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COMPARING SEASONAL PATTERNS ACROSS MAIN INBOUND TOURISM COUNTRIES IN NORTH MACEDONIA

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ABSTRACT

The study measures the level of seasonality among top six inbound countries in tourism market in North Macedonia. The Gini and Theil indexes, as well as the correlation values for each of the selected countries, are computed and compared to show the differences between them. Overnights of tourists from Albania, Bulgaria, Poland, Serbia, the Netherlands, and Turkey from 2011 to 2019 is the primary variable. The research found that the Netherlands has the greatest seasonality, followed by Poland. The seasonality in neighboring countries (Albania, Bulgaria, and Serbia) is significantly lower. Turkey has been added to this group. The study suggests boosting tourism marketing to Turkey, which has low seasonality and accounts significant portion of total foreign overnights, as well as maintaining smooth campaign to neighboring countries with lower seasonality. Furthermore, a discussion is open on creating new strategies for attracting tourists from the Netherlands and Poland out of the main season.

KEY WORDS: Seasonality, Inbound tourism, Gini index, Theil index.

INTRODUCTION

Seasonality is a constant challenge to each country that develops tourism, and its temporal concentration is noted on a worldwide level

(Duro&Turrión-Prats, 2019). It provokes many problems to the destinations, from economic aspects (Williams & Shaw, 1991), environmental aspects(Manning & Powers, 1984), and social aspects in terms of well-being of residents (Sastre et al., 2015).Such imbalance in tourism flows known as seasonality (Allcock, 1994) may be provoked by the natural conditions or institutional factors (Allcock, 1994; Bar-On, 1975; Butler, 1994; Commons & Page, 2001; Connell et al., 2015; Higham&Hinch, 2002), and other factors like type of tourist product offered by the destination (Cuccia& Rizzo, 2011; Martín Martín et al., 2014), the market structure (Fernández-Morales et al., 2016), and economic variables(Rosselló et al., 2004).On the other hand, off-season offers benefits like ecological recovery (Butler, 1994), sociocultural recovery (Hartmann, 1986; Mathieson & Wall, 1982) maintenance of tourist infrastructure (Grant et al., 1997), and even preserving the identity (Hartmann, 1986).

In this paper, we attempt to calculate seasonality patterns of international tourism market in North Macedonia. The purpose is to make a comparative analysis of top six inbound tourism countries and to obtain evidence on their strengths and dynamic. Besides the introductory section, the article is structured as follows: First, it addresses some methodological aspects and data. Second, it discusses the results of the research. Third, it concludes the main statements. Finally, it posts some limitations and future work to be addressed.

DATA AND METHODOLOGY

Seasonality in tourism may be tested by computing different variables. In this study, and consistent with the literature, seasonality is understood as the monthly concentration of demand. The basic variable is the overnights of international tourists from selected countries that visited North Macedonia. The following six countries were chosen for the research: Albania, Bulgaria, Poland, Serbia, the Netherlands, and Turkey as they encompass 45% of total international overnights in North Macedonia in 2019 (Table 1). Generally, tourists from Poland, the Netherlands and Turkey visit North Macedonia with packaged-tours, while from Albania, Bulgaria and Serbia as neighboring countries generally travel individually and occasionally by travel agencies.

The sample period spreads over nine years i.e. 2011-2019. That period was targeted because as of 2011 the Government successfully introduced new measures for subsidizing tour operators and incoming tourist agencies. Furthermore, many new low-budget flights were established, and by the end of 2019 international tourism was developing smoothly. However, a shock

and a profound structural tourism development change happened in 2020 due to COVID-19 pandemic.

Table 1. Inbound tourism in North Macedonia by selected countries in 2019 (%)

Country	%
Albania	3.53
Bulgaria	5.91
Serbia	6.72
Poland	8.11
Netherlands	10.14
Turkey	10.49
Total	44.89

Source: Authors' calculations based on the State Statistical Office (online data).

Seasonality may be computed with various parameters, like: Seasonal Range, Seasonality Ratio, Peak Seasonal Factor, Coefficients of Seasonal Variation Amplitude Ratios, Similarity Ratios, Coefficient of Variation, and Concentration Indices (Koenig-Lewis & Bischoff, 2005). This research is based on the Gini index and the Theil index.

The Gini index (Gini, 1912) is a frequently used index that analyzes inequality in particular series, based on the Lorentz curve (Black, 2002; Fernández-Morales et al., 2016; Lim & McAleer, 2008; Wöber, 1997). It uses the equation given in formula (1).

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

Where for x_i take the fractions from the intervals (example $1/n, 2/n, \dots, n/n$), y_i for the values of y_i the cumulative fractions from the real values of the series are taken.

The Theil index (Theil, 1967) is calculated using a logarithmic function on the fractures of the series $p_t = \frac{x_t}{X}$, where the value of overnights in the period t , X is the sum of the total number of nights per year $\therefore X = \sum_{t=1}^n x_t$. For the purposes of this paper, the relative redundancy given by formula (2) is used:

$$R = 1 - \frac{H}{\log n} \quad (2)$$

Where $H = \sum_{t=1}^n p_t \log \frac{1}{p_t}$ (3)

Both coefficients give a maximum value of seasonality 1, when it is concentrated in only one period, and a value close to zero when the values

are evenly distributed. The difference between the two coefficients is in the upper part of the distribution of values, which is important for the seasonality in tourism. Furthermore, the Theil index can be used to compare inequalities in data sets.

RESULTS, ANALYSIS AND DISCUSSION

Tables 2 and 3 show the calculated values for the existence of seasonality in terms of international tourism demand, divided by country of origin with the largest market share.

From the data in Table 2, it is noticeable that Bulgaria has the lowest average seasonality of index values (0.101895), whereas the Netherlands has the greatest (0.312667). In other words, visitors from Bulgaria have the most variation in the statistics, while tourists from the Netherlands have the lowest. These values, however, are minor for each of the investigated countries, implying that there is no substantial difference in seasonality between years in any of the analyzed emittive zones. Furthermore, in general, the seasonality of neighboring countries (Albania, Bulgaria, and Serbia) is lower than that of countries that do not border North Macedonia (the Netherlands, and Poland) except for Turkey.

Table 2. Gini index values for selected incoming countries, 2011-2019

Year/Country	Albania	Bulgaria	Poland	Serbia	Turkey	Netherlands
2011	0.134968	0.079618	0.273699	0.123885	0.156642	0.32076
2012	0.148368	0.083317	0.277129	0.123552	0.129084	0.310602
2013	0.116385	0.155101	0.289321	0.125205	0.132072	0.307014
2014	0.080526	0.125203	0.307463	0.127336	0.159993	0.290722
2015	0.125032	0.060871	0.327982	0.104785	0.157381	0.314411
2016	0.103148	0.086707	0.304521	0.104581	0.151675	0.323946
2017	0.100142	0.126397	0.334949	0.114317	0.180717	0.318991
2018	0.081787	0.11209	0.329471	0.091228	0.177405	0.313212
2019	0.108899	0.087754	0.30567	0.10924	0.166058	0.314346
Average	0.111028	0.101895	0.305578	0.113792	0.156781	0.312667

Source: Authors' calculations

Table 3 provides the Theil index values for the same selected incoming countries and for the same sampled period from 2011 to 2019. Like the Gini index, this indicator measures inequality in data series. Yet, it is more sensitive than the Gini index, especially in the higher section of the value distribution, which is crucial for tourism seasonality.

When evaluating the data in Table 3, the same conclusion is reached, but this time with Theil index values. Once again, the series from Poland and the Netherlands have the highest seasonality (averages of 0.23553 and 0.274422, respectively), whereas the neighboring countries have substantially lower average seasonality (Albania 0.02556, Bulgaria 0.019574, and Serbia 0.029896). Again, Turkey is found to have low seasonality of an average of 0.076255.

Table 3. Theil index values for selected incoming countries, 2011-2019

Year/Country	Albania	Bulgaria	Poland	Serbia	Turkey	Netherlands
2011	0.033635	0.014375	0.185553	0.036504	0.062692	0.270852
2012	0.044612	0.01294	0.181976	0.028868	0.063189	0.276618
2013	0.026661	0.029671	0.212623	0.040939	0.068546	0.260632
2014	0.020996	0.026882	0.2461	0.033319	0.071941	0.252389
2015	0.025596	0.013968	0.261513	0.027293	0.082412	0.278927
2016	0.024795	0.017461	0.218262	0.031213	0.085995	0.284488
2017	0.020307	0.021987	0.273251	0.025974	0.08966	0.289412
2018	0.01645	0.02186	0.296511	0.020062	0.086698	0.275274
2019	0.016988	0.017024	0.243982	0.024891	0.075166	0.281203
Average	0.02556	0.019574	0.23553	0.029896	0.076255	0.274422

Source: Authors' calculations

Table 4. Correlation coefficients between Gini and Theilindexes for selected incoming countries

Albania	Bulgaria	Poland	Serbia	Turkey	Netherlands
0.860063	0.946001	0.952429	0.772322	0.698003	0.833989

Table 4 provides the correlation values between the two indices for each of the investigated emitive zones to demonstrate the differences between them. It is noticeable that the smallest correlation is in the indexes for Turkey (0.698003), and the largest for Poland (0.952429). This means that the distribution at the top of the series values affects the changes in the degree of correlation between the indexes. Because the values of overnights are concentrated in the middle part of the yearly series, the Lorentz curve shows that the values of the series with considerable seasonality go above the predicted value and subsequently trend to the maximum value (Figure 1).

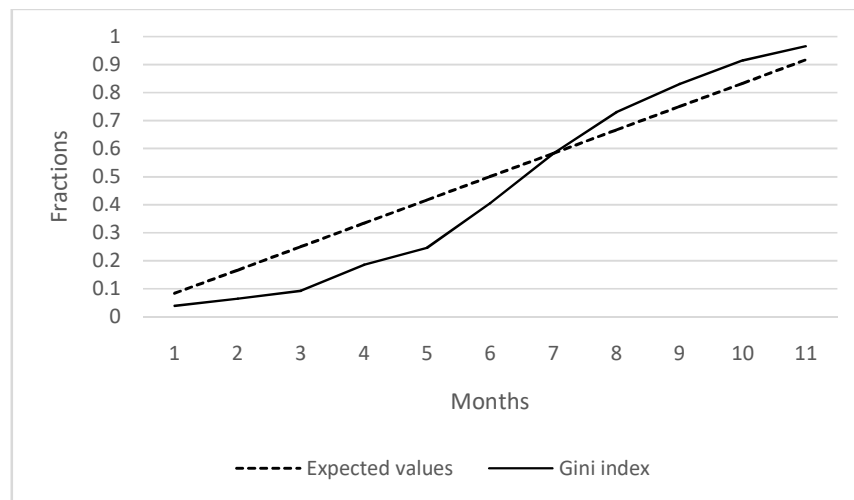


Figure 1. Gini index and expected values for Turkey, 2019

CONCLUSION

The study calculated Gini and Theil indexes and the correlation values for Albania, Bulgaria, Poland, Serbia, the Netherlands, and Turkey, as top six inbound tourism countries in North Macedonia. Then a comparison is made to identify differences and level of seasonality of each of the selected countries. The primary variable was tourist overnights during 2011-2019. Substantial share of 10.14% of total international overnights in 2019 are booked by the Dutch tourists (Table 1), for which the research found to be a country with the highest seasonality. In this manner, new strategies must be introduced to attract this group of tourists all -year round. North Macedonia is perceived as a sunny destination, which undermines other attractive factors. New creative items (cultural and heritage-based products) are less sensitive to the weather, especially during the off-season. Yet, there is a need for extra activities in tourism areas, which may impact product diversification (Benur&Bramwell, 2015). Seasonality's significant impacts can be managed, minimized, and controlled, but they cannot be avoided. Despite numerous attempts to overcome seasonality, there is still much that can be done, such as lengthening the main season, establishing additional seasons, diversifying markets, using differential pricing and tax incentives on a temporal basis, boosting domestic tourism in off-seasons, and providing off-season attractions or events. Furthermore, if held during the shoulder or off-season, exceptional events such as festivals and conferences may aid in overcoming seasonal impacts.

Additionally, the research found low seasonality in neighboring countries (Albania, Bulgaria, and Serbia) and in Turkey as well. So, the promotion effort should be targeted towards these countries despite their modest contribution of 3-6% market share. Yet, more aggressive promotion may be addressed to Turkey due to the low seasonality and significant portion of the share in total international overnights.

LIMITATIONS AND FUTURE WORK

Several constraints limited the study, but they can also serve as useful starting points for future research.

First, the sample period (2011-2019) is quite short. If the time series is longer, the results on seasonality's influence on tourism development may be more serious since it reflects a longer period.

Second, the analysis employs a straightforward approach that can be used in a variety of situations. More complex approaches, such as SARIMA (Seasonal Autoregressive Moving Average) models, TQSAR (Two-Quarter Smoothed Annualized Rate) method, HP (Hodrick-Prescott) filter smoothing method, and others, may improve the results.

Finally, rather of relying on a single approach, future study may use a variety of models and theories to measure tourism seasonality.

Despite the challenges of measuring and comparing seasonal patterns in tourism among inbound countries, this study contributes to a better understanding of tourism data fluctuations so that tourism demand may be easily managed.

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