

## THE LIFE CYCLE OF AGRO TOURIST ENTERPRISES

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*This paper analyzes the supply of an important form of non urban tourism, the so-called agro tourism, together with providing a detailed literature review of the various stages of a tourist product life cycle. A theoretical econometric model of these life cycle phases is then presented. Finally, suggestions are proposed about the contribution of private and public sectors, and the strategies political institutions should follow in order to sustain and promote agro tourism.*

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### INTRODUCTION

Agro tourism is defined as the various means of tourist activity developed within rural areas by people who work as farmers and are harmonised with the rural life style. Agro tourism aims basically at providing alternative solutions towards enhancing farmers' activities and improving their salaries. Moreover, it supports economic development in local communities as well as ensuring the continuity of local goods production. But above all, it gives the credentials for young people to remain living and work in rural areas. This new trend in agro tourism is well supported by the European Union's initiative with "LEADER" programme aiming at a better quality of life in rural areas.

The theory behind the optimum size of agro tourist population and the measures taken by the European Union, led to a significant shrink of agro tourist population within the European Union. Lately, when the consequences of such measures were made clear, it was evident that the employment reduction in farming sector would necessary imply rural areas' abandonment. On the contrary, leaving in rural areas could be



combined with other forms of employment, rather than farming, which could offer a complementary salary and better quality of life.

During the last couple of decades, Europe experiences a growing demand of agro tourism which gradually led to a relative demand and supply of infrastructure and services. A huge number of Northern European countries like Sweden, Austria, Switzerland and Great Britain, have a long standing tradition of agro tourist development. On the other hand, Mediterranean countries are not as well developed in this tourist sector, even if they dispose all the required environmental, historic and cultural characteristics to do so. European Union is targeting at reversing this trend of rural abandonment. Such development could partly be achieved by the residents themselves who could promote local natural beauties as well as protecting the natural beauties and cultural heritage of each area.

Through European Union policies, agro tourism had been widely spread and more importantly being used as a mean that provides all social and economic challenges to support the decline of local production in rural areas.

## **ANALYSIS OF AGRO TOURISM LIFE CYCLE**

In general, a life cycle is defined as the evolution of product sales from its initial import in the market and its development until its maturity and recession. In tourist literature there isn't such a unanimous agreement as to how many stages actually define a tourist product. Butler (1980) suggests a detailed product evolution divided into six major phases; investigation, participation, growth, consolidation, stabilisation and meta-stabilisation which could be characterized from a period of recession, revival or stability. Goncalves and Aguas, (1997) describe these six phases based on four principles: demand, supply, distribution and competition.

This paper focuses on supply as defined by Goncalves and Aguas (1997). In the first stage the tourists are attracted by the natural resources, and by the historical and cultural heritage. However, the services and the infrastructure have not yet been activated to satisfy this new tourist demand. In the second stage both private and public sectors cooperate towards reactivating and supplying tourist products and services. The stage of growth is characterised by an increase and differentiation of supply where the national and foreign enterprises begin to control supply and local authorities lose control gradually. In the phase of

consolidation, tourism becomes the basic part of local economy and it is able to create income and work places, but the growth rate of tourist flow starts to decrease. In the stabilisation phase, tourist destination starts to loose its initial development and experiences a reduction of tourist flow.

At this point it is very important to highlight that the aforementioned description is provided in order to support the methodology that follows, since the number of stages depend on product characteristics, marketing strategies and public and private investments.

In marketing terminology, product development is defined in terms of increase of product's sales. In tourist literature there are few indications regarding which indices should be used. Haywood (1986) proposes the measurements of "number of visits", even if the proportion of market share or earnings could provide an indication of life cycle of a tourist destination. Cooper and Jackson (1989) use the number of tourist arrivals to estimate the life cycle of Isle of Man in Great Britain by dividing a sample of 50 years into three models and running a linear regression. These models have captured the growth, consolidation and recession phases of tourist destinations providing that the life cycle of tourist products depends on the act of administrators as well as social, cultural, economic and competition characteristics. Goncalves and Aguas (1997) use "stays in hotels" to define the life cycle in Florida, USA. Finally, (Foster and Murphy, 1991) use a supply index named "number of beds", to describe the life cycle process, given the shortage from the demand perspective.

## **THEORETICAL MODEL**

Cooper and Jackson (1989) support the view that life cycle utilization could be both regulative and descriptive. On the other hand, life cycle could be used as a guide to the development and assessment of marketing strategies, whereas on the other hand it could be used as a forecasting tool (given data availability). At the same time, life cycle in its descriptive approach, it provides a way of describing the evolution of specific destinations.

In the proposed model the number of agro tourist lodges is being used as an economic indicator to identify the main characteristics of infrastructure life cycle. This index has been used to other sectors such as car industry in the US (Carroll and Hannan, 2002).

Goncalves and Aguas (1997) claim that second and third degree linear polynomial models are the most suitable to detect the main features

of tourist products life cycle. The assumptions to the models are as follows:

The general equation for the linear model is the following:

$$ACt = \beta_0 + \beta_1Trend + et \quad (1)$$

where ACt = number of agro tourist lodges in use

$\beta_0$  = constant

$\beta_1$  = coefficient of time trend

et = residuals assuming that they are normally distributed with zero mean and constant variance.

When both statistical and diagnostic tests support model (1), and  $\beta_1$  coefficient is positive, then tourist product is said to go through a stage of growth. On the other hand, if  $\beta_1$  coefficient has a negative sign, then tourist product undergoes a recession period.

In case model has a quadratic form, it is being specified as follows:

$$ACt = \beta_0 + \beta_1Trend + \beta_2Trend^2 + et \quad (2)$$

where ACt = number of agro tourist lodges in use

$\beta_0$  = constant

$\beta_1$  = coefficient of time trend

$\beta_2$  = coefficient of time trend squared.

et = residuals assuming that they are normally distributed with zero mean and constant variance.

When the diagnostic test of functional form is being accepted and  $\beta_2$  coefficient is positive, (depicted by an upward slope) then we say that the tourist product goes through a stage of growth. A stage of recession can be defined from a negative  $\beta_2$  coefficient that implies a downward slope of function (Sincich, 1989).

When the cubic specification is being adopted then there is a non linear relation between time trend and dependent variable. According to (Chu 2004), a cubic model is regarded as a flexible curvilinear model which can be used as the general model of linear regression. The general equation in this case is shown below:

$$ACt = \beta_0 + \beta_1Trend + \beta_2Trend^2 + \beta_3Trend^3 + et \quad (3)$$

where ACt = number of agro tourist lodges in use.

$\beta_0$  = constant

$\beta_1$  = coefficient of time trend

$\beta_2$  = coefficient of time trend squared.

$\beta_3$  = coefficient of time trend cubed.

et = residuals assuming that they are normally distributed with zero mean and constant variance.

When an integrated series of statistic and diagnostic tests proposes a cubic specification of model someone could then detect a flattening

pattern in the tourist product's life cycle. This implication would suggest that tourist product is characterized by a stage of growth, stabilisation and stationarity.

Finally, we can consider a logarithmic transformation of the model as shown in the following equation:

$$LACt = \beta_0 + \beta_1 LTrend + et \quad (4)$$

where LACt = the natural logarithm of the number of agro tourist lodges in use

$\beta_0$  = constant

$\beta_1$  = logarithmic specification of the coefficient of time trend

et = residuals assuming that they are normally distributed with zero mean and constant variance.

The aforementioned model specification, recognizes a stage of stationarity in the tourist product life cycle. Di Benedetto and Bojanic (1992) have adopted a gradually logarithmic model in order to explain the existence of a stationarity's phase which is followed by a new increase.

There is no unanimous agreement in the tourist literature as to which of the above proposed model specifications one should follow. The time trend should be used in each model based on the coefficients' statistical tests. The final model should be chosen based on the results of statistical and diagnostic tests and the information retrieved by the criteria of assessing the data and checking fitness of data. The various tests as t (t – test) and F (f – test) distribution, the Durbin – Watson (D - W) statistic, the test of autocorrelation (AR), the conditional heteroscedasticity (ARCH), the test of normality (NORM), the test of heteroscedasticity (HETER) and the test of model's functional form (RESET) are those which will determine the specification of the model to be used. We could control for non-stationarity problems by using dummy variables. Also, time lags of the dependent variable can be added in the equation with statistically significant coefficients in order to control for problems of linear correlation in the residuals.

## **CONCLUSION**

The models proposed in this paper regarding tourist product life cycle, have strategic implications in both private and public policy bodies of the agro tourism sector. As (Haywood, 1986) explain “understanding the evolution procedure of a tourist region and enabling to forecast changes is of great importance, since the cost of reaction usually increases analogous to the change implications”. The heterogenous econometric

modelling (see quadratic, cubic and logarithmic specifications) in trend evolution emphasises the need of following tourist product supply.

## REFERENCES

- Agarwal, S. (1992). The resort cycle revisited: Implications for resorts. *Tourism Recreation and Hospitality Management*, Vol. 5, pp.194-208.
- Butler, R.W. (1980). The concept of a tourist area life cycle of evolution. *Canadian Geographer*, Vol. 24, pp.5-12.
- Carroll, G. & Hannan, M. (2002). *The demography of corporations and industries*. Princeton, NJ: Princeton University Press.
- Chu, F.L. (2004). Forecasting tourism demand: A cubic polynomial approach. *Tourism Management*, Vol. 18, pp.159-170.
- Cooper, C. & Jackson, S. (1989). Destination life cycle. The Isle of Main case study. *Annals of Tourism Research*, Vol. 16, pp.377-398.
- Di Benedetto, C.A. & Bojanic, D.C. (1992). Tourism area life cycle extensions. *Annals of Tourism Research*, Vol. 20, pp.557-570.
- Foster, D.M. & Murphy, P. (1991). Resort cycle revisited: The retirement connection. *Annals of Tourism Research*, Vol. 18, pp.553-567.
- Goncalves, V.F. & Aguas, P.M. (1997). The concept of life cycle: An application to the tourist product. *Journal of Travel Research*, pp.12-22.
- Haywood, K.M. (1986). Can the tourist-area life cycle be made operational. *Tourism Management*, Vol. 7, pp.154-167.
- Sincich, T. (1989). *Business statistics by examples*. USA, Dellen Publishing Company.

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