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A TOURIST FLOW STUDY OF THE RURAL METROPOLITAN AREA OF ORADEA COMPARED TO BIHOR COUNTY

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Abstract
The current tourist flow study is part of a series of several tourist-related research on the rural region of the Oradea Metropolitan Area. The research analyzes the tourist flow in the rural OMA compared to Bihor County. Thus, the annual tourist flow quantitative and qualitative indicators in the area of the rural OMA and Bihor County for the period 2001-2020 were analyzed referring to tourist arrivals, overnight stays, average length of stay, tourist flow density and seasonality. The

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secondary data were collected from annual statistic registries of the Romanian National Institute of Stastistics, stored, processed and analyzed under the form of maps, graphs and tables as well as adjoining interpretations through the GIS mapping program and statistical analysis programs.The analysis revealed that the hotspot of tourist consumption in the rural Metropolitan Area of Oradea (i.e. OMA) and Bihor County is represented by Băile Felix and 1 Mai spas which draw the largest share of all OMA tourists of 93.2% and 48.3% of Bihor County for the analyzed period 2001-2020 for its thermal cure factors. It reveals an overtourism consumption in a single commune vresus its other counterparts. The length of stay in the rural OMA amounts to six days, the high season being from May to October with a peak in August.

Key words
Oradea Metropolitan Area, Bihor County, tourist flow analysis, tourist flow weighted difference, overtourism consumption, GIS.

INTRODUCTION

Tourism is a complex phenomenon, which raises a few issues related to the satisfaction of human needs in terms of tourist travel. Carrying out statistical studies on tourist flow can provide useful information for leisure and entertainment forecasts. In this sense, the knowledge of the structural tourist flow indicators can determine a certain direction for the development of services offered by the tourist providers. The objective of measuring the size of the tourist flow is to understand the socio-economic phenomenon. Lately, tourism has become a fundamental component of economy and stood as an opportunity to develop regions with tourism potential. Many tourist destinations are confrunted with unbalances referring to the tourist demand, some featuring overtourism while others complete lack of tourists on the same relatively restraint territory. The territorial focus of this paper triggered a small administrative unit such in the shape of a metropolitan area (i.e. rural part of the Oradea Metropolian Area) engulfed in a lerger administrative unit such as that of a county (i.e. Bihor County). Overtourism generates negative outcomes on the territory such as pressure on the territory's resource thus triggering environmental, social and cultural impacts and an unsustainable consumption.

The current study's main objective is to find out where the tourist demand is concentrated at the level of rural Oradea Metropolitan Area (OMA) compared to Bihor County and in this purpose more statistical indicators from the period 2001-2020 were analyzed such as tourist arrivals, overnight stays, average length of stay, tourist flow density and seasonality. The tourist flows were identified through statistical analysis and the cartographic approach. Its results can be used further on as a landmark for the weak and strong points of Bihor county. A weakpoint reference is made to the overtourism consumption occuring in a single commune through pressure on resources such as thermal waters, converted arable lands

(Linc et al., 2017) as well as on the local population. The strong points are given by the advantages of rural area and its ecotourism valences (Acharya et al.,2021; Linc et al., 2019; Nurkovic, 2017).

From the two territorial entities comparison, rural OMA and Bihor County certain clear-cut differences emerge namely in the case of rural OMA tourist arrivals' and overnights' indicators analysis which exceeds by far the Bihor county counterpart. This overturn is mainly due the two hotspots (i.e. two old international spas) in terms of tourist consumption located in the southern metropolitan part which mange to capture most tourist flows, so that one out of two arrivals from Bihor county was made in the rural OMA during 2001-2020. At the other end, in the case of the average length of stay, Bihor County overpasses by far rural OMA which emerges as a natural fact given that Bihor County spreads over a wider surface (i.e. 7544 km^2) and therefore a more varied tourist supply whereas the rural OMA barely spreads over 634.34 km^2.

The same holds true for the analysis of the tourist flow density where Bihor County obviously overtops rural OMA, a predictable situation given the population of the two territorial entities, the former registering 611,017 inhabitants whereas the later registers 245,537 inhabitants. The need to carry out these analyses is primordial because of the lack of literature in this field for the analysed territory, being meant to fill a gap from this perspective. This economic indicators' analysis has led to the elaboration of a holistic tourist consumption view at a very local scale as that of a metropolitan area as well as a regional one as that of a county and of the different consumption patterns between the two. In the antithesis it is also a comparison between a relatively new local territorial entity versus an old regional territorial entity tourist consumption trends.

The study results can assist potential tourist entrepreneurs and investors to develop innovative tourist products within the newly rural OMA region as well as seeing where most tourist consumption occurs at the level of the rural OMA and Bihor County so as to avoid overtourism and spread flows sustainably throughout the entire rural OMA in the future.

Oradea Metropolitan Area Setting

The OMA is located in the north-western part of Romania and lays over a lowland plain and low hills area. The relief is set in light steps and consists of the low plain of Crişuri, the Depressionary Corridor of Crişul Repede river, Oradea Hills in the north-east and Tăşad Hills in the south-east area.

The OMA is an association of territorial administrative units found in the proximity of the municipality of Oradea, where the latter is the core and the surrounding communes are its satellites. It has been created with the purpose of enhancing the area's prosperity and its residents' quality of life. The association

was set up in on the 9th of May 2005 and currently counts 12 members. Among them 11 are communes (i.e. Biharia, Borş, Cetariu, Ineu, Nojorid, Oşorhei, Paleu, Sînmartin, Sîntandrei, Girisu de Cris, Toboliu) and a municipality. (i.e. Oradea city). The rural communes, submitted for the tourist flow analysis herewith cover 634.34 sqkm (figure 1).

Figure 1. Administrative map of Romania and Oradea Metropolitan Area

LITERATURE REVIEW

Tourism grasped great attention due to this sectors's unprecedented growth already since its 1950s. The dynamics of tourism offers both challenges and opportunities with new and innovative emerging products which manage to increase tourists flows. Lately the focus and challenge it to watch over this extension so that it is sustainable both at global, regional and local level (Fletcher et al., 2018). Despite climate change concerns, most likely tourism will continue to grow exponentially in the future, despite shock years faced by the Sars-Cov pandemic situation, most destinations are very resilient and witness a fast-paced come-back to pre-pandemic tourist flows. Europe will remain the largest receiving region, but tourism will face new constraints which will alter the way it operates also in terms of policy-making and planning. Due to its social nature tourism is influenced by economic development, politics, environment, technology, etc. Tourism in the third millennium will not be done randomly, but in the lens of trying to correct excesses of the past, therefore the concept of resident-responsive tourism will apply in which tourism development will have to seek the support of the communities it affects directly. Despite many doubts, the 27 member states

European Union has continued to grow its number of tourists and in the prospect of a further enlarged EU with other eastern countries applying for membership it will be one of the largest economic bloc and tourism region in the world (Stupariu, 2017). Certain countries tend to opt for a market economy model others have witnessed movements toward deregulation, privatization, regional economic integration or for the global, transnational corporation model (Goeldner and Ritchie, 2012). The internationalization of markets and well as the rise in technology will yield a more knowledge-based society with more experienced, discerning, demanding and sophisticated tourists seeking individualized experiences.

The numbers of tourists worldwide continue to increase, apart from some cataclysmic events among which a recent one was the Covid-2019 outspread which made worldwide demand drop to the level of the 1990s (UNWTO, 2020), therefore demand is a primary focus for tourism entrepreneurs. The success or failure to attract markets to own tourism business be they hotels, airline companies or tour operators depend on the businessmen's skills and know-how, therefore demand is a key determinant for tourism profitability and efficiency. The demand for a tourism product in a destination relies on the price of tourism in the destination, the price of competing alternative destinations, potential consumers' incomes, consumer tastes, and the promotional efforts of the destination as well as other social, cultural, geographic and political factors (Song et al., 2009).

Tourism managers will attempt to keep a close match between the supply and demand of a product. The ability to maintain a high occupancy rate is critical for an accommodation unit, which involves a good balance between the fixed and variable costs. The variations in demand range from daily, weekly, seasonal to the long- term (Weaver and Lawton, 2014). The ability to match the gap between the two depends on the marketing strategies and decision-making of tourism entrepreneurs, a step worth taken forth when the anticipated demand materializes.

Ryan (2000) dwells on the issue of determinants of demand, such as the economic and social triggers, the former relating to higher levels of income, level of prices, exchange rates and the latter to paid leisure time and free weekends.

Demand refers to tourists, quantified in tourist arrivals and overnights in statistical surveys. An overnight stay represents every night for which one person is registered into an accommodation unit (Cheran, 2016) and arrivals refer to an individual who makes multiple trips to a country being counted each time as a new arrival (Das, 2017).

The tourist flow is approached in various specialized works related to their purpose (Sigala et al., 2019; Stupariu, 2017), methods of analyzing the tourist flow (Rasouli and Timmermans, 2014; Pendyala and Bhat, 2012; Schiffer, 2012) forecast determined by tourist traffic indicators (Song and Witt, 2012; Wong and Song, 2012; Frechtling, 2012), the importance of analyzing the tourist traffic using specialized software (Lellinger, 2010), measures to increase the quality of

tourist services determined by the evolution of tourist traffic (Tribe, 2011), tourist potential (Tatar et al., 2018; Linc et al., 2019; Francesconi, 2014) or the motivation of the tourist traffic (Mwikali, 2014; Pearce, 2011). The current study aligns to a series of themed tourism-based studies carried out in the Oradea Metropolitan Area of Stasac et al. (2020), Linc et al. (2019), Tatar et al. 2018; 2021), Carriere et al. (2018); Bucur (2012) and Dincă et al. (2012), meant to create a holistic approach of the tourism phenomenon in the OMA on the background of its development into an area with all premises for a fully-fledged integrated inter-communally linked tourist destination. Bihor County as a tourist destination has been studied in the literature by Herman et al. (2019; 2020; 2021) as well as Romanian tourism by Light and Dumbraveanu (1999), Postelnicu and Dabija (2018), Bujdoso et al. (2015).

The OMA tourist flow relies, in terms of motivation on capitalization of the thermo-mineral waters which is noticeable from afar, the existence of multifunctional lacustrine accumulations, protected areas (nature reserve and Natura 2000 site), natural resources which are complemented harmoniously by a wide range of man-made resources.

METHODOLOGY

The research questions addressed by the study refer to finding out if there is a polarizing area of tourism demand/flow within the rural OMA and Bihor County and if the smaller territorial unit such as OMA is attracting more tourists versus its bigger counterpart such as Bihor County. Thus the main objective is to find out where is concentrated the tourist demand at both the level of rural OMA and in this purpose more statistical indicators from the period 2001-2020 were analyzed such as tourist arrivals, overnight stays, average length of stay, tourist flow density and seasonality.

All secondary quantitative data were collected from annual statistic registries of the Romanian National Institute of Stastistics and processed under the form of GIS maps, graphs and tables as well as adjoining interpretations.

The number of tourists staying in the tourist accommodation units in the rural region of the Oradea Metropolitan Area included all persons, regardless of citizenship (i.e. both Romanians and foreigners) who travelled outside their permanent residence localities for a period of less than 12 months and stayed at least one night in a tourist accommodation unit in the studied area (i.e. the rural metropolitan area of Oradea), having as main reason for the trip other than to carry out a paid activity.

The indicators analysed in the current study refer to the rural OMA overnights analysis, where an overnight stay is defined as a 24-hour interval, starting with the hotel time (12:00), for which a person is registered and receives accommodation on account of the rate for the space occupied. Further on the rural OMA length of stay is calculated, where the length of stay is obtained from the ratio between the

number of overnight stays and the number of arrivals and the rural OMA tourist flow density is also calculated being defined as the ratio between the number of arrivals and the number of residents. Seasonality trends were also highlighted, where seasonality represents a predictable fluctuation or pattern that recurs or repeats over a one-year period.

The statistical data used in the current study come from the National Institute of Statistics in Romania database (https://insse.ro/cms/), the reference period for all the tourist flow indicators was the interval 2001-2020.

RESULTS AND DISCUSSIONS

Arrivals of tourists staying within tourist accommodation facilities

In the period 2001-2020 in the rural OMA region a total number of 2,875,633 tourist arrivals were registered. Their share in the flow determined by the tourist traffic in Bihor County (administrative unit in which OMA is located), was 52.8%, or in other words, one of two arrivals of tourists in Bihor County during the studied period was made in rural OMA (figure 2).

Versus the average annual value of arrivals in the rural OMA during 2001-2020 (149,775 arrivals), it is only during 2015-2019 that the registered values were higher, indicating an increase in the tourist flow, the annual exceedances being included between 4.5 and 69.5%. Prior to this period, respectively between the years 2001-2014, the values recorded annually were lower than the average value with weights between 0.5 and 29.3%. Therefore, in the second part of the studied period a tourist flow increase can be noticed (figure 2 and 3).

The share of arrivals in the rural OMA within the total number of arrivals in Bihor County has a decreasing trend over the entire period between 2001-2020. From an average value of over 60% recorded in the first part of the studied period (2003-2009), an average value of less than 50% was reached in the last part of the studied period (2012-2019), even if numerically this last part has seen significant increases. This can be accounted for, on the one hand by the new opportunities offered by Bihor County for practicing other types of tourism besides spa, and on the other hand by the increase in the number of participants in the tourist flow (figure 2 and 3).

Inevitably, the tourist arrivals share in the rural Oradea Metropolitan Area was dominated by the recorded values in the spas Băile Felix and Băile 1 Mai which attract 93.2% of the total number of tourists arriving in the OMA rural during 2001-2020 (respectively 2,791,492 arrivals or 48.3% of the total number of tourists arriving in Bihor County in the same period). The possibilities of practicing spa tourism in the two locations account for these higher values.

Borș is located on the second place, where due to transit tourism, the tourist flow accounted for 5.1% of the total number of tourists arriving in the rural OMA

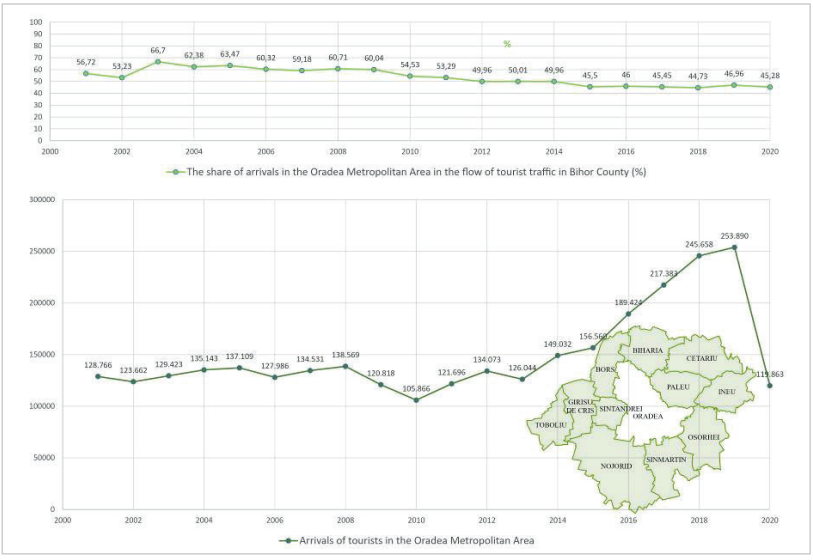

Figure 2. Arrivals of tourists in the rural region of the Oradea Metropolitan Area and their share in the of tourist flow of Bihor County during 2001-2020

Source: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

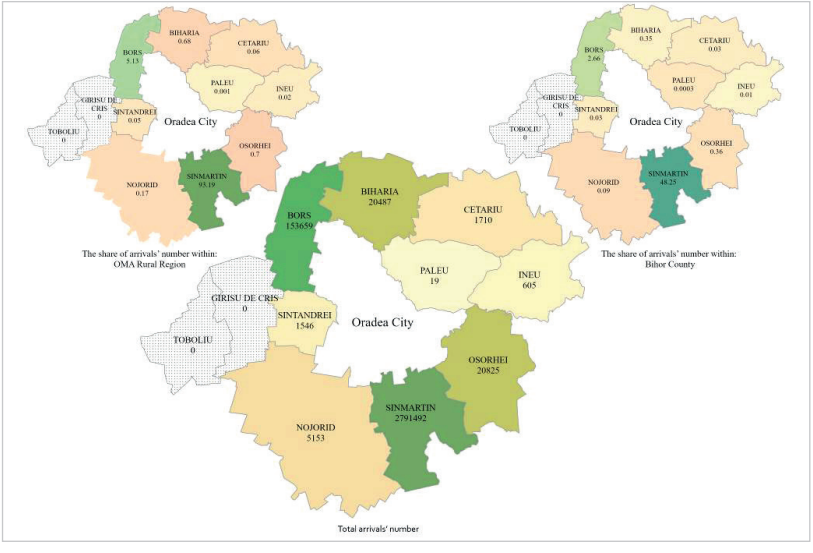

Figure 3. Arrivals of tourists in the localities of the rural region of the Oradea Metropolitan Area and their share in tourist flow in the rural OMA region and Bihor County (total values for the period 2001-2020)

Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

region during 2001-2020 (respectively 153,659 arrivals or 2.7% of the total number of tourists arriving in Bihor County during the same period).

The rest of the rural OMA localities registered low weights in terms of arrivals from 2001-2020, the values being below 1%: the number of arrivals registered during 2001-2020 was between 19-20,825 with a share of the tourist flow arrivals number between 0.001 and 0.7% and a share of the number of arrivals in the tourist flow in Bihor County between 0.0003 and 0.36% (figure 2 and 3).

Approximately four-fifths (80.3%) of tourists arriving in the rural OMA region during 2001-2020 preferred the hotel accommodation (the share registered in Bihor County for the same type of facility was 77.7%), 11.8% preferred the tourist and agrotourism pensions (the share registered at the level of Bihor county for the same type of facility was 3.8%), and 4.8% preferred the tourist villas and chalets (the share registered at the level of Bihor county for the same type of facility was 11.0 %). As it can be noticed in figure 4, the weights recorded in the OMA rural area are similar to the situation encountered in Bihor County (figure 4, 5).

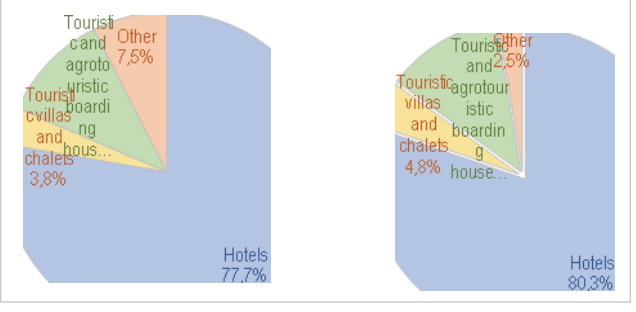

Figure 4. The share of tourist arrivals by accommodation facilities Bihor County (left) rural OMA region (right) by weighted means for 2001-2020
Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

Regarding the annual tourist flow values, in the rural OMA the share of hotel arrivals decreased during 2001-2020 from weights that exceeded 85% in the first part of the studied period (2001-2008), to weights below 75% during 2015-2020. This is accounted for by the reduction of the share of tourist accommodation capacity in hotels due to the emergence of other types of tourist accommodation structures.

In the case of tourist villas and chalets, until 2009, the share of arrivals in these types of facilities was on average of 7.5%, during 2010 and 2014, the share of arrivals in these facilities was on average of 1.9%, and after 2015, the share of arrivals in these facilities was on average of 3.7%.

A special case, responsible for reducing the share of tourist accommodation capacity in hotels is due to the emergence of tourist and agritourist pensions. If until 2009 the share of arrivals in these types of facilities was on average of 1.8%, after 2010, the share of arrivals in these types of structures was on average of 18.1%. In fact, if in 2001 the share of arrivals in these types of facilities was of 0.4%, in 2020 the share of arrivals in these facilities was of 25.8%.

In other types of facilities (hostels, apartment hotels, motels and bungalows), the average share of arrivals during 2001-2020 was on average of 2.5% (Figure 5).

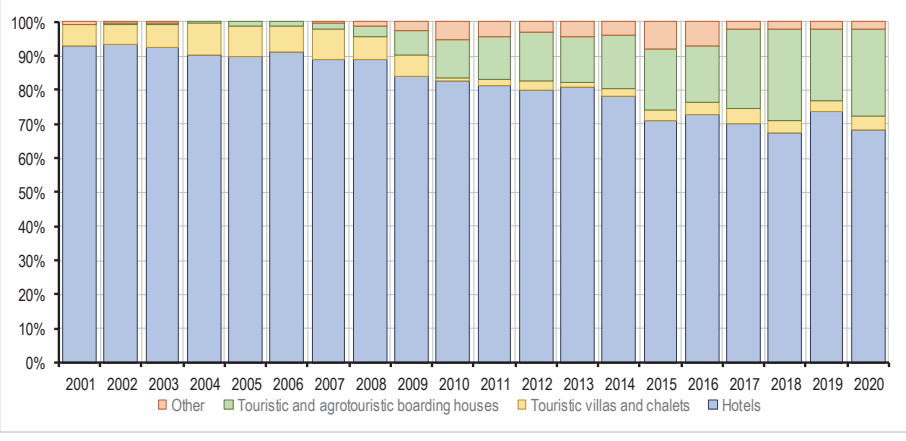

Figure 5. Arrivals of tourists in Bihor County and the rural OMA region by accommodation types during 2001-2020
Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

Overnight stays of tourists within tourist accommodation facilities

During 2001-2020 in the rural OMA region a total number of 17,129,189 overnight stays of tourists were registered. This results in an average annual value of 856,459 overnight stays in the rural OMA area. The share of overnight stays in the rural OMA region in the flow determined by the tourist traffic in Bihor County in the period 2001-2020 was 74.9%, or in other words, 3 out of 4 overnight stays in Bihor county during the studied period were made in the rural region of the OMA (Figure 6, 7).

Regarding the number of overnight stays in the rural OMA area during 2001-2020, we can identify three distinct periods: the first period, between 2001-2008 is characterized by a large number of overnight stays, the annual average being exceeded by values comprised between 8.7 and 18.9%; the second period, which begins in 2009 and lasts until 2015, is characterized by a lower number of overnight stays, probably due to the economic crisis of 2008 and its aftermath, when the number of overnight stays was less with values between 3.8 and 17.3 %

compared to the annual average recorded in the period 2001-2020; the third period, between the years 2016-2019 where the number of overnight stays in the OMA rural successively increases and decreases, successive attempts to return after a negative tourist flow period (Figure 6, 7).

Regarding the share of overnight stays in the rural OMA area among the total number of overnight stays in Bihor County, according to the recorded data, two distinctive periods stand out: the first period, during 2001 and 2013, is characterized by a high share of overnight stays in the tourist flow from Bihor county, the average annual overnight stays registered in this period in the rural OMA region is of 81.6% of the total number of overnight stays in Bihor county; the second period, between 2014 and 2020 is characterized by a lower share of overnight stays. The average annual overnight stays recorded in this period in the rural OMA region being of only 63.5% from the total number of overnight stays in Bihor County (Figure 6, 7).

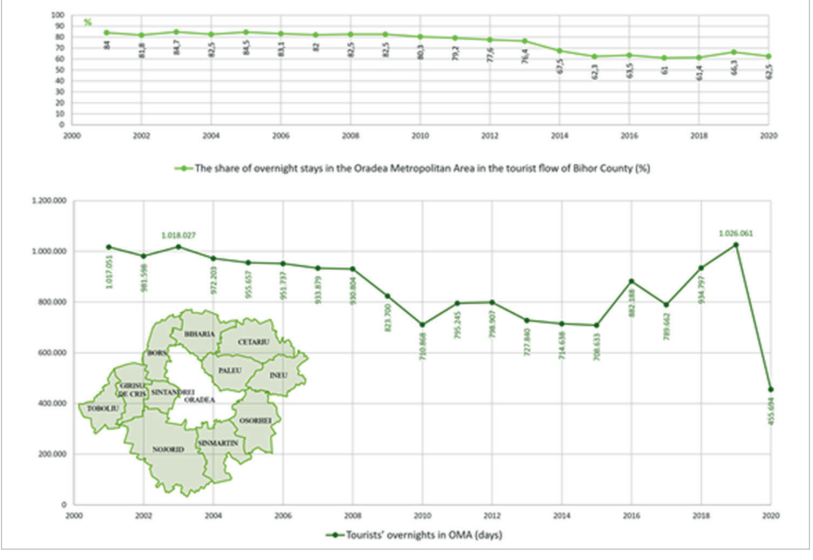

Figure 6. The overnight stays in the Oradea Metropolitan Area and their weight within the tourist flow of Bihor County during 2001-2020

Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

As in the case of arrivals, the share of overnight stays in the rural OMA area was dominated by the values recorded in the spas Băile Felix and Băile 1 Mai accounting for 98.4% of the total number of overnight stays of tourists in the rural OMA during 2001- 2020 (or 73.6% of the total number of overnight stays in Bihor County in the same period). The need for a longer period to perform certain procedures and treatments in the spas Băile Felix and Băile 1 Mai led to a higher

number of overnight stays, hence their significant share in the tourist flow. Due to the practice of transit tourism, the tourist flow in Borş accounted for 1.2% of the total number of overnight stays in the rural OMA area during 2001-2020, respectively a total number of 205,669 overnight stays. As in the case of arrivals, the rest of the localities in the rural region of the Oradea Metropolitan Area had low shares in terms of overnight stays during 2001-2020, the values being below 1%: the number of overnight stays recorded during 2001-2020 was between 30 and 23,899, with a share of the number of overnight stays in the tourist flow in the rural OMA between 0.0002 and 0.1% and a share of the number of overnight stays in the tourist flow in Bihor county between 0.0001 and 0.1% (Figure 6).

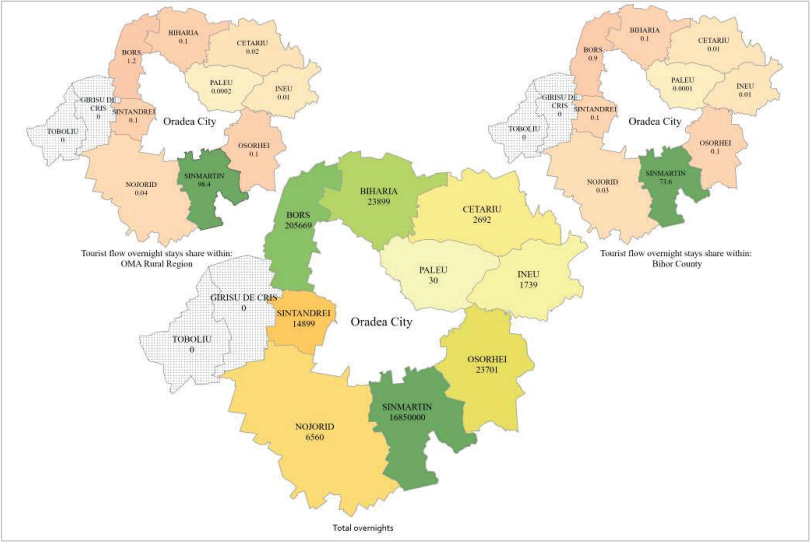

Figure 7. Overnight stays of tourists in the Oradea Metropolitan Area rural localities and their tourist flow share within Bihor County and rural OMA during 2001-2020
Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

More than nine out of ten (92.5%) of the overnight stays carried out during 2001-2020 in the rural OMA region were registered within hotels (the share of overnight stays registered in Bihor county for the same facility was 88.0%), 4.4% of overnight stays were spent in tourist and agritourism pensions (the share of overnight stays recorded in Bihor County for the same facility was of 5.7%), and 2.0% of overnight stays were in villas and chalets (the share of overnight stays registered in Bihor County for the same type of facility was of 2.6%). As it can be seen in Figure 8, the overnight stays share by type of accommodation facilities in the rural OMA area are similar to overnight stays recorded in Bihor County (Figure 8, 9).

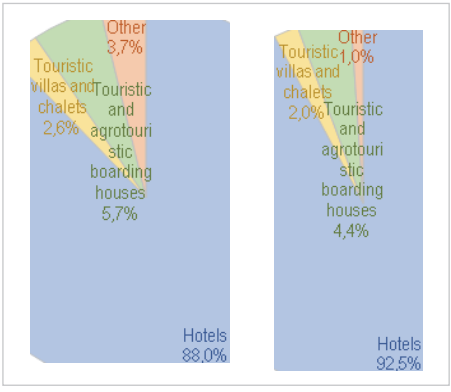

Figure 8. The overnight stays share by types of accommodation facilities in Bihor County (left) and the rural region of the Oradea Metropolitan Area (right) by average weights for 2001-2020

Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

Regarding the annual tourist flow values of the rural OMA, the share of overnight stays in hotels decreased during 2001-2020 from shares that exceeded the value of 92% in the first part of the studied period 2001-2014 to shares below the value of 87% in the last part of the studied period 2015-2020. Almost identical to the situation found out in the case of arrivals, is situation is attributable to the reduction of the share of tourist accommodation capacity in hotels due to the emergence of other types of tourist reception structures.

In the case of tourist villas and chalets, the overnight stays' share recorded until 2009 was on average of 2.7%, between 2010-2014, the share of overnight stays recorded in these types of facilities was on average of 0.6%, and after 2015, the share of overnight stays registered in these types of facilities was on average of 2.1%.

The decrement of tourist accommodation capacity share in hotels is due to tourist and agritourism pensions. If until 2009 the share of overnight stays recorded in these types of facilities was on average of 0.6%, after 2010, the share of overnight stays recorded in these types of facilities was on average of 8.3% (an increase of over 1400%). In fact, if in 2001 the overnight stays share registered in these types of structures was 0.05%, in 2020 the share of overnight stays recorded in these types of facilities was of 14.4% (an increase of almost 30,000%). In other types of facilities (hostels, apartment hotels, motels and bungalows), the average share of overnight stays recorded during 2001-2020 was on average of only 1.1% (Figure 9).

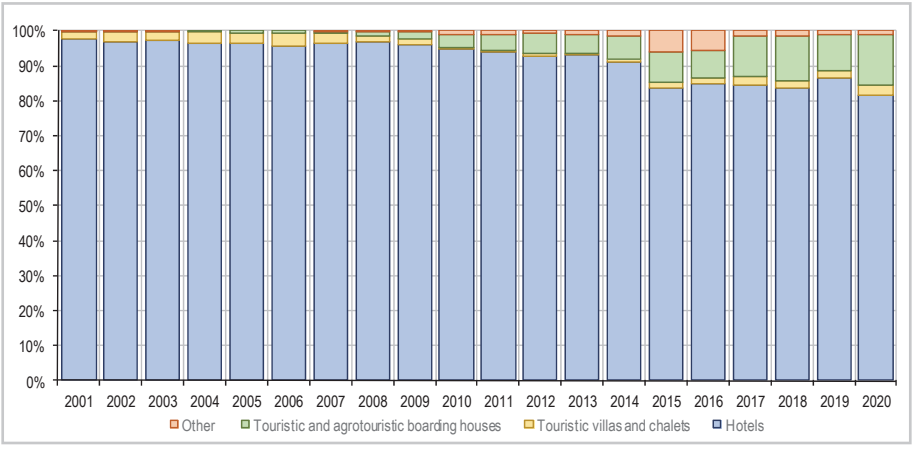

Figure 9. Overnight stays of tourists in the Oradea Metropolitan Area by types of tourist accommodation facilities during 2001-2020
Source: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations02

Average length of stay

Obtained from the ratio between the number of overnight stays and the number of arrivals, the average length of stay in the rural OMA area during 2001-2020 was 6.0 days, compared to 4.3 days referring to the average length of stay registered in Bihor County in the same period. Per whole, the average length of stay shows a decreasing trend throughout the analyzed period (i.e. 2001-2020), identifying three distinct stages: the first stage, between 2001-2003, with high values of the average length of stay of 7.9, the second stage between 2004-2013 with average values of the average length of stay of 6.7 and the third stage between 2014-2020 with low values of the average length of stay of 4. 2. Compared to the values of the average length of stay registered in Bihor County, the values of the average length of stay in the rural OMA area during 2001-2020 were higher with shares between 127.0 and 155.4% (Figure 10).

Regarding the average length of stay by types of tourist accommodation facilities in Bihor County and the rural Oradea Metropolitan Area, according to the data analyzed for the period 2001-2020, in the rural Oradea Metropolitan Area the longest average stay was recorded in hotels, here registering a value of 6.6 (compared to an average length of stay of 4.5 registered in hotels in Bihor county). In the other types of accommodation facilities, the average length of stay in the rural region of the Oradea Metropolitan Area has values between 2 and 2.5 (close to the values of average lengths of stays registered in the same accommodation facility in Bihor county) (Figure 11).

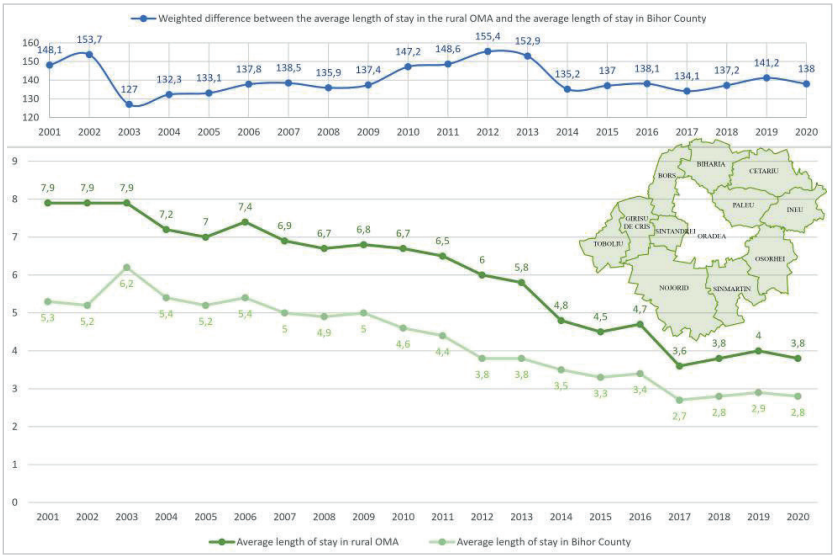

Figure 10. Average length of stay (days) in the rural OMA and weight difference compared to the average length of stay in Bihor County during 2001-2020

Source: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

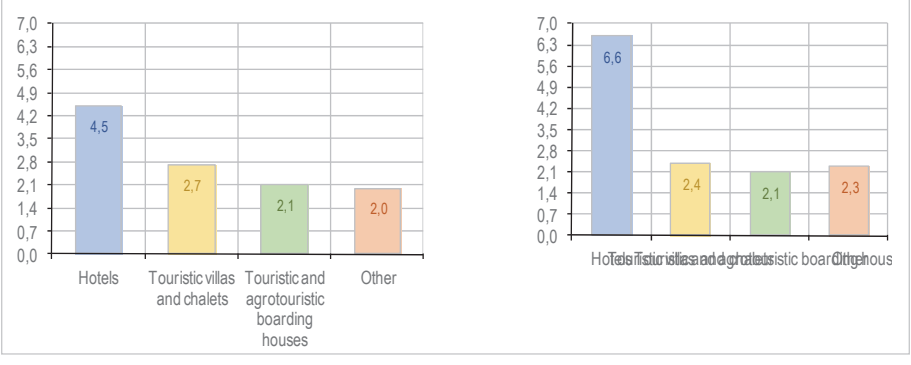

Figure 11. Average length of stay by types of tourist accommodation facilities in Bihor County (left) and the rural Oradea Metropolitan Area (right) by weighted average values for the period 2001-2020

Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

Compared to the types of tourist accommodation facilities, the average length of stay in the rural OMA has high values in the case of hotels; in the first part of the studied period of 2001-2013, the average length of stay in hotels exceeded 6.7, with an average value for this period of 7. 6. After 2014, the average length of stay

in hotels decreased below 5.7, registering an average value for this period of 5. 0. In the rural OMA, the average length of stay in hotels in the period 2001-2020 was between 4.4 and 8. 3. Compared to the average length of stay in hotels registered in Bihor County, the average length of stay in hotels in the rural OMA is higher with shares between 126.4% and 158.6% (Figure 12).

The average length of stay in tourist villas and chalets in the rural OMA during 2001-2020 was between 1.7 and 4. 2. Compared to the average length of stay in tourist villas and cottages registered in Bihor County, the average length of stay in tourist villas and chalets in the rural OMA is higher with shares between 54.8% and 106.4% (Figure 9, Table 8). The average length of stay in tourist and agritourist pensions in the rural OMA during 2001-2020 was between 1.0 and 2. 9. Compared to the average length of stay in tourist and agritourism pensions registered in Bihor County, the average length of stay in tourist and agritourism pensions in the rural OMA is higher with shares between 72.1% and 130.6% (Figure 12).

The average length of stay in other tourist accommodation facilities in the rural OMA during 2001-2020 was between 0 and 3. 8. Compared to the average length of stay in other tourist accommodation recorded in Bihor County, the average length of stay in other tourist accommodation in the rural OMA is higher with shares between 0% and 154.3% (Figure 12).

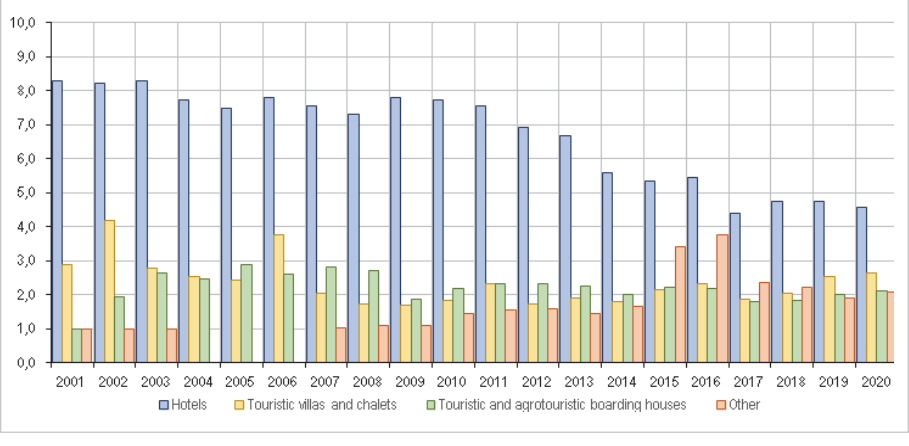

Figure 12. Average length of stay by types of tourist accommodation facilities in the rural OMA during 2001-2020

Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

The relatively high value of the stay registered in the rural OMA is due to the tourist flow from the spas of Băile Felix and Băile 1 Mai where spa tourism generates long periods of accommodation for the practitioners of this type of tourism. Thus, during 2001-2020 in Sântmartin there was an average length of stay of 6. 3. A close value of the average length of stay, respectively 5.9 (representing 98.5% of the average length of stay registered in the rural OMA during 2001-2020), was registered in Sântandrei, but the value is generated by a relatively small tourist flow given that Sântandrei has a share of only 0.05% of the total number of arrivals in the rural OMA during 2001-2020 and only 0.09% of the total number of overnight stays in the rural OMA during 2001-2020.

Approximately the same situation is found in the case of Ineu, where the average length of stay is relatively long, respectively 3.6 (representing 60.0% of the average length of stay registered in the rural OMA during 2001-2020), and the share of arrivals and overnight stays in the tourist flow registered during 2001-2020 in the rural region of OMA was 0.02% and 0.01% respectively.

The other localities registered an average length of stay between 1.1 and 1.6, but among them only Borș locality had a share of arrivals and overnight stays in the tourist flow registered during 2001-2020 of over 5% and 1% respectively (Figure 13).

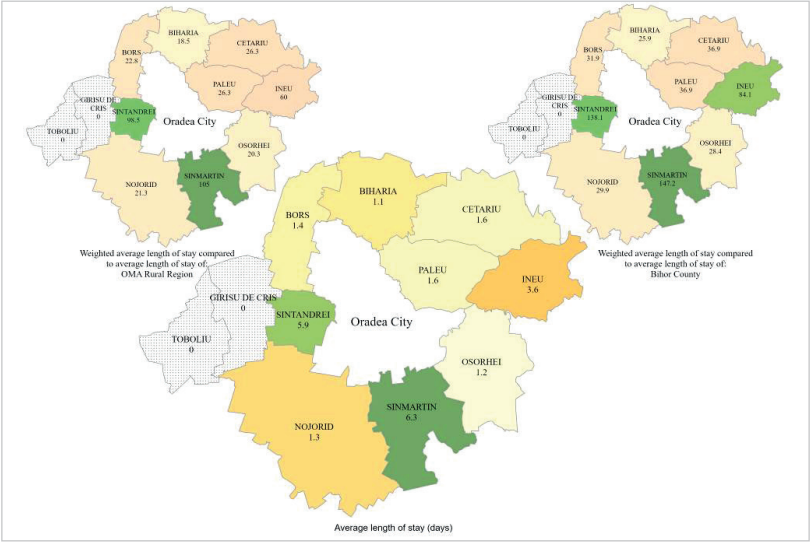

Figure 13. Average length of stay in the rural OMA and their weighted difference in the tourist flow in the rural OMA and Bihor County during 2001-2020
Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

Tourist flow density

Defined as the ratio between the total number of arrivals and the resident population, the tourist flow density in the rural OMA had an average value of 3.46 for the period 2001-2020.

Taken as a whole, the tourist flow density in the rural OMA during 2001-2020 features three stages. The first stage, between 2001-2008, is characterized by a relatively high average tourist flow density, respectively with values between 3.28 and 3. 66. The period 2009-2013 follows and is characterized by a relatively low average tourist flow density, respectively with values between 2.55 and 3. 05. The last period of 2014-2019, is characterized by an increase in the tourist flow density, from 3.27 to 4. 91. Comparing the average density of tourist flow in the rural OMA area to the average density of tourist traffic in Bihor County from 2001-2020, it results in weights between 527.0% and 1,157.5%, hence resulting the size of the tourist flow density in the rural OMA compared to Bihor County (Figure 14).

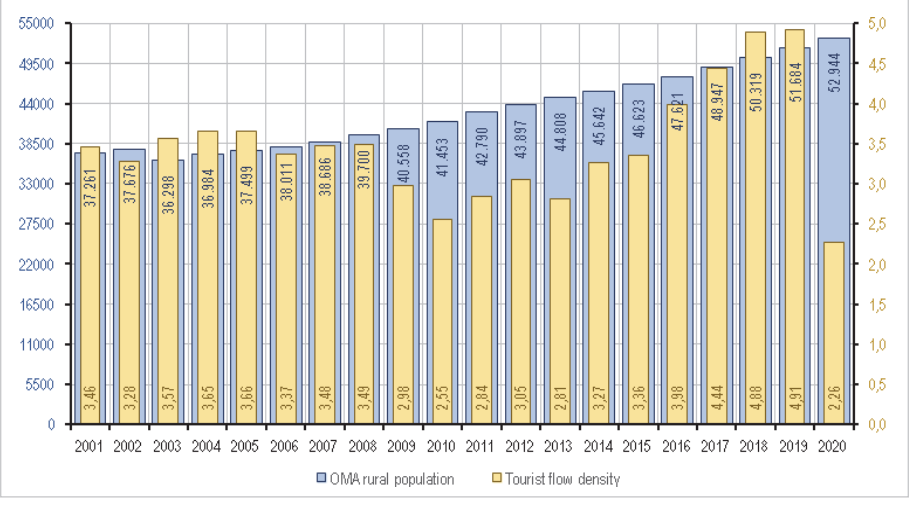

Figure 14. Tourist flow density and population in the rural OMA during 2001-2020
Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations2002

The relatively high value of the average tourist flow density in the rural OMA during 2001-2020 is given by the high average tourist flow value in Sânmartin commune, respectively 14.47, i.e. 417.6% compared to the average density of tourist flow in the rural OMA during 2001-2020 and 3113.1% compared to the average tourist flow density in Bihor county during 2001-2020. With the exception

of Borș locality, where the average tourist flow density value during 2001-2020 was 1.94, in all the other localities, the average tourist flow density value during 2001-2020 was sub unitary (Figure 15).

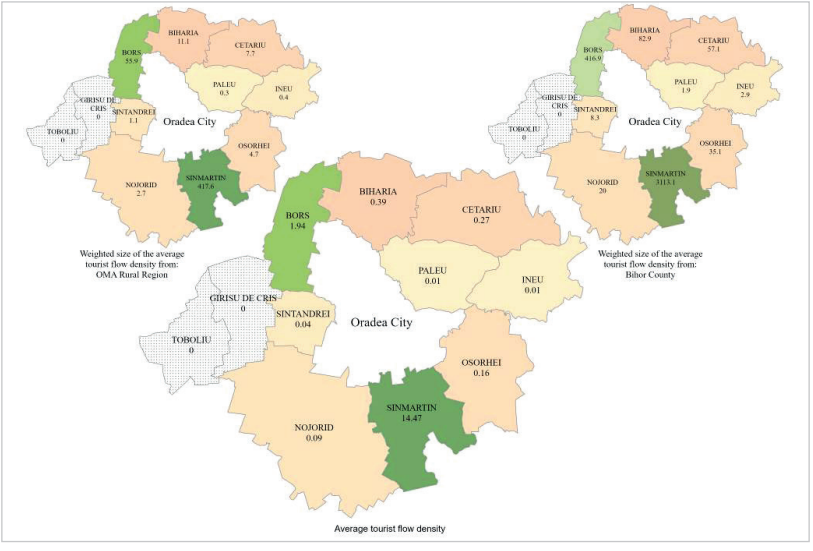

Figure 15. Average tourist flow density in the rural OMA and its tourist flow weighted size of the rural OMA and Bihor County during 2001-2020
Source of data: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations2002

Seasonality

To determine the tourist flow in the rural OMA, we used the method of monthly weights of tourist arrivals. Thus, the months in which the monthly weights of tourist arrivals exceeded 8.33% (100% / 12) were considered as months that are part of the tourist season. Conversely, the months in which the monthly weights of tourist arrivals did not exceed 8.33%, were considered as months that are not part of the tourist season.

For the period 2010-2019, according to the data on arrivals in the OMA, the tourist season has six months, from May to October. During this period, on average, almost two thirds of the total number of annual arrivals in the rural OMA are carried out.

According to the statistical data, during 2010-2019 there were short seasons of four months (in 2017, when in the tourist season only 47.5% of the total number of tourists were registered) or five months (in 2011 when in the tourist season 51.5% of the total number of tourists were registered and in 2016 when 56.5% of the total number of tourists were registered in the tourist season), but also long

seven-month seasons (in 2015, when in the tourist season there were registered 74.1% of the total number of tourists). During the period 2010-2019, the average value of monthly arrivals over which the calendar month was considered part of the tourist season almost always increased, from 8,788 arrivals in 2010 to 21,158 arrivals in 2019, with weights from 3.4% to 20.9%. The latter statement refers to the only decrease recorded in 2013 when compared to the previous year, the average value of monthly arrivals over which the calendar month was considered part of the tourist season decreased by 6.1% from 11,137 to 10,463 arrivals (Figure 16).

In the analyzed period of 2010-2019, the months with the highest average share of arrivals were: August, with 15.2% (i.e. with a total of 257,662 arrivals), July, with 12.3% (and with a total of 208,587 arrivals) and September with 10.7% (and a total of 181,063 arrivals). On the other hand, the months with the lowest average share of arrivals were February, with 4.6% (and a total of 78,355 arrivals), January, with 4.9% (and a total of 83,154 arrivals) and March, with 5.0% (and a total of 83,917 arrivals) (Figure 16).

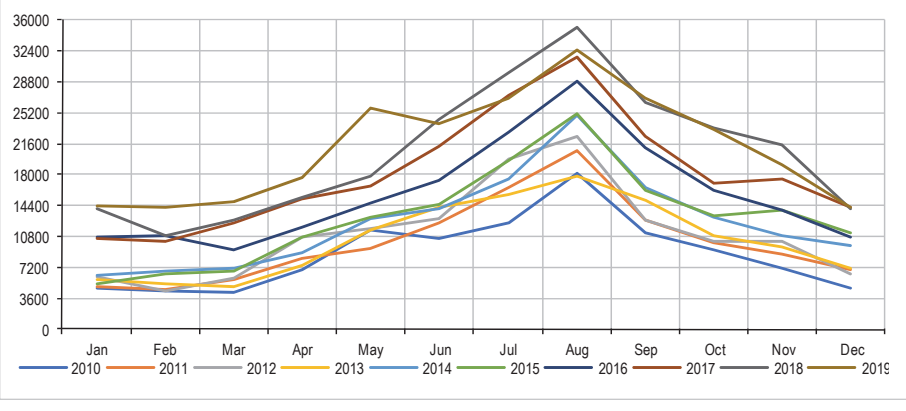

Figure 16. Monthly tourist arrivals in the rural OMA during 2010-2019
Source: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

The year 2020 within the rural OMA tourist flow

The restrictions imposed by the Sars-Cov2 virus in 2020 had an impact on the rural OMA tourist flow.

Thus, the share of monthly rural OMA tourist arrivals in 2020 was lower in March, April, May and June, approximately similar to July, October, November and December and higher in January, February, August and September than the average values recorded in the period 2010-2019, the average differences being ± 798.9% (with a minimum of 7.7% and a maximum of 8094.1%).

In 2021, the monthly tourist arrivals weights in the rural OMA have similar values to the average values recorded during 2010-2019, the average differences being ± 15.4% (with a minimum of 3.2% and a maximum of 50.2%). Regarding the numerical and weighted data in Table 13 and the graphical representation in Figure 12, we can say that, despite the fact that in 2020 the tourist flow in the rural OMA was disturbed, in 2021 it returns approximately to the previous values (those recorded in period 2010-2019) (Figure 17).

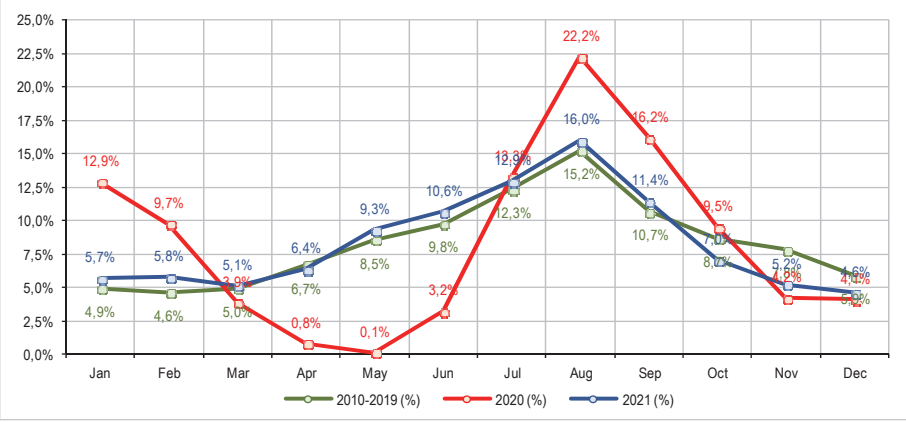

Figure 17. Monthly tourist arrivals weights in the rural OMA over the years 2010-2019, 2020 and 2021

Source: http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table and own calculations

The results of the analysed indicators can lead to a new vision of the territory by highlighting its unsustainable demand concentration and the need to split the flows towards other areas of Bihor county where the natural environment is less damaged and is endowed with tourist attractions (Tatar et al., 2017; Dinca et al. 2018; Tatar et al, 2018; 2021).

Overall, for the analysed period of 1990-2020, the rural OMA and Bihor County showed some revealing trends. Namely in the early 1990s the tourist flow witnessed a lower frequency versus its subsequent years since Romania was just coming out of a totalitarian system and some important changes took place in its economic, cultural and political fields. All the services sector among which tourism mainly were impacted with passing from a socialist centralized economic system to a free market economy. This triggered a lower income for the population which involved less time and money allocated for holidays for the average traveller. This situation deterioration and stagnation occurred over a decade until 2010. Henceforward, the situation started to improve, being accountable to the fact that

Romania became a full EU member in 2007 and thus allowed European funding accession for different tourist projects which subsequently increased the tourism demand after 2010 till 2019. As shown in figure 2 the tourist arrivals trend was increasing gradually only to drop significantly and suddenly to almost the levels of the year 2010 during the year 2020 due to the Coronavirus pandemic.

CONCLUSIONS

The study revealed that a smaller territorial unit such as Sanmartin commune with an on old tourist spa consumption like Băile Felix since 1500 and 1 Mai since 1200 manages to constantly polarize most tourist flows from a larger territorial unit (metropolis or county) even to the present day.

The statistical results indicated that the number of tourists arriving in accommodation facilities in the rural OMA during 2000-2019 increased significantly, especially in the last part of the studied period. By comparison, in 2019 an almost double number of tourists arrived in the rural OMA compared to 2000 (i.e. an increment of 97.2% was registered).

The average stay of tourists coming to the rural OMA decreased to almost half during 2000-2019, from 7.9 to 4.0 days. By comparison, in 2019 the average stay in the rural area of OMA decreased by 48.8% compared to 2000.

The tourist flow density in the rural OMA during 2000-2019 has increased alongside the number of rural OMA inhabitants which has also increased. By comparison, in 2019 the tourist flow density in the rural OMA increased by 42.1% compared to 2000.

The tourist season in the rural OMA according to the data from 2000-2019 extends over a six-month period, between May and October, but the trend is to decrease to five months, from June to October.

Even if the year 2020 presents an atypical evolution of the tourist circulation in the rural OMA region, the data registered in 2021 are according to the averages registered in the period 2000-2019.

The current statistical analysis indicates that all tourist arrivals from the rural OMA are concentrated in the two internationally rated spas, which can be considered a tourist hot spot both for OMA and Bihor County. This in its turn generates unsustainable consumption in the sense that negative environmental outcomes are already spotted such as the hot thermal water aquifer drying out (Cohut, 2017), therefore the study shows that for a sustainable consumption, flows need to be spread towards other metropolitan communes. This raises questions for tourist territorial logistic and equipment such as the existence of accommodation, food and beverage, entertainment etc facilities so that tourist demand is lured to other metropolitan communes too and tourist consumption occurs in a sustainable manner. Some of the short-term mitigation strategies also include the dispersing of

visitors and referring specifically to the rural OMA flows overconcentrated in Felix and 1 Mai spas of Sanmartin commune, they could be redirected towards another thermal water pool park, nonetheless of smaller dimensions as that located in Livada de Bihor locality of the Nojorid commune, both communes relying on the same resources of thermal waters.

REFERENCES

ACHARYA, A., PATHAK, A., K., MONDAL, B., K., DASH, P., BHADRA, T. (2021). Assessing the Economic Impact of Tourism and Verdict Ecotourism Potential of the Coastal Belt of Purba Medinipur District, West Bengal. *Folia Geographica* 63 (2), pp. 82-107

BUCUR L. (2012). *Studiu geografic al Zonei Metropolitane Oradea prin Sisteme Informaționale Geografice*, Editura Muzeului Țării Crișurilor, Oradea.

BUJDOSO Z., DAVID L., MADARAS S., PENZES J., NEDELEA A. (2015). Spatial Trends, Changes and Its Consequences in Tourism after the Millennium in Romania: Towards Sustainability? In: Vasile, Dinu (szerk.) *BASIQ 2015 International Conference: New Trends in Sustainable Business and Consumption*, Bucharest University of Economic Studies, pp. 394-399

CARRIERE J-P, FILIMON L., GUITEL S., SAVOURNEY C, IRINCU E. (2018). Urban Sprawl within the Metropolitan Area of Oradea, *disP - The Planning Review*, 54, 3, 36 -51

CHERAN I. (2016). *Turismul Romaniei*, Breviar statistic, INS.

COHUT, I., PAAL, G. (2017). Requiem for the nature reserve "Peţea brook" of 1 May Spa / Recviem pentru rezervația naturală "Pârâul Peţea" de la Băile 1 Mai. *Nymphaea Folia Naturae Bihariae***,** *XLIV*, 77-92.

DAS R.C. (2017). *Handbook of Research on Economic, Financial and Industrial Impacts on Infrastructure Development*, IGI Global.

DINCĂ I., HERMAN GR., SZTANCKOVICS G. (2012). *Descoperire prin ecoturism şi prin turism rural în Comuna Cetariu*, Editura Universității din Oradea.

DINCĂ I., LINC R., TĂTAR C., NISTOR S., STAȘAC M., BUCUR L. (2017). Surveying the Rural Resilience within the Oradea Hills Household Independent Cellar Landscape, in *Modern Technologies for the 3rd Millennium*, Editografica Learning, pp. 13-22, Bologna, Italy

FLETCHER J., FYALL A., GILBERT D., WANHILL S. (2018). *Tourism- Principles and Practice,* Sixth Edition*,* Pearson

FRANCESCONI S. (2014). *Reading Tourism Texts: A Multimodal Analysis. Tourism and Cultural Change,* Channel View Publications.

FRECHTLING D. (2012). *Forecasting Tourism Demand*, Routledge.

GOELDNER C.R. and RITCHIE BRENT J.R. (2012). *Tourism – Principles, Practices, Philosophies*, Wiley & Sons, pp 445-469

HERMAN, G.V., CACIORA, T., DUMBRAVĂ, R. et al. (2019). Geographical Considerations Regarding the Tourist Information and Promotion Centers from Bihor County, Romania. *GeoJournal of Tourism and Geosites*, 27(4), 1439–1448

HERMAN, G.V., GRAMA, V., SONKO, S.M. et al. (2020). Online Information Premise in the Development of Bihor Tourist Destination, Romania. *Folia Geographica*, 62(1), 21-34

HERMAN, G. V., BANTO, N., CACIORA, T., UNGUREANU, M., FURDUI, S., GARAI, L. D., GRAMA, V. (2021). The perception of Bihor Mountain Tourist Destination, Romania. *Geografie Politica*, 94 (4), 573–587

HERMAN, G. V., BANTO, N., CACIORA, T., GRAMA, V., UNGUREANU, M., FURDUI, S., BUHAȘ, R., BUHAȘ, S. (2020). Tourism in Bihor County, Romania. Trends and Prospects. *Folia Geographica*. 2020, 62 (2), 87–105.

INS (2021). (Institutul National de Statistica), Statistica Economica, *Turism*, http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table, accessed November 2021

LELLINGER T. (2010). *How important is Web 2.0 for the tourism sector and how can the industry apply to this trend?:* Business Research Project, University of Wales, Newport.

LIGHT D., DUMBRAVEANU D. (1999). Romanian Tourism in the Post-Communist Period, *Annals of Tourism Research*, vol 26, issue 4, pp 898-927

LINC R., DINCĂ I., STASAC M., TATAR C., BUCUR L. (2017). Surveying the Importance of Population and Its Demographic Profile, Responsible for the Natura 2000 Sites of Bihor County, Romania, *Eastern European Countryside*, Volume 23, Issue 1, pp. 147-170

LINC R., DINCĂ I., NISTOR S., TĂTAR C.F, BUCUR L., STAȘAC S.M., STUPARIU I.M. (2019). The environmental asset of the rural from Oradea Metropolitan Area (Romania), in *Annals of the University of Oradea*, *Geography Series*, XXXIX, 2, 1-17.

MWIKALI V. (2014). *Tourism motivation and experience*, GRIN Verlag.

NURKOVIC, R. (2017). Geographical Distribution of the Vineyards and Wine Production in Rural Areas of Bosnia and Herzegovina. *Folia Geographica* 59 (2), pp. 50-59

PEARCE P.L. (2011). *Tourist Behaviour and the Contemporary World*, Channel View Publications.

PENDYALA R.M., BHAT C.R. (2012). *Travel Behaviour Research in an Evolving World*, Lulu.com Publisher.

POSTELNICU C., DABIJA D.C. (2018). Romanian Tourism: Past, Present and Future in the Context of Globalization, *Ecoforum*, Volume 7, Issue 1 (14).

RYAN C. (2000). *Recreational Tourism, Demand and Impacts, Aspects of Tourism 11*, Channel View Publications.

SCHIFFER R.G. (2012). *Long-distance and Rural Travel Transferable Parameters for Statewide Travel Forecasting Models*, Transportation Research Board.

SIGALA M., RAHIMI R., THELWALL M. (2019). *Big Data and Innovation in Tourism, Travel, and Hospitality: Managerial Approaches, Techniques, and Applications*, Springer.

SONG H., WITT S.F. (2012). *Tourism Demand Modelling and Forecasting*, Routledge.

SONG H., WITT S.F., LI G. (2009). *The advanced econometrics of tourism demand*, Routledge.

RASOULI S., TIMMERMANS H.J.P. (2014). *Mobile Technologies for Activity - Travel Data Collection and Analysis*, Hershey.

STAȘAC S.M., STUPARIU I.M, TĂTAR C.F, LINC R., BUCUR L., DINCĂ I., NISTOR St. (2020). The tourist and technical infrastructure survey within Oradea rural leisure metropolitan belt, *Annals of the University of Oradea*, *Geography Series*, XXX, 2p 182-193.

STUPARIU, M. (2017). Study on Structural Dimensions of Establishment of Touristic Reception with Functions of Touristic Accommodation in Countries of European Union. *Folia Geographica* 59 (2), pp. 60-77

TĂTAR C., DINCĂ I., LINC R., NISTOR S., JUDEA D., BUCUR L., STAŞAC M. (2017). Rural Landscape Regeneration by the Household Independent Cellars' Geospatial Analysis and Rehabilitation, in *Modern Technologies for the 3rd Millennium*, Editografica Learning, pp. 89-98, Bologna, Italy

TĂTAR C.F, LINC R., DINCĂ I., STUPARIU I.M, BUCUR L., STAȘAC S.M., NISTOR S. (2018). Nature-based suburban leisure opportunities within the Oradea Metropolitan Area, *Annals of the University of Oradea, Geography* Series, XXVIII,2, 269-281.

TĂTAR C.F., LINC R., STUPARIU I.M., STAȘAC S.M., DINCĂ I., NISTOR St., BUCUR L. (2021). Towards a sustainable approach of cultural tourist resources in the Oradea Metropolitan Area (OMA), Romania, *Annals of the University of Oradea, Geography Series,* XXXI 2,110-132.

TRIBE J. (2011). *The Economics of Recreation, Leisure and Tourism*, Routledge.

UNWTO, *Covid 19 and Tourism*, a Year in Review.

WEAVER D., LAWTON L. (2014). *Tourism management*, fifth edition, Wiley.

WONG K., SONG H. (2012). *Tourism Forecasting and Marketing*, Routledge.