THE INTERCORRELATION BETWEEN TOURISM AND THE ENVIRONMENTAL EVOLUTION IN THE CONTEXT OF THE ECONOMIC CYCLE CASE STUDY: ROMANIA

Păun Iulian Gabriel[1]
Master's student, Faculty of Commerce, Bucharest University of Economic Studies, Bucharest, Romania

ABSTRACT
Because the effects of economic cycles and, in particular, the crisis of recent years, are becoming stronger and more extensive , affecting whole sectors of the world economy and national tourism through important role to contribute to mitigating these negative consequences . To help increase however , support and economic recovery, it is necessary to identify factors that have a strong influence on indicators of tourist traffic. This will then allow the ranking factors exerted by link indicators hierarchy that can be a foundation for the design of strategies and policies to maximize the positive effects of tourism on the national economy. At the same time, it can contribute to a better understanding of how the determinants of tourism act at different stages of the economic cycle. This paper examines the links between a number of macroeconomic indicators (GDP, employment, real wages) and a number of indicators of tourist traffic (number of overnights , arrivals, departures). Analysis period includes the years of the economic cycle (2005-2012) and highlights the links between economic growth , economic recession , and the correlations for the entire period.

Keywords: *environmental, economic cycle, tourism, influence factors, Romania*
JEL Classification
A10, B53, E20, E32, L83

1. Introduction

Tourism is a sector of global importance and it also represents a developing industry that contributed to the global gross domestic product (including the more ample effects of investments, supply chain and the impact resulted from incomes) with a total of 6.630 billion USD in 2012 (9.3% of the global GDP). It is expected that the total contribution will also register an increase of 3.2% in year 2013, reaching the threshold of 6.842 billion USD; this threshold will represent 9.4% of the global GDP (WTTC, 2013).

The direct contribution of tourism to the national GDP in 2012 was 9 billion LEI, which represents 1.5% of GDP. It is expected that it will increase with 10.6% till it reaches 10 billion LEI in 2013. In 2013, the total contribution of tourism was 30.5 billion LEI, which represents 5.1% of GDP and an increase of 4.3% to 31.8 billion LEI (the equivalent of 5.3% of GDP) is anticipated (WTTC, 2013). Therefore, despite the fact that the world economy is fighting for recovery after the global financial crisis, the tourism contribution to GDP (Gross Domestic Product) increased for the third consecutive year in 2012, creating more than 4 million new jobs (WTTC, 2013).

At a national level, tourism was the generator of 479 thousand jobs in 2012 (the equivalent of 5.7% of the total employment figure). This number will increase with 3.1% in 2013, to 494 thousand jobs (the equivalent of 5.9% of the total employment figure). It is anticipated that tourism will support 551 thousand jobs by 2023, which will represent 6.8% of the total employment figure (WTTC, 2013), an increase of 1.1% per year, during this period.

Thanks to its significant importance, but also to its multiplier effect, tourism can contribute to the revival of the national economy in the context of the economical crisis. However, in order to support the economical growth, it is necessary to identify whether or not there are links between environmental factors and tourism indicators and also their courses of actions. These pieces of information have great importance in realising national and local strategies which can have the

[1] gabipaun90@gmail.com

potential to permit the mitigation or even neutralisation of the effects of the economical cycle resulted from the financial crisis, but also to contribute to the maximisation of the positive effects.

2. The economical cycle – theoretical aspects regarding the concept, historic evolution and its implications

The problem of economical cycles has its origin in thinkers' and researchers' concerns over the years.

By observing the reality, some rhythms, cadencies, of long and short cycles that formed chronology have been identified. The prefiguration of cyclic models that are known at the present time in economy was created 6,000 years ago, in Egypt which at that time was holding a perpetual calendar, realized according to the image of the Nile; river that was adjusting life and sustenance (Brăileanu, 2001). Machiavelli prefigures the political transformation of society in relation to the symbol of the circle, or cycle, symbol, in which one can find the justification of foresight and statistical techniques, and also the justification of governmental methods (Idem, p.40). One of the first cyclic representations of the economical phenomenon, including the monetary one, appears in the 'Economical Table' of Francois Quesnay. He intelligently formalizes the principal interdependences between the actors of the economical life, by structuring them in a reproductive model – the first model of dynamic and procedural economical balance. At this scientist, one can also find the analogies between the economical system and the human body, but also between economical life and medical life.

Ludwing von Mises has developed, at an initial stage, a theory of economical cycles which later became well-known as the 'Austrian theory of economical cycles'. He applied the theories of the Monetary School to the subjective theories of capital and interest developed by Bohm-Bawerk and he noticed that the credit and deposit expansion without the contribution of saving, produced by the bank system through the medium of fractional reserves and guided by a central bank, not only generates cyclic and uncontrolled growth of the monetary mass, but also triggers an artificial and unsustainable 'extension' of production processes, which, thereby, become excessive with regards to capital. Credit expansion and its effect, amplification of the inflationary process, will adopt, sooner or later, a descendent plan and they will produce a crisis or an economical recession. The committed errors will be reflected at an investment level, resulting in massive unemployment, and erroneous invested resources will require liquidation and relocation to more effective domains (Huerta de Soto, 2011).

It is generally accepted that by cyclic movement one can understand the fact that the system evolves in an ascendant direction, being pushed by forces that guide it upwards, having a common endeavour and a cumulative effect one over the other and which gradually lose their power, following, at some point, a replacement with forces that act in an opposite direction (Keynes, 2009). These have a similar behaviour to those mentioned; they reach a maximum point of development, then they drop, and the process is resumed. It is worth mentioning, that through cyclic movement we shouldn't only understand that ascendant and descendant tendencies do not always persist on the same direction, but also the fact that these are being overturned.

Keynes considers that his regularity regarding sequencing and the commercial cycle duration is due to the way the marginal productivity of capital fluctuates (Idem, pp. 383-388). He considers that the crisis is a sudden collapse of the capital marginal productivity determined by the current's too optimistic expectations in relation to future benefits of capital goods, but also by the abundance and current production costs of this type of goods.

Another perspective with regards to the issue of economical evolutions is given by the 'Theory of real economical cycles' which offers us the main framework for the analysis of economical fluctuations and which has become to a high degree the centre of the macro-economical theory. Economists who utilise this theory underline the importance of quantitative aspects regarding modelling, thus they are reflected by the main role offered to calibration, simulation and evaluation of models. The most important dimension proposed by this theory is conceptual and it is being supported by three statements (Gal, 2008):

- **The efficiency of economical cycles** – the multitude of economical fluctuations observed in industrialized countries can be interpreted as a balance resulted from economy's responses to exogenous variations of real forces (technology), in an environment characterized by perfect competition and by divergence free markets. In accordance with this vision, cyclic fluctuations do not necessarily signalize an inefficient allocation of resources. Therefore, stabilization politics can be unnecessary and undesirable, but they can also be counterproductive.

- **The importance of technological shocks** as a source of economical fluctuations – this statement derives from the model's ability to generate 'realistic' fluctuations of outputs and of other macro-economical variables, even when total variations of the productivity factor are supposed to be the only exogenous forces. This interpretation strongly contrasts with the more traditional vision of technological chances as source of growth on the long run, without any connection to the economical cycle.

- **The limited role of the monetary policy** – 'The theory of real economical cycles' is attempting to explain the economical fluctuations without any reference to monetary factors, even ignoring the very existence of the monetary sector.

In order to counter the effects of the current economical cycles, it has been proposed the administration of the risk by the state (Pop, 2010). Therefore, until the beginning of the 20th century, the visions related to public finances on the European continent were dominated by two major paradigms: - the British one and the cameralist one (German and Italian). The two currents regarded the state as entity in different ways. Cameralism shared the idea that a state can embody the greater good to which individuals aspire and participate in order to complete the welfare generated by market shares. The cameralists' vision in relation to public finances refers to the way individuals, through the ensemble of changes that are represented by the state, can reach their objectives.

British liberalisation regards the state as the sum created by the concessions made by each individual in relation to a part of his/her force and it must be stopped from using its power against its own subjects through limiting its role in society regarding the actions of internal and external defence.

In the 80s, as a result of perceiving the failure of governmental interventions, many economists, finance ministers from developing countries, but also leaders of international development organisms started to support the growth of the degree of utilising market mechanisms as a key instrument for increasing efficiency and for rapid economical growth (Todaro and Smith, 2011). As a result of national liberalisation programmes, a series of developing countries tried to reduce the role of the public sector, encouraging the private sector and eliminating the distortions in the interest rate, salaries and prices of consumer goods.

Huerta de Soto considers that 'if we desire to build for the 21st century a financial and monetary system that is truly stable, which will protect our economies against crises and recessions to the best of its abilities, we will have to: (1) assure that there is complete freedom of choice with regards to currency, based on a metallic standard (gold) that will replace all fiduciary means issued in the past; (2) establish a free-banking system, (3) insist that all agents involved in the free-banking system will be subjected to and respect the rules and the legal traditional principles, especially the principle according to which no one, not even a banker, can enjoy the privilege of lending something that has been entrusted as sight deposit (for example, free-banking system with 100% reserves)' (Huerta de Soto, 2010).

It becomes apparent that the opinions of specialists regarding the causes and remedies of the evolution of economical cycles are very divergent – some of them recommend a stronger regulation and a greater surveillance, while others are suggesting the deregulation, liberalisation and cancellation of the privileges of the bank system.

3. The environmental factors that influence tourism

Due to the fact that it belongs to the tertiary sector of economy, tourism is affected by the evolutions of the economical cycles (Miron and Folcuţ, 2005). Provision of complex services represents a trump card of competitiveness, but it also represents a dominant economical activity in all countries regardless of their development stage and of their ranking in the global commerce.

The current literature makes reference to certain factors that determine the service dynamic and, consequently, the dynamic of tourism (Ibidem, pp. 28-31): the greater elasticity of service request in relation to incomes – it has been noticed that while incomes increase, the tendency to raise the share of spending on services in relation to goods also increase; goods include more and more actives that have their origin in the tertiary sector and they are being offered by specialised providers, the strategic role of services in connection with goods exports, the growth of manufacturers' responsibility for offered goods, the increase of intensity with regards to product intellectual property, the growth of technical complexity in relation to marketable goods, the reduction in economical distance between states (the differences between the prices of goods at supply checkpoints and at destination), the increasing of the commercial character of the services, the growth and diversity of service request, the consolidation of liberalisation and deregulation processes.

The business environment is defined as the 'space which is exterior to the borders of the enterprise system'. This represents the ambient in which it exists and functions (Moşteanu et al., 2000).

The environment in which businesses operate exercises a great influence on their financial results. Therefore, decisions, which managers report their businesses to globalisation challenges, are affected by the national climate in which the enterprise localises its activity, but also by the underlying international conduct norms.

In literature, the business environment is structured on two levels: general and specific. The specific environment contains factors and influences with direct and lasting impact on the enterprise. This category reunites the following elements (Ibidem): suppliers, clients, competitors, financial-banking institutions that are directly connected with the enterprise, the branch of the market structures which is associated to the enterprise, associative structures that have an impact on the firm: patronal federations, unions, etc.

The reunion of forces and influences that affect to some extent the existence and functionality of enterprises from the same area, takes place in the context of general environment. This category incorporates (Ibidem, p.60): the legislative and administrative regulations, the business ethical norms and the codes of commercial conduct, technologies, the eco-system, the reference parameters of the macro-economical framework (interest rate, fiscality, exchange, indices), the basic macro-economical correlations, the unbalances and economical crises (unemployment, inflation, recession), the cultural factors and the international environment.

One can observe that there are a multitude of factors that exercise significant influences through their high numbers, but also through the implications associated with the enterprises from the services sector. Thus, it becomes imperative for the economical agent who activates in tourism to build a vision and a strategy that start from a close analysis of the political, economical, social and technological environment (PEST) (Ioncică et al., 2004) on one hand regarding historical evolutions and on the other hand, in relation to next trends. Simultaneously, managers are also obliged to allocate time to other factors that raise issues in establishing enterprise strategies – the nature of the industry (type of product, type of markets in which it operates, production and performance technologies, but also the access to materials and raw materials), the nature of the enterprise (type of property, the enterprise's degree of maturity, the extent to which the activity is national or international), the present conditions and the type of economy in which the enterprise operates (Ţuclea, 2003).

The management of the organisations that operate in the tourism sector has to keep under surveillance the cultural environment and the reference groups of the targeted customer. Culture is a complex of abstract elements and materials created by a society and which makes reference to values, attitudes, ideas and significant symbols. The reference group is that real or imaginary group which serves as benchmark in making some decisions. Family is a strong reference group in a certain culture

(Moutinho, 2000). This group has to be observed and analysed by tourism managers in order to identify the resulted modifications and to neutralise or satisfy them according to expectations.

The general managerial orientation has deep implications in relation to the development of the international marketing activity of the enterprise. The stage of internationalization associated with the enterprise at some point leads to different types of strategic orientations in relation to the organisation or in the context of the marketing activity such as: the ethocentric orientation (a feature of firms that open the first subsidiaries on different external markets), the polycentric orientation (specific for companies that target the capitalization of a successful economical element in the host country), the regiocentric orientation (which approaches compact geographical or economical areas) and the geocentric orientation (which is a feature of large enterprises that act and optimise their strategies at a global level) (Dumitru, 2004).

Beside the factors that were previously mentioned, the tourism marketing environment covers two other factors with impact on this industry (Stăncioiu, 2004): the natural environment – the prices of tourist products are influenced by the tendency of decreasing the pollution level and of the increasing the conservation level of natural and anthropogenic tourist resources, the demographic environment – characterised by the population size in a certain area, population density, geographical localisation of the population, age, sex, etc.

Problems with profound and ample implications regarding the business environment, and especially in relation to the touring sector, are produced by the instability of the legislative environment. These problems have been emphasized during the transition from the socialist economy to the free-market economy and one can identify two trends – the increase of the regulations' number and the process of changing some of them at very short intervals (Ioncică, op. cit.). Marinescu (2007) considers that the 'main preoccupation should be the simplification of legislation and its confinement, in such a way that the law should be the one that dictates, and not the decisions of some governmental or parliamentary officials, whose preoccupation, sometimes, appears to be, the identification of new ways of destabilizing even more the business environment.'

Another stringent problem at a national level is represented by the harsh fiscal framework. Consequently, according to a study conducted by The World Bank in 2010 with reference to the evaluation of the Romanian business attractiveness, the entrepreneur has to pay directly or to hold and swerve a total of 113 fees and taxes. In comparison with year 2007, fiscality has increased – this year the number of payments that had to be made was 89 (The World Bank, 2010). In these conditions, it is necessary to reform this legislative framework, even more so considering that fact that we can observe a favourable reaction of the business environment to the incentive of fiscality reduction – in 2005 the number of new SRLs significantly increased in comparison with previous years – as a result of the introduction of the unique tax rate of 16%, at the end of 2004 (Marinescu, 2012).

Unfortunately, in 2012, compared with 2010, the burden of fees and taxes has been modified in a negative way – the number of annual consumed hours for fiscal obligations payments reaching 222 from 202. In consequence, in 2012, Romania was ranked 154th in the paid taxes list, in comparison to its ranking in 2010, the 149th place.

The above-mentioned factors, alongside many others influence tourism. An analysis on these would include the following categories of factors:

- ✓ Economical factors (population incomes, touristic offers, prices);
- ✓ Technical factors (the performance of the means of transportation);
- ✓ Social factors (urbanization, leisure time, fashion);
- ✓ Demographical factors (population evolution, age structure, socio-professional categories);
- ✓ Psychological, educational and civilization factors (educational level, temper, individual character);

- ✓ Natural factors (geographical location, relief, climate);
- ✓ Political and organisational factors (border formalities, visa regime, conflicts, etc);
- ✓ Seasonal factors (with cycle activity – seasons succession, the structure of the school year, agricultural activity);
- ✓ Conjectural factors (economical and political crises, armed conflicts, natural catastrophes, meteorological conditions).

Furthermore, the present study will analyse the correlation between the economical factors and the main national tourist traffic indicators.

4. The analysis of the correlation between the economical environment factors and the tourist traffic indicators – case study: Romania

In the context of the recent manifestation of the economical cycle, the aim of the present study is represented by the identification of some links (and their direction of manifestation) between different macro-economical environment factors and a series of indicators that reflect the global evolution that was recorded by the Romanian tourism.

The identification of these correlations is necessary for conceiving strategies of neutralization of negative effects or of enhancement of positive influences in relation to tourism evolution.

4.1 Methodology

The information about the temporal evolution of the tourism phenomena is systematically recorded by the competent institutions (The Statistical National Institute). The evolution of the tourist traffic is influenced by the action of the different categories of factors that are measured through the present indicators system at a macro-economical level. The data that will be analysed are represented by primary sources that were provided by the Romanian Statistical Yearbook and by the 2005-2012 tourist indicators summaries.

One of the most important evaluation indicators of the tourist traffic is the number of arrivals at accommodation structures with reception functions. Beside this indicator, the present study will also analyse the number of overnights at the tourist accommodation structures, but also the number of domestic departures outside the national borders. The number of overnights or tourist-days is being calculated as the sum of the multiplications between tourists' number and the duration of the tourist activity expressed in days and it is derived by processing information from hotel unit statistics (Micu, 2013).

The relationships between the listed indicators will be analysed by clustering them into pairs as follows: the GDP indicator with the number of overnights at the tourist accommodation structures, the occupied population with the number of arrivals and the monthly real wages per household in relation to domestic departures.

It is worth analysing the correlation degree between the tourist traffic indicators, previously listed, and some of the economical environment indicators such as – monthly wage per household, occupied population and the gross domestic product in steady prices. In order to conduct these measurements, we will apply various econometric and statistical methods as the correlation coefficient and the regression method.

The regression method is relying on the measurement and the prediction of the influence exerted by one or more factors (the exogenous variable – cause X) on a certain indicator (endogenous variable – effect Y). The basic element in regression is the regression function, which presents the dependency of the Y variable on the X variable factor (Zaharia, Gogonea, Oprea, 2010). The main indicators used for conducting the regression analysis are: R, R2, R2 and Se (Table number 1).

Indicators used for the regression method

Table no.1

Multiple R	$Ry,x = \sqrt{\frac{\sum_{i=1}^{n}(\hat{y}_i - \bar{y}_i)^2}{\sum_{i=1}^{n}(y_i - \bar{y})^2}} = \sqrt{1 - \frac{\sum_{i=1}^{n}(y_i - \hat{y}_i)^2}{\sum_{i=1}^{n}(y_i - \bar{y})^2}}$
R Square	$R^2 = \frac{\Delta^2_{y/x}}{\Delta^2_y} = 1 - \frac{\Delta^2_e}{\Delta^2_y} = \frac{\sum_{i=1}^{n}(\hat{y}_i - \bar{y})^2}{\sum_{i=1}^{n}(y_i - \bar{y})^2}$
Adjusted R Square	$\bar{R}^2 = 1 - \frac{\Delta^2_e / n-k-1}{\Delta_y / n-1}$
Standard Error	$s_e = \sqrt{\frac{\Delta^2_e}{n-2}} = \sqrt{\frac{\sum_{i=1}^{n}(y_i - \hat{y}_i)^2}{n-2}}$
Observations	n

Source: Zaharia, M., Gogonea, M., Oprea, C., Econometric analysis of the flow of tourists in the accommodation structures in Romania, The Annals of The "Ştefan cel Mare" University of Suceava, Vol. 10, Special Number, 2010, pp. 92-100.

The correlation coefficient is being derived from the following formula

$$Correl(X,Y) = \frac{\sum (x-\bar{x})(y-\bar{y})}{\sqrt{\sum (x-\bar{x})^2 \sum (y-\bar{y})^2}}$$ and it shows the direction of the relationship and its intensity.

The regression function can be validated by the dispersion analysis which is calculed by the F test (Fisher Snedecor). The regression model is statistically significant if calculated F is greater than critical F. Also, the model can be considered statistically significant if Significance F is lower than α, where α represents the significance threshold and 1 – α represents the confidence level. Usually, α=0.05 or α= 0.01, corresponding to a confidence level of 95% and 99%.

ANOVA and the F test

Table no. 2

Source variation	df	SS	MS =SS/df	F	Significance F
Regression	k	SSR= $\Delta^2_{y/x} = \sum_{i=1}^{n}(\hat{y}_i - \bar{y})^2$	$s^2_{y/x} = \frac{\Delta^2_{y/x}}{k}$	F calculated $F = \frac{s^2_{y/x}}{s^2_e}$	
Residual	n-k-1	SSE= $\Delta^2_e = \sum_{i=1}^{n}(y_i - \hat{y}_i)^2$	$s^2_e = \frac{\Delta^2_u}{n-k-1}$		
Total	n-1	SST= $\Delta^2_y = \sum_{i=1}^{n}(y_i - \bar{y})^2$ SST=SSR + SSE	$s^2_y = \frac{\Delta^2_y}{n-1}$		

Source: Zaharia, M., Gogonea, M., Oprea, C., Econometric analysis of the flow of tourists in the accommodation structures in Romania, The Annals of The "Ştefan cel Mare" University of Suceava, Vol. 10, Special Number, 2010, pp. 92-100.

Finally, the regression model parameters are being tested by using the Student test (the T test) (Cristache, 2002).

The used data are presented in table number 3.

The tourist traffic indicators and the macro-economical indicators - Romania

Table no. 3

Indicator	2005	2006	2007	2008	2009	2010	2011	2012
Arrivals - thousands	5805.1	6216.0	6971.9	7125.3	6141.1	6036.2	7002.4	7653.4
Overnights - thousands	18373.0	18991.7	20593.3	20726.0	17325.4	15967.1	17914.1	19091.4
Romanian(domestic) departures – thousands	7139.8	8905.8	10979.8	13072.2	11722.5	10905.2	10936.2	11489.5
GDP billions current prices	288.2	344.7	416.0	514.7	501.1	523.7	556.7	587.5*
GDP billions steady prices	288,2	298,4	317,2	340,4	317,9	314,4	321,6	323,6
GDP index % (previous year=100)	100	107,9	106,3	107,3	93,4	98,9	102,3	100,6
Real wage index %	100	109	125	145.7	143.4	138.2	135.6	136.9
Monthly real wage/ household**	456,40	497,48	570,50	664,97	654,48	630,74	618,88	624,81

**The GDP of year 2012 is the estimated one; **own calculations*

Source: INSSE, The tourist indicators summary 2005-2012, The Romanian Statistical Yearbook 2007,2012,2013.

4.2 The correlation between GDP and overnights

In this part of the study, we will analyse the way in which the number of overnights at the tourist accommodation structures has been influenced by the evolution of the gross domestic product in steady prices, in the period 2005-2012.

It is worth mentioning that the evolution of both indicators follows an ascendant trend in the first four years of the analysed period, and between 2008 and 2010, it registers a descendant trend. The last two years of the period are characterised by an increase of both indicators.

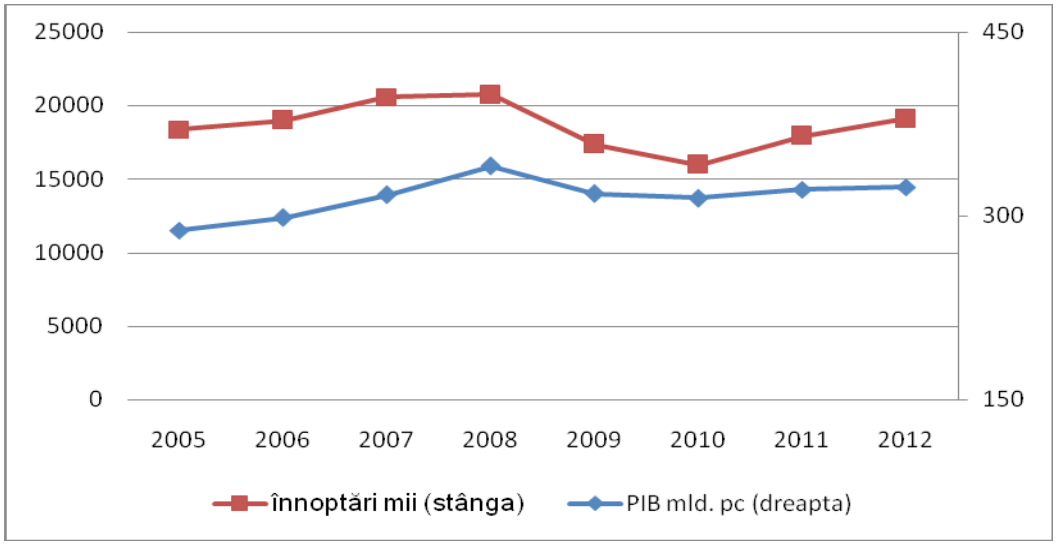

Figure 1. The evolution of GDP and overnights

Considering the evolution of GDP in real prices and the number of overnights in Romania between 2005 and 2012, the following correlogram of both indicators has been carried out (Figure 3).

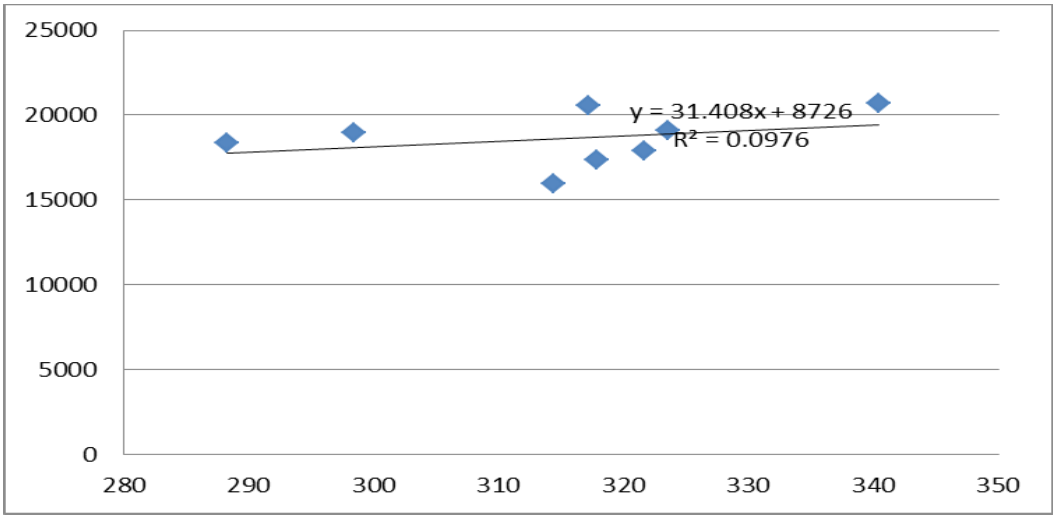

Figure 2. The GDP – overnights correlogram

It is worth mentioning that the determination degree between the two indicators is 0.097, which means that the number of overnights is 9% influenced by GDP; the relationship between them is very weak.

4.3 The correlation occupied population – arrivals

We will follow the determination of a relationship between the number of the occupied population (OP) at a national level and the number of arrivals at accommodation structures.

By observing figure number 3, it becomes discernable the fact that the occupied population registers a positive evolution until 2008 when the indicator is starting to follow a descendant trend. In 2011, it resumes the positive trend. The number of arrivals at the accommodation structures with reception functions has a similar evolution, expect the fact that the descendant trend ends in 2010 and not in 2011.

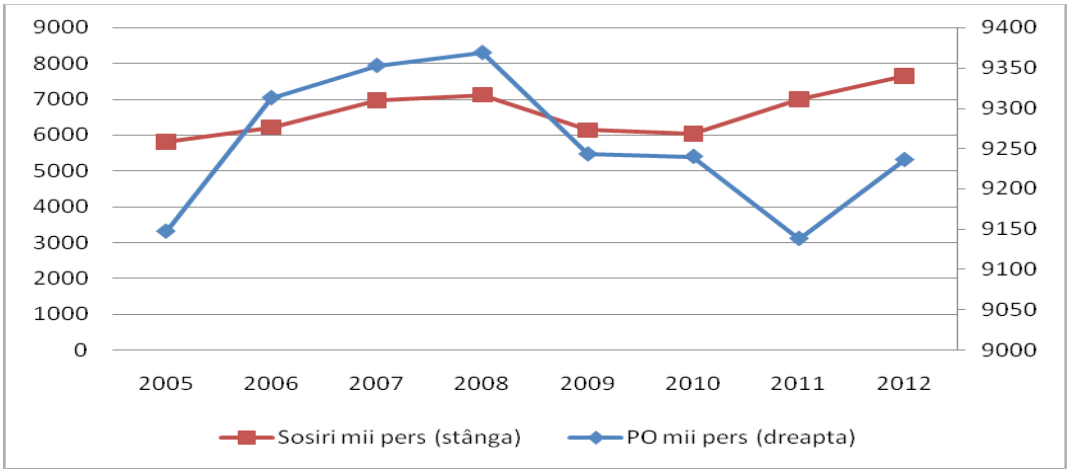

Figure 3. The evolution of OP and arrivals

The representation of data through a correlogram (Figure 4) allows us to observe a linear dispersion of the data.

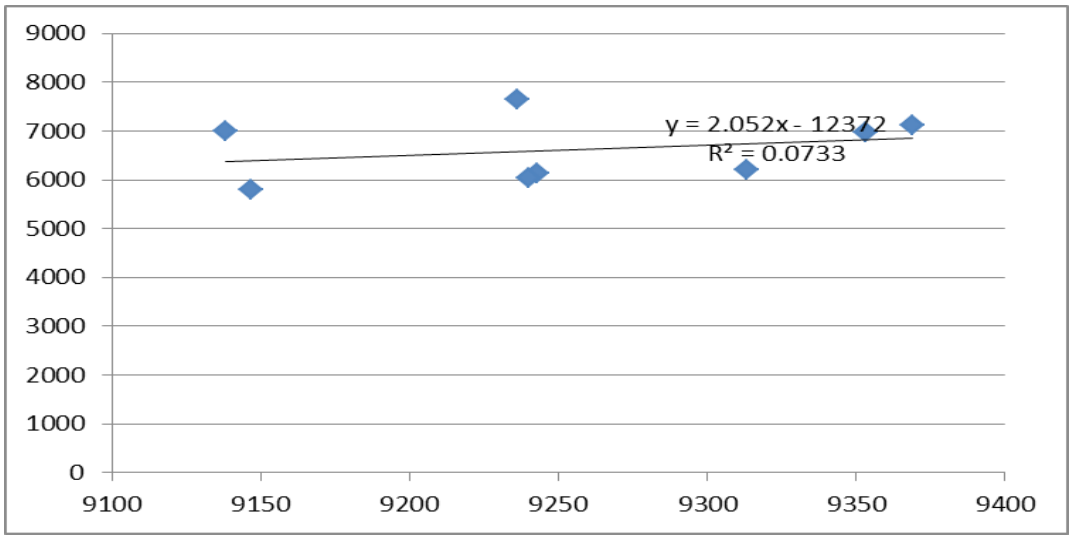

Figure 4. The OP – arrivals correlogram

Therefore, we can observe a very weak relationship between the indicators which can be explained by the fact that the determination degree is 0.07, which means that the arrivals are 7% influenced by the occupied population indicator.

4.4 The correlation between the monthly real wage per household – resident (or domestic) departures

The last pair of analysed indicators is the one formed by the monthly real wage per household and the resident departures outside national borders.

By analysing the below figure, we can observe that the two indicators have similar evolutions until 2010 – they increase until 2008 and after that they decrease. The number of departures follows an ascendant trend from 2010, while the monthly real wage continues to decrease to this year, resuming a positive trajectory in 2011.

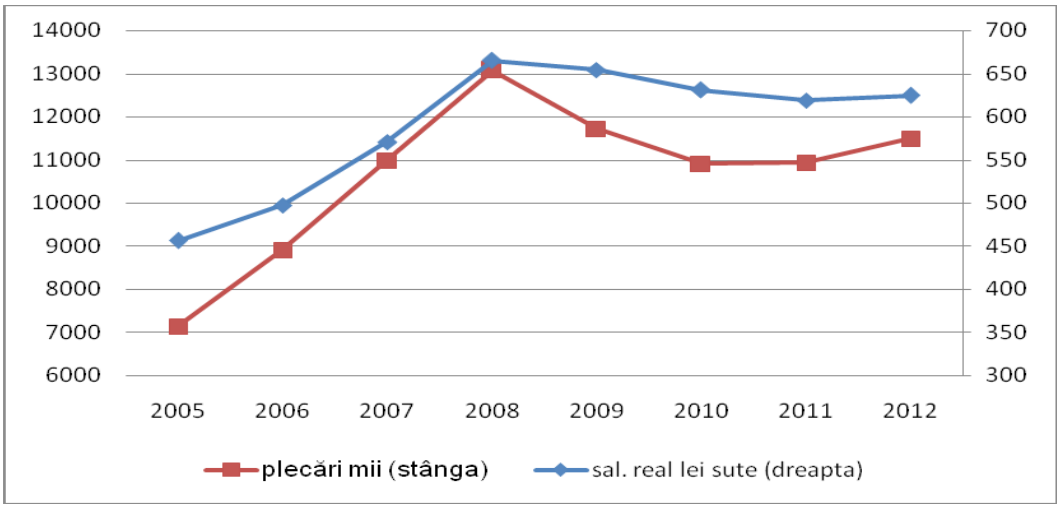

Figure 5. The evolution of departures and real wage

In order to better notice the relationship between the two indicators, the present study carries out a correlogram (Figure 6) and underlines a determination degree between departures and real wage of 90%.

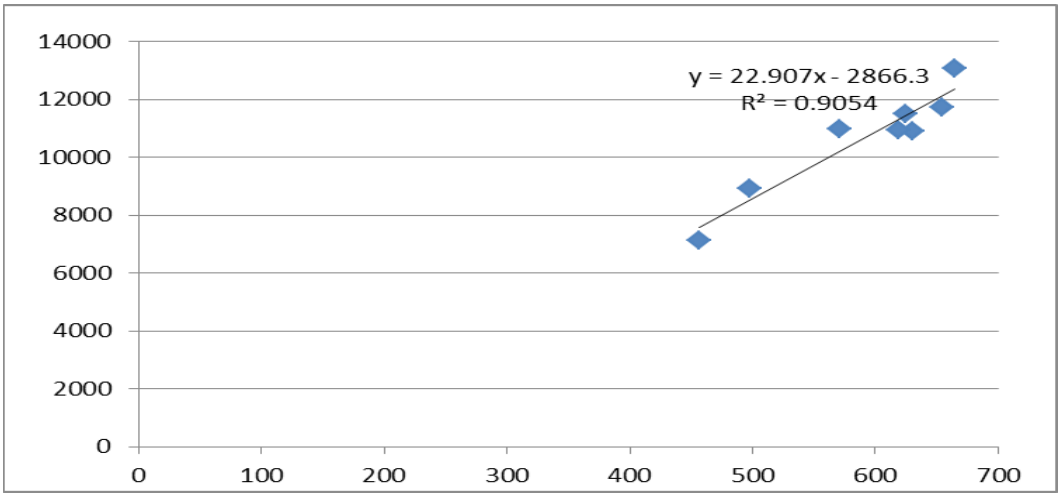

Figure 6. The real wage – departures correlogram

Furthermore, the present study will analyse the data through the spreadsheet software and the results will be presented below (table no. 4).

The determination and testing of the regression model

Table no. 4

SUMMARY OUTPUT						
Regression Statistics						
Multiple R	0.951507686					
R Square	0.905366877					
Adjusted R Square	0.88959469					
Standard Error	606.7483406					
Observations	8					
ANOVA						
	df	*SS*	*MS*	*F*	*Significance F*	
Regression	1	21132451.12	21132451.12	57.40274735	0.000274807	
Residual	6	2208861.293	368143.5488			
Total	7	23341312.42				
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	-2866.26075	1796.029604	-1.595887253	0.161626134	-7260.986865	1528.465364
Real wage lei hundreds (right)	22.90693114	3.023434546	7.57646008	0.000274807	15.50885334	30.30500895

The correlation ratio equal to 0.951508 shows us that there is a strong relationship between the monthly real wages per household and domestic departures. The percentage used by the real wage to influence tourists' departures is approximately 91% (R Square = 0.905367). Due to the fact that the significance threshold is lower than 0.05 (Significance F = 0.000274807 < 0.05), the regression model is valid. The correlation coefficient between these indicators is 0.95 which means that there is a strong positive relationship.

After conducting the analyses, we can notice that between the three pairs of indicators, during the analysed economic cycle, the relationship between them is very weak (the pair GDP – overnights has a determination degree of 0.09 and a correlation coefficient of -0.34, and the pair occupied population – arrivals has a determination degree of 0.07 and a correlation coefficient of 0.27).

Thereby, in the case of GDP in constant prices and overnights, even though the relationship is very weak, it acts in reverse – as this indicator decreases, the number of overnights increases and vice-versa.

The only pair that showed a direct and strong relationship is the one formed by the monthly real wage per household and the number of departures (the ratio and the correlation coefficient are equal to 0.95, the determination degree is 0.90). This relationship can be maximized by the tourism operators by focusing the promotion and marketing efforts on the customer segments least affected by the crisis – as families with children that prefer coastal areas (Turtureanu, et. al., 2012), but also by offering attractive deals from a financial point of view – for individual clients, or by proposing some business events and less incentive deals – for corporative clients (Iftimie and Podina, 2013). Another source that can be capitalized is the one represented by the promotion of regional tourism as a stimulating factor for developing disadvantaged areas with tourist vocation (Hapenciuc, Condratov, Nistoreanu, 2009). Thus, the simplicity of rural life and its serenity represent the trump card for the tourist who is tired of the complexity and stressful aspects of the urban life and they must be capitalized by the tourism economic agents.

Moreover, in order to eliminate the distortions created by the economic crisis and to identify more accurately the relationships between the analysed indicators, the present study will conduct a 'before and after crisis' analysis, in such a way that relationships will be determined for each stage of the economic cycle – the growth period and the recession period.

4.5 The correlation of the 'before and after economic crisis' indicators

For the first pair of indicators (GDP – overnights), we can notice that in the economical growth period between 2005-2008, the ratio and the correlation coefficient are equal to 0.08, which shows a very weak relationship; it is almost non-existent. Due to the fact that the significance threshold is greater than 0.05, one can consider that the regression model is not valid. The economic crisis period permits the observation of the fact that the indicators have a ratio and a correlation coefficient of 0.85, which represents a direct and strong relationship. Similarly, in this case the regression model is not valid, due to the fact that the significance threshold is greater than 0.05.

It is noticeable that the second pair of indicators (occupied population – arrivals) has in the economical growth period a ration equal to 0.89 and a correlation coefficient of 0.90, which shows that there is a very strong and positive relationship between these two indicators. Thus, the strong correlation between the occupied population and the number of arrivals can be interpreted by the fact that as long as people undertake earner activities, they will be inclined to travel. The economic crisis leads to the decrease of the correlation ratio which reaches 0.3, but also to the decrease of the correlation coefficient that becomes -0.3; these facts are showing a weak and reverse relationship. Despite the fact that in the 'after economic crisis' period, the occupied population is decreasing and the number of arrivals presents an opposite trend, this phenomenon can be explained through the fact that individuals have fragmented the movement duration by travelling more and for shorter periods of time.

In relation to the third pair, formed by the real wage and the number of departures, one can observe that in the economic growth period, the correlation ratio and the correlation coefficient are equal to 0.99, which represents a very strong and positive relationship. The relationship between these indicators is decreasing in intensity during the economic crisis, leading to a ratio and correlation coefficient of 0.71, which shows a strong and positive relationship. The strong relationship is explained by the fact that the real wage has an ascendant trend which offers the possibility for travelling outside the national borders. The economic crisis period is characterised by the reduction of the real wage, with direct impact on the number of departures. This behaviour can be explained by the fact that individuals have other priorities with regards to spending incomes, tourist needs being demoted.

Conclusion

Despite the fact that from a statistical point of view, the results present the possibility of not confirming the theoretical hypotheses, they are necessary for creating a hierarchy of the causes that influence the tourist traffic and to act upon the most important factors. Consequently, such a ranking of the influential factors of the tourist traffic indicators in the 'before the economic crisis' period can be described in the following order: 1) real wage, 2) occupied population and 3) GDP. In the 'after economic crisis' period, this ranking is represented by the following order: 1) GDP, 2) real wage and 3) occupied population.

The results can be utilised in the economic cycle phases, in such a way that the adjustment of public policies would permit a high degree of adaptation to the economical situation.

At the same time, these discovered correlations can establish the basis for the substantiation of some macro-economical strategies of stimulating tourism, but also of the entire economy. In consequence, in order to encourage the population degree of occupation, the growth of the real wage, but also the growth of the GDP, the implementation of some fiscal relaxing measures and the deregulation of the labour market are recommended. Only the implementation of such methods can lead to positive effects for the national tourism and economy, to a better lifestyle and also to the continuity of the current economical system.

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