

doi: 10.52370/TISC26481MD

SEASONALITY OF TOURISM DEMAND IN WESTERN BALKAN COUNTRIES: A COMPARATIVE ANALYSIS

Martin Dzambaski¹

Abstract

Seasonality of tourism demand represents a significant phenomenon that influences the development and sustainability of tourist destinations. The aim of this paper is to analyze the seasonality of tourism demand in the Western Balkan countries through a comparative analysis of tourist arrivals and overnight stays. The research is based on monthly statistical data for six countries: Croatia, Slovenia, Montenegro, North Macedonia, Albania, and Serbia. The analysis applies descriptive statistics, seasonal index, analysis of variance (ANOVA), correlation analysis, and linear regression. The results indicate a pronounced seasonal concentration of tourism demand, with the highest level of activity occurring during the summer months. Furthermore, the findings reveal a statistically significant positive relationship between tourist arrivals and overnight stays. The study highlights the need for diversification of the tourism offer in order to reduce seasonal fluctuations and achieve more sustainable tourism development in the region.

Key Words: *Seasonality, tourism demand, tourist arrivals, overnight stays, Western Balkans, tourism development*

JEL classification: *L83, Z32*

Introduction

Tourism represents one of the most dynamic economic activities in the contemporary global economy and has a significant impact on economic growth, employment, and regional development. However, despite the

¹ Martin Dzambaski Ms.C., Goce Delcev University – Stip, Faculty of Tourism and Business Logistics, „Krste Misirkov” 10A, 2000 Stip, +38978 752 548 martin.217175@student.ugd.edu.mk

positive economic effects, the development of tourism is often accompanied by various structural challenges, among which the seasonality of tourism demand represents one of the most significant.

Seasonality in tourism refers to periodic fluctuations in tourist flows that occur throughout the year and result from natural, institutional, and socio-economic factors (Butler, 2001). These seasonal variations are most often associated with climatic conditions, school holidays, public holidays, as well as tourists' preferences for traveling during specific periods of the year. According to Baum & Lundtorp (2001), seasonality represents a structural characteristic of the tourism industry that significantly affects the utilization of tourism capacities, the stability of revenues, and the overall functioning of the tourism market.

In many tourist destinations, tourism demand is concentrated in specific periods of the year, leading to periods of excessive pressure on tourism infrastructure, as well as periods of underutilization of tourism resources (Butler, 2001). This phenomenon creates significant challenges in managing tourism supply, particularly in terms of infrastructure planning, human resource management, and the sustainability of tourism development (Koenig-Lewis & Bischoff, 2005).

Tourism development in the Western Balkans is characterized by pronounced seasonality, with tourist arrivals and overnight stays concentrated in the summer months.

The aim of this paper is to analyze the seasonality of tourism demand in the countries of the Western Balkans through a comparative analysis of tourist arrivals and overnight stays. The research is based on secondary statistical data and applies descriptive statistics, analysis of variance (ANOVA), correlation analysis, and regression analysis in order to identify seasonal patterns in tourism demand and to examine the relationship between key tourism indicators.

Literature Review

Seasonality is one of the most significant phenomena in tourism and is considered one of the fundamental characteristics of tourism demand. Seasonality is most commonly defined as a periodic and recurring variation in tourist flows that occurs throughout the year and results from natural, institutional, and socio-economic factors (Butler, 2001). These variations are most often associated with climatic conditions, school

holidays, public holidays, and tourists' preferences for travelling during specific periods of the year (Higham & Hinch, 2002).

Seasonality represents a structural characteristic of the tourism industry that significantly influences the functioning of the tourism market and the utilization of tourism capacities (Baum & Lundtorp, 2001). During periods of high tourist season, increased pressure is often placed on tourism infrastructure and natural resources, whereas during the low season, tourism capacities remain underutilized (Butler, 2001).

Research indicates that seasonality has a significant impact on the economic effects of tourism. The concentration of tourism demand within a limited period may lead to revenue instability, seasonal employment, and challenges in human resource management within the tourism sector (Koenig-Lewis & Bischoff, 2005). Furthermore, seasonal variations may affect the competitiveness of tourism destinations and their capacity to achieve sustainable development (Butler, 2001).

In addition to economic effects, seasonality also has significant social and environmental implications. During periods of intensive tourism activity, increased pressure may arise on local infrastructure, natural resources, and the environment, which may affect the quality of life of the local population and the sustainability of tourism development (Gössling et al., 2015).

In contemporary research, seasonality is increasingly analyzed through quantitative indicators and statistical models in order to better understand the dynamics of tourism demand. The analysis of tourism flows and their temporal distribution represents an important basis for planning tourism development and managing tourism destinations (Buhalis & Gretzel, 2011). Furthermore, studies indicate that seasonality has significant implications for the sustainability of tourism, as the concentration of tourism activities within a short period of time may create pressure on natural resources, infrastructure, and local communities (Gössling et al., 2015).

Previous studies have also examined tourism development and destination potential in smaller destinations in North Macedonia, highlighting the importance of promotion and strategic destination management (Popova et al., 2024).

Digital transformation has also become an important factor influencing tourism development and working conditions in the tourism sector, particularly through the implementation of new technologies and digital tools (Dzambaski, 2025).

Research Methodology

This paper is based on the analysis of secondary statistical data on tourism flows in the Western Balkan countries. The analysis includes a comparative examination of tourist arrivals and overnight stays in several countries in the region in order to identify seasonal patterns of tourism demand. The research covers Croatia, Slovenia, Montenegro, North Macedonia, Albania and Serbia.

The analyzed data cover the period from 2015 to 2025. To avoid excessive data density in tables and figures, the study uses the average monthly values calculated for the entire analyzed period.

The data used in the analysis were obtained from the official statistical institutions of the analyzed countries and their national statistical databases, which provide relevant and comparable statistical information on tourism flows.

Several statistical methods were applied in the research in order to examine the seasonality of tourism demand and the relationship between key tourism indicators. First, descriptive statistics were used to present the basic characteristics of the data and their distribution across months.

In order to examine the existence of statistically significant differences in tourist overnight stays between different months, an analysis of variance (ANOVA) was applied.

In addition, regression analysis was applied to examine the impact of the number of tourists on the number of overnight stays. The analyses were conducted using the statistical software PSPP, which enables the application of various statistical techniques for data analysis.

Results and Discussion

Table 1: *Average monthly tourist overnight stays in selected Western Balkan countries (2015–2025)*

Month	Croatia	Slovenia	Montenegro	North Macedonia	Albania	Serbia
January	487.211	663.550	63.612	83.149	114.483	631.367
February	524.637	717.251	74.014	77.760	105.765	627.217
March	816.413	659.410	93.611	88.552	126.430	613.464
April	2.160.712	777.353	184.903	116.023	200.190	663.349
May	4.298.434	972.286	355.053	163.654	305.910	839.150
June	10.703.920	1.432.035	660.083	185.240	536.296	890.908
July	23.249.906	2.441.272	1.276.474	261.808	953.061	1.117.964
August	25.615.388	2.800.230	1.496.552	310.683	1.212.981	1.280.497
September	9.798.385	1.456.538	721.187	201.567	586.502	897.936
October	2.582.695	986.337	249.885	155.589	263.007	816.617
November	705.386	622.783	99.913	107.906	205.679	612.755
December	668.051	711.828	70.821	88.404	186.135	625.526

Source: *Author's calculations using data from national statistical offices.*

Table 1 presents the average monthly distribution of tourist overnight stays in the selected Western Balkan countries. There is a concentration of tourism demand during the summer months. In most of the analyzed countries, the lowest values of tourist overnight stays are recorded during the winter months, particularly in January and February, which further indicates the existence of pronounced seasonality in tourism demand. These results confirm that tourism activity in the region is strongly dependent on the summer tourism season.

Table 2: *Seasonal index of tourist overnight stays in selected Western Balkan countries*

Month	Croatia	Slovenia	Montenegro	North Macedonia	Albania	Serbia
January	7	56	14	54	29	79
February	8	60	17	51	26	78
March	12	56	21	58	32	77
April	32	66	42	76	50	83
May	63	82	80	107	77	105
June	157	121	148	121	134	111
July	342	206	287	171	238	140
August	377	236	336	203	303	160
September	144	123	162	131	147	112

October	38	83	56	101	66	102
November	10	52	22	70	51	76
December	10	60	16	58	47	78

Source: Author's calculations using data from national statistical offices.

Table 2 presents the seasonal index of tourist overnight stays in the selected Western Balkan countries. As can be observed, tourism demand in all analyzed countries is strongly concentrated in the summer months, particularly in July and August.

The most pronounced seasonality is observed in Croatia, where the seasonal index reaches values of 342 in July and 377 in August, indicating a strong concentration of tourism activity during the summer season. Similarly high values are recorded in Montenegro and Albania, where the index reaches 336 and 303 in August, respectively, suggesting a significant dependence on summer tourism.

In Slovenia, Serbia, and North Macedonia, seasonal variations are somewhat less pronounced; however, a clear concentration of tourism demand during the summer period is still evident. In all analyzed countries, the lowest values of the seasonal index are recorded during the winter months, particularly in January and February, which further confirms the existence of pronounced seasonality of tourism demand across the region.

Table 3: *Average monthly tourist arrivals in selected Western Balkan countries (2015–2025)*

Month	Croatia	Slovenia	Montenegro	North Macedonia	Albania	Serbia
January	91.116	81.784	6.602	15.261	34.541	106.684
February	102.790	113.284	6.220	13.522	30.979	117.821
March	117.501	93.961	6.471	13.443	30.909	111.495
April	155.939	91.973	8.605	16.420	52.533	137.929
May	200.805	103.932	13.632	23.502	46.112	179.149
June	245.085	167.047	14.963	21.568	66.985	160.621
July	304.989	191.659	17.619	30.511	112.604	174.094
August	347.242	227.557	17.292	37.932	132.214	205.717
September	185.642	158.877	12.828	23.629	70.662	152.838
October	173.788	137.380	9.771	21.318	46.638	155.700
November	131.023	97.075	7.589	16.607	39.998	115.701
December	126.444	105.370	7.289	17.405	45.244	118.114

Source: *Author's calculations using data from national statistical offices.*

Table 3 presents the average monthly distribution of tourist arrivals in the selected Western Balkan countries. As can be observed, all analyzed countries exhibit pronounced seasonal dynamics, with the highest values recorded during the summer months, particularly in July and August.

The largest volume of tourist arrivals is recorded in Croatia, where the number of tourists reaches 347,242 in August.

The lowest values of tourist arrivals are recorded during the winter months, particularly in January and February, which further indicates the existence of pronounced seasonality of tourism demand across the region.

Table 4: *Average length of stay of tourists in selected Western Balkan countries by month (2015–2025)*

Month	Croatia	Slovenia	Montenegro	North Macedonia	Albania	Serbia
January	5	8	10	5	3	6
February	5	6	12	6	3	5
March	7	7	14	7	4	6
April	14	8	21	7	4	5
May	21	9	26	7	7	5
June	44	9	44	9	8	6
July	76	13	72	9	8	6
August	74	12	87	8	9	6
September	53	9	56	9	8	6
October	15	7	26	7	6	5
November	5	6	13	6	5	5
December	5	7	10	5	4	5

Source: *Author's calculations using data from national statistical offices.*

Note: Average length of stay was calculated as the ratio between tourist overnight stays and tourist arrivals. The values represent average monthly values for the period 2015–2025.

Table 4 presents the average length of stay of tourists in the analyzed Western Balkan countries. As can be observed, the length of stay varies among the countries, with the longest stays recorded in Croatia and Montenegro, particularly during the summer months.

In Slovenia, Serbia, and North Macedonia, the average length of stay is relatively shorter and remains more stable throughout the year. These differences indicate the existence of different patterns of tourist consumption and travel behavior in the region.

Table 5: ANOVA results for monthly differences in tourist overnight stays

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.1E+14	11	2.0E+13	1.09	0.383
Within Groups	1.1E+15	60	1.8E+13		
Total	1.3E+15	71			

Source: *Author's calculations using PSPP statistical software.*

To examine whether statistically significant differences exist in the number of tourist overnight stays between the months, an analysis of variance (ANOVA) was applied. The results show that the value of the F-statistic is 1.09, while the level of statistical significance is $p = 0.383$, indicating that there are no statistically significant differences between the analyzed months. Although descriptive statistics indicate visible seasonal fluctuations in tourist overnight stays, these differences are not statistically significant at the selected significance level ($p > 0.05$).

Table 6: Correlation between tourist arrivals and overnight stays

Variables	Overnight stays	Tourist arrivals
Overnight stays	1.000	0.686
Tourist arrivals	0.686	1.000

Source: *Author's calculations using PSPP statistical software.*

To examine the relationship between tourist arrivals and the number of overnight stays, Pearson correlation analysis was applied. The results indicate a strong positive correlation between the two variables ($r = 0.686$, $p < 0.01$). This suggests that an increase in the number of tourists is directly associated with an increase in the number of tourist overnight stays, which is an expected outcome in the tourism industry.

Table 7: Regression results for tourist arrivals and overnight stays

Model summary / Regression results	Value
R	0.69
R Square	0.47
Adjusted R Square	0.46
F	62.15
Sig.	0.000
B (Tourist arrivals)	37.98
Beta	0.69
Sig. (Tourist arrivals)	0.000

Source: *Author's calculations using PSPP statistical software.*

Linear regression analysis was conducted to examine the impact of tourist arrivals on the number of tourist overnight stays. The results indicate that the model is statistically significant ($F = 62.15$, $p < 0.01$). The coefficient of determination is $R^2 = 0.47$, suggesting that approximately 47% of the variation in overnight stays can be explained by the number of tourist arrivals. Additionally, the regression coefficient shows a significant positive influence of tourist arrivals on the number of overnight stays ($\beta = 0.69$, $p < 0.01$).

Conclusion

This paper analyzed the seasonality of tourism demand in selected Western Balkan countries through a comparative analysis of tourist arrivals and overnight stays. The results of the analysis indicate that tourism activity in the region is strongly concentrated in the summer months, particularly in July and August, which confirms the existence of pronounced seasonality in tourism demand.

The analysis of tourist overnight stays and tourist arrivals shows that Croatia records the largest volume of tourism activity compared to the other analyzed countries, while the remaining countries in the region exhibit a similar seasonal pattern characterized by a significant increase in tourism demand during the summer period.

Furthermore, the results of the correlation analysis indicate a strong positive relationship between tourist arrivals and the number of overnight stays, suggesting that an increase in the number of tourists directly leads to an increase in tourist overnight stays.

The findings of the study indicate that tourism demand in the Western Balkan countries is highly dependent on the summer tourism season. Therefore, future tourism development policies and strategies in the region should focus on the diversification of tourism supply and the development of alternative tourism products in order to reduce seasonality and achieve more sustainable tourism development.\

References

1. Baum, T., & Lundtorp, S. (Eds.). (2001). *Seasonality in Tourism*. Routledge. <https://doi.org/10.4324/9780080516806>

2. Buhalis, D., & Gretzel, U. (2011). Tourism and social media. In R. Law, M. Fuchs, & F. Ricci (Eds.), *Information and communication technologies in tourism 2011* (pp. 3–12). Vienna: Springer.
3. Butler, R. (2001). Seasonality in tourism: Issues and implications. In T. Baum & S. Lundtorp (Eds.), *Seasonality in tourism* (pp. 5–21). Oxford: Pergamon.
4. Dzambaski, M. (2025). The impact of digitalization on stress and well-being among tourism employees. *International Journal of Economics, Management and Tourism*, 5(2), 66–76. <https://doi.org/10.46763/IJEMT255266dz>
5. Gössling, S., Scott, D., & Hall, C. M. (2015). Inter-market variability in CO2 emission-intensities in tourism: Implications for destination marketing and carbon management. *Tourism Management*, 46(6), 203–212. <https://doi.org/10.1016/j.tourman.2014.06.021>
6. Higham, J., & Hinch, T. (2002). Tourism, sport and seasons: The challenges and potential of overcoming seasonality in the sport and tourism sectors. *Tourism Management*, 23(2), 175–185. [https://doi.org/10.1016/S0261-5177\(01\)00046-2](https://doi.org/10.1016/S0261-5177(01)00046-2)
7. Koenig-Lewis, N., & Bischoff, E. (2005). Seasonality research: The state of the art. *International Journal of Tourism Research*, 7(4–5), 201–219. <https://doi.org/10.1002/jtr.531>
8. Popova, D., Miteva, N., & Dzambaski, M. (2024). Region of Berovo as a Tourist Destination. In *Yearbook – Faculty of Tourism and Business Logistics* (pp. 117–125). Faculty of Tourism and Business Logistics. <https://doi.org/10.46763/YFNTS2471117p>