Assessing the Significance of City Tourism in Europe

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3.1 Purpose and objective

This chapter continues the focus on city tourism, by assessing the significance of city tourism in Europe compared to European tourism overall. In doing so, the focus is not only on the current situation but also on possible future developments, thus the chapter follows two distinct objectives. Firstly, to provide a comprehensive analysis of the role city tourism played in Europe in past and present, and secondly, to provide some outlook into the future development of European city tourism. In particular, the chapter attempts to provide an answer to the question: Based on past and present experience, how is the share of city tourism likely to develop in the years to come? For this purpose, a number of common forecasting methods are briefly introduced and their applicability to city tourism forecast is analysed. At the end of this chapter, the reader shall have a critical understanding of a) the challenges attached to European city tourism data, b) commonly applied forecasting methods and their appropriateness, and c) the role city tourism plays in Europe relative to overall tourism.

3.2 Introduction

The popular voice often states that tourism is a significant – if not the most significant – industry sector for most European countries, in addition city tourism is often viewed as a major contributor. For example, a study commissioned by the German Federal Ministry of Economics and Technology viewed city tourism as the largest growth sector for the past 10 years with a growth rate of more than 40% (German Federal Ministry of Economics and Technology, 2006). Although city tourism is certainly estimated to have a significant contribution to the overall importance of tourism in Europe, hardly any study is reporting on the total volume of city tourism in Europe and comparing it to overall tourism (Page and Hall, 2003; van den Berg, van der Borg, and von der Meer, 1995).

The previous chapters introduced some more generic concepts and sources of city tourism statistics and TourMIS as a marketing information system. This chapter builds on the previous, and thus readers are encouraged to review the challenges of compiling and using city tourism statistics. The rationale behind measuring the significance of city tourism in

Europe is mainly to critically question the popular voice stated above.

The remainder of the chapter is organized as follows: First, the sources of data for the current analysis are described, and the methods of data compilation and cleaning are outlined. Then, the status quo of European city tourism is portrayed, firstly on an aggregated level, then with a focus on the top 20 city destinations in Europe. Before the share of European city tourism is forecasted until 2020, most commonly applied forecasting methods are introduced and their appropriateness is determined. The chapter closes with an outlook of the future of European city tourism, for the first time including the present economic crisis as a factor.

3.3 Quantifying European city tourism

First, European city tourism is outlined in terms of arrivals, bed nights, average length of stay and the development of these key figures during the past years will be given. The aim is to provide an overview about the significance of European city tourism compared to tourism overall. Additionally, the top 20 European cities will be the focus of an analysis.

For the following comparisons, the data sources primarily used are TourMIS, Eurostat, the statistical office of the European Union, and tourism figures provided by the United Nations World Tourism Organization (UNWTO). However, only a limited number of cities enter their data into TourMIS and therefore, additional sources and data compilation were required. Currently European Cities Marketing (ECM) compiles data for around 80 European cities on a regular basis. These data can also be downloaded from TourMIS. The criteria of being a 'city' proposed by ECM include having more than 2,000 rooms in commercial accommodations, one congress centre with at least 1,000 seat capacity, an international airport within one hour's reach of the city's centre, an important historical heritage, a minimum CTO budget of 250,000 ECU, regular important cultural events, and a population of more than 100,000. Among these criteria only the latter was considered in this study to cover as many European cities as possible regardless of e. g. their importance in convention and meetings tourism. However, in Europe, there are more than 400 cities that fit to this criterion. Although the cities reporting in TourMIS are probably the most important ones in city tourism, the figures for all other cities still need to be estimated for the purpose of completeness and comparability. Therefore, in spring 2004 more than 30 students participating in a tourism forecasting class at the Vienna University of Economics and Business started compiling information for the 400 cities. Data searched by the students included figures for bed nights, arrivals, bed spaces, hotels, passengers at airports, the area of the city in square kilometres, population, various indicators of attractiveness, etc. Information was obtained from a number of data sources including TourMIS, consulting Internet resources (e. g. statistical offices) or contacting City Tourist Offices' (CTOs) managers and government representatives. In principal, bed nights and arrivals for the European countries and cities are measured in all forms of accommodation including hotels and similar establishments plus other collective accommodation such as campsites or holiday dwellings (Eurostat, 1995). If information for this definition was unavailable, then data for hotels and similar establishments were used. If only few data points in the time series were missing, the data was estimated by all different sources of information using well approved imputation and extrapolation methods. However, in cases where the complete time series was unavailable, the cities were excluded from the analysis. The following European cities with a population of more than 100,000 are currently not covered by this study (not enough infor-

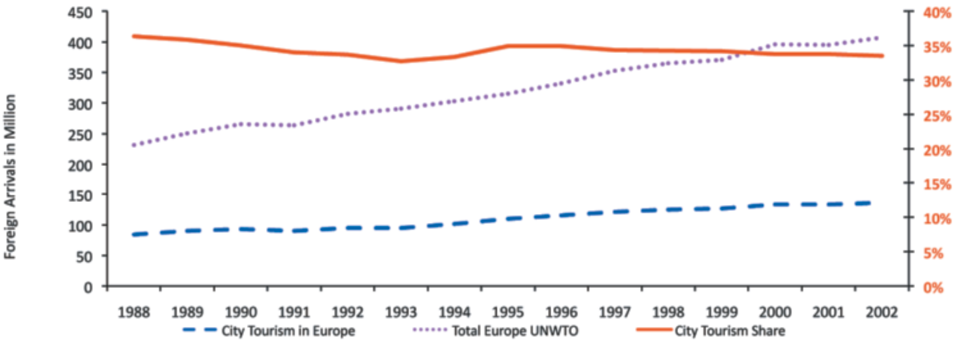

Fig. 1 Comparison of foreign arrivals in all forms of accommodation establishments in European cities to European tourism in general

mation was found allowing for a reasonable estimation): Namur (Belgium); Stara Zagora, Pleven, Sliven, Dobric (Bulgaria); Liberec, Hradec Králové (Czech Republic); Tartu (Estonia); Oulu (Finland); Gaziantep, Merzifon, Kayseri, Eskisehir, Diyarbakir, Urfa, Samsun (Turkey); Leeds, Kirklees, Wigan, Sunderland, Bolton, Plymouth, Stoke-on-Trent, Southampton (Great Britain). Nevertheless, 379 cities remained and were analysed according to their city tourism development between 1988 and 2002. Additionally, estimates for the cities were produced applying different forecasting methods.

As far as the figures for tourism in Europe on a countrywide level are concerned, the standards of the UNWTO were used. The UNWTO includes the European Union member countries, as well as Norway, Switzerland, Armenia, the Russian Federation, Liechtenstein, Andorra, Bosnia & Herzegovina, the Former Yugoslav Republic of Macedonia, Israel, Montenegro, Turkey, Croatia and Serbia. However, Bosnia & Herzegovina, Andorra, the Former Yugoslav Republic of Macedonia, Israel, Malta, Montenegro and Serbia were not covered by this study since no city time series were available. Only foreign arrivals were considered excluding domestic tourism from this analysis.

3.3.1 European city tourism compared to overall tourism – the status quo

City tourism is often seen as a significant or even major part of overall European tourism. Some indication of volume and direction of travel flows in European city tourism exists, yet the scope and impact remains largely unknown. There is little doubt that a high percentage of tourism volume and a much higher percentage of European business and professional travel volume were absorbed by European metropolises; however, these assumptions have not yet been empirically confirmed. This chapter demonstrates the significance of European city tourism by using data from 379 cities. This data series is available from 1998 until 2002. Furthermore, for 67 European cities the time series covering the period 1991–2006 is available. The analysis will also compare the top 20 city destinations (in terms of the highest bed night volume for the year 2006) to the other 67.

European tourism overall increased by 76% from 231.6 million arrivals in 1988 to 407 million in 2002. Although development of city tourism was similarly favourable in this time period (85 million arrivals in 1988 and 137 million in 2002) the rise in demand was only 61%, thus significantly lower than for tourism

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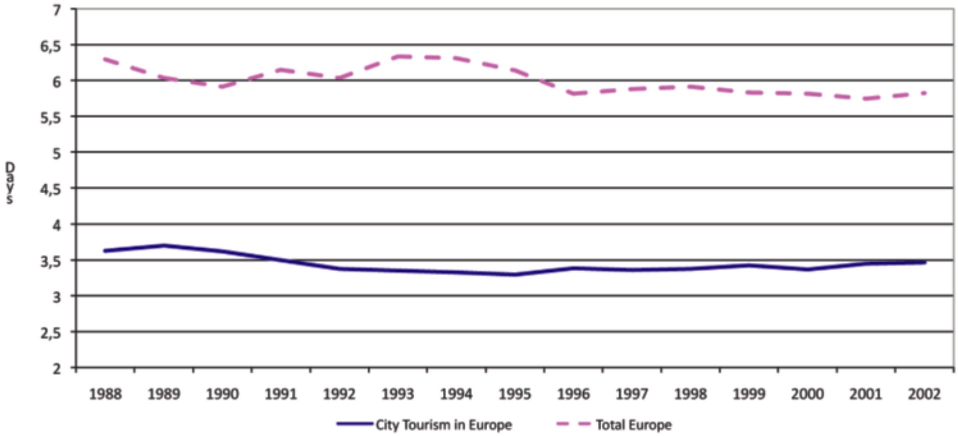

Fig. 2 The average length of stay in city tourism compared to tourism overall

overall (see city tourism share in Figure 1). In 2002, 379 cities generated 137 million arrivals which accounts for 33.5% of overall tourism in Europe.

City tourism traditionally experiences shorter length of stays than other forms of tourism, which is illustrated in Figure 2 (3.4 days in cities whereas 5.8 days in overall Europe in the year 2002). The average duration of stay decreased from 1988 until 2002. The average length of stay dropped from 6.3 in 1988 to 5.8 in 2002 when looking at tourism in Europe overall. The average duration of city trips has decreased by 0.2 days (from 3.6 days in 1988 to 3.4 days in 2002).

For the more recent years until 2006, the data for this large sample of almost 400 cities is not yet available. Therefore, a smaller sample was analyzed with a focus on recent developments of tourism bed nights in the respective destinations. Bed night data compiled by the Eurostat, the European Cities Marketing (ECM) and statistics available on TourMIS were used to compare the changes in the performance of European city tourism to European tourism in general for the time period 1990 until 2006. Data for both, domestic and foreign tourism was considered in this comparison. The city sample includes 67 cities[1] and the country sample comprises 32 countries (the 27 European Union member countries as well as additional five countries, i. e. Switzerland, Norway, Croatia, Liechtenstein and Iceland). The outcome is shown in Figure 3 which illustrates the changes in the performances of one year compared to the previous year. The country peak in 2000 was mainly due to major bed night increases in Spain and Italy. Figure 3 also demonstrates how different the city and country performance may be from each other.

Next, the top 20 European urban destinations are investigated. The TourMIS data entered by the cities themselves or provided by

1 Amsterdam, Antwerp, Augsburg, Barcelona, Berlin, Bilbao, Bologna, Bratislava, Bregenz, Bruggen, Brussels, Budapest, Cagliari, Copenhagen, Dijon, Dresden, Dublin, Dubrovnik, Eisenstadt, Florence, Genoa, Gent, Gijón, Göteborg, Graz, Hamburg, Heidelberg, Helsinki, Innsbruck, Klagenfurt, Linz, Lisbon, Ljubljana, London, Luxembourg City, Malmö, Milan, Munich, Münster, Naples, Nuremberg, Olomouc, Oslo, Palermo, Paris, Prague, Reykjavík, Rome, Salzburg, Santa Cruz de Tenerife, St. Pölten, Stockholm, Tallinn, Tampere, Tarragona, Triest, Turin, Turku, Valencia, Venice, Verona, Vienna, Weimar, Würzburg, Zagreb, Zurich

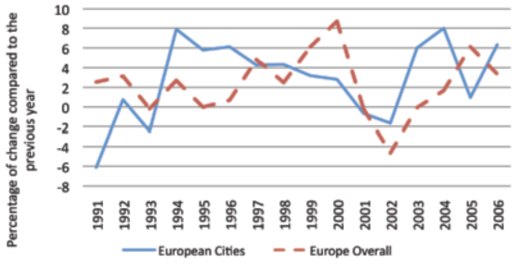

Fig. 3 Changes of total European bed nights compared to European city bed nights

Fig. 4 Comparison of the performance of the top 20 city destinations to the 67 cities sample (in terms of bed nights)

the ECM served as the data basis for a further comparison between the development of the top 20 and the other 67 cities included in the TourMIS sample.

3.3.2 Development of the top 20 European tourism cities

First, the arrivals data from 2006 are compared to the bed night data from the same year for the top 20 cities and comparatively ranked. London, Paris and Rome lead the table in both measures, bed nights and total arrivals, yet the further down in the ranking one goes, differences become apparent e. g. Dublin is better performing when looking at the bed nights, the same is true for Prague or Budapest. Remarkable in total numbers is London, accounting for more than triple the bed nights of Paris, its unofficial competitor in European city tourism. Eight of the 20 big players have bed night figures of more than 10 million a year (Table 1).

When the performance of the 67 cities sample is compared to the top 20 European city destinations (Figure 4), the trend is very similar. City tourism had increased, but experienced a decline in 2001 and 2002, possibly due to September 11. The other earlier decline in 1991 may have certainly been caused by the Gulf crisis. Another remarkable observation is that it seems that the gap between the two samples seems to grow, suggesting the city tourism destinations' overall sample is registering slightly higher increases than the top 20 cities. Nevertheless, the proportion of the top 20 to the overall sample is quite impressive with the top 20 cities accounting for 86% of the bed nights of the 67 cities.

3.4 Forecasting European City Tourism

The objective of this chapter is not to convey the fundamentals of statistical forecasting; instead we refer the reader to the seminal work on statistical forecasting in tourism "Forecasting Tourism Demand, Methods and Strategies" by Douglas C. Frechtling for a refresher. None-

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Table 1 Top 20 arrival and bed nights ranking based on TourMIS data for 2006

City	Bed nights 2006 (in thousands)	Bed nights ranking	Arrival Ranking
London	126,000	1	1
Paris	35,505	2	2
Rome	28,174	3	3
Dublin	22,974	4	6
Berlin	15,901	5	5
Barcelona	14,771	6	4
Prague	11,278	7	10
Vienna	10,088	8	8
Munich	8,859	9	9
Amsterdam	8,587	10	7
Hamburg	7,177	11	11
Milan	6,765	12	12
Budapest	6,009	13	15
Lisbon	5,742	14	14
Florence	5,697	15	16
Venice	5,388	16	18
Stockholm	5,348	17	13
Brussels	4,836	18	–*
Copenhagen	4,627	19	–*
Dresden	3,499	20	21

* For Brussels and Copenhagen no data were available for the arrivals 2006

theless, in order to provide a logical entry into the chain of arguments made in this chapter, a brief overview of purpose and practices of forecasting tourism demand is made.

Forecasting is an attempt to foresee the future by examining the past. Naturally, historical data is the basis for forecasting, yet what distinguishes a forecast from a mere manipulation of numerical functions is a judgmental component. Any quality forecast, however, is derived in an objective and systematic fashion and combines objective data with subjective guesses and hunches of the analyst. Forecasts are generally classified into two general categories, qualitative and quantitative forecasting. Sometimes, a third category is used in addition, in which a combination of both is termed "forecasting for decision making" (Choy, 1984).

Qualitative methods are based on individuals' judgements e. g. the often used and widely known Delphi method relies on experts' opinions as data basis. The World Tourism Organisation uses in its UNWTO World Tourism Barometer a panel of tourism experts not only for rating current performances but also for giving opinions on future developments. The qualitative method of the jury of expert opinions relies on experts meeting and reaching consensus on a certain forecasting question (Frechtling, 2001, p. 213). Another qualitative method would be a consumer intention survey asking consumers whether or not they are planning a trip (Frechtling, 2001, p. 227).

The combination of objective and subjective forecasting methods goes in line with the view that a mere extension of historical data into the future alone does not yet constitute forecasting, but that a judgmental component is necessary to create meaningful and worthwhile forecasts. A preference for combined forecasting methods (i. e. improved forecasting accuracy) is repeatedly expressed in the literature (Song and Li, 2008). In this chapter, the focus lies on assessing the significance of city tourism, therefore the decision making component of the study is relatively minor. In consequence, the chapter will focus on quantitative forecasting methods and will leave the subjective interpretation of results to the stakeholders of this book.

As for the quantitative forecasting methods, one commonly distinguishes between time series, or extrapolative methods and causal methods. Causal methods establish a cause-and-effect relationship by identifying the explanatory variable and building a mathematical expression that explains the effect on the forecast variable. For example, tourism managers who consider expanding the transport network to a city may wish to first establish a causal relationship between transport options to the city and number of arrivals. Once such a causal effect has been positively established, the decision makers can forecast the total number of arrivals by adjusting the transport variable. Extrapolative methods, on the other hand, do not focus on the predictive power of external variables, but instead utilize historic data to draw an objective picture of the future.

As far as the forecasting methods are concerned there is no common conclusion in the research community on which models are optimal in which situations, not even on whether to use complex models or just stick to naïve models and exponential smoothing (Frechtling, 1996). In practice, the problems faced by tourism managers are so complex that simple heuristics are applied, following the philosophy of rather being ‘approximately right’ than being ‘precisely wrong’. In general, the concept of parsimony prevails, meaning the simplest model with the best predictive power is likely to be applied (Nikolopoulos, Goodwin, Patelis, and Assimakopoulos, 2007). Therefore, the forecast accuracy is considered the ultimate basis of decision on which forecast method is to be applied.

Questions

Which are the two broad categories of forecasting? Why does forecasting have such high importance in tourism?

3.4.1 Assessing Forecast Accuracy

Forecasting tourism data is of considerable value to tourism managers as well as policy makers, thus making the accuracy of forecast models the most important criterion. Due to its clarity and intuitiveness, the most commonly applied measure of forecast accuracy relates to the forecast error, i. e. the arithmetical difference between the forecasted and the eventually observed value. Forecast errors can be expressed in absolute terms (i. e. absolute difference between forecasted and observed international tourist arrivals), however measuring percentage errors relative to the absolute values allows the forecaster to compare forecasting models across different time series (Frechtling, 2001). The Mean Average Percentage Error (MAPE) is a sum of the absolute errors for each time period divided by the actual value for the period and is expressed as:

$$MAPE = \frac{1}{n} \times \left(\frac{|e_t|}{A_t}\right) \times 100$$

Where: n = number of periods
e = absolute forecast error
A = actual value of the variable being forecasted
t = some time period

Table 2 Forecasting Methods Applied in this Study

Model	Description
Naïve 1	Forecast value for the period is equal to the observed value of the proceeding period
Naïve 2	In addition to the most recent observation, the upward or downward change that occurred towards the proceeding observation is used to predict future values
Single Moving Average (SMA)	Forecasts are obtained by averaging the most recent periods excluding older numbers (also called "smoothing")
Single Exponential Smoothing (SES)	A higher weight is given to more recent values when conducting the forecast, applies one smoothing factor
Double Exponential Smoothing (DES)	Exponentially reducing weights are applied to past values like in SES but DES uses two smoothing factors and allows handling trends
AutoRegressive Integrated Moving Average (ARIMA) or Box-Jenkins Approach	Two forecasting methods, autoregression and the moving average, are used to predict future values

The interpretation is intuitive, the smaller the MAPE value, the more accurate the forecast, thus methods with lower MAPE values outperform forecasting methods with higher MAPE values. Lewis's (1982, in Frechtling, 2001, p. 26) interpretation of the MAPE values is a means to judge the forecasting accuracy – less than 10% is highly accurate, 11–20% is considered a good forecast, 21–50% is a reasonable forecast and more than 50% is an inaccurate forecast.

The remainder of this chapter applies extrapolative methods on European tourism arrivals data. Without debate, causal models of city tourism are informative but (a) would not provide any insight into the significance of city tourism and (b) often suffer from a complex and ill-defined array of explanatory variables. For a review of econometric forecasting models, see Witt and Witt (1995). The possibilities for extrapolative methods have clearly increased enormously in the past decades, mainly due to the quick advances in computational power and the analytical programs that came with it. While the complexity of extrapolative methods is clearly recognized, the authors focus on the most commonly applied extrapolation methods (Armstrong, 2001) as explained in Table 2.

The above outlined forecasting methods were applied to the city tourism arrival figures. Calculations were either done with Excel or SPSS. First a brief description of the applied methods is given followed by sample calculations with the tourism arrival data. The methods will then be assessed on the basis of the MAPE. The best performing model will be used to demonstrate a forecast of city tourism figures until 2020. Finally, this forecast will be compared to the UNWTO European tourism arrivals predictions in order to give an estimate whether the significance of European city tourism will increase or decrease when compared to tourism overall.

3.4.2 Naïve Forecasting

Naïve forecasting methods are based solely on the most recent information available, arguing that the most recent observation is the most accurate approximation of future occurrences (Hanke, Wiechern, and Reitsch, 2001). They are obtained with minimal effort and data manipulation (Shim, 2000), but although naïve forecasting may be perceived simplistic, it can be suitable when little data is available and the object of forecast is relatively stable. Several naïve forecasting methods are possible, yet the two most common are the Naïve 1 and Naïve 2 forecasting methods.

The Naïve 1 forecast method simply states that the forecast value for the period (t) is equal to the observed value of the proceeding period (t-1) (Makridakis, Wheelwright, and Hyndman, 1998). It is expressed in algebraic terms as:

$$\hat{y}_t = y_{t-1}$$

The Naïve 2 forecasting methods assumes that in addition to the most recent observation, one should also include the change that occurred towards this proceeding observation, that is, if the final observation led by a decrease, one should include this decrease in the forecast (Makridakis et al, 1998, Newbold and Bos, 1994). Again in algebraic terms, the Naïve 2 forecasting methods reads:

$$\hat{y}_t = y_{t-1} + P\,(y_{t-1} - y_{t-2}), \text{ where}$$

P is the proportion of change between period t–2 and t–1 that was chosen to be included in the forecast. The Naïve 2 method is considered a useful tool for a series that trends upward or downward (Frechtling, 2001).

According to Hanke, Wiechern and Reitsch (2001), naïve forecasting methods are frequently applied since they are not costly, easy to implement and easy to understand. Particularly for short-term forecasts, naïve methods are often the tools of choice (Heizer and Render, 2001). Table 3 shows figures of a Naïve 1 and Naïve 2 forecast and its MAPE when applied to the European tourism arrivals numbers.

Furthermore, extrapolative forecasting methods were applied to have a look at how city tourism could develop in the future. The implications of forecasting are of direct effect to tourism businesses. Airlines might plan their routes accordingly when the demand for a city destination is estimated to increase or decrease. It has to be noted that demand for destinations may also be created by the carrier, something that could be observed with the growth of low-cost airlines. Large international hotel chains may base their decision whether to build or buy new hotel complexes in a certain city on forecasts for the upcoming periods. Tour operators can decide on offering packaged tours to certain cities by considering estimates for the future. However, here it is important to distinguish between short-term amendments to supply (such as additional routes or planes on popular routes) and long-term investments such as the acquisition of hotel properties or improvement of infrastructure. Each of these certainly has substantially different forecasting requirements.

3.4.3 Single Moving Average (SMA)

The single moving average (SMA) uses the numbers of the most recent periods to predict future figures. The important assumption of the single moving average method is that, the more recent the data, the higher their relevance is. However, all values included have the same weight; older values are just excluded from the calculation of the single moving average. The more periods are chosen to be included in the calculation of the single moving average, the higher will be the smoothing effect. The next step would be to assign weight to periods, e. g. if there was a crisis in a particular period, the results of this period might receive a lower weight to distort the predicted values not too much. The equation for the single moving average is:

$$F_t = \frac{A_{t-1} + A_{t-2} + \ldots + A_{t-\mathrm{n}}}{n}$$

F represents the forecast value, A the actual value, t is some time period and n the number of time periods (Frechtling, 2001). Figure 5 compares the forecast with the actual data and

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Table 3 Results of Naive Forecasting

Year	Actual	Naive 1	Naive1_MAPE	Naive 2	Naive2_ MAPE
1988	84194832	n. a.	n. a.	n. a.	n. a.
1989	89955199	84194832	18.98	n. a.	n. a.
1990	93077232	89955199	18.75	97068764	9.12
1991	89840299	93077232	18.32	98299729	16.60
1992	95172703	89840299	24.56	88382836	25.18
1993	95212281	95172703	17.50	102463871	15.70
1994	101218306	95212281	14.08	96865486	14.87
1995	109971517	101218306	17.98	108559590	12.62
1996	116007721	109971517	18.68	125714400	30.49
1997	121183618	116007721	13.93	125306846	12.04
1998	125027109	121183618	13.05	127801893	12.39
1999	126592871	125027109	15.36	129889981	12.34
2000	133813605	126592871	14.06	130461349	11.48
2001	133483351	133813605	16.71	145480742	47.99
2002	136304776	133483351	11.65	135509859	9.93
2003	n. a.	136304776	n. a.	140236458	n. a.

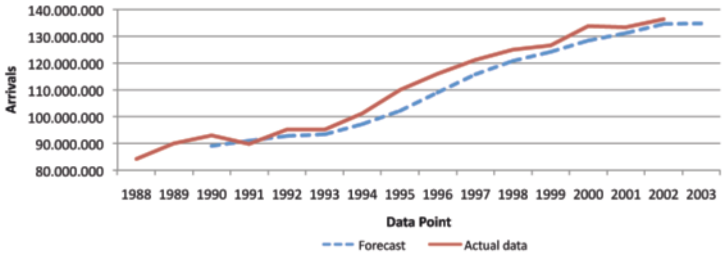

Fig. 5 Application of Single Moving Average (SMA)

shows that the forecast was less optimistic than the actual performance was.

3.4.4 Exponential smoothing

Exponential smoothing is the next level in complexity and double exponential smoothing can handle linear trends (Frechtling, 2001). In general, exponential smoothing is attaching weights to the values, higher weights to the more recent data and lower weights to the older ones. Thus, while simple moving average is excluding older values, exponential smoothing includes them but is weighting them with lower importance than the more recent ones. Therefore, exponential smoothing allows varying the significance of older values. Single exponential smoothing applies one smoothing factor on stationary time series. The following formula is used to calculate forecasts with the SES method:

$$F_t = F_{t-1} + \alpha\,(A_{t-1} - F_{t-1})$$

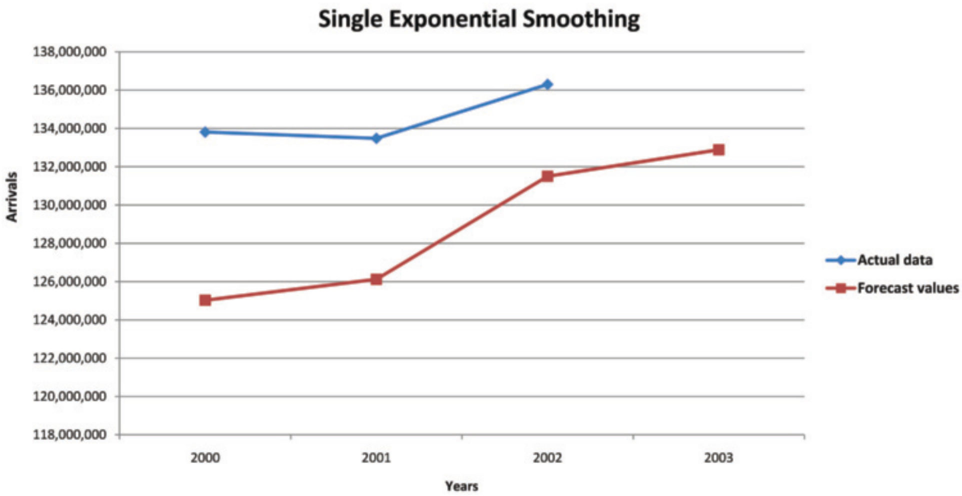

Fig. 6 Application of Single Exponential Smoothing (SES)

F being the forecast value, α = the smoothing constant between 0 and 1, A = actual value and t = some time period (Frechtling, 2001). Alpha (α) is the smoothing constant which can have values between zero and one. It determines the weight of the previous values in the time series. Zero would mean all values would be weighted the same; the higher the α value is, the higher the most recent values are weighted.

In our example SES allows forecasting one period ahead like the SMA. The smoothing parameter was 0.3. Figure 6 shows the forecasts resulting from SES compared to the actual city tourism data for the years 2000 until 2003. Forecasts are less optimistic than actual arrival numbers.

In this study double exponential smoothing (DES) and the Holt model were applied enabling the consideration of trends and using two smoothing factors (Schröder, 1994). The formulas behind double exponential smoothing are briefly outlined (Frechtling, 2001).

The Levels or values are calculated by
$\alpha A_t + (1 - A)(L_{t-1} + b_{t-1})$
The Trend of the series is obtained by
$b_t = \alpha (L_t - L_{t-1}) + (1 - \alpha) b_{t-1}$

The Forecast is computed by
$F_{t+h} = L_t + hb_t$

(L = level of the series, α = level and trend smoothing constant between 0 and 1, A = actual value, b = trend of the series, t = some time period, h = number of time periods to forecast)

Table 4 compares the forecasts of DES and ARIMA to the actual tourism arrival numbers. For double exponential smoothing forecast, the smoothing parameter was 0.1. Again, predictions are more cautious than the actual data values were. Furthermore, forecasts up to the year 2020 are indicated.

3.4.5 AutoRegressive Integrated Moving Average (ARIMA)

The autoregressive integrated moving average or Box-Jenkins approach is an advanced extrapolative method using two forecasting methods, the autoregressive and the moving average component (Frechtling, 2001). The complex ARIMA method requires five

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Table 4 DES and ARIMA Forecasting Results

Year	Actual	DES	ARIMA
1988	84194832	83957458	n. a.
1989	89955199	87589848	87899267
1990	93077232	92711766	93516274
1991	89840299	97156036	96772230
1992	95172703	95598297	93866614
1993	95212281	98776915	98285059
1994	101218306	100073250	98723986
1995	109971517	106246215	104657821
1996	116007721	114008411	113762097
1997	121183618	120872404	120804545
1998	125027109	123894569	124873397
1999	126592871	127502873	128288078
2000	133813605	131124311	130323189
2001	133483351	136811883	136950594
2002	136304776	137255256	137993377
2003	n. a.	139250626	139775917
2004	n. a.	142417309	143589637
2005	n. a.	145583991	147116651
2006	n. a.	148750674	150923971
2007	n. a.	151917356	154530611
2008	n. a.	155084039	158300103
2009	n. a.	158250721	161951959
2010	n. a.	161417403	165695002
2011	n. a.	164584086	169371934
2012	n. a.	167750769	173099521
2013	n. a.	170917451	176790224
2014	n. a.	174084133	180509135
2015	n. a.	177250816	184207381
2016	n. a.	180417498	187921436
2017	n. a.	183584181	191623818
2018	n. a.	186750863	195335124
2019	n. a.	189917546	199039773
2020	n. a.	193084228	202749495

Table 5 MAPEs for the Forecasting Methods Applied

	Naïve 1	Naïve 2	SMA	SES	DES	ARIMA
MAPE	11.65	9.93	3.37	5.20	10.94	11.38

steps to obtain a forecast. First, the data series is checked whether seasonality and non-stationarity are found. If so the data needs to be transformed. The next step is to identify the appropriate model which is followed by the estimation. Only if the diagnostic checking of the models is passed, the best model is chosen to perform the forecasting (Frechtling, 2001). Table 4 outlines the forecasting results for the ARIMA and the DES.

ARIMA is slightly more optimistic than double exponential smoothing showing higher values for European tourism arrivals forecasts. According to ARIMA, in 2020, European tourist arrivals will amount to more than 200 million whereas DES predicts 193 million arrivals. Next, the MAPEs of the different methods applied are compared for the year 2002 (Table 5). The goal is to use the best performing method's forecasts for a comparison to tourism arrival forecasts provided by the UNWTO for Europe. This will help in estimating whether European urban tourism is predicted to increase or decrease its share when compared to tourism overall forecasts.

The SMA and SES MAPEs would be the best; however, these methods do not allow a long-term forecast (similarly to the naïve methods). Therefore, DES forecast figures will be applied because its MAPE was best for long term forecasting.

3.4.6 Forecasts of European urban tourism compared to tourism overall

The year 2020 will be the focus for the comparison of European urban tourism and its forecasts (according to the best performing model) to UNWTO predictions for tourism overall. According to UNWTO predictions tourism in Europe will account for 717 million tourist arrivals in 2020 (527 million in 2010). DES forecasts 193 tourist arrivals in European cities for 2020. Thus, the share of urban tourism when compared to tourism overall would be 26.9% in terms of arrivals. When looking at the city tourism share in 1988 it was still 36.4% whereas in 2002 it was almost 3% less with a share of only 33.5%. The forecasts for 2010 predict a share of 30.6% In conclusion, predictions show a significant decline in the share of city tourism when compared to European tourism arrivals overall. The share of city tourism will decrease by almost 10% from 1998 until 2020.

Discussion Point

Combination of forecasting methods

Forecasting is an attempt to foresee the future by examining the past. In this chapter, we discussed and demonstrated quantitative forecasting methods. Any quality forecast, however, is derived in an objective and systematic fashion and combines objective data with subjective guesses and hunches of the analyst. Qualitative methods are based on individuals' judgements e. g. the often used and widely known Delphi method relies on experts' opinions as data basis. However, the combination of objective and subjective forecasting methods goes in line with the view that a mere extension of historical data into the future alone does not yet constitute forecasting, but that a judgmental component is necessary to create meaningful and worthwhile forecasts. The judgmental component may include political, economical, and social status quo such as wars, terrorism and economic crisis that may influence future travel decisions. A preference for combined forecasting methods (i. e. improved forecasting accuracy) is repeatedly expressed in the literature (Song and Li, 2008) and would give more accurate forecasting results than applying only one method by itself.

Table 6 Predictions of DES with and without crisis

Year	DES values considering crisis	DES values without crisis
2008	155457224	155084039
2009	150338185	158250721
2010	154290352	161417403
2011	157761248	164584086
2012	161232144	167750769
2013	164703040	170917451
2014	168173937	174084133
2015	171644833	177250816
2016	175115729	180417498
2017	178586625	183584181
2018	182057521	186750863
2019	185528417	189917546
2020	188999314	193084228

3.4.7 Effect of economic crisis on tourism forecasts

Furthermore, an outlook will be given on how the above forecasts change when considering the current economic crisis and its effect on tourism. Tourism Economics (2009) forecasts in their report about the financial crisis and its implications for European tourism a 3.8% decline for Europe. However, a decrease of only 3.8% for city tourism would be rather optimistic since city tourism usually suffers more from crises than tourism overall (e. g. because of less business trips or a reduced number of short city breaks). Therefore, a decrease of 5% is estimated and this drop is considered in an additional forecast showing predictions until 2020. Table 6 outlines the expected lower level of tourism arrivals.

Additionally, the predictions considering the crisis are visualized in Figure 7. The forecasts show that city tourism will continue on a slightly lower level, thus, it will take some time until tourism is back to its growth levels experienced before.

Fig. 7 DES Forecasts including a 5% decrease of city tourism in 2009

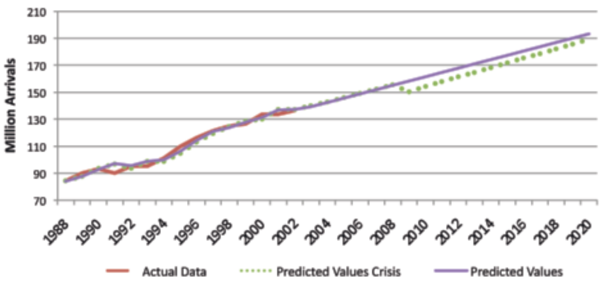
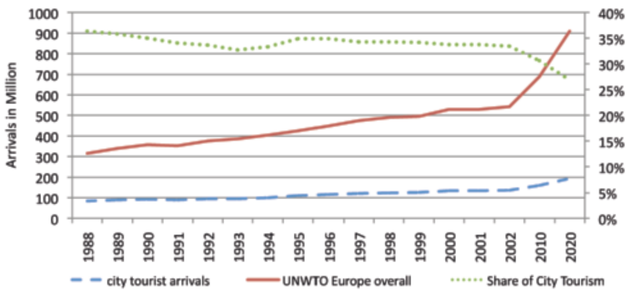


Fig. 8 The Share of City Tourism



3.5 Conclusions

Tourism, as one of the most important industry sectors in Europe, is the focus of many research endeavours. However, the scope and importance of city tourism has hardly been researched empirically. A reason might be that when trying to assess the significance of city tourism, several difficulties, such as data availability or comparability, appear. In an attempt to assess the significance of city tourism in Europe, data for almost 400 European cities with a population of at least 100,000 was collected for the time period 1998–2002. Based on these figures, the aim was to apply different forecasting methods to be able to give predictions for city tourism in Europe. While forecasts on a continent level are provided by the UNWTO, no estimates for European city tourism are available. This study was an attempt to fill this gap. When looking at the sample for a time period of almost 15 years (1988–2002) and 18 years of forecast, it appears that the share of city tourism is decreasing. While the share of city tourism was 36.4% in 1988, estimates show a decreased share of 26.9% for 2020 meaning a loss of almost 10% (Figure 8).

Future studies could try to find out whether this will be true solely for European city tourism or if this negative prediction applies to city tourism around the world. Furthermore, future research could concentrate on particular cities to find out which urban destinations will lose their significance to be able to implement counter-actions.

Web sites of interest

European Cities Marketing (ECM): http://www.europeancitiesmarketing.com
Eurostat – Statistical Office of the European Communities: http://epp.eurostat.ec.europa.eu
WTO – World Tourism Organization (UNWTO): http://www.unwto.org
UNWTO World Tourism Barometer: http://www.unwto.org/facts/eng/barometer.htm

Review questions

(1) How might a qualitative forecasting approach look like?
(2) Name some examples of quantitative forecasting methods and outline their differences.
(3) How would you describe the performance of city tourism in the past and future years?
(4) How would you assess the importance of European city tourism compared to tourism overall in Europe?

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