# Measuring Seasonality in Central Europe's Tourism – how and for what?

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## ABSTRACT

Based on the intensity or quality of tourism, the concept of 'seasonality' describes the unevenness or fluctuation during the course of a year, with the 'season' including (at least one) peak period. Such seasonal fluctuations in Europe, which are mostly influenced by seasonal climate changes, are quite common. For the tourism industry, this factor is very important because of utilisation of tourism infrastructure and effects on a region's economy and employment. Nevertheless, the characteristics and measures of tourism seasonality, compared over different regions, are not well known; problem analysis and a search for solutions in the competition of tourist regions are coming more into use, but so far only on a regional level.

This investigation is based on dates from arrivals and overnight stays in the 142 "Tourism Areas" of Germany and the 36 NUTS-III regions of Austria. It includes first, tourism seasonality based on various indicators and then with the help of a Cluster Analysis arranges them by region to various types of seasonality. The results only partially match the expected tourism types (e.g. city tourism) based on regional (tourism) characteristics. This gives an approach for a study, which classifies an interregional comparison of tourism areas and finds methods for solving related problems over a wider regional context.

## 1 WHAT DOES SEASONALITY MEAN?

### 1.1 The Etymology of 'Season' and 'Seasonality'

The concept of 'season' stems from the french word 'saison' which represents an ideal or favorite business period. 'Saison' is derived from the Latin word "satio" = (time of the sowings) (Duden 1989) and therefore has its roots in agriculture. One current key-meaning of 'season' is based on the definition found in Duden (ibid.) which defines season as "the most important period within the year, in which some certain things are abounding". A similar definition is found in the Merriam-Webster Dictionary (1993). In both dictionaries, the various examples illustrate the themes of climate (rain season), animal life (wandering), agriculture (the harvest of specific products), society (opera season) and tourism (travelling to a certain area).

The concept of 'seasonality' is neither in the named, nor in other known encyclopedias (e.g. the German encyclopedia, "Der Große Brockhaus") or found in professional/technical terminology (e.g. Spektrum Lexikon der Geography 2001/2002). It is, however, well documented in tourism research, especially in North America and northern Europe (e.g. Bar-On 1975, Butler 1994, Baum & Lundtorp 2001, Koenig & Bischoff 2004), as well as in Austria (e.g. Bundesministerium für Wirtschaftliche Angelegenheiten 1998). It is obviously derived from the adjective 'seasonal' = "concerning the season; affected by the season" (Duden 1989). It also refers to the existence of uneveness or fluctuation during the course of the year, which occurs in relation to a specific season.

### 1.2 Causes for Tourism Seasonality

Seasonality in tourism is caused by two basic elements, one, which is 'natural', and one which is 'institutionalised' (Bar-On 1975), that, in some cases, are linked to each other. The first relates to regular temporal variations in natural phenomena, particularly those associated with climate (temperature, rainfall, snow, sunlight, etc.) and the true seasons of the year (phenological aspect of land cover). Travelers have specific preferences which makes it necessary to distinguish between different types of tourism (bathing-, hiking- or ski vacations).

The second form of seasonality depends on social factors and policies concerning specific costumes and legislated holidays. Early examples include certain religious holy days and related pilgrimages made. There were also trends among the higher social classes to divide the year into specific 'seasons': Winter meant staying in town, while summer was spent on country estates, and included activities such as farming and hunting (so called "villeggiatura" in Italy). Later, in the 19th century, winter seasons were spent at spas or on the mediterranean coast. Thus, for the privileged elite it was considered socially necessary to participate in selected activities which took place in seasonally different locations (Butler 2001).

In the 20th century, especially in the age of mass tourism, vacationing often depended on school, industrial and public holidays, which, even until today, have been based on historic conventions (e.g. agriculture high seasonal working periods) and climatic condition adjustments (e.g. summer heat). Today, about half of the population is dependant on school holidays for planning their holiday trip (Kessler 1990). The staggering of school holiday times over different regions (federal states of Germany and Austria) has, to a certain degree, compensated for seasonal variations.

### 1.3 Implications of Tourism Seasonality

Seasonality "may be expressed in terms of dimensions of such elements as numbers of visitors, expenditure of visitors, traffic on highways and other forms of transportation, employment and admission to attractions" (Butler 2001, p. 5). The phenomenon may also cause overuse as well as under-utilisation of resources and facilities. Seasonality can be considered as a major economic problem for the tourism industry, not only because of low returns on investment and problems caused by obtaining and employing full-time staff, but also because of the temporal effects from heavy traffic and the exhaustion of infrastructure and natural resources such as water consumption (Ball 1989, Ashworth & Thomas 1999, Krakover 2000).

For this reason, it is for Butler (2001, p.5) not surprising, "that considerable efforts have been made by both public and private sectors to reduce seasonality in destination areas through a variety of approaches." This has been done not only by promoting economic development, but also by adressing regional planning and policy making. He furthermore confirms that (ibid., p. 5 ff.), "there has been relatively little research devoted to this topic which has been published in academic literature. (…) Comperatively, few detailed studies have been made of its nature or on all of its effects. Problems still exist in identifying the basic causes of this phenomenon, such as the reasons for its persistence, and its measurements. (…) Equally little research has addressed the problem of whether seasonality varies in nature and intensity on a spatial basis either within or between destiantion areas, although there has been speculation that this has been the case." Finally, there is no scientific concept or theory on tourism seasonality (Lundtorp 2001, p. 23).

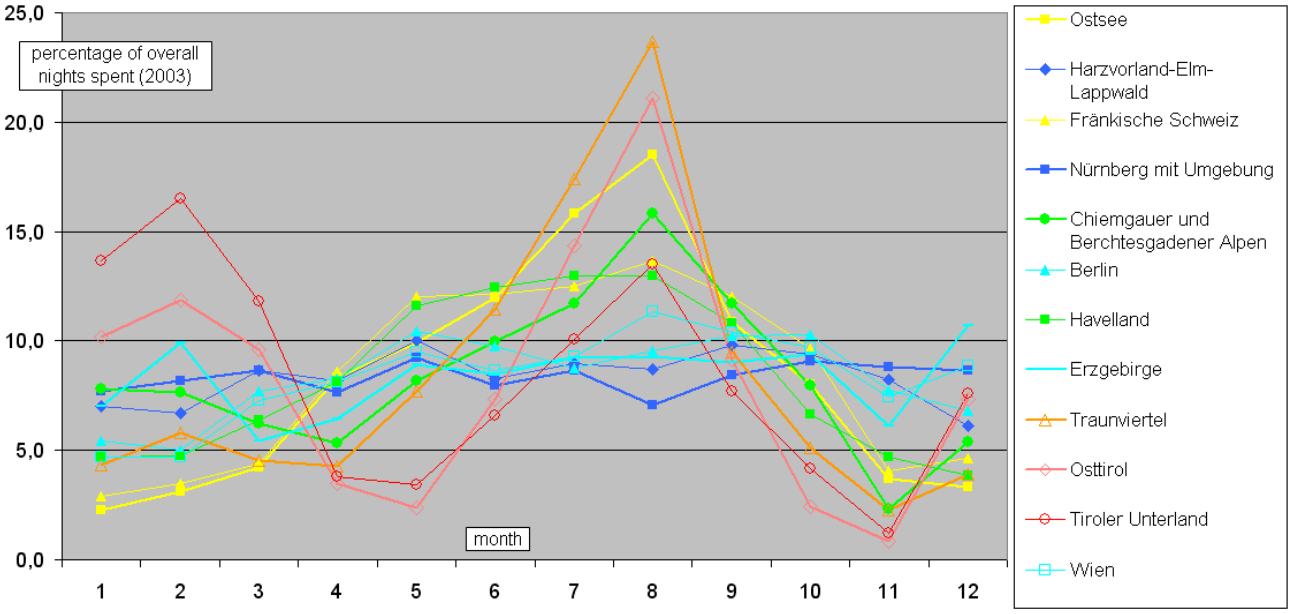


Fig. 1: Yearly curve (2003) of nights spent in investigated tourism areas (see area types in section 3.3).

### 1.4 Some Usual Presentations of Tourism Seasonality

The interrest in research on tourism seasonality depends on the magnitude and effect that seasonal fluctuations have for a region or national economy. It is therefore amazing that, despite the social-economic importance of seasonality, a substantial deficit still exists concerning research on the characteristics and extent of tourism seasonality in Central Europe, especially in Germany.

The depiction of seasonal fluctuations in tourism is mostly limited to the following indicators and graphic representations:

the number (single peak, two-peak or non-peak patterns, Butler & Mao 1997) and timely order of the respective seasons and their duration;

the ratio/relationship of summer- and winter seasons in the form of a simple statistical measure (e.g. Kessler 1990, Smeral 1994);

the annual curve, based on monthly values, graphically presents a more simpler format (e.g. Bundesministerium für wirtschaftliche Angelegenheiten, 1998).

These types of representation make it possible to recognize, to a good degree, the course of seasonal variations. However, the extent of seasonality cannot be fully explained and they only allow a limited interregional comparison; a typecasting of regions is hardly possible.

## 2 THE DATA TO EXPLORE SAISONALITY

### 2.1 Research Area and Regional Research Units

The following study of tourism structures in Central Europe covers an axis stretching from the high mountainous Alpine regions to the coasts of the North and Baltic Seas. The entire territories of Germany and Austria where selected because they have traditional tourist destinations and corresponding data for both countries are available on a regional basis.

Tourism data is reported in both countries for those represented municipalities ("Berichtsgemeinden" in Austria) and enterprises which have a minimum standard capacity for tourism. Data for both countries was collected and published by their respective

statistical state and federal offices. Aggregations were made at the communal, state and federal levels respectively. In Austria, data is also available at the district (NUTS IV) level, and in Germany at the level that is based on the 142 so-called "Tourism Areas" ("Reisegebiete"), which usually do not correspond with the size of the administrative districts. These "Tourism Areas" were designated by the respective states as well as by their role as specific cultural landscapes (Nature Parks) and/or functional regions, or according to the administrative districts ("Landkreise", NUTS III) (Kessler 1990).

The german "Tourism Areas" were slightly modified for this study (summary of units smaller than administrative districts or "Landkreise", especially in Upper Bavaria), while for Austria, the district data was assorted into 36 regional units, similar in size to the "Tourism Areas" in Germany and analogical to the concept of NUTS III. To this effect, 166 tourism areas were created that can be statistically and, by measures of cartography, visually compared.

## 2.2 Data Availability

Tourism statistics in both countries are legally regulated, e.g. for Germany by the Accomodation Statitics Law from 1980. In 1995, EC guidelines were established for harmonizing respective national tourism data collection. The implementation of these guidelines in EC member states still varies (Spektrum Lexikon der Geographie 2001/2002).

In the monthly reporting process, the following data is collected: arrivals, overnights stays as well as the nationality of the guests, the number of available beds, vacation appartment units and camping sites (lodging capacity). Tourism statistics will be completed by a sporadic census that will record the number of commercial enterprises, restaurants, jobs, persons employed and the amount of business turnover.

For german "Tourism Areas", monthly based data on the number of arrivals and overnight stays can be found free of charge on the internet (www.DESTATIS.de). The respective Austrian district-level data can be purchased via the internet using the ISIS data-bank system (Statistik Austria), for which registration is necessary. Based on the numbers of arrivals and overnight stays, the average length of stay can be calculated and, therefore, makes it possible to carry out the present study.

Due to inconsistant data availability, the following relevant themes could not be covered for the entire study area: Over-demand during the main season and the potential maximal values for arrivals (cf. Smeral 1994); stays made in a second home (cf. Lichtenberger 1997, pp. 223ff.) and the characteristic of local recreation and leisure time traffic (without overnight stays); seasonal distribution of visitors to cultural and tourism sites; regional overlapping of different tourism forms, travel originating from different regions or countries as well as the different purposes of visits (e.g. congress and culture tourism in cities, etc.).

## 2.3 Algorithms

Various indicators were defined for all 166 tourism regions for the seasonality of arrivals (A), nights spent (N) and mean length of stay (D):

MXMON = Month (1 = Jan., 12 = Dec.) with the most arrivals/overnight stays and the longest average stay.

MNMON = Month (1 = Jan., 12 = Dec.) with the fewest arrivals/overnight stays and the shortest average stay.

This data characterizes the peak and the turning point during the course of the year (see section 1.4). Further characteristics for irregularities during the year could be shown by the number of peaks and their duration (whereas a flattened peak indicates higher intensity over several months while a pointed or steep peak indicates high intensity over a short period). As there is no existing algorithm, the indicators must be interpreted visually on an yearly curve.

ASS = Sum (May – October) / Annual Sum
for the summer- to winter season ratio (see section 1.4)

D_MX = 100 - (100*Monthly Average) / Monthly Maximum
as the proportion of monthly average to the monthly maximum (cf. "Seasonality Ratio", after Yacoumis 1980 and "Seasonality Indicator", after Lundtorp 2001).

MN_MX = 100 - (100*Monthly Minimum) / Monthly maximum
as the proportion of the monthly minimum to the monthly maximum (seasonality span)

SAW_D = 100*Standard deviation of the Monthly Value / Monthly Average
as a variation coefficient (V) (cf. "Coefficient of seasonal variation", after Yacoumis 1980)

SV_2G = 100*Sum of all Monthly Differences/ 2*Annual Sum
as a percent of the maximal possible variation between the monthly values

SAIS = (SV_2G + MN_MX) / 2
as an indicator, which is calculated from the variation between the months and the span of variation during the year

GINI = 100*Gini Coeffizient
calculated as the area between the Lorenz Curve and the 45-degree equality line divided by the entire area below the 45 degree line, as a generally recognized measure for inequality (cf. Wanhill 1980, Tsitouras 2004)

All these values are representing the extent of inequality during the course of the year. The range of values is between 0 and 100 (except with SAW_D, then the value is > 0).

## 2.4 Data Correlation

Even though all the inequality indicators possess nearly the same potential range of values, the respective Z-values will be transformed. Thus, the calculated seasonality indicators will be processed through of a Correlation Analysis (bivariate Pearson Correlation), which should allow for the choice of a reliable set of indicators and help with preparation for making further analysis.

The analysis essentially shows, that all measures of uneveness for arrivals and for overnight stays are very highly correlated with each other (> 0.75), the measures for the length of stay are highly correlated (> 0.5). The maximum- and minimum months of arrivals and overnight stays are just as highly correlated (> 0.5), while the respective month of length of stay were not found to be significant (< 0.2).

| | | Arrivals | | | | | | Nights spent | | | | | | Mean Length of Stay | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SV_2G | MN_MX | GINI | ASS | MNMON | MXMON | SV_2G | MN_MX | GINI | ASS | MNMON | MXMON | SV_2G | MN_MX | GINI | ASS | MNMON | MXMON |
| Arrivals | SV_2G | | 0.83 | 0.83 | 0.06 | 0.34 | -0.35 | 0.94 | 0.80 | 0.83 | 0.02 | 0.29 | -0.35 | 0.69 | 0.66 | 0.69 | -0.04 | -0.02 | -0.16 |
| | MN_MX | 0.83 | | 0.94 | 0.43 | 0.10 | -0.35 | 0.80 | 0.95 | 0.92 | 0.38 | 0.05 | -0.25 | 0.61 | 0.64 | 0.67 | 0.07 | -0.06 | -0.12 |
| | GINI | 0.83 | 0.94 | | 0.48 | 0.10 | -0.32 | 0.80 | 0.89 | 0.96 | 0.44 | 0.04 | -0.24 | 0.59 | 0.61 | 0.65 | 0.11 | -0.04 | -0.10 |
| | ASS | 0.06 | 0.43 | 0.48 | | -0.20 | 0.14 | 0.07 | 0.39 | 0.43 | 0.97 | -0.24 | 0.30 | 0.11 | 0.17 | 0.23 | 0.35 | -0.09 | 0.14 |
| | MNMON | 0.34 | 0.10 | 0.10 | -0.20 | | 0.00 | 0.36 | 0.16 | 0.15 | -0.22 | 0.67 | -0.06 | 0.38 | 0.31 | 0.32 | -0.08 | 0.13 | -0.06 |
| | MXMON | -0.35 | -0.35 | -0.32 | 0.14 | 0.00 | | -0.28 | -0.32 | -0.31 | 0.13 | 0.03 | 0.64 | -0.28 | -0.29 | -0.29 | 0.01 | 0.13 | 0.10 |
| Nights spent | SV_2G | 0.94 | 0.80 | 0.80 | 0.07 | 0.36 | -0.28 | | 0.86 | 0.87 | 0.06 | 0.33 | -0.27 | 0.70 | 0.69 | 0.72 | 0.08 | 0.01 | -0.11 |
| | MN_MX | 0.80 | 0.95 | 0.89 | 0.39 | 0.16 | -0.32 | 0.86 | | 0.94 | 0.39 | 0.09 | -0.19 | 0.64 | 0.70 | 0.71 | 0.24 | -0.09 | -0.02 |
| | GINI | 0.83 | 0.92 | 0.96 | 0.43 | 0.15 | -0.31 | 0.87 | 0.94 | | 0.44 | 0.07 | -0.21 | 0.66 | 0.70 | 0.73 | 0.29 | -0.06 | -0.02 |
| | ASS | 0.02 | 0.38 | 0.44 | 0.97 | -0.22 | 0.13 | 0.06 | 0.39 | 0.44 | | -0.26 | 0.32 | 0.11 | 0.20 | 0.23 | 0.54 | -0.08 | 0.26 |
| | MNMON | 0.29 | 0.05 | 0.04 | -0.24 | 0.67 | 0.03 | 0.33 | 0.09 | 0.07 | -0.26 | | -0.12 | 0.27 | 0.21 | 0.21 | -0.24 | 0.24 | -0.19 |
| | MXMON | -0.35 | -0.25 | -0.24 | 0.30 | -0.06 | 0.64 | -0.27 | -0.19 | -0.21 | 0.32 | -0.12 | | -0.18 | -0.16 | -0.16 | 0.20 | -0.01 | 0.21 |
| Mean Length of Stay | SV_2G | 0.69 | 0.61 | 0.59 | 0.11 | 0.38 | -0.28 | 0.70 | 0.64 | 0.66 | 0.11 | 0.27 | -0.18 | | 0.93 | 0.94 | 0.18 | -0.01 | -0.08 |
| | MN_MX | 0.66 | 0.64 | 0.61 | 0.17 | 0.31 | -0.29 | 0.69 | 0.70 | 0.70 | 0.20 | 0.21 | -0.16 | 0.93 | | 0.96 | 0.29 | -0.05 | -0.04 |
| | GINI | 0.69 | 0.67 | 0.65 | 0.23 | 0.32 | -0.29 | 0.72 | 0.71 | 0.73 | 0.23 | 0.21 | -0.16 | 0.94 | 0.96 | | 0.28 | -0.08 | -0.08 |
| | ASS | -0.04 | 0.07 | 0.11 | 0.35 | -0.08 | 0.01 | 0.08 | 0.24 | 0.29 | 0.54 | -0.24 | 0.20 | 0.18 | 0.29 | 0.28 | | -0.12 | 0.53 |
| | MNMON | -0.02 | -0.06 | -0.04 | -0.09 | 0.13 | 0.13 | 0.01 | -0.09 | -0.06 | -0.08 | 0.24 | -0.01 | -0.01 | -0.05 | -0.08 | -0.12 | | -0.07 |
| | MXMON | -0.16 | -0.12 | -0.10 | 0.14 | -0.06 | 0.10 | -0.11 | -0.02 | -0.02 | 0.26 | -0.19 | 0.21 | -0.08 | -0.04 | -0.08 | 0.53 | -0.07 | |

Tab. 1: Bivariate Pearson Correlation for seasonality indicators (Z-Transformation, this table is explained in section 2.3).

# 3 FROM REGIONAL PARTICULARITIES TO SEASONALITY TYPES

## 3.1 The Course of Tourism Seasonality

One simple approach for getting orientated with the seasonal cycles is to consider the maximum and minimum value months (fig. 2). Most tourism regions have a low frequency of visitors in January and in November, with November being the month that has the fewest overnight stays. Normally, most guests come during the vacation period in August and during part of September. A considerable number of regions also have their main tourism period in May, since a number of holidays occuring during that month allow for extended weekends to take place. Central European summer tourism, including vacations made in high mountain regions, has been experiencing a loss due to increasing competition from destinations reached by air travel.

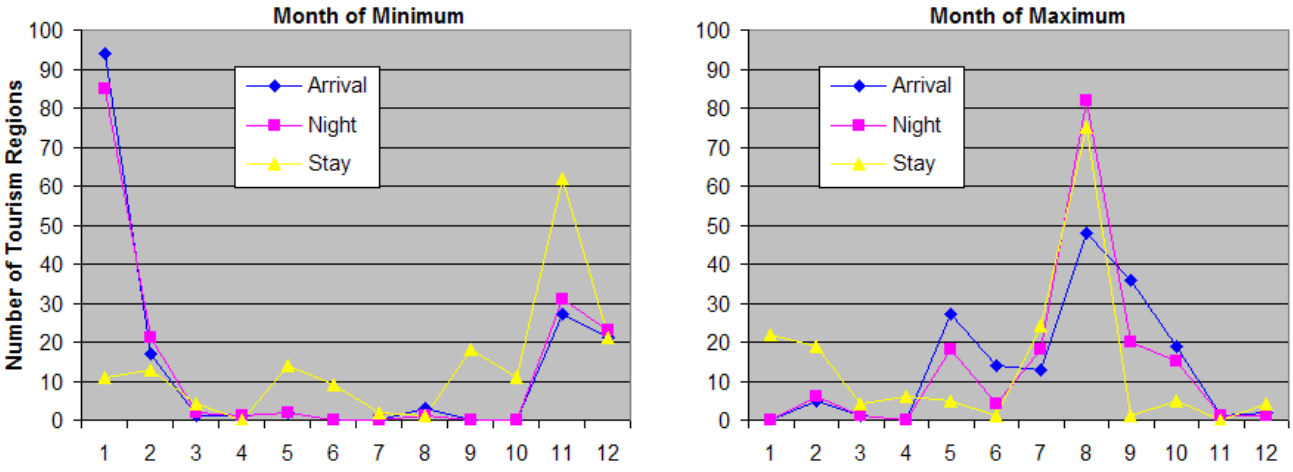


Fig. 2 / 3: Number of minimum und maximum month of arrivals / nights spent / (mean) length of stay in overall 166 Tourism Regions.

The Inner Alpine winter sport regions have their maximum of overnight stays in February, however, not all regions have a maximum for the average length of stay during that period. The Alpine Region has a certain monopoly hold on winter tourism, which has been continously growing over the last 30 years. Only those regions which are equipped with the necessary tourism infrastructure and capacity are the ones which profit (Lichtenberger 1997, Zimmermann 1998). It is also interessting to note that two regions in Germany, Nürnberg and Erzgebirge, have their most arrivals in December, as they are popular Christmas destinations.

The number of peak season periods (one ore two seasons) and the duration of the season (including 'shoulder season'; "Nebensaison") can be observed in the yearly curve (fig. 1). We determined those regions with either one or two short seasons (sharp peaks) that are predominantely located in the Austrian lake– or winter sports regions. The lack of a 'shoulder season', depends on the number of foreign guests – which, in Austria is relative high compared to Germany – as well as on the preference of Austrians to have a second home (cf. Lichtenberger 1997).

A much longer season with a distinct maximum and minimum can be observed at the German holiday destinations, e.g. the Baltic Sea (Ostsee) or the Franconian Alp (Fränkische Schweiz) region. The rest of the regions, as well as all metropolitan areas in the study, show a weak maximum peak level in terms of overnight stays, as in the case of Berlin in May and Wien in August. To this effect, some of these regions have registered a clear minmum in Winter (Berlin and Wien) while others show more eveness throughout the whole year (Nürnberg).

### 3.2 The extent of Tourism Seasonality

The various indicators quantify the extent of seasonal fluctuations in a particular region and therefore allow for a direct comparison to be made between different regions. Information regarding tourism capacity is of general economic interest. The indicator, D_MX shows the percent of unused bed capacity, based on the assumption that the supply of beds remain constant and that full occupancy is reached during the maximum month. In this regard, Nürnberg has a low, i.e. advantageous, comparative value of 11%, while the lake region in Carinthia has an unfavourable value of 72%. Similar results could be obtained with the indicator ASS, which reflects the relationship between summer- and winter seasons. In any case, it shows that the classical summer destinations, for example, the coast and lake regions, as well as the Franconian Alps (Fränkische Schweiz) and the Mosel Valley are revealing even more unused capacity in comparison to the Austrian winter sports regions, which show the existance of at least one additional season in summer.

The Gini Coefficient is a classical measure to account for the uneveness over all months. In concern to overnight stays, the classical vacation regions are showing the largest degree of uneveness, whereas urban areas and nearby tourism regions, i.e. potential areas for local recreation, are revealing less fluctuation. Based on the newly developed indicator SV_2G in which the differences between two consecutive monthly values are summed up, vacation regions can be assesed differently. Using this indicator for all Austrian tourism regions, the summer as well as the winter regions have the most conspicuous values. Here, the span between high-season and off-season is largest.

### 3.3 Cluster Analysis – an Attempt to Distinguish Tourism Seasonality Types

Hierarchial cluster analysis was able to catagorize the 166 investigated various tourism regions into various groups. Cluster analysis classifies large differences between the groups and similarities within groups. This study shows two main approaches: One of which analyses yearly patterns based on 12 monthly values. The other approach is based on a set of indicators which are chosen with the help of correlation analysis, in which a numeral representation is given to the maximum and minimum months that were considered as interval data. The indicator sets consist of (respecitvely with reference to arrivals, overnight stays and average length of stay): ASS, GINI, SV_2G, MXMON, MNMON (see section 2.3). The calculation of clusters was performed by SPSS statistical software.

The cluster analysis of the indicator sets essentialy showed more differentiated results as opposed to the patterns of the course of the year. Also, a comparison with the yearly curves reveals that the indicator set is better suited for arrangement in groups. This is despite the fact that by indicating the maximum and minimum months, the pattern of the year can only incompletely be portrayed. Information, however, is still missing for the number and duration of the seasons. This way, it would be possible to make further refinements using additional algorithms. Finally, it remains to be discussed as to how far the groups from the cluster analysis display seasonality types, or rather, from which groups seasonality types could be derived. Without additional information the clusters themselves could be hardly interpreted. To this effect, and in order to explain how many seasonality types should be formed, we reccommend to refer to the yearly curve (see fig. 1).

Whether the number of arrivals, overnight stays and/or length of stay have to be included into the arrangement of seasonality types depends on the purpose of the investigation. While those values for arrivals and overnight stays are generally highly correlated, the category 'length of a stay' proves to be quite different from the other two. For this reason, processing the three catagories together can prove to be difficult. Concerning the tourism economy, overnight stays is the most significant unit of measurement for capacity utilization. Therefore, the following recommendation of seasonality types just refers to overnight stays:

*A. Regions with strong distinct forms of seasonality (predominantly tourism region):*

1. with two defined seasons, with the winter season more predominant (Austrian Alps; e.g. Tiroler Unterland)
2. with two defined seasons, with the summer season more predominant (Austrian Alps; e.g. Osttirol)
3. with a dominant summer season and no shoulder season (lake regions of Austria; e.g. Traunviertel)
4. with an extended summer season and a distinct minimum in winter (german coastal areas and lake regions, low mountains)

*B. Regions with a moderate seasonality (predominantly regions close to the urban centers, partially vacation regions):*

5. with more or less wide summer season, weak shoulder seasons or at least a weak minimum in winter (esp. northern Alpine rim and Alpine foothills, Eastern Bavarian, Hessian and North Rhine-Westphalian low mountain ranges)

*C. Regions with a weakly pronounced form of seasonality (partially urban regions and regions close to cities, but also low mountain areas, which includes rarely vacation regions):*

6. without a particular season, but with a clear minimum in winter
7. with only a minimum amount of variation

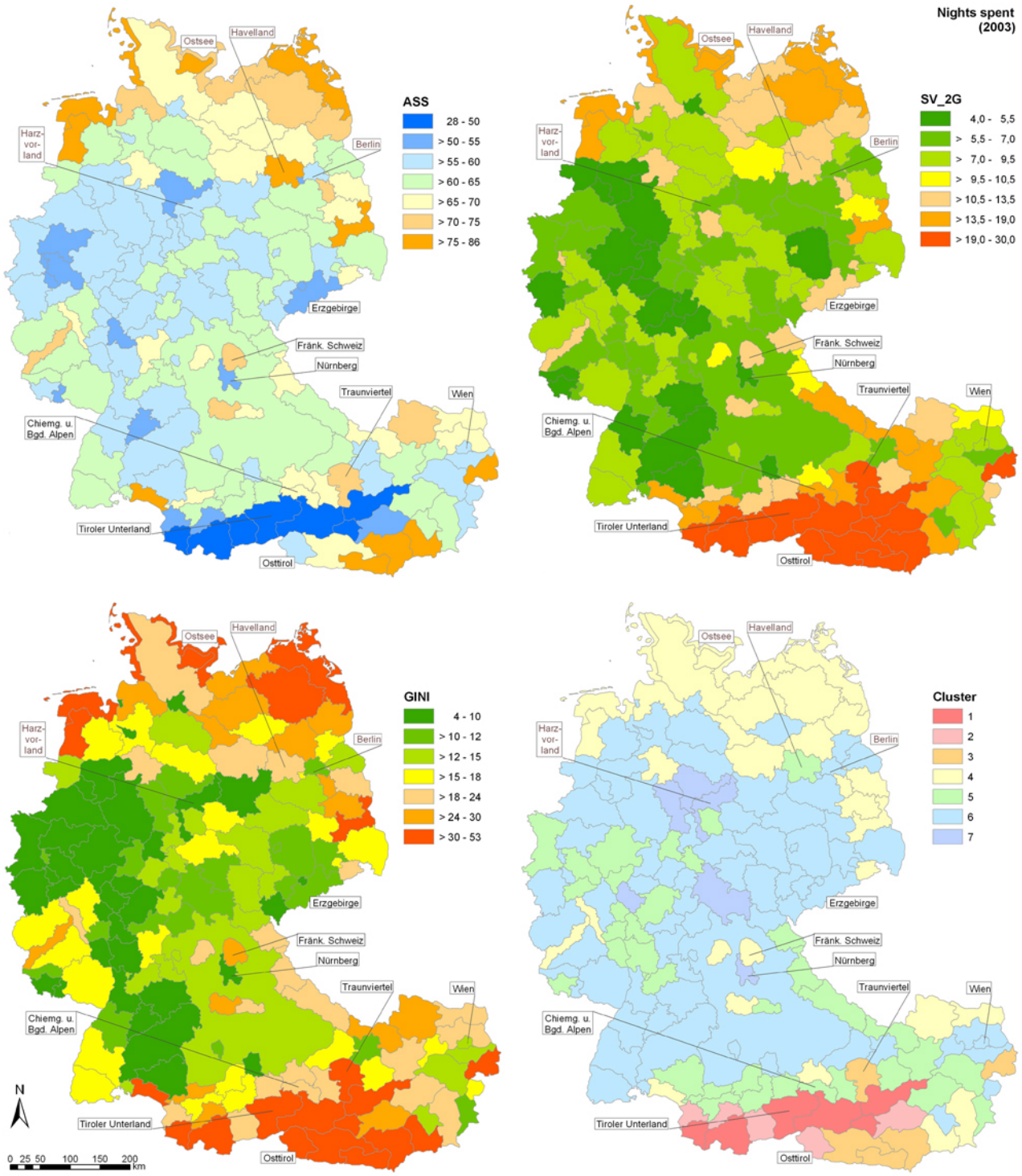


Fig. 4–7: Seasonality based on overnight stays (monthly values from 2003) – 3 indicators (above and below left; for an explanation, see section 2.3) and hierarchical Cluster Analysis with 7 groups based on a set of indicators (below right; for an explanation, see section. 3.3).

## 4 CONCLUSIONS

This study was motivated by the assumption that seasonality had rarely been investigated (Butler 2001). Our comparative assessment and categorization of tourism regions reveal a considerable amount of interregional differences, even between neighboring regions and between regions with the same or similar touristic images (e.g. low mountain, and urban regions, respective with and without a distinctive winter minimum). Thereby, we have to note that the results depend not only on the choice of indicators but also on the separation and size of the different investigated areas. If larger regional units had been aggregated, seasonal peaks would have become leveled as regional differences would cancel each other out.

It is generally recognized that sesonality tends to have more negative effects, especially from a socio-economic viewpoint. This also affects approximately 2 million jobs in Germany that are dependent on tourism (Harrer 2003). There has been several attempts made to overcome seasonality, such as lengthening the main season, establishing additional seasons, diversifying markets, using differential pricing and tax incentives on a temporal basis, encouraging the staggering of holidays, encouraging domestic tourism in

off-seasons, and providing off-season attractions or "events" (Butler 2001, with other references made). Also, special events such as festivals and conferences could help overcome the seasonal effects within tourism regions, provided that they take place in the shoulder or off-season (Freyer 1996). It could be pointed out, however, that tourists expect to have attractive programmes organized during the season (Ashworth & Thomas 1999).

In the process of regional planning in federal states such as Bavaria and Baden-Württenberg, one priority is protecting and developing tourism areas. To this effect, more pressure is being placed on infrastructure. However, in the planning programs, it remains unclear whether infrastructure should be more orientated to the needs of the main tourism seasons. In this paper, the analysis of problems and search for solutions concerning 'seasonality' can be seen in a wider regional context. At the moment, "Learning Regions" is a common concept in regional planning. In order to successfully carry this out, one must know which other regions present the best examples. Therefore, as a main conclusion to our study, we are proposing a method for the monitoring of seasonality in tourism regions that should be more specifically defined.

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