NEW MULTI-CRITERIA VALORIZATION OF HUNTING TOURISM DESTINATION

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Abstract: New formula for valorisation of hunting grounds is given in this paper. This formula provides better estimation than previous ways of estimations.

Keywords: Multi-criteria estimation, hunting tourism, formula for valorisation, hunting tourist destination, dominant criteria.

Introduction

Hunting tourism, with regards to the volume and structure of consumption, is considered as one of the most exclusive forms of tourism. Therefore, it gives a significant contribution to the overall economic performance of a country.

Hunting Association of Serbia was founded in 1896, it extends to the 6.5 million ha with 321 hunting grounds in total ("Hunting Association of Serbia").

During the past years, Serbia was attractive country for domestic and foreign hunters. Hunting big game in Serbian hunting grounds include deer, wild boar, mouflon and wild boar, and hunting of small game include rabbit, jackal and foxes, pheasants, partridges, quails, birds of prey and others.

As a consequence, the hunting grounds in Serbia were devastated, but despite of that Serbia planes to develop hunting tourism. Development and improvement of the hunting tourism is strategically implemented into the law regulative ("Law on game and hunting", "Law regulation"), and the significant funds are used for new programs which will provide better conditions for hunting and increase the number of game. Also, some new insights and approaches are established.

Since 1897., Hunting Association of Serbia publishes magazine "Hunter" which gives expert and other advice, i.e., which game and at what time can be hunted.

One methodology for valorization of natural hunting ground as hunting tourist destination is given in Prentović, 2007. Here, we will make an analysis of some important instances of this methodology and we will propose a new methodology (new formula) of valorization.

In Prentović, 2007, hunting touristic destinations are valuated by four criteria:

\[ C_1 \] - Geographical position of hunting area.

By this criterion, the position of hunting ground with respect to travel network is valuated (easy or not to come to this destination), the distance from initial areas (places in country and abroad from which hunters arrive) are
valuated too, and also positions with respect to other significant touristic destinations.

\( C_2 \) - *Natural characteristics of hunting area.*

By this criterion, the hunting game is evaluated (quantity and quality of hunting game and also its availability, possibility for shooting and finding game after shoots).

\( C_3 \) - *Anthropological characteristics of the hunting area.*

Here we valuate the stuffing structure of the hunting area in the terms of the complete touristic offer which is provided to the tourists by the hosts. So, by this criterion we valuate the gamekeepers and its associates and also theirs abilities to provide services to the hunters (tourists) to find and shoot game, to collect shouted game etc.

\( C_4 \) - *Material base and touristic equipment of hunting area.*

Here we valuate the catering facilities (accommodation and food), technical hunting objects, checks and polygons, means of access within the hunting area, places for storage and disposal hunting equipment (weapons and ammunition).

The marks by these criterions are given by the experts in this field and they are clustered into following categories:

<table>
<thead>
<tr>
<th>Mark</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not satisfied</td>
</tr>
<tr>
<td>2</td>
<td>Barely satisfies</td>
</tr>
<tr>
<td>3</td>
<td>Good</td>
</tr>
<tr>
<td>4</td>
<td>Very good</td>
</tr>
<tr>
<td>5</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

The marks for the criteria \( C_1, C_2 \) and \( C_3 \) are multiplied by 3, and the mark for the criterion \( C_4 \) is multiplied by 11. After that, the final mark \( M \) is obtained by adding up these values.

The touristic value of the observed hunting area is obtained by following scheme.

<table>
<thead>
<tr>
<th>Final mark ( M )</th>
<th>Touristic importance</th>
<th>Touristic value</th>
</tr>
</thead>
<tbody>
<tr>
<td>( M &lt; 35 )</td>
<td>Local touristic importance</td>
<td>Value 1</td>
</tr>
<tr>
<td>36 ( \leq M &lt; 60 )</td>
<td>Regional touristic importance</td>
<td>Value 2</td>
</tr>
<tr>
<td>61 ( \leq M &lt; 85 )</td>
<td>National touristic importance</td>
<td>Value 3</td>
</tr>
</tbody>
</table>
Short analysis of possible results

Anything can have the local touristic importance. If all marks by these criteria are equal to 1, then the final mark $M = 20$.

If some hunting area has mark 1 by criterion $C_2$, i.e., if this area does not satisfy criterion $C_2$, then it is still easy to obtain the regional touristic importance. This can be reached in some situations, for example as follows.

<table>
<thead>
<tr>
<th>$C_1$</th>
<th>$C_3$</th>
<th>$C_4$</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

If some hunting area has mark 1 by criterion $C_2$, then it is impossible to obtain national touristic importance.

If this area has mark 2 by criterion $C_2$, then the national importance can be reached, for example, in the following cases.

<table>
<thead>
<tr>
<th>$C_1$</th>
<th>$C_3$</th>
<th>$C_4$</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

To reach the international level, the minimal mark by criterion $C_2$ is 4, and two marks 5 and one mark 4 are required by the rest of criteria.

New formula

In the paper Žižović, 2018, the formula for evaluation of spa touristic destinations is given. This is a multi-criteria type of formula in which one criterion has dominant importance.

We have that

$$O = w_1D_1 + D_1(w_2D_2 + \cdots)$$

(1)

where:

- $w_1, w_2, \ldots$ represent the relative importance of the criteria $C_1, C_2, \ldots$, respectively,
- $D_1, D_2, \ldots$ are the marks of the observed destination obtained by the criteria $C_1, C_2, \ldots$, respectively,

- criterion $C_1$ has dominant importance in the decision process.

Following our example from the first section, it is obvious that criterion $C_2$ is dominant and that criteria $C_1, C_3$ and $C_4$ equally important for decision. Transforming weighted coefficients associated to the criteria, we have

$$w_i = 0,55, w_i = w_3 = w_4 = 0,15,$$

and therefore, we obtain modified formula (1) for valuation of hunting touristic destination

$$O = 0,55D_2 + D_2 \left( 0,15D_1 + 0,15D_3 + 0,15D_4 \right).$$

Notice that marks $D_1, D_2, D_3$ and $D_4$ can be transformed by following scheme.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0,2</td>
</tr>
<tr>
<td>2</td>
<td>0,4</td>
</tr>
<tr>
<td>3</td>
<td>0,6</td>
</tr>
<tr>
<td>4</td>
<td>0,8</td>
</tr>
<tr>
<td>5</td>
<td>1,0</td>
</tr>
</tbody>
</table>

**Analysis of possible results by new formula**

Now, the minimal number of points is obtained for $D_2 = 0,2$ and $D_1 = D_3 = D_4 = 0,2$, and it is

$$O_{\text{min}} = 0,55 \cdot 0,2 + 0,2 \cdot (0,15 \cdot 0,2 + 0,15 \cdot 0,2 + 0,15 \cdot 0,2) = 0,128,$$

which is 12,8 in the terms of previous case.

Now, we have significantly different situation for $C_2 = 1$. Let us consider situation when $C_2 = 1$ and all other marks are maximal, i.e., $C_1 = C_3 = C_4 = 5$. Then we have

$$O = 0,55 \cdot 0,2 + 0,2 \cdot (0,15 \cdot 1,0 + 0,15 \cdot 1,0 + 0,15 \cdot 1,0) = 0,2,$$
and the corresponding mark is 20.

So, for $ C_2 = 1$ it is impossible to hunting touristic area reach the regional importance.

For $ C_2 = 2$ we have that maximal corresponding mark is 40 and therefore we can conclude that hunting touristic area can have at most regional importance. This can be obtained if the rest of criteria results at least in marks 5,4,3 or 5,5,2 or 4,4,4. Also, let us mention that it is impossible to reach regional importance in the case of two marks 3!

For $ C_2 = 3$ maximal corresponding mark is 60. So, in this case, the hunting touristic area can not reach national importance, but this leads to regional importance for sure.

For $ C_2 = 4$ hunting touristic area can have national importance in the cases that minimal marks by the rest of the criteria are 5,2,1 or 4,3,1 or 3,3,2. If the marks by the rest of the criteria are less than those previously listed, then hunting touristic area has regional importance.

Similarly, to reach the international level, the minimal mark by criterion $ C_2$ is 4, and two marks 5 and one mark 4 are required by the rest of criteria.

From the previous it follows that marks 4 and 5 according criterion $ C_2$ can only have hunting places that have certain number of game during the hunting season. In the condition of Central Serbia, there is large number of such hunting sites only for hunting peasants. The reason is that almost all hunting associations are skilfully breeding peasants in breeders and before and during the hunting season they are released into hunting grounds. In some places, there is artificial breeding of some other species of game, but mostly in Vojvodina.

**Conclusion**

The formula proposed in this paper makes better clustering of hunting areas into the first three categories of touristic importance than the formula proposed in Prentović, 2007. From this we can conclude that hunting areas in Serbia that can have international importance are hunting grounds of feathered game (pheasant, partridge).
Fazanerija u Šumaricama, Kragujevac http://mapio.net/pic/p-19737954/

Lovačko udruženje Paraćin http://www.paracin.lu.rs/fazanerija/
Fazanerija JP „Vojvodina šume“  
http://www.vojvodinasume.rs/proizvodnja-izgoj-fazana-u-jp-vojvodinasume/

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