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# SEASONALITY AND SUSTAINABILITY OF TOURISM – CASE STUDY: PROTECTED MOUNTAIN AREAS IN SERBIA

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## Abstract

The role of seasonality in the sustainability of tourism is multiple and complex. The connection between seasonality and sustainability is even more complex when it comes to protected areas. This connection was investigated on the examples of selected protected mountain areas in Serbia - Kopaonik and Tara National Parks, and Stara planina and Zlatibor Nature Parks. The Gini index was used to measure seasonality, and to show the imbalance in the monthly distribution of the number of tourist overnight stays in the mentioned destinations, in the period 2013–2021. The research results show that the analyzed protected mountain areas in Serbia have different values of the Gini index, which is conditioned by their natural predispositions for tourism development (e.g. altitude and duration of snow cover), and at the same time the levels of tourist development of the area. In order to reduce the effects of seasonality, in each of the destinations that are the subject of this paper, alternative types of tourism and activities are implemented.

**Keywords:** tourism, seasonality, sustainability, protected areas, Serbia

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## SEZONSKOST IN TRAJNOSTNOST TURIZMA – ŠTUDIJA PRIMERA: ZAVAROVANA OBMOČJA V SRBIJI

### Izvleček

Vloga sezonskosti v trajnostnem razvoju turizma je večplastna in kompleksna. Povezava med sezonskostjo in trajnostnostjo je še bolj zapletena, ko gre za zavarovana območja. To povezavo smo proučili na primerih izbranih zavarovanih gorskih območij v Srbiji – narodnih parkov Kopaonik in Tara ter naravnih parkov Stara planina in Zlatibor. Za merjenje sezonskosti in prikaz neuravnoteženosti mesečne porazdelitve števila turističnih prenočitev v omenjenih destinacijah v obdobju 2013–2021 smo uporabili Ginijev indeks. Rezultati raziskave kažejo, da imajo analizirana zavarovana gorska območja v Srbiji različne vrednosti Ginijevega indeksa, kar je pogojeno z njihovimi naravnimi predispozicijami za razvoj turizma (npr. nadmorska višina in trajanje snežne odeje), hkrati pa tudi stopnje turistične razvitosti območja. Da bi zmanjšali vplive sezonskosti, v vsaki izmed obravnavanih destinacij izvajajo alternativne oblike turizma in aktivnosti.

**Ključne besede:** turizem, sezonskost, trajnostnost, zavarovana območja, Srbija

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## 1 PREVIOUS RESEARCH

The definition of tourism seasonality depends on whether it refers to supply or demand. The definition given by Butler (1994) is significant in the context of demand. He believes that seasonality is a temporal imbalance in tourism and can be expressed in terms of visitor numbers, the amount of money tourists spend, employment, and the like. Taking into account the supply, tourism seasonality is defined as a temporary imbalance in which the marketing of tourism products is concentrated in one or more periods (Lopez, Lopez, 2006).

As an inherent characteristic and market phenomenon, seasonality is of great importance in the sustainability of the tourism business (Su et al., 2019). From an economic perspective, the World Tourism Organization identifies seven dimensions of sustainability, one of which is seasonality. The basic issues and indicators of tourist destinations include tourism seasonality, defined by the arrival of tourists by months or quarters, the percentage of occupancy of accommodation by months, the percentage of business facilities opened during the year, the number and percentage of jobs in tourism that are permanent (compared to temporary jobs) (United Nations World Tourism Organization, 2004).

The seasonality of tourism is regarded as a problem for many world destinations, especially from the point of view of sustainability (Duro, Turrión-Prats, 2019). To

understand the effects of seasonality on the sustainability of a destination, it is necessary to identify three aspects that are accepted in sustainable development planning (Ayuso, 2003). These are: environmental sustainability (development compatible with the maintenance of ecological processes, biological diversity, and natural resources); social and cultural sustainability (it is compatible with culture, maintains and strengthens community identity); and economic sustainability (economically efficient development and management of resources to preserve them for future generations). Blancas et al. (2011) and Lozano-Oyola et al. (2012) consider the seasonality of tourism activities, such as accommodation supply, demand, or employment, in the economic indicators of the sustainability of tourism. Sustainable tourism requires stable activity to reduce the negative effects of high season and intense activity related to employment, use of resources, and excessive use of tourist areas. A short high season means underutilization of investments in the low season, and thus a limited return on capital (Sæþórsdóttir, Hall, Stefánsson, 2019).

Seasonality in tourism has negative effects on all three mentioned aspects. Seasonality affects the environment as the high concentration of visitors leads to over-exploitation of resources and often inadequate disposal of large amounts of waste. In a socio-cultural sense, destinations lose their identity due to overcrowding during certain periods of the year, which leads to a lower quality of residents' life and a lower level of satisfaction among tourists. Regarding the economic dimension, the more realistic the long-term use of the location and the continuity in the use of the destination capacity, the higher the level of sustainability will be (Martín Martín, de Dios Jimenez Aguilera, Molina Moreno, 2014).

Numerous studies have shown the negative effects of seasonality on the sustainability of tourist destinations. One of them refers to the region of Andalusia, where it was determined that the coastal areas have the highest seasonality and the highest influx of tourists, which threaten sustainability. Martín Martín et al. (2020) conclude that seasonality in rural tourism should not be evaluated in general, because each destination has specific conditions that determine stability or seasonality. High seasonal concentration threatens protected areas in Croatia. The daily number of visitors is limited in Krka National Park (Ćorluka, Vukušić, 2017). Although tourism is a permitted activity in national parks, it requires the application of sustainable development principles and strategies that encourage the positive impacts of tourism and mitigate or eliminate the negative ones. Gee et al. (1999) include the following in these strategies: policy and planning, resource management, facility construction and layout, visitor management, environmental adaptation, marketing and promotion, education and training, research and monitoring. In addition to negative perceptions of seasonality, there are also positive ones. On the example of the Mediterranean islands as typical summer season destinations we could observe also positive impacts during low winter season (Selänniemi, 2001), and complementarity with other activities, such as agriculture (Shaw, Williams, 1994).

## 2 METHODOLOGY

From the point of view of supply or demand, the double approach of defining tourism seasonality affects its measurement. The variable used to measure the intensity of seasonality determines the ranking of the analyzed destinations (Martín Martín, de Dios Jimenez Aguilera, Molina Moreno, 2014), in this case, protected mountain areas, which are also established tourist centers. The fluctuations in the number of overnight stays by tourists were taken into account as an expression of seasonality.

One of the broadest ways of analysis focuses on the concentration index assessment, which is used to quantify the seasonal intensity of a destination. Concentration index values are the result of measuring the degree of concentration of tourist activity throughout the year (Fernandez-Morales, 2003; Lundtorp, 2001; Rossello et al., 2004; Wanhill, 1980). The Gini index is often used to measure seasonal intensity (Fernandes et al., 2020; Fernandez-Morales, Cisneros-Martinez, McCabe, 2016; Fernandez-Morales, Mayorga-Toledano, 2008; Kožić, Krešić, Boranić-Živoder, 2013; Lau, Koo, Dwyer, 2017; Lau, Koo, 2022; Nastassios, Sitouras, 2004; Papakonstantinidis, 2012). It has also been used in measuring the seasonal concentration of tourism in protected natural areas (Kostopoulou, Kyritsis, 2006; Prachvuthy, 2006; Sims, 2010; Xu, Pan, 2019; Rahman, 2022).

The Gini index is a measure of the intensity of tourism seasonality for each of the analyzed years. It shows the imbalance in the monthly distribution and the variable is related to the number of visits or overnight stays (Grainger, Judge, 1996). In this paper, the Gini index, obtained using data on the number of overnight stays, was analyzed.

The Gini index is easy to interpret, and useful in comparing data and analyzing their distribution (dispersion). Lundtorp (2001) considers the Gini index to be the most stable indicator of seasonality. This methodology has limitations that must be considered. The most significant limitation is the lack of data. Not all tourist destinations have readily available monthly data on the variables that the Gini index implies. Therefore, it is only possible to carry out certain case studies and define certain models of seasonality that differ not only between different destinations (e.g. mountain, coastal, protected natural areas, spa, urban, rural...), but also between similar destinations that usually do not represent a homogeneous category in terms of seasonality. Other limitations refer to the non-inclusion of the ecological, social, and economic characteristics of the area, the people who inhabit it, and the tourists who visit it.

The Gini index is obtained using the following formula:

$$G = \frac{2}{n} \sum_{i=1}^n (x_i - y_i)$$

Where  $n$  represents the total number of proportions, which in the case of calculating the degree of inequality of tourist overnight stays in months in one year is 12,  $x_i$  is the rank of the proportion (ordinal number of the element), from 1/12 to 12/12,

while  $y_i$  is the cumulative relative frequency of tourist overnight stays and refers to the cumulative element of the Lorenz curve.

The cumulative element of the Lorenz curve for the  $i$  month is determined by the formula

$$f_i = \frac{v_i}{v_0}$$

where  $v_i$  is the cumulative number of overnight stays starting from January to December, while  $v_0$  is the total number of overnight stays during the year.

The Gini index has values in the interval between 0 and 1. The value 0 is for the lowest degree of seasonal concentration of tourists, and 1 is for the highest degree of seasonality concentration. The closer the Gini index is to zero, the more evenly distributed the series values are, and the closer the value is to 1, the more unevenly distributed.

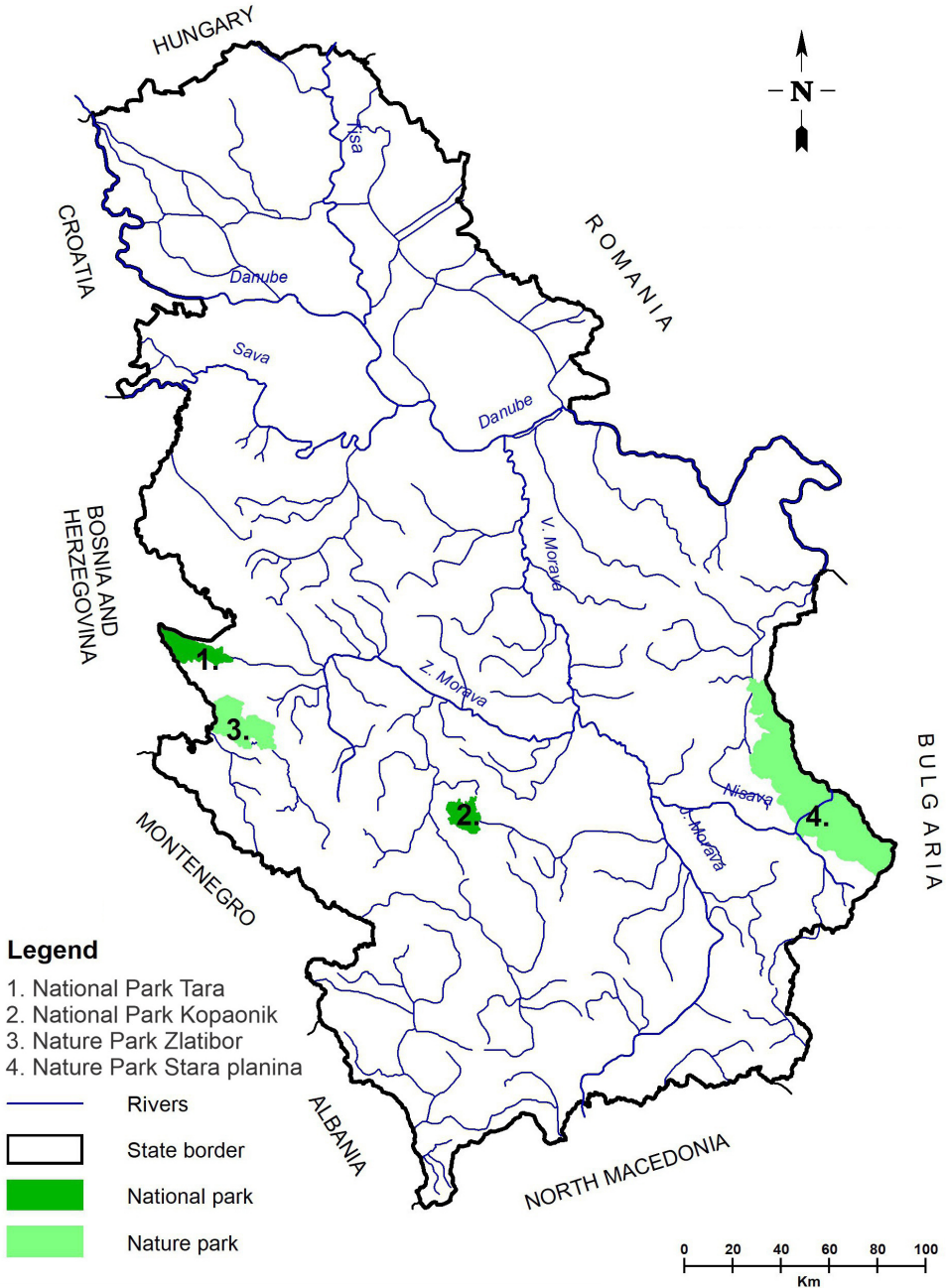
The first research hypothesis is that the seasonality of tourism in the protected mountain tourist centers of Zlatibor, Kopaonik, Tara, and Stara planina is not equal, but rather different depending on the destination. Another hypothesis is that each of these mountain destinations has similar Gini index values during the observed period.

### 3 RESULTS AND DISCUSSION

The Gini index values were determined in four mountain tourist centers in Serbia, parts of which are protected areas: Zlatibor, Kopaonik, Tara, and Stara planina (Figure 1). The tourist centers studied are characterized by the tradition of tourism development, recognition in the tourist market, visitation, tourist services and activities, and area protection.

The basic natural values of protected mountain areas are based on the richness, originality, and rarity of biodiversity, geodiversity, and variety of landscapes. On the territory of Kopaonik National Park, the habitat has more than 1,600 species of plants, more than half of which are high mountain flora with 91 species of endemic and 82 species of sub-endemic character. Kopaonik is habitat to 170 species of birds, 90% of which are nesting birds. Tara National Park is characterized by distinct forested areas with 35 forest and 9 meadow communities with more than 1,000 plant species, the most famous of which is the Balkan endemic and Tertiary relict of Pančić's spruce (*Picea omorika*). There are also 130 species of birds and 24 species of mammals, the most famous of which are the brown bear (*Ursus arctos*) and chamois (*Rupicapra rupicapra*). Zlatibor Nature Park is a habitat for as many as 960 species of plants, more than 150 species of birds, and also 54 species of mammals. Regarding the area, the largest protected area in Serbia is Stara planina Nature Park, which is in the process of being declared a national park. About 1,190 plant species inhabit this mountain

Figure 1: Geographical position of the studied protected mountain areas in Serbia.



massif. Stara planina is habitat to more than 110 species of diurnal butterflies, 18 species of amphibians and reptiles, 200 species of birds, and 30 species of mammals (Amidžić et al., 2011). To protect complex natural values, the development of tourism following the principles of sustainable development can be planned and implemented in zones that are under the protection regime III (Table 1).

Table 1: Overview of areas under the protection regimes I, II and III of Kopaonik and Tara National Parks and Zlatibor and Stara planina Nature Parks.

Protected area	Total area (ha)	Protection regime (%)		
		I	II	III
Kopaonik NP	11,969.04	12.38%	29.94%	57.68%
NP Tara NP	24,991.82	13.35%	34.07%	52.58%
Zlatibor Nature Park	41,923	4.69%	45.93%	49.38%
Stara planina Nature Park	114,332	3.22%	17.63%	79.15%

Source of data: [www.zzps.rs](http://www.zzps.rs)

The ecological consequences of the tourist attractiveness of the researched areas are also manifested by the transformation of the primary vegetation cover. Based on the research results by a group of authors (Djurđić, Jakovljević, Stojković, 2022), it was determined that in a time interval shorter than 20 years, the autochthonous vegetation was transformed, even in the zone that is under the protection regime I (examples Kopaonik National Park and Stara planina Nature Park), while the most intensive changes were observed on the territory of Zlatibor Nature Park in zones under the protection regimes II and III. In addition to the transformation or disappearance of habitats, changes have been observed in the form of intensification of erosive processes, increased sediment transport in watercourses, more frequent occurrence of landslides and torrential flows. The networks of ravines, gullies, and rills reduce the quality of the terrain intended for winter sports.

Among the researched mountain tourist centers, the most visited is Zlatibor, which in the period 2013–2021 had the largest number of overnight stays – 777,057 in 2019. The second destination by overnight stays is Kopaonik, with 565,980 overnight stays in 2019, the third is Tara with 281,002 overnight stays also in 2019, and Stara planina had the highest number of overnight stays in 2020 – 88,395 (Announcement, Statistical Office of the Republic of Serbia, 2022).

In connection with the analysis of seasonality attributes, the most visited months on Zlatibor are from May to August, on Kopaonik from December to March, on Tara from May to August, and on Stara planina in January and February. It is evident that Kopaonik, as a ski tourist center, has a dominant winter season, as does Stara planina, but with much smaller infrastructural and suprastructural capacities. The highest



peaks of Kopaonik and Stara planina are higher than 2000 m. The tourist destination of Kopaonik has a clearly expressed seasonality in the visitation, due to the strongest factor of attractiveness, the height of the snow cover, which allows the practice of winter sports. On Kopaonik, the height of the snow cover is greatest in February and March (about 100 cm). The mountains of Zlatibor and Tara are not intended for winter sports, due to the insufficient slopes of the mountain sides for practicing winter sports, and for this reason, the summer season is more dominant.

*Table 2: Gini index in selected mountain tourist centers/protected areas in Serbia for the period 2013–2021.*

Year	Zlatibor	Kopaonik	Tara	Stara planina
2013	0.15	0.43	0.26	0.37
2014	0.17	0.46	0.27	0.40
2015	0.15	0.41	0.34	0.42
2016	0.16	0.40	0.28	0.47
2017	0.13	0.37	0.22	0.34
2018	0.14	0.38	0.27	0.33
2019	0.12	0.39	0.22	0.34
2020	0.35	0.56	0.46	0.49
2021	0.22	0.44	0.40	0.37

*Source of data: Authors' findings based on monthly data on tourist overnight stays, accessed on the website of the Statistical Office of the Republic of Serbia.*

The data in Table 2 show that Kopaonik and Stara planina have higher Gini index values compared to Zlatibor and Tara. On Kopaonik, the values of the Gini index vary from 0.37 to 0.56, and on Stara planina from 0.33 to 0.47, which shows that the first hypothesis is confirmed and the second rejected. Among the investigated natural assets, Zlatibor has the lowest value of the Gini index (0.12 in 2019), but also with a value of 0.35, calculated for the 2020 data, which was conditioned by the COVID-19 pandemic. The increase in the Gini index value in 2021 is also a consequence of increased seasonality, as in the previous year.

The Gini index represents the area enclosed on the graph by the Lorenz curve and the direction of the area distribution. The cumulative order of the data, i.e. the frequency of the data from the smallest to the largest, gives a graphical representation of the Lorenz curve. In one year, the percentage proportions of the months in the year from 1/12% to 12/12% of the months are located cumulatively on the abscissa. The ordinate shows the total number of overnight stays that belong to certain proportions of the months of the year. If the number of overnight stays was the same in all months,



then the Lorenz curve would have the shape of a line of equal distribution. The form closer to the curve of unequal distribution is when there is inequality in the distribution of tourist overnight stays by months of the year.

A Lorenz curve is shown for each of the four protected mountain areas (Figures 2–5). Years with the highest and lowest value of the Gini index were taken into account.

Figure 2: Lorenz curve of tourist overnight stays on Zlatibor.

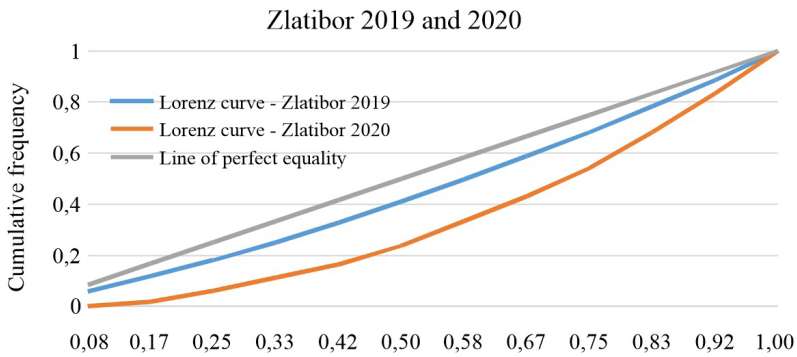


Figure 3: Lorenz curve of tourist overnight stays on Kopaonik.

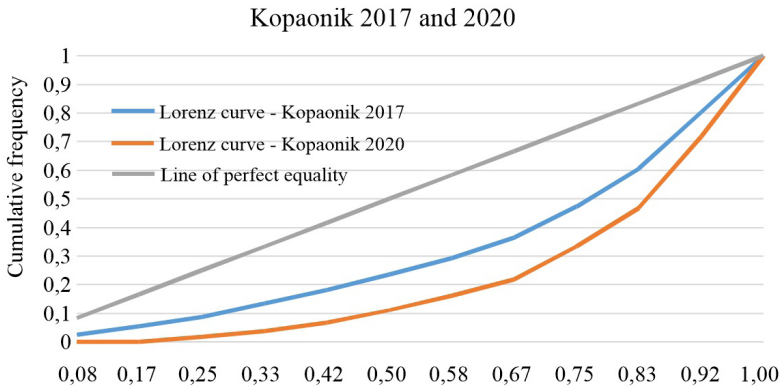


Figure 4: Lorenz curve of tourist overnight stays on Tara.

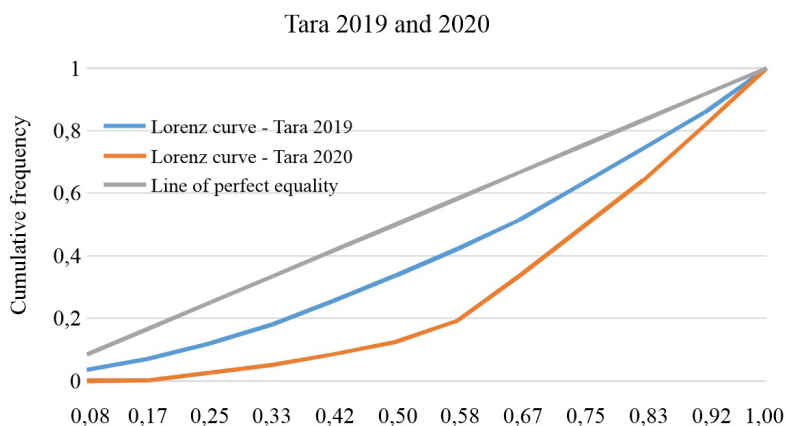
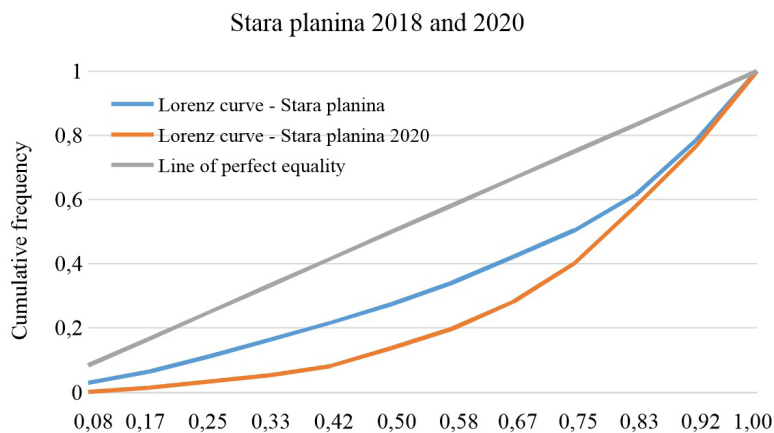


Figure 5: Lorenz curve of tourist overnight stays on Stara planina.



A comparison of Figures 2–5 shows that Zlatibor has the most even number of overnight stays throughout the year, with the lowest value of the Gini index in 2019 in the nine-year period studied. The inequality in the distribution of tourist overnight stays is most pronounced in 2020, which was affected by the COVID-19 pandemic.

One of the measures for the seasonally balanced development of tourism refers to the promotion of different alternative types of tourism. In this way, seasonality would be reduced, with an increase in economic effects (Dimoska, Petrevska, 2012). Financing projects that allow the use of accommodations throughout the year and

developing new tourism products to attract visitors in the off-season should be the task of many destinations.

The effects of seasonality could be mitigated by adapting the offer of products and services to diverse target markets. For example, although Kopaonik has a marked seasonality in its offer – in winter the target segment is skiers, in summer it could be tourists who prefer geotourism, ecotourism, adventure tourism, etc., in spring and fall the companies (seminars and team buildings). The Kopaonik ski center has over 50 km of groomed alpine slopes and a system of 24 cable cars with a total capacity of about 30,000 skiers per hour. In addition to the well-developed winter season, outdoor facilities also contribute to the development of the summer season: sports fields, zip lines, bobsled riding on rails, tubing, trim tracks for recreationalists, adventure parks, mountain biking, and cable car rides. In addition to sports and recreation, congress tourism is possible, because there are accommodation facilities that have halls for organizing various business meetings. To promote the summer season, events are organized: off-road driving on the Serbian Trophy Trails, orienteering competition Orienting Kopaonik Open, Blueberry Days, the Three Sides of Kopaonik Bicycle Race, and local events (Đorđević et al., 2018).

Zlatibor does not have the typical natural predispositions for the construction of ski slopes and cable cars, and therefore for the development of winter sports and recreational tourism, but it has for other types of tourism, which are conditioned by various tourist attractions (national geoheritage objects – Stopića pećina, waterfall in the village of Gostilje, lakes, ethno complex in Sirogojno). Zlatibor mountain favors health tourism. It is a therapeutic area for diseases of the respiratory organs, thyroid gland, anemia, and metabolic diseases. The events are mostly recreational and cultural and entertaining. One of the most interesting is the night race of Nordic skiers and in the summer season the Zlatibor Cultural Summer, with numerous events. The image of Zlatibor is recognizable in the domestic tourist market, but in the last decade, it has been characterized by high urbanization and crowds, especially in the summer season.

Tara mountain is a destination that offers active vacation, recreation, health, business tourism, rural tourism, and forms of nature-related tourism. A network of forest roads suitable for mountain biking and hiking has been developed, and additional facilities are available, such as rafting and cruises on the Drina River. In the locality of Mitrovac, there is a children's resort, and in the locality of Predov krst, there are ski areas (the length of the slope is from 3 to 5 km). The Perućac zone offers various activities on the water (fishing is especially popular), summer and winter holidays, but also shorter stays, as well as the use of the benefits of rural tourism (Đorđević et al., 2018).

The climate of Stara planina is favorable because the mountain is covered with snow for almost five months, which is a good basis for winter sports. The average duration of a snow cover thicker than 50 cm is about 70 days, and the average maximum height of the snow cover is 110–150 cm (Manojlović et al., 2015).

In addition to the climate, a significant factor in Stara planina's competitiveness is its rich biodiversity and geodiversity. However, investments in this destination are still insufficient, which is the main competitive threat compared to other tourist destinations. This situation has its advantages, which are related to lower degradation of the area. In addition to the conditions for winter tourism, which is given priority, there are conditions for ecotourism, because Stara planina is a natural asset of national importance of the protection category I. Ecotourism can influence the extension of the tourist season, to justify potential economic investments and realize the ecological and social components of sustainable development (Manojlović et al., 2015).

A comparison of this paper's results was made with the results of a study in the Republic of Korea, which highlighted the necessity of monitoring 133 protected areas on Jeju Island, identified as hotspots of tourist visits, which showed a value of the Gini index greater than 0.5. Protected areas such as SeongsanIlchulbong and Cheonjejeon Waterfall had high seasonal dynamics and were some of the most frequently visited natural resources (Kim et al., 2020). Protected natural assets in Serbia, which are the subject of this paper, do not have such an accentuated seasonality.

Most Mediterranean countries have a seasonal nature of tourist visits. Tourist activities are increasing, resulting in a seasonal business. An example of this is Croatia, which has the value of the Gini index of 0.64 when it comes to overnight stays by tourists (higher values compared to arrivals) (Čorluka, Vukušić, 2017). The seasonality of tourism in Croatia is constantly present due to the structure of accommodation facilities as well as the greater increase in the number of overnight stays in the summer season compared to the rest of the year (Suštar, Laškarin Ažić, 2018). This example also proves that the values of the Gini index depend on the types of destinations, i.e. dominant forms of tourism and tourist demand.

## 4 CONCLUSION

Case studies show that tourism in destinations in protected mountain areas of Serbia and their surroundings has heterogeneous impacts, taking into account demand, tourism resources, and the markets they attract. In perspective, research and recommendations could go in the direction of further identifying geographic areas and environmental conditions that allow for greater annual stability. The advantage of the methodology used is that it enables the comparison of the intensity of seasonality not only in one destination over time but also in several destinations. Further and more advanced studies could be conducted in areas with different characteristics, e.g. protected mountain areas in neighboring countries, with different management policies. Subsequent research could investigate the impact of seasonality on the local population, how seasonality is affected by proximity to emission centers, and trends in the international tourism market. All these and similar research would contribute to the definition of a model for reducing seasonality.

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## References

- Amidžić, L., Krasulja, S., Đorđević, Z., Panjković, B., Ostojić, D., Belij, S., Habijan-Mikeš, V., Kovačev, N. et al., 2011. Zaštićena prirodna dobra Srbije [Protected natural assets of Serbia]. Belgrade: Ministry of Environment, Mining and Spatial Planning, Institute for Nature Conservation of Serbia.
- Announcement, Statistical Office of the Republic of Serbia, 2013-2021. URL: <https://www.stat.gov.rs/publikacije/> (accessed 10.07.2022).
- Ayuso, S., 2003. Turismo sostenible: reto o ilusión? Barcelona: Centre d'Estudis Ambientals.
- Blancas, F. J., Lozano-Oyola, M., González, M., Guerrero, F. M., Caballero, R., 2011. How to use sustainability indicators for tourism planning: The case of rural tourism in Andalusia (Spain). *Science of The Total Environment*, 412-413, pp. 28-45. DOI: 10.1016/j.scitotenv.2011.09.066.
- Butler, R., 1994. Seasonality in tourism: issues and problems. In: Seaton, A. V. (ed.). *Tourism: The state of the art*. New York: John Wiley & Sons, pp. 332-339.
- Čorluka, G., Vukušić, A. 2017. Seasonal concentration of tourism in Croatia. *Journal of Information Systems & Operations Management*, 11, 2, pp. 232-242.
- Dimoska, T., Petrevska, B. 2012. Indicators for sustainable tourism development in Macedonia. Conference proceedings, first international conference on business, economics and finance »From liberalization to globalization: Challenges in the changing world«, 13-15 September 2012, Štip, Macedonia, pp. 389-400.
- Djurđić, S., Jakovljević, T., Stojković, S. 2022. The sustainable development of tourism in the mountainous protected areas of Serbia. In: Lojović, M. (ed.). *Proceedings of conference: Tourism in modern European and Euroasian area – state, problems, challenges, perspectives*, May 2022, Trebinje, Bosnia and Herzegovina, pp. 335-347.
- Duro, J. A., Turrión-Prats, J., 2019. Tourism seasonality worldwide. *Tourism Management Perspectives*, 31, pp. 38-53. DOI: 10.1016/j.tmp.2019.03.010.
- Đorđević, N., Lakićević, N., Milićević, S., 2018. Benčmarking analiza turizma u nacionalnim parkovima Tara i Kopaonik [Benchmarking analysis of tourism in national parks Tara and Kopaonik]. *Ekonomija, teorija i praksa*, 3, pp. 52-70. DOI:105937/etp1803052Đ.
- Fernandes, P.O., Nunes, A. M., Veloso, C. M., Santos, E., Ferreira, F. A., Fonseca, M. J. S., 2020. Outdoor solutions for the seasonal concentration of tourism demand in

- Northern Portugal: An integrated approach based on the Gini Index. *Handbook of research on the impacts, challenges, and policy responses to overtourism*. IGI Global, pp. 364–379.
- Fernández-Morales, A., 2003. Decomposing seasonal concentration. *Annals of Tourism Research*, 30, pp. 942–956. DOI: 10.1016/S0160-7383(03)00090-2.
- Fernández-Morales, A., Mayorga-Toledano, M. C., 2008. Seasonal concentration of the hotel demand in Costa del Sol: A decomposition by nationalities. *Tourism Management*, 29, 5, pp. 940–949. DOI: 10.1016/j.tourman.2007.11.003.
- Fernández-Morales, A., Cisneros-Martínez, J. D., McCabe, S., 2016. Seasonal concentration of tourism demand: Decomposition analysis and marketing implications. *Tourism Management*, 56, 172–190. DOI: 10.1016/j.tourman.2016.04.004.
- Gee, C. Y., Fayos-Sola, E., 1999. *International tourism: A global perspective*. Madrid: World Tourism Organization.
- Kim, Y. J., Lee, D. K., Kim, C. K., 2020. Spatial trade off between biodiversity and nature-based tourism: Considering mobile phone-driven visitation pattern. *Global Ecology and Conservation*, 21, e00899. DOI: 10.1016/j.gecco.2019.e00899.
- Kostopoulou, S., Kyritsis, I., 2006. A tourism carrying capacity indicator for protected areas. *Anatolia*, 17, 1, pp. 5–24.
- Kozić, I., Krešić, D., Boranić-Živoder, S., 2013. Analiza sezonalnosti turizma u Hrvatskoj primjenom metode Gini koeficijenta. *Ekonomski pregled*, 64, 2, pp. 159–181.
- Lau, P. L., Koo, T. T. R., Dwyer, L., 2017. Metrics to measure the geographic characteristics of tourism markets: An integrated approach based on Gini index decomposition. *Tourism Management*, 59, pp. 171–181. DOI: 10.1016/j.tourman.2016.07.019.
- Lau, P. L., Koo, T. T., 2022. Multidimensional decomposition of Gini elasticities to quantify the spatio temporality of travel and tourism distribution. *Tourism Management*, 88, 104422. DOI: 10.1016/j.tourman.2021.104422.
- López, J. M., López, L. M., 2006. La concentración estacional en las regiones españolas desde una perspectiva de la oferta turística. *Revista de Estudios Regionales*, 77, pp. 77–104.
- Lozano-Oyola, M., Blancas, F. J., González, M., Caballero, R., 2012. Sustainable tourism indicators as planning tools in cultural destinations. *Ecological Indicators*, 18, pp. 659–675. DOI: 10.1016/j.ecolind.2012.01.014.
- Lundtorp, S., 2001. Measuring tourism seasonality. In: Baum, T., Lundtorp, S. (eds.). *Seasonality in tourism*. Oxford, England: Pergamon, pp. 23–50.
- Manojlović, I., Denda, S., Stojanović, J., 2015. Turistička valorizacija Stare planine [Tourist valorization of Stara planina]. In: Filipović, D., Đurđić, S. (eds.). *Četvrti srpski kongres geografa - Zbornik radova mladih istraživača*. Belgrade: University of Belgrade - Faculty of Geography, Serbian Geographical Society, pp. 163–168.
- Martín Martín, J. M., de Dios Jimenez Aguilera, J., Molina Moreno, V., 2014. Impacts of seasonality on environmental sustainability in the tourism sector based on

- destination type: an application to Spain's Andalusia region. *Tourism Economics*, 20, 1, pp 123–142. DOI: 10.5367/te.2013.0256.
- Martín Martín, J. M., Salinas Fernández, J. A., Rodríguez Martín, J. A., del Sol Ostos Rey, M., 2020. Analysis of tourism seasonality as a factor limiting the sustainable development of rural areas. *Journal of Hospitality & Tourism Research*, 44, 1, pp. 45–75. DOI:10.1177/1096348019876688.
- Martín Martín, J. M., Salinas Fernandez, J. A., 2022. The effects of technological improvements in the train network on tourism sustainability. An approach focused on seasonality. *Sustainable Technology and Entrepreneurship*, 1, 1, 100005. DOI: 10.1016/j.stae.2022.100005.
- Nastassios, A., Sitouras, T., 2004. Adjusted Gini coefficient and “months equivalent” degree of tourism seasonality: A research note. *Tourism Economics*, 10, 1, pp. 95–100. DOI: 10.5367/00000000477316661.
- Papakonstantinidis, L. A., 2012. Forecasting the tourist impact based on Gini Index: Flexible development policies. *International Journal of Tourism and Travel Management*, 1/2, pp. 48–57.
- Prachvuthy, M., 2006. Tourism, poverty, and income distribution: Chambok community-based ecotourism development, Kirirom National Park, Kompong Speu Province, Cambodia. *Journal of GMS Development Studies*, 3, pp. 25–40.
- Rahman, M., 2022. Is co-management a double-edged sword in the protected areas of Sundarbans mangrove? *Biology & Philosophy*, 37, 4. DOI: 10.1007/s10539-022-09836-3.
- Rosselló, J., Riera, A., Sansó, A., 2004. The economic determinants of seasonal patterns. *Annals of Tourism Research*, 31, 3, pp. 697–711. DOI: 10.1016/j.annals.2004.02.001.
- Sæþórsdóttir, A. D., Hall, M. C., Stefánsson, Þ., 2019. Senses by seasons: Tourists' perceptions depending on seasonality in popular nature destinations in Iceland. *Sustainability*, 11, 11, 3059. DOI:10.3390/su11113059.
- Selänniemi, T., 2001. Trapped by the image: the implications of cultural tourism in the insular Mediterranean. In: Ioannides, D., Apostolopoulos, Y., Sonmez, S. (eds.). *Mediterranean islands and sustainable tourism development: Practices, management and policies*. London, New York: Continuum, pp. 108–123.
- Shaw, G., Williams, A. M., 1998. Entrepreneurship, small business culture and tourism development. In: Ioannides, D., Debbage, K. G. (eds.). *The economic geography of the tourist industry*. London, New York: Routledge, pp. 235–255.
- Sims, K. R., 2010. Conservation and development: Evidence from Thai protected areas. *Journal of Environmental Economics and Management*, 60, 2, pp. 94–114. DOI: 10.1016/j.jeem.2010.05.003.
- Su, Z., Aaron, J. R., Guan, Y., Wang, H., 2019. Sustainable livelihood capital and strategy in rural tourism households: A seasonality perspective. *Sustainability*, 11, 4833. DOI: 10.3390/su11184833.



- Suštar, N., Laškarić Ažić, M., 2018. Measuring tourism seasonality across selected Mediterranean countries. *Economies of the Balkan and Eastern European Countries*. KnE Social Sciences, pp. 216–229. DOI: 10.18502/kss.v4i1.5990.
- United Nations World Tourism Organization, 2004. *Indicators of sustainable development for tourism destinations*. Madrid: United Nations World Tourism Organization.
- Wanhill, S., 1980. Tackling seasonality: A technical note. *International Journal of Tourism Management*, 1, 4, pp. 243–245. DOI: 10.1016/0143-2516(80)90048-1.
- Xu, B., Pan, J., 2019. Spatial distribution characteristics of national protected areas in China. *Journal of Geographical Sciences*, 29,12, pp. 2047–2068. DOI: 10.1007/s11442-019-1704-0.

## SEZONSKOST IN TRAJNOSTNOST TURIZMA – ŠTUDIJA PRIMERA: ZAVAROVANA OBMOČJA V SRBIJI

### Povzetek

Povezava med sezonskostjo in trajnostnim turizmom je v znanstveni literaturi obravnavana tako z ekonomskega kot ekološkega in socialnega vidika. Sezonskost v turizmu ima negativne, a tudi pozitivne učinke na vse tri omenjene vidike. Analizirana je na podlagi prihodov in prenočitev turistov po mesecih, zasedenosti nastanitvenih zmogljivosti, obratovanja zmogljivosti na letni ravni ter začasnih zaposlitev v turizmu.

V metodološkem smislu se za kvantificiranje sezonskosti destinacije pogosto uporablja indeks koncentracije. Merjenje sezonske koncentracije turizma v izbranih zavarovanih gorskih območjih Srbije je bilo izvedeno z uporabo Ginijevega indeksa in kaže neenakost prenočitev turistov po mesecih v letu. Vrednosti Ginijevega indeksa so bile izračunane za štiri gorska turistična središča v Srbiji: narodna parka Kopaonik in Tara ter naravna parka Stara planina in Zlatibor, in sicer za obdobje 2013–2021. Ključne vrednosti obravnavanih gorskih turističnih destinacij temeljijo na biodiverziteti in geodiverziteti, tradiciji turističnega razvoja, obiskanosti in turističnih vsebinah.

Najbolj obiskani meseci na Zlatiboru so od maja do avgusta, na Kopaoniku od decembra do marca, na Tari od maja do avgusta, na Stari planini pa januarja in februarja. Kopaonik kot smučarsko turistično središče ima prevladujočo zimsko sezono, prav tako Stara planina, medtem ko Zlatibor in Tara nimata dovolj pobočij, primernih za zimske športe. Zaradi tega je na Zlatiboru in Tari glavna poletna sezona. Na izrazito sezonskost obiskanosti Kopaonika vpliva predvsem višina snežne odeje, ki je februarja in marca okoli 100 cm.

Izrazitejša sezonskost turističnega obiska Kopaonika in Stare planine se kaže v višjih vrednostih Ginijevega indeksa v primerjavi z Zlatiborom in Taro. Vrednosti Ginijevega

indeksa na Kopaoniku so od 0,37 do 0,56, na Stari planini pa od 0,33 do 0,47. Zlatibor ima najnižje vrednosti Ginijevega indeksa (0,12 v letu 2019), Tara pa je do leta 2020 imela najvišjo vrednost tega kazalnika 0,34 (l. 2015). Pandemija covid-19 v letih 2020 in 2021 je na Kopaoniku povzročila povišanje vrednosti Ginijevega indeksa na 0,56.

Spodbujanje in izvajanje alternativnih oblik turizma in dejavnosti prispeva k zmanjšanju sezonskosti. Zelo pomembno je prilagajanje turistične ponudbe različnim ciljnim skupinam. V tem smislu gre za različne turistične produkte in dejavnosti, kot so geoturizem, ekoturizem, doživljajski turizem ter prireditveni in poslovni turizem.

Na značilnosti turizma v izbranih gorskih turističnih destinacijah na zavarovanih območjih Srbije vplivajo različni dejavniki, med katerimi so naravne predispozicije, turistični trg in promocijske aktivnosti. Z uporabo Ginijevega indeksa smo intenzivnost sezonskosti obravnavali v kronološko-prostorskem kontekstu, kar bi s podrobnejšimi analizami in vključevanjem drugih dejavnikov v turistični razvoj destinacij lahko prispevalo k opredelitvi drugačnih modelov blaženja sezonskosti.