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## Recreational services economic evaluation and responsible management of protected areas: a case study in the Plitvice National Park (Croatia)

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## Outline

- Rationale
- Objectives
- Area description
- Research methodology
- Results
- Conclusions

## Rationale

Common problems in NPs management:

- the assessment of the **carrying capacity** in terms of visitors,
- their **optimal distribution along the year**
- and in the **various location** of the Park

**No. of visitors:** a key organisational factor also in relation to the role that tourism may have for the **local economies**

**Entrance fee:** direct impact on the budget available for the **park management and protection**

→ the proper marketing of the NP's attractions may thus result not only in a more effective tourist, recreational and educational service, but also in larger investment in biodiversity conservation

## Objectives

- To analyse the economic value of the recreational and biodiversity protection functions of the NP through a Contingent Valuation approach
- To define the marketing tools to be employed by the NP authorities to optimize the sustainable use of the land resources by visitors

## Area description (1/2)

NP Plitvice: Croatia's most popular tourist attraction

UNESCO World Heritage status in 1979

300 square kilometres

Altitude: from 360 to 1,280 m



The Park is open daily all year round, with longer opening hours during summer (usually 8am to 7pm).

An entrance fee:

- 55 Kunas in November – April (7.5 €);
- 110 in the other months (15.5 €).

## Area description (2/2)

- 16 lakes, inter-connected by a series of waterfalls, and set in deep woodland populated by deer, bears, wolves, boars and rare bird species.
- the lakes join together over a distance of 8 kilometres.



## Research methodology

- Face to face interview; questionnaires translated into 4 languages (Croatian, English, German and Italian)
- Contents of the questionnaires:
  - length of the holiday, transport, the number of trips taken, ...
  - satisfaction index regarding different aspects of the NP
  - WTP

The admission fee is entirely spent by the administration to maintain the good conditions of the park. Imagine that, due to the high cost of administration, the park had to raise the cost of the entrance in order to guarantee the public opening. In this situation, what would be the maximum amount of the ticket that you will be willing to pay to visit the park?

Full ticket \_\_\_\_\_ Kuna  
Reduced ticket \_\_\_\_\_ Kuna

## Research methodology

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  - satisfaction index regarding different aspects of the NP
  - WTP
  - socio-economic information
- contingent valuation (CV) approach (Mitchell and Carson, 1989)
- 221 questionnaires have been collected between October 1st and 15th 2007

## Results

Average WTP (full tickets)	Average WTP (reduced ticket)
18.2 €	9.8 €

Considering that the ticket paid was equal to **15.5** and **7.5 €** respectively for the adults and the children, the consumer surplus equals to **3.1 €** and to **2.2 €** per visit. These figures are comparable with the recreational benefits estimated in other European natural parks (Marangon et al., 2002).

## Results

Visitors to the National Park by country of origin (Euro)

Country	No. visitors	%	Average WTP (full ticket)	Average WTP (reduced ticket)
Australia	8	3.6	20.5	11.40
Austria	9	4.1	17.1	10.68
Belgium	6	2.7	18.3	9.38
Brazil	1	0.5	20.6	10.29
Canada	2	0.9	20.6	10.29
China	2	0.9	23.3	11.66
Croatia	58	26.2	16.6	8.45
Finland	3	1.4	27.4	13.72
France	10	4.5	16.1	9.70
Germany	38	17.2	18.3	9.87
Hungary	2	0.9	17.8	10.63
Ireland	2	0.9	32.2	15.09
Israel	12	5.4	19.3	10.98
Italy	20	9.0	22.0	12.26
Netherlands	1	0.5	0.0	0.00
New Zealand	5	2.3	17.6	8.51
Poland	2	0.9	20.6	10.29
Slovenia	2	0.9	0.0	0.00
Spain	4	1.8	17.2	8.58
Switzerland	12	5.4	14.7	8.92
United Kingdom	3	1.4	16.0	8.00
USA	19	8.6	17.9	10.16
Total	221	100.0	18.2	9.82

## Results

Enjoyment of the visit to the National Park (Euro)

Did you enjoy your visit to the park?	No. visitors	%	Average WTP (full ticket)	Average WTP (reduced ticket)
Not at all	0		-	-
Not too much	2		14.4	8.6
Quite a lot	6		16.8	9.9
A lot	64		17.7	9.6
Very much	147		18.5	9.9
No answer	2	0,9	17.2	9.9
Total	221	100,0	18.2	9.8

Positive indicator of consumers' satisfaction

## Results

Visitors to the National Park by number of visits during the last 5 years (Euro)

No. visits	No. visitors	%	Average WTP (full ticket)	Average WTP (reduced ticket)
0	138		17.9	9.8
1	53		18.9	9.9
2	19		17.0	8.8
3	6		21.0	11.4
4	2		20.6	10.3
5 or more	3		16.5	9.4
Total	221	100,0	18.2	9.8

Consumers' satisfaction: fidelity

## Results

Visitors to the National Park by their intention to stay more days (Euro)

	No. visitors	%	Average WTP (full ticket)	Average WTP (reduced ticket)
Only one day	179		17.7	9.6
More than one day	38		19.8	10.7
No answer	4	1,8	23.8	12.3
Total	221	100,0	18.2	9.8

A problem (opportunity?): stop and go visit

## Results

Influence of the interests related to nature observation on the choice to visit of the National Park (Euro)

	No. visitors	%	Average WTP (full ticket)	Average WTP (reduced ticket)
Not at all	20		16.8	9.8
A bit	25		15.8	8.2
Quite enough	30		18.8	9.8
A lot	49		19.1	10.2
Very much	91		18.5	10.2
No answer	6	2,7	17.4	9.8
Total	221	100,0	18.2	9.8

A strong latent demand for env. education

## Results

2 different demand functions estimated:

Croatian demand function:

- $WTP = -6,3435 \ln(x) + 39,591$   
 $r^2 = 0,9406$

Other visitors demand function:

- $WTP = -8,8497 \ln(x) + 51,519$   
 $r^2 = 0,9550$

## Results

There is a remarkable difference between the current tickets and the revenue maximising tickets for the Croatian: the actual entrance fees are closer to the profit maximising condition for the people coming from abroad, but they are probably too high for the Croatian.

## Conclusions

- Most visitors arrive to the park while in transit but they are strongly motivated
- They arrive to the park mainly by their own vehicles, and most stay in the park for a day (not a very good example of sustainable tourism!)
- A high demand for organized tourist-educational services
- There is the need of an active supply of recreational and educational services:
  - to reduce the pressure on some overcrowded areas
  - to take advantages of the “minor” environmental elements of the NP

