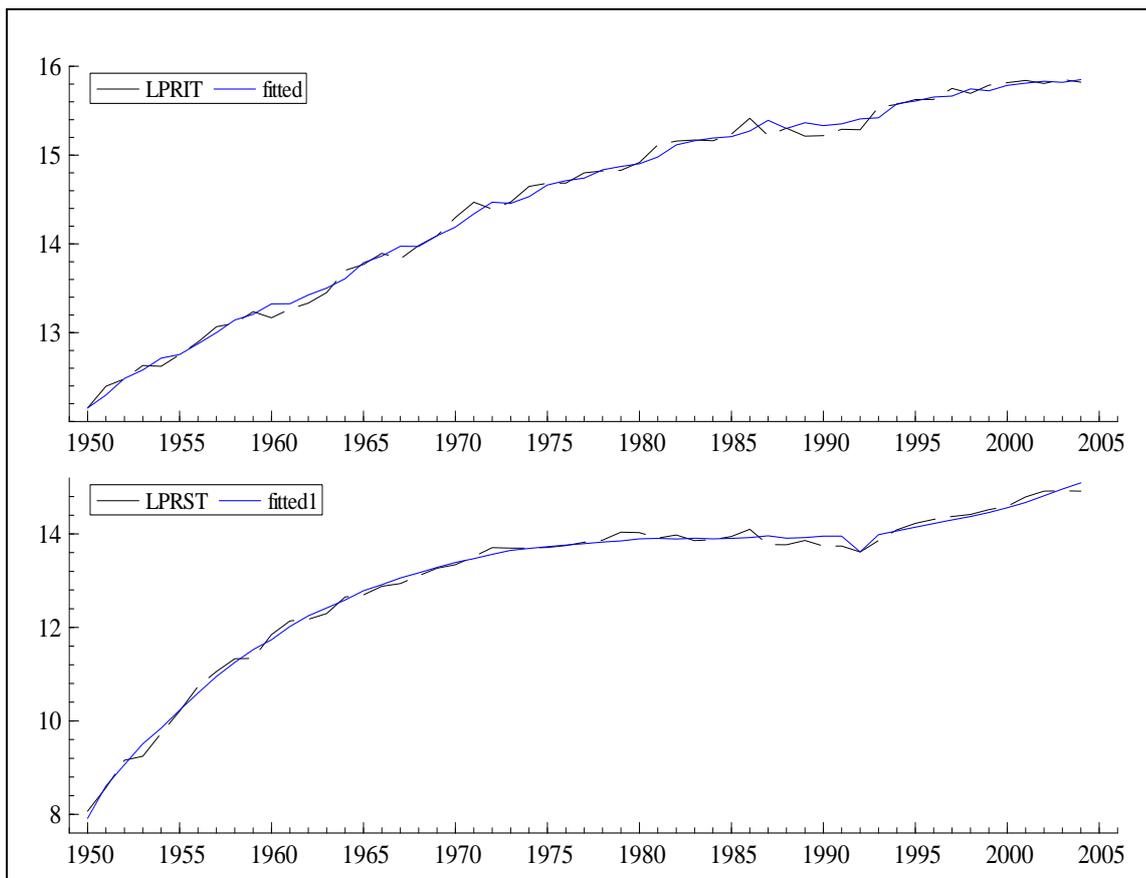
Table 1 Domestic Demand Estimation

$LIT_t = 5.272 + 0.570 LIT_{t-1} + 0.051 Trend - 0.0004 Trend^2 + 1.045 D50$				
(3.81)	(4.92)	(3.47)	(-3.34)	(4.38)
$R^2=0.995251$ $Joint_F(4,50)=2620^{**}$ $DW=2.06$ $AR_F(2,48)=0.99700$ $ARCH_F(1,48)=0.99700$ $NORM_Chi^2(2)=0.60888$ $HETER_F(6,43)=0.73060$ $RESET_F(1,49)=0.092057$				

A second-order term for the trend variable ($Trend^2$) is required in the model, as given in equation (2). The sign of β_2 , that measures the amount of curvature in the response curve, is negative implying a possible decline phase. Note that the coefficients allowing for the quadratic specification are jointly statistically significant. The inclusion of the first lag of the dependent variable suggests the existence of imitation effects; hence, domestic tourists can be regarded as psychocentric (Sinclair and Stabler, 1997). An extra qualitative variable, ($D50$, that takes the value of one in 1950 and the value of zero otherwise) detects the positive effects produced by the public operator impulse fiscal subsidies and financial intervention that gave an important impulse to the tourist private development (Dettori, 2002). In Figure 2, the fitted and the actual log domestic nights of stay are presented (namely, $LPRIT$ and $FITTED$).

⁶ The null hypothesis, that the two models are empirically identical, has to be rejected since the statistical value (i.e. 18.82) is higher than the critical value at the 5% level (i.e. 3.84); furthermore, the residual sum of the squares (RSS) of the linear specification is higher than the RSS of the log specification (i.e. 1.87515376 > 0.491390625); this finding suggests that the log specification is empirically better than the linear one.

Figure 2 Actual and fitted data



An OLS approach is employed to estimate the international tourism demand in Sardinia. Once more, the model is expressed in logarithmic terms, as suggested by the Box and Cox (1964) test⁷. In this case, a logistic specification is required (see Equation (3)) that allows for non-linearities in the relationship between the time trend and the international demand. Table 2 reports the empirical results achieved.

Table 2 International Demand Estimation

$\text{LSTR}_t = 6.362 + 0.181 \text{LSTR}_{t-1} + 0.418\text{Trend} - 0.012\text{Trend}^2 + 0.001\text{Trend}^3 - 0.362D92$					
(11.2)	(2.12)	(7.87)	(-7.67)	(7.59)	(-3.04)
$R^2 = 0.995788$ $\text{Joint_F}(5,49) = 2317^{**}$ $\text{DW} = 1.46$ $\text{AR_F}(2,47) = 2.3034$ $\text{ARCH_F}(1,47) = 0.557$ $\text{NORM_Chi}^2(2) = 4.112$ $\text{HETER_F}(5,43) = 1.5820$ $\text{RESET_F}(1,48) = 1.4893$					

⁷ The null hypothesis has to be rejected since the statistical value (i.e. 33.73) is higher than the critical value at the 5% level (i.e. 3.84); furthermore, the residual sum of the squares (RSS) of the linear specification is higher than the RSS of the log specification (i.e. 2.19162721 > 0.642898475); this outcome suggests that the log specification is empirically better than the linear one.

The inclusion of the first lag of the dependent variable suggests the existence of imitation effects; hence, foreigners can be regarded as psychocentric (see also Pulina, 2002). An extra qualitative variable, *D92*, detects the negative effects caused by the international economic and international political crisis occurred at the beginning of the Nineties. In Figure 2, the actual and the fitted log international nights of stay are depicted (namely, *LPRST* and *IFitted*).

4. DESCRIPTIVE ANALYSIS

The application of the life cycle models to Sardinian tourist demand highlights 4 main stages: the involvement, from 1950 to 1960; involvement and development, from 1961 to 1972; development and consolidation, from 1973 to 1985; and revitalisation, from 1993 to 1999. A preliminary analysis for the period 2000-2004 highlights a different pattern for the domestic and the international demand. The former shows signs of a decline stage, while the latter seems to have reached a stagnation phase. In Table 3 the demand life cycle of demand and supply are compared⁸. The former is measured by the average growth for each period of total nights of stay divided by domestic and foreign tourism, while the latter is measured by the average growth of the numbers of hotels, camp sites and tourist villages and their relative capacity. It can be notice that in the first two stages under analysis, the nights of stay and the beds supplied by accommodation firms grow at the same pace, while for the periods 1973-1985 and 1986-1992, the accommodation capacity of tourism firms increase more. During the revitalisation stage (1993-1999), demand increases for exogenous factors rather than internal ones (such as, for instance, the devaluation of Italian lira and the geo-political instability and wars). As one reports later (section 4.6), the last phase shows signs of decline for the domestic demand and maturity for international demand. A decline phase is also detected for camp sites.

⁸ As one notices from Table 3, given the availability of supply data, the comparison between demand and supply starts from 1955.

Table 3. Average growth rate of tourist demand and supply in Sardinia, 1955-2004.

Stages of the Life Cycle	Years	Tourism Demand			Tourism Supply					
		Italian tourists	ForeignTourists	Total	Hotels		Camp sites and tourist villages		Total	
					Numbers	Beds	Numbers	Beds	Numbers	Beds
Involvement	1955-1960	9,9	44,3	13,1	1,1	8,6	98,2	28,3	2,0	10,3
Involvement and development	1961-1972	11,2	17,3	12,7	4,0	12,7	8,4	20,3	4,3	13,4
Development and consolidation	1973-1985	6,9	15,2	5,5	2,0	4,6	8,2	36,1	2,6	11,0
Consolidation and stagnation	1986-1992	1,3	-3,6	0,3	1,8	5,3	0,7	1,2	1,6	3,0
Revitalisation	1993-1999	9	14,1	9,0	2,0	3,5	-0,1	1,3	1,7	2,4
Stagnation and decline	2000-2004	0,9	8,6	2,7	2,2	3,7	0,7	0,2	2,0	2,1

Tourism demand: nights of stay for total, domestic and international tourism.

Tourism supply: number and beds of hotels, camp sites and tourist villages

Sources: EPT since 1988, from 1989 ISTAT.

In the following sub-sections each stage is analysed more in depth by considering: tourism demand expressed by the average growth of domestic and international tourist nights; tourism supply expressed by the average growth of tourism accommodation in terms of number of firms (hotels, campings and tourist villages) and their capacity; finally, the regional government policies issued in the sector.

4.1 Involvement Stage: 1950 – 1960

The beginning of the introduction stage in Sardinia can be identified between the two Great Wars (Solinas, 1971), whereby Italy had acquired a leadership amongst other competitors, such as France, Yugoslavia and Greece. In the “Holy Year” 1925, 20 million foreigner nights of stay were registered in Italy (Formica and Uysal, 1996). However, the Second World War stopped the growth until the beginning of the Fifties. In this decade, Sardinia also experienced an involvement stage. From a policy perspective, it is worth noticing that in 1948 with a constitutional law (n.3 26/02/1948), the Italian island of Sardinia obtained a special statute which meant autonomy in tourism legislation and planning (Loi-Puddu 1972). Since the ‘50, the regional government seemed aware of the importance of tourism for economic growth;

nevertheless, its involvement in the tourist sector has been unsystematic. Tourism interventions by the Sardinian government have regarded mainly the creation of tourism accommodation, the implementation of transport infrastructure, tourism education and the promotion of the island as a tourist destination. During this period, the regional government allocated resources in creating and increasing tourist supply and infrastructures. In 1950, with a regional law, the Sardinian government founded a public agency called ESIT (Ente Sardo Industrie Turistiche) conceived as an instrumental body to the tourism regional authority (the so called Assessorato al Turismo). The role of ESIT has been essentially of funding private investment in tourism accommodation, promoting Sardinia as a holiday destination and fostering local entrepreneurship in tourism (Biagi, 2002). In order to increase private endogenous investment through imitation, ESIT built public hotels called *Gran Hotel ESIT* localised partly along the coast, and partly in the inner areas of the region.

On the demand side, one calculates an average domestic growth rate of 11.1%, and an international growth rate equal to 48.4% in terms of nights of stay, between 1950 and 1960. Tourism supply - such as hotels, camp sites and tourist villages - grew by 2.0% in terms of number of accommodation and 10.3% in terms of beds. Analysing separately the dataset for hotels and for camp sites and tourist villages, one notices how the growth of the latter is extremely high (98.2% the number of structures and 28.3% the total amount of beds). Nevertheless, it is important to know that in 1955 in absolute terms there were 239 hotels against 2 camp sites, while in 1960 the hotels number 254 against 13 camp sites (Table 3).

Overall, in this decade, tourism demand, characterised by heterogeneous groups of visitors, starts growing, while the public and private sectors are involved in providing tourist goods and services.

4.2 Involvement and development: 1961-1972

During the '60s, the region starts the activity of tourist planning. In 1962 a regional development plan called "Piano di Rinascita" was approved, in which tourism played a central role for the economic revitalization of Sardinia. The general principles of the plan had to be followed by more specific medium-term plans (5 years), the first one, for the period 1965-1969, was the expression of an advanced vision of the interconnection between tourism, natural resources and other economic sectors. In that plan, Sardinia was divided into six tourist districts (the so called *Comprensori Turistici*), each district encompassed similar areas beyond the administrative borders. In each district, a committee of experts proposed a development plan for the area. Unfortunately, implementation of the plan was interrupted by the lack of a more general urban planning and safeguard measures for the territory (Poddighe 2001). In 1964 a regional law (law n.8) financed new private tourism entrepreneurs, the enlargement of existing accommodation firms and the construction of tourism infrastructures. The financing policy was oriented to boost mass tourism through the implementation of accommodations in hotels of medium-low quality. These funds were assigned yearly until 1993 when the law was refinanced with a new one.

On demand side, at an aggregated level, Sardinia experienced an average rate growth equal to 12.7%, between 1961 and 1972. However, at a disaggregated level, the domestic tourist flows registered an average growth equal to 11.2% and this figure confirms the positive trend of the previous decade, while the foreign component denoted a growth rate equal to 17.3%. The latter result indicates a substantial diminishing average growth of about 31.0% with respect to the Fifties. This finding can be depicted in Figure 2 where one notices a flattening pattern of the function during the Sixties. In 1973, according to ISTAT (1980), the composition of foreign tourism demand visiting Sardinia was the following: 37.2% from the UK, 19.7% from Germany, 11.6% from France and, finally, 10.5% from Switzerland. The average growth rate of the accommodation industries in the decade was 4.3% (structures) and 13.4% (beds), again,

hotels and camp sites increase at different rates, 12.7% hotel beds and 20.3% camp sites beds (Table 3).

One concludes that the Sixties experienced a further involvement stage for the domestic component and a development stage for the international component; hence, one might argue that in this phase of the life cycle allocentrics began to be replaced by middle-centric tourists. At the same time, national and foreign enterprises started handling the supply and locals progressively lost control (Gonçalves and Águas, 1997).

4.3 Development and Consolidation: 1973-1985

In the first half of the Seventies, Sardinia experiences a strong coastal tourism development fostered by weak legislation and control. In the same period, experts and researchers started referring to the subject of the environmental repercussions produced by an uncontrolled growth of tourism (Dettori, 2002). There was a realisation that tourist activity can become the bulk of the economy only if it boosts the economy of its residents via multiplier effects, preserves the quality of life of the local population and its natural and culture's heritage. The concern about the coastal speculation forced the region between the second half of the decade and the first half of the Eighties, to intervene with more severe rules in urban planning (regional law n.10 1976, and n.17 1981; Poddighe 2001). Moreover, another expression of this concern is the regional attempt to change seasonality of tourism demand through, for instance, funding tourism initiatives and congresses off-peak season. At a national level, in 1983 a national statutory law on tourism was approved (i.e. the national law n.217, the so called *Legge Quadro*) having two main aims, firstly the reorganisation of the regional tourism bodies and secondly the classification of firms in the tourism industry in order to create a national standard as a necessary condition to reinforce the competitiveness of Italy. In that period, Italy starts losing appeal in the European tourism market probably due to North European tour operators' investments in competitor countries such as Spain, Turkey and

Greece, that could compete in terms of lower prices, higher accommodation and services quality. As Formica e Uysal (1997) point out between 1974 and 1987 Italy had reached a stagnation stage.

In 1984 the Sardinian government followed the given national guidelines regulating the classification of accommodations firms (regional law, n.22) whereas, the reorganisation of tourism bodies followed a very long and protracted process that took approximately twenty years to complete.

In this decade, the domestic demand in Sardinia registers an average increase equal to 6.9%, four percentage points less than in the Sixties. Hence, as given in Figure 2, one detects a development stage for the national flows. For the foreign component one calculates a growth equal to 2.1%; that is, the international demand decreased by 15.2% with respect to the previous decade. This outcome suggests that foreign flows reached a consolidation stage within the life cycle framework. Furthermore, in Figure 2, one notices a flattening pattern of the function within the sample set between 1973 and 1985. As Gonçalves and Águas (1997) point out, the consolidation phase is characterised by psychocentric tourists, risk adverse, who choose the vacation destination on the basis of either their own or friends and family past experience; tourist demand starts experiencing decreasing marginal rates of growth. At the regional level, the tourist demand reached an average growth of 5.5%. Hotels, campings and tourist villages grow by 2.6%, their accommodation capacity by 11.0% (hotels increase by 2.0% in terms of structures and 4.6% in terms of beds; camp sites and tourist villages by 8.2% in terms of structure and 36.1% in terms of beds; Table 3).

4.4 Consolidation and Stagnation: 1986 –1992

As Poddighe (2001) notes well in this period the Sardinian government intervenes in tourism by regulating and financing agritourist activities (law n.32, 1986), integrating the classification of accommodation firms (law n.21, 1987), fixing the activities of travel agencies

(law n.13, 1988) and regulating tourism jobs – such as tourism guides, tourism translators, congress managers, etc.- through the creation of professional regional registers and fixing price lists (law n.1, 1988). On demand side, at the aggregated level, the growth rate slows down but still remains marginally positive, being equal to an average of 0.3%. On the one side, the domestic demand registers a further decrease in flows with an average growth equal to 1.3%; hence, one notices a consolidation stage for the domestic flows; arguably, more and more national psychocentrics were attracted by the island of Sardinia. On the other side, international flows experience a negative outcome, with an average decrease rate equal to - 3.6%, with respect to the previous decade. Figure 2 shows that in the second half of the Eighties the number of visitors reaches its peak and a turning point occurs in the function. This outcome suggests that foreign flows reached a maturity stage (or stagnation stage) within the life cycle framework, in accordance to the Formica and Uysal (1997) study. The authors emphasise the lack of competitiveness of Italian markets in terms of high inflation, expensive Italian airlines' fares and underdeveloped infrastructure. In these years, an outgoing tourism phenomenon emerges amongst Italians residents negatively affecting the benefits that traditionally have characterised the tourism balance of payments. On the supply side, the number of tourism accommodations grew by 1.6%, the total capacity by 3.0%, hotels increased by 1.8% in number and 5.3% in beds, while camp sites and tourist villages grew by 0.7% in number and 1.2% in capacity (Table 3).

4.5 Revitalisation: 1993 –1999

Regional government in this period seemed particularly interested in increasing the number of accommodation providing new resources to fund new firms and the enlargement of existing ones (regional law n.40, 1993); new funds were allocated in 1998 (law n.9). The second half of the Nineties, regional legislators pay particular attention to promoting alternative tourism

classifying a wider range of accommodation firms (1998: regional law n.18 on agritourism firms and n. 27 on the classification of alternative tourism firms).

As far as demand is concerned, along the Nineties a revitalisation phase can be noticed (Figures 1 and 2). At a Sardinian level, one calculates an average increase in tourism nights of stay equal to 9.0%. International tourist flows registered an average rate of increase equal to 14.1%. The comeback of tourism growth is due to several causes. The devaluation of the lira (Italian currency), which occurred in September 1992, together with a price stabilisation that gave an important boost in regaining an international competition. A further impulse to Italian tourism was given by the war in the ex-Yugoslavia and the political instability in the North African countries soon after the first Gulf war. These international events also enhanced domestic tourism as Sardinia experienced an average growth in the Italian flows equal to 7.9%.

On the supply side, the overall growth of accommodation firms is 1.7% (2.0% hotels and - 0.1% campings) while the capacity is 2.4% (3.5% hotels, 1.3% camp sites; Table 3).

4.6 Stagnation and decline?

By analysing the figures on the past five years (2000-2004), the positive trend of the Nineties has once more slowed down. Tourism demand in Sardinia has experienced an average growth rate equal to 2.7%, showing a decrease of 5.0% with respect to the previous decade. Noticeably, the first three years of the new Millennium were characterised by an average increase of 3.9%, whereas a growth rate of 0.9% occurred between 2002 and 2004. The domestic demand shows a moderate average growth equal to 0.9% along the 5 years under consideration. It is worth noticing, that in 2004 there has been a registered decrease in the nights of stay of -2.7% with respect to the previous year. As given in the econometric analysis, the quadratic function has highlighted a negative coefficient for the *Trend*² which reflects signs of a decline stage for the national component (see Figure 2). The international

component shows an average growth rate of 8.6%. This positive trend is particularly evident in the first three years of this decade, where an average growth rate equal to 14.3% occurred, due to a “butterfly effect” caused by the liberalisation of transport; nevertheless, between 2002 and 2004 the increase of foreign visitors is less than unity (0.3%). These results seem in line with the econometric logistic specification that puts in evidence the existence of a flattening pattern in recent years (Figure 2).

As far as the supply side is concerned, the overall growth of accommodation firms is 2.0% (2.2% hotels and 0.7% camp sites) while the capacity increases by 2.1% (3.7% hotels, 0.2% camp sites; Table 3).

In general, the years 2000 - 2004 are characterised by important economic, social, and regional policy changes. Firstly, the expansion of *ICT* has positively affected tourism activity thanks to improved marketing and on line booking systems that help match demand and supply (Peruzzu and Renoldi, 2004). However, the information innovations create a dynamic competitiveness in a globalised market. The lack of competitiveness in terms of price, differentiation and quality of products turns into diminishing flows of tourists towards a certain location. Secondly, Sardinia has improved product accessibility by developing communication infrastructure such as air and maritime transport thanks to liberalisation policies. An important example is low cost airlines such as Rynaiair that serves Sardinian airports from Germany, Spain and the UK. Other low cost airlines are run towards Germany and other Northern European countries. However, a major innovation is still required to modernise its inland infrastructures such as railways and transport (CRENoS, 2003).

5. Conclusions

The current study investigates the characteristics of tourism activity life cycle in Sardinia. The time span analysed is from 1950 to 2004. The quantitative and the descriptive analysis show four main stages of tourist product: the involvement, from 1950 to 1960; involvement and

development, from 1961 to 1972; development and consolidation, from 1973 to 1985; and revitalisation, from 1993 to 1999. The last four years under analysis gives insight on the possible evolution of the Sardinian tourism product. A preliminary analysis for the period 2002-2004 shows different patterns for the domestic and the international demand. In the former a decline stage is detected, while in the latter a stagnation phase seems to have been reached. As far the supply is concerned, regional policy has played a relevant role in fostering tourist entrepreneurs. However, regional planning has not followed a long run strategy of sustainable growth. The lack of shared guidelines for local authorities has boosted heterogeneous interventions based on private interests that have comprised and deteriorated the natural resources. A turning point for regional long run sustainable planning is reached in 2004 (regional law n.8 2004). Two main issues have been addressed by the Sardinian government: restrictions on building possibilities for individuals and businesses within two kilometres of the coastline; a “luxury” tax on private accommodation and boats belonging to non-residents in the region. As a result common strict rules on the use of natural resources have been planned. The discussion amongst local institutions, business and citizens is still in progress. At this point, it would be interesting to test the presence of a cointegration relationship between the economic variables of interest and, if so, applying a Granger method to test for short and long run causality between tourism demand and supply.

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