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THE ECONOMIC EFFICIENCY OF ROMANIA AGRO-TOURISM GUEST HOUSES, IN TERMS OF SEASONALITY AND CONCENTRATION RATIO OF TOURIST ARRIVALS DURING THE PERIOD 2007-2012

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Abstract:

The tourist facility develops its activity under certain circumstances that make up its overall economic and social environment. Before developing a realistic strategy for progress and sustainable development, the tourism unit must take into account both the characteristics of the environment in which it operates as well as the trends and the way in which its component elements evolve.

The particular nature of the tourism activity, mostly developed in the context of an inconsistently evolving tourism demand, has urged the need to highlight the tourism seasonality phenomenon and its influence in the tourism performance process. One important aspect to be taken into account when analysing tourist arrivals is the study of this seasonality of the tourism activity. Seasonality is that state of temporal evolution defined by a peak period of the activity in a certain sector of economic activity.

The identification of the seasonality of tourism demand subsequently enables one to define the pattern of the phenomenon under analysis, thus gaining information on the predictable pattern of the tourism activity in the following period. Moreover, the results arrived at after identifying seasonality, create the basis for short term forecasts. In order to at least partially eliminate the random effect factors, the analysis should be conducted for a period of at least three consecutive years.

Key words: tourism seasonality, seasonal indices, tourism performance.

JEL classification: O11, O13

1. INTRODUCTION

The underlying principle of the concept of economic efficiency of a tourist facility encompasses not only the optimization of the results based on a limited number of resources but also the agreement of the mechanisms of a competitive tourism market that generates profit and yield with the essential prerequisite of increasing the individual's (tourist's) welfare and of ensuring social equity. (Zaman and Geamănu, 2006)

In Romania, tourism is one of the economic sectors with real chances of long-term development; it is also a means to define and improve the image of our country abroad; it is a source for augmenting the state's currency inflow; it is a safe market for labour force and for redistributing the redundancies from the highly restructured sectors; it is a method of temporarily providing jobs and revenues for the population; it is an economic and social development means, due both to the revenues it generates and to the inter-human and cultural exchanges it favours; it is a unique way of capitalizing the rich and varied natural resources of the country that cannot be exported as such but can be an important source of exports by making use of it on the spot; it is a multi-disciplinary economic sector whose incoming-outgoing system generated an entire array of other economic, cultural, social and recreational activities.

Seasonality is the dominant feature of the tourism activity and must be taken into account when developing marketing policies, i.e. in the process of designing the tourism product and actually providing it by performing the services themselves. The seasonality of the tourism demand

is an objective reality that profoundly affects the overall activity of the tourism operators. It can be practically identified on all decisional levels and is of interest for all tourism services providers. The measures taken for diminishing seasonality are mainly developed by means of traditional methods, particularly consisting of advertising efforts made in order to sell a tourism product that is insufficiently adapted to the extra-seasonal demand.

Depending on the geographical position of the recipient tourism destination in relation to domestic and international tourism circuits, on the climate and landscape and especially depending on the attractiveness or variety of the services supplied etc., researchers in the field of tourism identify three defining approaches concerning the type of seasonal curves in the tourism activity.

The first approach states that the tourism activity is concentrated during a single season, limited in duration and important in terms of the tourism phenomenon intensity (for instance, the Black Sea coast).

The second approach entails that the tourism activity is concentrated during two seasonal periods that differ in duration. During the periods we are referring to, the tourism demand differs in terms of amplitude (mountain resorts).

In the third approach, the tourism activity does not have any intensified seasonal concentrations, as the frequency of the tourist arrivals is rather linear throughout the year (balneal resorts, urban centres).

2. ANALYSIS OF THE DYNAMICS IN THE NUMBER OF ARRIVALS IN ROMANIAN AGRO-TOURISM GUEST HOUSES

The concentration of the tourist activity and the need to diminish the tourism seasonality curve has never been as acute as it is perceived nowadays. On the one hand, this is due to a considerable increase in the number of tourists travelling during the full season and, on the other hand, to the efforts made by the service providers and directed at prolonging the tourist activity season.

From a methodological standpoint, the economic analysis is conducted in a similar way as it is for other economic activities. However, since the tourism product is the result of a range of specific activities, the indicator system, the calculation methods and the economic efficiency analysis is different in tourism, depending on the type of services. (Bîrsan and Șușu, 2013)

In order to better understand the effects of seasonality in the tourism industry, one needs to know the frequency of the service demand throughout a calendar year, as well as the temporal fluctuations in the volume and intensity of the flows of visitors in various areas and tourist resorts.

In order to analyse the seasonality of the tourist arrivals in Romanian agro-tourism guest houses, we have considered the number of monthly tourist arrivals of each year during the period 2007-2012.

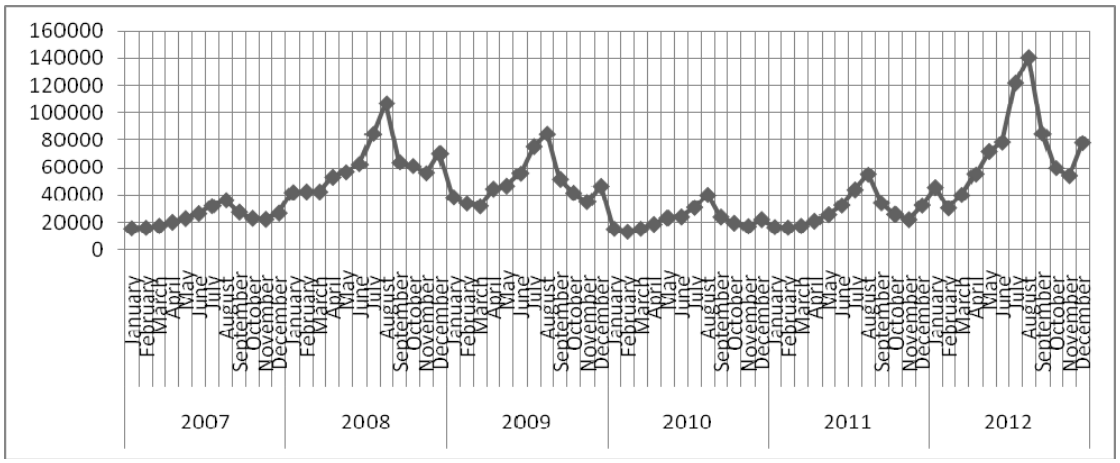

Figure no.1 Evolution of the monthly number of tourist arrivals in Romanian agro-tourist guest houses during the period 2007-2012

Source: developed by the authors

The analysis of the above graph reveals that the number of tourists arriving after the beginning of the economic crisis in 2008 had diminished, and the tourist demand recovered as late as 2012, when the peak for the period under analysis was reached. Note that the number of tourists checking into Romanian guest houses in August 2012 was 4,5 times higher than the number of tourists arriving in the month of February the same year.

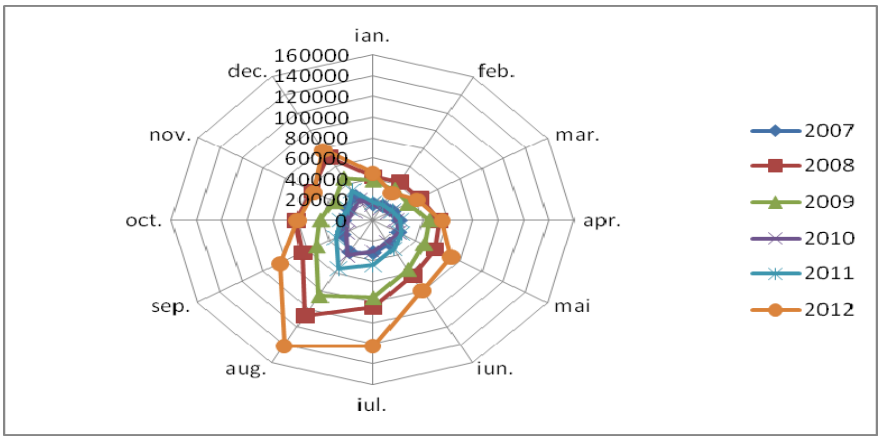

Figure no.2 Monthly concentration of the number of tourists arriving in Romanian agro-tourist guest houses during the period 2007-2012

Source: developed by the authors

The polar diagram in the above figure highlights the variation in the number of tourists arriving in Romanian agro-tourist guest houses during the period 2007-2012. The phenomenon under analysis has a seasonal pattern, reaching a peak in August and a trough in February.

Since the duration of the tourist season in an area (or a resort) is first of all conditioned by the climate and weather conditions, the business policy instruments used in the tourism sector are meant to compensate for the diminishing attractiveness of the natural factors with a set of additional elements to co-interest potential tourists in order to take full advantage of the cultural heritage, by maintaining the tourism services demand at a reasonable level for providers for as long a period as possible throughout a calendar year.

The statistical method

The statistical analysis of seasonality is directed at measuring seasonal variation, identifying the causes of seasonality and establishing the economic and social consequences. In this respect, the monthly seasonal indices will be calculated, indicating the maximum and the minimum intensity of tourist arrivals, as well as the growth and decline periods of these arrivals. (Secăreanu and Firoiu, 2011).

The methods used for calculating seasonality coefficients are rather diverse, but the arithmetic mean method is most frequently resorted to. According to this method, the seasonality indices are calculated using the formula (Neacşu and Băltăreţu, 2005):

$$I_s = \frac{\bar{y}_l}{\bar{\bar{y}}} \cdot 100 \qquad (1)$$

where:

$\bar{y}_l$ - is the monthly mean

$\bar{\bar{y}}$ -general monthly mean

The more the value of these coefficients approaches 100, the more seasonality attenuates and vice-versa, the further away it is from 100, the more acute seasonality becomes.

In order to check the accuracy of the measurements, the sum of the seasonality indices should equal the product of the number of sub-periods (12) and i 100 (Voineagu and Colibaba and Grădinaru, 2002).

In order to measure the concentration of seasonality, a series of indices will be used, such as: concentration ratio, the Hirschman index, Onicescu's information energy, the Corado Gini concentration coefficient and the Struck concentration coefficient.

The struck coefficient (C_s) was applied for measuring the intensity and trends in seasonality. This coefficient is actually a corrected form of the Gini coefficient and is calculated using the formula (Minciu, R. 2004):

$$C_s = \sqrt{\frac{n\sum g_i^2 - 1}{n-1}} \quad (2)$$

where,

n – is the number of categories

g_i – the weight of each category to the total

This concentration coefficient can have values that range between $[0; 1]$. The minimum possible value ($C_s = 0$), does not depend on the number of categories under consideration, thus giving the coefficient the advantage of an easy and comparable interpretation. The value 1 is reached when the concentration is at its maximum and value 0 when there is an even distribution. (Jaba, 2002)

Seasonality indices

The seasonality indices have been measured by directly applying the arithmetic mean method. An arithmetic mean for each month ($\bar{y}_i$) was first calculated, covering the period of all the 6 consecutive years, followed by the calculation of a general monthly mean ($\bar{\bar{y}}$).

The general monthly mean was calculated as an average of the monthly means or by adding all the data points of the time series and dividing this number to the number of data points of the series (72 data points). An average of 42915 tourist arrivals in Romanian guest houses was recorded during the period 2007-2012.

Table no.1 centralizes the results for the monthly means and the calculated seasonality indices.

Table no.1 Evolution of the monthly number of tourists arriving in Romanian agro-tourist guest houses during the period 2007-2012

Month	Years						Monthly mean $\bar{y}_i$	Seasonality index (I_s %)
	2007	2008	2009	2010	2011	2012		
January	15776	42037	38378	15399	16675	45620	28980,83	67,53
February	16142	42561	34095	13339	16238	30608	25497,17	59,41
March	17550	42525	32053	15428	17501	40152	27534,83	64,16
April	20374	52922	44576	18814	21134	55277	35516,17	82,76
May	23051	56841	46706	23411	25798	71980	41297,83	96,23
June	26588	62655	55826	24187	32628	78607	46748,50	108,93
July	32174	84882	75435	31020	44003	121914	64904,67	151,24
August	36368	107119	84919	40115	55147	140566	77372,33	180,29
September	27633	63987	51494	24103	34186	85097	47750,00	111,27
October	23253	61302	41638	19732	26052	59808	38630,83	90,02
November	22487	56158	35063	17279	22229	54144	34560,00	80,53
December	26970	70455	46509	22318	32595	78244	46181,83	107,61
Total	288366	743444	586692	265145	344186	862017		
General monthly average ($\bar{\bar{y}}$)							42914,58	1200

Source: authors' own calculations, based on the data provided by the monthly Statistical Bulletins, INS, 2008-2013

Each month's specific mean has been related to the general monthly average and we have thus arrived at the seasonality indices that identify the monthly average standard deviation from the defining monthly average for the whole period (6 years). Thus, if the number of tourists arriving in January in Romanian guest houses amounts to an average of 67,53% to the general monthly average, the average number of tourists arriving in December was of 7,61% to the general monthly average. The peak was recorded in August, with a number of tourist arrivals that had reached an average of 80,29% above the general monthly average.

After calculating the seasonality indices, we can state that tourist arrivals in Romanian agro-tourist guest houses follow a seasonal pattern. If the number of tourists arriving during the first five months of the year is below the general monthly average, the number of tourists is above the general monthly average in the following four months, starting with the month of June.

The Struck concentration coefficient was calculated in order to measure the seasonal concentration ratio. The table below centralizes the necessary calculations conducted while measuring the concentration coefficient for the period 2007-2012.

Table no.2 Calculations made for measuring the concentration coefficient 2007 - 2012

Month		Years					
		2007	2008	2009	2010	2011	2012
January	g_i	**0,05471**	**0,05654**	**0,06541**	**0,05808**	**0,04845**	**0,05292**
	g_i^2	**0,00299**	**0,00320**	**0,00428**	**0,00337**	**0,00235**	**0,00280**
February	g_i	**0,05598**	**0,05725**	**0,05811**	**0,05031**	**0,04718**	**0,03551**
	g_i^2	**0,00313**	**0,00328**	**0,00338**	**0,00253**	**0,00223**	**0,00126**
March	g_i	**0,06086**	**0,05720**	**0,05463**	**0,05819**	**0,05085**	**0,04658**
	g_i^2	**0,00370**	**0,00327**	**0,00298**	**0,00339**	**0,00259**	**0,00217**
April	g_i	**0,07065**	**0,07118**	**0,07598**	**0,07096**	**0,06140**	**0,06413**
	g_i^2	**0,00499**	**0,00507**	**0,00577**	**0,00503**	**0,00377**	**0,00411**
May	g_i	**0,07994**	**0,07646**	**0,07961**	**0,08830**	**0,07495**	**0,08350**
	g_i^2	**0,00639**	**0,00585**	**0,00634**	**0,00780**	**0,00562**	**0,00697**
June	g_i	**0,09220**	**0,08428**	**0,09515**	**0,09122**	**0,09480**	**0,09119**
	g_i^2	**0,00850**	**0,00710**	**0,00905**	**0,00832**	**0,00899**	**0,00832**
July	g_i	**0,11157**	**0,11417**	**0,12858**	**0,11699**	**0,12785**	**0,14143**
	g_i^2	**0,01245**	**0,01304**	**0,01653**	**0,01369**	**0,01634**	**0,02000**
August	g_i	**0,12612**	**0,14408**	**0,14474**	**0,15129**	**0,16022**	**0,16307**
	g_i^2	**0,01591**	**0,02076**	**0,02095**	**0,02289**	**0,02567**	**0,02659**
September	g_i	**0,09583**	**0,08607**	**0,08777**	**0,09090**	**0,09932**	**0,09872**
	g_i^2	**0,00918**	**0,00741**	**0,00770**	**0,00826**	**0,00987**	**0,00975**
October	g_i	**0,08064**	**0,08246**	**0,07097**	**0,07442**	**0,07569**	**0,06938**
	g_i^2	**0,00650**	**0,00680**	**0,00504**	**0,00554**	**0,00573**	**0,00481**
November	g_i	**0,07798**	**0,07554**	**0,05976**	**0,06517**	**0,06458**	**0,06281**
	g_i^2	**0,00608**	**0,00571**	**0,00357**	**0,00425**	**0,00417**	**0,00395**
December	g_i	**0,09353**	**0,09477**	**0,07927**	**0,08417**	**0,09470**	**0,09077**
	g_i^2	**0,00875**	**0,00898**	**0,00628**	**0,00709**	**0,00897**	**0,00824**
$\sum g_i^2$		**0,08858**	**0,09045**	**0,09188**	**0,09215**	**0,09628**	**0,09897**

The concentration coefficients for each year during the period 2007-2012 are calculated as follows:

$$C_{s\,(2007)} = \sqrt{\frac{12 \cdot 0{,}08858 - 1}{12 - 1}} = 0{,}075662 \quad (3)$$

$$C_{s\,(2008)} = \sqrt{\frac{12 \cdot 0{,}09045 - 1}{12 - 1}} = 0{,}088123 \quad (4)$$

$$C_{s\,(2009)} = \sqrt{\frac{12 \cdot 0{,}09188 \quad 1}{12 - 1}} = 0{,}096583 \quad (5)$$

$$C_{s\,(2010)} = \sqrt{\frac{12 \cdot 0{,}09215 - 1}{12 - 1}} = 0{,}098091 \quad (6)$$

$$C_{s\,(2011)} = \sqrt{\frac{12 \cdot 0{,}09628 - 1}{12 - 1}} = 0{,}118861 \quad (7)$$

$$C_{s\,(2012)} = \sqrt{\frac{12 \cdot 0{,}09897 \quad 1}{12 - 1}} = 0{,}130596 \quad (8)$$

The value of the calculated concentration coefficients shows a relatively even monthly distribution of the number of tourist arrivals in Romanian agro-tourist guest houses during each year. There is a trend of increased seasonality, as the concentration coefficient increased from 7,56% in 2007 to 13,05% in 2012.

3. THE EFFECTS OF TOURIST SEASONALITY AND THE MAIN WAYS TO DIMINISH THESE ECONOMIC EFFECTS IN THE TOURISM SECTOR

Tourism evolves as a consequence of the impact of the changes occurring in contemporary societies, and its dynamics is part of the general development process. In turn, tourism acts as stimulus for progress and development, through its human and material potential it engages in its activities, as well as through the positive effects it exerts in the adjacent sectors. (Bîrsan and Șușu, 2013)

The seasonal variations of the tourist demand are visible in all countries or tourist destinations, and these fluctuations tend to increase both in volume and in intensity as well. The seasonal concentration in tourism is a constant phenomenon in the circulation of tourists, triggered by the character and the nature of the discontinuous flows in the tourist demand. In time, this increasing exacerbation of the tourist concentration has brought about a series of specific tourism phenomena, such as:

- *holiday invasion* – more or less intense, both in old and in new regions as well as in well-known tourism destinations;
- *overuse of the railway, road, maritime and air networks* – exaggerated at times, during the peak of seasonal concentration of the tourist circulation;

- *insufficient accommodation* – alarming at times, in accommodation units, and the need to provide new accommodation possibilities at very short notice;
- *increasing tension* in the relationships between the service petitioners and the units providing tourist services;
- *increasing insufficiency of public services* that are not well adapted for the level and the intensity of the demand during peak periods.

At present, we are witnessing an ascending trend in the variation of the tourist demand and this situation may worsen at an accelerated pace in the future as well. This leads to a need to analyse the drawbacks that derive from an increasingly severe seasonal concentration, a natural and unavoidable consequence of the contemporary tourism market.

Tourism researchers have intensively covered the economic aspects of the uneven and seasonal distribution of the tourism demand frequency and they are now trying to find solutions in order to diminish as much as possible the negative influence of the seasonality phenomenon. However, before attempting to find these solutions that would alleviate seasonal fluctuations in tourism, one should look at the causes generating these fluctuations and thus enable a better understanding of the specific nature of these variations.

The analyses conducted on the seasonal variations occurring in the tourism circulation enable the identification of several factors that firstly influence the attractiveness of certain tourism resorts and the seasonality of the activities developed in the areas under consideration. Thus, we can state that these extremely important factors can trigger major seasonal changes in the tourism activity. Among these factors, we can mention:

- the individuals' increasing need for leisure;
- the presence and the abundance of the natural resources and heritage;
- the level and structure of the population's income flows;
- the duration and the structure of the time available for leisure activities;
- the secondary tourism supply;
- the subjective factors that may affect tourism behaviour.

The analysis of the above mentioned factors enables us to appreciate the fact that the tourism demand is flexible, while the tourism supply must keep up with the constantly changing and evolving demands of the potential customers.

We should underline the fact that, while the primary supply is greatly due to the weather conditions and therefore has a different intensity, depending on seasonality, the secondary tourism supply exists and actually functions throughout the calendar year, having however a different noticeable intensity during a specific season.

The efforts directed at finding efficient solutions to extend the tourist season enable the identification of two categories of factors that cause seasonal concentrations in tourism, namely:

- *endogenous factors* that can be influenced by tourism operators by means of economic and organisational methods as well as through their business policy;
- *exogenous factors* that cannot be directly influenced through the actions of tourism operators and organisations, as these factors are the result of the social and economic development where tourism does not hold a dominant position.

The development of the tourism activity is influenced by both there endogenous variables, that companies can control and manipulate, and by the exogenous variables, whose action cannot be controlled but which may have a strong impact on the company strategy, directed at diminishing and capitalizing the seasonality of the tourism demand.

This classification of the factors influencing seasonal concentration also allows us to also identify the possible ways to favourably influence the extension of the tourism season. The economy of tourism can only influence the endogenous factors, while the national economy and society act on the exogenous factors. However, we should underline the fact that the importance of the exogenous factors is higher and their influence exceeds that of the endogenous factors.

The role of tourism in the domestic economy of different countries is highly important, due to the complexity of this phenomenon and to the wide range of the activities entailed by its emergence, maintenance and development.

4. CONCLUSIONS

The results arrived at in the conducted study show that the seasonal variations of the tourist demand recorded in Romanian agro-tourist guest houses are mainly caused by economic and organisational factors. These refer to the paid vacations mechanism or to the benefits granted during holidays.

As the dominant feature of the tourism activity, tourist seasonality should be considered when developing the marketing policy of the tourism facility and requires ample and consistent efforts to adjust the tourism supply to the specific needs of the tourism demand expressed on the market.

Seasonality should be taken into account both during the provision of the tourist product (through the actual performance of the services) and during its design phase, when the future tourist destination is being set up for accommodating visitors.

When designing the tourism facility, one should place the functionality elements in close relation to the subsequent requirements ensuing from the removal or diminishing of the effects triggered by the seasonal concentration of the demand.

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