

**RELATIONS BETWEEN MOUNTAIN TOURISM,  
DEMOGRAPHIC STRUCTURE AND EMPLOYMENT AT LOCAL  
LEVEL IN SERBIA**

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**Abstract**

*Mountain areas have various functions. The matter is prevailingly about their environmental values because geographically induced isolation of mountains makes them more difficult in terms of accessibility and intensive settling, which again have negative impact on their economic development. As literature stresses that tourism is one of the major means for economic diversification and activation of depopulated mountain areas, this research deals with trends and mutual relations between a basic demographic structure in mountain areas, employment and tourism at the local level. A set of representative variables from the field of demographics, employment and tourism are firstly analysed regarding recent ten-year trends and finally tested in their mutual dependence through a correlation analysis. The paper brings the whole range of results, but the main ones prove that there is a relation between population size, ageing index, a share of tourists and share of domestic tourists in mountain units of self-governance (municipalities or cities).*

**Key Words:** *mountain tourism, employment, demography, ski resorts, Serbia*

**JEL classification:** *J11, J14, J49*

**Introduction**

In academic literature, in strategic, planning and legislative documents, mountain areas are the most frequently recognised by three aspects: (1)

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problems and challenges that are more intensive than in other areas, (2) agricultural activities, and (3) tourism (BDMRRC, 2002; Dabić et al., 2002; Brewer Lama & Sattar, 2004; Price et al., 2004; Burdusel et al., 2006; Bogdanov, 2007; RASP, 2010). Thereby, agriculture and tourism are seen as complementary activities, where the former belongs to traditional economic model and the tourism got its later development influx, particularly when it comes to experiences of mountain areas outside of the West-European region (Bieberstein Koch-Weser & Kahlenborn, 2004; Milijić et al., 2008; Pantić & Živanović Miljković, 2010; Milijić, 2015). Tourism in general, including event tourism, is recognised as a tool for local development in any type of area (Bjeljac et al., 2013). Both alternatives – agriculture and tourism – are chosen to be the carriers of contemporary economic mountain development and as two out of few sustainable development pillars in the preservation of demographic capital and its vitality (Pantić, 2014; Milijić, 2015).

Tourism is a development generator – both commercial and non-commercial – that has a positive impact on the development of other activities in economically hindered regions, such as mountain areas (Milijić et al., 2008). An increasing number of tourists in the mountains creates new jobs, which is further related to mitigation of emigration and general demographic trends (Milijić et al., 2010; Pantić, 2014). Mountain tourism, particularly ski resorts, is one of the fastest growing sub-categories of tourism, not only in Western Europe, but also in Southeast Europe and Serbia (Milijić et al., 2010). Economic advantages of tourism development can be recognized in increased BDP, activation of financial inflow from outside of mountain regions and the country, etc. (Mililić, et al., 2008).

Similar to the global context, Serbian mountain areas, being delineated as areas above 600 m elevation (Pantić, 2015a), are entitled as areas with a higher extent of problems than it is the case at the national level or at the level of main gravitational zones (RASP, 2010). One of the problems is dealing with consequences of demographic change, which means that total population size in Serbian mountain areas and their units of local self-governance (ULS) are harshly influenced by depopulation, emigration and population ageing processes (Pantić, 2014). Between 1948 and 2002, mountain areas in Serbia lost 40% of its population and it grew older than national and EU-27 average (Ibid.). Since agriculture was a major economic activity in the mountains of Serbia before and during the intensive depopulation period (cca. since 1950) (Stojanović, 1990), most

of recent strategic and planning documents give the mountain areas a chance for revival through tourism development (RASP, 2010; Official Gazette, 2004; Official Gazette, 2016).

Population in economically hindered mountain ULSs in Serbia considers road infrastructure and enrichment of job offers/opportunities as the most relevant preconditions to motivate them to stay in the mountain areas and also to "invite" emigrants back (Pantić, 2015b). In addition, tourism is recognised as a proper development change for the population in the most developed mountain ULSs, too (Maksin et al., 2011). This indicates that agriculture, at least in the context it is developed in Serbia at the moment, is insufficient in providing acceptable economic effect and subsistence of the mountain population at their current location. Therefore, this paper focuses on connections between demographic trends and tourism, i.e. employment and tourism.

In the following sections, the presentation of this research is initially explained through applied methodology, after which comes analysis of chosen mountain ULSs in Serbia from the aspect of demographic trends, trends in employment, employment in tourism and tourism investments in the last ten years. After the presentation of recent trends, follows the section with results of the correlation analysis. The correlations were tested between variables from the field of demography, employment and tourism, i.e. the same variables that are presented in the previously mentioned section. Finally, the last section summarises the conclusions, including the elements of discussion regarding unexpected findings.

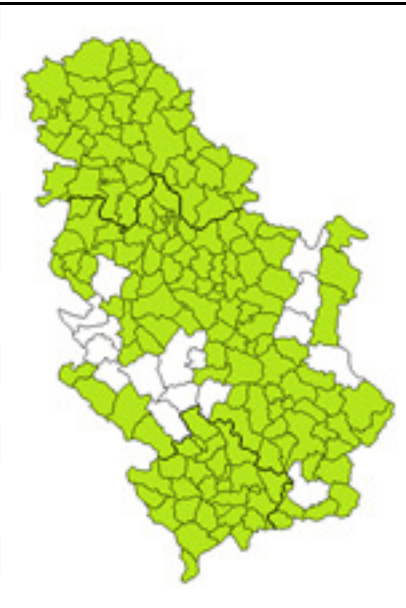
## **Methodology**

Regarding the focus of the research, the first methodological task was to determine representatives of mountain tourism, so that they are statistically measurable. Tourism activities are widely dispersed over Serbian mountain and hilly areas, but since the intensity and tourism development is rather insignificant if it is not systematically supported, organised and defined by spatial planning, the decision was made to keep this research focused on mountain tourism centres that include whether ski-tourism combined with accommodation options or other very well established tourism centres. In order to differentiate mountain from hilly areas, only those centres that lie above 600 m elevation were taken into consideration. The choice was finally shortened down to Besna Kobila,

Crni Vrh, Divčibare, Golija, Goč, Kopaonik, Rajkovo, Rtanj, Stara Planina, Tara – Mokra Gora, Zlatar and Zlatibor (Table 1).

The chosen approach was quantitative, in order to make it possible to compare different sorts of variables (demography, tourism, employment) at the level of each mountain tourism centre separately, as well as in their mutual comparison. Therefore, it was necessary to delineate each mountain tourism centre in the lowest possible unit for which there were available statistical data. The lowest possible administrative unit, in this case, were municipalities or cities, hence, the analysis was conducted on those ULSs to which the chosen mountain tourism centres pertained (Table 1).

Table 1: *Case studies – mountain tourism centres, corresponding ULSs and their spatial dispersion*

Mountain tourism centre	Corresponding ULS	Spatial dispersion of ULSs
Besna Kobila	Vranje	
Crni Vrh	Bor	
Divčibare	Valjevo	
Golija	Ivanjica	
	Novi Pazar	
Goč	Kraljevo	
	Vrnjačka Banja	
Kopaonik	Brus	
	Raška	
Rajkovo	Majdanpek	
Rtanj	Boļjevac	
Stara planina	Knjaževac	
Tara - Mokra Gora	Užice	
	Bajina Bašta	
Zlatar	Nova Varoš	
Zlatibor	Čajetina	

Source: *Elaborated by the authors*

Census data in Serbia are being collected and reported every ten years; meanwhile, many data at settlement or ULS level are not recorded. In order to show recent trends and to omit the issue with outdated data, this research is based on annual statistical publications that contain data on all targeted topics. The chosen time-frame is the ten-year period from 2007

to 2017. Overlapping two criteria – topics of the paper and available data – the following variables were chosen:

- Demography
  - Population size
  - Ageing index
- Employment
  - Share of working population
  - Number of unemployed per 1,000 inhabitants
- Tourism
  - Share of employees in tourism (restaurants and hotels)
  - Number of tourists per 1,000 inhabitants
  - Share of domestic tourists
  - Share of over-night stays of domestic tourists
  - Investments in tourism (new capital assets counting investments in accommodation and food services).

The analysis was conducted in two steps. In the first step, this research reports on a ten-year trend by each variable – for each ULS individually, but also in a summary for all mountain tourism centres. To secure comparability of the data, most of the variables were expressed in relative instead of absolute values. Only the population size and investments remained in absolute values.

A correlation analysis was the second step. The correlation was tested between all variables in a correlation matrix. In order to maximise comparability of variables of diverse value ranges, variable values prepared for the first step of the analysis were previously transformed into standardized values, and only as such used in correlation analysis. The analysis was conducted for each ULS individually, but also on data aggregated for chosen mountain tourism centres. It is relevant to mention that the data by each variable were aggregated in two ways: (1) variables for which absolute values were available in statistical reports were summed up, while (2) variables for which statistical reports offer only relative values (e.g. share of employees in tourism) were aggregated as average value of all mountain tourism centres. The major role in result interpretation had correlation analysis at the aggregated level, but individual case correlations were used to confirm and ease interpretation of results. The interpretation presented in the paper is limited to the strongest correlations: very strong (over 90% overlapping), strong (80-90% overlapping) and indicative (70-80% overlapping). Additional

interpretations are given in the notion of positive or negative dependence of variables.

One of the methodological limitations, that might have deviated the results, is the fact that some of the analysed ULSs encompass more than one touristic centre and that, besides one mountain centre, other touristic centres cannot be related to mountain tourism, but rather to spa- or city-tourism. Related to this is also the fact that analysed ULSs are of different size – some of them are rather small (e.g. Čajetina, Nova Varoš), while others represent regional centre (e.g. Kraljevo, Vranje). Another limitation is data on over-night stays of tourists, which are not considered complete due to households that provide accommodation services without prior issuance of a licence by corresponding bodies. They are not included in statistical reports. In addition, some of registered accommodation units do not report all over-night stays.

### **Demographic dynamics and population age<sup>3</sup>**

In the analysed period of time, population size has been constantly decreasing in the case of most analysed ULS. The largest exception is the City of Novi Pazar where, in contrast, number of inhabitants increased (in total by 12.4% from 2007 to 2017) (Statistical Office of the Republic of Serbia [SORS], 2009, 2010a, 2010b, 2011, 2012, 2013, 2014, 2015, 2016, 2017 and 2018). Besides Novi Pazar, Vrnjačka Banja can be also reported as an exception due to its persistent population size fluctuations – switches between increase and decrease, but where population size decreased (by 0.5%) comparing beginning and the end of the analysed decade. Another exception is the City of Kraljevo, where number of inhabitants increased in 2011, but only due to the changes in the Census methodology, which started to count internally displaced persons from Kosovo and Metohija as permanent residents. As Kraljevo is larger settlement the closest to the north administrative live with Kosovo and Metohija, it was one of the most attractive targets for the displaced population, which influenced demographic structure of the city. Regardless of the methodological influx of inhabitants (representing only

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3 This and the following three sections ("(Un)Employment Dynamics and (Un)Employment in Tourism", "Tourism Dynamics", "Correlation Analysis Results") are based on the following sources: Statistical Office of the Republic of Serbia, 2009, 2010a, 2010b, 2011, 2012, 2013, 2014, 2015, 2016, 2017 and 2018). Each presented result relates to all the listed sources; therefore, in order to omit repetition, the sources are not always referred through the sections.

mechanical increase), population size in Kraljevo continued to decrease until the end of the analysed period (by 0.3%). The largest population loss is registered in Majdanpek (by 21.2%), Boljevac (by 19.1%) and Nova Varoš (by 11.3%). In average, the analysed ULSs lost about 10% of population.

If demographic age is evaluated through ageing index<sup>4</sup>, population in analysed mountain municipalities/cities grew older by 54.3 index units from 2007 to 2017 (from 114.1 to 168.4). As it is taken that desirable index values range up to 40 index units, the populations with ageing index over 40 are considered to be ageing populations (Census, 2011). Therefore, an increase of over 50 index units during the analysed ten-year period in case of the mountain ULSs can be considered to be the ageing process of exponential progression. The only ULS that recorded index values under 40 at the beginning of the analysed period is Novi Pazar (39.0). The second youngest ULS is the City of Vranje with ageing index 75.4 at the beginning and 119.2 at the end of the ten-year period. Besides those two, Bor (96.5), Majdanpek (97.8) and Užice (98.7) also had index values under 100. Undoubtedly the oldest population age structure has Knjaževac, as it was in 2007, it continued as well in all consecutive years up to 2017 (214.6–254.7). The most progressive ageing trend was recorded in Nova Varoš where index leaped from 113.7 to 218.4, while Novi Pazar recorded the smallest increase (10.4 index points). The most intensive ageing processes, with exception of Novi Pazar, was registered in the transition from the year 2011 to 2012.

### **(Un)Employment dynamics and (un)employment in tourism**

Fluctuation in a share of working population in time-frame 2007-2017 did not appear to be significant – in case of each ULS it was less than 5%. Nevertheless, the majority of ULSs record the same trend: an increase of working population share until 2011 (case of five ULS) or until 2012 (all other ULS), after which was induced a decrease. The five ULSs, where decrease occurred a year sooner than in others, are Čajetina, Majdanpek, Bor, Vrnjačka Banja and Novi Pazar. However, at the end of the analysed period, only Knjaževac had under 60% of working population (59.2%), while Valjevo had the highest share (66.8%). In comparison to the

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<sup>4</sup> Proportion of number of elderly population (60 and over) to young population (0-19) or  $\text{No}(60+)/\text{No}(0-19)*100$ .

starting year (2007), Brus, Boljevac and Novi Pazar had practically the same share as at the end of the period (2017).

The number of unemployed per 1.000 inhabitants decreased in the majority of analysed ULSs. Only Brus and Boljevac recorded increase of unemployment (from 104 to 132; and from 68 to 83 respectively). The largest decrease occurred in Novi Pazar (by 43), followed by Vrnjačka Banja (by 42), Užice, Raška (both by 38) and Nova Varoš (by 36). In 2017, the lowest unemployment was in Čajetina (37) and the highest was in Novi Pazar (174). The highest unemployment in 2017 was also in Novi Pazar (217), which indicates that, whatever the reason might be, unemployment was dealt intensively. In addition, a general note would be that unemployment rate trend is not stable and that it fluctuates from year to year in the majority of analysed ULSs.

A share of employees in tourism decreased in five ULSs from by 0.1% to by 3.7% (Raška, Čajetina, Boljevac, Bajina Bašta, Vranje respectively), in Majdanpek the share remained the same in 2017 compared to 2007, while majority of ULSs recorded increase from by 0.5% (Bor) to by 5.2% (Brus). On average, a share on employment in the tourism sector is increasing. However, the growth was not consistent over the analysed period of time, but generally speaking, the share was decreasing from 2007 to 2010, stagnating between 2010 and 2014, and finally increasing since 2014. A share of employees in tourism exceeded 10% only in three ULSs at the begging of the analysed period, as remained the case at the end of the period. It occurred in Raška, Čajetina and Vrnjačka Banja. Interestingly, share of employees in tourism decreased in Raška (from 13.2% to 13.1%) and Čajetina (from 22.9% to 22.7%) that are two ULSs with the highest share regarding employment in tourism.

### **Tourism dynamics**

In most of the ULS number of tourists (per 1,000 inhabitants) was decreasing until 2010, after which it fluctuated in various ways (depending on ULS) from 2010 to 2014 (a few cases to 2015), and finally started to increase since 2014. However, there can be named two exceptions: Užice, which recorded subtle and permanent increase of tourists throughout entire period; and Kraljevo, which did not record positive results after 2014, unlike most of the other ULSs. In the observed a ten-year span, four ULSs did not record increase of tourists (Majdanpek, Bajina Bašta, Kraljevo and Ivanjica), while Užice and Kraljevo recorded



increase smaller than 1% in the time-frame from 2014 to 2017 when other ULSs recorded an increase higher than 50%. Similarly, Bor and Vranje had below 15% increase. Measuring an increase in the span from 2007 to 2017 and from 2014 to 2017, the best results were achieved by Valjevo and Boljevac, while Knjaževac experienced the largest expansion regarding the ten-year period (231.1%). After 2014, it appears that Nova Varoš took a good leap towards tourism development because its number of tourists per 1,000 inhabitants increased by 102.4%. In 2017, Čajetina had the largest number of tourists per 1,000 inhabitants (13,529), followed by Vrnjačka Banja (8,231). Both ULSs also hold the leading positions regarding then-year average. In contrast to these, Vranje, Novi Pazar and Kraljevo had the lowest number of tourists per 1,000 inhabitants (below 200), and Bor joins them on the list when it comes to a ten-year average.

A general trend is a decreasing share of domestic and an increase of foreign tourists. Valjevo and Nova Varoš represent exceptions because they record sudden increase of domestic tourists since 2014. Overall speaking, there is high share of domestic tourists in all analysed ULSs: the lowest recorded share in the analysed decade was 61.3% (Novi Pazar in 2016), while majority of ULSs in majority of the observed years had more than 80% of domestic tourists. The least desirable cases are Bajina Bašta and Ivaljica because they have not succeeded in increasing a share of foreign tourists beyond 10% during entire ten-year period. In average, only Užice, Kraljevo and Novi Pazar had more than 20% of foreign tourists in the ten years. Insecurity in tourism development might be noted in the case of Boljevac, Vranje and Knjaževac that do not record constant trend in development, but the values vary from one year to another, thus indicating no clear trend. Similar inclinations appear in Novi Pazar, too.

Similar to the percentage of domestic and foreign tourists, a share of nights that domestic tourists spent in the mountain tourism centres is in decline, which indicates increasing percentage of foreign tourists. Nevertheless, the difference in share of domestic over-night stays compared to foreign over-night stays is insignificant (domestic overnight stays were in each ULS and in each analysed year beyond 80%). In addition to this, it is interesting to mention that trend in domestic over-night stays over the course of ten years strongly fluctuated in Nova Varoš, Bajina Bašta and Ivaljica from year to year, with no evident trend of

increase or decrease. Also, Valjevo recorded a major drop in domestic over-night stays, after which followed an intense increase.

As for absolute values of annual investments in tourism (new capital assets counting investments in accommodation and food services), it seems that there is no defined tourism development policy at the local level, or at least that there are troubles with policy implementation. Namely, in majority of ULS, investments strongly fluctuate from one year to another, in both directions: rising and decreasing. In the case of Boljevac there was no investment from 2007 to 2017, in Majdanpek since 2010, in Nova Varoš since 2011 and in Novi Pazar since 2016. ULSs with the most success with this regard are Raška, Čajetina, Bor, Knjaževac and Kraljevo, but there should be still differentiated three groups. Bor and Knjaževac belong to the first group that had very low investments at the beginning of the analysed time period (if any) and their final investments increased to humble amounts. Kraljevo is the case where starting investments at the beginning of the period were also low, but in the end it got to a more significant level. Finally, Raška and Čajetina appear to be the ULSs with solid investments (regarding mutual comparison of the analysed ULSs) all the time, particularly Raška.

### **Correlation analysis results**

This section of the paper discusses the results of the analysis for the summary of all case study ULSs, although individual analysis of each case itself helped interpretation of the results and additional confirmation of their relevance. Generally speaking, the results in case of some ULS are differentiated to a larger extent regarding some variables and depending on ULS's size difference, whether their tourism offer is based solely on mountain/ski resorts or they have developed spa-, city-, or other sort of tourism, etc. The relations tested here are interpreted in three categories: very strong relations (over 90% overlapping), strong relations (80-90% overlapping), and indicative relations (70-80% overlapping).

If correlation analysis is conducted collectively for all chosen mountain ULSs, the strongest relation occurs, naturally, in the case of dependent variables – the share of domestic tourists and share of domestic tourists' over-night stays. Certainly, their correlation is positive. By putting this relation aside, the strongest correlation is found in the case of overall number of inhabitants and ageing index, which are again variables from the same field – demographics. In contrast to the previous relation, this

one is negative, or it can be stated that smaller ULSs have older population and that an increase in elderly population corresponds to a decrease of the total population size.

First, a very strong correlation between variables from different fields is a correlation between ageing index on the one hand, and the share of domestic tourists and share of domestic tourists' over-night stays on the other hand. Their correlation is negative and does not indicate an obvious causality. It is complementary to indicate a correlation between total population size on the one hand and share of domestic tourists and their over-night stays on the other hand, which is positively related. By taking in account previously spotted correlation between ageing index with a total ULS population size, it can be concluded that the share of foreign tourists is higher in smaller mountain tourism ULSs (e.g. municipalities with no significantly large urban centre and that rely prevalingly on mountain tourism and resorts), than in larger city centres. This result deserves attention in future research since it was not obtained only in a collective analysis of mountain tourism ULSs, but also in the analysis of separate cases.

The last among very strong correlations was recognized between the share of working population in the total population size and a number of tourists per 1,000 inhabitants. It shows that communities with higher share of working population have smaller number of tourists. However, since the range of working population share, observed through all ULSs and entire ten-year period, varies only in few percentages, it is the question whether this correlation should get particular attention and relevance.

Strong relations were found between share of working population employed in tourism sector and number of tourists (per 1,000 inhabitants). This relation is, as it would be expected, proven to be positive: share of employees in tourism increases with number of tourists. In addition, there was found an indicative relation showing that total population size decreases with increase of number of tourists, and that number of tourists increases parallel to decrease of unemployed. The firstly mentioned relation speaks in favour to earlier indicated relation – smaller mountain ULSs are more successful in tourism than larger ULSs, while the former relation proves the positive dependence between tourism and employment in mountain tourism ULS.

Besides proven relation between tourism and employment, which was the main focus of this paper, this research has also brought unexpected results. Namely, the analysis indicated, although a correlation was not strong or indicative, that there is negative dependence between the number of inhabitants and height of investments in tourism; that relation between employment in tourism and overall employment is not significant; that there is practically no relation between investments in tourism and number of tourism employees, as well as between number of tourists and investments. The absence of relation between investments in tourism and a number of tourists and tourism employees might indicate that attractiveness for tourists does not lay only in direct investments in tourism, but also in general investment, e.g. in the field of culture and infrastructure. Although, it can be indicate a lacking quality of the available statistical data.

### **Conclusion**

General trends regarding demography, tourism and employment in mountain tourism ULSs are a decrease of population size, as well as a share of domestic tourists, unemployment, recent decrease of a share of the working population, while population age, number of tourists, a share of employees in tourism increase.

In the time-span from 2007 to 2017, analysed mountain ULSs lost 10% of its population. One of the factors is certainly low birth-rate, which is recognisable though very fast tempo of population ageing. The increase of elderly population is one piece of evidence, but it is slowly becoming to be detectable through a trend of the working population that has started a phase of decrease. Knjaževac is exactly the example that has the oldest population and, parallel to it, the smallest share of the working population.

Overall, a share of employees in tourism is rather low, which indicates that most of the ULSs still rely on the other sectors of employment. The alarming fact is that ULSs that experienced the greatest loss of employees in tourism during the analysed period of time are exactly those ULSs that have the highest share of employees in this sector. The success in tourism can be partially measured by a share of foreign tourists, which is low in all analysed ULSs, but at least there is an increasing trend. Finally, the tourism industry in Serbian ULS deals with the problem of inconsistent investment strategy, which is lacking in the majority of analysed cases.

If observed at the level of individual ULSs, there are a few exceptions and examples relevant to mention. Kraljevo and Vrnjačka Banja were significantly influenced regarding demographic structure by its position (located near administrative the line between central Serbia and the autonomous region of Kosovo and Metohija). Nova Varoš and Knjaževac are examples of a rapid population loss and a population ageing increase, but on the other hand those two municipalities recorded an increase in the number of tourists, an increase of foreign tourists, employment and a share of employees in tourism. In addition, municipalities Brus and Raška share the same mountain tourism centre, but still show opposite results. This might be the proof that success depends not only on external, but rather on internal conditions and that diversification of economic activities brings positive outcomes. Namely, a share of employees in tourism increased in Brus more than in any other ULS, while employment decreased; in Raška, there is the opposite situation. Finally, the City of Valjevo represents an exception among ULSs with a larger urban centre because it grew in terms of tourism in contrast to Kraljevo, Vranje and Novi Pazar.

The cases of ULSs where tourism development indicators rise while demographic change is still heading on might be explained with the postponed effect of tourism until adequate support is given also to other complementary activities such as agriculture (Maksin et al., 2014). In addition, tourism development requires high investments (commercial investments in governmental responsibility) in the beginning, which takes time and postpones the effects of non-commercial investments (dependent on private investments) (Milijić, et al., 2010).

Regarding relations and dependency of variables in the field of demography, tourism and employment, the analysis has shown that smaller ULSs, which have no significantly large urban centre and rely prevalingly on ski-tourism instead of city-break tourism, have a rather elderly population, but the higher number of tourists and a higher share of foreign tourists. A higher share of employees in tourism is positively correlated with a number of tourists and a number of tourists is positively correlated to employment. In contrast, investments in tourism are negatively correlated to ULS population size.

In the summary, relations between mountain tourism, demographic structure and employment at the local level can be recognised on the examples analysed in this research. Some of the aspects, such as a

negative correlation between the population size and a number of tourists, would be interesting for further research, as well as the influence of investment structure to overall employment, but also to employment in tourism and tourism development.

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