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## INVESTIGATING TOURISM SEASONALITY IN MACEDONIA

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**Abstract:**

The main aim of the paper is to make an empirical investigation on tourism seasonality. Moreover, the research examines seasonal patterns in tourism in terms of tourist arrivals. In this line, the case of Macedonia is studied by employing the Gini coefficient and Seasonality Indicator, thus covering a time-frame of past two decades. The results reject the research hypothesis and point to conclusion of having low seasonality in tourism. Hence, this empirical evidence confirm that tourism flow distribution or concentration is not significant to tourism development. The contribution of this paper lies in the fact that disentangles the belief of having strong and notable high season during summer months. Additionally, this research may serve as a starting point for urging measures and activities for enhancing the up-to-date modest tourism development in Macedonia.

*Key words:* tourism, seasonality, Gini coefficient, seasonality indicator.

*Jel Classification:* L83, R1, O47

### INTRODUCTION

Regardless the level of economic development, each country is interested in tourism due to its various positive impacts. Generally, tourism contributes to economic growth and development, promoting international understanding and peace, improving living standard, stimulating local trade and industry development, protection of cultural heritage etc. (Goeldner, Ritchie, and McIntosh 2000). In this line, seasonality is noted as one of the most influencing factor for limiting continuous development. So, one may understand it as a phenomena that provokes incomplete and unbalanced usage of means necessary for economic development (BarOn 1973).

This research attempts to answer the main investigation question for examining any seasonal patterns in tourism in Macedonia. In order to explore this hypothesis, the

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paper is structured in several parts. After the introductory part, there is a section that gives a brief overview on main reasons for seasonality in tourism flows, underlining the most profound negative, as well as positive effects. The research design encompassing the methodology and research frame are posed in Section two. Section three presents the main research findings and discussion, while the conclusion remarks are noted in last part of the paper. Generally, the contribution of this paper lies in the fact that represents first attempt empirically to analyze the seasonality in tourism in Macedonia. Simultaneously, this research disentangles the belief of having strong and constant high season during summer months. Moreover, in a scientific manner is argued that the modest results in tourism development in Macedonia must not be addressed to seasonality.

### SNAPSHOT ON TOURISM SEASONALITY

Seasonality in tourism has been a subject of interest among researchers and academicians thus provoking continuous debates and argumentations (BarOn 1993 and 1999; Baum 1999; Chung 2009; Higham and Hinch 2002; Jang 2004; Lundtorp 2001; Yacoumis 1980). Yet, they all generally agree that seasonality is occurred due to temporary imbalance in tourism flows caused by three types of factors:

- (1) Nature (sunny days, snow falls, insolation etc.);
- (2) Institutional factor (religious and pilgrimage travel, workers' holidays, students' ferries, festival events etc.); and
- (3) Other factors (social pressure, personal preferences, inertness etc.).

Moreover, it is noted that this type of systematic variations may be present during the year, semester, but also in the frames of a month or a week, even in a single day (Holloway 1994; Lundberg, Krishamoorthy, and Stavenga 1995). Each of them may have positive or negative influence on tourism development.

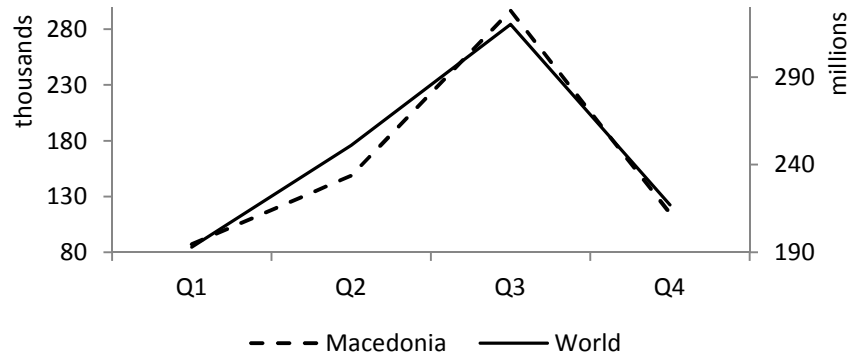
If having negative consequences over tourism development, the researches pose the fact that seasonality may not be controlled (Allcock 1989; Edgell 1990; Laws 1991; Snepenger, Houser, and Snepenger 1990; Szivas, Riley, and Airey 2003). In this respect, they all refer to damaging influences in:

- (a) Employment (part-time employment, social instability and insecurity etc.);
- (b) Investments (high risks over law occupancy rate); and
- (c) Environment (pollution, overcrowding, xenophobia, criminal activity etc.).

Thankfully to various methods for detecting seasonality, one may identify and introduce measures and activities in order to cope and overcome negative impacts on tourism. As the most commonly applied methods, the academicians note: extension of the season by introducing new tourist products immune to seasonality; application of positive pricing policy; developing business tourism, etc. (Nadal, Font, and Rossello 2004; Sutcliffe and Sinclair 1980; Witt, Brooke, and Buckley 1991).

On the other side, there is a large body of literature that elaborates an approach that seasonality provokes positive effects as well, particularly in terms of sociology and ecology. Namely, after devastating high season, long and quiet period is more than

welcomed especially for recovering the sources, and the local population as well (Butler 1994; Drakatos 1987; Grant, Human, and LePelley 1997; Hartmann 1986).



**Figure 1.** Number of tourists in 2011, Macedonia vs. World

Figure 1 presents number of tourists by quarters in 2011 in Macedonia, and in the World as well. One may visually conclude that Quarter 3 (comprised of summer months: July, August and September) encompasses the largest quantum of tourists and travelers, that representing the highest peak-point i.e. the high season. With regards to Macedonia this may be explained with fact that in Quarter 3 tourism demand is the highest due to presence of multiple factors. Namely, in these months the usage of holidays and ferries is the highest (institutional factor), there is hot and sunny weather particularly in lake resorts (natural factor) and there is a manifestation of personal preferences and attitudes of tourists and travelers (other factors). Although at first glance this may seem as a strong seasonality pattern, yet the in-depth analysis in addition points to opposite conclusion.

## METHODOLOGY

Based on the research question noted in the introductory part, the research attempts to meet the following aims:

- To gain in-depth knowledge regarding seasonal patterns of tourism in Macedonia; and
- To empirically test and analyze the strength of seasonality in tourism demand in Macedonia.

Hence, the following research hypothesis is set: “Tourism demand in Macedonia has strong seasonality ( $G > 0.5$  and  $SI = 0$ )”.

The research is mainly covered by quantitative approach in order to meet the set objectives. In this respect, the analysis of seasonal concentration of tourism demand in

Macedonia is done by computing the Gini coefficient (G) and the Seasonality Indicator (SI). The main variable applied in this research is the number of tourists on monthly basis during the period 1992-2012. Calculations are based on standard equations for G and SI on yearly basis (Eq. 1 and Eq. 2).

The Gini Coefficient is first developed and introduced in 1912, and since then it is one of the most commonly used coefficients for measuring inequality of revenues caused by temporary disorders. Moreover, the Gini coefficient is often applied as appropriate measure for expressing seasonality in tourism (Arnold 2008; Bigovic 2012; Black 2002; Fernández-Moralez 2003; Lim and McAleer 2008; Nadal, Font, and Rossello 2004). In this respect, different approaches are noted for calculating the Gini coefficient (Xu 2003). Its value spreads between 0 and 1, whereas bigger G represents bigger inequality i.e. seasonality in tourism, and vice versa. In this research, the Gini coefficient on yearly basis is calculated upon standard equation (Eq. 1).

$$G = 2/n \sum_{i=1}^n (x_i - y_i) = 2/n[(x_1 - y_1) + (x_2 - y_2) + \dots + (x_n - y_n)] = 2/n[\sum_{i=1}^n x_i - \sum_{i=1}^n y_i] \quad (1)$$

Whereas:

$n$  denotes number of months;

$x_i$  denotes rank of the months (1/12, 2/12, ..., 12/12); and

$y_i$  denotes cumulative relative frequency of tourist arrivals in rank by ascending order.

The Seasonal Indicator is additional measure for quantifying empirically observed seasonality patterns in tourism. Most commonly is calculated as an inverse value of the Seasonality Ratio (Wanhill 1980; Yacoumis 1980). Its value ranges from 1/12 up to 1, whereas bigger SI represents absence of fluctuation during the year, i.e. seasonality in tourism, and vice versa. In this research, the SI is calculated upon standard equation (Eq. 2).

$$SI = \frac{y_0}{y_n} \quad (2)$$

Whereas:

$y_0$  denotes the average number of tourist arrivals per year; and

$y_n$  denotes the highest number of tourist arrivals in the particular year.

## RESULTS, ANALYSIS AND DISCUSSION

As noted in the methodological framework, the main aim is to calculate G and SI for tourism demand in Macedonia for the sample period. For that purpose, some previous calculation must be undertaken. In this line, Table 1 presents calculations of the rank of fractiles i.e. months in a year. In addition, due to their consistency, the obtained data are applied in further calculations, particularly in computing the G values.

**Table 1.** Calculations of fractiles' rank

$x_i$
1/12 = 0.08
2/12 = 0.17
3/12 = 0.25
4/12 = 0.33
5/12 = 0.42
6/12 = 0.50
7/12 = 0.58
8/12 = 0.67
9/12 = 0.75
10/12 = 0.83
11/12 = 0.92
12/12 = 1.00
Total = 6.50

**Table 2.** Computing data for G coefficient

Year	$y_i$	$\Sigma x_i - \Sigma y_i$
1992	5.162265	1.337735
1993	4.688712	1.811288
1994	4.712432	1.787567
1995	4.942154	1.557846
1996	5.032522	1.467477
1997	4.980468	1.519532
1998	4.589051	1.910948
1999	4.632997	1.867002
2000	4.924533	1.575467
2001	5.274685	1.225315
2002	4.741342	1.758657
2003	4.655795	1.844205
2004	4.773329	1.726671
2005	4.818808	1.681192
2006	4.805113	1.694887
2007	4.704226	1.795774
2008	4.799811	1.700188
2009	4.844718	1.655282
2010	4.816294	1.683706
2011	4.790886	1.709114
2012*	4.132557	1.367443

Note: \* Data refer by the end of October

Since the fractiles' rank are computed, the calculations proceed by obtaining further data. So, Table 2 presents cumulative relative frequency of tourist arrivals by ascending order on yearly basis ( $y_i$ ). Additionally, this table presents the difference between number of fractiles and the cumulative relative frequency in rank ( $\Sigma x_i - \Sigma y_i$ ).

The calculated values for G and SI for the sample period are presented in Table 3. It is noticeable similarities in the value during the past two decades among the both indicators. So, with regards to the Gini coefficient, the values spreads between 0.2042 and 0.3185. The average value of G for the period 1992-2012 is 0.2774. The data show that seasonality in terms of intra-year monthly variations in tourist arrivals is constant during the 21-year period. Due to fact that research calculations referring Gini coefficient are far below the margin of 0.5, one may conclude presence of very modest seasonality in tourism. Namely, the low value of G shows that current distribution of tourism demand for the sample period, has no meaning to Macedonia. So, the concentration in terms of tourist arrivals in Macedonia points to relative balance and equality. Thus, high peaks in July and August have not sufficient capacity and strength for serious influence with an in-depth manner.

**Table 3.** Gini coefficient and Seasonality Indicator of tourism demand in Macedonia, 1992-2012

Year	Tourist arrivals	G	SI
1992	585699	0.2230	0.4723
1993	647728	0.3019	0.3861
1994	613154	0.2979	0.4207
1995	503837	0.2596	0.4357
1996	476205	0.2446	0.4794
1997	451871	0.2533	0.4843
1998	575080	0.3185	0.4106
1999	549630	0.3112	0.3976
2000	632523	0.2626	0.4385
2001	333308	0.2042	0.4828
2002	441712	0.2931	0.3960
2003	483151	0.3074	0.4103
2004	465015	0.2878	0.4129
2005	509706	0.2802	0.4187
2006	499473	0.2825	0.4257
2007	536212	0.2993	0.4104
2008	605320	0.2834	0.4325
2009	587770	0.2759	0.4419
2010	586241	0.2806	0.4470
2011	647568	0.2849	0.4506
2012*	597481*	0.2735	0.4259
average 1992-2012	539461	0.2774	0.4324

Note: \*Data refer by the end of October.

With regards to the Seasonality Indicator, one may adhere from Table 3 that the calculated values for the sample period ranges between 0.3861 and 0.4843 noting an average value of 0.4324. Since all computed data are far above zero, one may argue humble fluctuation within a year. So, upon the calculations for SI, we may conclude the presence of fragile tourism seasonality in Macedonia. Since both calculations (for G and SI) indicate data that do not support the values for confirming hypothesis of having strong seasonality in tourism in Macedonia, we reject it.

Additionally, it can be noted that all calculated values of G and SI are similar, almost identical and approximately constant with small neglectable variations (G has the lowest value and SI the highest value in 2001 due to war conflict in Macedonia). This points to conclusion that during the entire sample covering a period over twenty years there was never any meaningful and strong seasonal patterns in tourism in Macedonia. So, the belief for having high tourism seasonality in Macedonia with significant characteristics, particularly in summer months, scientifically is proved to be groundless. Consequently, we disentangled the attitude of having strong high season during summer, but rather modest results in tourism development. Yet, one may find positive impulse in increased presence of foreign tourists, particularly in the past two years, as well as in encouraging forecasted values. Namely, upon a medium-run estimation of foreign tourist demand, it is expected an increase of 17% until 2014 (Petrevska 2012, 53).

## CONCLUSION

This paper aims to recall the importance of seasonality as one of the major and profound limits for tourism development. In this respect, a brief overview is presented on reasons for the most examined negative effects of tourism seasonality. Additionally, some approaches referring positive impacts due to seasonality have been noted. In the same time, the research attempts to clarify the difference between registered peaks in third quarter in each year, and the presence of seasonality. Namely, statistical data regarding tourist arrivals really do present largest figures, but it must not be generalized and interpreted as strong and powerful seasonality in tourism flows. On the contrary, this only indicates that in quarter 3 exist cumulative influence of all factors that provoke extended concentration and increased demand. Such situation includes: acceptable and favorable weather conditions; extensive insolated days; usage of vacations and ferries; personal preferences for summer season etc. Furthermore, this research notes that this kind of supportive factors are not common only for Macedonia, but are rather noted in the world as well.

The paper presents the research findings upon the main aim of the empirical investigation. So, in order to investigate seasonality in tourism demand in Macedonia, the basic variable used in the calculation is tourist arrivals on monthly basis. The sample spreads over two decades, from 1992 to 2012. The research outcomes rejected the hypothesis and gave a scientific clarification for having moderate seasonality patterns in tourism in Macedonia. Moreover, the findings point to fact that distribution i.e. concentration of tourism demand in terms of tourist arrivals, is humble and has no substantial meaning to Macedonia. Since the sample period covers a time-frame of two decades, the research results indicate that seasonality in tourism never had profound effects at all since the independence of Macedonia until today, but rather to talk about permanent modest tourism development.

Generally, this research found out that theoretical belief for existing seasonality with meaningful patterns, particularly in summer months, is groundless. Hence, this empirical analysis in a scientific manner rejects such attitude and disentangles the presence of having seasonal concentration in tourism in Macedonia with substantial influence. So, the up-to-date modest tourism results must not be addressed to seasonality as strong and limiting factor for tourism development in Macedonia, since there is no such. Although the use of simple technique can be helpful in some contexts, the research may be enhanced in future work by employing advanced methods. Due to fact that this is first attempt empirically to test seasonality in tourism demand in Macedonia, this paper gains additional importance and contribution.

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