

SYSTEM THINKING FOR TOURISM MANAGEMENT – COMPETITIVENESS AND SUSTAINABLE DEVELOPMENT. ROMANIAN CASE

Mihaela Vartolomei, Lecturer¹

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Abstract: *This research presents the tourism as a system emphasizing the imperative of systemic thinking approach for the tourism industry, as a novelty. Then the author makes a survey of the Romanian tourism system, using statistic data from National Institute of Statistics and Eurostat database, and data collected from various official, governmental and semi-official published reports, research journals, newspaper reports, research articles, websites and works of individual scholars: The Travel & Tourism Competitiveness Report 2017 from World Economic Forum, Travel & Tourism Economic Impact 2018 from World Travel & Tourism Council, Tourism Investment Masterplan, Transnational Strategy for the Sustainable Territorial Development of the Danube Area with Special Regard to the Tourism. The methodology of the present paper is classic and there are used as methodological instruments the analysis, comparisons and synthesis of available information. The scope of the paper is to analyze the competitiveness and sustainable development in the tourism management for Romanian case, to conclude and to make recommendations. Hence, in conclusion, the Romanian tourism is under-developed according to its potential. The implementation of National Innovation System in Romania must be considered as a future solution for better exploiting of the tourism potential and to make it more productive.*

Keywords: *system thinking, tourism management, national innovation system, competitiveness, sustainable development.*

1. INTRODUCTION

The company in travel, hospitality, and tourism dynamic industry is like a living organism, with multiple contributions and connections, as a part of a complex system [1]. The success of any industry (both the civil and the military one) is increasingly depending from the perspective of a dynamic and systemic thinking for innovation system performance. The importance of focusing on complex evolutionary system thinking approach (this means considering the dynamics and the tensions between the holistic components in time and space) and systemic connectivity in evolving institutions and organizational capabilities reveals from the necessity to face continuing competitiveness, productivity, innovation challenges, and sustainable development in tourism management amidst the global competition in the framework of global challenges (climate change, the increase of population, the limitation of the resources, etc.).

The system (generally, the system approach can be designed as it is presented in the figure 1) is a group of various individual components (the structure or the framework) that interact each other, cooperate and work in the limit of space-time-resources conditions, driving to one (un) certain finality, but creating thousands of interrelationship and inter-action between the components of the structure (the clockwork) combining in a dynamic way. Any system is an integer of its components and, in the same time, it is a subsystem of a whole system, the system hierarchy being infinite in space and time. The quality of the system is given by all its characteristics that make the system to be able to satisfy the necessities of the intern or extern environment in the

¹ Politehnica University of Timisoara, Management Department, P-ta. Victoriei 2, 300006 Timișoara, Romania

framework of the life cycle stages of that system. The outputs quantity of the system reflects the competing capacity of the system, with a quality degree enforced by the environment, that the system is able to produce.

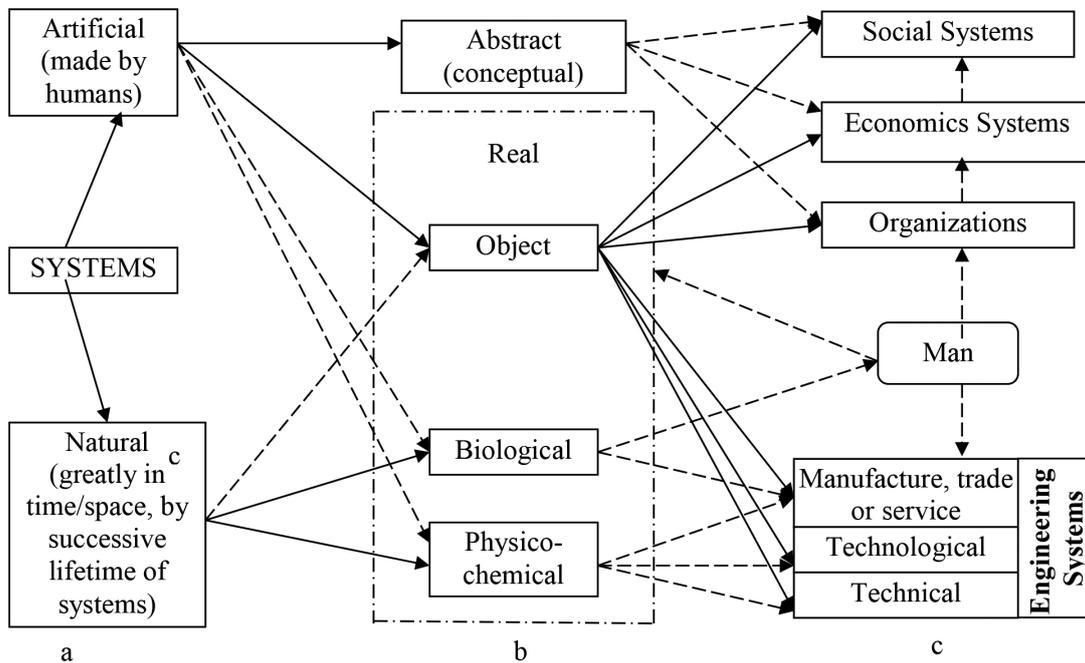


Figure 1: Scheme of the system: (a) source, (b) components, (c) action systems hierarchy
 Source: [2]

Thereby, the system has a competition property that represents its ability to win, to obtain the most performances in the competing process around, in a space-time-resources three dimension, by using certain opportunities.

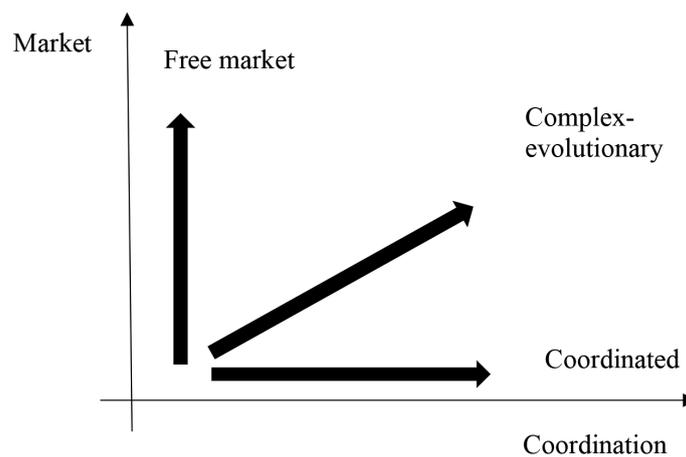


Figure 2: National innovation policies influence

The technology studies the transformation of the substance, the energy or the information in work technological processes and the possibilities of one efficient settlement to obtain the needed products. From research point of view, two groups of production or service subsystems can be identified:

- Small production or service systems (at simple or complex operation level),
- Big production or service systems organized by a set of small systems.

Innovation policy at the international organizations and the national governments and the decision-makers level had turned towards the adoption of the language of the system thinking, and in particular the implementation of the National Innovation System (NIS) (figure 2), with the specific innovation policy characteristics [3]. It is widely acknowledged that the competitiveness is stimulus for the whole society, it is the source of the innovation and the value added in the management system.

2. METHODOLOGY

The methodology of the present paper is classic and there are used as methodological instruments the analysis, comparisons and synthesis of available information. The main sources of data used are National Institute of Statistics and Eurostat databases. The methodology of the paper is based on secondary data collected from various official, governmental and semi-official published reports, research journals, newspaper reports, research articles, websites and works of individual scholars: The Travel & Tourism Competitiveness Report 2017 from World Economic Forum, Travel & Tourism Economic Impact 2018 from World Travel & Tourism Council, Tourism Investment Masterplan, Transnational Strategy for the Sustainable Territorial Development of the Danube Area with Special Regard to the Tourism.

3. SYSTEM THINKING APPROACH FOR COMPETITIVENESS IN TOURISM MANAGEMENT

Tourism system (figure 3) comprises theoretically and practically many components [4]:

1. demand sector can be expressed in different ways: either by the number of visitors or tourists (overnight accommodation is essential) in a region except the residents and the people who use touristic facilities and services, the origin region of the traveler, or the classical definition that is the amount of tourism products or services the individuals are able to buy, at a certain moment, at a certain price; it represents market segmentation by origin (domestic visitors, international visitors, national residing abroad, non-residents, foreigners, outbounds, inbounds), by demographics (younger, teenager, aged, gender, spending power, level of education, family composition), by characteristics (overnight or some-days visitor), or by the main purpose of the tourism trip: business (professional), holidays (leisure and recreation), education (study, training, scientific events), health (medical care), religion (pilgrimage), shopping, sport, visiting friends and relatives, transit, other visitors, other travelers (border worker, seasonal worker, short-term worker, long-term worker, nomads and refugees, transit passenger not entering the economic and legal territory, crews on modes of transport, asylum requester, long-term students and patients and their family joining them, diplomats, consular staff, military personnel and their dependents, foreign operational arm forces).
2. supply sector can be expressed by the tourism destination zones, the activities (tour operators, travel agencies, rent facilities), attractions (cities, landscapes, parks, museums, cultural events and festivals), transportation system (road, rail, sea, air), and intermediaries (restaurants, banks, accommodation, communication, retail shop, bars, libraries, churches, theatres, casinos, infrastructure and facilities);
3. the transit regions sector has many parts of the others components;
4. support services sector provides goods and services in both demand and supply zone, as part of the supply chain in tourism management;

5. the coordination sector is the government (public service) that provides regulatory controls (licensing laws, taxation, safety regulations), policy formulation (in economic, tourism, transport, foreign affairs, regional development, sport and recreation, telecommunications), national issues and interests (visas, trade, bilateral air services, anti-terrorism treaties), law and order (security of visitors, police, customs, immigration, anti-terrorism strategy), planning, infrastructure (roads, railways, airports, ports, water, power, communication);
6. bio-physical environment is related to legislation, national parks, biosphere reserves, world heritage sites, natural landscape, wilderness, protected areas, state forest, reserves, city parks, botanical gardens, aquariums, zoos;
7. home and host community can be residents, families, individuals, community organizations (NGO), indigenous minorities with social and cultural effects, community infrastructure development, cultural landscapes, training and up-skilling.

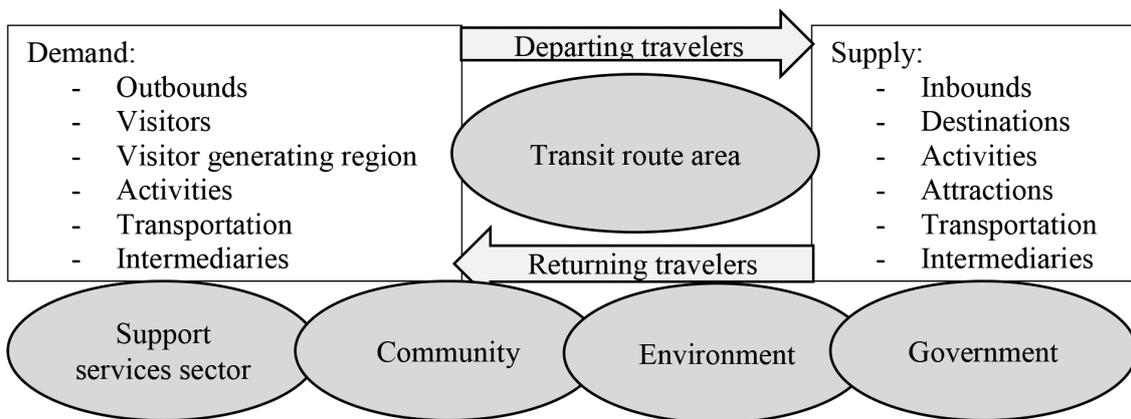


Figure 3: Components of tourism system

Travel, hospitality and tourism system consist in a lot of businesses, activities, components and ventures that all inter-relate with each other in many dynamic different ways, in a relationship constantly changing, in order to save or even increase the value of the natural or cultural resources for a viable and sustainable development with present and future benefits. Service system or customer service system (CSS) is a multi-operation action system able to transform specific inputs (substance, energy, information and work) in specific outputs (products, services and waste products demanded by demand force in the tourism market and extern environment). Hospitality system is included in tourism system and includes activities within the service industry (lodging, event planning, theme parks, transportation, cruise line, travelling and additional fields).

While Manufacturing Integrated System (MIS) is composed both of building and land, and the needed technical base, composed generally by aggregates or equipment, Customer Integrated System (CIS) gives the owners the opportunity to use the technologies, networks and to process their own transactions [5].

Figure 4 is presenting, in a large scale, a general structure of MIS and CIS. Hence, the meaning of the relations is focused on finality given by the satisfaction degree of the clients/consumers that will demonstrate the efficiency of the manufacture or service activity.

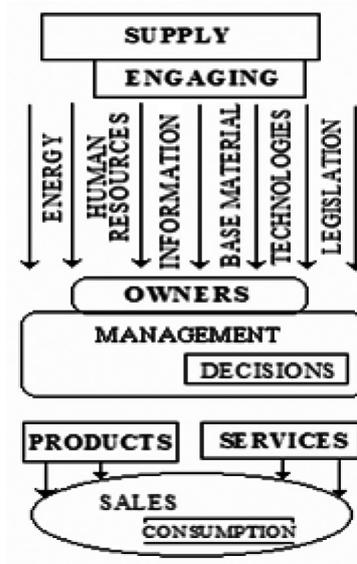


Figure 4: Structure of MIS and CIS

The competitiveness in tourism and travel field is related to the capacity of a company or service in tourism field to understand the market and competition game and to cope with its forces, and furthermore, competitiveness measures economical and technical performances: efficiency, safety, quality productivity, adaptability, success, up-to-date management, abreast of the new technologies and methods, high quality products, optimal cost. It represents the energy of the private or public entities (companies or national economy). Hence, the competitiveness of a tourism company represents the capacity of the company to cope with the competitors on the tourism market.

The competitiveness is a very complex term, being over the great influence of the capacity to be integrated into the market and the around environment. At microeconomic level, the scientific literature emphasizes many categories of the competitiveness, such as global, financial, trade, human resources, managerial, or technical competitiveness.

A high level of competitiveness is ensured by the labor productivity, labor cost, the degree the client requests are satisfied, the quality of the services, etc. A company is competitive on one specific market if it succeeds to obtain high levels of certain economic indicators such as sales, turnover, profit rate, market share comparing with the results of the other companies on the travel and tourism market.

In sustainable development condition in tourism system (figure 5) the private/public or individual/collective actors implicated must respond to the present necessities without compromising the capacity of future generations to satisfy their needs. The respect for solidarity between generations represents a real constraint for the economic actors in the tourism area too. It enforces, in particular, a special way to manage the natural resources and settlement good methods for environment protection, underlying the importance of innovation for environmental sustainability (innovation ecology).

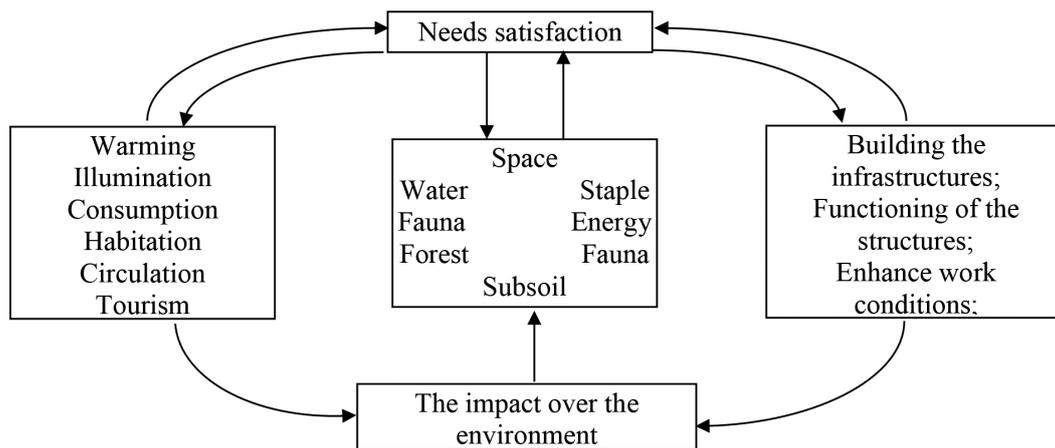


Figure 5: Sustainable development and environment of tourism system

Sustainable innovation policies represent the evolutionary solution [6] for future challenges in shifting to a low carbon economy, and require new perspectives of governmental policies in NIS.

4. SCIENTIFIC LITERATURE REVIEW OVER SYSTEM THINKING AND COMPETITIVENESS FOR TOURISM SYSTEM

Competitiveness is defined as the degree a nation, in free market conditions, is able to produce goods and services that can surpass international test, and to maintain or even increase, in the same time, the real income of the citizens [7]. Hence, competitiveness is a great challenge for nations, travel companies, touristic region, or holiday resort. These kinds of challenges are applied to governance, managers, investors both in private and public fields.

Thereby, the competitiveness represents the ability to compete with external field without attempt to the environment. Growth in competitiveness is possible just in economic growth based on good governance, good management of the production system and to manufacture own products and services (patented) competitive on world market. Competitiveness increase requires:

1. Systemic approach to the reality,
2. To switch the science, engineering, economics, management from traditional look and assimilation of 'to learn what to think' towards 'to learn how to act' using system theory,
3. To create a new integrative management (of value and competitiveness): engineering, economics, mathematics fields,
4. Flexible optimization of competitiveness for military manufacturer and products,
5. Flexible optimization of whole competitiveness (at micro, macro, world level).

NIS thinking literature debates are divided between national differences approach (empirical analysis reveals great differences in national system features [8], [9]) and the use of unique comparative indicators [10]. A great number of literatures acknowledge the influence of national social and political characteristics on innovation performance [11], [12]. For instance, they emphasized the importance of the settlement of the institutions that support technological, economic and social environment: research and development, entrepreneurship, complex technology sectors (such as biotechnology, telecommunication, or defense), technology transfer between universities and business, competition around technical standards [13] and the striking necessity for institutional continuity [14].

5. EMPIRICAL STUDY AND DISCUSSION. ROMANIAN CASE

Romania country („the Dacian wolf”) has a great touristic potential with gorgeous natural resources (the hydrographical network, the temperate-continental climate, the unique flora and fauna), with numerous and beautiful culture, customs and traditions (ethno-folkloric, religious): Carpathian Mountains (the higher peak is Moldoveanu Peak with 2544m), Danube River (with the length by 1075 km from 2,269 km total length and 33,250 km² basin area), Cazane Danube Gorges, and other 27 rivers, natural lakes (4 lakes of glacial circuses, 1 lake of volcanic crater, 3 lakes of karstic depressions, 2 lakes of natural barrage, 3 clasto-karstic lakes, 9 river banks, 4 river-maritime banks, 4 maritime lagoons, 4 river meadow lakes, 7 Danube Delta lakes), 27 major anthropic lakes, Danube Delta, protected areas (with 45 scientific reservations, 13 national parks, 206 natural monuments, 671 natural reservations, 15 natural parks, 3 biosphere reservations, 19 wetlands of international importance, 148 special avifauna protection areas, 383 sites of community interest, surface waters (inland rivers and the Danube) and underground waters, 360 Seaside at Black Sea. Romania is the 27th European Union member state, it has very beautiful landscape, it has a real and strong geo-strategic geographical position and indeed Romania can be considered as a gift for the European Union at its 50th anniversary (in 2007 when Romania has joined the European club).

In Romanian tourism resort there were developed strategies and structures such as: The National Institute for Research and Development in Tourism, Tourism Investment Masterplan, Transnational Strategy for the Sustainable Territorial Development of the Danube Area with Special Regard to the Tourism [15].

Tourism Investment Masterplan has set three investments of national importance [16]:

- Development of ski infrastructure (Sustainable Development in the Fagaras Massif),
- Development of Danube Delta and Black Sea resorts (Mini-port/Marina),
- Development of Constanta port (Planning the Diamant Port).

geo\time	2012	2013	2014	2015	2016	2017
EU (28 countries)	60.70	60.42	59.84	61.38	61.44	
Bulgaria	18.80	22.00	25.67	28.38	29.77	34.72
Romania	21.50	23.57	25.19	26.32	24.01	26.76
Portugal	36.61	37.48	23.87	24.39	42.38	42.22
Greece	37.08	32.58	38.84	36.68	35.56	39.36
Germany	77.39	77.79	77.13	77.51	75.41	72.35
Luxembourg	81.03	82.78	82.47	82.92	80.93	
Netherlands	85.23	84.39	83.69	83.52	85.28	85.41
Finland	92.08	90.69	90.75	90.65	91.45	91.33

Table 1: Participation in tourism for personal purposes (tourists as share of total population)
 Sources: by author using Eurostat data

Table no.1 presents the case regarding the travelers for personal purposes (expressed as the number of the tourists as the share of the total population) for the period of time 2012 and 2017 (from the data availability reason).

Hence, it can be easily noticed that, in fact, Romanian citizens participate in the tourism industry the least comparing with the people from EU-28 countries, even if in 2012 Bulgaria had the smallest value, but starting with 2014 till present Romania has passed to the first place with the

smallest share of people participating in the tourism activity; the values are situated well below the average of the EU-28 countries.

The tourism is a subsector of the service economy as a component of the economic growth and the gross domestic product (GDP). The tourism industry is influenced by other industries, for instance, the tourism service, the transportation means, the combustible use, the norms of environment protection, the safety and the security services.

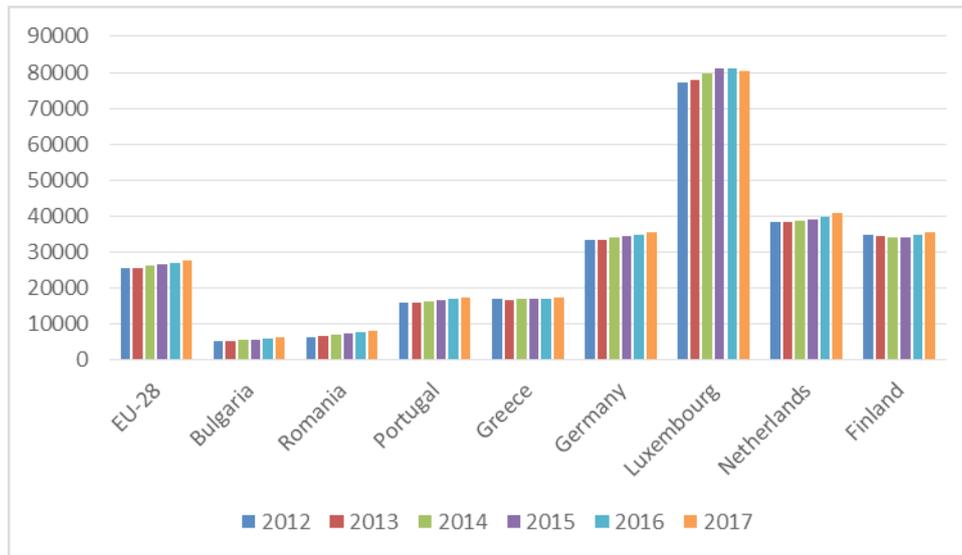


Figure 6: Real GDP per capita for the best performing in tourism participation
 Sources: by author using Eurostat data

The comparison of the real GDP (expressed in euro per capita) for the best EU countries performing in the tourism industry for the 2012-2017 is studied in figure 6. Romania and Bulgaria have the smallest GDP per capita.

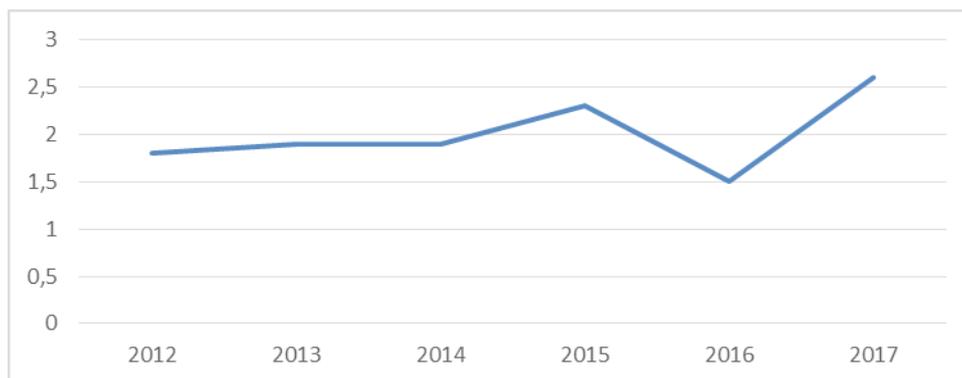


Figure 7: Share of tourism in total GDP for Romania
 Sources: by author using Eurostat data

The share of tourism industry in total Romanian GDP was in 2000 1.1% registering a constant decreasing till 0.8 in 2000, and then a constant increasing to 1.9 in 2008 till 2.6 in 2017. The figure 7 reveals the share of the tourism expenditure in total GDP for 2012-2017, and the figure 8 shows the share of the expenditure with the research and development (R&D) in the GDP.

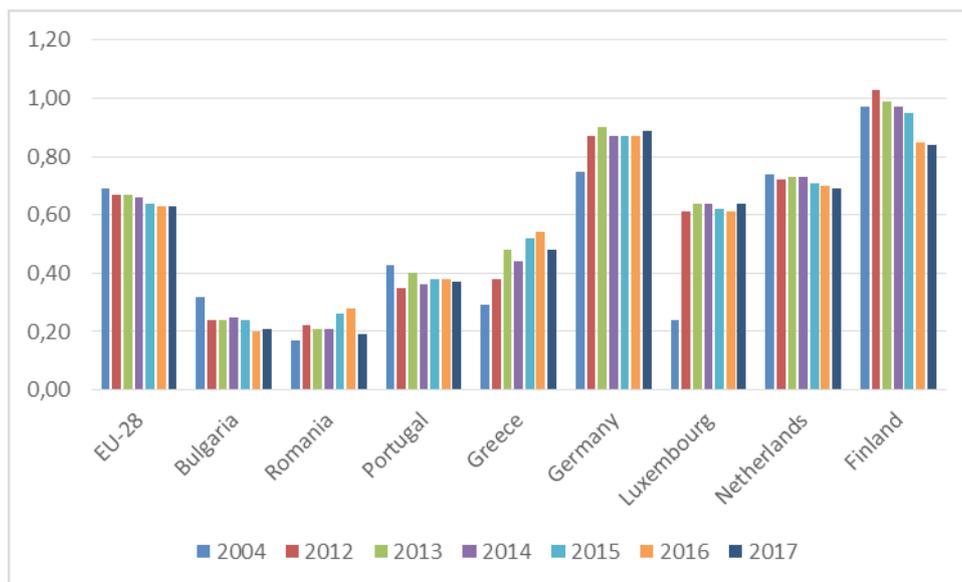


Figure 8: Share of expenditure with research and development in GDP (in %).
 Sources: by author using Eurostat data

Romania and Bulgaria have almost the same findings, but they are the less performers in the field of R&D investment with the smallest results in EU. The best results are obtained by Finland, Germany, and Netherlands. It can be very interesting to study in a future research (depending on the available data) if there is a correlation between the people participation in the tourism and the level of the GDP and share of the R&D in the GDP (it is not the purpose for this study). The comparative performance of Romania is the weakest in EU-28.

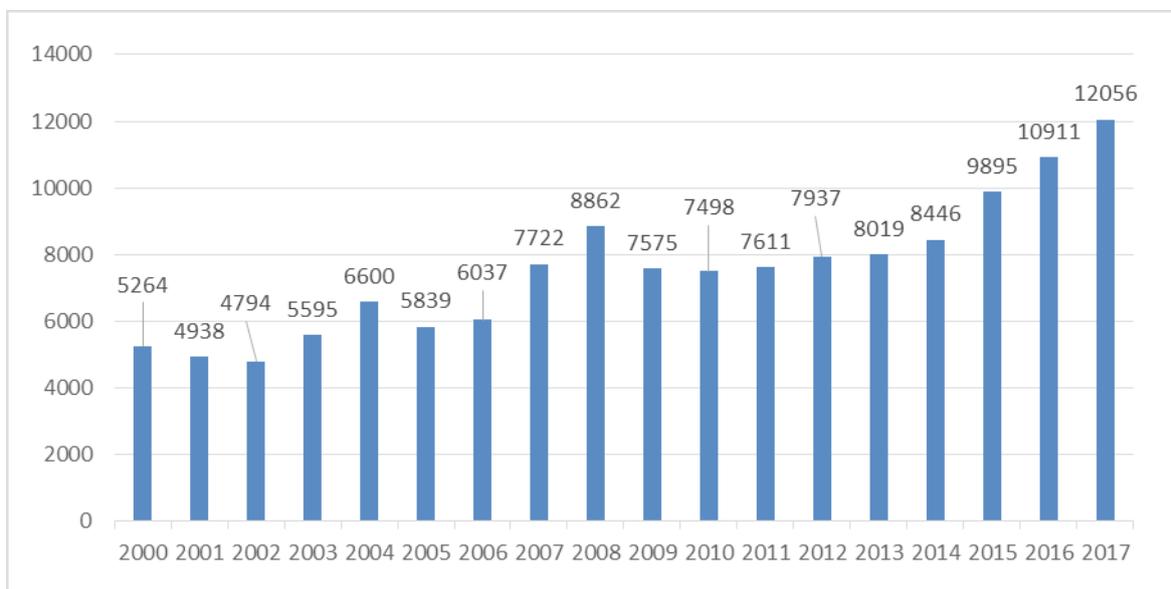


Figure 9: Arrivals of foreign visitors in Romania
 Sources: by author using Eurostat data

A part of the international tourism of Romania is illustrated by the arrivals of foreign visitors in Romania (figure 9) and the departures of Romanian travelers abroad. Both the arrival and the departures increased constantly starting with 2009 till 2017.

One product of tourism and travel sector is accommodation for the tourists (establishment of touristic reception which provides accommodation more than 5 places and specific services): hotels, motels, hostels, touristic inns, touristic chalets, camping, touristic villas, bungalows, boarding houses, houselet-type unit, agro-touristic boarding houses, touristic halting places, holiday village, ships accommodation spaces, school camps) [4]. Full statistical data of official registered accommodation are registered by the National Institute of Statistics [17].

The number of the accommodation establishments (represents any facility that regularly or occasionally provides short-term accommodation for the tourists as a paid service) has increased constantly from 2006 till 2017 (figure 10) with over 50%.

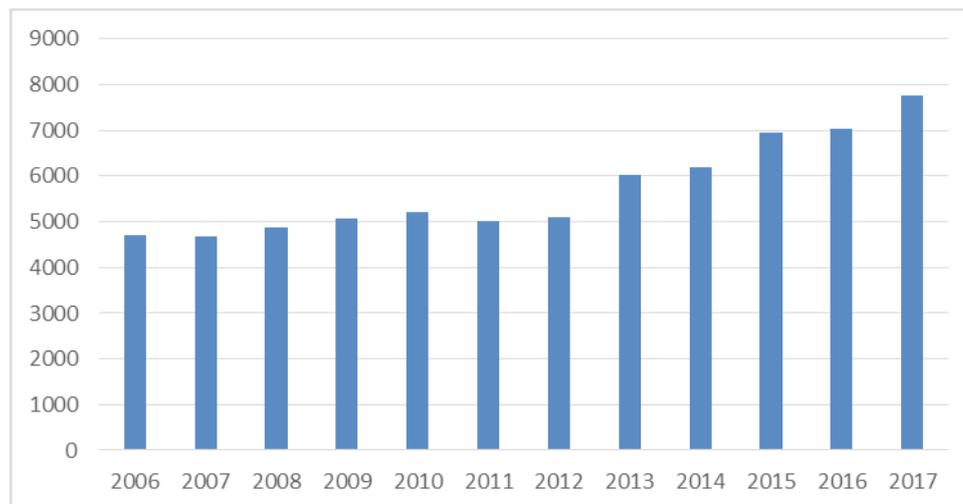


Figure 10: Number of accommodation establishments
Sources: by author using Eurostat data

The following figures are related to the Romanian tourism industry: the number of travels, tours operator reservation service and related activities, the numbers of person employed.

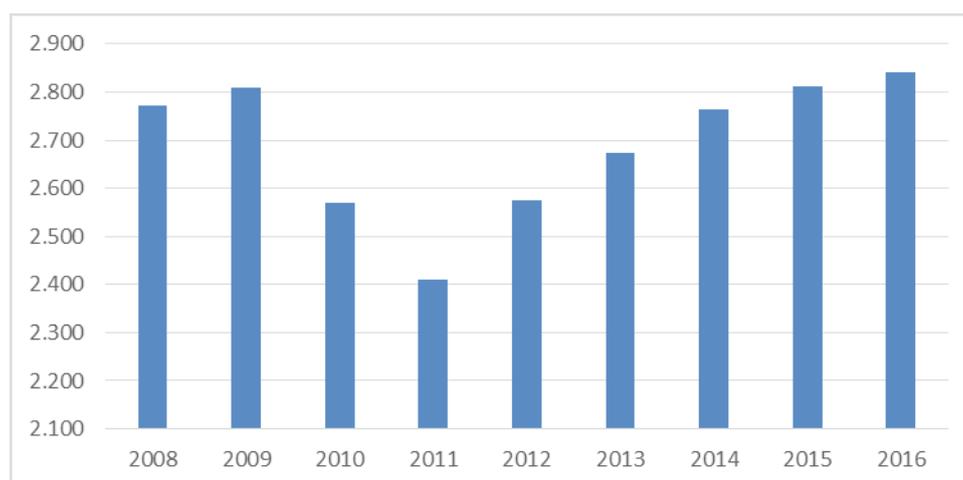


Figure 11: Number of travel agency, tour operator reservation service and related activities
Sources: by author using Eurostat data

According to Eurostat database, the number of companies in the tourism field (the number of travel agencies, the tour operator reservation service and the related activities), had fallen in

2011 then it has risen again till 2016 (figure 11), even if it can be noticed that the share of tourism in the total GDP for Romania increased a little for 2012-2015 period of time and then it had fallen suddenly for 2016, recovering the growing trend in 2017 (figure 7 above).

The number of the persons employed in the tourism industry (figure 12) had registered almost the same oscillated trend, and the average is around four persons per company for all period of time.

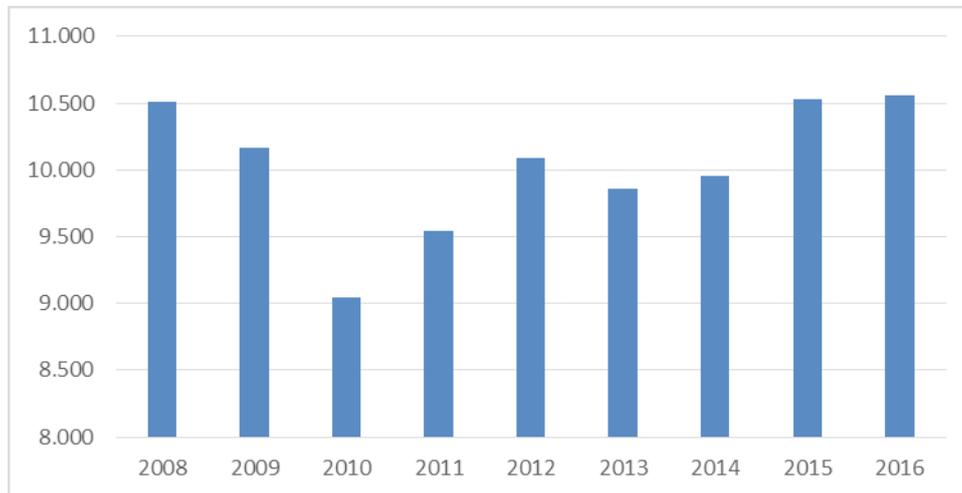


Figure 12: Persons employed (in number)
 Sources: by author using Eurostat data

Figure 13 illustrates the share of the total employees in the number of the persons employed. The findings are between about 93% (in 2016) and 96% in (2011), which means the result is a subunit value, and they are reflecting the poor employment in the tourism industry.

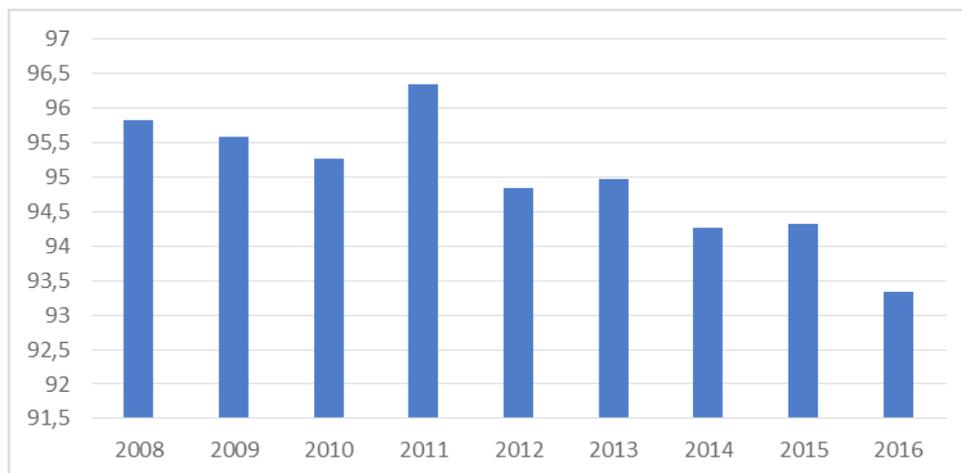


Figure 13: Share of employees in persons employed (in %)
 Sources: by author using Eurostat data

Turnover per person employed expressed in thousand euro per person is shown in the figure 14. It shows that in 2009 the turnover per person decreased with 30%, then it had recovered till 2015, but in 2016 it decreased again by 20%.

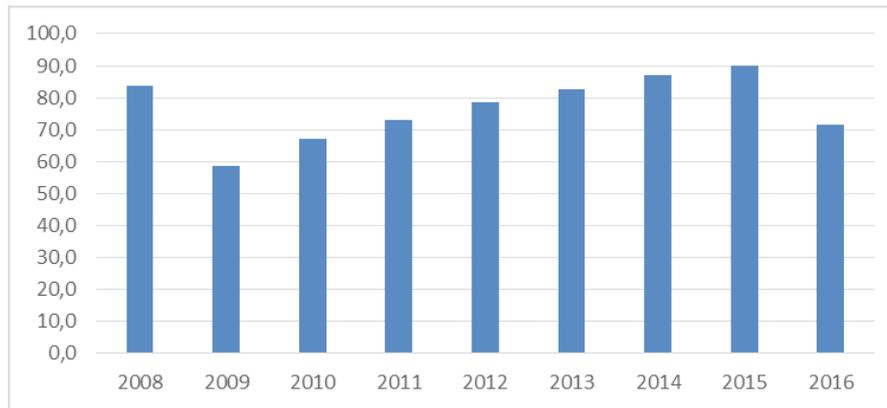


Figure 14: Turnover per person employed (thousand euro)
Sources by author using Eurostat data

The apparent labor productivity (figure 15) computed as the ration between the gross value added and the persons employed is expressed in thousand euro and it registered a decreasing trend from 10 thousand euro in 2008 to 7 thousand euro (an almost 30% decrease), and then it increased again almost to 10 thousand euro.

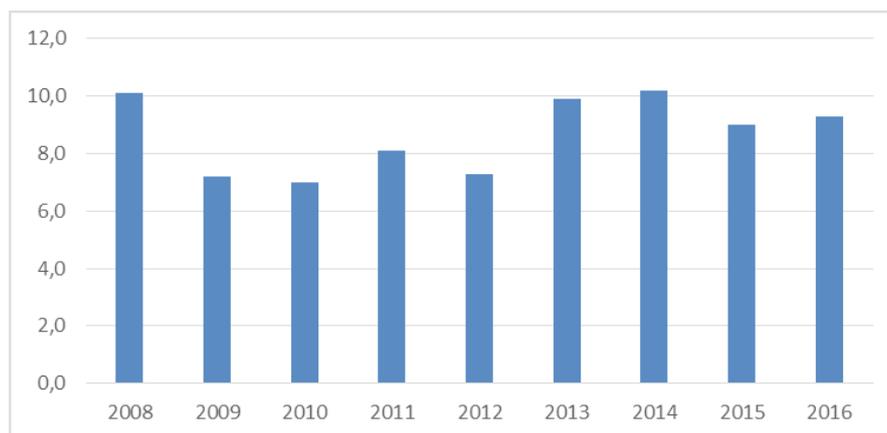


Figure 15: Labor productivity (in thousand euro)
Sources by author using Eurostat data

The investment per person employed expressed in million euro is presented in figure 16. It is noticed that in the first year from the chosen period analyzed – 2008 it had the highest value (8 million euro), then it decreased around 2 million euro till 2016.

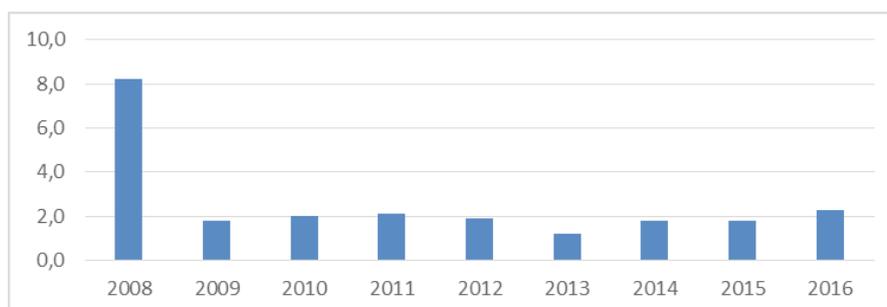


Figure 16: Investment per person employed (in million euro)
Sources by author using Eurostat data

The gross value added per employee expressed in thousand euro is presented in figure 17. It is noticed that in the first year from the chosen period 2008 it was 10,600 euro, then it decreased to 7,300 euro and then increased again in 2013 maintaining the value around 10 thousand euro.

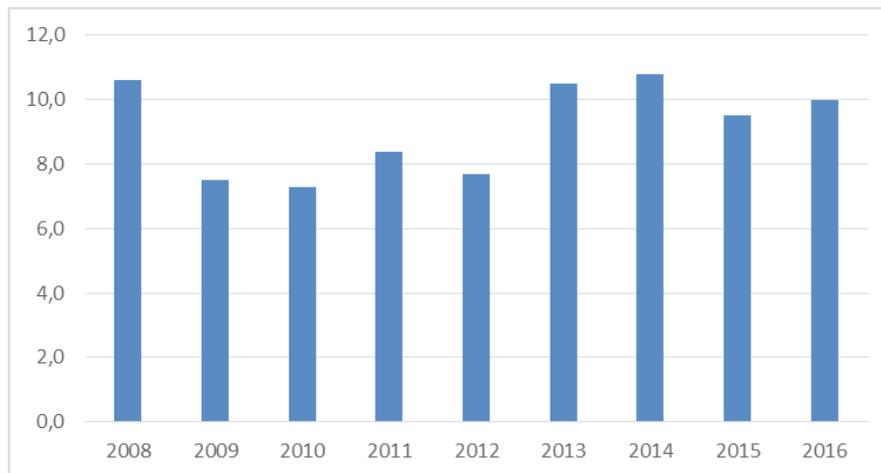


Figure 17: Gross value added per employee (in thousand euro)
 Sources by author using Eurostat data

World Economic Forum (independent international comparator of national performance in tourism) published starting with 2007 a report (Travel & Tourism Competitiveness Report TTCR) about travel and tourism competitiveness in major emerging world countries. The Travel & Tourism Competitiveness Index (TTCI) scored from 1 (the less performance) to 6 (the best performance), measures more the attractiveness to develop business in the travel and tourism industry rather than the attractiveness of the country as tourism destination [18]. The evolution of the TTCI for Romania is presented in figure 18).

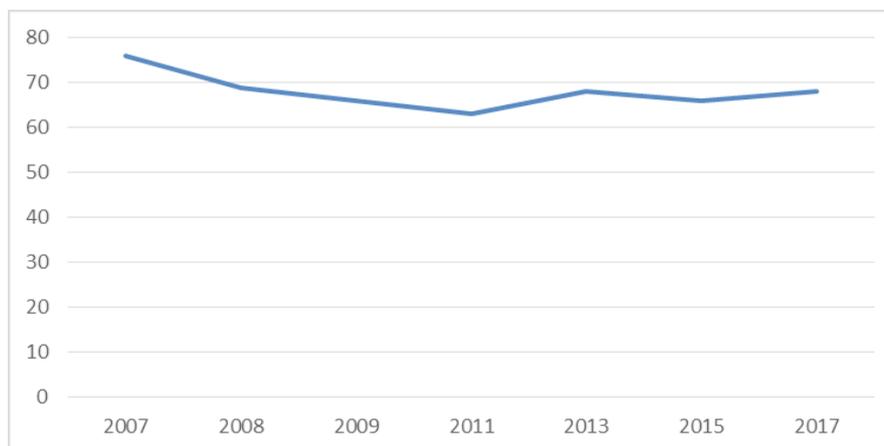


Figure 18. Romanian International competitiveness rank
 Sources by author using TTCRs

The outlook for Romanian Travel & Tourism Competitiveness Index by the 14th main pillars (sub-indexes) and pillars of sub-indexes is presented in table 2. Some indexes were developed and changed (environmental regulation was changed in environmental sustainability, it was introduced international openness, price competitiveness, human resources indicator was changed with human resources and Labor market, cultural resources indicator was replaced with cultural resources and business travel, etc.).

Romania	2007		2009		2013		2017	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Regulatory framework	87	3.86	61	4.68	66	4.61	-	-
Policy rules and regulations	67	4.61	64	4.46	87	4.33	-	-
Environmental regulations/ sustainability	101	3.31	37	4.89	58	4.67	43	4.41
Safety and security	72	4.26	62	5.26	63	4.89	39	5.78
Health and hygiene	99	3.68	54	5.09	54	5.36	31	6.14
Prioritization of T&T	82	3.45	102	3.72	103	3.77	108	3.81
Business environment and infrastructure	74	3.2	64	3.61	68	3.67	76	4.36
Air transport infrastructure	93	2.38	81	2.74	93	2.59	82	2.37
Ground (and port) transport infrastructure	77	3.01	83	3.11	109	2.87	92	2.8
Tourism (service) infrastructure	50	3.55	34	4.46	34	5.07	62	4.37
ICT infrastructure/ readiness	56	2.85	42	3.78	59	3.42	60	4.7
Price competitiveness in T&T industry	87	4.18	110	3.98	84	4.41	85	4.68
Human, cultural and natural resources	71	4.68	77	3.83	73	3.85	81	4.45
Human resources (and labor market)	76	4.96	58	5.15	83	4.73	81	4.45
Education and training	95	4.43	61	4.8	-	-	-	-
Availability of qualified labor	95	4.43	59	5.5	-	-	-	-
Affinity for T&T	95	4.43	105	4.44	122	4.11	108	3.81
Natural resources	46	4.64	85	2.87	88	3.25	68	2.99
Cultural resources (and business travel)	46	4.64	49	2.85	41	3.31	48	2.27
International openness	-	-	-	-	-	-	45	3.93

Table 2: Travel % Tourism Competitiveness Index for Romania by pillars
 Sources by author using TTCRs

According to the table 2, in the frame of the Travel & Tourism Competitiveness Index, the study started in 2007, in general Romania has experienced oscillations, but registered few progresses in the pillar of the regulatory framework (figure 19): from the 87th place in 2007 to the 66th place in 2013.

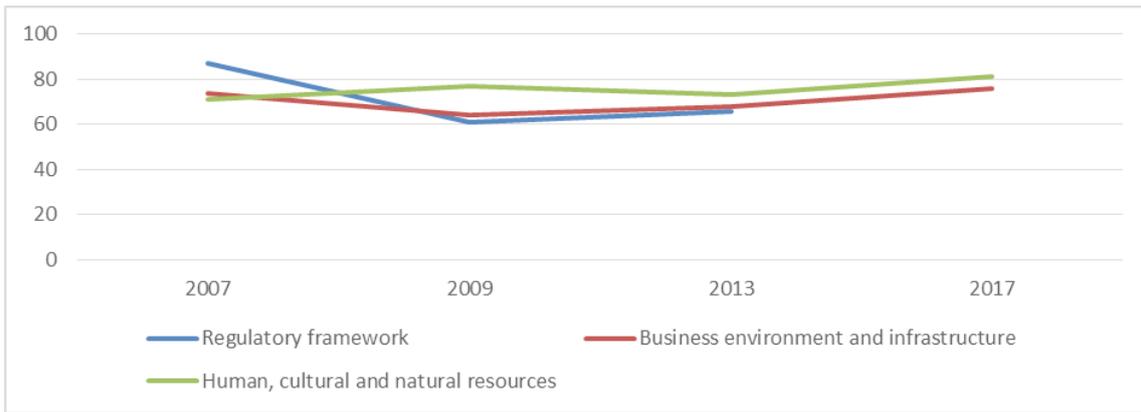


Figure 19. Main pillars of Romanian International Competitiveness rank
 Sources by author using TTCRs

Romanian TTCI (figure 19) benchmarks the progress policy in matter of investment and business in tourism industry, to ensure a long-term tourism competitiveness. In 2017, the Travel & Tourism Competitiveness Index ranked Romania on the 68th global place (global rank) out of 136 countries around the world with a score of 3.8 points, the 66th place out of 141 countries (score 3.8) in 2015, registering some improvement from the 76th place in 2007 out of 124 countries (with the score by 3.91 points). The case by components is presented in figure 20.

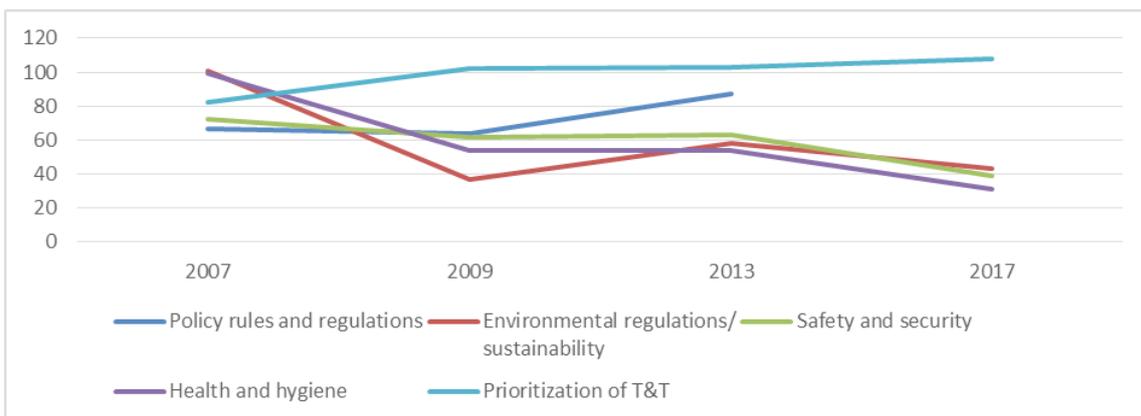


Figure 20. Regulatory framework for Romania
 Sources by author using TTCRs

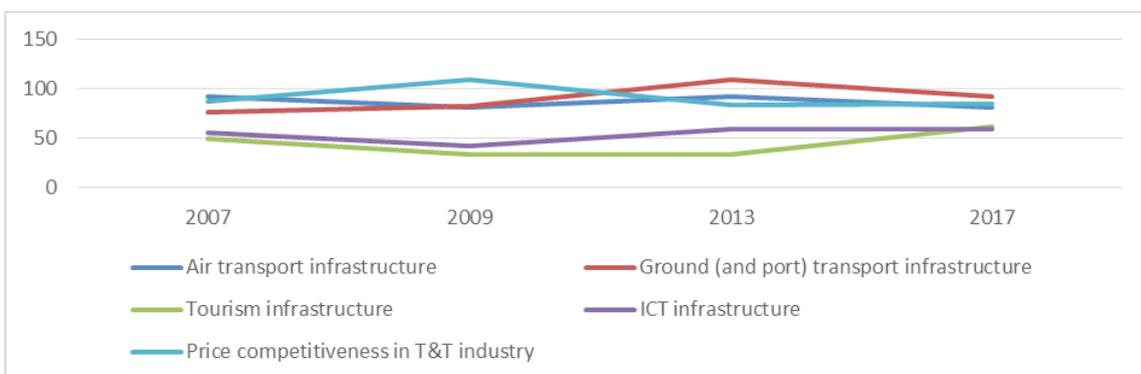


Figure 21. Business environment and infrastructure for Romania
 Sources by author using TTCRs

Thus, in the regulatory framework category (figure 20), just policy rules and regulations, and prioritization of travel and tourism registered sustainable increase, but environmental regulations and sustainability, the health and hygiene and safety and security criteria had significant decreases.

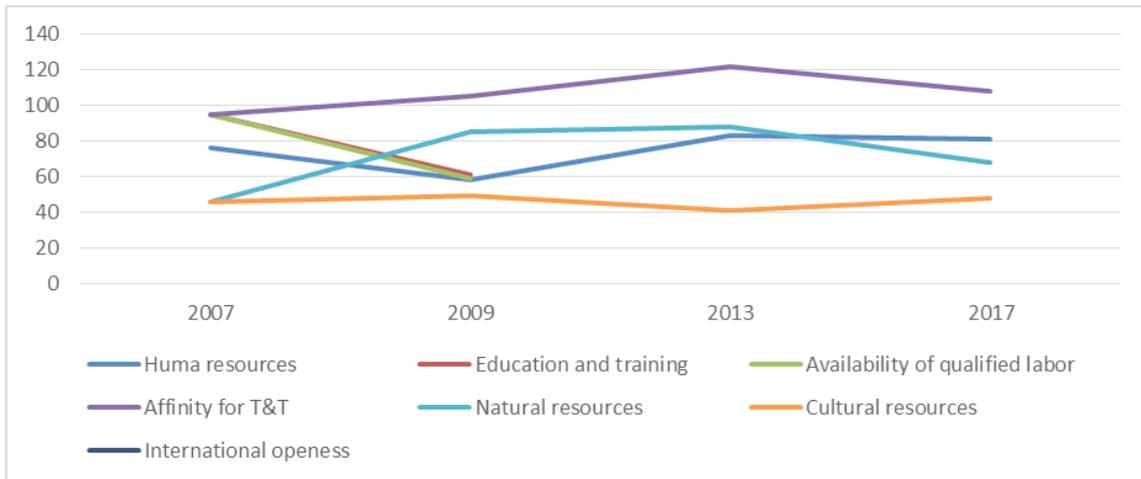


Figure 22. Natural resources for Romania
 Sources by author using TTCRs

The second pillar named business environment and infrastructure generally improved the rank but the other criteria registered decreases: ground and port infrastructure, tourism infrastructure, ICT infrastructure, price competitiveness in travel and tourism industry (figure 21). The third pillar natural resources (figure 22) decreased in ranking.

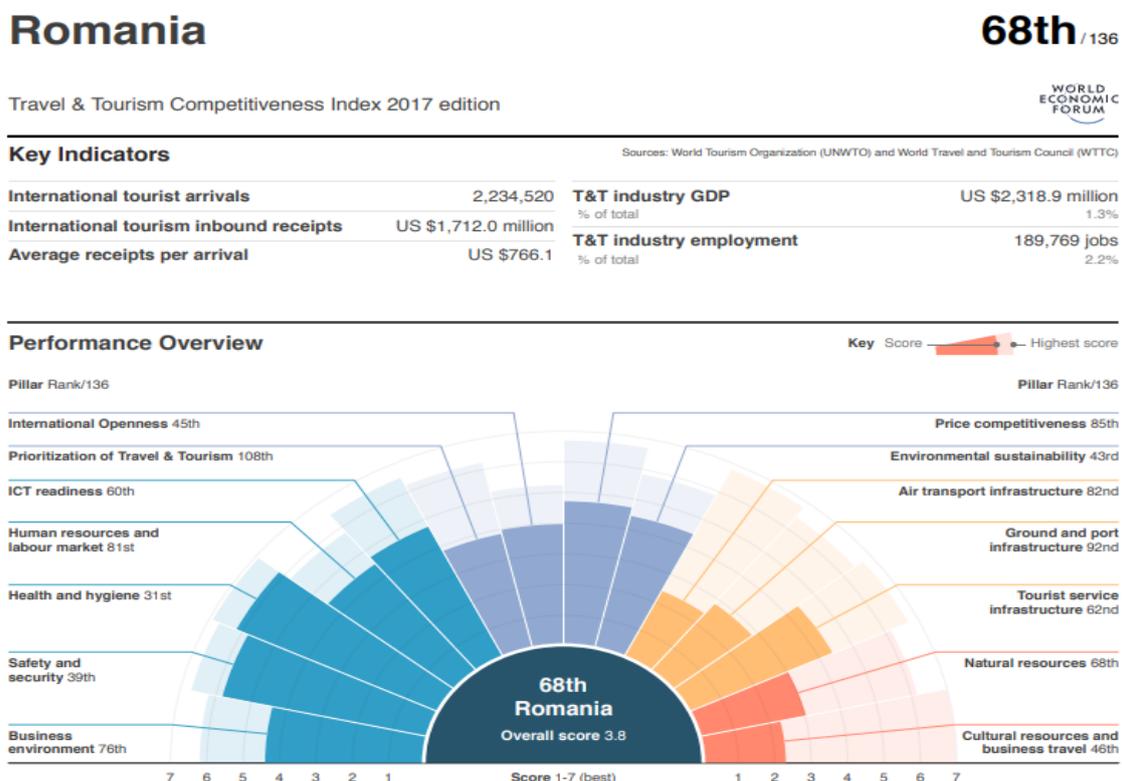


Figure 23. TTCI for Romania in 2017
 Source: The Travel & Tourism Competitiveness Report 2017 [18]

The most influenced factors responsible for the weak performance of Romania (figure 23), along the analyzed period of time, are considered to be associated with Government regulation, especially in the environmental area and with health and safety measures; hygienic measures are likely to be particularly associated with the outbreak of bird flu, or swine fever. Regarding the business environment/infrastructure category, both the air and the ground transportation infrastructure are considered to have great influence on the lack of competitiveness. Within the human/cultural/natural resources category, relative to the weaknesses associated with human resources and the public perception of the importance and value of tourism as indicated by the political world and statistics, are considered to be responsible for the lack of competitiveness [15].

6. CONCLUSION

In conclusion, we presented in the first chapter an introduction over the system approach (the source, the components, the action systems hierarchy) and the influence of the national innovation system (NIS) on the competitiveness. The competitiveness is a stimulus for the whole society, it is the source of the innovation, and it has a great influence on the value-added in the management system. After the methodology of the paper was presented, the author brought a real plan for the implementation of the system thinking approach in tourism management. In fact, the originality of the paper consists in the applying the system thinking to the tourism field also. The tourism field is a system and can be approached to like a system. Customer Integrated System (CIS) gives the owners (the tourism company) the opportunity to use the technologies, networks and to process their own transactions for better result in competitiveness and sustainable development. The competitiveness of a tourism company represents the capacity of the company to cope with the competitors on the tourism market. Hence, the author presents a short literature over system thinking and competitiveness for the tourism system and conclude that system approach can increase the competitiveness. The core of the paper is the empirical study and discussion over Romanian case. In Romanian tourism resort there were developed strategies and structures such as: The National Institute for Research and Development in Tourism, Tourism Investment Masterplan, Transnational Strategy for the Sustainable Territorial Development of the Danube Area with Special Regard to the Tourism. Tourism Investment Masterplan has set three investments of national importance: Development of ski infrastructure (Sustainable Development in the Fagaras Massif), Development of Danube Delta and Black Sea resorts (Mini-port/Marina), Development of Constanta port (Planning the Diamant Port).

After the statistical survey we presented in this paper studying Romanian case, we can finally draw some scientific and practical conclusions:

1. Romanian citizens participate in the tourism industry the least comparing with the people from EU-28 countries, and the values are situated well below the EU-28 average. The reason could be that the smallest average household income is in Romania;
2. Romania registered the smallest real GDP (euro/capita) in the tourism industry for all studied years (2012, 2013, 2014, 2015, 2016, 2017);
3. The findings for the share of the expenditure with the research and development (R&D) in the GDP are the smallest;
4. Both the arrival and the departures increased constantly starting with 2009 till 2017;
5. The number of the accommodation establishments has increased constantly from 2006 till 2017 with over 50%;

6. The number of companies in the tourism field (the number of travel agencies, the tour operator reservation service and the related activities), had fallen in 2011 then it has risen again till 2016;
7. The number of the persons employed in the tourism industry had registered almost the same oscillated trend, and the average is around four persons per company for all period of time. The share of the total employees in the number of the persons employed registered subunit value, which are reflecting the poor employment in the tourism industry;
8. Turnover per person employed decreased with 30% in 2009 and then it had recovered till 2015, but in 2016 it decreased again with 20%;
9. The apparent labor productivity registered a decrease from 10 thousand euro in 2008 to 7 thousand euro (an almost 30% decreasing) and then it increased again almost to 10 thousand euro;
10. The investment per person employed had the highest value (8 million euro) in the first year from the chosen period analyzed – 2008, then it decreased around 2 million euro till 2016;
11. The gross value added per employees decreased in 2009 related to 2008 and then increased again in 2013 maintaining the value around 10 thousand euro;
12. The Travel & Tourism Competitiveness Index (TTCI) for Romania registered a relative decreasing trend because of the policy rules and regulations, transport infrastructure, tourism service infrastructure, human resources (and labor market), natural and cultural resources;
13. the low employment in the tourism industry can be explained by the unpredictability and the ambiguity of an abstruse legislative apparatus, especially in Romanian Labor Code (with many changes in 2018), difficult to comprehend or to anticipate. This state determines the employer to become confused, distrustful and fearful with negative effect on tourism indicators;
14. a poor allocation of the governmental financial funds towards tourism industry and poor results of governmental expenses for tourism infrastructure field especially, but for entire infrastructure sector in general as well.

The author identified point-to-point solutions and recommendations:

1. to increase the productivity in tourism sector in order to increase the household income in Romania;
2. to increase the share of the tourism industry in the real GDP per capita;
3. to invest in the research and development, in employee training and courses, and to increase the share of the R&D in the GDP;
4. to increase the arrival and the departures figures;
5. to increase the tourism offer and the tourism services quality;
6. to ensure a stable and clear legislation;
7. to encourage the employment in tourism industry;
8. to increase the labor productivity in the tourism sector in order to increase the employees' wages and salaries;
9. to increase the gross value added reported to the persons employed;
10. to ensure a sustainable increasing of investment rate (investment per person);
11. to ensure a sustainable increasing of the gross value added per employees;
12. to improve The Travel & Tourism Competitiveness Index (TTCI) for Romania;
13. to set and develop the national innovation policies;
14. to reduce the corruption in administration and in the tourism area;
15. to become more pragmatic in national resource management;
16. to improve and apply more efficient tourism marketing.

The empirical and theoretical study presented in this work showed that in the last period of time, the Romanian tourism industry and service have increased slowly against its tourism potential, from both the qualitative and the quantitative point of views. It is easy to notice that all in all the market of the Romanian tourism finally has developed even if the tourism industry increased shyly comparing with the huge potential and also comparing with the other countries in the region and in the European Union.

It still remains imperative measures to be applied: to invest in the tourism infrastructure, to invest in the tourism education field, to bring close together the public, corporate, and university areas. The Romanian tourism strategies are still at the targets declaration level with no data about the settlement outcomes: the development of the public investment in the infrastructure, the development of the tourism sector in the economy (with a major impact on the socio-economic environment: increase the living level, improve the quality of life, stimulate employment, create jobs, increase the investment rate, save the natural and cultural heritage), the sustainable development of the tourism. As it was showed above, the tourism is the subsector of service economy as a component of the economic growth and the gross domestic product (GDP), but the share is very small (about 2-3%). The Government policy is oriented toward increasing in the future the share of the tourism industry in the GDP. On the other hand, innovation and entrepreneurship represent the core of the competitiveness. The tourism innovation is the economic act based not especially on the new technologies but on the new perceptions of the tourism market opportunities. The elaboration and development of system thinking (notion and approach) in tourism management can furthermore improve policy-making in the future, more in system failure (the scope for innovation is limited by government policies) rather than market failure (that do not capture the dynamic complexity of the systemic combinations). The approach of the tourism system in a dynamic, emergent, and evolving manner is the source of knowledge for innovation, that can enhance the competitiveness in the sector for a successful and sustainable economy. According to findings, neither innovation policy nor performance in tourism management is discussed as a policy priority in Romanian government in the last 25 years. More honest policies are required in the education system. Furthermore, the link between industry and science must be strengthened to stimulate innovation in tourism and drive universities to business needs. Decision makers must understand the importance of system thinking and that knowledge transfer from research field to business leads to growth and high living level. They must also adapt public policies to society interests. Sustainable development assurance determines increasing the human welfare and the ecosystems conservation, that suppose the integration of economic, social and environment objectives. These objectives cannot be achieved until the people will understand the importance to improve the mutual relationships and their relation with the eco-system they live in. The present climate change challenges and perspectives require effectively complex evolutionary government policies in matter of sustainable innovation, in fact the necessity for a radical departure from the traditional policy mix towards a national innovation system in order to avoid a system failure. In conclusion, the research of the present paper is a very original one, trying to approach tourism industry as a system. The limitation of the empirical part consists in the availability of the data. It is envisioned that the future research works will approach empirically the correlation between the expenditure with research and development and tourism industry results (as share in GDP, for instance), the tourism activity, the research and development investments, the education level and the GDP (revealing the living level), depending on the availability of the data, and also the future scientific works intend to incorporate and advocate for the importance of deeper study of the system thinking research in the tourism service.

REFERENCES

- [1] Foster, J. (2005) From Simplistic to Complex Systems in Economics, *Cambridge Journal of Economics*, 29 (6), pp. 873-892.
- [2] Vartolomei, M., Jadaneant, M. (2007) *The Management of Military Technical, Technological and Manufacturing Systems*, ICEEMS
- [3] Dogson, M., Hughes, A., Foster, J., Medcalfe, J.S. (2010) *Systems Thinking, market failure, and the development of innovation policy: The Case of Australia*, UQ Economics Discussion Paper No.403: Department of Economics University of Queensland. And Centre for Business Research Working Paper 397, University of Cambridge.
- [4] Cooper, C., Fyall, A., Gilbert, D., Wanhill, S. (2018) *Tourism: Principle and Practice*, Sixth Edition, Pearson Education Limited, United Kingdom.
- [5] Hagg, S., Cummings, M., McCubbrey, D.J., Pinsonneault, A., Donovan, R. (2006) *Management Information System for the Information Age (Third Canadian Edition)*, Toronto, McGraw-Hill.
- [6] Nill, J., Kemp, R. (2009) Evolutionary approaches for sustainable innovation policies: From Niche to Paradigm?, *Research Policy* 38(4), 668-680.
- [7] Kotler, Ph. (2001) *Marketigul locurilor*, Ed. Teora, Bucuresti, pp. 232.
- [8] Edquist, C., Hommen, L. (2008) *Small Country Innovation Systems: Globalization, Change and Policy in Asia and Europe*, Cheltenham, Edward Elgar.
- [9] Edquist, C. (2005) *Systems of Innovation: Perspective and Challenges*, Oxford Handbook of Innovation, oxford University Press.
- [10] Balzat, M., Hanusch, H. (2004) Recent Trends in the Research on National Innovation Systems, *Journal of Evolutionary Economics* 14, pp.197-210.
- [11] Dore, R. (2000) *Stock Market Capitalism: Welfare Capitalism: Japan and Germany versus the Anglo-Saxons*, Oxford University Press.
- [12] Bergek, A., Jacobsson, S., Carlsson, B., Lindmark, S., Rickne, A. (2008) Analyzing the Functional Dynamic of the technological innovation systems: A Scheme of Analysis, *Research Policy* 37 (3), pp. 407-429.
- [13] Hall, P.A., Soskice, D. (2001) *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*, Oxford University Press.
- [14] Nelson, R. (1993) *National Innovative Systems: A Comparative Analysis*, Oxford University Press, pp.509.
- [15] *Transnational Strategy for the Sustainable Territorial Development of the Danube Area with Special Regard to the Tourism*, accessed 10.11.2018, available at: http://www.datourinfo.eu/sites/default/files/Tourism%20Survey_romania_eng.pdf,
- [16] *Tourism Investment Masterplan*, accessed 10.11.2018, available at: <http://www.mt.gov.ro/web14/strategia-in-transporturi/master-plan-general-transport>,
- [17] National Institute of Statistics (INS), <http://www.insse.ro/cms/>, accessed in October and November 2018.
- [18] World Economic Forum, *The Travel & Tourism Competitiveness Report 2017 (TTCR 2017)*, available at <https://www.weforum.org/reports/the-travel-tourism-competitiveness-report-2017>, accessed 31.10.2018.
- [19] World Travel & Tourism Council, *Travel & Tourism Economic Impact 2018*, European Union, report available at <https://www.wttc.org/-/media/files/reports/economic-impact-research/regions-2018/europeanunion2018.pdf>, accessed 11.11.2018.