

THEORETICAL ASPECTS OF MODELS FOR CONCEPTUALIZING THE ECO-SUSTAINABLE TOURISM DEVELOPMENT

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Abstract

Currently, in the context of operating tourism activities on the impact of protection, conservation and regeneration of environmental resources, of ecological, research, establish and applying models is a necessity in terms of sustainable development.

The evolutionary process of performing tourism activities allow a clearer definition of some applicable model types that will lead to deep perception of tourism phenomenon on eco-sustainable development path.

The circumstances created around the concept of eco-sustainable tourism development leads to emphasize on models for operating and forecasting tourism activities; such as assessment of its economic impact.

These objectives established and achieved during the article outlined the premise of a research that can constitute a starting point for the future approaches of models, that will lead to their comprise in the practical plan of strategies for eco-sustainable development of tourism.

Keywords: tourism, eco-sustainable development, models, modeling tourism activity

JEL Classification: L8, Q01

Introduction

The study is part of a research¹ aimed to highlight the interdependencies between tourism, ecology and sustainable development.

The objectives aimed in this paper are oriented towards highlighting the interdependence aspects within the perimeter of theoretical-operational models. Modeling process is presented as models that aims developing tourism activities,

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¹ Andrei Daniela Ruxandra, PhD thesis – Tourism and eco-sustainable development pg.52

and then of models for their forecasting and not least of models for economic impact assessment that this field has on that development, implicitly on economic one at Romanian level. In the economic system, Zaharia and Gogonea² stresses that the tourism industry forms a subsystem with multiple interconnections cyber economic, social, cultural and beyond.

The natural environment in the context of sustainable development should be studied with growth patterns covering essential aspects: as a source of natural resources (minerals, biological) necessary to conduct economic processes as a reservoir for waste disposal generated by socio - economic processes with a limited capacity to absorb these residues and self-regeneration of environmental factors, the impact on tourism.

Applying the methods of eco-sustainable patterns of tourism development in the context of eco-sustainable is inevitably followed by the appearance of specific aspects of designing programs that explicitly address space problems of local communities. Thus, can be mentioned, carrying out a process of gradual implementation of the measures to be taken on potential protection and prevention of his degradation, of scientific and rational exploitation of resources involved in running them.

Modeling tourism activity

Models on operating tourism activity in eco-sustainable development conditions

Tourist process modeling towards protecting and preserving the environment is influenced directly or indirectly by the result of economic growth and sustainable impact.

There are models that attempt to express or describe quantitatively evolution of processes material flows and of polluting residuals flows under the influence of socio - economic processes and especially under the influence of the production development as a whole and tourism in particular. Also, they try to evaluate the activity of anti-pollution, to internalize the current economic one, using the expression in physical units by value prices.

² Zaharia M., Gogonea R. 2006. Tourism implication in Economic Growth. A Cybernetic Approach, in *International Journal of Computer, Communications & Control*, Year 2006, vol. 1, Supplementary Issue p. 492-496.

The trend to a clearer characterization of the main types of models aims a deeper understanding of tourism phenomenon, in order to target him on eco-sustainable path.

□ *Models of complete systems* so named because include inter-networking feature of components of the touristic system analyzed. In this category stands Wolf³ model considered the most complete, which joins the one of Mathieson and Wall⁴ which study tourism under three aspects:

- dynamic (demand and trip)
- static (stay at the destination and its sequel)
- impact

How the approach of models is performed in concurrence of tourism development trend from the sustainability perspective, Leiper⁵ design a larger model that includes the environment in the context of interdependences.

□ *Models and theories on tourist behavior* include motivational and behavioral elements highlighting the close relationship between the natural and socio-psychological.

If in 1981 Mayo and Javis, with Pearce⁶ develops the model regarding the needs of the natural authenticity and its perception, while Fridge⁷ studies environment psychology through experiences on trips, like Clawson and Knetsch.

The models and theories approach on tourist behavior is presented as an overview of tourism packages consumer behavior problems associated with purchasing decision⁸.

Tourism requirements can be identified and evaluated through general models and theories of consumer behavior associated with the purchase decision, given their main utility highlight the connections between key factors that influence the behavior.

³ Wolfe R., 1964 - *Perspectives on outdoor recreation: a bibliographic survey*, The Geographical Review, vol 54

⁴ Mathieson A., Wall G. 1982 – *Tourism economic physical and social impacts*, Logman, London

⁵ Leiper N., 1981 - *Towards a cohesive, curricului in tourism the case for distinct discipline*, Annals of tourism Research, vol 8, nr1

⁶ Mayo E., Javis L., 1981 – *The psychology of Leisure Travel*, CVI, Boston and Pearce P. , 1982 – *The social psychology of tourist Behaviour*, Pergamon, Oxford

⁷ Fridge J., 1982 - *Environmental psychology and tourim*, Annals of tourism Research, vol 9, nr1.

⁸ *Tourism Principles And Practice*, fourth edition Pearson education: England, 2008; p.55

Differentiation of purchasing decision in tourism, due to the types of products offered brings the shape of theories and methods from the premise that tourism is a service.

Development theory has known through time three periods that characterize consumer behavior:

1. – *modern empiricism stage*, from the 1930s until the late 1940s, characterized by empirical research in the promotion field. These studies have highlighted through attempts to identify the effects of distribution, advertising and promotion decisions. The base on these models, derived primarily from economic theories held by the company.

2. – *motivational research period* during the 1950s, was one in which stress was attributed to Freudian concept, and those related to it, the orientation being directed toward depth interviews, panels, theme tests of perception and other projective techniques.

3. – *development stage* in 1960, which are the years of modeling formative of tourism consumer behavior.

Over time, it was noted that, known theorists interested in the choice process on tourism have developed "great models" of consumer behavior and they used or transformed appropriately to particularities of this field.

Engel, Blackwell and Miniard (1986)⁹ conducted a classification of models, according to the measure of searching or problem-solving by the consumer:

1. *Limited problem-solving models* are applicable to banal or repeated procurement and have a low level of consumer involvement.

2. *Extensive problem solving models*, applicable for procurement which have a high level of knowledge of the risk involved and where information search and alternatives evaluation plays an important role in the purchase decision, category in which enters tourists behavior models.

One of the first attempts to show understanding in case of purchasing behavior in tourism, is found in the work of Wahab, Crampon and Rothfield (1976)¹⁰. These authors showed that consumer behavior is determined and designed his or her purchase, in terms of uniqueness purchasing decision:

⁹*Tourism Principles And Practice*, cited paper, p.56

¹⁰*Tourism Principles And Practice*, cited paper , p.56

- non-return of investment;
- considerable costs relative to income;
- acquisition is not a spontaneous or a caprice;
- expenditure involves saving and preplanning

Schmoll's model is built on the motivations, desires, needs and expectations, those being social and personal determinants factors of consumer behavior, influenced by travel stimuli, confidence of traveller, destination image, previous experience, and temporal and financial constraints. The model has four fields, each exerting an influence on the final decision - according to Schmoll (1977)¹¹: "The final decision (choosing a destination, time travel, accommodation type, type of agreements related to travel, etc.) is actually the result of another process involving a series of successive fields."

- Field 1: Travel stimulus. These include external stimuli in the form of promotional announcements, personal and commercial advices.

- Field 2: Social and personal determinants factors. They define customer preferences in terms of needs and desires, expectations, objective and subjective risks that may be related to travel.

- Field 3: External Variables. These include potential passenger confidence in service provider, the destination image, experience, and financial and time constraints.

- Field 4: Destinations characteristics. They consist of features related to destination or services relating to the decision and its consequences.

The model (except for changes that include the word "travel" in titles and the location of previous experience in the field 3) was taken directly from the "great models" already mentioned. In Schmoll's model there is no feedback or stimuli in terms of behavior and values, therefore, it is difficult for us to look at the model as dynamic one.

However, Schmoll highlights many of the features of decision-making by travelers which, although are not unique, influence tourism demand. We can include here the decisions on choosing a mix of services that define the product: high cost, destination image, the degree of risk and uncertainty, the need to plan ahead and difficulty in obtaining complete information.

¹¹*Tourism Principles And Practice*, cited paper, p.57

While it highlighted some of the features associated with the problems resolution in terms of travel, Schmoll simply repeat the determinants factors of cognitive processes of decision-making.

In the work of Schmoll, is again highlighted the importance of image, which plays an important role in terms of demand.

The Mayo and Jarvis model (1981) is also inspired by the great models of theorists, retrieving the strategy regarding decision making process, where the solution of the problem is considered extensive, limited or turned into routine. The two continue the theory, describing the decision-making process as extensive, being characterized by a visible need for information and extension of decision-making process.

Finding and evaluating information is presented as the main component of the decision-making process so that the consumer moves from general concepts to specific criteria and to opt for alternatives.

Mayo and Jarvis claimed about the journey that represents a special form of consume behavior, which involves the purchase of intangible and heterogeneous existential product, but after, they have failed to develop a fundamental theory.

The Mathieson and Wall model (1982) presents a travel decision behavior, divided into 5 stages. They are influenced by 4 relationships factors:

1. Tourist profile (age, education, previous experience and motivation);
2. Measures on the trip (the image of facilities and services that are based on source credibility);
3. Characteristics and resources destination (attractions and features destination);
4. Characteristics of the trip (distance, time travel and possible risks of the visited area).

In addition, Mathieson and Wall admit that holidays is a product characterized by intangibility, perishability and heterogeneity which, in one way or another, affect the consumer's decision. In any case, except highlighting the fact that assessment and consumption will occur simultaneously, their model bases consist of the above. You cannot say that the model reflects the depth of the understanding level of models; on the contrary, it only incorporate the idea that aims consumer aims information search and the importance of external factors.

The model omits important aspects of perception, memory, personality and information processing aspects that are the basis of traditional models. The model offered by them focuses more on a perspective based on the product and less on consumer behavior.

The Woodside and Lysonski model (1989) consider two types of stimuli:

1. Marketing of the product, promotion, place and price as key external stimuli;
2. The internal variables of the tourist, which include experience, socio-demographic variables, lifestyle and values.

The model seeks the tourist vigilance in terms of destination or product, from initial state to the state of choice and purchase decision. Woodside's and Lysonsky's contribution lies in factorization in the model of feelings associated with selecting the destination, that tourists can classify probability purchasing decision options, and variables such as the environment.

Tourist options classification is divided into the following categories:

1. – arguably package - destinations or products that have a good chance of being sold. Woodside and Lysonsky states that this package varies between 3 and 5 options.
2. – unavailable package - destinations or products not likely to be sold. This package includes "inept destinations" refused, let's say, because of the lack of tourism attractions.

The Moscado model (1996) provided a different approach of consumer behavior, by emphasizing the importance of the activities, highlighting about them that represents a very important link between travel and destination choice.

They claim that motivation generates for tourists the wish to conduct activities, destinations being the providers of those activities. In this model, Moscado offers a number of useful practical procedures in using models by marketers. Also, they claim that the segments based on tourist's activities can be associated with destination activities, through product development and communication strategies.

Forecasting models for tourism activity and sustainable development

Implementation of strategic thinking in tourism activity towards sustainable development requires the application of planning and forecasting models.

Systematic orientation of operational valences lead to practical validation of model application results, in terms of clarifying assessment tools or action corroborated with defining a clear methodology appropriate to the context of touristic activity operation.

Linking theoretical and operational methods have as result the application of models channeled on estimation and / or forecasting tourism activity, among the most significant are:

➤ *Regression model* that allows the evaluation of the correlation significance between variables applicable in tourism, validation of the model for estimating and extending analysis results. Using the Fisher test leads also to measuring the factors influence on outcome variable variation. However, this model enables forecast of a touristic phenomenon on medium term through the method based on the linear model.

➤ *The model for measuring seasonal variation*

Applying the model of measuring seasonal variation is the result of significant concentration of tourist flows in certain periods of the calendar year, as a result of natural conditions and of specific manifestation of offer and demand. The appearance of seasonal fluctuations which is affecting the carrying out tourism activities require, in time, the use of this model to soften the seasonality phenomenon, as require in the planning and forecasting touristic activity.

The model is based on the methodology for determining the seasonality coefficients and indices, the traffic intensity coefficients.

➤ *Assessment model of the tourism demand concentration*

This model consists in determining the spatial concentration degree of demand for tourism products based on the distribution of tourist arrivals in the various forms of spatial distribution from places, areas, regions, countries, etc. for a period of at least two years.

➤ *Tourism demand elasticity model*

Given the higher order needs that must be satisfied after the basic ones, through the model is estimated the influence of incomes on tourism demand. However, this model expresses the sensitivity of tourism demand from the variation of prices and tariffs applied to tourism activities.

➤ *The Boston Consulting Group Model* consists in analyzing the product portfolio of the tourism company or travel agency through group activities in

four categories, taking into account two criteria: growth rate of the product or service market and relative market share.

➤ *The Belson model of tourism market segmentation* involves applying market segmentation process by quantifying the absolute differences between real values, resulting from the research and theoretical values corresponding to null hypothesis that is required to be established. The conclusion takes into account the difference between the two types of values which, the higher level it register it requires a more efficient market structure analysis.

➤ *The attractiveness assessment model* includes an evaluation of attractiveness elements of market segments after specifying the motivation of practicing forms of tourism for each segment and preparing a worksheets and / or a test with 10 questions.

Most applicability in forecasting have *econometric models*¹² that include specific regression analyzes. They are determined in relation to the behavior manifested in the context of carrying out tourism activities, correlation being "key" element model development. From this point of view is an interesting approach highlight of Zaharia, Oprea and Gogonea¹³ in the evolution of the analysis on demand and offer of accommodation in camps for children of school age and under.

On cyclical periods can be analyzed a touristic phenomenon through *simple method of trends extrapolation*, so, based on a function transfer a variable to be used to predict another in terms of travel, by applying *Box-Jenkins*¹⁴.

Also significant results can be obtained using data mining techniques in the development and analysis of behavior of economic agents¹⁵ in various fields, including the tourism industry, these methods allow multifactorial analysis of large data volumes.

¹² Loeb P, 1982- *International travel to the United States, an economic evaluation. Annals of tourism Research, vol 9, nr1*

¹³ Zaharia M., Oprea C., Gogonea R.M. Econometric analysis on the evolution of the demand and offer of accommodation in camps for children under and of school age, in Jurnal of Tourism, nr.7/2009, "Stefan cel Mare" University, Suceava, Romania, p. 35-40

¹⁴ Wandner S., Van Erden J.1980 - Estimating the demande for international tourism using time series analysis , George Washington University

¹⁵ Oprea C., Zaharia M., *Using data mining methods in knowledge management in educational field*, in *Annals of the Oradea University. Fascicle of Management and Technological Engineering*, Volume X (XX), 2011(1), pp. 5311-5320. Oradea, Romania

Regardless of the models applied the need to estimate and/or forecast tourism activity remains an important asset in the strategic decisions implemented for sustainable tourism development.

Models for assessing the economic impact of tourism

Essential in research on tourism development is the aspect that targets possibilities of measuring the causal mechanisms that materialize through models that identify also the impact of tourism on the environment, from the natural to economic.

The *multiplier effect* of tourism highlights both direct and indirect effects, as well as those induced of tourism on other sectors of the economy manifested in close correlation.

Y.Tinard considers that "multiplier measures the changes in income levels, results, employment and balance of payments - caused by travel expenses change."¹⁶

Many specialists are dealing tourism multiplier of expenses or income in various aspects, outlining in time his presentation in these types¹⁷.

- *Results multiplier*, quantifies the additional outputs obtained on account of an additional unit of travel expenses;
- *Transactions multiplier*, which measures the additional turnover generated by an additional unit of expenditure;
- *Income multiplier*, which expresses the additional domestic revenues, generated by an additional unit of travel expenses;
- *Employment multiplier*, which highlights the increasing of jobs number, in equivalent to the total time, due to an additional unit of travel expenses;
- *Government revenue multiplier*, which measures income (revenue), net additional created by an additional unit of travel expenses;
- *Imports multiplier*, which expresses the value of imported goods and services, caused by an additional unit of travel expenses.

The process of determining the multiplier effect in tourism is based on an instrument for establishing tourism expenditure and the influence they have on the economy. However, the value of the multiplier effect is determined by the

¹⁶ Tinard Y., 1995 – Le tourisme. Economie et Management, 2^e ed. Ediscience Millan Press Ltd., London

¹⁷Minciu R., 2000 – Tourism economy, Uranus Publishing House, București ; p.

degree of economic development of the region or country. This value decreasing it can be observed that with the reduction of productive economy sub-sectors, it is necessary to call for external resources to meet the needs of tourists.

EGC model is the latest "innovation" in the economic impact of tourism. The major advantage of this model is that it can simulate also the impact of various policy changes on tourism, allowing greater flexibility than input - output analysis. Was presented a wide range of areas where tourism impact is analyzed with this model - globalization, EU accession or as a consequence of the September 11 attacks in the US.

Applying of Computable General Equilibrium model (CGE) for Romania was done partly by presenting some elements of general equilibrium based on equations analysis and regression for tourism in our country. Were revealed, thus, four regression functions¹⁸:

1. production of hotels and restaurants sector based on the influence factors, number of employees and amount of tangible assets.
2. production volume by hotels and restaurants sectors through influencing factors GDP per capita, infrastructure represented by the length of the highway and volume of tangible assets.
3. function comprising the dependent variable GDP per capita and independent variables overnight stays in tourist accommodation and employment function that puts in functional dependency the number of overnight stays with influencing factors real average net monthly earnings and inflation.
4. function that puts in functional dependency the number of overnight stays with influencing factors real average net monthly earnings and inflation.

Conclusion

In conclusion, the presentation of models to characterize the tourism system envisages that tourism development is predominantly oriented to design and development based on planning sustainability processes of environmental issues.

However, the interdependence between development - research - modeling occurs at fairly low levels which led to a new way of approaching the issue. This approach takes into account the movement guidance and touristic action

¹⁸ http://evectur.incdt.ro/index.pl/egc_ro

from support and amplification to national assessment. Simultaneously requires dealing the issue which shall include also costs, benefits from tourism, due to the application of self-control solutions or establishing limits in different plans.

Tourism development should be oriented to development planning and economic impact concern of by the research process, modeling, establishing clear and concrete objectives. They must complete directly, wholly development plans and projects.

Application of sustainable tourism development projects starts in early design stages in order to harmonize with the environment, the local community and other economy sectors, continuing in the status of the activities regarding services.

Development projects phases can and should be pursued and encouraged by authorized bodies. They have the quality to determine strategies to solve the deficiencies encountered during their performance.

The constant assessment process and recovery of future directions should lead to development of a development process more adaptable to touristic system changes. It is still necessary to organize so as to orient much better to a better capacity to forecast unpredictable changes facing the touristic system. It requires in the future for a sustainable tourism development a functional combination of research with the planning process.

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