

THE DRIVERS OF RURAL ACCOMMODATION DEVELOPMENT IN ROMANIA: A PRELIMINARY STUDY

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ABSTRACT. Modern rural tourism is an umbrella concept, including a wide range of (niche) type tourism related to the countryside/rural areas. The central attractions of rural tourism are induced by the closeness to nature and new cultural experiences related to (local) history and intangible heritage. The interest for a rural destination being increased by an environment considered appealing from natural and aesthetic viewpoints, allowing for various forms of recreation.

This preliminary study answers the following question: *which are the drivers of the accommodation development in rural areas in Romania?* taking into consideration only the potential tourist attractions that could be identified based on official records (e.g. historic monuments, the status of resort for a given locality, the registered vineyards, the two rankings from 2008 and 2012). The overall conclusion of the study is that the potential tourist attractions have a relatively small influence on the development of Romanian rural lodgings. Therefore, more factors should be added in order to understand the accommodation development in rural areas in Romania.

Key words: rural tourism, lodging, resources, Romania

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I. Introduction and literature review

Modern rural tourism is an umbrella concept, including a wide range of (niche) type tourism related to the countryside/rural areas (Lane & Kastenholtz 2015; Figueiredo et al., 2013; Aref & Gill 2009). Rural tourism development can trigger the growth of other tourism-related activities in the countryside, and might contribute to the social and economic regeneration of rural areas (Iorio & Corsale 2013). A significant benefit of rural tourism is the diversification it brings to the rural economy (Panyik et al., 2011). Nonetheless, rural tourism should rather complement the existing activities in order to preserve the countryside authenticity (Hall 2004; Tao & Wall 2009).

The central attractions of rural tourism are induced by the closeness to nature and new cultural experiences related to (local) history and intangible heritage (Figueiredo et al., 2013). The interest for a rural destination being increased by an environment considered appealing from natural and aesthetic viewpoints, allowing for various forms of recreation (Banski & Bednarek-Szczepanska 2013).

While Romania rural tourism potential is considered to be important (Avram 2020 in press; Gavrilă-Păven 2015), the problems related to Romanian rural areas are also multiple and complex (Tudorache et al., 2017; Calina et al., 2017; Davidescu et al., 2018). Moreover, despite the existence of a national strategy for tourism development, the attention given to rural tourism was rather insignificant, these form of tourism not finding a way among the priorities of national and/or regional authorities (Ibanescu et al., 2018).

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At the end of 2019, of the total of 2,861 communes in Romania, 1,869 communes have no registered lodging facilities between 2005 and 2019, according to the Romanian National Institute of Statistics (NIS). The remaining 992 communes registered at least one lodging facility, of which only 6 communes registered at least 30 accommodation units, while only 4 registered 50 or more similar units (NIS).

The number of communes with registered accommodations grew from 441 in 2005 to 862 in 2019, an overall increase of 95.46%, with only one county (Ilfov) registering a decrease of 40.00%, while only other one county (Botosani) registered no variation in the number of communes with registered lodgings (NIS) as Annex 1 shows. Nonetheless, some extreme situation can be highlighted: 146 communes for which between 10 and 48 potential tourist attractions were identified, have no registered accommodations between 2005 and 2019; at the other ends of the spectrum are 139 for which no potential tourist attractions were identified, though 27 of these communes registered at least one lodging facility, according to NIS.

Through NRDP (National Rural Development Program) in order to support the tourism development in rural areas, in 2008, a ranking of tourist potential of (almost) all the 2,861 communes was published, followed by a new ranking issued in 2011/2012 for only 948 communes considered to have a high tourist potential.

The natural question that arises from these brief observations is: which are the drivers of the accommodation development in rural areas in Romania? While several academic papers (Nistoreanu 2018; Coros 2020 in press) present a classification of Romanian rural localities based on what are considered well known local resources, to the best of authors' knowledge this question was not investigated in-depth, for all the Romanian communes and no previous academic similar research was published.

This preliminary study answers the above-formulated question taking into consideration only the potential tourist attractions that could be identified based on official records (e.g. historic monuments, the status of resort for a given locality, the registered vineyards, the two

rankings from 2008 and 2012). The overall conclusion of the study is that the potential tourist attractions have a relatively small influence on the development of Romanian rural lodgings. Therefore, more factors should be added in order to understand the accommodation development in rural areas in Romania.

II. Material and methods

The identification of the 2,861 communes was based on the NIS classification offered through the Territorial-Administrative Units' Register (SIRUTA). Further, for all the communes, the following data were extracted:

1. the accommodation units, based on NIS data via Tempo-online, for the years 2005, 2010, 2015, and 2019. The start year 2005 was chosen for the following reasons: a) is the year before the publication of the Master-Plan for Tourism in Romania 2007-2026; b) the first database with the accommodation units offered by the Ministry of Tourism/National Authority for Tourism (MoT/NAT) is available for 2005; no comparisons previous to 2005 are possible between the data offered by NIS and MoT/NAT; c) by the end of 2005 almost all administrative units' upgrades (from communes to towns or from villages to communes) were completed; the very few registered in 2006 have no important consequences on the study.

2. the 2008 ranking and 2012 ranking for the communes; both rankings quantify the communes' tourist potential based on a number of points; the 2008 ranking uses the 1 to 10 scale; the 2012 ranking uses a scale from 1 to 56.4, though the majority of the 948 ranked communes have between 20 and 35 points. No explanation could be found regarding how the two rankings were established. Moreover, the assignment of rankings in 2008 and 2012 seems not to follow a uniform process: while 27 communes declared resorts (either of local or national interest) were not taken into consideration by the 2008 ranking, the 2012 ranking assigned points to 25 of these communes, while leaving 3 resorts of local interest not ranked.

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3. the protected natural areas based on the Romanian Government Decision 1284/2007 and the Order 46/2016 issued by the Environment Ministry.

4. the historic monuments made available by the Ministry of Culture at <https://patrimoniu.ro/monumente-istorice/lista-monumentelor-istorice>

5. the museums were not included in this study because the inventory offered by the Romanian National Institute of Statistics is clearly incomplete, excluding local museums, based on the local communities' efforts to preserve various historic, cultural, and natural attractions (see Pop & Balint, 2020 in press)

6. the recognized wine regions, vineyards and independent wine centers as announced by the National Office of Wine and Wine Products through the Order 1205/2018.

7. the recognized sources of mineral waters in Romania provided by the National Agency for Mineral Resources through the Orders 175/2008 and 139/2018.

8. the balneary potential based on a range of sources crossed with the information regarding the mineral waters since no official list for the localities with balneary resources could be found.

9. the status of resort (either of national or local interest) as provided by MoT/NAT and the last updates for 2019 provided by <http://turismbalneo.ro>

The gathered data presented above suffered the following processing:

1. for the accommodation units, an average for the four observations was calculated; however, when at least one accommodation unit was registered in any of the four years, the average was considered 1.

2. for the 2008 ranking the following conventions were applied: a) in the cases of 10 communes without ranking in 2008, the lack of ranking was replaced with 0; b) in the case of the localities declared resorts for which no 2008 rank was available, the lack of ranking was replaced with an average number of points (6) resulting from taking into consideration the ranking available for the localities declared resorts later than 2008; this processing was applied for 28 communes.

3. a variable called 'extra-resources' was created in order to measure the influence of following potential tourist resources: the presence of the vineyards/independent wine centers; the existence of mineral waters and balneary potential; the status of resort for the respective locality; the presence of a natural or cultural World Heritage Site (WHS). For each of these tourist resources, 1 point was allocated. Though the lists of protected areas and of historic monuments include the WHS, it was considered that the inclusion of a certain natural area or a cultural monument on the WHS list enhances the tourist potential of the respective locality/localities as shown by Iorio & Corsale (2013), Reyes (2014). Therefore, the maximum number of points for this variable (extra-resources) is 4.

For the present research, three groups of communes were considered: a) the one including all the 2.861 localities; b) the second group includes the 1,913 localities with no 2012 rankings, and c) the third group including the 948 localities ranked in 2012.

The following hypotheses were formulated:

H1 (for all communes): 2008 rank is influenced by the tourist resources

H1.1 (for the 1,913 communes): 2008 rank is influenced by the tourist resources

H1.2 (for the 948 communes): 2008 rank is influenced by the tourist resources

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H2 (for the 948 communes): 2012 rank is influenced by the tourist resources

H2a (for the 948 communes): 2012 rank is influenced by the tourist resources and the 2008 rank

H3 (for all communes): lodgings are influenced by the tourist resources and the 2008 rank

H3.1 (for the 1,913 communes): lodgings are influenced by the tourist resources and the 2008 rank

H3.2 (for the 948 communes): lodgings are influenced by the tourist resources and the 2008 rank

H3.2a (for the 948 communes): lodgings are influenced by the tourist resources and the 2008 rank and the 2012 rank

For testing the above hypotheses the OLS (ordinary least square) multiple regression was used. The results were completed with the application of PLS-SEM (partial least squares-structural equation modeling) which allows more complex links between the investigated variables. The names of the variables are presented in Annex 6 and those of latent variables are presented in Annex 9 to 11.

III. The overall situation of tourist resources and lodgings in rural areas by counties, regions and macro-regions

Annex 1 presents the communes with tourist potential. The number of communes in columns 1 to 8 is absolute; meaning that one commune can appear in one or all the eight columns, hosting multiple tourist attractions.

As Annex 1 shows, over 65% of Romanian communes have under their administration natural protected areas, about 84% have registered historic monuments, and about 27% of the communes have or are part of registered vineyards and independent wine centers. Macro-region 1 and Macro-region 4 are slightly above or around the national average. Macro-region 2 is below the national average with the number of communes

hosting historic monuments (only about 78% of the communes), though it is well over the national average (with 38%) regarding the communes with vineyards/wine centers. Macro-region 3 is well below the national average (with 49%) concerning the communes with allocated natural protected areas.

At regional level, Center, South-East, and West regions have the more balanced percentages of communes with allocated natural areas and registered historic monuments, though only the Center region is above the national average in both cases, while the other two regions are above the national average only in the case of communes with natural areas. The highest imbalances can be seen in South-Muntenia and South West regions, where the communes with allocated natural areas represent only 50%, respectively 58%, while the communes with historic monuments represent 85%, respectively 93%. North-East, South-East and South-West regions have between 30% and 48% communes as part of vineyards/wine centers, while the West region has the lowest level (7%) of communes being part of vineyards/wine centers.

At county level, the number of counties with a percentage of communes lower than the national average is equal, 18, in both cases of communes with allocated natural areas and communes with historic documents. Though, several counties have a relatively low number of communes with natural areas: Dambovita (26%), Ilfov (31%), Prahova (33%), Salaj (40%), and Valcea (46%), while in the case of communes with historic monuments only Braila registered 53%, being the only county with a percentage lower than 60%.

The number of counties with a percentage of communes with vineyards/wine centers above the national average is 19 of which 7 counties with a percentage of these communes of 50% (Alba and Constanta with 52%; Iasi with 60%; Dolj with 62%; Mehedinti with 64%; Vaslui with 83% and Galati with 95%).

After intersecting the information regarding the identified factors of tourist potential, the number of communes for which no tourist potential could be identified (based on allocated natural areas, historic monuments,

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vineyards/wine centers, mineral waters, natural/cultural WHS, and the status of resort) was of 139 communes at national level, representing about 5% of total communes. The highest concentration of communes with no tourist potential can be found in Macro-region 2 (46 communes), followed closely by Macro-region 3 (42 communes), while Macro-region 4 has 33 communes with this situation and Macro-region 1 only 18 communes. At regional level, South-Muntenia is on top with 41 communes, followed by North-East region with 29 communes and West region with 23 communes. At the other end of the spectrum, the Center region has only 2 communes with no tourist potential. At the county level, 10 counties have 0 communes with no tourist potential (of which 5 are in Macro-region 1), other 7 counties have only 1 commune with no tourist potential, 9 counties have 2 to 4 communes with no tourist potential, 14 counties have 5 to 9 communes with no tourist potential, while 2 counties have each 12 communes with no tourist potential. These last 2 counties are Prahova and Timis (Annex 1).

The 2008 ranking did not rank 38 communes, of which 28 communes have the status of resorts either of national or local interest.

The 2012 rank was more selective and included only 948 communes (about 33% of the total communes) while leaving without ranking 1,913 communes. Macro-region 2 has the highest number of communes (620 communes) not ranked in 2012, followed by Macro-region 4 with 505 not ranked communes, while within Macro-region 1, the number of communes with no 2012 rank is only 340. At the regional level, only two regions have less than 200 communes with no rank in 2012: Center region with 122 communes and West region with 189 communes. At the county level, 21 counties (of 41) have a percentage of communes with no 2012 rank higher than the national average of 67%. Of these 21 counties, 6 have this percentage between 90% and 98%. These 5 counties are: Calarasi, Giurgiu, Ialomita and Teleorman from Macro-region 3, and Olt and Timis county from Macro-region 4.

Of these 21 counties with a high percentage of no 2012 rank, 2 counties are those with 12 communes with no tourist potential, while other 11 counties have between 5 and 9 communes with no tourist potential.

Though at the other end of the specter, 2 of these 21 counties have 0 communes with no tourist potential.

By intersecting the data for 2008 rank and 2012 rank, only 13 localities have not been ranked by both rankings, of which 3 communes with the status of resort (see note* of Annex 1). Therefore only the same 10 communes were considered with no tourist potential by both rankings. However when crossing the information of the two rankings with the factors of tourist potential, only 2 of these 10 communes have no identified tourist potential: Poieni-Solca (Suceava county) and Pesac (Timis county).

While the situation presented above suggest a certain correlation between the factors considered for tourist potential and both rankings, it also suggests that the rankings were based on a self-assessment of communes' authorities and the entire extent of the tourist potential is either undervalued or ignored.

Annex 2 depicts the situation of all the communes using the average 2008 ranking, the most frequent 2008 rank, and the average number of lodgings for the period 2005-2019 (as explained in section Material and methods). At the national level, the average 2008 rank is 3.09 (out of a maximum un 10), and the most frequent rank is 2 (for 30.93% of the communes). The average percentage of communes without lodgings is about 65% at national level. Of the communes with registered lodgings, at national level, about 64% have only 1 lodging, other 34% have between 2 and 19 lodgings, while only 2% have 20 lodgings or more. Of these 2% of communes, 60% have the status of resort (see Annex 2). Only Macro-region 1 has an average 2008 rank higher than the national average, of 3.94, followed by Macro-region 4 with an average 2008 closer to the national average of 3.06, while Macro-region 3 has the lowest average 2008 rank of 2.53. Macro-region 1 is the only one having 4 as the most frequent 2008 rank, registered for about 31% of the communes. Macro-region 1 it is also the sole one with about 48% of the communes with no lodgings, well below the national average of 65%, while all the other regions have a percentage of communes with no lodgings above the average (between 70% and 75%). Also within Macro-region 1, the communes

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with 1 lodging represent about 59%, with 5% under the national average of 64%, followed by Macro-region 2 with 62%, while in Macro-region 3 and 4, 72% of the communes have only 1 lodging. The 'deficit' of 5% for the communes with 1 lodging registered by Macro-region 1, becomes a 'surplus' in the case of communes with 2 to 19 lodgings, which represent 39% within Macro-region 1, compared with the national average of 34%. Macro-region 2 is the only one with 4% of the communes having 20 lodgings or more, a situation due not to resorts, but to localities situated in Tulcea county (in or in the proximity of Danube Delta), Neamt county and Suceava county (see Annex 2).

At regional level, only 3 regions have an average 2008 rank higher than 3: North-West and Center (from Macro-region 1), and West (from Macro-region 4). Also, North-West and Center regions have 4 as the most frequent 2008 rank, while all the other regions have 2 as the most frequent 2008 rank. Besides, North-West and Center (from Macro-region 1), and West (from Macro-region 4) are the only regions having a percentage of communes with no lodgings lower than the national average of 65%; these percentages are 55% for North-West, 40% for Center, and respectively 56% for West region. Additionally, North-West and Center region have a percentage of communes with 2 to 19 lodgings above the national average of 34%, of 36% (North-West) and respectively 43% (Center). The third region with such a percentage above the national average for this category of communes is North-East, with 38%. North-East and South-East region (both part of Macro-region 2) are the only with a percentage of communes with at least 20 lodgings above the national average (2%), of 3% and respectively 6%. The details regarding the name of these communes are presented in Annex 2.

At national level, 8 counties of 41 have an average 2008 rank above 4, and the concentration of these counties is in Macro-region 1, two counties (Bistrita-Nasaud and Maramures) from the North-West region and five counties (Alba, Brasov, Covasna, Harghita, Sibiu) from Center region. The 'outsider' is Hunedoara county, from West region, Macro-region 4. All these 8 counties have the following common features: a) 4 is the most

frequent 2008 rank with Brasov county having about 44% of the communes with this rank; b) the percentage of communes with no lodgings is well below the national average of 64%, ranging between 17% and 55%; the counties with the lowest percentage of 0 lodgings communes are Covasna (17%) and Brasov (27%), while Bistrita-Nasaud is the county with 55%; c) six of these eight counties have also a higher number of communes with 2 to 19 lodgings; the percentage of these communes ranges between 36% and 55%, in all cases above the national average of 34%; four of these counties have this percentage of communes close to or above 50% (Maramures and Harghita with 48%; Brasov with 49% and Covasna with 55%); the exceptions are Bistrita-Nasaud with only 19% and Hunedoara with 26%.

Furthermore, while only 2 counties (Brasov and Harghita) host communes with at least 20 lodgings, the percentage of these communes is also significantly higher than the national average of 2%. In the case of Brasov the percentage is 5%, while in the case of Harghita is 6%. For more information see Annex 2.

In addition, 7 more counties have 4 as the most frequent 2008 rank, though they register an average rank lower than 4, between 3.13 and 3.77, situating them above the average rank at the national level of 3.09. These counties are: Cluj and Salaj (North-West region), Mures (Center region), Neamt (North-East region), Tulcea (South-East region), Arges (South-Muntenia region), and Arad (West region). One main feature of these counties is the fact that despite the relative high percentage of communes with rank 4 (over 30% in five cases), these percentage is compensated by a cumulative higher percentage for communes with ranks 2 and 3. Similar to the previous group of counties, within 5 of these counties, the percentage of communes with 0 lodgings is below the national average (64%), ranging between 41% and 60%. The only exception is Salaj county with 69%. Also four of these seven counties have a percentage of communes with 2 to 19 lodgings higher than the national average (34%), ranging between 37% and 48%. The exceptions are the counties of Salaj, Mures, and Arad. Furthermore, 3 of this group of counties include communes

with at least 20 lodgings. Tulcea county leads with 16%, followed by Neamt county with 5%, while Arges county is at 2%, the same as the national average.

At the other end of the spectrum, Annex 2 reveals three counties with an average rank lower than 2: Calarasi, Ialomita, and Teleorman all in South-Muntenia region. These counties also have 1 as the most frequent 2008 rank. Just another county, from the same South-Muntenia region, has 1 as the most frequent 2008 rank, though its average rank is above 2 (Giurgiu).

Four counties have more than 90% of the communes with no lodgings: Botosani (North-East region), Ialomita and Teleorman (South-Muntenia region), Olt (South-West region). Within five counties, all the communes with registered lodgings, host only one lodging: Galati (South-East region), Giurgiu, Ialomita and Teleorman (South-Muntenia region), Olt (South-West region).

The situation presented in Annex 2 suggests a certain level of correlation between the 2008 ranking and the number of communes with registered lodgings and, to some extent, a correlation between the 2008 ranking and the number of lodgings.

Annex 3 presents how the number of communes reporting at least 1 lodging evolved between 2005 and 2019. The discrepancy in the numbers reported in Annex 1 and 2 comes from using the average, as explained in the *Material and methods* section.

As Annex 3 shows, Macro-region 1 is leading with the highest number of communes with lodgings, retaining its top position since 2005. It is followed by Macro-region 2, Macro-region 4, and on the last position is Macro-region 3. Nonetheless, when calculating the growth rate between 2005 and 2019, Macro-region 4 is on top, with a rate of about 141%, well above the 95% at national level, while all the remaining 3 Macro-regions registered growth rate lower than the national level, with Macro-region 3 on the last position. The situation of Macro-region 3 is generated by the -40% decrease rate in the case of Ilfov county, the only one with a decrease in the number of communes reporting lodgings.

At regional level, the Center region is leading from the number of communes with lodgings followed in the descending order, by North-West, North-East, South-Muntenia, West, South-East regions, and, in the last position, the South-West region. Nonetheless, the growth rate of these communes provides a different ranking: South-West region is on top with a rate of about 185%, followed by the West region with 117% and by South-Muntenia region with 102%. North-West and North-East regions rank on 4th and respectively 5th position with growth rates above the national average (95%), but lower than 100%. Center region is on the 6th position with a lower than national average rate of 82%, while the South-East region is on the last position with a rate of 65%.

At county level it would be difficult to establish the ranking, based on the number of communes with lodgings since the positions changed with every new observation. However, it is interesting to mention that in 2005 only four counties registered more than 20 communes with lodgings: Cluj, Harghita, Suceava, and Arges. By 2019, this number grew to 24 counties. Within Central and West regions all the component counties have more than 20 communes with lodgings, while within the North-West region 5 of the 6 counties are in this situation.

When the growth rate is considered at the county level, the following groups can be distinguished:

a) only Ilfov county has a negative growth rate of -40%; b) only Botosani county has a 0% growth rate; c) 17 counties have a growth rate between 1% and 99%; within this group, a number of 6 counties have a growth rate lower than 50% (Constanta, Cluj, Arad, Iasi, Harghita, and Vrancea); d) 19 counties have a growth rate between 100% and 399%; e) 3 counties registered growth rates of 400% or more: Mehedinti (400%); Galati (500%); Vaslui (900%); this group owns its situation to a very low number of communes with lodgings in 2005, between 1 and 3 communes; while the absolute number of communes is not very high in 2019, any increase from such a low level represents an important jump ahead.

Crossing the information in Annex 3 with the information in Annex 2, no clear pattern could be established for the growth rate of communes with lodgings in relation to 2008 ranking. While the case of

Macro-region 4 seems to suggest that the growth rate could be higher in relation with a 2008 ranking of 3, this is contradicted by the Macro-regions 1 and 2 which have almost similar growth rates with 2008 rankings of 3.94 and respectively 2.83. The same contradictory results can be observed at the regional level: the best example is of the North-East and South-West regions with a 2008 ranking of 2.71 and respectively 2.70 and with growth rates of about 97% and respectively 185%. The situation is similar at the county level.

Based on the information presented above, there can be suggested that the 2008 ranking was established mainly based on the existing lodgings rather than on the other factors that can generate tourist attractions.

Annex 4 presents the structure of the 2,861 communes taking into consideration the average number of lodgings, 2008 ranking, and the identified number of tourist attractions. The communes with 2 to 19 tourist attractions are the most prominent group, therefore it represents the highest number of localities within all the 4 clusters included in Annex 4 (communes with 0 lodgings, communes with 1 lodging, communes with 2-19 lodgings and communes with at least 20 lodgings). While a linear relation was expected between the number of tourist attractions and the presence of lodgings, this simple linearity is evident only for the first 3 clusters for the communes with 2 to 19 tourist attractions, when expressed as a percentage from the total of communes for the respective clusters (the communes from this group represent 81% within the cluster with 0 lodgings, 89% within the clusters with 1 lodging, 90% within the cluster with 2-19 lodgings, but decreases to 80% within the cluster with at least 20 lodgings). This linear relation seems to exist, at some extent, only in case of communes with 20 or more tourist attractions: they represent 1% within the cluster with 0 lodgings; 3% within the clusters with 1 lodging and with 2-19 lodgings; and 20% within the cluster with at least 20 lodgings.

A negative linear relation exists for the other 2 groups; the number of communes with no tourist attractions and with just 1 tourist attraction is decreasing while the number of lodgings increases. Nonetheless, it is

interesting to mention that within the cluster 2-19 lodgings, 6 communes with no tourist attractions are found (Poiana Vadului – Alba county, Cazasu – Braila county, Hartop – Suceava county, Dumbravita – Timis county, all with 2 lodgings each; Beceni – Buzau county with 3 lodgings; Ghiroda – Timis county with 7 lodgings), and 17 communes with only one tourist attraction.

The negative linear relation is more evident when only the ranking is considered within the 4 clusters: the communes with 0 to 4 points represent 93% within the cluster with 0 lodgings, 75% within the cluster with 1 lodging, 54% within the cluster with 2-19 lodgings, and 20% within the cluster with 20 lodgings or more. The linear relation is also evident when the communes with 5 to 10 points are under scrutiny; they represent 7% within the cluster with 0 lodgings, 25% within the cluster with 1 lodging, 46% within the cluster with 2-19 lodgings, and 80% within the cluster with 20 lodgings or more.

Though, Annex 4 shows that the ranking of communes by groups and within the clusters do not follow a clear pattern.

Annex 5 is similar to Annex 4, though it includes only the 948 communes which were considered for the 2012 ranking. The only linear pattern that could be found was between the 2008 ranking and the number of lodgings, the number of communes with a ranking of 5 or higher increases from 32% within the cluster of communes with 0 lodgings to 50% within the cluster of communes with 1 lodging, to 61% for the communes with 2 to 19 lodgings, and to 79% for the communes with at least 20 lodgings.

For the other distributions of data, no clear pattern emerged.

It is interesting to mention in Annex 5 the communes with no identified tourist potential, but with 2012 ranking. Their number is very small; there are 3 communes with no identified tourist potential and with no registered accommodations (Brusturoasa – Bacau county – with 17 points under 2012 ranking; Ilva Mare – Bistrita-Nasaud county – with 23.5 points under 2012 ranking; Lapusata – Valcea county – with 13 points under 2012 ranking), and 1 commune with no tourist potential, and with 2

lodgings (Cazasu – Braila county – 1 point under 2012 ranking). All these communes are considered to have ‘high tourist potential’ according to 2012 ranking. Though there are no details regarding how the 2012 ranking was established and by whom, this situation (combined with the fact that 35 communes with just one identified tourist attraction were included in this ranking, of which 20 have no registered lodgings) suggests that the ranking emerged based on the self-evaluations performed by the local authorities and took into consideration some intangible potential attractions that could not be quantified.

The results extracted above are in line with the recent findings of Davidescu et al. (2018).

IV. Research results

Multiple regression results

Annex 6 presents the descriptive statistics for 3 groups of communes: all the 2,861, the 1,913 without 2012 ranking, and the 948 ranked in 2012. The data in Annex 6 concord with the data in Annexes 1 to 5. The data show the lower level of tourist potential for the 1,913 communes (e.g. the maximum number of points under 2008 rank is 7 for these communes) and a higher level for the 948 communes ranked in 2012 (which have an average number of points of about 4.7 under 2008 rank, register a higher number of historic monument, protected areas and have, on average, more than 2 lodgings per commune). Of course, some exceptions exist in both cases and they were mentioned within the previous pages.

Annex 7 comprises the correlation coefficients between the selected variables for the 3 groups of communes.

For all the communes, the correlations are significant but weak or very weak. A weak correlation exists between 2008 rank and the following other variables: lodgings, monuments and protected areas, while the

relation with the extra-resources is even weaker. Except for the weak relationship of lodgings with 2008 rank, this variable have weaker relationships with the protected areas and extra-resources, and almost 0 correlation with the historic monuments. The relationships between historic monuments, protected areas, and extra-resources are expected to be very weak since these variables should have no real connections with each others (see Annex 7A).

For the 1,913 communes with no 2012 ranking, the correlations are all lower than 0.2 and could be considered very weak or non-existent. In the case of these communes, the extra-resources seem to be completely unimportant for 2008 rank and in the case of lodgings (see Annex 7A).

In the case of the 948 communes ranked in 2012, the only moderately-strong correlation exists between 2008 rank and 2012 rank. The majority of the remaining correlations are weak and very weak, while the correlation is not significant between the historic monuments and lodgings and also between the historic monuments and protected areas (see Annex 7B).

Annex 8 presents the results of the stepwise multiple regression. As already suggested by the results of correlation coefficients from Annex 7, for all the communes, the 2008 ranking is influenced by all three independent variables, though explain 18.8% of this dependent variable; the lowest influence seems to be exerted by extra-resources. When lodgings are taken into consideration as dependent variable, the model, though significant, explains only 7.3% of its evolution. The 2008 ranking is the most influent of the independent variables, while historic monument having no significant influence (see Annex 8A).

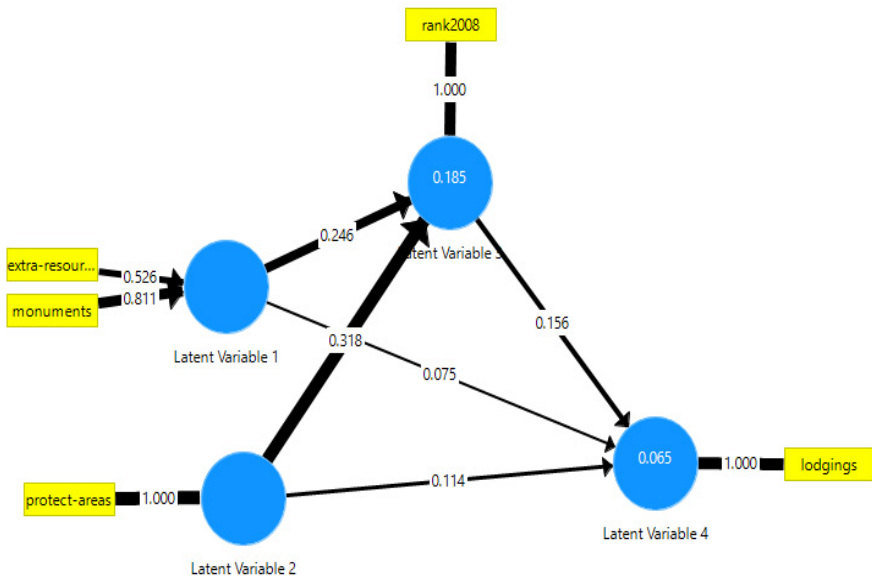
In the case of the 1,913 communes with no 2012 ranking, the model, although significant, explains only 5.4% of the dependent variable 2008 rank, extra-resources being insignificant. In the case of lodgings, the model, also significant, explains only 3.3% of the dependent variable; 2008 rank has the highest influence, while extra-resources and historic monuments have no significant influence (see Annex 8A).

For the 948 communes with 2012 ranking (see Annex 8B), the dependent variable 2008 rank is explained by the model only 7.3%, with historic monuments having the lowest influence. The model explains 11.5% of the dependent variable 2012 rank, the independent variables (historic monuments, protected areas, and extra-resources) having a balanced influence. Though, when 2008 rank is added as to the model, the explanatory power of the model increases at almost 37% and 2008 being the most influential. In the case of lodgings, the explanatory power of the model with 4 independent variables is low, of 6.4%, while the historic monuments have no influence. When 2012 rank is added as an independent variable, the explanatory power of the model increases slightly to 8%, while historic monuments and 2008 rank have no significant influence on the lodgings.

PLS-SEM results

Figure 1 presents the PLS-SEM results for all the 2,861 communes. The details regarding the PLS-SEM calculations are presented in Annex 9.

As Figure 1 shows, the results are similar to those generated by the multiple regression (Annex 8A). The existing resources influence 2008 rank up to 18.5%, while the combined influence on lodgings is low, of 6.5%. The strongest influence on the 2008 rank comes from the protected areas, while rank 2008 has the strongest influence on lodgings, therefore showing that the natural and anthropic resources have rather an indirect influence. This finding suggests that rather the official communications (e.g. 2008 rank) have some influence on local population decision to offer tourist lodgings than the cognizance regarding the presence and the value of local natural and anthropic resources.



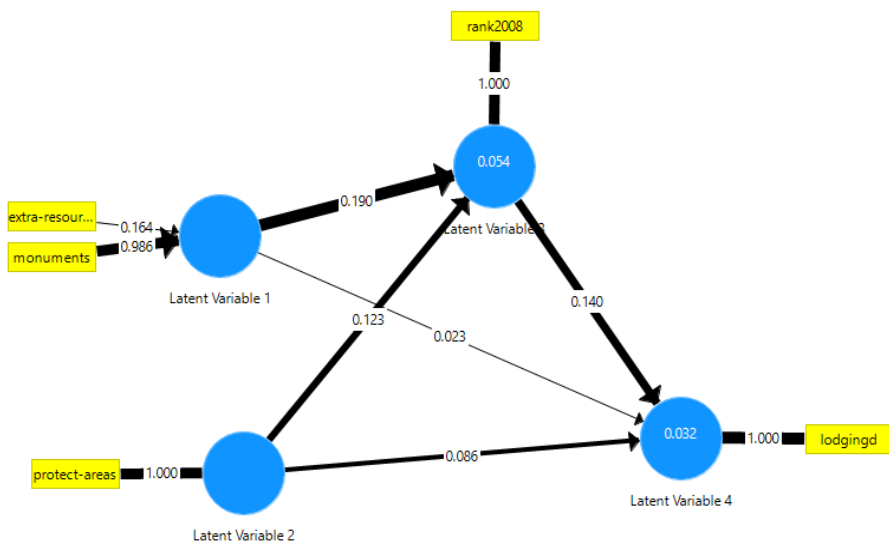
Source: authors' calculations

Figure 1: PLS-SEM results for 2,861 communes

Figure 2 presents the PLS-SEM results for the 1,913 communes without 2012 rank. The details regarding the PLS-SEM calculations for these 1,913 communes are presented in Annex 10. These results are also similar with the multiple regression results (Annex 8A). The existing resources influence 2008 rank up to 5.4%, while the combined influence on lodgings is very low, of 3.2%. The difference that occurs in comparisons with Figure 1 is represented by the fact that, for this group of communes, the 2008 rank is rather more strongly influenced by the anthropic resources (mainly the historic monuments). This situation is in concordance with the lowest number of protected areas allocated to these communes, as Annex 6A shows. The findings for the 1,913 communes are similar to those for all the 2,861 communes.

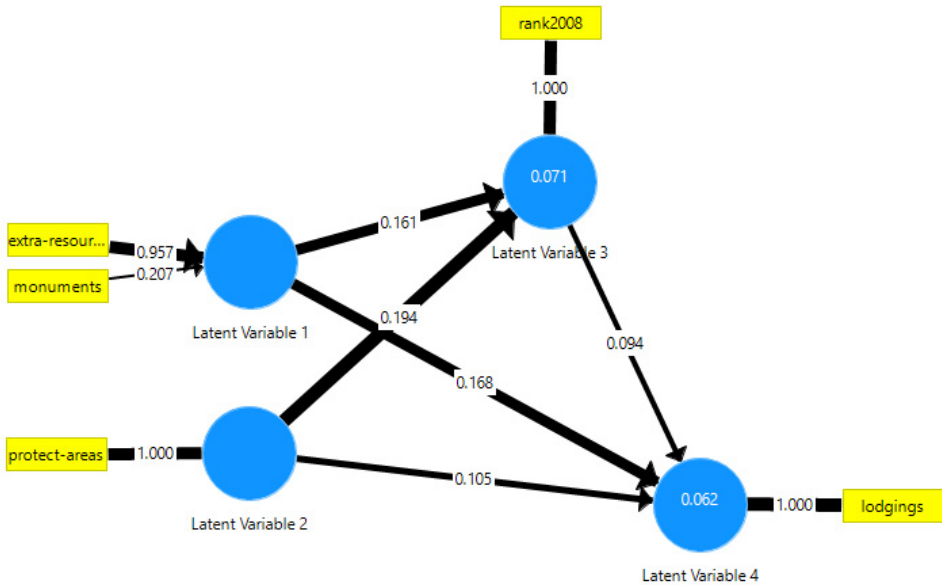
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Figure 3 presents the PLS-SEM results for the 948 communes with 2012 rank (the 2012 rank not included). The details regarding the PLS-SEM calculations for these 948 communes are presented in Annex 11. Similar to the previous results, Figure 3 results are them too similar to the multiple regression results (Annex 8B, the sections for 2008 rank and lodgings A). The existing resources influence 2008 rank up to 7.1%, while the combined influence on lodgings is low, of 6.2%. Though, the inner model in Figure 3 shows a different situation compared with Figures 1 and 2. For this group of 948 communes, the influence of the existing tourist resources is stronger than the influence of the 2008 rank, the anthropic resources having the most substantial influence. However, the 2008 rank is rather under the influence of protected areas. The findings suggest that within this group of communes the level of awareness regarding the existence and the value of the natural and anthropic resources is higher and that the local population uses this information when offering tourist accommodations. The confirmation given by the 2008 rank regarding the presence of these resources seems to be of secondary importance.



Source: authors' calculations

Figure 2: PLS-SEM results for 1,913 communes (without 2012 rank)



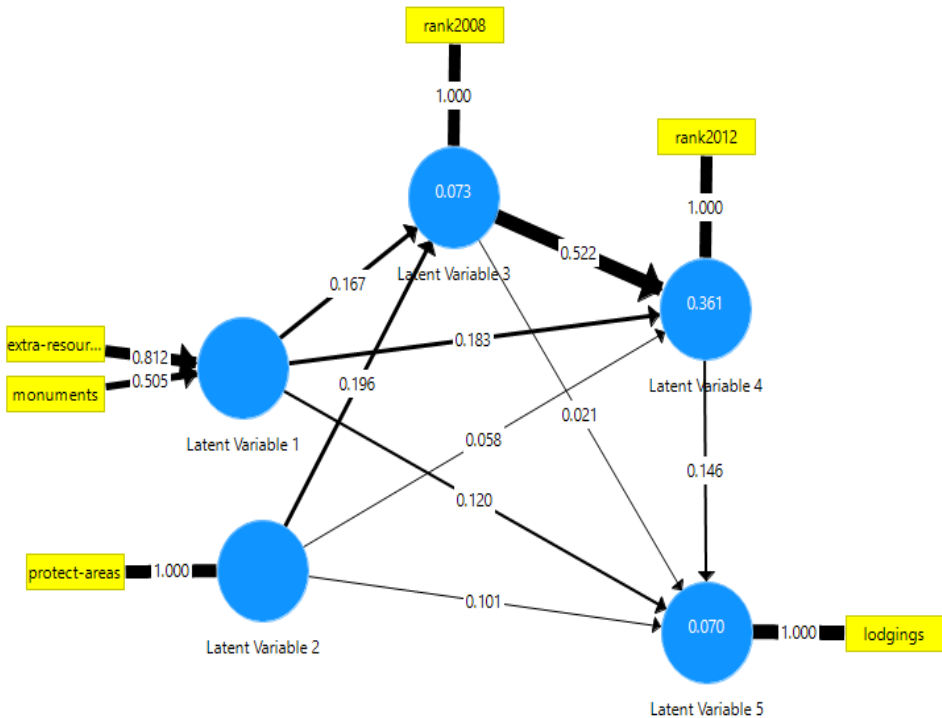
Source: authors' calculations

Figure 3: PLS-SEM results for 948 communes with 2012 rank (2012 rank not included)

Figure 4 presents the PLS-SEM results for the 948 communes with 2012 rank (the 2012 rank included). The details regarding the PLS-SEM calculations for these 948 communes are presented in Annex 12. Similar to the previous results, Figure 3 results are them too similar to the multiple regression results (Annex 8B, the sections for 2012 rank B and lodgings B). The existing resources influence 2012 rank up to 36.1%, while the combined influence on lodgings is low, of 7.0%. The inner model shows, however, that the influence on lodgings of the anthropic resources, natural resources, and 2012 rank are similar. Nonetheless, the strongest influence on the 2012 rank comes from 2008 rank, which indicated that the 2012 ranking process was based on the previous assessments. Given the similar influence of anthropic resources, natural resources, and 2012 rank, the results from Figure 4 can be considered in line with those in

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Figure 3. While the presence of 2012 rank seems to be important, there is a higher level of awareness within this group of communes regarding the existence and the value of the natural and anthropic resources and the decision of local population to offer accommodations for tourists is based on this awareness.



Source: authors' calculations

Figure 4: PLS-SEM results for 948 communes with 2012 rank (2012 rank included)

V. Discussions

As Table 1 shows, all the hypotheses formulated were confirmed with a high level of confidence.

The results suggest that those who established the ranks for 2008 and 2012 took into consideration the identified tourist resources. Nonetheless, the 2012 rank was mainly based on the information provided by the 2008 ranking. However, when the tourist accommodation is concerned, the influences are weak and they suggest a low to very low level of awareness regarding the existence and the value of the identified natural and anthropic tourist attractions within the local communities.

Table 1: Hypotheses confirmation/infirmation

Hypotheses	Multiple regression results	PLS-SEM results
H1 (for all communes): 2008 rank is influenced by the tourist resources	Confirmed. R ² = 18.8%; p-value < 0.001	Confirmed R ² = 18.5%; p-value = 0.0000
H1.1 (for the 1,913 communes): 2008 rank is influenced by the tourist resources	Confirmed. R ² = 5.4%; p-value < 0.001	Confirmed R ² = 5.4%; p-value = 0.0000
H1.2 (for the 948 communes): 2008 rank is influenced by the tourist resources	Confirmed. R ² = 7.3%; p-value < 0.001	Confirmed R ² = 7.1%; p-value = 0.0000
H2 (for the 948 communes): 2012 rank is influenced by the tourist resources	Confirmed. R ² = 11.5%; p-value < 0.001	Not investigated.
H2a (for the 948 communes): 2012 rank is influenced by the tourist resources and the 2008 rank	Confirmed. R ² = 36.8%; p-value < 0.001	Confirmed R ² = 36.1%; p-value = 0.0000
H3 (for all communes): lodgings are influenced by the tourist resources and the 2008 rank	Confirmed. R ² = 7.3%; p-value < 0.001	Confirmed R ² = 6.5%; p-value = 0.0000
H3.1 (for the 1,913 communes): lodgings are influenced by the tourist resources and the 2008 rank	Confirmed. R ² = 3.3%; p-value < 0.001	Confirmed R ² = 3.2%; p-value = 0.0000
H3.2 (for the 948 communes): lodgings are influenced by the tourist resources and the 2008 rank	Confirmed. R ² = 6.4%; p-value < 0.001	Confirmed R ² = 6.2%; p-value = 0.0000
H3.2a (for the 948 communes): lodgings are influenced by the tourist resources and the 2008 rank and the 2012 rank	Confirmed. R ² = 8.0%; p-value < 0.001	Confirmed R ² = 7.0%; p-value = 0.0000

Source: authors' calculations

Also the rankings of 2008 and 2012 have a relatively low direct influence on lodgings, as Figures 1 to 4 show. All these results suggest that a range of other factors should be added in order to understand the presence of lodgings in rural settlements.

VI. Conclusions

With overall growth of 95.46% of the number of communes reporting lodgings between 2005 and 2019, the developing of accommodation supply within rural areas has an upward trend. Though, about 65% of the communes report no lodgings, about 22% report only one lodging facility, while only a negligible number of 20 communes host 20 lodgings or more. The high number of communes with no lodgings and with just one lodging explain the weak relation between the tourist attractions and the accommodation offered in rural areas. Even within the cluster of 948 communes with 2012 rankings, the number of communes with 0 lodgings represent 39%, while the number of communes with just 1 lodging represent 33%. Therefore, the influence of tourist attractions on the accommodation offer remains weak.

he findings indirectly reveal that the awareness of the local population regarding the existence and the value of the identified natural and anthropic tourist attractions is low or very low. This result is in line with the previous findings of Pop & Georgescu (2019), Pop & Balint (2020, in press), and Iatu et al. (2018), however, these papers refer mainly to the presence of World Heritage Sites (WHSs).

Also the findings point toward the idea that the development of accommodation facilities in rural areas is based mainly on individual decisions and the respective offer creates rather a complementary service to other economic activities. This idea was already demonstrated by Pop & Georgescu (2019) for the rural localities hosting WHSs.

The results of this study point into two directions: a) to extend the range of factors taken into consideration (e.g. population, population structure and education, the accessibility of the respective localities); b) to focus the study only on the rural localities that host a lodging.

The limitations of the present study come from not taking into consideration the intangible heritage, an element difficult to quantify. Also, the number of lodgings reported by NIS can be undervalued. A future study will take into consideration the larger database offered by the Ministry of Tourism/National Authority for Tourism.

Nonetheless, the future development of Romanian rural tourism should consider the recommended community-based tourism as suggested by (Figueiredo et al., 2013). Furthermore, within the rural communities the level of awareness regarding the value of the existing resources should increase and should be combined with sustainable strategies for economic development. Additionally, as suggested by Avram (2020, in press), the development of tourist activities should include the tourists' profiles in correlation with the available resources, leading to segmentation of rural tourist offer as suggested by Coros (2020, in press) and Nistoreanu (2018).

REFERENCES

- Aref, F., Gill, S.S. (2009). Rural Tourism Development Through Rural Cooperatives, *Nature and Science* 7(10), 68-73
- Avram, D. (2020, in press). Changes in rural tourism: What's new?. in *New trends and opportunities for Central and Eastern Europe Tourism* (Nistoreanu, P., ed), IGI-Global, USA, 191-206
- Banski, J. & Bednarek-Szczepanska, M. (2013). The influence of differentiation of the landscape capital on the offer of the agro-tourist facilities in Poland, in *ORTE 2013: International Conference on Rural Tourism – Re-inventing rural tourism and rural tourism experience*, Proceedings, ISBN: 978-989-20-4016-5, 235-250

THE DRIVERS OF RURAL ACCOMMODATION DEVELOPMENT IN ROMANIA:
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- Calina, A., Calina, J. & Tiberiu, I.(2017). Research regarding the implementation, development and impact of agritourism on Romania's rural areas between 1990 and 2015. *Environmental Engineering Management Journal*, 16, 157-168
- Coros, M.M. (2020, in press). Rural tourism and its dimension: a case of Transylvania, Romania. in *New trends and oppotunities for Central and Eastern Europe Tourism* (Nistoreanu, P., ed), IGI-Global, USA, 246-272
- Davidescu, A.A.M., Strat, V.A., Grosu, R.M., Zgură, I.D. & Anagnoste, S. (2018). The Regional Development of the Romanian Rural Tourism Sector. *Amfiteatru Economic*, 20 (Special No. 12), 854-869
- Figueiredo, E., Kastenzholz, E., & Pinho, C. (2013). Living in a rural tourism destination – explaining the view of local communities, in *ORTE 2013: International Conference on Rural Tourism – Re-inventing rural tourism and rural tourism experience*, Proceedings, ISBN: 978-989-20-4016-5, 139-154
- Gavrila-Paven, I. (2015). Tourism opportunities for valorizing the authentic traditional rural space-study case: Ampoi and Mures Valleys microregion, Alba County, Romania. *Procedia: Social and Behavioral Sciences*, 188, 111-115
- Hall, D. (2004), *Rural Tourism Development in Southeastern Europe: Transition and the Search for Sustainability*, *International Journal of Tourism Research*, 6, 165-176
- Iatu, C., Ibanescu, B.C., Stoleriu, O.M., & Munteanu, A. (2018). The WHS designation – a factor of sustainable tourism growth for Romanian rural areas?. *Sustainability*, 10(3), 626
- Iorio, M., Corsale, A. (2013), *Community-based Tourism and Networking: Viscri, Romania*, *Journal of Sustainable Tourism*, 22(2), 234-255
- Lane, B., Kastenzholz, E. (2015), *Rural tourism: the evolution of practice and research approaches – toward a new generation concept?*, *Journal of Sustainable Tourism*, 23(8-9), 1133-1156
- Nistoreanu, P. (2018). Romania. In E. M. Dobrescu & P. Nistoreanu (Eds.), *Turismul rural european*. Sitech, Craiova, 516-544
- Panyik, E., Costa, C., & Ratz, T. (2011), *Implementing integrated rural tourism: An event-based approach*. *Tourism Management*, 32(6), 1352-1363

- Pop, C. & Balint, C. (2020, in press). Romanian newly-nominated WHS and current tourism development in the associated rural localities, in *New trends and opportunities for Central and Eastern Europe Tourism* (Nistoreanu, P., ed), IGI-Global, USA, 223-245
- Pop, C. & Georgescu, M-A. (2019). Romanian rural World Heritage Sites and tourism development, *Entrepreneurial Business and Economic Review (EBER)*, 7(1), 135-158
- Reyes, V. (2014). The production of cultural and natural wealth: An examination of World Heritage Sites. *Poetics*, 44, 42-63
- Tao, T.C.H., Wall, G. (2009), Tourism as a sustainable livelihood strategy, *Tourism Management*, 30(1), 90-98
- Tudorache, D., Musteata-Pavel, M., Simon, T. & Rădulescu, A. (2017). Tourism market development trends of Brasov county. *Knowledge Horizons - Economics*, 8(3), 27-32

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Annex 1: The situation of communes with tourist potential

County/region/ macro-region	Number of communes	Number of communes with protected areas	Number of communes with historic monuments	Number of communes with vineyards/wine centres	Number of commune with mineral waters/balneary potential	Number of communes with (natural or cultural) WHS	Number of communes with status of resort	Number of communes with no identified tourist potential	Number of communes with no 2008 ranking (of which resorts)	Number of communes with no 2012 ranking	Number of communes with no 2008 ranking and 2012 ranking
Bihor	91	71	74	10	7	0	3	5	4 (3)	65	1
Bistrita- Nasaud	58	40	47	24	1	0	2	4	0	21	0
Cluj	75	55	72	20	1	0	2	0	1 (1)	48	0
Maramures	63	51	53	7	7	10	5	1	1 (1)	9	0
Satu-Mare	59	34	52	21	9	0	0	4	1	49	1
Salaj	57	23	50	19	4	0	1	2	0	26	0
North- West	403	274	348	101	29	10	13	16	7 (5)	218	2
Alba	67	56	59	35	0	2	2	1	2 (2)	22	0
Brasov	48	41	45	0	6	4	3	0	2 (2)	15	0
Covasna	40	36	38	0	8	0	1	0	1 (1)	13	0
Harghita	58	51	52	0	11	1	2	1	2 (2)	22	1
Mures	91	74	79	33	5	1	1	0	0	32	0
Sibiu	53	46	50	23	1	2	2	0	1 (1)	18	0
Center	357	304	323	91	31	10	11	2	8 (8)	122	1
Macro-1	760	578	671	192	60	20	24	18	15 (13)	340	3
Bacau	85	45	69	25	1	0	0	7	0	71	0
Botosani	71	43	61	4	0	0	0	7	0	63	0
Iasi	93	71	83	56	2	0	0	2	0	79	0
Neamt	78	55	62	1	5	0	2	6	2 (2)	35	0
Suceava	98	71	65	0	9	7	6	5	1	57	1
Vaslui	81	44	61	67	1	0	0	2	0	71	0
North-East	506	329	401	153	18	7	8	29	3 (2)	376	1
Braila	40	31	21	14	3	0	1	5	1 (1)	26	1
Buzau	82	52	68	18	3	0	1	5	1 (1)	66	0
Constanta	58	46	52	30	2	4	1	2	1 (1)	33	0
Galati	61	34	39	58	0	0	0	0	1	46	1
Tulcea	46	45	34	22	0	14	0	0	0	24	0
Vrancea	68	45	54	28	2	0	1	5	0	49	0

County/region/ macro-region	Number of communes	Number of communes with protected areas	Number of communes with historic monuments	Number of communes with vineyards/wine centres	Number of commune with mineral waters/balneary potential	Number of communes with (natural or cultural) WHS	Number of communes with status of resort	Number of communes with no identified tourist potential	Number of communes with no 2008 ranking (of which resorts)	Number of communes with no 2012 ranking	Number of communes with no 2008 ranking and 2012 ranking
South-East	355	253	268	170	10	18	4	17	4 (3)	244	2
Macro-2	861	582	669	323	28	25	12	46	7 (5)	620	3
Arges	95	52	86	18	3	0	3	3	1 (1)	45	0
Calarasi	50	25	37	14	0	0	0	5	0	49	0
Dambovita	82	21	77	5	2	0	1	5	0	63	0
Giurgiu	51	29	49	9	0	0	0	1	0	47	0
Ialomita	59	48	40	1	0	0	0	9	1	55	1
Prahova	90	30	74	17	2	0	1	12	1 (1)	72	0
Teleorman	92	57	76	9	0	0	0	6	0	90	0
South-Muntenia	519	262	439	73	7	0	5	41	3 (2)	421	1
Ilfov	32	10	31	0	0	0	1	1	1 (1)	27	0
Macro-3	551	272	470	73	7	0	6	42	4 (3)	448	1
Arad	68	55	45	11	3	0	1	3	1 (1)	54	0
Caras-Severin	69	53	58	6	0	17	3	6	2 (2)	38	0
Hunedoara	55	46	45	0	4	4	1	2	1 (1)	17	0
Timis	89	56	63	4	6	0	1	12	5 (1)	80	5
West	281	210	211	21	13	21	6	23	9 (5)	189	5
Dolj	104	60	99	64	0	0	0	1	0	93	0
Gorj	61	34	60	9	3	1	3	0	1 (1)	31	0
Mehedinti	61	45	56	39	4	4	0	0	0	44	0
Olt	104	63	90	13	1	0	0	8	1	99	1
Valcea	78	36	76	25	4	7	1	1	1 (1)	49	0
South-West	408	238	381	150	12	12	4	10	3 (2)	316	1
Macro-4	689	448	592	171	25	33	10	33	12 (7)	505	6
National level	2,861	1,880	2,343	759	120	78	52	139	38 (28)	1,913	13*

Note *: of these 13 communes, 3 have the status of resort of local interest: Chiscani (Lacul Sarat) – Braila county; Voslabeni (Izvorul Muresului) – Harghita county, and Ortisoara (Baile Calacea) – Timis county.

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**Annex 2: The situation of communes 2008 rank and average number
of lodgings for 2005-2019**

County/region/ macro-region	Number of communes	Minimum/maximum 2008 rank	Average 2008 rank	The most frequent 2008 rank (and percentage)	Communes with 0 lodgings	Communes with 1 lodging	Communes with 2-19 lodgings	Communes with 20 lodgings or more	Comments
Bihor	91	0/7	3.20	2 (35.16%)	55	22	13	1	Sanmartin (Baile Felix & 1 Mai; resorts): 66 lodgings
Bistrita- Nasaud	58	1/8	4.47	4 (25.86%)	32	21	5	0	
Cluj	75	1/6	3.52	4 (40.00%)	31	23	21	0	
Maramu- res	63	1/10	4.90	4 (25.40%)	28	15	20	0	
Satu-Mare	59	0/6	2.49	2 (37.29%)	41	16	2	0	
Salaj	57	1/7	3.42	4 (31.58%)	33	19	4	1	Boghis (resort): 30 lodgings
North- West	403	0/10	3.67	4 (25.56%)	220	116	65	2	
Alba	67	1/10	4.72	4 (22.39%)	31	23	13	0	
Brasov	48	2/8	4.25	4 (43.75%)	13	16	17	2	Bran (resort): 102 lodgings; Moieciu (resort): 111
Covasna	40	1/8	4.20	4 (30.00%)	18	10	12	0	
Harghita	58	1/8	4.00	4 (32.76%)	10	22	23	3	Praid (resort): 49 lodgings; Voslabeeni (Izvo- rul Muresului, resort): 23 lodgings; Zetea: 30 lodgings
Mures	91	1/8	3.48	4 (48.35%)	50	29	12	0	
Sibiu	53	2/9	4.57	4 (39.62%)	21	18	14	0	

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County/region/ macro-region	Number of communes	Minimum/ maximum 2008 rank	Average 2008 rank	The most frequent 2008 rank (and percentage)	Communes with 0 lodgings	Communes with 1 lodging	Communes with 2-19 lodgings	Communes with 20 lodgings or more	Comments
Center	357	1/10	4.20	4 (36.97%)	143	118	91	5	
Macro-1	760	0/10	3.94	4 (30.97%)	363	234	156	7	
Bacau	85	1/6	2.08	2 (54.12%)	60	19	6	0	
Botosani	71	1/6	2.42	2 (56.34%)	69	1	1	0	
Iasi	93	1/6	2.23	2 (37.63%)	69	16	8	0	
Neamt	78	1/9	3.77	4 (30.77%)	39	19	18	2	Alexandru cel Bun: 20 lodgings; Ceahlau (Durau, resort): 41 lodgings
Suceava	98	0/9	3.48	2 (28.57%)	43	28	25	2	Sucevita (resort): 26 lodgings Vama: 20 lodgings
Vaslui	81	1/6	2.25	2 (48.15%)	70	10	1	0	
North-East	506	0/9	2.71	2 (41.70%)	350	93	59	4	
Braila	40	1/6	2.08	1 (52.50%)	33	5	2	0	
Buzau	82	1/7	2.72	1 (34.15%)	54	16	11	1	Merei (Sarata Monteoru, resort): 22 lodgings
Constanta	58	1/8	3.36	3 (22.41%)	43	11	3	1	Costinesti (resort): 173 lodgings
Galati	61	0/7	2.79	3 (31.15%)	54	7	0	0	
Tulcea	46	1/8	3.87	4 (28.26%)	27	9	7	3	Somova: 23 lodgings; Jurilovca: 24 lodgings; Murighiol: 39 lodgings
Vrancea	68	1/6	2.90	2 (38.24%)	48	15	4	1	Tulnici: 20 lodgings

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County/region/ macro-region	Number of communes	Minimum/maximum 2008 rank	Average 2008 rank	The most frequent 2008 rank (and percentage)	Communes with 0 lodgings	Communes with 1 lodging	Communes with 2-19 lodgings	Communes with 20 lodgings or more	Comments
South-East	355	0/8	2.95	2 (23.65%)	259	63	27	6	
Macro-2	861	0/9	2.83	2 (34.26%)	609	156	86	10	
Arges	95	1/6	3.56	4 (36.84%)	47	26	21	1	Rucar: 25 lodgings
Calarasi	50	1/5	1.60	1 (70.00%)	44	5	1	0	
Dambovita	82	1/7	3.02	2 (35.37%)	59	19	4	0	
Giurgiu	51	1/6	2.18	1 (37.25%)	43	8	0	0	
Ialomita	59	0/5	1.92	1 (50.85%)	55	4	0	0	
Prahova	90	1/6	2.88	2 (40.00%)	64	18	7	1	Maneciu (Cheia, resort): 20 lodgings
Teleorman	92	1/5	1.88	1 (42.39%)	84	8	0	0	
South-Muntenia	519	0/7	2.43	2 (27.75%)	396	88	33	2	
Ilfov	32	1/7	2.63	2 (43.75%)	20	9	3	0	
Macro-3	551	0/7	2.53	2 (28.68%)	416	97	36	2	
Arad	68	1/7	3.13	4 (25.00%)	39	20	9	0	
Caras-Severin	69	2/8	3.75	2 (27.54%)	35	22	12	0	
Hunedoara	55	2/10	4.58	4 (36.36%)	21	25	9	0	
Timis	89	0/6	2.21	2 (37.08%)	61	21	7	0	
West	281	0/10	3.42	2 (26.33%)	156	88	37	0	
Dolj	104	1/6	2.11	2 (49.04%)	91	11	2	0	
Gorj	61	1/9	3.59	2 (42.62%)	39	13	9	0	
Mehedinti	61	1/9	2.95	2 (49.18%)	45	12	4	0	
Olt	104	0/7	2.05	2 (45.19%)	96	8	0	0	
Valcea	78	1/7	2.82	2 (52.56%)	54	18	5	1	Voineasa (resort): 34 lodgings
South-West	408	0/9	2.70	2 (47.79%)	325	62	20	1	
Macro-4	689	0/10	3.06	2 (39.04%)	481	150	57	1	
National level	2,861	0/10	3.09	2 (30.93%)	1,869	637	335	20	

Annex 3: The evolution of communes with registered accommodation facilities between 2005 and 2019

County/region/ macro-region	Number of communes	Communes with lodgings in 2005	Communes with lodgings in 2010	Communes with lodgings in 2015	Communes with lodgings in 2019	Increase/decrease in communes with lodgings (%)
Bihor	91	18	19	27	30	66.67
Bistrita- Nasaud	58	5	6	11	24	380.00
Cluj	75	27	33	32	40	48.15
Maramures	63	19	26	27	34	78.95
Satu-Mare	59	8	8	9	15	87.50
Salaj	57	5	10	14	20	300.00
North-West	403	82	102	120	163	98.78
Alba	67	8	18	28	32	300.00
Brasov	48	19	19	27	32	68.42
Covasna	40	11	15	21	21	90.91
Harghita	58	36	31	34	40	11.11
Mures	91	16	16	30	35	118.75
Sibiu	53	12	18	22	26	116.67
Center	357	102	117	162	186	82.35
Macro-1	760	184	219	282	349	89.67
Bacau	85	11	9	20	22	100.00
Botosani	71	2	2	2	2	0.00
Iasi	93	14	13	16	18	28.57
Neamt	78	17	28	29	35	105.88
Suceava	98	25	31	36	51	104.00
Vaslui	81	1	5	8	10	900.00
North-East	506	70	88	111	138	97.14
Braila	40	3	3	6	6	100.00
Buzau	82	14	21	22	25	78.57
Constanta	58	8	9	8	12	50.00
Galati	61	1	1	1	6	500.00
Tulcea	46	9	8	13	17	88.89
Vrancea	68	14	11	6	15	7.14
South-East	355	49	53	56	81	65.31
Macro-2	861	119	141	167	219	84.03
Arges	95	23	28	40	45	95.65
Calarasi	50	2	4	4	5	150.00
Dambovita	82	8	16	17	21	162.50
Giurgiu	51	3	3	2	5	66.67

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County/region/ macro-region	Number of communes	Communes with lodgings in 2005	Communes with lodgings in 2010	Communes with lodgings in 2015	Communes with lodgings in 2019	Increase/decrease in communes with lodgings (%)
Ialomita	59	1	4	4	4	300.00
Prahova	90	13	13	16	22	69.23
Teleorman	92	3	1	3	5	66.67
South- Muntenia	519	53	69	86	107	101.89
Ilfov	32	10	10	7	6	-40.00
Macro-3	551	63	79	93	113	79.37
Arad	68	15	20	19	20	33.33
Caras- Severin	69	10	17	30	32	220.00
Hunedoara	55	14	14	17	29	107.14
Timis	89	9	12	19	23	155.56
West	281	48	63	85	104	116.67
Dolj	104	3	3	9	10	233.33
Gorj	61	7	9	11	22	214.29
Mehedinti	61	3	4	7	15	400.00
Olt	104	2	0	1	6	200.00
Valcea	78	12	13	19	27	100.00
South-West	408	27	29	47	77	185.19
Macro-4	689	75	92	132	181	141.33
National level	2,861	441	531	674	862	95.46

Source: based on NIS data as available via Tempo-online

Annex 4: The structure of the 2,861 communes based on the average lodgings, 2008 ranking, and potential tourist attractions

Communes with 0 lodgings					
2008 ranking points	Number of commune with no tourist potential	Number of communes with 1 tourist attraction	Number of communes with 2-19 tourist attractions	Number of communes with 20 tourist attractions or more	Total
0 points	1	3	4	0	8
1 point	48	62	260	0	370
2 points	47	102	547	2	698
3 points	12	29	276	4	321
4 points	2	28	297	6	333
5 points	1	3	67	0	71

6 points	1	2	43	2	48
7 points	0	2	11	1	14
8 points	0	0	1	1	2
9 points	0	0	4	0	4
10 points	0	0	0	0	0
Total	112	231	1,510	16	1,869

Communes with 1 lodging

2008 ranking points	Number of commune with no tourist potential	Number of communes with 1 tourist attraction	Number of communes with 2-19 tourist attractions	Number of communes with 20 tourist attractions or more	Total
0 points	1	0	1	0	2
1 point	4	6	50	0	60
2 points	11	13	125	1	150
3 points	5	7	90	1	103
4 points	0	3	154	8	165
5 points	0	2	68	3	73
6 points	0	0	53	3	56
7 points	0	0	18	0	18
8 points	0	0	5	1	6
9 points	0	0	2	0	2
10 points	0	0	2	0	2
Total	21	31	568	17	637

Communes with 2-19 lodgings

2008 ranking points	Number of commune with no tourist potential	Number of communes with 1 tourist attraction	Number of communes with 2-19 tourist attractions	Number of communes with 20 tourist attractions or more	Total
0 points	0	0	0	0	0
1 point	1	1	16	1	19
2 points	2	4	32	0	38
3 points	1	5	20	1	27
4 points	2	3	91	1	97
5 points	0	2	44	3	49
6 points	0	1	52	3	56
7 points	0	1	22	1	24
8 points	0	0	11	0	11
9 points	0	0	11	0	11
10 points	0	0	2	1	3
Total	6	17	301	11	335

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Communes with 20 lodgings or more					
2008 ranking points	Number of commune with no tourist potential	Number of communes with 1 tourist attraction	Number of communes with 2-19 tourist attractions	Number of communes with 20 tourist attractions or more	Total
0 points	0	0	0	0	0
1 point	0	0	0	0	0
2 points	0	0	0	0	0
3 points	0	0	1	0	1
4 points	0	0	3	0	3
5 points	0	0	1	0	1
6 points	0	0	9	4	13
7 points	0	0	1	0	1
8 points	0	0	0	0	0
9 points	0	0	1	0	1
10 points	0	0	0	0	0
Total	0	0	16	4	20

Annex 5: The structure of 948 communes, with 2012 rank, based on the average lodgings, 2008 ranking, and potential tourist attractions

Communes with 0 lodgings					
2008 ranking points	Number of commune with no tourist potential	Number of communes with 1 tourist attraction	Number of communes with 2-19 tourist attractions	Number of communes with 20 tourist attractions or more	Total
0 points	0	0	0	0	0
1 point	0	0	10	0	10
2 points	1	3	26	0	30
3 points	1	0	20	0	21
4 points	0	12	177	3	192
5 points	1	3	58	0	62
6 points	0	1	37	2	40
7 points	0	1	8	1	10
8 points	0	0	1	1	2
9 points	0	0	4	0	4
10 points	0	0	0	0	0
Total	3	20	341	7	371
<i>Average 2012 rank</i>	17.83	23.71	24.50	34.79	25.51

Communes with 1 lodging					
2008 ranking points	Number of commune with no tourist potential	Number of communes with 1 tourist attraction	Number of communes with 2-19 tourist attractions	Number of communes with 20 tourist attractions or more	Total
0 points	0	0	0	0	0
1 point	0	1	5	0	6
2 points	0	1	15	1	17
3 points	0	0	11	0	11
4 points	0	2	115	6	123
5 points	0	2	67	3	72
6 points	0	0	51	3	54
7 points	0	0	18	0	18
8 points	0	0	5	1	6
9 points	0	0	2	0	2
10 points	0	0	2	0	2
Total	0	6	291	14	311
<i>Average 2012 rank</i>	0	25.26	27.43	29.80	27.50
Communes with 2-19 lodgings					
2008 ranking points	Number of commune with no tourist potential	Number of communes with 1 tourist attraction	Number of communes with 2-19 tourist attractions	Number of communes with 20 tourist attractions or more	Total
0 points	0	0	0	0	0
1 point	1	1	3	1	6
2 points	0	1	8	0	9
3 points	0	0	5	0	5
4 points	0	3	73	1	77
5 points	0	2	43	3	48
6 points	0	1	50	2	53
7 points	0	1	22	1	24
8 points	0	0	11	0	11
9 points	0	0	11	0	11
10 points	0	0	2	1	3
Total	1	9	228	9	247
<i>Average 2012 rank</i>	1	22.55	30.85	33.03	21.86

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Communes with 20 lodgings or more					
2008 ranking points	Number of commune with no tourist potential	Number of communes with 1 tourist attraction	Number of communes with 2-19 tourist attractions	Number of communes with 20 tourist attractions or more	Total
0 points	0	0	0	0	0
1 point	0	0	0	0	0
2 points	0	0	0	0	0
3 points	0	0	1	0	1
4 points	0	0	3	0	3
5 points	0	0	1	0	1
6 points	0	0	8	4	12
7 points	0	0	1	0	1
8 points	0	0	0	0	0
9 points	0	0	1	0	1
10 points	0	0	0	0	0
Total	0	0	15	4	19
<i>Average 2012 rank</i>	0	0	27.66	36.13	31.90

Annex 6: Descriptive statistics

Annex 6A: Descriptive statistics for 2,861 communes
and 1,913 communes without 2012 ranking

All 2,861 communes					
Descriptive statistics	rank2008	lodgings	monuments	protect-areas	extra-resources
Mean	3.055	1.025	3.437	1.456	0.353
Median	3.000	0.000	2.000	1.000	0.000
Mode	2.000	0.000	1.000	0.000	0.000
St.dev	1.670	5.236	3.895	1.773	0.527
Skewness	0.930	20.037	2.839	2.770	1.189
Kurtosis	0.852	537.202	13.698	16.088	0.816
Min	0.000	0.000	0.000	0.000	0.000
Max	10.000	173.000	46.000	21.000	3.000
25 th percentile	2.000	0.000	1.000	0.000	0.000
50 th percentile	3.000	0.000	2.000	1.000	0.000
75 th percentile	4.000	1.000	5.000	2.000	1.000
Counts/valid	2,861	2,861	2,861	2,861	2,861

1,913 communes without 2012 ranking					
Descriptive statistics	rank2008	lodgings	monuments	protect-areas	extra-resources
Mean	2.251	0.317	2.751	1.033	0.315
Median	2.000	0.000	2.000	1.000	0.000
Mode	2.000	0.000	1.000	0.000	0.000
St.dev	1.019	0.909	3.176	1.198	0.477
Skewness	0.813	10.402	2.867	1.629	0.955
Kurtosis	1.169	212.560	13.298	4.034	-0.678
Min	0.000	0.000	0.000	0.000	0.000
Max	7.000	23.000	28.000	9.000	2.000
25 th percentile	2.000	0.000	1.000	0.000	0.000
50 th percentile	2.000	0.000	2.000	1.000	0.000
75 th percentile	3.000	0.000	4.000	2.000	1.000
Count/valid	1,913	1,913	1,913	1,913	1,913

Source: authors' calculations

Annex 6B: Descriptive statistics for 948 communes with 2012 ranking

948 communes with 2012 ranking						
Descriptive statistics	rank2008	lodgings	monuments	protect-areas	extra-resources	rank2012
Mean	4.678	2.454	4.823	2.309	0.428	27.172
Median	4.000	1.000	4.000	2.000	0.000	26.500
Mode	4.000	0.000	2.000	1.000	0.000	21.500
St.dev	1.542	8.836	4.751	2.347	0.610	7.812
Skewness	0.432	12.103	2.496	2.331	1.126	0.457
Kurtosis	1.083	190.960	10.717	10.886	1.184	0.510
Min	1.000	0.000	0.000	0.000	0.000	1.000
Max	10.000	173.000	46.000	21.000	3.000	56.400
25 th percentile	4.000	0.000	2.000	1.000	0.000	21.508
50 th percentile	4.000	1.000	4.000	2.000	0.000	26.500
75 th percentile	6.000	2.000	6.250	3.000	1.000	32.000
Count/valid	948	948	948	948	948	948

Source: authors' calculations

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Annex 7: Correlation matrices

**Annex 7A: Correlation matrices for 2,861 communes
and 1,913 communes without 2012 ranking**

All 2,861 communes					
	rank2008	lodgings	monuments	protect-areas	extra-resources
rank2008					
lodgings	0.219 (p<0.001)				
monuments	0.272 (p<0.001)	0.070 (p<0.001)			
protect-areas	0.355 (p<0.001)	0.180 (p<0.001)	0.106 (p<0.001)		
extra-resources	0.139 (p<0.001)	0.153 (p<0.001)	0.077 (p<0.001)	0.120 (p<0.001)	
1,913 communes without 2012 ranking					
	rank2008	lodgings	monuments	protect-areas	extra-resources
rank2008					
lodgings	0.156 (p<0.001)				
monuments	0.196 (p<0.001)	0.051 (p=0.026)			
protect-areas	0.134 (p<0.001)	0.106 (p<0.001)	0.051 (p=0.025)		
extra-resources	0.026 (p=0.265)	0.037 (p=0.102)	0.006 (p=0.805)	0.058 (p=0.011)	
948 communes with 2012 ranking					
	rank2008	rank2012	lodgings	monuments	protect-areas
rank2008					
rank2012	0.569 (p<0.001)				
lodgings	0.148 (p<0.001)	0.211 (p<0.001)			
monuments	0.095 (p=0.003)	0.228 (p<0.001)	0.025 (p=0.441)		
protect-areas	0.213 (p<0.001)	0.188 (p<0.001)	0.145 (p<0.001)	0.005 (p=0.889)	
extra-resources	0.171 (p<0.001)	0.212 (p<0.001)	0.201 (p<0.001)	0.105 (p=0.001)	0.121 (p<0.001)

Source: authors' calculations

Annex 7B: Correlation matrix for 948 communes with 2012 ranking

948 communes with 2012 scores						
	rank2008	rank2012	lodgings	monuments	protect-areas	extra-resources
rank2008						
rank2012	0.569 (p<0.001)					
lodgings	0.148 (p<0.001)	0.211 (p<0.001)				
monuments	0.095 (p=0.003)	0.228 (p<0.001)	0.025 (p=0.441)			
protect-areas	0.213 (p<0.001)	0.188 (p<0.001)	0.145 (p<0.001)	0.005 (p=0.889)		
extra-resources	0.171 (p<0.001)	0.212 (p<0.001)	0.201 (p<0.001)	0.105 (p=0.001)	0.121 (p<0.001)	

Source: authors' calculations

Annex 8: Regression results

Annex 8A: Regression results for 2,861 communes and 1,913 communes without 2012 ranking

All 2,861 communes					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
rank2008	b ₀ (intercept)	2.182	48.192	< 0.001	-
	monuments	0.099	13.643	< 0.001	1.016
	protect-areas	0.302	18.795	< 0.001	1.024
	extra-resources	0.262	4.871	< 0.001	1.019
R ² (%) = 18.8%; p-value < 0.001; F = 221.123					
lodgings	b ₀ (intercept)	-1.433	7.015	< 0.001	-
	monuments	0.007	0.278	0.781	1.082
	protect-areas	0.319	5.593	< 0.001	1.151
	extra-resources	1.166	6.432	< 0.001	1.027
	rank2008	0.510	8.133	< 0.001	1.232
R ² (%) = 7.3%; p-value < 0.001; F = 52.591					

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1,913 communes without 2012 ranking					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
rank2008	b ₀ (intercept)	1.963	57.798	< 0.001	-
	monuments	0.061	8.519	< 0.001	1.003
	protect-areas	0.105	5.543	< 0.001	1.006
	extra-resources	0.037	0.772	0.440	1.003
R ² (%) = 5.4%; p-value < 0.001; F = 36.567					
lodgings	b ₀ (intercept)	-0.064	-1.202	0.228	-
	monuments	0.005	0.820	0.412	1.041
	protect-areas	0.064	3.731	< 0.001	1.022
	extra-resources	0.055	1.274	0.203	1.004
	rank2008	0.125	6.070	< 0.001	1.057
R ² (%) = 3.3%; p-value < 0.001; F = 16.300					

Source: authors' calculations

Annex 8B: Regression results for 948 communes with 2012 ranking

948 communes with 2012 ranking					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
rank2008	b ₀ (intercept)	4.106	47.332	< 0.001	-
	monuments	0.026	2.520	0.012	1.011
	protect-areas	0.129	6.201	< 0.001	1.015
	extra-resources	0.352	4.386	< 0.001	1.026
R ² (%) = 7.3%; p-value < 0.001; F = 24.816					
rank2012 A	b ₀ (intercept)	23.306	54.274	< 0.001	-
	monuments	0.344	6.792	< 0.001	1.011
	protect-areas	0.553	5.388	< 0.001	1.015
	extra-resources	2.171	5.462	< 0.001	1.026
R ² (%) = 11.5%; p-value < 0.001; F = 40.774					
rank2012 B	b ₀ (intercept)	12.432	18.648	< 0.001	-
	monuments	0.276	6.419	< 0.001	1.018
	protect-areas	0.213	2.401	0.017	1.056
	extra-resources	1.238	3.648	< 0.001	1.047
	rank2008	2.648	19.446	< 0.001	1.079
R ² (%) = 36.8%; p-value < 0.001; F = 137.335					

Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
lodgings A	b ₀ (intercept)	-2.070	-2.255	0.024	-
	monuments	-0.005	-0.086	0.931	1.018
	protect-areas	0.389	3.188	0.001	1.056
	extra-resources	2.500	5.350	< 0.001	1.047
	rank2008	0.551	2.941	0.003	1.079
R ² (%) = 6.4%; p-value < 0.001; F = 16.063					
lodgings B	b ₀ (intercept)	-4.317	-4.053	< 0.001	-
	monuments	-0.055	0.917	0.359	1.063
	protect-areas	0.350	2.877	0.004	1.063
	extra-resources	2.276	4.877	< 0.001	1.062
	rank2008	0.073	0.331	0.741	1.511
	rank2012	0.181	4.065	< 0.001	1.583
R ² (%) = 8.0%; p-value < 0.001; F = 16.366					

Source: authors' calculations

Annex 9: PLS-SEM results for the 2,861 communes
(Source: authors' calculations)

Annex 9A: Total effects

	Latent variable 1 (monuments & extra resources)	Latent variable 2 (protect-areas)	Latent variable 3 (rank2008)	Latent variable 4 (lodgings)
Latent variable 1 (monuments & extra resources)	-	-	0.246 (inner VIF: 1.023)	0.113 of which 0.039 indirect effect (inner VIF: 1.097)
Latent variable 2 (protect-areas)	-	-	0.318 (inner VIF: 1.023)	0.164 of which 0.050 indirect effect (inner VIF: 1.147)
Latent variable 3 (rank2008)	-	-	-	0.156 (inner VIF: 1.228)
Latent variable 4 (lodgings)	-	-	-	-

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Annex 9B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
Latent variable 1 (monuments & extra resources)	-	1.000	-	-
Latent variable 2 (protect-areas)	1.000	1.000	1.000	1.000
Latent variable 3 (rank2008)	1.000	1.000	1.000	1.000
Latent variable 4 (lodgings)	1.000	1.000	1.000	1.000

Annex 9C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)

	Latent variable 1 (monuments & extra resources)	Latent variable 2 (protect-areas)	Latent variable 3 (rank2008)	Latent variable 4 (lodgings)
Latent variable 1 (monuments & extra resources)	-	-	-	-
Latent variable 2 (protect-areas)	0.149	1.000	-	-
Latent variable 3 (rank2008)	0.294	0.355 (0.355)	1.000	-
Latent variable 4 (lodgings)	0.137	0.180 (0.180)	0.219 (0.219)	1.000

Annex 9D: Total effects T-statistic and p-values

	T-statistic	P-value
Latent variable 1 → Latent variable 3	13.538	0.000
Latent variable 1 → Latent variable 4	4.693	0.000
Latent variable 2 → Latent variable 3	19.208	0.000
Latent variable 2 → Latent variable 4	4.185	0.000
Latent variable 3 → Latent variable 4	7.416	0.000

Annex 10: PLS-SEM results for the 1,913 communes
(Source: authors' calculations)

Annex 10A: Total effects

	Latent variable 1 (monuments & extra resources)	Latent variable 2 (protect-areas)	Latent variable 3 (rank2008)	Latent variable 4 (lodgings)
Latent variable 1 (monuments & extra resources)	-	-	0.190 (inner VIF: 1.004)	0.050 of which 0.027 indirect effect (inner VIF: 1.042)
Latent variable 2 (protect-areas)	-	-	0.123 (inner VIF: 1.004)	0.103 of which 0.017 indirect effect (inner VIF: 1.147)
Latent variable 3 (rank2008)	-	-	-	0.140 (inner VIF: 1.057)
Latent variable 4 (lodgings)	-	-	-	-

Annex 10B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
Latent variable 1 (monuments & extra resources)	-	1.000	-	-
Latent variable 2 (protect-areas)	1.000	1.000	1.000	1.000
Latent variable 3 (rank2008)	1.000	1.000	1.000	1.000
Latent variable 4 (lodgings)	1.000	1.000	1.000	1.000

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Annex 10C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)

	Latent variable 1 (monuments & extra resources)	Latent variable 2 (protect-areas)	Latent variable 3 (rank2008)	Latent variable 4 (lodgings)
Latent variable 1 (monuments & extra resources)	-	-	-	-
Latent variable 2 (protect-areas)	0.060	1.000	-	-
Latent variable 3 (rank2008)	0.198	0.134 (0.134)	1.000	-
Latent variable 4 (lodgings)	0.056	0.106 (0.106)	0.156 (0.156)	1.000

Annex 10D: Total effects T-statistic and p-values

	T-statistic	P-value
Latent variable 1 → Latent variable 3	8.732	0.000
Latent variable 1 → Latent variable 4	1.896	0.059
Latent variable 2 → Latent variable 3	5.433	0.000
Latent variable 2 → Latent variable 4	4.189	0.000
Latent variable 3 → Latent variable 4	3.999	0.000

Annex 11: PLS-SEM results for the 948 communes without considering
rank2012 (Source: authors' calculations)

Annex 11A: Total effects (and inner VIF)

	Latent variable 1 (monuments & extra resources)	Latent variable 2 (protect-areas)	Latent variable 3 (rank2008)	Latent variable 4 (lodgings)
Latent variable 1 (monuments & extra resources)	-	-	0.161 (inner VIF: 1.014)	0.183 of which 0.015 indirect effect (inner VIF: 1.042)
Latent variable 2 (protect-areas)	-	-	0.194 (inner VIF: 1.014)	0.123 of which 0.018 indirect effect (inner VIF: 1.054)

	Latent variable 1 (monuments & extra resources)	Latent variable 2 (protect-areas)	Latent variable 3 (rank2008)	Latent variable 4 (lodgings)
Latent variable 3 (rank2008)	-	-	-	0.094 (inner VIF: 1.076)
Latent variable 4 (lodgings)	-	-	-	-

Annex 11B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
Latent variable 1 (monuments & extra resources)	-	1.000	-	-
Latent variable 2 (protect-areas)	1.000	1.000	1.000	1.000
Latent variable 3 (rank2008)	1.000	1.000	1.000	1.000
Latent variable 4 (lodgings)	1.000	1.000	1.000	1.000

**Annex 11C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)**

	Latent variable 1 (monuments & extra resources)	Latent variable 2 (protect-areas)	Latent variable 3 (rank2008)	Latent variable 4 (lodgings)
Latent variable 1 (monuments & extra resources)	-	-	-	-
Latent variable 2 (protect-areas)	0.117	1.000	-	-
Latent variable 3 (rank2008)	0.184	0.213 (0.213)	1.000	-
Latent variable 4 (lodgings)	0.198	0.145 (0.145)	0.148 (0.148)	1.000

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Annex 11D: Total effects T-statistic and p-values

	T-statistic	P-value
Latent variable 1 → Latent variable 3	4.669	0.000
Latent variable 1 → Latent variable 4	4.402	0.000
Latent variable 2 → Latent variable 3	6.627	0.000
Latent variable 2 → Latent variable 4	2.447	0.015
Latent variable 3 → Latent variable 4	4.288	0.000

**Annex 12: PLS-SEM results for the 948 communes
rank2012 included (Source: authors' calculations)**

Annex 12A: Total effects (and inner VIF)

	Latent variable 1 (monuments & extra resources)	Latent variable 2 (protect-areas)	Latent variable 3 (rank2008)	Latent variable 4 (rank2012)	Latent variable 5 (lodgings)
Latent variable 1 (monuments & extra resources)	-	-	0.167 (inner VIF: 1.010)	0.271 of which 0.087 indirect effect (inner VIF: 1.040)	0.163 of which 0.043 indirect effect (inner VIF: 1.093)
Latent variable 2 (protect-areas)	-	-	0.196 (inner VIF: 1.010)	0.160 of which 0.102 indirect effect (1.052)	0.128 of which 0.027 indirect effect (inner VIF: 1.057)
Latent variable 3 (rank2008)	-	-	-	0.522 (inner VIF: 1.079)	0.097 of which 0.076 indirect effect (inner VIF: 1.505)
Latent variable 4 (rank2012)	-	-	-	-	0.146 (inner VIF: 1.564)
Latent variable 5 (lodgings)	-	-	-	-	-

Annex 12B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
Latent variable 1 (monuments & extra resources)	-	1.000	-	-
Latent variable 2 (protect-areas)	1.000	1.000	1.000	1.000
Latent variable 3 (rank2008)	1.000	1.000	1.000	1.000
Latent variable 4 (rank2012)	1.000	1.000	1.000	1.000
Latent variable 5 (lodgings)	1.000	1.000	1.000	1.000

Annex 12C: Discriminant validity: Fornell-Larker Criterion (and Heterotrait-Monotrait Ratio)

	Latent variable 1 (monuments & extra resources)	Latent variable 2 (protect-areas)	Latent variable 3 (rank2008)	Latent variable 4 (rank2012)	Latent variable 5 (lodgings)
Latent variable 1 (monuments & extra resources)	-	-	-	-	-
Latent variable 2 (protect-areas)	0.101	1.000	-	-	-
Latent variable 3 (rank2008)	0.187	0.213 (0.213)	1.000	-	-
Latent variable 4 (rank2012)	0.287	0.188 (0.188)	0.569 (0.569)	1.000	-
Latent variable 5 (lodgings)	0.176	0.145 (0.145)	0.148 (0.148)	0.211 (0.211)	1.000

Annex 12D: Total effects T-statistic and p-values

	T-statistic	P-value
Latent variable 1 → Latent variable 3	4.959	0.000
Latent variable 1 → Latent variable 4	8.010	0.000
Latent variable 1 → Latent variable 5	4.423	0.000
Latent variable 2 → Latent variable 3	7.052	0.000
Latent variable 2 → Latent variable 4	5.374	0.000
Latent variable 2 → Latent variable 5	3.040	0.002
Latent variable 3 → Latent variable 4	15.919	0.000
Latent variable 3 → Latent variable 5	4.353	0.000
Latent variable 4 → Latent variable 5	3.278	0.001