

THE DRIVERS OF RURAL ACCOMMODATION DEVELOPMENT IN ROMANIA: PART 3 (FINAL PART)

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Cornelia POP¹, Maria-Andrada GEORGESCU²

ABSTRACT. The current paper continues the work of Pop et al. (2019) and Pop & Georgescu (2020) concerning the drivers (factors) that might influence the rural accommodation development in Romania. The present study introduced 13 new factors/drivers. The research question remains the same as formulated in the previous study: *which are the drivers of the accommodation development in rural areas in Romania?* The findings of the present analysis are in line with the findings of Pop & Georgescu (2020), which show that lodging development in rural areas is related to a certain extent to tourist attractions, while the 2008 rank and 2012 rank have a rather mediating influence. The newly added endogenous factors/drivers Romanian rural localities add relative little to the explanatory power of models used to assess the rural lodgings development. While in some cases (see Table 1) R squared doubles its value compared with the findings of Pop & Georgescu (2020), the relationship among the dependent variable and the selected factors, though significant, remains weak.

Key words: rural, tourism, accommodation, drivers, Romania.

JEL Classification: L83, Z30, Z32

¹ Prof.dr., Faculty of Business, Babes-Bolyai University, Cluj-Napoca, Romania, cornelia.pop@tbs.ubbcluj.ro

² Assoc.Prof.dr., University of Political Studies and Public Administration, maria-andrada.georgescu@administratiepublica.eu

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Introduction

The current paper continues the work of Pop et al. (2019) and Pop & Georgescu (2020) concerning the drivers (factors) that might influence the rural accommodation development in Romania. Similar to the previous two studies, this paper also covers the 2,861 communes and the period 2005 to 2019. In order to allow comparisons, the analysis is performed on two data sets regarding the rural accommodations: the one provided by the National Institute of Statistics (NIS) and the other one provided by the Ministry of Tourism (MoT)³. The differences between these two data sets are presented by Pop & Georgescu (2020). Furthermore, the analysis takes into consideration the two category of communes as proposed by the previous papers: the 948 communes which received a rank in 2012 and the 1,913 communes without the 2012 rank.

To the factors/drivers presented by Pop & Georgescu (2020), the present paper introduces 13 new factors/drivers, as follow: one factor is '20 km to county residence', completing the factor 'road access'; a group of 3 factors deals with the population and population structure ('population' of each commune, the percentage of 'women' in the population, and the percentage of 'Romanian' population); a second group of 3 factors deals with economic status of the respective commune and includes the number of 'employees', the 'unemployment rate', and the number of 'active firms'; a third group concerns the availability of various utilities and includes also 3 factors ('drinking water (pipe) network', 'sewage (pipe) network', and 'natural gas pipe network'); the fourth group includes 3 other factors

³ The name of the institution and the abbreviation (MoT) is a generic one for all the central authorities in charge with Romanian tourism between 2005 and 2019. This situation is generated by the fact that tourism sometimes has a stand- alone, dedicated ministry, while other times tourism is included in other (various) ministries, depending on the respective government visions and priorities.

related to other facilities (the number of 'schools', the 'bed places (available) in hospitals', and the number of 'dwellings'); these fourth group being complementary to the second group of factors. These factors were included based on the suggestion formulated at the end of Pop & Georgescu (2020) study. These factors/drivers were chosen because the data were available at each commune level.

Since the study of Pop & Georgescu (2020), to the best of authors' knowledge, no academic study, investigating in-depth the factors/drivers for the development of rural accommodations in Romania, was published.

Nonetheless, for the current study, similar to the study of Pop & Georgescu (2020), the ideas formulated by Pop et al. (2019) remain significant: a) tourism might bring diversification to the rural economy (Panyik et al., 2011), complementing the existing economic activities (Hall 2004; Tao & Wall 2009) and potentially giving rise to other tourism-related economic activities; b) the impulse that might be given to the economic activity also can have a positive impact on the poverty reduction (Ruiz-Real et al., 2020) and on the social rebirth of rural areas (Iorio & Corsale 2013); c) rural tourism is often seen as a solution to the many and complex rural problems due to the fact that it allows the integration and the preservation of local culture, history, and heritage, while protecting the local environment (Bianchi, 2018); d) furthermore, rural tourism has the advantage to rely on local initiatives and local management (Okech et al., 2012), bringing forth the local natural and anthropic factors, and the intangible heritage, creating various forms of recreation (Banski & Bednarek-Szczepanska 2013).

Recent studies regarding Romanian (rural) tourism continue to highlight the important potential for this economic sector (Cehan et al., 2019; Avram, 2020; Coros, 2020), some of the studies revealing the uneven territorial distribution of (rural) tourism accommodations (Constantin & Reveiu, 2018; Cehan et al., 2019) and therefore the uneven influence of rural tourism, triggered by the accessibility of the respective rural localities, on the economy and demography of the respective rural areas (Ibanescu et al., 2020). Nonetheless, rural tourism development in Romania should navigate the numerous and interconnected problems of rural areas as highlighted by Calina et al. (2017) and Davidescu et al. (2018), among others being mentioned the decline of population, poverty, the

problem of basic services, and including the problems and effects of various financing resources, mainly provided via European Union schemes (Galluzzo, 2021). It is interesting to mention that the topic of rural tourism and the related complex problems ranks Romania as the second most studied country with 76 papers related to rural tourism in Web of Science Core Collection for the period 2004-2019, according to Ruiz-Real et al. (2020).

The research question remains the same as formulated in the previous study: ***which are the drivers of the accommodation development in rural areas in Romania?***

The findings of the present analysis are in line with the findings of Pop & Georgescu (2020), which show that lodging development in rural areas is related to a certain extent to tourist attractions, while the 2008 rank and 2012 rank have a rather mediating influence. The newly added endogenous factors/drivers Romanian rural localities add relative little to the explanatory power of models used to assess the rural lodgings development. While in some cases (see Table 1) R squared doubles its value compared with the findings of Pop & Georgescu (2020), the relationship among the dependent variable and the selected factors, though significant, remains weak.

Material and methods

Similar to the previous two studies, all the 2,861 communes were included in the analysis.

Points 1 to 11 from Pop & Georgescu (2020, pp.96-97) remain unchanged for the present paper and will not be reproduced due to reasons concerning the length of the study. For the 13 new series of data extracted for the current study, the details are presented below, starting with point 12, continuing the list from Pop & Georgescu (2020), as follow:

12. the data for the factor/driver '20 km to county residence' were extracted using Google maps; the distance was measured by road; the information was transformed in a dummy variable with 1 for the communes within the above mentioned distance; this factor was introduced to see if the proximity of a commune to the most important urban center of

a county has an influence on the number of lodgings; this factor also complete the information provided by the factor ‘roads’ (‘road access’ in the current paper) introduced by Pop & Georgescu (2020) study;

13. the factor called percentage of ‘Romanian’ population (or ‘Romanians’) was extracted using the results of 2011 census; the data are available at: <https://www.recensamantromania.ro/rpl-2011/rezultate-2011/>, Table 8⁴;

14. the following 9 new factors (‘population’ of each commune, the number of ‘employees’, the ‘unemployment rate’, the ‘drinking water (pipe) network’, the ‘sewage (pipe) network’, the ‘natural gas pipe network’, the number of ‘schools’, the ‘bed places (available) in hospitals’, and the number of ‘dwellings’) were extracted from NIS data using Tempo-online; as for the previous studies the data were extracted for 2005, 2010, 2015, and 2019 and the average for these observations was further calculated, using the same procedure described by Pop & Georgescu (2020) for NIS lodgings and MoT lodgings in page 98.

15. the factor the percentage of ‘women’ in the population was calculated based on NIS data regarding the communes’ total population and communes’ women population; as presented in point 14, above, the data were extracted for 2005, 2010, 2015, and 2019; the percentage of women was calculated in each case and an average for the four observations was computed;

16. the factor ‘active firms’ was extracted using the data provided by <https://www.listafirme.ro/> at commune level; the data were extracted for 2005, 2010, 2015, and 2019 and the average was computed.

As mentioned in Introduction, the same categorization, proposed by Pop et al. (2019) and utilized in Pop & Georgescu (2020), is applied in the present study, as follow: a) the first category includes all the 2,861 communes; b) the second cluster contains the 1,913 communes with no ranking in 2012; c) the third cluster comprised the 948 communes which received a ranking in 2012, communes considered to be better situated

⁴ The title of Table 8 is (in Romanian): *Populatia stabila dupa etnie – judete, municipii, orase, commune.*

from tourist attraction viewpoint and, therefore, having more appeal for developing tourist accommodations.

There is necessary of a brief remainder regarding the 2008 rank(ing) and 2012 rank(ing) since they appear frequently in the study. Both rankings were established by central authorities through NRDP (National Rural Development Program), though no details could be found on the respective rankings were based. The study of Pop et al. (2019) suggested that 2008 rank(ing) was mainly based on the existing lodgings, while the 2012 rank(ing) was strongly influenced by the 2008 rank(ing). While the 2008 rank(ing) included almost all the communes (excepting 28 rural localities with the status of 'resort' on national or local interest and other 10 communes located in 7 counties), the 2012 was provided for only 948 communes considered to have high or very high tourist potential. Some more details regarding these two ranks can be found in Pop et al. (2019).

The descriptive statistics for the selected factors/drivers are presented in Annex 7 for all the 3 groups of communes, while the correlation matrices are presented in Annex 8.

The hypotheses formulated in Pop & Georgescu (2020, pp.99-100) were altered to include the new 13 factors added by the present study. More details about the list of factors and their grouping are provided in Annex 6 and Annex 9.

H1 (for all communes): 2008 rank is influenced by the tourist resources, roads access, info population, economic status, utilities, and other facilities.

H1.1 (for the 1,913 communes): 2008 rank is influenced by the tourist resources, roads access, info population, economic status, utilities, and other facilities.

H1.2 (for the 948 communes): 2008 rank is influenced by the tourist resources, roads access, info population, economic status, utilities, and other facilities.

H2 (for the 948 communes): 2012 rank is influenced by the tourist resources, roads access, info population, economic status, utilities, and other facilities.

H2.1 (for the 948 communes): 2012 rank is influenced by the tourist resources, roads access, info population, economic status, utilities, other facilities, and the 2008 rank.

H3 (for all communes): NIS lodgings are influenced by the tourist resources, roads access, info population, economic status, utilities, other facilities, and the 2008 rank.

H3bis (for all communes): MoT lodgings are influenced by the tourist resources, roads access, info population, economic status, utilities, other facilities, and the 2008 rank.

H3.1 (for the 1,913 communes): NIS lodgings are influenced by the tourist resources, roads access, info population, economic status, utilities, other facilities, and the 2008 rank.

H3.1bis (for the 1,913 communes): MoT lodgings are influenced by the tourist resources, roads access, info population, economic status, utilities, other facilities, and the 2008 rank.

H3.2 (for the 948 communes): NIS lodgings are influenced by the tourist resources, roads access, info population, economic status, utilities, other facilities, and the 2008 rank.

H3.2bis (for the 948 communes): MoT lodgings are influenced by the tourist resources, roads access, info population, economic status, utilities, other facilities, and the 2008 rank.

H3.2a (for the 948 communes): NIS lodgings are influenced by the tourist resources, roads access, info population, economic status, utilities, other facilities, the 2008 rank, and the 2012 rank.

H3.2a-bis (for the 948 communes): MoT lodgings are influenced by the tourist resources, roads access, info population, economic status, utilities, other facilities, the 2008 rank, and the 2012 rank.

For testing the above formulated hypotheses, two methods were used: OLS (ordinary least square) multiple regression and PLS-SEM (partial least squares-structural equation modeling) were used, PLS-SEM allowing for more complex associations between investigated factors/drivers. Within PLS-SEM, the formative-reflective high-order components approach was

used, comprising 21 dimensions containing 21 indicators. The latent variables and their components/dimensions are presented in Annex 6, while the results of PLS-SEM are presented in Annexes 10 to 13. The results for OLS multiple regression are presented in Annex 9.

Selected results regarding the newly introduced factors/drivers of rural accommodation development

Regarding the accessibility of communes via roads, according to Pop & Georgescu (2020), only 24 communes do not have direct access from national or county roads. The present study determined that 552 communes (19.29% of the total) are located within 20 km distance from the county residence, as Annex 3 shows. Macro-region 2 is in top with 164 communes, followed by Macro-region 1 with 142 communes. At regional level, South-Muntenia region is leading with 114 communes. In Annex 4 and Annex 5 more detail information is given for the categories of 1,913 communes (without 2012 rank) and 948 communes (with 2012 rank). Overall, 333 communes, within 20 km distance from the county residence, report lodgings; 184 of these communes are in the group of 1,913 communes without 2012 rank, while 149 are included in the group of 948 communes with 2012 rank. While, at a first glance, the situation seems to indicate a certain correlation between the proximity to a county residence and the presence of lodgings in the respective communes, the data in Annex 8A and 8B show that the relationship is either not significant for when all the communes and the 948 communes are considered, or significant but weak (0.161 for NIS lodgings and 0.182 for MoT lodgings) in the 1,913 communes group. Furthermore, the regression and PLS-SEM results confirm these weak relationship, most of the time the 20 km distance to the county residence being irrelevant and often negative, suggesting that the rural lodgings are more likely to be developed farther away from the great urban center of the respective county, which is not surprising given the characteristics of rural tourism. Though one must mention that, given the current conditions of Romanian rural areas, at 20 km from the county residence one might find remote and beautiful rural areas, while at the other end of the spectrum, one

might find communes where a lot of urban population is migrating (e.g. Floresti commune of Cluj county is growing rapidly due to the proximity to Cluj-Napoca).

Information concerning the structure of population, the percentage of women in total population, and the percentage of Romanian population is presented in Annex 1. The majority of communes (2,377, representing 83.1% of the total) have a population of less than 5,000 inhabitants. Only 35 communes have a population higher than 10,000 people and of these 35 communes, 19 (54.3%) are located within 20 km distance from the county residence. It is worth noting that 792 communes (27.7% of the total) registered an increase in the number of inhabitants, Macro-region 1 leading with 274 such communes, followed by Macro-region 2 with 241 communes having an increase in population. Of these 792 communes, 340 (42.9%) are located in the proximity of their respective county residences (at maximum 20 km distance). It is interesting to mention that of the 792 communes only 131 have an increase of 1,000 people (or more) and 100 of these communes are within 20 km distance from the respective county residence. This situation suggests that the largest urban settlement within a county is likely to influence the level of population in the surrounding areas.

The percentage of women in total population show a relative balance in the number of communes dominated by male population (1,466 communes), respectively female population (1,395 communes) as Annex 1 shows. However, imbalances exist at Macro-region level (e.g. Macro-region 2 where male dominated communes prevail, while within Macro-region 3, the female dominated communes predominate). Interesting to note that the data in Annex 8A and 8B show an insignificant relation between the percentage of women and the rural lodgings in the case of all communes and for the 948 communes with 2012 rank, while for the 1,913 communes without 2012 rank there is a significant but very weak correlation (0.059 for NIS lodgings, respectively 0.061 for MoT lodgings). This suggests that in this last case, there is a (very) small chance that lodgings might be developed rather in communes dominated by female population.

The majority of communes (2,148 or 75.1%) have more than 90% Romanian population. The ethnic diversity is higher in Macro-region 1, mainly in Center region, due to the presence of Hungarian population.

For the other three Macro-regions, the number of communes where the Romanian population is less than 50% is very small. It is worth noting that, as data in Annex 8A and 8B show, that for all the communes and for the category of 1,913 communes without 2012 ranking, there are significant but very weak, and respectively significant and weak negative relations between the dominance of Romanian population and NIS lodgings, respectively MoT lodgings⁵. This situation suggests that there is more likely (however a low likeliness) that lodgings are developed rather in communes where the percentage of Romanian population is lower. Up to a point, this result is partly confirmed by the high number of communes with lodgings in Covasna county (more than 50% in 2019) and Harghita county (about 70% in 2019)⁶, two of the county with a significant Hungarian population. However, the significance of this negative correlation between the Romanian population and the presence of rural lodgings is completely lost when the group of 948 with 2012 rank is considered.

Annex 2 presents the situation of communes when some aspects related to the economic situation (the number of employees, the unemployment rate, and the number of active firms) are taken into consideration. The majority of communes, 1,727 (60.4%) have between 100 and 499 employees, and these communes are relatively evenly distributed among the four Macro-regions. It is interesting to note that of the 297 communes with 500 employees or more, only 97 have more than 1,000 employees. Within these 97 communes, 74 are located within 20 km distance from the county residence, 89 communes have an unemployment rate less than 5%, and 93 communes have more than 50 active firms. This indicates clearly that the proximity to the most important urban center of a county increase the economic status of the surrounding rural localities.

Also, when the unemployment rate is considered, most part of the communes, 1,707 (about 60%), have registered an unemployment rate

⁵ The significant correlations are the following:

- a) in the case of all communes: -0.042 for NIS lodgings and -0.051 for MoT lodgings;
- b) in the case of 1,913 communes with 2012 rank: -0.117 for NIS lodgings and -0.155 for MoT lodgings.

⁶ Based on the data provided by Annex 3 from Pop & Georgescu (2020).

of less than 5%⁷. Macro-region 2 and Macro-region 1 lead in this respect with about 500 communes each. At the other end of the spectrum are the communes with 10% or more unemployment rate (379). Macro-region 2 leads the way in this respect with 144 communes in this category, followed by Macro-region 4 with 96 communes. It must be mentioned that Macro-region 4 includes the extremes: West region with the lowest number of communes (4) with over 10% unemployment rate, and South-West region with the highest number of communes (92) with over 10% unemployment rate.

The data in Annex 3 (last column) show that at least one active firm exists in the 2,861 rural localities. Additionally, to the information above, preponderantly the rural localities have less than 50 active firms, respectively 2,105 communes (73.6%). Macro-region 2 leads in this respect with 646 communes in this situation, while Macro-region 3 is at the other end of the spectrum with 380 communes. The number of communes with 100 or more active firms is only 251, with Macro-regions 1 to 3 having an almost equal number of communes in this situation. At regional level, North-West region (Macro-region 1) and South-Muntenia region (Macro-region 3) are in the leading position, both with 42 communes with at least 100 active firms. It is interesting to note that of these 251 communes, only 63 have more than 250 active firms; all these 63 communes report at least 500 employees, and unemployment rate of less than 5% and 58 of these communes are located within 20 km distance from the county residence, supporting the idea that a more intense economic activity is taking place around the most important urban centers of each county.

Annex 8A and 8B show all these 3 factors have a weak to very weak (mainly in the case of unemployment rate), though significant, relation with NIS lodgings and MoT lodgings for all communes and for the categories of 1,913 communes (without 2012 rank) and 948 communes (with 2012 rank), suggesting that the development of lodgings it is likely to occur in rural localities with a more intense economic activity. Nonetheless, adding the information regarding the factor '20 km distance

⁷ One must note that this situation is a little bit surprising since, for the same period and calculates in the same way describes in point 14 of *Material and methods* section, the unemployment rate at national level was 5.2%.

from the county residence' it must be added that the rural localities where tourist lodgings are developed have to be farther from the county residence than 20 km and to have at least a moderately economic activity, which is not always easy to achieve, according to the presented data.

Annex 3 shows that, of the utilities for which NIS data were available at commune level, the widest spread within rural localities is the drinking water (pipes) network, available in 2,324 communes (81.2%). The sewage (pipes) network ranks second, being available for 1,088 communes (38.0%), while the natural gas (pipes) network is available for only 694 communes (24.3%); of these 694 communes, 311 are located in Macro-region 1, where the most important natural gas deposits of Romania are situated. The distribution of communes with the 3 types of utilities mentioned above can be followed in detail in Annex 3.

Annex 4 and Annex 5 give information about the number of communes with all the utilities, with no utilities, and with a combination of one or two utilities; in this last group falls the majority of Romanian communes (2,275, representing 79.5% of the total). More interesting is to mention that only 324 communes (11.3%) have all the three utilities; of these 324 communes, only 157 communes (48.5%) are located within 20 km distance from the county residence. Also of these 324 communes, 252 communes (77.8%) report lodgings. This seems to indicate that the combined presence of the three types of utilities is important for the development of lodgings. However, when considering the other end of the spectrum, the communes without any utilities, their number is 262 (9.2%); of these, only 55 communes (21.0%) are located within 20 km distance from the county residence. Also of these 262 communes, 133 communes (50.8%) report lodgings. This result seems to indicate that the lodgings can be developed despite the presence of utilities as long as tourist attractions are present.

The data in Annex 8A and 8B show the following: for all the communes, the relation between lodgings and the utilities is significant, though weak to very weak (for natural gas network); for the 1,913 communes without 2012 rank, the relationship continues to be significant and being from weak to moderate; for the 948 communes with 2012 ranking (considered more attractive for tourism development) the

relation is significant but weak in the cases of drinking water and sewage networks, while becoming insignificant for the natural gas network. The results in Annex 8A and 8B confirm the suggestion resulting from Annex 4 and 5, that the presence of utilities is more important in the case of less tourist attractions, while these utilities become less relevant where tourist attractions exist.

Annex 3 also contains information about the presence of schools and the availability of hospital bed places in rural localities. When schools are concerned, only 4 communes⁸ do not registered schools for the period under investigation. The majority of communes (2,612, representing 91.3% of total) have between 1 and 2 schools, while the remaining 245 communes have between 3 and 6 schools. While for the purpose of this paper the data regarding the types of schools were not extracted, the schools in rural localities mostly cover the early childhood education level, primary level, and lower secondary education level⁹ in the communes where 1 or 2 schools exists. Where at least 3 schools exist, usually the upper secondary education level is also covered, while sometimes post-secondary non-tertiary education is available. This factor ('schools') was introduced in order to see if it represent an incentive for economic activity diversification via tourist lodging development. Annex 8A and 8B show either a very weak (but significant) relation with lodgings for all communes and the 1,913 communes without 2012 rank, or there is no relation for the 948 communes with 2012 rank.

Only 158 communes have beds in hospitals available at rural level. For the purpose of this paper the information was not detailed further for providing details regarding the type of hospitals. The beds in hospitals were considered just as 'other facilities'. Since the number of communes with this facility is low, there is no surprise that Annex 8A and 8B show a very weak (but significant) relation in the case of all communes, an insignificant relation in the case of 1,913 communes

⁸ These 4 communes are: Brebu Nou (Caras-Severin county), Batrana and Bunila (Hunedoara county), and Ciocarlia (Ialomita county).

⁹ The level of education are presented based on the classification provided by the European Commission within the material available at the following link: https://yourterm.eu/wp-content/uploads/2020/01/the_structure_of_the_european_education_systems_2018_19.pdf

without 2012 rank, and a significant but weak relation in the case of 948 communes with 2012 ranking, probably due to the fact that in the case of some communes having the status of resort and spa facilities where also (in some cases) medical assistance in hospitals is provided.

The descriptive statistics in Annex 7 (A and B) are provided for all the considered factors/drivers. Therefore, there is nothing to be added to Pop & Georgescu (2020) comments regarding the tourist attractions, road accessibility, and the lodgings. For the new 13 factors/drivers included in the present analysis, the differences for mean, median, and third quartile within all the 3 groups under scrutiny are not all important. Some exceptions (slightly higher differences) can be observed in the case of employees, the number of active firms, sewage network, and beds in hospitals, while for natural gas pipe network the exception occurs only for the 3rd quartile. The information provided in Annex 7 combined with the correlation results from Annex 8 anticipate the results presented below, within the next section of this paper.

Multiple regression results, PLS-SEM results and discussions

The detailed results for the multiple regression can be found in Annex 9 (A and B) where there were included the tested hypotheses. Also, to allow the comparisons with the results of Pop et al. (2019) and Pop & Georgescu (2020), the final results for the multiple regression were include in Table 1, below.

The results of multiple regression can be discussed at length, which the space of this paper does not allow it. However, the general outcome shows that the newly added factors/drivers either do have a low influence on the lodging development or do not have any influence. These findings are in line with the selected results, based on correlation coefficients, presented in the section above.

Table 1 shows better that the introduction of the new factors/drivers add some explanatory power to the model. Compared with the results of Pop & Georgescu (2020), this explanatory power is very weak in the cases of H1, H1.1, and H1.2, is weak in the cases of H2 and H2.1, is weak to moderate in the case of H3 group of hypotheses (in some cases

the explanatory power is almost double). Nonetheless, except of H2 and H2.1 where R squared shows a weak to moderate relationship between the dependent variable and the selected factors, for the H1 and H3 group of hypotheses R squared shows weak to very weak relationships.

The results obtained through multiple regression are confirmed by the results obtained through PLS-SEM. The PLS-SEM results are presented in Annexes 10 to 14 and Table 1. Similar to the multiple regression results, the newly added factor do increase the explanatory power of the model, but not in a significant manner. R squared shows almost similar results with the multiple regression results for the present study and similar increases compared with Pop & Georgescu (2020) study.

The figures in Annex 14 confirm the findings mentioned above. As found by Pop & Georgescu (2008), the 2008 rank, for which no clear information was provided by the authorities, is influenced mainly by tourist attractions (monuments, protected areas, extra points/resources), while the influence is different in all the three groups of communes considered. The other latent variables have a negligible influence, though the accessibility via roads seems to be more important than the 20km distance to the county residence, while the presence of active firms seems to play a minor role.

Similar to Pop & Georgescu (2020) results, the 2012 rank is mainly influenced by 2008 rank, and therefore, indirectly by tourist attractions. Nonetheless, 2012 rank has is also directly influenced (though the influence is weak) by the access via roads (the proximity to county residence being irrelevant) and by the presence of various utilities.

When the factors/drivers impacting the development of lodgings (for both NIS and MoT data), the results are showing similar influences, with some slight variations: the main influence (direct and indirect) comes from tourist attractions, followed by the economic status (mainly under the influence of active firms). For the 1,913 communes without 2012 rank, therefore considered less attractive for tourism, to the two group of factors mentioned previously, the road access has a weak to moderate direct influence, though the proximity to the county residence has a lower importance. The situation remains almost the same when for the 948 communes with 2012 rank; the 2012 rank is included as factor/driver. The

slight differences show that road access has a weak to moderate direct influence, while the 20 km distance to the county residence is unimportant. In the case of economic status, the active firms lose their dominance, the number of employees seeming to increase in importance. For the same group of 948 communes, of interest is the negative weak direct effect of latent variable ‘info population’ on lodgings, suggesting that lodgings might be developed in smaller rural localities.

Table 1. Hypotheses confirmation

Hypotheses formulated by Pop et al. (2019)			Hypotheses formulated by Pop & Georgescu (2020)			Hypotheses formulated for the present study		
Hypotheses	Multiple regression results	PLS-SEM results	Hypotheses	Multiple regression results	PLS-SEM results	Hypotheses	Multiple regression results	PLS-SEM results
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 (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 (for all communes): 2008 rank is influenced by the tourist resources and roads (accessibility)	Confirmed. R ² = 19.0%; p-value < 0.001	Confirmed R ² = 18.6%; p-value = 0.0000
H1.1 (for the 1,913 communes): 2008 rank is influenced by the tourist resources and roads (accessibility)	Confirmed. R ² = 5.7%; p-value < 0.001	Confirmed R ² = 5.6%; p-value = 0.0000	H1 (for all communes): 2008 rank is influenced by the variables/factors in Annex 9A	Confirmed. R ² = 20.2%; p-value < 0.001	Confirmed R ² = 19.4%; p-value = 0.0000	H1 (for all communes): 2008 rank is influenced by the variables/factors in Annex 9A	Confirmed. R ² = 7.2%; p-value < 0.001	Confirmed R ² = 6.6%; p-value = 0.0000

Hypotheses formulated by Pop et al. (2019)		Hypotheses formulated by Pop & Georgescu (2020)		Hypotheses formulated for the present study	
H3 (for all communes): lodgings are influenced by the tourist resources and the 2008 rank	Confirmed. R ² = 7.3%; p-value < 0.001	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	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 = 6.5%; p-value = 0.0000		Confirmed R ² = 36.1%; p-value = 0.0000		Confirmed R ² = 7.1%; p-value = 0.0000
H3 (for all communes): NIS lodgings are influenced by the tourist resources, the 2008 rank, and roads (accessibility)	Confirmed. R ² = 7.6%; p-value < 0.001	H2.1 (for the 948 communes): 2012 rank is influenced by the tourist resources, the 2008 rank, and roads (accessibility)	Confirmed. R ² = 45.1%; p-value < 0.001	H1.2 (for the 948 communes): 2008 rank is influenced by the tourist resources and roads (accessibility)	Confirmed. R ² = 7.5%; p-value < 0.001
	Confirmed R ² = 6.8%; p-value = 0.0000		Confirmed R ² = 44.7%; p-value = 0.0000		Confirmed R ² = 7.3%; p-value = 0.0000
H3 (for all communes): NIS lodgings are influenced by 2008 rank and the other variables/factors in	Confirmed. R ² = 11.0%; p-value < 0.001	H2 (for the 948 communes): 2012 rank is influenced by the variables/factors in Annex 9B	Confirmed. R ² = 18.5%; p-value < 0.001	H1.2 (for the 948 communes): 2008 rank is influenced by the variables/factors in Annex 9B	Confirmed. R ² = 8.5%; p-value < 0.001
	Confirmed R ² = 9.1%; p-value = 0.0000		Not investigated.		Confirmed R ² = 8.6%; p-value = 0.0000

Hypotheses formulated by Pop et al. (2019)		Hypotheses formulated by Pop & Georgescu (2020)		Hypotheses formulated for the present study	
H3.2 (for the 948 communes): lodgings are influenced by the tourist resources and the 2008 rank	-	H3.1bis (for the 1,913 communes): <i>MoT lodgings are influenced by the tourist resources, the 2008 rank, and roads (accessibility)</i>	-	H3.2 (for the 948 communes): NIS lodgings are influenced by 2008 rank and the other variables/factors in Annex 9B	-
Confirmed. R ² = 6.4%; p-value < 0.001	Confirmed. R ² = 6.4%; p-value < 0.001	Confirmed. R ² = 8.1%; p-value < 0.001	Confirmed. R ² = 6.7%; p-value < 0.001	Confirmed. R ² = 13.1%; p-value < 0.001	Confirmed. R ² = 11.5%; p-value = 0.0000
Confirmed R ² = 6.2%; p-value = 0.0000	Confirmed R ² = 3.2%; p-value = 0.0000	Confirmed R ² = 8.0%; p-value = 0.0000	Confirmed R ² = 6.5%; p-value = 0.0000	Confirmed R ² = 7.9%; p-value = 0.0000	Confirmed R ² = 10.9%; p-value = 0.0000
H3.2 (for the 948 communes): NIS lodgings are influenced by the tourist resources, the 2008 rank, and roads (accessibility)	H3.1 (for the 1,913 communes): lodgings are influenced by the tourist resources and the 2008 rank	H3.1bis (for the 1,913 communes): <i>MoT lodgings are influenced by the tourist resources, the 2008 rank, and roads (accessibility)</i>	H3.1 (for the 1,913 communes): NIS lodgings are influenced by the tourist resources, the 2008 rank, and roads (accessibility)	H3.1 (for the 1,913 communes): NIS lodgings are influenced by 2008 rank and the other variables/factors in Annex 9A	H3bis (for all communes): <i>MoT lodgings are influenced by 2008 rank and the other variables/factors in Annex 9A</i>
Confirmed. R ² = 6.4%; p-value < 0.001	Confirmed. R ² = 3.3%; p-value < 0.001	Confirmed. R ² = 8.1%; p-value < 0.001	Confirmed. R ² = 6.5%; p-value < 0.001	Confirmed. R ² = 15.2%; p-value < 0.001	Confirmed. R ² = 12.9%; p-value < 0.001
Confirmed R ² = 6.2%; p-value = 0.0000	Confirmed R ² = 3.2%; p-value = 0.0000	Confirmed R ² = 8.0%; p-value = 0.0000	Confirmed R ² = 6.4%; p-value = 0.0000	Confirmed R ² = 7.9%; p-value = 0.0000	Confirmed R ² = 10.9%; p-value = 0.0000
H3.2 (for the 948 communes): NIS lodgings are influenced by the tourist resources, the 2008 rank, and roads (accessibility)	H3.1 (for the 1,913 communes): lodgings are influenced by the tourist resources and the 2008 rank	H3.1bis (for the 1,913 communes): <i>MoT lodgings are influenced by the tourist resources, the 2008 rank, and roads (accessibility)</i>	H3.1 (for the 1,913 communes): NIS lodgings are influenced by the tourist resources, the 2008 rank, and roads (accessibility)	H3.1 (for the 1,913 communes): NIS lodgings are influenced by 2008 rank and the other variables/factors in Annex 9A	H3bis (for all communes): <i>MoT lodgings are influenced by 2008 rank and the other variables/factors in Annex 9A</i>
Confirmed. R ² = 6.4%; p-value < 0.001	Confirmed. R ² = 3.3%; p-value < 0.001	Confirmed. R ² = 8.1%; p-value < 0.001	Confirmed. R ² = 6.5%; p-value < 0.001	Confirmed. R ² = 15.2%; p-value < 0.001	Confirmed. R ² = 12.9%; p-value < 0.001
Confirmed R ² = 6.2%; p-value = 0.0000	Confirmed R ² = 3.2%; p-value = 0.0000	Confirmed R ² = 8.0%; p-value = 0.0000	Confirmed R ² = 6.4%; p-value = 0.0000	Confirmed R ² = 7.9%; p-value = 0.0000	Confirmed R ² = 10.9%; p-value = 0.0000

Hypotheses formulated by Pop et al. (2019)			Hypotheses formulated by Pop & Georgescu (2020)			Hypotheses formulated for the present study		
-	H3.2a (for the 948 communes): lodgings are influenced by the tourist resources and the 2008 rank and the 2012 rank	-	H3.2a-bis (for the 948 communes): MoT lodgings are influenced by the tourist resources, the 2008 rank, the 2012 rank, and roads (accessibility)	Confirmed. R ² = 9.0%; p-value < 0.001	Confirmed. R ² = 7.1%; p-value < 0.001	H3.2a (for the 948 communes): lodgings are influenced by the 2008 rank, 2012 rank and the other variables/factors in Annex 9B	Confirmed. R ² = 16.5%; p-value < 0.001	Confirmed. R ² = 13.5%; p-value < 0.001
-	Confirmed. R ² = 8.0%; p-value < 0.001	-	H3.2a (for the 948 communes): NIS lodgings are influenced by the tourist resources, the 2008 rank, the 2012 rank, and roads (accessibility)	Confirmed. R ² = 8.0%; p-value < 0.001	Confirmed. R ² = 6.9%; p-value = 0.0000	H3.2a (for the 948 communes): NIS lodgings are influenced by 2008 rank, 2012 rank and the other variables/factors in Annex 9B	Confirmed. R ² = 9.7%; p-value = 0.0000	Confirmed. R ² = 9.7%; p-value = 0.0000
-	Confirmed. R ² = 7.0%; p-value = 0.0000	-	H3.2bis (for the 948 communes): MoT lodgings are influenced by the tourist resources, the 2008 rank, and roads (accessibility)	Confirmed. R ² = 9.0%; p-value < 0.001	Confirmed. R ² = 7.0%; p-value = 0.0000	H3.2bis (for the 948 communes): MoT lodgings are influenced by 2008 rank and the other variables/factors in Annex 9B	Confirmed. R ² = 12.2%; p-value = 0.0000	Confirmed. R ² = 14.3%; p-value = 0.0000

Source: Pop et al. (2019) for the first three columns, Pop & Georgescu (2020) for the columns four to six and authors' calculations for the last three columns.

Conclusions

The findings of the present paper are in line with the previous findings of Pop et al. (2019) and Pop & Georgescu (2020). Of importance for rural lodgings' development is the latent variable 'tourist attractions' which has mainly an indirect effect via 2008 rank and in the case of 948 communes group, via 2012 rank; both ranks playing a mediating role, as PLS-SEM figures in Annex 14 show. However, the direct effect of latent variable tourist attraction can be considered weak, concurring with the idea expressed by Pop et al. (2019), that the high number of communes with 0 lodgings and just 1 lodging might impact on this relation¹⁰. Other studies of Constantin & Reveiu (2018), Cehan et al. (2019), Pop & Balint (2020) support the findings regarding tourist attractions by highlighting the uneven distribution of rural accommodations in relation with the locations of tourist attractions.

The latent variable 'road access' seems to play a lesser role, excepting the case of 1,913 communes considered less attractive from tourism-related attractions viewpoint; though, the proximity to the county residence is of lower importance. Though it must be highlighted that a more intense economic activity takes place in the communes closer to the county residence, as highlighted in the section *Selected results*, a situation confirmed by Ibanescu et al. (2020) from economic and demographic viewpoints.

As mentioned in the previous section, while for all communes and 1,913 communes without 2012 rank the direct influence of population (latent variable 'info population') is very weak, for the 948 communes with 2012 rank the direct influence of population is a bit higher and negative, though it remains weak. These results suggest there is a low likeliness that rural lodgings might be developed in smaller (from population viewpoint) rural localities. This negative direct influence is confirmed by Galluzzo (2021) who showed that agritourism is indirectly related to population density, therefore suggesting a growth of agritourism in less populated areas.

¹⁰ It is interesting to note that Pop et al. (2019) also mention that even within the 948 communes with 2012 rank, therefore the communes with higher tourist potential, 39% of these communes have 0 lodgings, while other 33% have just 1 lodging.

The latent variable 'economic status' is also influencing the development of lodgings in rural areas mainly via of the component 'active firms', though, within the group of 948 communes with 2012 rank, the component 'active firms' loses some ground in favor of 'employees'. This result is partly confirmed by the findings of Ibanescu et al. (2020). Nonetheless, further investigations of the influence of this variable on rural lodgings' development are needed via Granger causality.

The latent variables 'utilities' and 'other facilities' seem to have no important effects on rural lodgings development, a situation which raise questions regarding the local solutions for current water, sewage, and heating and their impact on the respective accommodation services' quality.

The findings of the present analysis are in line with the findings of Pop & Georgescu (2020) and suggest that the selected endogenous factors for rural localities have a relative low explanatory power for lodgings development. These findings are supported also by Galluzzo (2021) who suggest that agritourism growth in Romania has been correlated with exogenous factors, like the availability of financial resources and other causes that drove the inhabitants of rural areas to pursue the development of tourism facilities. This idea seems to be supported by the recent growth registered by rural pensions (the most frequent form of lodgings in rural areas, as shown by Pop et al. (2017)) between 2019 and 2021 of 23.6%, as reported by NIS, under the influence of Sars-cov-2 pandemic on tourism.

Indirectly, and cumulated with the findings of Constantin & Reveiu (2018) regarding the relative low of correlation between rural lodgings and the location of tourist attractions, the results of the present paper point toward the little awareness of rural population regarding existence and value of local tourist attractions, as also highlighted by Pop & Georgescu (2020). Also indirectly the present analysis points toward the reduced alternatives of entertainment facilities as mentioned by Porutiu et al. (2021), given the low number of rural localities with the status of 'resort' (see Annex 1 of Pop & Georgescu, 2020)

As suggested by Figueiredo et al. (2013), one of the best path to follow for Romanian rural tourism offer development is represented by the model of community-based tourism, though this concept is not very

well understood and barely applied as shown by (Havadi Nagy & Espinosa Segui, 2020), though some exceptions exist, like the case of Viscri, Barsovo county, as highlighted by Iorio & Corsale (2013). Nonetheless, the development of lodgings in Romania's rural areas, in order to create the base for rural tourism growth, remains a complex problem which needs continuous adjustments (like the recent case of decentralization and fragmentation trends as mentioned by Ruiz-Real et al. (2020) and further enhanced by the recent pandemic of Sars-cov-2), to the adaptation of tourist offer to the available resources for the segmentation of this offer, as suggested by Coros (2020) and Nistoreanu (2018), to the willingness of rural inhabitants to alter their lifestyles to rural tourism as a new livelihood, and to assess the positive and negative aspects of tourism impacts.

To the various limitations of this study as already mentioned by Pop et al. (2019) and Pop & Georgescu (2020) one must add the grouping of communes based on the availability of 2008 rank and 2012 rank. Another classification might generate different results.

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Annex 1: The situation of communes considering the population, the percentage of women, and the percentage of Romanian population

<i>County / region / macro- region</i>	<i>Population</i>			<i>With population increase (2019 to 2005)</i>	<i>Women (%)</i>		<i>Romanians (%)</i>		
	<i>100 to 4,999</i>	<i>5,000 to 9,999</i>	<i>≥ 10,000</i>		<i>35.00 to 49.99</i>	<i>50.00 to 59.99</i>	<i>0.00 to 49.99</i>	<i>50.00 to 89.99</i>	<i>90.00 to 99.99</i>
Bihor	80	10	1	30	42	49	20	43	28
Bistrita- Nasaud	46	12	0	14	36	22	1	14	43
Cluj	67	5	3	12	32	43	7	43	25
Maramures	55	7	1	17	29	34	9	7	47
Satu-Mare	49	10	0	27	23	36	28	18	13
Salaj	55	2	0	12	13	44	14	20	23
North- West	352	46	5	112	175	228	79	145	179
Alba	62	5	0	9	54	13	2	13	52
Brasov	40	8	0	42	36	12	2	19	27
Covasna	37	3	0	16	27	13	33	3	4
Harghita	48	10	0	30	33	25	51	5	2
Mures	75	16	0	33	52	39	39	29	23
Sibiu	50	3	0	32	37	16	0	14	39
Center Macro-1	312	45	0	162	239	118	127	83	147
Bacau	52	31	2	25	71	14	1	11	73
Botosani	58	13	0	11	49	22	0	2	69
Iasi	55	32	6	41	86	7	0	8	85
Neamt	52	25	1	18	50	28	0	3	75
Suceava	68	28	2	53	60	38	3	6	89
Vaslui	74	7	0	12	76	5	0	3	78
North-East	359	136	11	160	392	114	4	33	469
Braila	37	3	0	4	20	20	0	2	38
Buzau	70	12	0	9	24	58	0	3	79
Constanta	41	14	3	27	49	9	2	19	37
Galati	40	17	4	14	50	11	1	5	55
Tulcea	43	3	0	4	38	8	2	8	36
Vrancea	58	10	0	23	32	36	1	1	66
South-East Macro-2	289	59	7	81	213	142	6	38	311
	648	195	18	241	605	256	10	71	780

<i>County / region / macro- region</i>	<i>Population</i>			<i>With population increase (2019 to 2005)</i>	<i>Women (%)</i>		<i>Romanians (%)</i>		
	<i>100 to 4,999</i>	<i>5,000 to 9,999</i>	<i>≥ 10,000</i>		<i>35.00 to 49.99</i>	<i>50.00 to 59.99</i>	<i>0.00 to 49.99</i>	<i>50.00 to 89.99</i>	<i>90.00 to 99.99</i>
Arges	77	16	2	21	28	67	0	0	95
Calarasi	40	9	1	8	15	35	0	6	44
Dambovita	55	27	0	20	22	60	0	5	77
Giurgiu	39	12	0	10	9	42	0	4	47
Ialomita	56	3	0	8	23	36	1	5	53
Prahova	57	29	4	17	39	51	0	1	89
Teleorman	86	6	0	0	33	59	0	10	82
South- Muntenia	410	102	7	84	169	350	1	31	487
Ilfov	9	22	1	31	3	29	0	7	25
Macro-3	419	124	8	115	172	379	1	38	512
Arad	62	5	1	28	14	54	4	24	40
Caras- Severin	69	0	0	13	25	44	5	21	43
Hunedoara	55	0	0	13	12	43	0	3	52
Timis	75	13	1	60	40	49	2	58	29
West	261	18	2	114	91	190	11	106	164
Dolj	93	10	1	18	27	77	0	24	80
Gorj	54	7	0	7	39	22	0	2	59
Mehedinti	59	1	1	7	31	30	1	10	50
Olt	104	0	0	5	49	55	0	2	102
Valcea	75	3	0	11	38	40	0	3	75
South- West	385	21	2	48	184	224	1	41	366
Macro-4	646	39	4	162	275	414	12	147	530
National level	2,377	449	35	792	1,466	1,395	229	484	2,148

Note: only one commune (Floresti, Cluj county) has a population of over 22,000 people.

Source: authors' calculations based on NIS data and

<https://www.recensamantromania.ro/rpl-2011/rezultate-2011/>

Annex 2: The situation of communes considering
the number of employees, unemployment,
and number of active firms

<i>County / region / macro-region</i>	<i>Employees (number)</i>			<i>Unemployment (%)</i>			<i>Active firms (number)</i>		
	<i>< 100</i>	<i>100 to 499</i>	<i>≥ 500</i>	<i>< 5%</i>	<i>5% to 9.99%</i>	<i>≥ 10%</i>	<i>< 50</i>	<i>50 to 99</i>	<i>≥ 100</i>
Bihor	13	59	19	65	23	3	48	30	13
Bistrita-Nasaud	16	37	5	56	2	0	38	15	5
Cluj	29	37	9	54	18	3	44	20	11
Maramures	8	49	6	55	8	0	48	12	3
Satu-Mare	19	36	4	43	11	5	44	10	5
Salaj	18	32	7	27	25	5	47	5	5
North-West	103	250	50	300	87	16	269	92	42
Alba	33	28	6	25	31	11	54	10	3
Brasov	12	26	10	24	6	18	27	10	11
Covasna	11	29	0	26	10	4	32	8	0
Harghita	15	42	1	36	14	8	32	19	7
Mures	26	53	12	55	23	13	64	18	9
Sibiu	21	29	3	32	16	5	40	9	4
Center	118	207	32	198	100	59	249	74	34
Macro-1	221	457	82	498	187	75	518	166	76
Bacau	17	57	11	54	22	9	62	15	8
Botosani	29	40	2	57	11	3	69	1	1
Iasi	16	68	9	62	20	11	76	8	9
Neamt	17	54	7	58	16	4	47	23	8
Suceava	18	75	5	79	14	5	65	26	7
Vaslui	19	62	0	26	27	28	79	2	0
North-East	116	356	34	336	110	60	398	75	33
Braila	11	26	3	16	12	12	36	3	1
Buzau	23	52	7	17	32	33	57	18	7
Constanta	9	43	6	44	10	4	42	6	10
Galati	24	32	5	15	20	26	43	11	7
Tulcea	10	34	2	35	9	2	31	12	3
Vrancea	30	37	1	45	16	7	39	22	7
South-East	107	224	24	172	99	84	248	72	35
Macro-2	223	580	58	508	209	144	646	147	68
Arges	25	60	10	57	27	11	60	26	9

<i>County / region / macro-region</i>	<i>Employees (number)</i>			<i>Unemployment (%)</i>			<i>Active firms (number)</i>		
	<i>< 100</i>	<i>100 to 499</i>	<i>≥ 500</i>	<i>< 5%</i>	<i>5% to 9.99%</i>	<i>≥ 10%</i>	<i>< 50</i>	<i>50 to 99</i>	<i>≥ 100</i>
Calarasi	6	40	4	36	12	2	40	9	1
Dambovita	27	47	8	57	20	5	56	21	5
Giurgiu	2	43	6	37	11	3	34	10	7
Ialomita	21	38	0	30	24	5	55	4	0
Prahova	18	51	21	66	21	3	50	20	20
Teleorman	51	38	3	18	39	35	84	8	0
South-Muntenia	150	317	52	301	154	64	379	98	42
Ilfov	0	8	24	32	0	0	1	4	27
Macro-3	150	325	76	333	154	64	380	102	69
Arad	6	49	13	60	8	0	42	20	6
Caras-Severin	38	29	2	47	19	3	64	5	0
Hunedoara	25	25	5	25	29	1	45	9	1
Timis	3	45	41	87	2	0	53	23	13
West	72	148	61	219	58	4	204	57	20
Dolj	60	38	6	24	35	45	88	9	7
Gorj	10	42	9	24	36	1	47	10	4
Mehedinti	37	22	2	7	27	27	59	1	1
Olt	58	46	0	44	42	18	97	6	1
Valcea	6	69	3	50	27	1	66	7	5
South-West	171	217	20	149	167	92	357	33	18
Macro-4	243	365	81	368	225	96	561	90	38
National level	837	1,727	297	1,707	775	379	2,105	505	251

Note: only one commune (Chiajna, Ilfov county) has over 6,000 employees; commune Floresti (Cluj county) has the highest number of active firms (1,817), while commune Chiajna (Ilfov county) is in the second position with 1,276 active firms.

Source: authors' calculations based on NIS data and <https://www.listafirme.ro/>

Annex 3: The situation of communes considering the proximity to the county residence, the availability of utilities, the existence of schools and hospital beds and the presence of active firms

County / region/ macro-region	Number of communes	Number of communes at max.20 km around the county residence	Number of communes with drinking water network	Number of communes with sewage network	Number of communes with natural gas network	Number of communes with schools	Number of communes with hospital bed places	Number of communes with active firms
Bihor	91	16	81	36	15	91	3	91
Bistrita-Nasaud	58	12	51	32	15	58	3	58
Cluj	75	11	74	51	36	75	7	75
Maramures	63	10	59	34	18	63	3	63
Satu-Mare	59	13	56	34	20	59	1	59
Salaj	57	11	50	14	12	57	2	57
North-West	403	73	371	201	116	403	19	403
Alba	67	8	63	28	24	67	0	67
Brasov	48	8	43	21	32	48	3	48
Covasna	40	12	28	26	9	40	2	40
Harghita	58	15	51	40	20	58	3	58
Mures	91	15	70	41	72	91	3	91
Sibiu	53	11	37	25	38	53	1	53
Center	357	69	292	181	195	357	12	357
Macro-1	760	142	663	382	311	760	31	760
Bacau	85	21	74	59	21	85	2	85
Botosani	71	17	47	12	4	71	7	71
Iasi	93	18	71	45	20	93	8	93
Neamt	78	14	54	24	12	78	5	78
Suceava	98	18	46	38	4	98	7	98
Vaslui	81	16	66	23	9	81	4	81
North-East	506	104	358	201	70	506	33	506
Braila	40	6	39	8	7	40	2	40
Buzau	82	18	77	16	15	82	7	82
Constanta	58	3	57	25	10	58	4	58
Galati	61	6	57	26	7	61	3	61
Tulcea	46	5	46	22	1	46	0	46

County / region/ macro-region	Number of communes	Number of communes at max.20 km around the county residence	Number of communes with drinking water network	Number of communes with sewage network	Number of communes with natural gas network	Number of communes with schools	Number of communes with hospital bed places	Number of communes with active firms
Vrancea	68	22	58	12	5	68	3	68
South-East	355	60	334	109	45	355	19	355
Macro-2	861	164	692	310	115	861	52	861
Arges	95	17	88	31	29	95	10	95
Calarasi	50	9	47	9	7	50	1	50
Dambovita	82	24	70	20	44	82	5	82
Giurgiu	51	11	20	6	7	51	7	51
Ialomita	59	12	53	7	5	58	0	59
Prahova	90	24	81	30	41	90	7	90
Teleorman	92	17	46	9	2	92	5	92
South-Muntenia	519	114	405	112	135	518	35	519
Ilfov	32	20	27	22	29	32	5	32
Macro-3	551	134	432	134	164	550	40	551
Arad	68	11	60	34	13	68	8	68
Caras-Severin	69	5	57	41	5	68	1	69
Hunedoara	55	10	41	25	9	53	2	55
Timis	89	16	88	40	27	89	4	89
West	281	42	246	140	54	278	15	281
Dolj	104	21	67	19	11	104	9	104
Gorj	61	14	46	16	22	61	4	61
Mehedinti	61	7	45	21	0	61	2	61
Olt	104	17	66	28	7	104	1	104
Valcea	78	11	67	38	10	78	4	78
South-West	408	70	291	122	50	408	20	408
Macro-4	689	112	537	262	104	686	35	689
National level	2,861	552	2,324	1,088	694	2,857	158	2,861

Source: authors' calculations based on NIS data

Annex 4: The situation of the 1,913 communes without 2012 rank considering the presence of utilities (drinking water network; sewage network and natural gas network)

County / region/ macro-region	Number of communes	Number of communes with lodgings (568)						Number of communes without lodgings (1,345)					
		With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence	With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence
Bihor	91	2	2	0	2	8	17	0	0	1	5	2	26
Bistrita-N	58	0	0	0	0	4	3	0	1	1	0	0	12
Cluj	75	2	9	0	1	1	13	0	7	0	0	1	14
Maramures	63	2	1	0	1	0	1	0	2	0	0	1	1
Satu-Mare	59	3	0	0	0	4	7	1	5	0	3	4	22
Salaj	57	0	0	0	0	2	9	0	0	0	2	2	11
North-West	403	9	12	0	4	19	50	1	15	2	10	10	86
Alba	67	0	0	0	1	0	5	0	4	0	1	1	10
Brasov	48	1	2	0	1	1	5	0	0	0	0	0	5
Covasna	40	0	2	1	2	2	3	0	0	0	3	0	0
Harghita	58	1	1	0	0	4	10	0	2	0	0	0	4
Mures	91	3	4	0	1	0	3	1	6	0	0	2	12
Sibiu	53	3	3	0	0	1	2	0	4	0	2	0	3
Center	357	8	12	1	5	8	28	1	16	0	6	3	34
Macro-1	760	17	24	1	9	27	78	2	31	2	16	13	120
Bacau	85	6	2	1	0	5	7	0	6	2	6	6	30
Botosani	71	0	0	0	0	4	4	0	0	6	13	5	31
Iasi	93	4	3	0	6	3	8	0	1	0	13	6	35

County / region/ macro-region	Number of communes	Number of communes with lodgings (568)						Number of communes without lodgings (1,345)					
		With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence	With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence
Neamt	78	1	2	0	1	3	3	0	0	0	14	1	10
Suceava	98	2	0	1	14	2	15	1	0	2	10	1	9
Vaslui	81	1	3	0	0	2	3	1	1	3	10	5	42
North-East	506	14	10	2	21	19	40	2	8	13	66	24	157
Braila	40	1	0	0	1	1	2	0	0	0	0	1	20
Buzau	82	0	2	0	1	5	10	0	1	0	3	11	33
Constanta	58	1	2	0	0	0	4	0	2	0	0	0	24
Galati	61	0	0	0	0	1	6	1	2	0	3	2	31
Tulcea	46	0	0	0	0	0	5	0	0	0	0	1	16
Vrancea	68	2	0	2	2	10	9	0	0	0	4	6	14
South-East	355	4	4	2	4	17	36	1	5	0	10	21	138
Macro-2	861	18	14	4	25	36	76	3	13	13	76	45	295
Arges	95	2	2	1	0	4	8	0	1	0	1	3	23
Calarasi	50	1	1	0	0	3	9	0	0	0	2	5	28
Dambovita	82	4	2	0	3	2	7	3	4	0	6	5	27
Giurgiu	51	0	1	0	5	1	1	0	0	4	16	6	13
Ialomita	59	0	0	0	0	2	4	1	0	0	6	9	33
Prahova	90	7	3	0	2	2	8	1	3	0	4	12	30
Teleorman	92	0	0	1	1	1	6	0	0	8	35	7	31
South-Munt	519	14	9	2	11	15	43	5	8	12	70	47	185
Ilfov	32	5	3	0	1	1	1	6	1	0	0	5	4
Macro-3	551	19	12	2	12	16	44	11	9	12	70	52	189

THE DRIVERS OF RURAL ACCOMMODATION DEVELOPMENT IN ROMANIA: PART 3 (FINAL PART)

County / region/ macro-region	Number of communes	Number of communes with lodgings (568)						Number of communes without lodgings (1,345)					
		With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence	With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence
Arad	68	2	2	0	3	3	8	3	1	0	3	2	27
Caras-S	69	0	2	0	3	0	11	0	0	1	4	2	15
Hunedoara	55	1	1	0	1	3	4	0	0	0	3	0	4
Timis	89	6	4	0	0	8	16	1	3	0	1	1	40
West	281	9	9	0	7	14	39	4	4	1	11	5	86
Dolj	104	2	0	0	5	7	5	1	0	1	27	9	38
Gorj	61	2	1	0	1	1	5	0	2	0	9	1	9
Mehedinti	61	0	0	0	2	2	4	0	0	0	11	2	23
Olt	104	1	0	2	1	1	3	2	0	4	26	6	53
Valcea	78	0	1	0	2	3	5	0	2	0	8	2	26
South-West	408	5	2	2	11	14	22	3	4	5	81	20	149
Macro-4	689	14	11	2	18	28	61	7	8	6	92	25	235
National level	2,861	68	61	9	64	107	259	23	61	33	254	135	839

Source: authors' calculations based on NIS data

Annex 5: The situation of the 948 communes with 2012 rank considering the presence of utilities (drinking water network; sewage network and natural gas network)

County / region/ macro-region	Number of communes	Number of communes with lodgings (647)						Number of communes without lodgings (301)					
		With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence	With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence
Bihor	91	0	0	0	2	3	14	0	1	0	0	0	6
Bistrita-N	58	2	3	0	0	4	14	0	0	0	2	1	11
Cluj	75	5	3	0	0	4	14	0	0	0	0	0	1
Maramures	63	4	2	0	2	2	32	1	2	0	1	1	7
Satu-Mare	59	1	2	0	0	0	5	0	0	0	0	0	2
Salaj	57	1	1	0	2	6	9	0	1	0	3	0	8
North-West	403	13	11	0	6	19	88	1	4	0	6	2	35
Alba	67	5	4	0	2	2	20	0	2	0	1	0	9
Brasov	48	4	11	0	1	1	10	0	1	0	1	1	3
Covasna	40	1	3	1	1	7	12	0	0	0	0	0	2
Harghita	58	4	4	0	3	6	19	0	0	0	0	0	0
Mures	91	6	8	0	1	0	19	1	6	0	4	2	12
Sibiu	53	5	4	0	2	2	13	0	1	0	2	0	6
Center	357	25	34	1	10	18	93	1	10	0	8	3	32
Macro-1	760	38	45	1	16	37	181	2	14	0	14	5	67
Bacau	85	0	1	0	0	1	7	0	0	0	0	0	5
Botosani	71	1	0	1	1	0	0	0	0	0	2	0	3
Iasi	93	2	2	1	1	1	2	1	1	0	1	0	2
Neamt	78	2	1	1	2	5	20	0	0	0	4	1	7

THE DRIVERS OF RURAL ACCOMMODATION DEVELOPMENT IN ROMANIA: PART 3 (FINAL PART)

County / region/ macro-region	Number of communes	Number of communes with lodgings (647)						Number of communes without lodgings (301)					
		With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence	With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence
Suceava	98	1	0	4	14	2	12	0	0	1	3	1	3
Vaslui	81	0	0	0	0	2	0	0	0	0	2	2	4
North-East	506	6	4	7	18	11	41	1	1	1	12	4	24
Braila	40	1	0	0	0	1	2	0	1	0	0	1	8
Buzau	82	1	1	0	0	1	9	0	0	0	0	0	4
Constanta	58	2	2	0	0	0	9	0	0	0	1	0	11
Galati	61	1	0	0	1	0	2	0	0	0	0	1	10
Tulcea	46	0	0	0	0	3	15	0	0	0	0	1	5
Vrancea	68	0	0	0	0	1	8	0	0	0	2	1	7
South-East	355	5	3	0	1	6	45	0	1	0	3	4	45
Macro-2	861	11	7	7	19	17	86	1	2	1	15	8	69
Arges	95	2	2	0	3	4	23	0	3	0	1	1	11
Calarasi	50	0	0	0	0	0	0	0	0	0	0	0	1
Dambovita	82	2	1	0	0	2	5	0	0	0	0	6	3
Giurgiu	51	0	0	0	1	0	2	0	0	0	0	0	1
Ialomita	59	0	0	0	0	0	0	0	0	0	0	0	4
Prahova	90	2	2	0	0	0	10	0	0	0	1	0	3
Teleorman	92	0	0	0	1	0	1	0	0	0	0	0	0
South-Munt	519	6	5	0	5	6	41	0	3	0	2	7	23
Ilfov	32	2	1	0	0	1	1	0	0	0	0	0	0

County / region/ macro-region	Number of communes	Number of communes with lodgings (647)						Number of communes without lodgings (301)					
		With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence	With all utilities and at max 20 km around the county residence	With all utilities and farther than 20 km from the county residence	No utilities and at max 20 km around the county residence	No utilities and farther than 20 km from the county residence	One or two types of utilities at max 20 km around the county residence	One or two types of utilities farther than 20 km from the county residence
Macro-3	551	8	6	0	5	7	42	0	3	0	2	7	23
Arad	68	0	1	0	0	1	11	0	0	0	0	0	1
Caras-S	69	0	0	0	1	2	16	0	0	0	2	0	10
Hunedoara	55	2	2	2	2	1	17	0	1	1	5	0	5
Timis	89	0	0	0	0	0	5	0	1	0	0	0	3
West	281	2	3	2	3	4	49	0	2	1	7	0	19
Dolj	104	0	0	0	0	1	1	0	0	0	2	0	5
Gorj	61	0	1	0	2	7	7	1	1	0	1	2	8
Mehedinti	61	0	0	0	3	3	7	0	0	0	0	0	4
Olt	104	0	0	0	1	0	0	0	0	1	1	0	2
Valcea	78	2	0	0	1	2	13	1	1	0	0	1	8
South-West	408	2	1	0	7	13	28	2	2	1	4	3	27
Macro-4	689	4	4	2	10	17	77	2	4	2	11	3	46
National level	2,861	61	62	10	50	78	386	5	23	3	42	23	205

Source: authors' calculations based on NIS data

Annex 6: The list of variables, their units of measurement, and the components of latent variables used in PLS-SEM

<i>Latent variable</i>	<i>Variables</i>	<i>Units of measurement</i>	<i>Latent variable</i>	<i>Variables</i>	<i>Units of measurement</i>
rank 2008	Rank 2008	points	NIS lodgings	NIS lodgings	number
rank 2012	Rank 2012	points	MoT lodgings	MoT lodgings	number
tourist attractions	extra points (resources)	points	economic status	employees	number
	Monuments	number		% unemployment	percentage
	Protected areas	number		active firms	number
road access	20 km to county residence	dummy	utilities	drinking water network	kilometers
	road access	points		sewage network	kilometers
info population	women	coefficient		other facilities	natural gas pipes network
	Romanians	coefficient	schools		number
	population	number	beds in hospitals		number
			dwelling		number

Source: authors' work

Annex 7: Descriptive statistics

Annex 7A: Descriptive statistics for 2,861 communes and 1,913 communes without 2012 ranking

All 2,861 communes								
<i>Descriptive statistics</i>	<i>Mean</i>	<i>Median</i>	<i>St.dev</i>	<i>Min</i>	<i>Max</i>	<i>25th percentile</i>	<i>75th percentile</i>	<i>Count/valid</i>
Rank 2008	3.055	3.000	1.670	0.000	10.000	2.000	4.000	2,861
Monuments	3.437	2.000	3.895	0.000	46.000	1.000	5.000	2,861
Protected areas	1.456	1.000	1.773	0.000	21.000	0.000	2.000	2,861
Extra points (resources)	0.353	0.000	0.528	0.000	3.000	0.000	1.000	2,861
20 km to county residence	0.194	0.000	0.395	0.000	1.000	0.000	0.000	2,861
Roads	1.039	1.000	0.952	0.000	7.000	0.250	1.000	2,861
Population	3,397	2,912	1,990	137	22,975	2,041	4,292	2,861

CORNELIA POP, MARIA-ANDRADA GEORGESCU

All 2,861 communes								
<i>Descriptive statistics</i>	<i>Mean</i>	<i>Median</i>	<i>St.dev</i>	<i>Min</i>	<i>Max</i>	<i>25th percentile</i>	<i>75th percentile</i>	<i>Count/valid</i>
Women	0.499	0.500	0.014	0.354	0.586	0.492	0.507	2,861
Romanians	0.867	0.957	0.229	0.001	0.995	0.900	0.972	2,861
Employees	259.782	144.750	400.533	10.250	6,700.250	90.250	264.000	2,861
% unemployment	5.437	4.067	4.258	0.100	35.167	2.533	7.000	2,861
Active firms	48.777	28.000	80.861	1.333	1,817.000	16.250	51.500	2,861
Drinking water network	16.224	14.550	14.033	0.000	120.400	5.000	23.500	2,861
Sewage network	4.184	0.000	7.857	0.000	85.800	0.000	6.000	2,861
Natural gas pipes network	5.807	0.000	13.341	0.000	107.000	0.000	0.000	2,861
Schools	1.445	1.250	0.638	0.000	6.000	1.000	1.667	2,861
Beds in hospitals	5.261	0.000	32.600	0.000	543.250	0.000	0.000	2,861
Dwellings	1,379	1,239	712	123	14,765	905	1,692	2,861
NIS lodgings	1.025	0.000	5.236	0.000	173.000	0.000	1.000	2,861
MoT lodgings	1.556	0.000	7.606	0.000	224.000	0.000	1.000	2,861
1,913 communes without 2012 ranking								
<i>Descriptive statistics</i>	<i>Mean</i>	<i>Median</i>	<i>St.dev</i>	<i>Min</i>	<i>Max</i>	<i>25th percentile</i>	<i>75th percentile</i>	<i>Count/valid</i>
Rank 2008	2.251	2.000	1.019	0.000	7.000	2.000	3.000	1,913
Monuments	2.751	2.000	3.176	0.000	28.000	1.000	4.000	1,913
Protected areas	1.033	1.000	1.198	0.000	9.000	0.000	2.000	1,913
Extra points (resources)	0.316	0.000	0.477	0.000	2.000	0.000	1.000	1,913
20 km to county residence	0.196	0.000	0.397	0.000	1.000	0.000	0.000	1,913
Roads	1.014	1.000	0.929	0.000	7.000	0.250	1.000	1,913
Population	3,298	2,830	1,897	278	15,783	2,017	4,131	1,913
Women	0.499	0.500	0.015	0.354	0.542	0.492	0.508	1,913
Romanians	0.890	0.958	0.188	0.001	0.995	0.915	0.972	1,913
Employees	242.369	133.250	386.638	16.000	6,700.250	84.000	234.000	1,913
% unemployment	5.613	4.200	4.462	0.100	35.167	2.467	7.433	1,913
Active firms	44.767	24.500	77.379	1.333	1,276.000	14.750	44.500	1,913

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All 2,861 communes								
<i>Descriptive statistics</i>	<i>Mean</i>	<i>Median</i>	<i>St.dev</i>	<i>Min</i>	<i>Max</i>	<i>25th percentile</i>	<i>75th percentile</i>	<i>Count/valid</i>
Drinking water network	15.410	13.900	13.696	0.000	120.400	3.700	22.600	1,913
Sewage network	3.764	0.000	7.746	0.000	85.800	0.000	4.000	1,913
Natural gas pipes network	5.241	0.000	13.070	0.000	107.000	0.000	0.000	1,913
Schools	1.412	1.250	0.592	0.000	5.750	1.000	1.500	1,913
Beds in hospitals	4.216	0.000	30.486	0.000	543.250	0.000	0.000	1,913
Dwellings	1,340	1,209	639	158	5,467	895	1,639	1,913
NIS lodgings	0.317	0.000	0.909	0.000	23.000	0.000	0.000	1,913
MoT lodgings	0.452	0.000	1.198	0.000	24.000	0.000	1.000	1,913

Source: authors' calculations

Annex 7B: Descriptive statistics for 948 communes with 2012 ranking

948 communes with 2012 ranking								
<i>Descriptive statistics</i>	<i>Mean</i>	<i>Median</i>	<i>St.dev</i>	<i>Min</i>	<i>Max</i>	<i>25th percentile</i>	<i>75th percentile</i>	<i>Count/valid</i>
Rank 2008	4.678	4.000	1.542	1.000	10.000	4.000	6.000	948
Rank 2012	27.172	26.500	7.812	1.000	56.400	21.508	32.000	948
Monuments	4.823	4.000	4.751	0.000	46.000	2.000	6.250	948
Protected areas	2.309	2.000	2.347	0.000	21.000	1.000	3.000	948
Extra points (resources)	0.428	0.000	0.612	0.000	3.000	0.000	1.000	948
20 km to county residence	0.190	0.000	0.392	0.000	1.000	0.000	0.000	948
Roads	1.088	1.000	0.994	0.000	6.000	0.500	1.000	948
Population	3,596	3,120	2,152	137	22,975	2,112	4,653	948
Women	0.499	0.499	0.013	0.425	0.586	0.491	0.506	948
Romanians	0.820	0.955	0.288	0.001	0.993	0.860	0.972	948
Employees	294.921	178.250	425.242	10.250	4,587.000	109.500	317.688	948
% unemployment	5.083	3.900	3.789	0.633	29.233	2.600	6.267	948
Active firms	56.869	36.750	86.947	1.500	1,817.000	21.000	64.063	948

948 communes with 2012 ranking								
<i>Descriptive statistics</i>	<i>Mean</i>	<i>Median</i>	<i>St.dev</i>	<i>Min</i>	<i>Max</i>	<i>25th percentile</i>	<i>75th percentile</i>	<i>Count/valid</i>
Drinking water network	17.867	16.137	14.559	0.000	92.975	7.000	25.425	948
Sewage network	5.031	0.000	8.013	0.000	50.500	0.000	8.000	948
Natural gas pipes network	6.951	0.000	13.809	0.000	100.975	0.000	8.894	948
Schools	1.510	1.250	0.717	0.000	6.000	1.000	1.750	948
Beds in hospitals	7.371	0.000	36.421	0.000	373.333	0.000	0.000	948
Dwellings	1,457	1,298	835	123	14,765	926	1,841	948
NIS lodgings	2.454	1.000	8.836	0.000	173.000	1.000	2.000	948
MoT lodgings	3.785	1.000	12.822	0.000	224.000	1.000	3.000	948

Source: authors' calculations

Annex 8: Correlation matrices

Annex 8A: Correlation matrices for 2,861 communes and 1,913 communes without 2012 ranking

All 2,861 communes																							
	Rank 2008	Monuments	Protected areas	Extra points (resources)	20 km to county/residence	Roads	Population	Women	Romanians	Employees	% unemployment	Active firms	Drinking water network	Sewage network	Natural gas pipes network	Schools	Beds in hospitals	Dwellings	NIS lodgings	MoT lodgings			
Rank 2008	1																						
Monuments	0.272 0.001	1																					
Protected areas	0.355 0.001	0.106 0.001	1																				
Extra points (resources)	0.139 0.001	0.077 0.001	0.118 0.001	1																			

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All 2,861 communes																					
	Rank 2008	Monuments	Protected areas	Extra points (resources)	20 km to county residence	Roads	Population	Women	Romanians	Employees	% unemployment	Active firms	Drinking water network	Sewage network	Natural gas pipes network	Schools	Beds in hospitals	Dwellings	NIS lodgings	Mot'l lodgings	
20 km to county residence	-0.099 <i>0.637</i>	0.076 <i>0.001</i>	-0.053 <i>0.003</i>	-0.013 <i>0.478</i>	1																
Roads	0.005 <i>0.774</i>	0.086 <i>0.001</i>	0.061 <i>0.001</i>	-0.013 <i>0.472</i>	0.177 <i>0.001</i>	1															
Population	0.050 <i>0.007</i>	0.178 <i>0.001</i>	0.007 <i>0.697</i>	0.059 <i>0.002</i>	0.248 <i>0.001</i>	0.248 <i>0.001</i>	1														
Women	0.042 <i>0.026</i>	0.082 <i>0.001</i>	-0.042 <i>0.026</i>	-0.047 <i>0.011</i>	0.052 <i>0.005</i>	0.145 <i>0.001</i>	0.018 <i>0.325</i>	1													
Romanians	-0.096 <i>0.001</i>	-0.060 <i>0.001</i>	-0.090 <i>0.001</i>	-0.035 <i>0.059</i>	-0.047 <i>0.011</i>	0.036 <i>0.056</i>	0.008 <i>0.676</i>	-0.040 <i>0.033</i>	1												
Employees	0.069 <i>0.001</i>	0.120 <i>0.001</i>	0.005 <i>0.797</i>	-0.023 <i>0.226</i>	0.319 <i>0.001</i>	0.249 <i>0.001</i>	0.537 <i>0.001</i>	0.125 <i>0.001</i>	-0.021 <i>0.258</i>	1											
% unemployment	-0.063 <i>0.001</i>	-0.036 <i>0.051</i>	-0.023 <i>0.223</i>	0.073 <i>0.001</i>	-0.218 <i>0.001</i>	-0.122 <i>0.001</i>	-0.210 <i>0.001</i>	-0.029 <i>0.127</i>	0.016 <i>0.391</i>	-0.237 <i>0.001</i>	1										
Active firms	0.079 <i>0.001</i>	0.138 <i>0.001</i>	0.019 <i>0.316</i>	-0.014 <i>0.439</i>	0.369 <i>0.001</i>	0.249 <i>0.001</i>	0.622 <i>0.001</i>	0.132 <i>0.001</i>	-0.030 <i>0.108</i>	0.786 <i>0.001</i>	-0.244 <i>0.001</i>	1									
Drinking water network	0.084 <i>0.001</i>	0.167 <i>0.001</i>	0.067 <i>0.001</i>	0.100 <i>0.001</i>	0.167 <i>0.001</i>	0.179 <i>0.001</i>	0.382 <i>0.001</i>	0.113 <i>0.001</i>	-0.005 <i>0.770</i>	0.341 <i>0.001</i>	-0.165 <i>0.001</i>	0.384 <i>0.001</i>	1								
Sewage network	0.088 <i>0.001</i>	0.064 <i>0.001</i>	0.051 <i>0.006</i>	0.060 <i>0.001</i>	0.173 <i>0.001</i>	0.120 <i>0.001</i>	0.304 <i>0.001</i>	0.077 <i>0.001</i>	-0.138 <i>0.001</i>	0.389 <i>0.001</i>	-0.169 <i>0.001</i>	0.449 <i>0.001</i>	0.353 <i>0.001</i>	1							

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All 2,861 communes																					
	Rank 2008	Monuments	Protected areas	Extra points (resources)	20 km to county residence	Roads	Population	Women	Romanians	Employees	% unemployment	Active firms	Drinking water network	Sewage network	Natural gas pipes network	Schools	Beds in hospitals	Dwellings	NIS lodgings	MoT lodgings	
Natural gas pipes network	0.068 0.001	0.160 0.001	-0.034 0.073	0.013 0.476	0.235 0.001	0.163 0.001	0.384 0.001	0.098 0.001	-0.092 0.001	0.496 0.001	-0.176 0.001	0.529 0.001	0.286 0.001	0.280 0.001	1						
Schools	0.062 0.001	0.140 0.001	0.002 0.917	0.002 0.905	0.103 0.001	0.110 0.001	0.540 0.001	0.013 0.484	-0.032 0.090	0.342 0.001	-0.102 0.001	0.336 0.001	0.244 0.001	0.107 0.001	0.316 0.001	1					
Beds in hospitals	0.048 0.010	0.074 0.001	0.053 0.004	0.033 0.074	0.046 0.014	0.059 0.002	0.153 0.001	0.044 0.018	0.033 0.075	0.163 0.001	-0.057 0.002	0.134 0.001	0.102 0.001	0.075 0.001	0.073 0.001	0.065 0.001	1				
Dwellings	0.059 0.002	0.246 0.001	-0.003 0.885	0.057 0.002	0.230 0.001	0.255 0.001	0.913 0.001	0.113 0.001	0.046 0.014	0.538 0.001	-0.195 0.001	0.687 0.001	0.412 0.001	0.289 0.001	0.388 0.001	0.504 0.001	0.151 0.001	1			
NIS lodgings	0.220 0.001	0.071 0.001	0.181 0.001	0.152 0.001	0.013 0.486	0.058 0.002	0.078 0.001	0.025 0.188	-0.042 0.025	0.113 0.001	-0.073 0.001	0.173 0.001	0.118 0.001	0.111 0.001	0.066 0.001	0.047 0.012	0.078 0.001	0.115 0.001	1		
MoT lodgings	0.240 0.001	0.080 0.001	0.199 0.001	0.146 0.001	0.014 0.467	0.057 0.002	0.088 0.001	0.019 0.312	-0.051 0.006	0.128 0.001	-0.078 0.001	0.194 0.001	0.131 0.001	0.125 0.001	0.064 0.001	0.046 0.013	0.090 0.001	0.127 0.001	0.968 0.001	1	

1,913 communes without 2012 ranking																					
	Rank 2008	Monuments	Protected areas	Extra points (resources)	20 km to county residence	Roads	Population	Women	Romanians	Employees	% unemployment	Active firms	Drinking water network	Sewage network	Natural gas pipes network	Schools	Beds in hospitals	Dwellings	NIS lodgings	MoT lodgings	
Rank 2008	1																				

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1,913 communes without 2012 ranking																					
	Rank 2008	Monuments	Protected areas	Extra points (resources)	20 km to county residence	Roads	Population	Women	Romanians	Employees	% unemployment	Active firms	Drinking water network	Sewage network	Natural gas pipes network	Schools	Beds in hospitals	Dwellings	NIS lodgings	Mot'lodgings	
Monuments	0.196 <i>0.001</i>	1																			
Protected areas	0.134 <i>0.001</i>	0.051 <i>0.025</i>	1																		
Extra points (resources)	0.026 <i>0.250</i>	0.005 <i>0.814</i>	0.057 <i>0.012</i>	1																	
20 km to county residence	0.013 <i>0.576</i>	0.031 <i>0.177</i>	-0.003 <i>0.903</i>	-0.018 <i>0.440</i>	1																
Roads	-0.023 <i>0.310</i>	0.092 <i>0.001</i>	0.063 <i>0.006</i>	-0.010 <i>0.651</i>	0.201 <i>0.001</i>	1															
Population	0.008 <i>0.730</i>	0.168 <i>0.001</i>	0.050 <i>0.028</i>	0.045 <i>0.047</i>	0.260 <i>0.001</i>	0.258 <i>0.001</i>	1														
Women	0.093 <i>0.001</i>	0.091 <i>0.001</i>	-0.040 <i>0.080</i>	0.059 <i>0.010</i>	0.056 <i>0.015</i>	0.137 <i>0.001</i>	0.025 <i>0.268</i>	1													
Romanians	-0.028 <i>0.229</i>	-0.022 <i>0.329</i>	-0.115 <i>0.001</i>	-0.019 <i>0.404</i>	-0.044 <i>0.056</i>	0.001 <i>0.952</i>	0.021 <i>0.363</i>	-0.044 <i>0.056</i>	1												
Employees	0.030 <i>0.187</i>	0.102 <i>0.001</i>	0.000 <i>0.989</i>	-0.061 <i>0.008</i>	0.319 <i>0.001</i>	0.221 <i>0.001</i>	0.546 <i>0.001</i>	0.120 <i>0.001</i>	-0.050 <i>0.027</i>	1											
% unemployment	-0.032 <i>0.163</i>	-0.037 <i>0.110</i>	-0.002 <i>0.330</i>	0.102 <i>0.001</i>	-0.245 <i>0.001</i>	-0.131 <i>0.001</i>	-0.223 <i>0.001</i>	-0.020 <i>0.385</i>	0.033 <i>0.145</i>	0.251 <i>0.001</i>	1										

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1,913 communes without 2012 ranking																				
	Rank 2008	Monuments	Protected areas	Extra points (resources)	20 km to county residence	Roads	Population	Women	Romanians	Employees	% unemployment	Active firms	Drinking water network	Sewage network	Natural gas pipes network	Schools	Beds in hospitals	Dwellings	NIS lodgings	Mot lodgings
Active firms	0.052 0.024	0.130 0.001	0.004 0.874	-0.045 0.047	0.388 0.001	0.236 0.001	0.599 0.001	0.135 0.001	-0.041 0.070	0.844 0.001	-0.253 0.001	1								
Drinking water network	0.055 0.016	0.134 0.001	0.097 0.001	0.092 0.001	0.168 0.001	0.184 0.001	0.375 0.001	0.111 0.001	-0.015 0.520	0.330 0.001	-0.171 0.001	0.373 0.001	1							
Sewage network	0.053 0.019	0.057 0.013	0.070 0.002	0.056 0.015	0.171 0.001	0.132 0.001	0.325 0.001	0.064 0.005	-0.145 0.001	0.374 0.001	-0.157 0.001	0.492 0.001	0.365 0.001	1						
Natural gas pipes network	0.070 0.002	0.141 0.001	-0.007 0.748	-0.030 0.189	0.223 0.001	0.140 0.001	0.404 0.001	0.092 0.001	-0.081 0.001	0.538 0.001	-0.203 0.001	0.584 0.001	0.286 0.001	0.289 0.001	1					
Schools	0.041 0.074	0.117 0.001	0.001 0.976	-0.020 0.384	0.118 0.001	0.110 0.001	0.560 0.001	0.037 0.109	-0.004 0.856	0.346 0.001	-0.138 0.001	0.340 0.001	0.264 0.001	0.112 0.001	0.275 0.001	1				
Beds in hospitals	-0.001 0.949	0.037 0.106	-0.002 0.942	0.001 0.969	0.011 0.639	0.012 0.588	0.140 0.001	0.044 0.054	0.037 0.109	0.132 0.001	-0.054 0.019	0.086 0.001	0.083 0.001	0.057 0.001	0.064 0.001	0.073 0.001	1			
Dwellings	0.038 0.095	0.260 0.001	0.018 0.439	0.055 0.016	0.242 0.001	0.268 0.001	0.915 0.001	0.132 0.001	0.075 0.001	0.540 0.001	-0.198 0.001	0.625 0.001	0.414 0.001	0.309 0.001	0.413 0.001	0.524 0.001	0.130 0.001	1		
NIS lodgings	0.160 0.001	0.051 0.026	0.105 0.001	0.037 0.106	0.161 0.001	0.180 0.001	0.176 0.001	0.059 0.010	-0.117 0.001	0.261 0.001	-0.131 0.001	0.305 0.001	0.152 0.001	0.217 0.001	0.203 0.001	0.085 0.001	-0.014 0.543	0.187 0.001	1	
Mot lodgings	0.183 0.001	0.073 0.002	0.120 0.001	0.045 0.050	0.182 0.001	0.192 0.001	0.193 0.001	0.061 0.008	-0.155 0.001	0.298 0.001	-0.146 0.001	0.337 0.001	0.197 0.001	0.232 0.001	0.225 0.001	0.075 0.001	-0.014 0.526	0.204 0.001	0.861 0.001	1

Source: authors' calculations

Annex 8B: Correlation matrix for 948 communes with 2012 ranking

	Rank 2008	Rank 2012	Monuments	Protected areas	Extra points (resources)	20 km to county residence	Roads	Population	Women	Romanians	Employees	% unemployment	Active firms	Drinking water network	Sewage network	Natural gas pipes network	Schools	Beds in hospitals	Dwellings	NIS lodgings	MoT lodgings	
Rank 2008	1																					
Rank 2012	0.569 <i>0.001</i>	1																				
Monuments	0.095 <i>0.001</i>	0.228 <i>0.001</i>	1																			
Protected areas	0.213 <i>0.001</i>	0.188 <i>0.001</i>	0.005 <i>0.889</i>	1																		
Extra points (resources)	0.172 <i>0.001</i>	0.213 <i>0.001</i>	0.105 <i>0.001</i>	0.120 <i>0.001</i>	1																	
20 km to county residence	-0.030 <i>0.359</i>	0.111 <i>0.001</i>	0.152 <i>0.001</i>	-0.121 <i>0.001</i>	-0.005 <i>0.883</i>	1																
Roads	-0.033 <i>0.311</i>	0.281 <i>0.001</i>	0.066 <i>0.042</i>	0.045 <i>0.163</i>	-0.028 <i>0.397</i>	0.132 <i>0.001</i>	1															
Population	-0.003 <i>0.927</i>	0.258 <i>0.001</i>	0.168 <i>0.001</i>	-0.081 <i>0.013</i>	0.061 <i>0.059</i>	0.232 <i>0.001</i>	0.226 <i>0.001</i>	1														
Women	0.033 <i>0.306</i>	0.137 <i>0.001</i>	0.091 <i>0.005</i>	-0.049 <i>0.129</i>	-0.026 <i>0.417</i>	0.044 <i>0.175</i>	0.168 <i>0.001</i>	0.007 <i>0.840</i>	1													
Romanians	0.032 <i>0.331</i>	0.036 <i>0.272</i>	-0.028 <i>0.395</i>	0.002 <i>0.939</i>	-0.023 <i>0.472</i>	-0.059 <i>0.071</i>	0.092 <i>0.004</i>	0.016 <i>0.629</i>	-0.044 <i>0.178</i>	1												
Employees	0.046 <i>0.154</i>	0.334 <i>0.001</i>	0.118 <i>0.001</i>	-0.035 <i>0.283</i>	0.016 <i>0.621</i>	0.324 <i>0.001</i>	0.292 <i>0.001</i>	0.518 <i>0.001</i>	0.144 <i>0.001</i>	0.033 <i>0.311</i>	1											

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	Rank 2008	Rank 2012	Monuments	Protected areas	Extra points (resources)	20 km to county residence	Roads	Population	Women	Romanians	Employees	% unemployment	Active firms	Drinking water network	Sewage network	Natural gas pipes network	Schools	Beds in hospitals	Dwellings	NIS lodgings	MoT lodgings
% unemployment	-0.033 <i>0.316</i>	-0.134 <i>0.001</i>	-0.002 <i>0.939</i>	0.020 <i>0.547</i>	0.041 <i>0.202</i>	-0.156 <i>0.001</i>	-0.099 <i>0.002</i>	-0.180 <i>0.001</i>	-0.056 <i>0.085</i>	-0.031 <i>0.335</i>	-0.204 <i>0.001</i>	1									
Active firms	0.033 <i>0.313</i>	0.290 <i>0.001</i>	0.121 <i>0.001</i>	-0.014 <i>0.663</i>	0.011 <i>0.724</i>	0.339 <i>0.001</i>	0.268 <i>0.001</i>	0.654 <i>0.001</i>	0.134 <i>0.001</i>	0.004 <i>0.890</i>	0.691 <i>0.001</i>	-0.221 <i>0.001</i>	1								
Drinking water network	0.019 <i>0.560</i>	0.257 <i>0.001</i>	0.179 <i>0.001</i>	-0.007 <i>0.824</i>	0.093 <i>0.004</i>	0.170 <i>0.001</i>	0.163 <i>0.001</i>	0.385 <i>0.001</i>	0.122 <i>0.001</i>	0.033 <i>0.307</i>	0.351 <i>0.001</i>	-0.141 <i>0.001</i>	0.394 <i>0.001</i>	1							
Sewage network	0.045 <i>0.163</i>	0.196 <i>0.001</i>	0.034 <i>0.300</i>	-0.014 <i>0.677</i>	0.050 <i>0.124</i>	0.181 <i>0.001</i>	0.091 <i>0.005</i>	0.259 <i>0.001</i>	0.113 <i>0.001</i>	-0.114 <i>0.001</i>	0.408 <i>0.001</i>	-0.187 <i>0.001</i>	0.368 <i>0.001</i>	0.321 <i>0.001</i>	1						
Natural gas pipes network	-0.005 <i>0.880</i>	0.261 <i>0.001</i>	0.166 <i>0.001</i>	-0.112 <i>0.001</i>	0.063 <i>0.052</i>	0.262 <i>0.001</i>	0.199 <i>0.001</i>	0.344 <i>0.001</i>	0.116 <i>0.001</i>	-0.091 <i>0.005</i>	0.417 <i>0.001</i>	-0.110 <i>0.001</i>	0.431 <i>0.001</i>	0.275 <i>0.001</i>	0.253 <i>0.001</i>	1					
Schools	-0.007 <i>0.840</i>	0.175 <i>0.001</i>	0.138 <i>0.001</i>	-0.046 <i>0.156</i>	0.014 <i>0.659</i>	0.081 <i>0.013</i>	0.104 <i>0.001</i>	0.505 <i>0.001</i>	-0.031 <i>0.337</i>	-0.041 <i>0.208</i>	0.328 <i>0.001</i>	-0.025 <i>0.442</i>	0.321 <i>0.001</i>	0.201 <i>0.001</i>	0.087 <i>0.007</i>	0.375 <i>0.001</i>	1				
Beds in hospitals	0.051 <i>0.119</i>	0.162 <i>0.001</i>	0.096 <i>0.003</i>	0.079 <i>0.015</i>	0.066 <i>0.042</i>	0.107 <i>0.001</i>	0.128 <i>0.001</i>	0.165 <i>0.001</i>	0.048 <i>0.137</i>	0.045 <i>0.164</i>	0.205 <i>0.001</i>	-0.059 <i>0.070</i>	0.199 <i>0.001</i>	0.124 <i>0.001</i>	0.095 <i>0.003</i>	0.081 <i>0.013</i>	0.045 <i>0.165</i>	1			
Dwellings	-0.022 <i>0.503</i>	0.236 <i>0.001</i>	0.210 <i>0.001</i>	-0.070 <i>0.031</i>	0.043 <i>0.187</i>	0.222 <i>0.001</i>	0.235 <i>0.001</i>	0.916 <i>0.001</i>	0.089 <i>0.006</i>	0.040 <i>0.215</i>	0.535 <i>0.001</i>	-0.189 <i>0.001</i>	0.772 <i>0.001</i>	0.404 <i>0.001</i>	0.255 <i>0.001</i>	0.350 <i>0.001</i>	0.473 <i>0.001</i>	0.171 <i>0.001</i>	1		
NIS lodgings	0.149 <i>0.001</i>	0.211 <i>0.001</i>	0.026 <i>0.426</i>	0.146 <i>0.001</i>	0.199 <i>0.001</i>	-0.008 <i>0.810</i>	0.052 <i>0.111</i>	0.074 <i>0.023</i>	0.040 <i>0.221</i>	-0.004 <i>0.901</i>	0.121 <i>0.001</i>	-0.091 <i>0.005</i>	0.209 <i>0.001</i>	0.146 <i>0.001</i>	0.125 <i>0.001</i>	0.055 <i>0.093</i>	0.038 <i>0.240</i>	0.114 <i>0.001</i>	0.124 <i>0.001</i>	1	
MoT lodgings	0.170 <i>0.001</i>	0.241 <i>0.001</i>	0.033 <i>0.308</i>	0.163 <i>0.001</i>	0.187 <i>0.001</i>	-0.007 <i>0.820</i>	0.051 <i>0.118</i>	0.090 <i>0.005</i>	0.029 <i>0.366</i>	-0.011 <i>0.733</i>	0.143 <i>0.001</i>	-0.101 <i>0.002</i>	0.243 <i>0.001</i>	0.163 <i>0.001</i>	0.149 <i>0.001</i>	0.049 <i>0.133</i>	0.038 <i>0.239</i>	0.131 <i>0.001</i>	0.140 <i>0.001</i>	0.969 <i>0.001</i>	1

Source: authors' calculations

Annex 9: Regression results

Annex 9A: Regression results for 2,861 communes and 1,913 communes without 2012 ranking

<i>All 2,861 communes</i>					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
rank2008 R² (%) = 20.2% p-value < 0.001 F = 47.953 (results for H1)	b ₀ (intercept)	0.502	0.499	0.618	-
	monuments	0.096	12.890	< 0.001	1.081
	protect-areas	0.298	18.378	< 0.001	1.058
	extra-resources/extra points	0.283	5.215	< 0.001	1.051
	20 km to county residence	-0.128	-1.652	0.099	1.205
	roads	-0.079	-2.538	0.011	1.127
	population	0.000	-2.174	0.030	2.198
	women	4.193	2.108	0.035	1.062
	Romanians	-0.287	-2.289	0.022	1.053
	% unemployment	-0.021	-2.980	0.003	1.113
	active firms	0.001	1.794	0.073	2.344
	drinking water network	-0.001	-0.351	0.726	1.339
	sewage network	0.007	1.757	0.079	1.368
	natural gas pipes network	0.002	0.762	0.446	1.479
schools	0.098	1.840	0.066	1.473	
beds in hospitals	0.000	0.525	0.600	1.036	
lodgings NIS R² (%) = 11.0% p-value < 0.001 F = 21.876 (results for H3)	b ₀ (intercept)	-0.500	-0.150	0.881	-
	monuments	-0.013	-0.518	0.605	1.144
	protect-areas	0.290	5.110	< 0.001	1.184
	extra-resources/extra points	1.235	6.833	< 0.001	1.061
	20 km to county residence	-0.653	-2.538	0.011	1.206
	roads	0.115	1.110	0.267	1.130
	population	0.000	-3.132	0.002	2.201
	women	-0.830	-0.126	0.900	1.064

<i>All 2,861 communes</i>					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
	Romanians	-0.321	-0.770	0.441	1.055
	% unemployment	-0.050	-2.158	0.031	1.116
	active firms	0.014	7.774	< 0.001	2.347
	drinking water network	0.014	1.874	0.061	1.339
	sewage network	0.005	0.332	0.740	1.369
	natural gas pipes network	-0.016	-1.851	0.064	1.480
	schools	0.083	0.472	0.637	1.475
	beds in hospitals	0.007	2.439	0.015	1.036
	rank2008	0.469	7.548	< 0.001	1.253
lodgings MoT R² (%) = 12.9% p-value < 0.001 F = 26.403 (results for <i>H3bis</i>)	b ₀ (intercept)	1.958	0.409	0.683	
	monuments	-0.010	-0.285	0.776	1.144
	protect-areas	0.460	5.635	< 0.001	1.184
	extra-resources/extra points	1.635	6.297	< 0.001	1.061
	20 km to county residence	-1.078	-2.197	0.004	1.206
	roads	0.127	0.853	0.394	1.130
	population	0.000	-3.154	0.002	2.201
	women	-6.371	-0.673	0.501	1.064
	Romanians	-0.751	-1.256	0.209	1.055
	% unemployment	-0.072	-2.171	0.030	1.116
	active firms	0.023	9.023	< 0.001	2.347
	drinking water network	0.026	2.338	0.019	1.339
	sewage network	0.009	0.430	0.667	1.369
	natural gas pipes network	-0.033	-2.744	0.006	1.480
	schools	0.015	0.058	0.953	1.475
	beds in hospitals	0.012	2.938	0.003	1.036
	rank2008	0.751	8.414	< 0.001	1.253

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<i>1,913 communes without 2012 ranking</i>					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
rank2008 R² (%) = 7.2% p-value < 0.001 F = 9.827 (results for H1.1)	b ₀ (intercept)	-0.750	-0.974	0.330	-
	monuments	0.060	8.182	< 0.001	1.052
	protect-areas	0.113	5.905	< 0.001	1.040
	extra-resources/extra points	0.064	1.332	0.183	1.047
	20 km to county residence	0.011	0.169	0.866	1.235
	roads	-0.067	-2.602	0.009	1.131
	population	0.000	-2.795	0.005	2.197
	women	5.521	3.643	< 0.001	1.061
	Romanians	0.048	0.388	0.698	1.054
	% unemployment	-0.006	-1.089	0.276	1.135
	active firms	0.000	0.618	0.536	2.521
	drinking water network	0.000	0.086	0.932	1.343
	sewage network	0.004	1.208	0.227	1.455
	natural gas pipes network	0.003	1.550	0.121	1.566
	schools	0.082	1.764	0.078	1.506
beds in hospitals	0.000	-0.453	0.650	1.027	
lodgings NIS R² (%) = 15.2% p-value < 0.001 F = 21.216 (results for H3.1)	b ₀ (intercept)	0.278	0.423	0.672	-
	monuments	-0.007	-1.098	0.272	1.090
	protect-areas	0.048	2.907	0.004	1.059
	extra-resources/extra points	0.081	1.959	0.050	1.048
	20 km to county residence	0.063	1.167	0.243	1.235
	roads	0.111	5.021	< 0.001	1.036
	population	0.000	-0.808	0.419	2.206
	women	-0.198	-0.153	0.878	1.068
	Romanians	-0.398	-3.795	< 0.001	1.054
	% unemployment	-0.009	-1.885	0.060	1.136

<i>1,913 communes without 2012 ranking</i>					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
	active firms	0.003	6.857	< 0.001	2.521
	drinking water network	0.001	0.309	0.758	1.343
	sewage network	0.006	2.153	0.031	1.456
	natural gas pipes network	0.002	0.965	0.335	1.568
	schools	-0.024	-0.610	0.542	1.508
	beds in hospitals	-0.001	1.589	0.112	1.027
	rank2008	0.123	6.267	< 0.001	1.078
<hr/>					
lodgings MoT R² (%) = 19.4% p-value < 0.001 F = 28.608 (results for H3.1bis)	b ₀ (intercept)	0.917	1.087	0.277	-
	monuments	-0.015	-0.562	0.574	1.090
	protect-areas	0.068	3.194	0.001	1.059
	extra-resources/extra points	0.116	2.187	0.029	1.048
	20 km to county residence	0.099	1.438	0.151	1.235
	roads	0.148	5.231	< 0.001	1.136
	population	0.000	-0.661	0.509	2.206
	women	-0.964	-0.579	0.563	1.068
	Romanians	-0.762	-5.657	< 0.001	1.054
	% unemployment	-0.012	-2.106	0.035	1.136
	active firms	0.004	7.952	< 0.001	2.521
	drinking water network	0.005	2.188	0.029	1.343
	sewage network	0.005	1.315	0.189	1.456
	natural gas pipes network	0.002	0.957	0.338	1.568
	schools	-0.103	-2.013	0.044	1.508
	beds in hospitals	-0.001	-1.756	0.079	1.027
rank2008	0.183	7.289	< 0.001	1.078	

Note: The variables 'employees' and 'dwellings' were eliminated due to collinearity (VIF > 5)

Source: authors' calculations

Annex 9B: 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
rank 2008 R² (%) = 8.5% p-value < 0.001 F = 5.782 (results for H1.2)	b ₀ (intercept)	1.571	0.748	0.433	-
	monuments	0.028	2.651	0.008	1.096
	protect-areas	0.127	5.966	< 0.001	1.073
	extra-resources/extra points	0.360	4.446	< 0.001	1.053
	20 km to county residence	-0.112	-0.830	0.407	1.207
	roads	-0.095	-1.830	0.068	1.147
	population	0.000	-0.740	0.459	2.264
	women	5.142	1.293	0.196	1.088
	Romanians	0.246	1.427	0.154	1.052
	% unemployment	-0.016	-1.212	0.226	1.089
	active firms	0.001	1.114	0.265	2.243
	drinking water network	-0.003	-0.737	0.461	1.332
	sewage network	0.008	1.133	0.258	1.270
	natural gas pipes network	-0.001	-0.223	0.824	1.451
	schools	0.009	0.115	0.908	1.485
beds in hospitals	0.001	0.539	0.590	1.072	
rank2012 A R² (%) = 26.9% p-value < 0.001 F = 22.858 (results for H2)	b ₀ (intercept)	-2.298	-0.253	0.800	-
	monuments	0.226	4.691	< 0.001	1.096
	protect-areas	0.594	6.149	< 0.001	1.073
	extra-resources/extra points	2.095	5.707	< 0.001	1.053
	20 km to county residence	-0.235	-0.384	0.701	1.207
	roads	1.357	5.758	< 0.001	1.147
	population	0.000	0.899	0.369	2.264
	women	42.908	2.383	0.017	1.088
	Romanians	1.122	1.439	0.150	1.052
	% unemployment	-0.134	-2.219	0.027	1.089
	active firms	0.005	1.440	0.150	2.243
	drinking water network	0.036	2.089	0.037	1.332
	sewage network	0.065	2.116	0.035	1.270

948 communes with 2012 ranking					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
	natural gas pipes network	0.062	3.232	0.001	1.451
	schools	0.500	1.345	0.179	1.485
	beds in hospitals	0.011	1.730	0.084	1.072
rank2012 B					
R² (%) = 52.2% p-value < 0.001 F = 63.604 (results for H2.1)	b ₀ (intercept)	6.485	-0.883	0.378	-
	monuments	0.151	3.856	< 0.001	1.104
	protect-areas	0.255	3.199	0.001	1.114
	extra-resources/extra points	1.134	3.781	< 0.001	1.075
	20 km to county residence	0.064	0.129	0.898	1.208
	roads	1.611	8.436	< 0.001	1.151
	population	0.000	1.650	0.099	2.266
	women	29.205	2.044	0.045	1.090
	Romanians	0.467	0.740	0.459	1.054
	% unemployment	-0.091	-1.861	0.063	1.091
	active firms	0.003	0.969	0.333	2.246
	drinking water network	0.044	3.119	0.002	1.333
	sewage network	0.045	1.790	0.074	1.272
	natural gas pipes network	0.064	4.158	< 0.001	1.451
	schools	0.475	1.580	0.115	1.485
beds in hospitals	0.009	1.747	0.081	1.072	
rank2008	2.665	22.217	< 0.001	1.093	
lodgings NIS A					
R² (%) = 13.1% p-value < 0.001 F = 8.792 (results for H3.2)	b ₀ (intercept)	-1.408	-0.126	0.900	-
	monuments	-0.028	-0.462	0.644	1.104
	protect-areas	0.318	2.622	0.009	1.114
	extra-resources/extra points	2.502	5.468	< 0.001	1.075
	20 km to county residence	-1.725	-2.282	0.023	1.208
	roads	0.046	0.157	0.876	1.151
	population	-0.001	-3.108	0.002	2.266
	women	0.804	0.036	0.971	1.090
	Romanians	-0.406	-0.422	0.673	1.054

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948 communes with 2012 ranking					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
	% unemployment	-0.139	-1.868	0.062	1.091
	active firms	0.027	5.893	< 0.001	2.246
	drinking water network	0.045	2.085	0.037	1.333
	sewage network	0.035	0.934	0.351	1.272
	natural gas pipes network	-0.028	-1.179	0.239	1.451
	schools	0.341	0.744	0.457	1.485
	beds in hospitals	0.014	1.817	0.069	1.072
	rank2008	0.482	2.634	0.009	1.093
lodgings NIS B R² (%) = 13.5% p-value < 0.001 F = 8.556 (results for H3.2a)	b ₀ (intercept)	-0.738	-0.066	0.947	-
	monuments	-0.043	-0.719	0.472	1.122
	protect-areas	0.292	2.397	0.017	1.127
	extra-resources/extra points	2.385	5.182	< 0.001	1.092
	20 km to county residence	-1.732	-2.294	0.022	1.208
	roads	-0.121	-0.401	0.689	1.239
	population	-0.001	-3.221	0.001	2.272
	women	-2.213	-0.099	0.921	1.094
	Romanians	-0.455	-0.473	0.636	1.055
	% unemployment	-0.130	-1.742	0.082	1.095
	active firms	0.027	5.835	< 0.001	2.249
	drinking water network	0.040	1.687	0.062	1.347
	sewage network	0.031	0.813	0.417	1.276
	natural gas pipes network	-0.034	-1.450	0.147	1.478
	schools	0.292	0.638	0.524	1.489
	beds in hospitals	0.013	1.699	0.090	1.076
	rank2008	0.207	0.914	0.361	1.673
rank2012	0.103	2.071	0.039	2.093	
lodgings MoT A R² (%) = 15.8% p-value < 0.001	b ₀ (intercept)	6.568	0.410	0.682	-
	monuments	-0.019	-0.219	0.827	1.104
	protect-areas	0.515	2.967	0.013	1.114

948 communes with 2012 ranking					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
F = 10.883 (results for H3.2bis)	extra-resources/extra points	3.239	4.953	< 0.001	1.075
	20 km to county residence	-2.869	-2.655	0.008	1.208
	roads	-0.015	-0.037	0.971	1.151
	population	-0.001	-3.284	< 0.001	2.226
	women	-16.506	-0.520	0.603	1.090
	Romanians	-1.041	-0.757	0.449	1.054
	% unemployment	-0.204	-1.923	0.055	1.091
	active firms	0.046	6.984	< 0.001	2.246
	drinking water network	0.071	2.327	0.020	1.333
	sewage network	0.074	1.371	0.171	1.272
	natural gas pipes network	-0.060	-1.780	0.075	1.451
	schools	0.382	0.583	0.560	1.485
	beds in hospitals	0.027	2.209	0.027	1.072
	rank2008	0.851	3.253	0.001	1.093
lodgings MoT B R² (%) = 16.5% p-value < 0.001 F = 10.773 (results for H3.2a-bis)	b ₀ (intercept)	7.853	0.492	0.623	-
	monuments	-0.049	-0.567	0.571	1.122
	protect-areas	0.464	2.671	0.008	1.127
	extra-resources/extra points	3.014	4.591	< 0.001	1.092
	20 km to county residence	-2.881	-2.677	0.008	1.208
	roads	-0.334	-0.777	0.437	1.239
	population	-0.001	-3.421	0.001	2.272
	women	-22.291	-0.703	0.482	1.094
	Romanians	-1.134	-0.872	0.408	1.055
	% unemployment	-0.187	-1.757	0.079	1.095
	active firms	0.046	6.914	< 0.001	2.249
	drinking water network	0.062	2.040	0.042	1.347
	sewage network	0.066	1.211	0.226	1.276
	natural gas pipes network	-0.073	-2.146	0.032	1.478
	schools	0.288	0.441	0.660	1.489
beds in hospitals	0.022	2.054	0.040	1.076	

948 communes with 2012 ranking					
Dependent variable & model results	Independent variables	Estimate	T-statistic	p-value	VIF
	rank2008	0.323	1.001	0.317	1.673
	rank2012	0.198	2.783	0.005	2.093

Note: The variables 'employees' and 'dwellings' were eliminated due to collinearity (VIF > 5)

Source: authors' calculations

Annex 10 (Source: authors' calculations)

Annex 10-1: PLS-SEM results for the 2,861 communes considering NIS lodgings (Source: authors' calculations)

Annex 10-1A: Total effects

	NIS lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
NIS lodgings	-							
rank2008	0.149 (inner VIF: 1.242)	-						
tourist attractions	0.197 (inner VIF: 1.268)	0.428 (inner VIF: 1.040)	-					
road access	-0.002 (inner VIF: 1.093)	-0.048 (inner VIF: 1.090)	-	-				
info population	-0.026 (inner VIF: 1.429)	0.050 (inner VIF: 1.426)	-	-	-			
economic status	0.152 (inner VIF: 1.882)	0.059 (inner VIF: 1.877)	-	-	-	-		
utilities	0.033 (inner VIF: 1.541)	0.026 (inner VIF: 1.540)	-	-	-	-	-	
other facilities	0.012 (inner VIF: 1.751)	-0.048 (inner VIF: 1.749)	-	-	-	-	-	-

Annex 10-1B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
NIS lodgings	1.000	1.000	1.000	1.000
rank2008	1.000	1.000	1.000	1.000
tourist attractions	-	1.000	-	-
road access	-	1.000	-	-
info population	-	1.000	-	-
economic status	-	1.000	-	-
utilities	-	1.000	-	-
other facilities	-	1.000	-	-

**Annex 10-1C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)**

	NIS lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
NIS lodgings	1.000	-	-	-	-	-	-	-
rank2008	0.220 (0.220)	1.000	-	-	-	-	-	-
tourist attractions	0.210	0.432	-	-	-	-	-	-
road access	0.058	0.005	0.082	-	-	-	-	-
info population	0.085	0.112	0.139	0.177	-	-	-	-
economic status	0.180	0.085	0.072	0.283	0.428	-	-	-
utilities	0.140	0.109	0.145	0.208	0.392	0.553	-	-
other facilities	0.130	0.073	0.145	0.235	0.496	0.583	0.433	-

Annex 10-1D: Total effects T-statistic and p-values

	T-statistic	P-value
rank2008 → NIS lodgings	6.673	0.000
tourist attractions → NIS lodgings	3.743	0.000
tourist attractions → rank2008	24.957	0.000
road access → NIS lodgings	0.215	0.830
road access → rank2008	2.186	0.029
info population → NIS lodgings	0.838	0.402
info population → rank2008	1.070	0.285
economic status → NIS lodgings	3.919	0.000
economic status → rank2008	2.323	0.021
utilities → NIS lodgings	0.935	0.350
utilities → rank2008	1.187	0.236
other facilities → NIS lodgings	0.444	0.657
other facilities → rank2008	1.579	0.115

Annex 10-2: PLS-SEM results for the 2,861 communes considering MoT lodgings (Source: authors' calculations)

Annex 10-2A: Total effects

	MoT lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
MoT lodgings	-							
rank2008	0.165 (inner VIF: 1.242)	-						
tourist attractions	0.210 (inner VIF: 1.268)	0.428 (inner VIF: 1.041)	-					
road access	-0.010	-0.047	-	-				

	MoT lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
	(inner VIF: 1.095)	(inner VIF: 1.092)						
info population	-0.028 (inner VIF: 1.460)	0.048 (inner VIF: 1.457)	-	-	-			
economic status	0.170 (inner VIF: 1.875)	0.059 (inner VIF: 1.871)	-	-	-	-		
utilities	0.040 (inner VIF: 1.504)	0.026 (inner VIF: 1.503)	-	-	-	-	-	
other facilities	0.016 (inner VIF: 1.767)	-0.049 (inner VIF: 1.764)	-	-	-	-	-	-

Annex 10-2B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
MoT lodgings	1.000	1.000	1.000	1.000
rank2008	1.000	1.000	1.000	1.000
tourist attractions	-	1.000	-	-
road access	-	1.000	-	-
info population	-	1.000	-	-
economic status	-	1.000	-	-
utilities	-	1.000	-	-
other facilities	-	1.000	-	-

**Annex 10-2C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)**

	MoT lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
MoT lodgings	1.000	-	-	-	-	-	-	-
rank2008	0.240 (0.240)	1.000	-	-	-	-	-	-
tourist attractions	0.226	0.432	-	-	-	-	-	-
road access	0.057	0.050	0.081	-	-	-	-	-
info population	0.098	0.111	0.142	0.181	-	-	-	-
economic status	0.201	0.085	0.073	0.256	0.443	-	-	-
utilities	0.156	0.108	0.146	0.206	0.392	0.540	-	-
other facilities	0.146	0.074	0.144	0.238	0.510	0.586	0.421	-

Annex 10-2D: Total effects T-statistic and p-values

	T-statistic	P-value
rank2008 → MoT lodgings	6.592	0.000
tourist attractions → MoT lodgings	4.663	0.000
tourist attractions → rank2008	26.984	0.000
road access → MoT lodgings	0.083	0.934
road access → rank2008	2.058	0.040
info population → MoT lodgings	0.905	0.366
info population → rank2008	1.040	0.299
economic status → MoT lodgings	4.514	0.000
economic status → rank2008	2.409	0.016
utilities → MoT lodgings	1.175	0.241

	T-statistic	P-value
utilities → rank2008	1.340	0.181
other facilities → MoT lodgings	0.506	0.613
other facilities → rank2008	1.761	0.079

Annex 11 (Source: authors' calculations)

Annex 11-1: PLS-SEM results for the 1,913 communes considering NIS lodgings (Note: from latent variable 'info population' the variable 'employees' was eliminated due to collinearity; Source: authors' calculations)

Annex 11-1A: Total effects

	NIS lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
NIS lodgings	-							
rank2008	0.134 (inner VIF: 1.063)	-						
tourist attractions	0.067 (inner VIF: 1.118)	0.234 (inner VIF: 1.060)	-					
road access	0.106 (inner VIF: 1.230)	-0.047 (inner VIF: 1.227)	-	-				
info population	0.072 (inner VIF: 2.056)	0.009 (inner VIF: 2.005)	-	-	-			
economic status	0.208 (inner VIF: 2.471)	0.045 (inner VIF: 2.469)	-	-	-	-		
utilities	0.086 (inner VIF: 1.939)	0.051 (inner VIF: 1.936)	-	-	-	-	-	
other facilities	-0.075 (inner VIF: 2.295)	-0.053 (inner VIF: 2.292)	-	-	-	-	-	-

Annex 11-1B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
NIS lodgings	1.000	1.000	1.000	1.000
rank2008	1.000	1.000	1.000	1.000
tourist attractions	-	1.000	-	-
road access	-	1.000	-	-
info population	-	1.000	-	-
economic status	-	1.000	-	-
utilities	-	1.000	-	-
other facilities	-	1.000	-	-

**Annex 11-1C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)**

	NIS lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
NIS lodgings	1.000	-	-	-	-	-	-	-
rank2008	0.160 (0.160)	1.000	-	-	-	-	-	-
tourist attractions	0.106	0.232	-	-	-	-	-	-
road access	0.220	-0.009	0.086	-	-	-	-	-
info population	0.218	0.049	0.185	0.312	-	-	-	-
economic status	0.310	0.054	0.094	0.412	0.533	-	-	-
utilities	0.266	0.080	0.142	0.283	0.481	0.678	-	-
other facilities	0.191	0.038	0.209	0.330	0.690	0.607	0.474	-

Annex 11-1D: Total effects T-statistic and p-values

	T-statistic	P-value
rank2008 → NIS lodgings	3.995	0.000
tourist attractions → NIS lodgings	1.319	0.188
tourist attractions → rank2008	10.795	0.000
road access → NIS lodgings	3.458	0.000
road access → rank2008	1.713	0.087
info population → NIS lodgings	1.609	0.108
info population → rank2008	0.176	0.860
economic status → NIS lodgings	2.621	0.009
economic status → rank2008	1.261	0.208
utilities → NIS lodgings	2.126	0.034
utilities → rank2008	1.661	0.097
other facilities → NIS lodgings	1.973	0.049
other facilities → rank2008	1.412	0.159

Annex 11-2: PLS-SEM results for the 1,913 communes considering MoT lodgings (Note: from latent variable 'info population' the variable 'employees' was eliminated due to collinearity; Source: authors' calculations)

Annex 11-2A: Total effects

	MoT lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
MoT lodgings	-							
rank2008	0.151 (inner VIF: 1.063)	-						
tourist attractions	0.089 (inner VIF: 1.121)	0.234 (inner VIF: 1.063)	-					

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	MoT lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
road access	0.111 (inner VIF: 1.234)	-0.045 (inner VIF: 1.232)	-	-				
info population	0.099 (inner VIF: 1.805)	0.000 (inner VIF: 1.805)	-	-	-			
economic status	0.226 (inner VIF: 2.442)	0.048 (inner VIF: 2.420)	-	-	-	-		
utilities	0.094 (inner VIF: 1.939)	0.051 (inner VIF: 1.936)	-	-	-	-	-	
other facilities	-0.087 (inner VIF: 2.059)	-0.051 (inner VIF: 2.056)	-	-	-	-	-	-

Annex 11-2B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
MoT lodgings	1.000	1.000	1.000	1.000
rank2008	1.000	1.000	1.000	1.000
tourist attractions	-	1.000	-	-
road access	-	1.000	-	-
info population	-	1.000	-	-
economic status	-	1.000	-	-
utilities	-	1.000	-	-
other facilities	-	1.000	-	-

Annex 11-2C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)

	MoT lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
MoT lodgings	1.000	-	-	-	-	-	-	-
rank2008	0.183 (0.183)	1.000	-	-	-	-	-	-
tourist attractions	0.133	0.231	-	-	-	-	-	-
road access	0.241	-0.008	0.083	-	-	-	-	-
info population	0.254	0.046	0.184	0.297	-	-	-	-
economic status	0.343	0.054	0.092	0.418	0.510	-	-	-
utilities	0.298	0.081	0.153	0.293	0.473	0.675	-	-
other facilities	0.212	0.036	0.208	0.330	0.632	0.599	0.481	-

Annex 11-2D: Total effects T-statistic and p-values

	T-statistic	P-value
rank2008 → MoT lodgings	5.040	0.000
tourist attractions → MoT lodgings	2.200	0.028
tourist attractions → rank2008	10.932	0.000
road access → MoT lodgings	3.760	0.000
road access → rank2008	1.739	0.087
info population → MoT lodgings	1.642	0.101
info population → rank2008	0.001	0.999
economic status → MoT lodgings	3.623	0.000
economic status → rank2008	1.505	0.133
utilities → MoT lodgings	2.574	0.010

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	T-statistic	P-value
utilities → rank2008	1.844	0.066
other facilities → MoT lodgings	2.242	0.025
other facilities → rank2008	1.579	0.115

Annex 12 (Source: authors' calculations)

Annex 12-1: PLS-SEM results for the 948 communes without considering rank2012 and considering NIS lodgings

(Source: authors' calculations)

Annex 12-1A: Total effects (and inner VIF)

	NIS lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
NIS lodgings	-							
rank2008	0.089 (inner VIF: 1.082)	-						
tourist attractions	0.215 (inner VIF: 1.101)	0.271 (inner VIF: 1.021)	-					
road access	-0.002 (inner VIF: 1.109)	-0.051 (inner VIF: 1.107)	-	-				
info population	-0.106 (inner VIF: 2.030)	0.027 (inner VIF: 2.029)	-	-	-			
economic status	0.213 (inner VIF: 1.933)	0.051 (inner VIF: 1.930)	-	-	-	-		
utilities	0.085 (inner VIF: 1.307)	0.008 (inner VIF: 1.307)	-	-	-	-	-	
other facilities	0.044 (inner VIF: 2.034)	-0.044 (inner VIF: 2.032)	-	-	-	-	-	-

Annex 12-1B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
NIS lodgings	1.000	1.000	1.000	1.000
rank2008	1.000	1.000	1.000	1.000
tourist attractions	-	1.000	-	-
road access	-	1.000	-	-
info population	-	1.000	-	-
economic status	-	1.000	-	-
utilities	-	1.000	-	-
other facilities	-	1.000	-	-

**Annex 12-1C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)**

	NIS lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
NIS lodgings	1.000	-	-	-	-	-	-	-
rank2008	0.149 (0.149)	1.000	-	-	-	-	-	-
tourist attractions	0.228	0.267	-	-	-	-	-	-
road access	0.051	-0.034	0.022	-	-	-	-	-
info population	0.083	0.016	-0.003	0.288	-	-	-	-
economic status	0.217	0.033	0.010	0.256	0.595	-	-	-
utilities	0.168	0.038	0.076	0.162	0.410	0.442	-	-
other facilities	0.156	0.018	0.086	0.243	0.646	0.615	0.356	-

Annex 12-1D: Total effects T-statistic and p-values

	T-statistic	P-value
rank2008 → NIS lodgings	3.957	0.000
tourist attractions → NIS lodgings	6.183	0.000
tourist attractions → rank2008	9.413	0.000
road access → NIS lodgings	0.043	0.996
road access → rank2008	1.417	0.157
info population → NIS lodgings	1.308	0.193
info population → rank2008	0.376	0.707
economic status → NIS lodgings	2.411	0.016
economic status → rank2008	1.232	0.218
utilities → NIS lodgings	1.798	0.073
utilities → rank2008	0.798	0.846
other facilities → NIS lodgings	0.663	0.508
other facilities → rank2008	0.798	0.425

Annex 12-2: PLS-SEM results for the 948 communes without considering rank2012 and considering MoT lodgings
(Source: authors' calculations)

Annex 12-2A: Total effects (and inner VIF)

	MoT lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
MoT lodgings	-							
rank2008	0.106 (inner VIF: 1.083)	-						
tourist attractions	0.215 (inner VIF: 1.099)	0.271 (inner VIF: 1.020)	-					

	MoT lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
road access	-0.016 (inner VIF: 1.099)	-0.049 (inner VIF: 1.097)	-	-				
info population	-0.162 (inner VIF: 2.249)	-0.008 (inner VIF: 2.249)	-	-	-			
economic status	0.263 (inner VIF: 1.998)	0.060 (inner VIF: 1.994)	-	-	-	-		
utilities	0.107 (inner VIF: 1.275)	0.015 (inner VIF: 1.274)	-	-	-	-	-	
other facilities	0.075 (inner VIF: 2.146)	-0.030 (inner VIF: 2.145)	-	-	-	-	-	-

Annex 12-2B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
MoT lodgings	1.000	1.000	1.000	1.000
rank2008	1.000	1.000	1.000	1.000
tourist attractions	-	1.000	-	-
road access	-	1.000	-	-
info population	-	1.000	-	-
economic status	-	1.000	-	-
utilities	-	1.000	-	-
other facilities	-	1.000	-	-

Annex 12-2C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)

	MoT lodgings	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
MoT lodgings	1.000	-	-	-	-	-	-	-
rank2008	0.170 (0.171)	1.000	-	-	-	-	-	-
tourist attractions	0.231	0.269	-	-	-	-	-	-
road access	0.050	-0.034	0.024	-	-	-	-	-
info population	0.096	0.004	0.007	0.265	-	-	-	-
economic status	0.250	0.033	0.012	0.262	0.633	-	-	-
utilities	0.193	0.040	0.075	0.152	0.402	0.424	-	-
other facilities	0.178	0.018	0.087	0.246	0.683	0.621	0.341	-

Annex 12-2D: Total effects T-statistic and p-values

	T-statistic	P-value
rank2008 → MoT lodgings	4.167	0.000
tourist attractions → MoT lodgings	6.117	0.028
tourist attractions → rank2008	8.669	0.000
road access → MoT lodgings	0.131	0.872
road access → rank2008	1.246	0.213
info population → MoT lodgings	1.777	0.076
info population → rank2008	0.106	0.916
economic status → MoT lodgings	2.620	0.009
economic status → rank2008	1.389	0.166
utilities → MoT lodgings	2.381	0.018

	T-statistic	P-value
utilities → rank2008	0.417	0.677
other facilities → MoT lodgings	0.966	0.335
other facilities → rank2008	0.516	0.606

Annex 13 (Source: authors' calculations)

Annex 13-1: PLS-SEM results for the 948 communes rank2012 included and considering NIS lodgings (Source: authors' calculations)

Annex 13-1A: Total effects (and inner VIF)

	NIS lodgings	rank 2012	rank 2008	tourist attractions	road access	info population	economic status	utilities	other facilities
NIS lodgings	-								
rank2012	0.084 (inner VIF: 2.074)	-							
rank2008	0.094 (inner VIF: 1.658)	0.524 (inner VIF: 1.088)	-						
tourist attractions	0.199 (inner VIF: 1.165)	0.306 (inner VIF: 1.111)	0.276 (inner VIF: 1.028)	-					
road access	-0.027 (inner VIF: 1.275)	0.165 (inner VIF: 1.192)	-0.069 (inner VIF: 1.187)	-	-				
info population	-0.110 (inner VIF: 2.478)	0.094 (inner VIF: 2.466)	0.036 (inner VIF: 2.465)	-	-	-			
economic status	0.178 (inner VIF: 2.351)	0.158 (inner VIF: 2.332)	0.117 (inner VIF: 2.317)	-	-	-	-		
utilities	0.050 (inner VIF: 1.641)	0.140 (inner VIF: 1.591)	-0.029 (inner VIF: 1.590)	-	-	-	-	-	
other facilities	0.079 (inner VIF: 2.559)	-0.044 (inner VIF: 2.559)	-0.093 (inner VIF: 2.549)	-	-	-	-	-	-

Annex 13-1B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
NIS lodgings	1.000	1.000	1.000	1.000
rank2012	1.000	1.000	1.000	1.000
rank2008	1.000	1.000	1.000	1.000
tourist attractions	-	1.000	-	-
road access	-	1.000	-	-
info population	-	1.000	-	-
economic status	-	1.000	-	-
utilities	-	1.000	-	-
other facilities	-	1.000	-	-

**Annex 13-1C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)**

	NIS lodgings	rank 2012	rank 2008	tourist attractions	road access	info population	economic status	utilities	other facilities
NIS lodgings	1.000	-	-	-	-	-	-	-	-
rank2012	0.211 (0.211)	1.000	-	-	-	-	-	-	-
rank2008	0.149 (0.149)	0.569 (0.569)	1.000	-	-	-	-	-	-
tourist attractions	0.214	0.329	0.266	-	-	-	-	-	-
road access	0.046	0.290	-0.038	0.032	-	-	-	-	-
info population	0.083	0.293	0.017	0.043	0.323	-	-	-	-
economic status	0.186	0.344	0.047	0.036	0.377	0.626	-	-	-
utilities	0.151	0.333	0.024	0.100	0.272	0.474	0.587	-	-
other facilities	0.151	0.273	0.009	0.116	0.282	0.738	0.647	0.453	-

Annex 13-1D: Total effects T-statistic and p-values

	T-statistic	P-value
rank2012 → NIS lodgings	2.060	0.040
rank2008 → NIS lodgings	1.810	0.071
rank2008 → rank2012	16.898	0.000
tourist attractions → NIS lodgings	4.207	0.000
tourist attractions → rank2012	5.655	0.000
tourist attractions → rank2008	9.291	0.000
road access → NIS lodgings	1.001	0.317
road access → rank2012	7.724	0.000
road access → rank2008	1.891	0.059
info population → NIS lodgings	2.019	0.044
info population → rank2012	1.906	0.057
info population → rank2008	0.567	0.561
economic status → NIS lodgings	1.460	0.145
economic status → rank2012	2.822	0.005
economic status → rank2008	2.498	0.013
utilities → NIS lodgings	0.669	0.504
utilities → rank2012	5.305	0.000
utilities → rank2008	0.811	0.418
other facilities → NIS lodgings	1.384	0.167
other facilities → rank2012	0.106	0.916
other facilities → rank2008	1.495	0.136

Annex 13-2: PLS-SEM results for the 948 communes rank2012 included and considering MoT lodgings (Source: authors' calculations)

Annex 13-2A: Total effects (and inner VIF)

	MoT lodgings	rank2012	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
MoT lodgings	-								
rank2012	0.110 (inner VIF: 2.069)	-							
rank2008	0.113	0.524	-						

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	MoT lodgings	rank2012	rank2008	tourist attractions	road access	info population	economic status	utilities	other facilities
	(inner VIF: 1.657)	(inner VIF: 1.088)							
tourist attractions	0.203 (inner VIF: 1.165)	0.306 (inner VIF: 1.112)	0.277 (inner VIF: 1.028)	-					
road access	-0.042 (inner VIF: 1.274)	0.167 (inner VIF: 1.189)	-0.069 (inner VIF: 1.184)	-	-				
info population	-0.142 (inner VIF: 2.515)	0.096 (inner VIF: 2.502)	0.033 (inner VIF: 2.501)	-	-	-			
economic status	0.230 (inner VIF: 2.397)	0.153 (inner VIF: 2.380)	0.116 (inner VIF: 2.365)	-	-	-	-		
utilities	0.052 (inner VIF: 1.635)	0.141 (inner VIF: 1.585)	-0.027 (inner VIF: 1.584)	-	-	-	-	-	
other facilities	0.092 (inner VIF: 2.592)	-0.045 (inner VIF: 2.592)	-0.092 (inner VIF: 2.583)	-	-	-	-	-	-

Annex 13-2B: Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite reliability	Average Variance Extracted (AVE)
MoT lodgings	1.000	1.000	1.000	1.000
rank2012	1.000	1.000	1.000	1.000
rank2008	1.000	1.000	1.000	1.000
tourist attractions	-	1.000	-	-
road access	-	1.000	-	-
info population	-	1.000	-	-
economic status	-	1.000	-	-
utilities	-	1.000	-	-
other facilities	-	1.000	-	-

Annex 13-2C: Discriminant validity: Fornell-Larker Criterion
(and Heterotrait-Monotrait Ratio)

	NIS lodgings	rank 2012	rank 2008	tourist attractions	road access	info population	economic status	utilities	other facilities
NIS lodgings	1.000	-	-	-	-	-	-	-	-
rank2012	0.241 (0.241)	1.000	-	-	-	-	-	-	-
rank2008	0.170 (0.170)	0.569 (0.569)	1.000	-	-	-	-	-	-
tourist attractions	0.219	0.329	0.267	-	-	-	-	-	-
road access	0.046	0.290	-0.038	0.033	-	-	-	-	-
info population	0.092	0.293	0.016	0.042	0.322	-	-	-	-
economic status	0.222	0.341	0.046	0.037	0.376	0.635	-	-	-
utilities	0.169	0.331	0.025	0.099	0.269	0.475	0.587	-	-
other facilities	0.172	0.272	0.010	0.117	0.283	0.741	0.655	0.447	-

Annex 13-2D: Total effects T-statistic and p-values

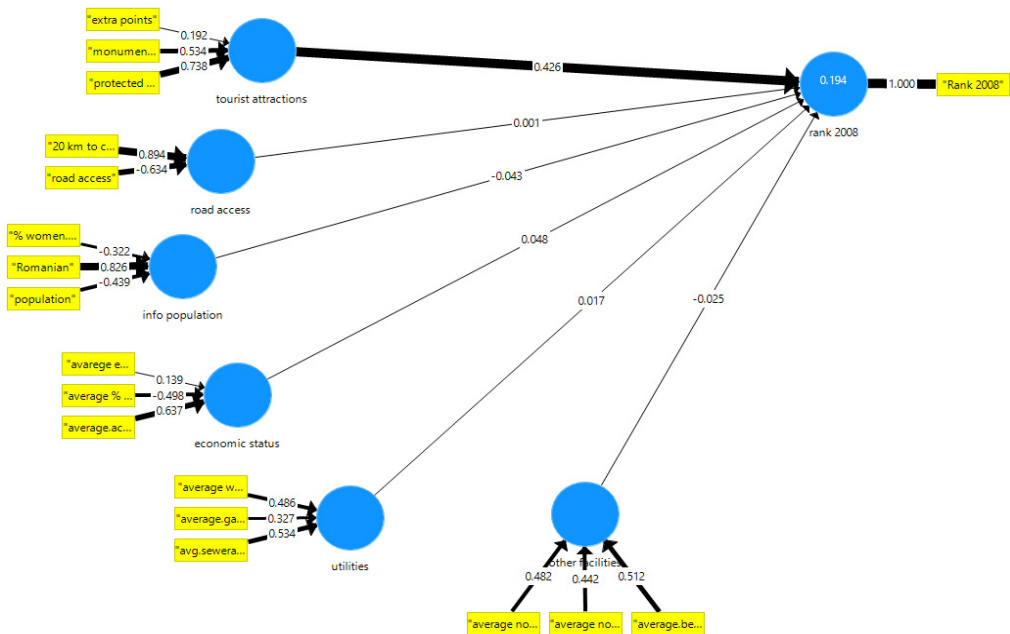
	T-statistic	P-value
rank2012 → MoT lodgings	2.730	0.007
rank2008 → MoT lodgings	1.667	0.096
rank2008 → rank2012	16.257	0.000
tourist attractions → MoT lodgings	4.506	0.000
tourist attractions → rank2012	5.851	0.000
tourist attractions → rank2008	8.742	0.000
road access → MoT lodgings	1.289	0.198
road access → rank2012	8.156	0.000
road access → rank2008	1.934	0.056
info population → MoT lodgings	2.345	0.019

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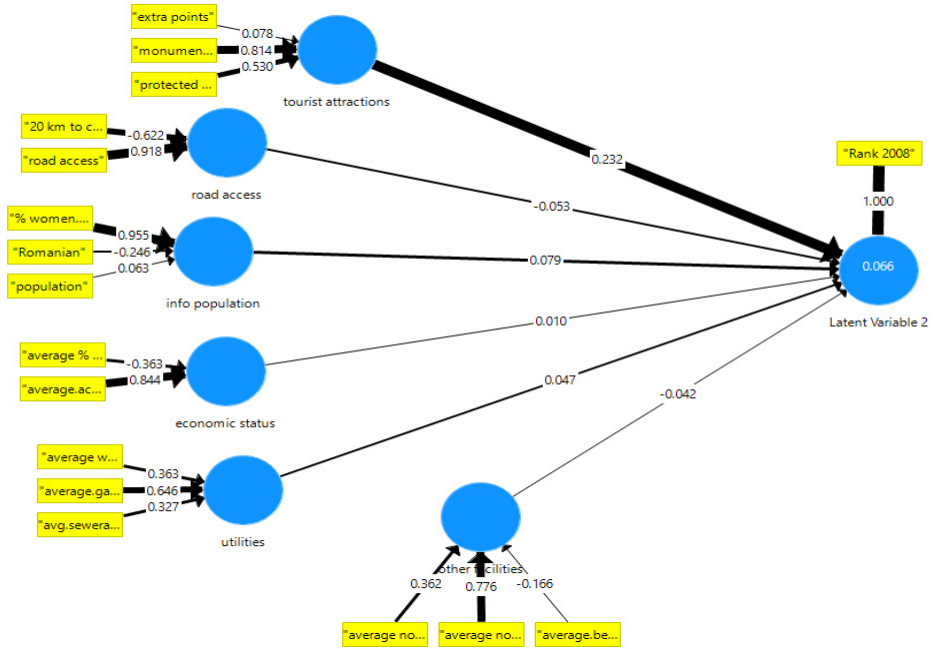
	T-statistic	P-value
info population → rank2012	1.913	0.056
info population → rank2008	0.537	0.592
economic status → MoT lodgings	1.608	0.108
economic status → rank2012	2.576	0.010
economic status → rank2008	2.503	0.013
utilities → MoT lodgings	0.590	0.556
utilities → rank2012	4.990	0.000
utilities → rank2008	0.723	0.470
other facilities → MoT lodgings	1.512	0.131
other facilities → rank2012)	0.076	0.939
other facilities → rank2008	0.142	0.142

Annex 14: Results of PLS-SEM by hypotheses (Source: authors' compilation)

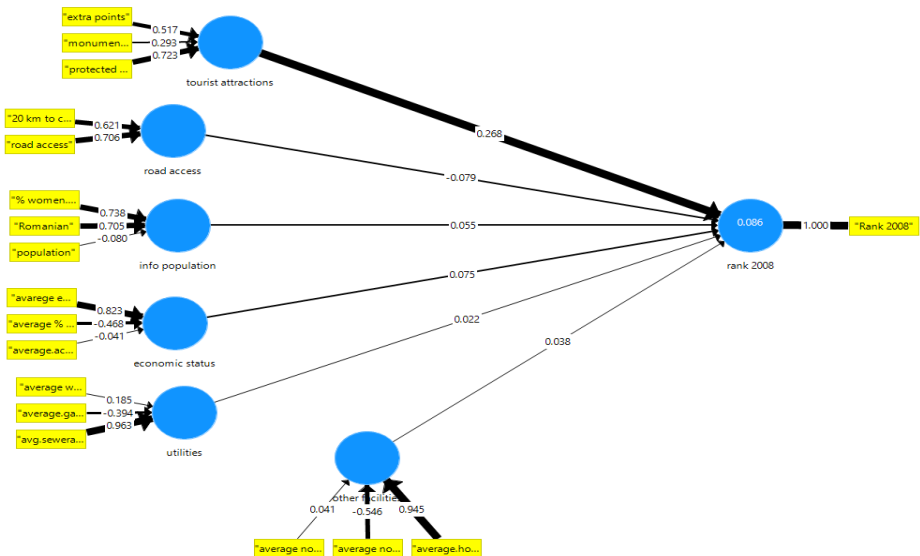
Annex 14.1: Testing 2008 rank for all communes (H1)



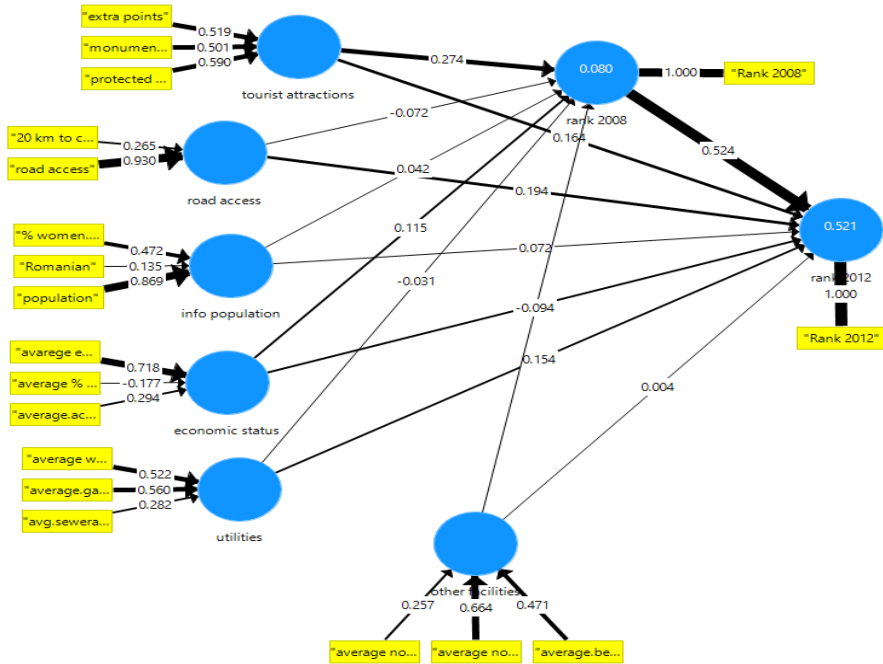
Annex 14.2: Testing 2008 rank for 1,913 communes without 2012 rank (H1.1)



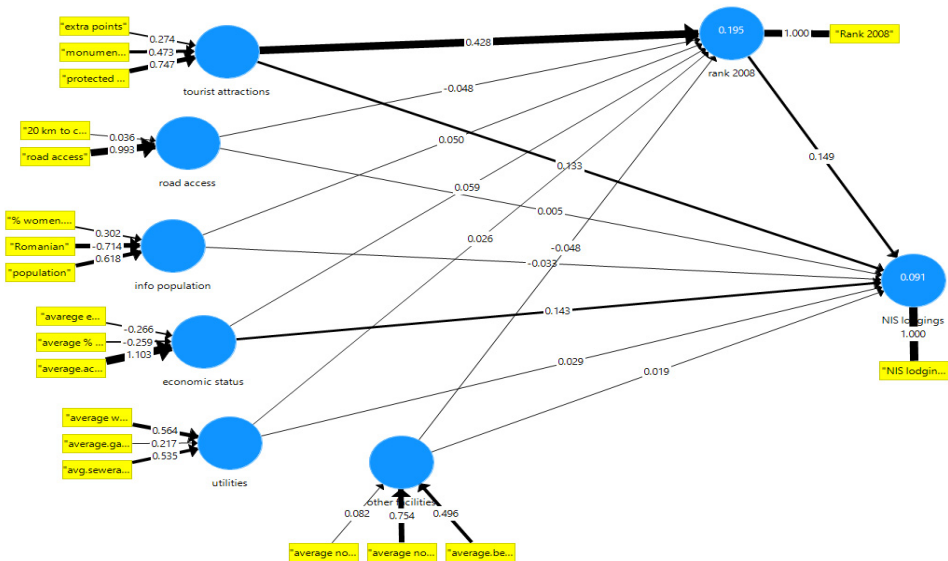
Annex 14.3: Testing 2008 rank for 948 communes with 2012 rank (H1.2)



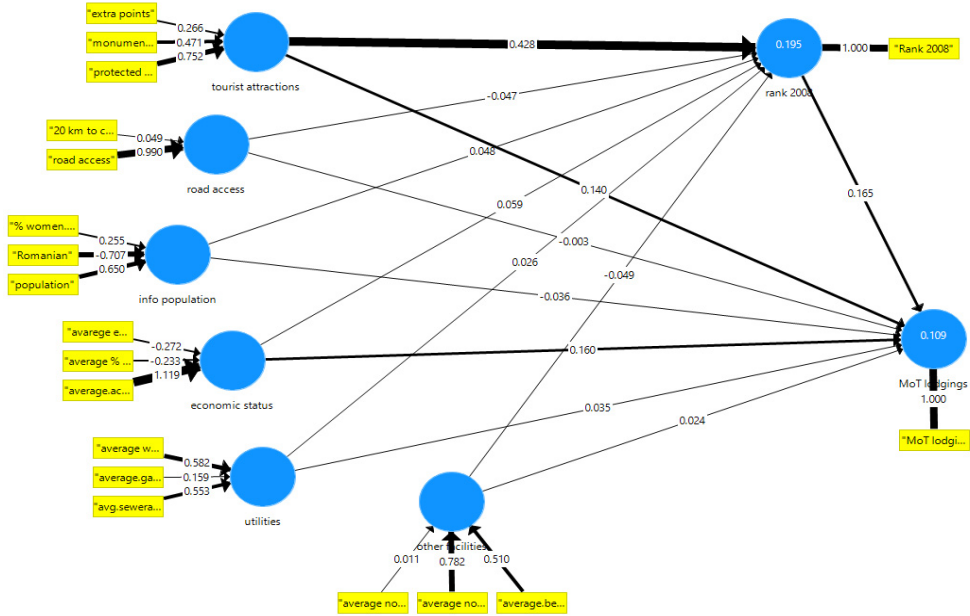
Annex 14.4: Testing 2012 rank for 948 communes with 2012 rank (H2.1)



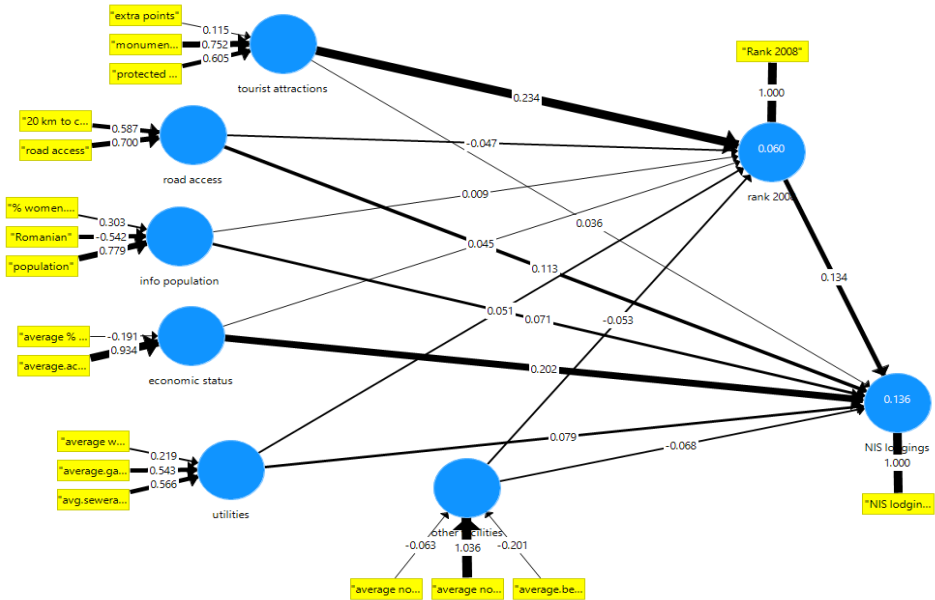
Annex 14.5: Testing NIS lodgings for all communes (H3)



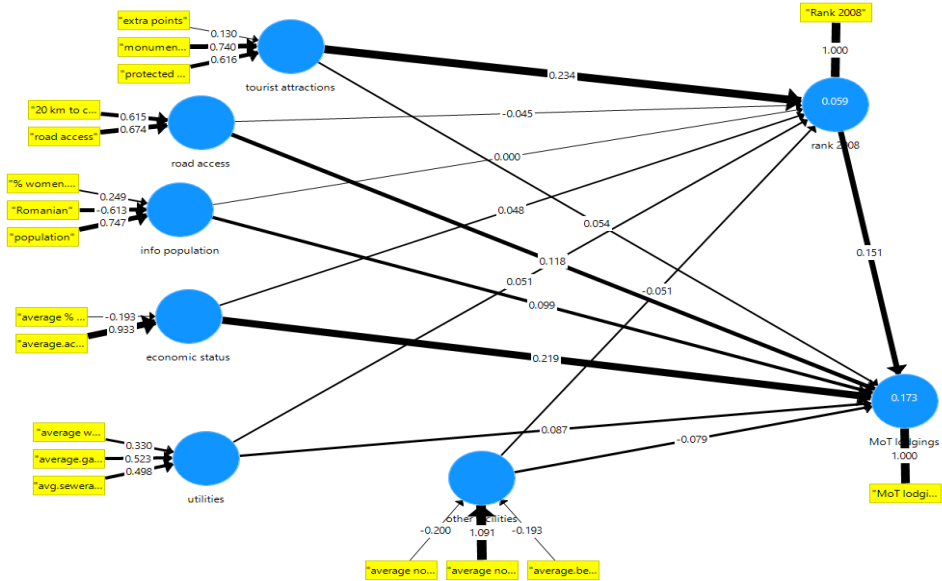
Annex 14.6: Testing MoT lodgings for all communes (H3bis)



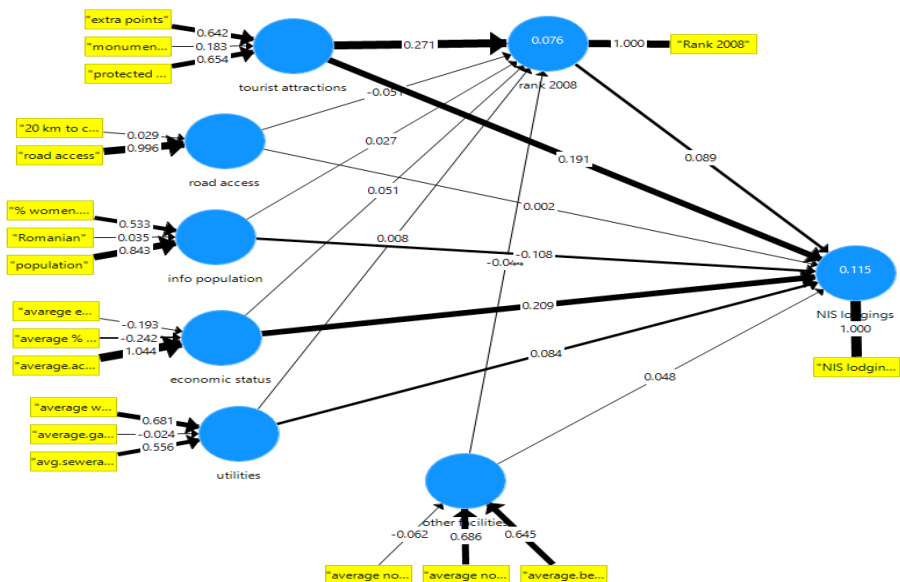
Annex 14.7: Testing NIS lodgings for 1,913 communes without 2012 rank (H3.1)



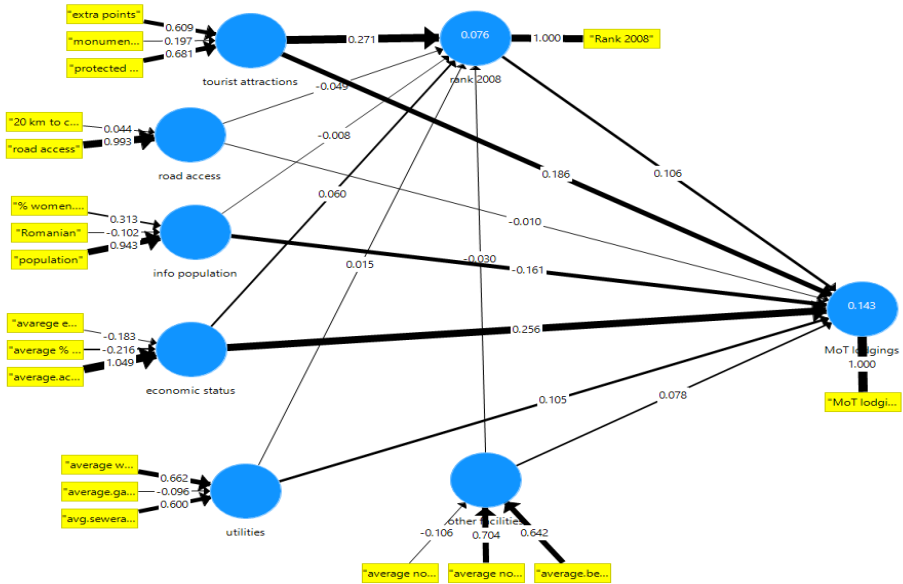
Annex 14.8: Testing MoT lodgings for 1,913 communes without 2012 rank (H3.1bis)



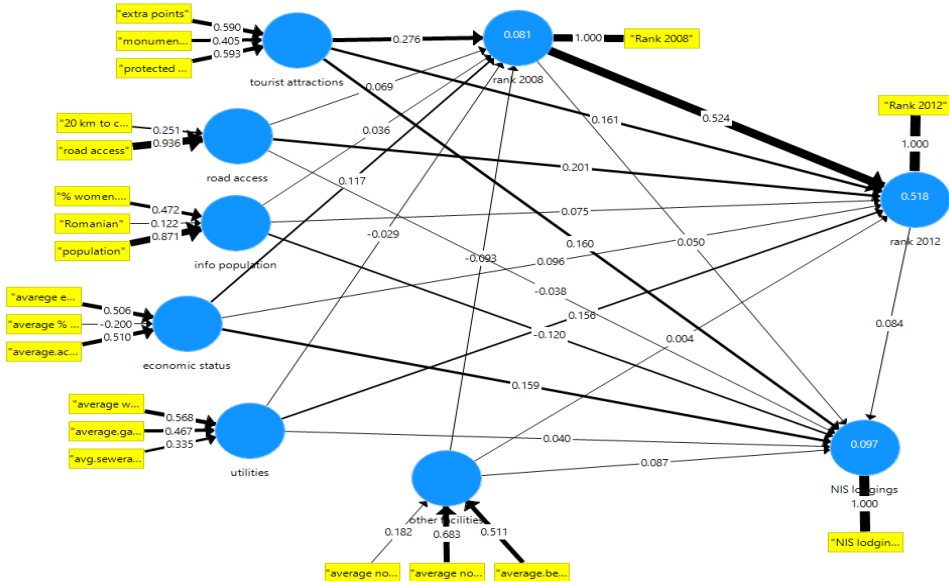
Annex 14.9: Testing NIS lodgings for 948 communes with 2012 rank - 2012 rank not included among factors (H3.2)



Annex 14.10: Testing MoT lodgings for 948 communes with 2012 rank - 2012 rank not included among factors (H3.2bis)



Annex 14.11: Testing NIS lodgings for 948 communes with 2012 rank - 2012 rank included among factors (H3.2a)



Annex 14.12: Testing MoT lodgings for 948 communes with 2012 rank - 2012 rank included among factors (H3.2a-bis)

