

Seasonal movements in mountain tourism of Serbia: a review of methods and literature

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Abstract

Touristic destinations and thus mountain touristic destinations face serious seasonality challenges. The most often seasonal peaks are in the winter season (Kopaonik and Stara Planina) or during the summer season (Zlatibor) and fall during the rest of the season. The subject of the paper places particular emphasis on forecasting seasonality and methods to measure it by applying different statistical and economic techniques. Some of the causes and consequences of seasonal trends within the tourism development of the three leading mountain centers of Serbia in terms of the development of mountain, sports, and recreational tourism are also reviewed.

1. The phenomenon of seasonality

Seasonality is a common phenomenon present in human activities of hunter-gatherer societies as well as later in agriculture and manufacturing in manifestations, sport for instance (Higham and Hinch, 2002), or recreational activity (Hartmann, 1986; Butler, 1994). Research on seasonal variations in industry and trade has been held by Kuznets (1933), and the first comprehensive study on tourism seasonality was published by Bar-On (1975).

According to Koenig-Lewis and Bischoff (2005), seasonality represents repetitive movements in a time series during a particular time of the year. Butler (1994) Bar-On (1975) divide factors that influence patterns of seasonality into two groups - natural and institutional. The same approach regarding factors that influence seasonality had Hartmann (1986), Allcock (1989), Butler (1994), Hinch and Hickey (1997), Sylvester (1999), and many others. On the other hand, natural seasonality refers to climate and weather conditions (temperature, rainfall, snowfall, daylight, and visibility) and institutional reflects social aspects (human, religious, school,

culture, ethnic and economic). Baum (1999) emphasize inflexibility within broad institutional frameworks as a cause of seasonal rigidity with respect to vacation patterns and so that major shifts in seasonal behavior are challenging to achieve. Butler (1994) also looked at institutional seasonality as the result of human decisions and is much more widespread and less predictable than natural seasonality.

The seasonality is a well-known problem all tourism development organizations are dealing with and trying to create a solution. The issue of seasonal trends has been explained by Koenig-Lewis and Bischoff (2010), who argue that seasonal impacts reflect on tourist activity, especially when talking about the number of fixed costs, rigid capacity in many private and public services.

Considering the mountain centers of Serbia, we can see a big difference in their origin, morphological evolution, dimensions, vegetation, the richness of hydrographic objects, and other characteristics. From this, we have concluded that they are not equally active for certain forms of human activities so that they can be valorized in different ways.

Considering the business of tourism development companies in the mountain destinations of Serbia, the economic impact of seasonality is related to inefficient use of resources and facilities, which affects prices and income, as well as profit (Jovičić and Ilić, 2010). For this reason, many scientists, researchers, and practitioners are addressing the issue of seasonalization, which continues to be a significant challenge for many mountain tourism sites, not only in Serbia but worldwide.

Mountains have been attracting tourists' attention since ancient times, and some of them have been well geographically studied, and there is a basis for their purposeful tourist valorization (Jovičić and Ilić, 2010). However, the development and success of mountain tourism destinations in the tourism market depend on several internal and external factors (Dimić and Radivojević, 2017). Key factors are the following: the overall image of the destination, the quality of the tourist offer in the winter and summer season, the sense of security, as well as the overall impression of the quality of the destination management.

Seasonality in tourism in Serbia is a serious issue affecting numerous aspects of life like depopulation, economic decline, social displacement, and spatial depletion, despite becoming a secondary issue in tourism according to recent research since it has been mitigated in advanced western societies with different improvement measures such as enriching touristic offer by organizing events and festivals, etc. (Cannas, 2012).

Seasonality is commonly seen as a phenomenon that negatively affects the economy and life in general, but on the other hand, it can have some positive effects.

Balanced and sustainable development of mountain destinations could be achieved only with a comprehensive and integrated approach between society, economy, and environment. The development of ecotourism could not be possible if the image of a mountain is created as the center of mass winter tourism (Stankov et al., 2011). The negative economic impact of seasonality is a loss of aspect of profits due to the inefficient utilization of resources and structures (Sutcliffe and Sinclair, 1980; Manning and Powers, 1984; Williams and Shaw, 1991). In such variable circumstances, it is hard to keep quality standards (Baum, 1999) and retain full-time staff (Yacoumis, 1980) and a quality workforce.

On the other hand, seasonality could have a positive impact in an economic sense, such as increased revenues of local population and students, artists, housewives through temporary jobs for seasonal workers (Mill and Morrison, 1998) and opportunity to maintain buildings and attractions

during in off-peak periods. Negative social impact reflects in congestion on traffic, a problem with free parking places, queues and increase in the costs services and goods Cannas (2012), the increase of crime (Mathieson and Wall, 1982), which might result in resentment from the local community towards all tourism activities (Manning and Powers, 1984). From the positive point of view, seasonality could allow the community relief from stress during the off-peak season (Mathieson and Wall, 1982) and enriching social life with cultural events in peak season. Ecological disruption and heavy use of the natural environment during the peak season (Manning and Powers, 1984), disturbance of wildlife, litter problems, physical erosion of footpath and other natural resources (Cannas, 2012), as well as pressure on resources, air, water and soil pollution are all the negative consequences of the impact on the environment. On the other side, the dead season is the only time of the year when the ecological environment could fully recover (Hartmann, 1986).

2. Describing seasonality, its causes, and effects

Different statistics are used to describe the level of seasonality present in the observed data. Some of them are the seasonal range, the seasonality ratio, the coefficient of variation, the amplitude ratio. The seasonal range represents the difference between the two most extreme monthly indices, the highest and the lowest. The higher the value of the seasonal range is, the higher is the level of seasonality. The seasonality ratio represents the ratio between the highest and the lowest seasonal value. Also, the higher value of this statistic reflects higher levels of seasonality. The coefficient of variation is defined as the ratio of the standard deviation and the mean. It is a measure of spread and describes the amount of variability relative to the mean, and it is a statistic having general use in describing the heterogeneity of data. The amplitude ratio represents the ratio between the amplitude observed in a particular year, and the average amplitude was taken over a long period. More on these measures could be found in (Lundtorp 2001, Þórhallsdóttir and Ólafsson, 2017)

The most common tools in describing seasonality are the Gini index and the Theil index. The Gini coefficient was introduced by the Italian statistician and sociologist Corrado Gini (Gini, 1912). It is based on the Lorenz curve, which represents, e.g., the percentage of the total number of tourists through the observed period on the timeline. The Gini coefficient is equivalent to the ratio of the size of the area between the Lorenz curve and the line of equality and the total triangular area under the line of equality (Figure 1). It ranges between 0 and 1. The coefficient value of 0 represents the

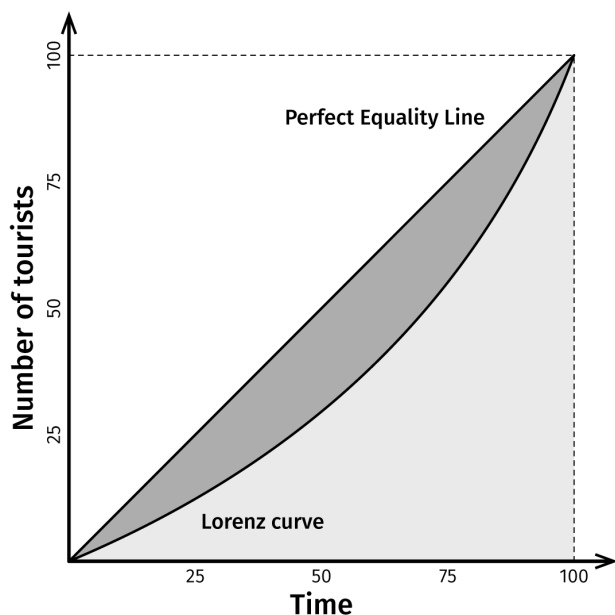


Figure 1. Lorenz curve

perfectly equal distribution of the number of tourists during the period. In this case, the Lorenz curve follows the line of equality. The more the Lorenz curve deviates from the line of equality, the higher will be the resulting value of the Gini coefficient. The coefficient value of 1 represents an unequal distribution of the number of tourists when, e.g., all tourists come at the same time. The appropriateness, advantage, and disadvantages are analyzed by many authors what can be found in (Atkinson 1975; Champernowne & Cowell, 1998; Campano, 2006).

The Theil index is a measure of inequality the same as redundancy in information theory, which is the maximum possible entropy of the data diminished by the observed entropy value. It is a special case of the generalized entropy index. It was induced by econometrician Henri Theil (Theil, 1967). The domain of the Theil index is the set of non-negative real numbers. The index value of zero reflects ideally equal distribution, while higher values indicate higher levels of inequality.

The authors, in (Ferrante et al., 2018), looked upon seasonality measures and emphasized the most commonly used indices: the Gini index and the Theil index. They, also, proposed an approach for the analysis and measurement of seasonality in tourism destinations, based on a review of the pattern of seasonal swing. They derived the relative seasonality index and showed its general purpose. This index enables a description of seasonal patterns as an initial step of analysis and, in a second step, a measurement of seasonal amplitude, taking into account the cyclical structure of periods.

In Sutcliffe's and Sinclair's paper (1980), two alternative methods of decomposing a change in seasonality between different years into a pure change in seasonality were presented. It consists of an increase in the concentration of annual arrivals, which occur in the same months of the year, and a pattern change giving the fluctuations over time in the proportions of tourist arrivals, which occur in different months. In that way, they gave a methodology for measuring the total level of seasonality, the amounts of the pure and pattern components of a change in the level of seasonality, and the extent and direction of the change in seasonality over time.

A traditionally used measure, such as the Gini coefficient, was used in (Rossello Nadal et al., 2004) for describing seasonality patterns through specific economic determinants. The authors summarized the intra-year variation in arrivals to the Balearic Islands through the Gini-coefficient, providing evidence of the influence of some economic variables on the seasonal distribution of tourist numbers, using regression analysis. They found the nominal exchange rate, GDP, relative prices, consumers' incomes to be significant factors influencing seasonality patterns.

Some advanced statistical time series analysis was used in (Pan et al., 2012) for forecasting hotel room demand with search engine data as predictors. They used analysis of ARMA time series models and identified a few forecasting models as the best for that purpose. Also, in (Pan, 2017) progressive techniques are applied to predict the level of seasonality. The author used big data analysis of weekly hotel occupancy as a tool for forecasting seasonality level.

In a number of articles, there are attempts to describe, measure, and forecast the level of seasonality by applying different statistical and economic techniques on variables and measures originated in the touristic context.

A connection of online booking and a level of seasonality was analyzed in (Bofa and Succurro, 2012). Their study explored how online booking affected seasonality, measured as the variation in hotel bed-places net occupancy rate between peak and off-peak periods. They tried to investigate the impact of those shifts in the search process of probably every tourist on the seasonal variation in the occupancy rate in hotels. One of their hypotheses was that the difference between high season and low season output increases as the discount rate decreases. They confirmed the causal relationship between online booking and seasonality. Because of online booking, firms modify their pricing strategy. The demand side behavior is altered only indirectly, through the price changes induced by online booking. This phenomenon has

the other side, the rise for new business for online travel agents. They can now analyze customers' online searches and purchases and exploit them to provide customers with more tailored offers. This will alter the traditional way of advertising in the tourism sector, putting travel agents into a double role, drawing revenue from two distinct sources, consumers and advertisers. They concluded that managers and policymakers in the tourism sector should not simply rely on the Internet as a tool to reduce seasonality. Still, they should not exclude traditional ways of attracting people in the low season, and more scattered holidays, e.g., an organization of events and festivals.

Also, the authors in (De Cantis et al., 2011) analyzed the correlation between the bed occupancy rate as a standard efficiency measure and seasonality. To formulate a good tourism marketing and development policies, they proposed a structure constituting a way to unite a reasoned guide of approaches to and the statistical tools for measuring seasonality, and a way of presentation scheme of support practitioners in the study of seasonal tourism indicators.

Another way of modeling seasonality was given in (Oses et al., 2016). The authors proposed a model for explaining and predicting mean hotel occupancy rates by destination based on these prices. The results are auspicious, the fit is excellent, and the predictions are also good.

Also, there are a lot of articles in which the authors reveal and analyze different factors affecting seasonality and give suggestions and guidelines to combat seasonality or to avoid or mitigate its consequences.

About tough and sometimes unsuccessful fight against seasonality and influence of geographic position concerning Northland, New Zealand, wrote the authors in (Commons and Page, 2001). They said that in a specific regional context, it is apparent that "given that seasonality is largely institutionalized or directly affects major characteristics of the product (to do with climate), many bounds on demand are not variable by price or marketing inducements" (Bull, 1995) alone. But such inevitability in seasonality fails to recognize the action which the tourism industry and private sector can take to address the issue.

In the same spirit, in (Duro, 2016) it could be found that factors relating to the tourism product itself and seasonal climate variations would be behind behavioral extremes. The paper analyses the seasonal concentration of tourist activity, taking hotel nights as an indicator. They concluded that, during the analyzed period 1999-2012, there was a growth in seasonality, emphasizing the extremes in seasonal concentration, most prominence in the Balearic Islands and two of the

Catalan provinces, and moderate in Madrid and the Canary Islands provinces

Additional measures to reduce seasonality could be found in (Parrilla et al., 2007). From a demand perspective, the most popular tactic for reducing seasonality is the organization of special events and festivals, introducing new market segments, and reduced prices. From a supply perspective, expanding the existing capacity should be one of the effective ways to reduce seasonality. However, these tactics do not eliminate all problems associated with seasonality. They gave their case study results of the hotels of the Spanish Balearics. They tried to identify the factors that influence the opening period with the conclusion that higher quality services in a hotel positively affect its opening period. Location, closer to urban areas and in Mallorca (the island with better transport connections with the continent during winter), is also related to a longer opening period. Their results justified the promotion of transforming lower-quality hotels into higher. It is also shown that other location characteristics are determinants for the length of an opening period.

One of the measures to combat seasonality are organizations of mega-sport events. The consequences of such actions are analyzed in Fourie et al. 2011. The authors emphasized the direct and immediately seen benefit of such events: the increase in tourist arrivals to the host country. But, in general, although the results suggest that mega-sport events promote tourism, the gain could vary depending on the type of mega-event, the participating countries, and whether the event is held during the peak season or off-season.

In (Koenig-Lewis and Bischoff, 2005), the authors commented on the state in existing literature and research on seasonality. They noted that there are many gaps in studies and that many of the issues arising in this field are, at best, only partially understood. There is a distinct lack of in-depth and longitudinal research to underpin the tentative findings that have emerged. Tourism seasonality research has been dominated by a focus on practice, rather than being based on theoretical models, they said.

3. Case study: mountain destinations of Serbia

Seasonal movements in mountain centers of Serbia are still a burning problem in the economy and tourist industry. They are caused by many different factors such as bad economic situation, underdeveloped infrastructure, inadequate marketing strategies, non-competitive position in the world market, and lack of touristic elements in off-peak season.

We summarized several recent studies concerning seasonal movements in mountain touristic centers in Serbia

The review studies cover two periods related to two seasons in the mountain centers of Serbia. The aim was to analyze the possibility of developing year-round tourism in mountain destinations and reduce seasonality. In many studies, we have come to the same indicators. Based on the above indicators, two seasons are clearly identified in Serbia, of which many mountain centers are more dominated by winter than the summer season. The only case where the summer season is more pronounced than the winter is Zlatibor Mountain, while Zlatar Mountain has recorded year-round tourist movements in terms of spa tourism. (Paunović and Radojević, 2014)

Guided by research and analysis of several studies, we can see that to achieve proper measures for seasonalization many authors have made comparisons (Benchmark analysis) of data (annual share in tourist arrivals, the highest share in annual tourist arrivals and the ratio of arrivals in highest and the lowest month).

According to Milijić et al. (2010), seasonality could be described through monitoring of the accommodation occupancy, income from accommodation facilities, and the ratio of income and accommodation units. These variables were used in numerous studies concerning seasonality. Previous researches dealing with seasonality in Serbian touristic centers point that in main mountain resorts in Serbia such as Kopaonik, Zlatibor, and Stara Planina, there are clearly distinguished two seasons, winter and summer seasons.

Kopaonik and Stara Planina have a more prominent winter season and stronger development of winter sports and recreational tourist movement. The situation in Zlatibor is the opposite. There, the summer season has a richer offer and accordingly greater visit. (Dimić and Radivojević, 2017)

Based on research data, we have concluded that the winter season on Kopaonik is clearly defined and that in the future period, this mountain center must do a lot to improve and introduce new measures that would contribute to the development of tourism throughout the year. Particular emphasis on Kopaonik Mountain should be placed on mountain biking, as well as the organization of congresses and conferences, due to its well-equipped accommodation and a large number of conference rooms. Also, one of the forms of tourism, regardless of the winter season on this mountain, can certainly be spa and wellness tourism that can be linked with spa and health tourism, considering that there are three spa centers at the foot of this mountain. Better connection with near urban and spa centers will enrich touristic offer by adding different types of touristic forms such as rural, eco, spa, urban, cultural, congress, and manifestation tourism with

mountain tourism. Mountain resort Kopaonik has a capacity for creating different types of tourist products that can be offered to clients of different demographic characteristics and purchasing power; such as summer vacations with family, and older couples in combination with wellness or summer activities (hiking, mountain biking, free climbing classes, gastronomic tradition, picking of herbs and collecting mushrooms). During the spring and autumn period, it can be used for congresses and seminars, summer and winter schools for students, smaller conferences, business meetings, and workshops. Also, the touristic offer could be widened with products dedicated to tourists with special interests such as horseback riding, orientation running, exploring flora and fauna, and similar. Connecting the mountain range with spa centers in its foothills, establishing new health touristic resources, and improving existing ones, better organization of recreational activities could significantly increase the satisfaction of the tourist, especially the eldest visitors.

In mountain resort Zlatibor, there is a clearly defined summer season. On this mountain, special attention should be paid to the development of rural areas at its foothills, with several specific manifestations, authenticity, ecological awareness, and the great benefits of natural values, such as the climate which gave this mountain its name as an air spa. These attributes form the basis of competitive advantage for a marketing strategy. According to the previously mentioned fact regarding the average age of tourists, mountain resort Zlatibor should establish or improve products that could attract elderly tourists like hiking, gastronomic tradition, patchwork, and knitting courses, picking of herbs, collecting mushrooms, exploring flora and fauna. The winter season is not far behind the summer season but still needs a lot of improvements. Due to the lack of long and steep ski slopes, on the mountain resort Zlatibor, capacities for a ski for beginners, ski for kids, ski schools, sledding should be developed and improved. Also, outside the summer and winter season, touristic products such as congresses and seminars, summer and winter schools, conferences, workshops should be offered

For the time being, mountain resort Stara Planina is the least developed of those three. It has a clearly defined winter season and has been mostly visited by families. It has a good choice of wide ski slopes of medium difficulty, perfect for ski recreationists and beginners. So, an improvement of winter offer should be directed to further development of ski schools and ski infrastructure. The summer season is far behind the winter season, and that should be a guide for future

mitigation of more than distinct seasonality. The touristic offer outside the winter season should be more various. The mountain resort Stara Planina must use the richness of its natural and anthropogenic values and its mild slopes as an attraction for an opportunity for explorers and nature lovers, hikers, and mountain bikers. Also, wellness and spa capacities should be offered to tourists as well as capacities for rural, gastronomic, eco, and congress tourism. In order to maintain the richness, unplanned construction and construction of small hydropower plants on mountain rivers must be stopped.

What all touristic mountain centers in Serbia need to pay special attention to is the interest of tourists to connect several different types of tourist movements in a particular destination. The reason for that is people who are on the mountains with their families or older tourists, who, through tourism, most often carry out natural forms of movement in terms of hiking, running, animation, cycling, and more. The reason for this is a visit to these centers for sports and recreation, as well as the revival of body weight in organisms. In this way, people maintain a better quality of life and efficiently perform their daily activities.

4. Conclusion

Some of the proposed solutions for challenging the off-peak season are extending activities beyond the main season, organizing events through the off-peak season, seeking to cultivate an all-year-round market (Connell et al., 2015). Taking into account the development of tourism so far in the mountain centers of mountain destinations of Serbia, we conclude that there are two separate tourist seasons, summer and winter (Bratić, 2015). The summer season is more diverse in terms of the offer and exceeds the potential of the winter season by the effects of the offer in specific segments (Dimić and Radivojević, 2017).

By the analysis of the presented studies, we conclude that based on the samples and factors we have examined through the possibility of reducing the seasonalization of the mountain destinations in Serbia, the first and key weakness is the existing suprastructure and accommodation capacities which are not satisfactory, the second problem is inadequate traffic connections, i.e., bad roads that underlie tourist development. The third problem is the insufficient formation of the summer season. With the development of the summer season, mountain sports and recreational tourism would be just one of the products in a well-balanced tourist area, thus reducing the risk of over-emphasizing only one tourist season and only one tourist product.

Future research of the mountain destinations of Serbia should focus on its activities as well as on the demographic situation at the foot of the mountain centers as a basis for the tourism market segmentation.

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