

## THE USE LEVEL OF ACCOMMODATION CAPACITY IN FUNCTION - A PERFORMANCE INDICATOR IN TOURISM

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### Abstract

*Description of tourism activity needs the drawing out of a system of unitary, complete, coherent, and correlated indicators. Between performance indicators is to be identified the use level of accommodation capacity available, as a direct reflection of the relation "effectively demand – supply".*

*In the present study, an analysis and interpretation modality is proposed for the level and dynamic of this indicator, starting from the systematic and common determining issues (factors) of the tourist accommodation structures.*

**Key words:** indicators system, use level of accommodation capacity in function, determining issues (factors).

**JEL classification:** P17, R11, M00

### 1. PRELIMINARY CONSIDERATIONS

According to the methodology elaborated by the National Institute for Statistics, in order to describe the occupation level of the accommodation capacity of the tourist structures, monthly, quarterly and annually is calculated and published the index of net use of the accommodation places (or capacity in function). The proportion of the total number of nights (N) determines this figure to the accommodation capacity in function, expressed in places-days (CF) in a determined period.

Taking into account the content of this figure, we appreciate that the name "index" is not in line with the statistic theory. The figure is not an index of the dynamic or a territory index, having additionally a different meaning from the values point of view in which it is comprised (theoretically the use figure can not over pass 100%). The only resemblance is that it is calculated in percentages.

In reality, the "index" of use represents a relative measure of the intensity which is calculated by making proportions of the value of a feature (N, in our case) with values of other feature (CF in our case), these two variables being in a logic inter-conditioning link or dependence.

Thus, the mentioned figure shall be used under the name of level of use of the capacity in function (ULCF), the formula being the following:

$$ULCF = \frac{N}{CF} * 100 \quad (1)$$

Regarding the position of ULCF in the figures system for the tourism activity, it is included in different groups:

- figures reflecting the relation demand-offer, mentioning that the meaning of demand is referred to

the effectively demand (number of nights) not to the potential demand;

- figures reflecting the fulfilled demand;  
- physical figures from the offer perspective, considering that it reflects the capacity to use the offer, not the demand;

- figures reflecting the efficiency of the activity, representing a proportion between effect (nights) and effort, represented by the number of places-days of accommodation.

There are enough arguments to put ULCF in any of the a.m. groups. Even if we consider that the first variant is the closest to reality, we insist that a system of figures may be constructed in various manners, depending on the criteria. The main element is given by its characteristics: a unitary, complete, coherent, and correlated figures system.

### 2. THE EVOLUTION OF THE USE LEVEL OF CAPACITY IN FUNCTION

After 1990, a considerable decrease of the ULCF has been registered, from 57.8% in 1990 to a lowest level of 33.4% in 2005. In the period 2006-2008 we see an increase of about 3%, ULCF reaching a low level however of 36.4%. It is to mention that, during the whole period under analysis, at hotels and motels the levels were over the country average with about 3-7%.

**Table 1 - Evolution of ULCF in the period 1990-2008**

	1990	1995	2000	2005	2006	2007	2008
<b>Total</b>	<b>57.8</b>	<b>45.0</b>	<b>35.2</b>	<b>33.4</b>	<b>33.6</b>	<b>36.0</b>	<b>36.4</b>
Hotels and motels	65.8	48.2	41.3	40.3	40.2	42.4	42.7

Source: Romania's Statistics 2008, for the period 1990-2007  
Visiting tourist accommodation structures in the period 1.09-30.09.2008, National Institute for Statistics, 2008  
Note: for 2008 data is referred to the period 1.01.-30.09.2008

The situation by counties is detailed in the annex 1 and is reflecting a significant variation as synthesized in the figure 1 graphics:

- In 1990 the histogram is relatively symmetric, a number of 30 counties having a ULCF between 50 and 70 %;

- In 2000 the distribution is very asymmetric to the left with a high arch level as a result of the fact that 20 counties had a ULCF between 20-30%, meanwhile only 8 were over a low level of 40%;

- In 2007, even if the variation patch remains the same as in 2000 (10-60%), it is to mention a flatten of the distribution because a series of counties are migrating from the low area of 30%.

### 3. THE LEVEL AND DYNAMIC OF INFLUENTIAL FACTORS

The correlated analysis of the level and dynamic of ULCF allow us to make a more comprehensive interpretation of the registered trends.

Transferring in dynamics the relation 1 we obtain:

$$IULCF = \frac{IN}{ICF} \quad (2) \text{ where:}$$

IULCF = index of the use level of the accommodation capacity in function

IN= index of the number of nights spent

ICF= index of the capacity for accommodation in function

As a consequence, the level and dynamic of ULCF may be analyzed in two cases:

A. When  $IULCF > 100\%$  the existing case may be the result of three variants:

-  $IN > ICF > 100\%$ , this reflecting a positive situation in which both factors are over units and the relatively change of the tourist flow overpasses the increase of the accommodation capacity in function;

-  $IN > 100\% > ICF$  case which means the increase of the tourist flow in conditions of decrease of the accommodation capacity in function;

-  $100\% > IN > ICF$ , case reflecting a paradox at the first view: thus, the increase of the occupation level is accomplished in conditions of reduction of tourist activity, but reduction of the accommodation

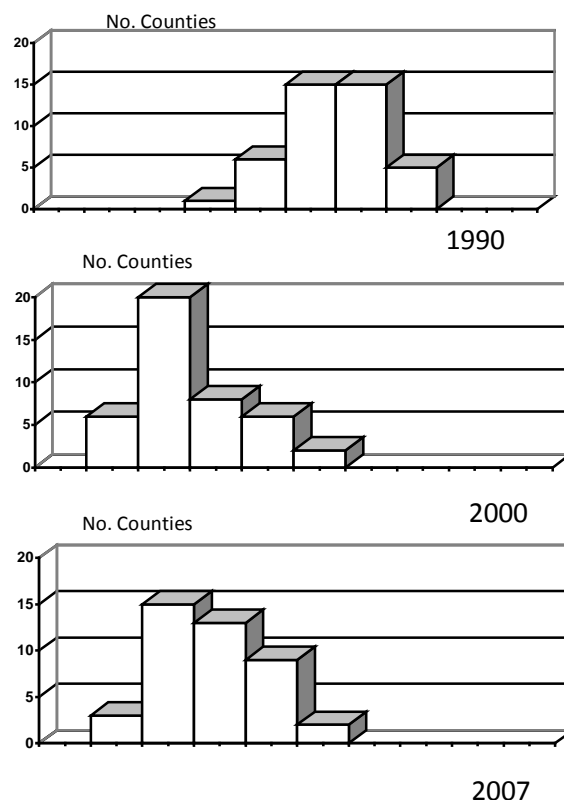
capacity is faster than reduction of the number of nights spent.

B. When  $IULCF < 100\%$ , the existing case being the result of another three variants:

-  $ICF > IN > 100\%$ , reflecting a positive situation in which both factors are over units, but the accommodation capacity in function is registering relatively good increases compared with the number of nights spent;

-  $ICF > 100\% > IN$ , which means the increase of accommodation capacity in function in conditions of tourist flow reduction;

$100\% > ICF > IN$ , reflecting obviously the most unhappy case of the tourist activity.



**Figure 1 - Counties distribution after use level of accommodation capacity in function during years 1990, 2000 and 2007**

Analyzing the use level of accommodation capacity in function (ULCF), by counties, in 2007, compared with 2000 (Annexes 2 and 3), a special interpretation is allowed which highlights a series of interesting issues, as level and trend.

• On the first places with the highest levels of ULCF we find mainly the counties having a good spa potential and a significant part of the activity organized through trade unions: Ialomița (57.2%), Covasna (56.0%), Vâlcea (47.9%), Bihor (47.0%). Also, excepting Vâlcea county, significant reductions of the functioning capacity were registered at the other units in the period 2000-2007: Covasna (-26.8%), Bihor (-16.6%), Ialomița (-14.1%). The cumuli result

of these figures consists in the high increasingly level of ULACF, reflected through two variants:

$$100\% > IN > ICF \\ IN > 100\% > ICF$$

- On the last places, with the lowest levels of ULCF we find mainly the counties to which in the period 2000-2007 simultaneous reductions have been registered, both to the functioning accommodation capacity and to the tourist flow (number of nights), so that:

$$100\% > ICF > IN$$

Between counties with the lowest level of ULCF we mention: Teleorman (13.6%), Vrancea (16.1), Botoșani (23.6%), Sălaj (24.0%).

- The counties with a great tourist potential are registering relatively low levels, but increasing, for the accommodation level: Brașov (25.3%), Tulcea (25.7%), Neamț (26.5%), Sibiu (30.3%), Cluj (31.0%), Mureș (37.0%).

The explanation is in the rapid increase of the accommodation capacity in the period 2000-2007: Sibiu (+75.2%), Neamț (+70.5%), Cluj (+30.3%), Brașov (+27.9%), Mureș (20.4%), Tulcea (20.5%). Even in this stage, the accommodation level increased as a result of the tourist flow, which over passed the increase of the offer:

$$IN > ICF > 100\%$$

In this category, we find also counties to which investment in the accommodation capacity determined positive results for the tourist flow, but the increase of the demand didn't over pass the increase of the offer:

$$ICF > IN > 100\%$$

Thus, in counties as Maramureș, Suceava, Dâmbovița, Timiș, Bistrița-Năsăud ULACF diminished even if in the period 2000-2007 the tourist activity made significant progress, regarding both the offer and the demand.

- A paradox is to be mentioned in Harghita and Bacău counties, with an average level of accommodation (28.0%, respectively 35.0%) in increase (ULCF > 100%). Even in this situation the tourist activity in the period 2000-2007 was in an accentuate throw-back: the functioning accommodation capacity has diminished with 35.3%, respectively 29.5%, over passing the reduction at the number of nights with 14.2%, respectively 23.7%. In this case:

$$100\% > IN > ICF$$

- Although it is not on the first places in the hierarchy of the accommodation level, it has to be underlined the spectacular developments in Bucharest, including Ilfov County. In the framework of great investment efforts, in the period 2000-2007 the accommodation capacity in function increased with 68.9% in Bucharest and with 150% in Ilfov County. These very rapid paces were anyway over passed by the increases of the tourist flow: the number of nights doubled in Bucharest and increased four times in Ilfov County (the increases in Ilfov were the greatest in the country).

- A last group might comprise counties with a very high tourist potential, with an average level of accommodation, or over the average, but not having significant developments. Thus, in counties such as Constanța, Caraș-Severin, Hunedoara and even Prahova, in the period 2000-2007 the designed strategy for the tourist activity might have been neutral, just to put into value some comparative advantages.

#### 4. FINDINGS

The use level of accommodation capacity in function (ULCF) may be considered a performance figure in the field, but for a good use and interpretation of this figure it has to be accompanied by the analysis of the direction and dynamic of the changes of its influential factors:

- systemic and common factors for all accommodation structures;
- specific factors for a peculiar accommodation structure.

The analysis of the systemic factors identifies at the aggregated level two influential factors:

- the level of the tourist flow, measured through the number of nights;
- accommodation capacity in function.

Depending on the availableness of data, the analysis may be carried on deeply. Taking into account that the number of nights depends on the average duration of the staying period – D and on the number of tourists (arrivals) – T, and the accommodation capacity in function is determined on the basis of the existing capacity – C (figured in places) and the average number of days of the accommodation offer – Z, the analysis of ULCF may be carried on also on the basis of the formula:

$$ULCF = D * T / C * Z * 100 \quad (3)$$

In this manner will be underlined, in dynamic, the temporal dimensions as trend and season. For the analysis at non-aggregated level of the ULCF (at microeconomic level) is necessary to consider the influences of specific factors, as a result of the space

dimension of the individual level of the accommodation for a certain category of accommodation structure. Specialized studies might underline the influences of some basic factors such as:

- location advantage compared with the competition (tourist attractions-facilities, central position or location in peripheral areas, location in rural areas or small towns with suitable access possibilities for the transportation);
- facilities and their amplitude, diversity of the services;

- efficiency of marketing policies and the budgets to sustain these policies;

- price policy, through reductions in extra season or other facilities for the tour operators, children, faithful clients etc.;
- modern possibilities to make reservations;
- existing accommodation capacity, investment and increase of the services' quality.

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## ANNEX NO. 1

### *Counties distribution after use level of accommodation capacity in function*

Groups after use level of accommodation - % -	1990	2000	2005	2007
10-15			Vrancea, Teleorman	Teleorman
15-20		Buzău, Vrancea, Argeș Teleorman, Cluj, Alba	Botoșani, Argeș	Maramureș, Vrancea
20-25		Neamț, Vaslui, Galați, Tulcea, Cluj, Gorj, Olt, Hunedoara, Sălaj, Brașov, Harghita, Ilfov	Neamț, Suceava, Vaslui, Buzău, Gorj, Maramureș, Sălaj, Brașov	Sălaj, Alba, Botoșani, Buzău
25-30		Botoșani, Mehedinți, Bacău, Maramureș, Giurgiu, Satu Mare, Dolj, Sibiu	Tulcea, Cluj, Dâmbovița, Prahova, Mehedinți, Olt, Hunedoara, Timiș, Cluj, Satu Mare, Alba, Harghita, Ilfov	Brașov, Harghita, Neamț, Suceava, Vaslui, Tulcea, Argeș, Călărași, Dolj, Gorj, Mehedinți
30-35		Tulcea, Prahova, Arad, Bistrița Năsăud, Mureș	Galați, Giurgiu, Arad, Bistrița Năsăud, Mureș, Sibiu	Bistrița Năsăud, Cluj, Sibiu, Prahova, Olt, Hunedoara, Timiș
35-40	Harghita	Suceava, Bihor, București	Bacău, București	Satu Mare, Mureș, Bacău, Ilfov, Dâmbovița, Arad
40-45	Tulcea, Dâmbovița, Teleorman	Iași, Caraș Severin, Timiș	Iași, Brăila, Constanța, Ialomița, Caraș Severin, Bihor	Constanța, Galați, București, Giurgiu, Caraș Severin
45-50	Neamț, Giurgiu, Mehedinți	Brăila, Dâmbovița, Covasna	Vâlcea	Bihor, Iași, Brăila, Vâlcea
50-55	Constanța, Gorj, Sălaj, Hunedoara, Sibiu	Olt, Vâlcea	Covasna	Covasna, Ialomița
55-60	Galați, Vrancea, Argeș, Olt, Arad, Caraș Severin, Bistrița Năsăud, Cluj, Covasna, Mureș			
60-65	Bacău, Suceava, Vaslui, Buzău, Călărași, Ialomița, Prahova, Dolj, Vâlcea, Alba, Brașov			
65-70	Timiș, Bihor, Maramureș, Satu Mare			
70-75	Botoșani, Iași, Brăila, București-Ilfov			

Source: Realized on data basis of Romanian Statistical Yearbook – 2008, NIS.

Note: Inferior limit included in period time.

## ANNEX NO. 2

*Counties hierarchy after use level of accommodation capacity in function*

County	2007		2000	
	%	Range	%	Range
Ialomița	57.2	1	31.1	15
Covasna	56.0	2	46.8	4
Brăila	49.2	3	47.1	3
Vâlcea	47.9	4	53.1	1
Bihor	47.0	5	37.6	10
Iași	45.1	6	43.1	8
Constanța	44.8	7	50.2	2
M. București	43.1	8	37.2	11
Caraș Severin	41.9	9	44.3	6
Giurgiu	41.4	10	6.1	24
Galați	40.1	11	22.8	31
Mureș	37.0	12	32.2	14
Ilfov	36.2	13	23.1	30
Dâmbovița	35.8	14	45.0	5
Satu Mare	35.6	15	29.6	18
Arad	35.2	16	31.1	16
Bacău	35.0	17	29.3	19
Olt	34.3	18	21.3	35
Prahova	33.4	19	30.2	17
Bistrița Năsăud	33.0	20	34.0	13
Timiș	32.0	21	43.0	9
Hunedoara	31.8	22	22.2	33
Cluj	31.0	23	17.2	40
Sibiu	30.3	24	27.5	22
Mehedinți	29.5	25	26.4	23
Harghita	28.0	26	23.8	28
Argeș	27.8	27	19.6	38
Neamț	26.5	28	23.0	29
Dolj	26.4	29	25.5	25
Călărași	26.2	30	21.3	34
Gorj	26.1	31	20.7	36
Vaslui	26.0	32	44.0	7
Tulcea	25.7	33	22.8	32
Suceava	25.6	34	36.0	12
Brașov	25.3	35	24.2	27
Sălaj	24.0	36	24.9	26
Botoșani	23.6	37	28.7	20
Buzău	23.4	38	19.3	37
Alba	21.1	39	17.8	39
Maramureș	17.4	40	27.8	21
Vrancea	16.1	41	16.4	42
Teleorman	13.6	42	16.9	41

Source: Calculated on data basis of Romanian Statistical Yearbook – 2008, NIS.

## ANNEX NO. 3

*Evolution of use level of accommodation capacity in function and of influencing factors in 2007 year, compared with 2000 year*

Year 2000=100

No. cat.	County	IULCF	IN	ICF
1	Ialomița	183.9	158.0	85.9
2	Covasna	119.6	87.6	73.2
3	Brăila	104.4	128.6	123.2
4	Vâlcea	90.2	98.9	109.7
5	Bihor	125.0	104.2	83.4
6	Iași	104.6	128.8	123.0
7	Constanța	89.2	93.1	104.3
8	M. București	115.9	195.4	168.9
9	Caraș Severin	94.6	92.7	97.9
10	Giurgiu	158.6	134.9	84.9
11	Galați	175.9	196.0	111.4
12	Mureș	114.4	138.3	120.4
13	Ilfov	156.7	392.8	250.0
14	Dâmbovița	79.5	100.2	125.8
15	Satu Mare	120.3	179.2	149.2
16	Arad	113.2	121.0	106.8
17	Bacău	119.4	85.8	70.6
18	Olt	161.0	156.9	97.4
19	Prahova	110.5	116.6	105.3
20	Bistrița Năsăud	97.1	109.9	113.2
21	Timiș	74.4	120.1	161.6
22	Hunedoara	143.2	106.1	74.2
23	Cluj	180.2	234.8	130.3
24	Sibiu	110.2	192.5	175.2
25	Mehedinți	111.7	113.9	101.8
26	Harghita	117.6	76.3	64.7
27	Argeș	141.8	156.5	110.5
28	Neamț	115.2	197.0	170.5
29	Dolj	103.5	142.2	144.4
30	Călărași	123.0	177.2	144.4
31	Gorj	126.1	122.7	97.3
32	Vaslui	126.8	132.9	104.7
33	Tulcea	112.7	135.4	120.5
34	Suceava	71.1	111.4	156.3
35	Brașov	104.5	133.7	127.9
36	Sălaj	96.4	91.4	94.7
37	Botoșani	82.2	59.3	72.1
38	Buzău	121.2	126.1	103.9
39	Alba	118.5	136.5	115.2
40	Maramureș	62.6	123.7	197.0
41	Vrancea	98.2	67.7	69.0
42	Teleorman	80.5	80.4	99.4

Source: Calculated on data basis of Romanian Statistical Yearbook – 2008, NIS.