



Towards a Sustainable Urban Tourism Development in Europe. The Role of Benchmarking and Tourism Management Information Systems. A Partial Model of Destination Competitiveness

by

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Outline

- Introduction & motivation for the study
- The measurement of destination competitiveness
- Data envelopment analysis (DEA)
- Proposed model
- DEA results and virtual reference
- Final remarks



Introduction to the study

- Growth of cities and city tourism
- Challenges

A destination's sustainability is as important as its performance in terms of the number of arrivals or bednights, in order to stay competitive and have satisfied visitors.

- How do we measure the sustainability of destinations?



Motivation for the study

- Development of indicators and metrics systems = paramount importance
- Synthesis of various initiatives that are proposing frameworks for sustainable tourism indicators for measuring **resources** and **objectives** for cities
- Application of DEA for benchmarking urban tourism destinations by using the commonly accepted indicators for measuring sustainability efforts of city destinations: **the partial model of destination competitiveness**



The measurement of destination competitiveness

- *The Competitive Destination: A Sustainable Tourism Perspective* by Ritchie and Crouch
- The Competitiveness Monitor by WTTC and the Travel and Tourism Competitiveness Report by WEF
- Sustainable Tourism Benchmarking Tool by Cernat and Gourdon
- ETIS by European Commission
-

variety of sustainability indicators

potential objectives and indicators for city tourism policy makers

potential resources



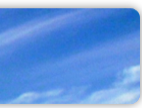
Objectives	Indicators	Type	References
Competitiveness (max)	bednights, arrivals, tourism revenues,....	economical	Wöber (1997), UNWTO (2014), EU (2013)
Seasonality (min)	distribution of demand	economical, environmental, social	EU (2013)

Resources	Indicators	Type	References
Capacity of primary tourism infrastructure	# of accommodation establishments, bedspaces	capital	Ritchie et al. (2001), UNWTO (2014), Blanke and Chiesa (2014)
Cultural resources	# of cultural attractions, # of UNESCO sites, # of major events/festival days per year	capital	Ritchie et al. (2001), Blanke and Chiesa (2014)



Data envelopment analysis (DEA)

- Mathematical model, non-parametric technique
- Performance evaluation and benchmarking against the best practice
- Relative efficiency of Decision Making Units (DMUs) = cities
- Multiple input and output variables can be processed without having any a priori information about the importance of the individual variables, irrespective of the units of their measurement



Proposed model

Uncontrollable input:

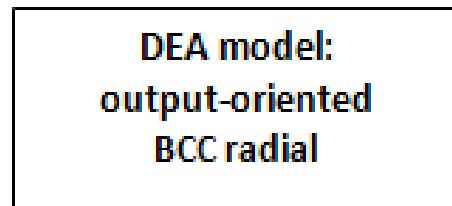
- Estimated number of attractions (natural + cultural)
(Land/Capital)

Outputs:

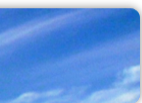
- Total foreign bednights
(Economical)
- Average % change in total foreign bednights between 2009 and 2014
(Economical)
- Seasonality (total foreign and domestic bednights)
(Economical/Environmental/Social)
- Density
(Environmental)

Input:

- Bed capacities
(Capital)



- Efficient & inefficient DMUs
- Benchmarking partners & weights
- Virtual reference



DEA results – inefficient cities

	City	Score	Benchmarks & Weights
Inefficient DMUs			
4	Bratislava	137.22%	1 (0.18) 2 (0.04) 9 (0.37) 23 (0.02) 26 (0.39)
7	Dresden	134.79%	2 (0.02) 15 (0.31) 23 (0.54) 26 (0.13)
13	Helsinki	130.42%	1 (0.12) 2 (0.08) 15 (0.36) 21 (0.10) 27 (0.34)
18	Munich	125.11%	2 (0.49) 19 (0.03) 21 (0.30) 23 (0.18)
20	Salzburg	115.25%	2 (0.13) 8 (0.62) 17 (0.25)
5	Bruges	114.54%	1 (0.00) 15 (0.34) 16 (0.34) 27 (0.32)
3	Berlin	111.48%	19 (0.37) 23 (0.63)
22	Tallinn	108.24%	15 (0.64) 23 (0.08) 25 (0.16) 26 (0.11) 27 (0.00)
14	Lisbon	107.90%	2 (0.24) 15 (0.26) 23 (0.17) 25 (0.22) 26 (0.10)
6	Copenhagen	106.19%	2 (0.29) 15 (0.43) 23 (0.17) 26 (0.12)



DEA results – efficient cities

	City	Score	Benchmark Appearance
Efficient DMUs			
10	Graz	94.96%	0
25	Vienna	94.38%	2
11	Hamburg	93.97%	0
16	Lucerne	92.11%	1
8	Ghent	87.76%	1
12	Heidelberg	86.08%	0
27	Zurich	78.07%	3
26	Vilnius	75.61%	5
9	Gijon	72.75%	1
1	Antwerp	67.65%	3
21	Stuttgart	59.78%	2
23	Turin	54.72%	7
19	Paris	44.36%	2
2	Barcelona	37.29%	7
15	Ljubljana	big	6
17	Malmö	big	1
24	Turku	big	0



Reflection on results

- 10 inefficient vs. 17 efficient cities
- Bratislava, Dresden & Helsinki = the top 3 inefficient cities
- Proposed benchmarks:
 - Bratislava: Vilnius (0.39)
 - Dresden: Turin (0.54)
 - Helsinki: Ljubljana (0.36)
- 3 cities with 'big' efficiency scores: Ljubljana, Malmö & Turku followed by Barcelona, Paris and Turin
- Benchmark appearances:
 - Barcelona & Turin (7)
 - Ljubljana (6)
 - Vilnius (5)



Virtual reference for Bratislava

Inputs	Bratislava	Virtual reference	Difference
Bed capacities	12086	11384	702
Estimated number of attractions (natural + cultural)	150	150	0
Outputs			
Seasonality (total foreign and domestic bednights)	0.20	0.14	0.06
Density	3.11	2.27	0.84
Total foreign bednights	707272	970503	-263231
Average % change in total foreign bednights between 2009 and 2014	2.60	3.57	-0.97



Final remarks

- Attempt made to run DEA analysis using indicators stemming from 3 dimensions of sustainability, using the data from TourMIS
- All inefficient cities were proposed number of best practices to look closer toward in order to improve their performance
- No universal best practice for all cities
- Virtual reference pointing toward strengths and weaknesses of the destinations
- Valuable input for tourism decision makers to enhance their destinations in various ways
- The core advantage: many indicators are available in TourMIS and can be used for improvement of the overall destination competitiveness