

Economic impact of roe deer tourist hunts in Vojvodina (Serbia)

Milosava Matejević¹, Vladimir Marković^{1*}, Markéta Kalábová²,
Zoran Ristić¹, Milutin Kovačević¹, Igor Ponjiger¹, Isidora Popović¹

¹University of Novi Sad, Faculty of Sciences, Department of Geography, Tourism and Hotel Management, Trg Dositeja Obradovića 3, RS-21000 Novi Sad, Serbia

²Czech University of Life Sciences Prague, Faculty of Forestry and Wood Sciences, Kamýcká 129, CZ-16500 Prague 6-Suchbát, Czech Republic

Abstract

Hunting tourism can have significant positive economic effects on the local community. The objective of the paper is to estimate the direct economic impact of roe deer hunting tourism, with a focus on regional level, by applying the Nordic Model. Analysis was based on data gathered in the autumn of 2021, from the interviews with hunting ground managers and hunting tourism outfitters, and a literature review. The length of stay of tourist hunters ranged from 2 to 6 days. According to the interviews and statistical data, one hunting tourist spent an average of 2,121 € per hunting day in Serbia. In 2019 the direct economic income of roe deer hunting tourism in Vojvodina was 623,574 €. The regional economic impact of hunting tourism in Vojvodina is significant given the small number of tourists from whom substantial income is generated. Developing of hunting activates on one or more game species could bring significant economic benefits to these kind of local communities. Resources raised through hunting tourism are later used in these regions through direct investment and as a tool for sustainable wildlife management, and thus, the ecological and economic sustainability of hunting tourism is crucial and must be considered in future development process.

Key words: hunting tourism; *Capreolus capreolus* L.; trophy hunting; the Nordic model; interview

Editor: Bohdan Konôpka

1. Introduction

Hunting is a popular form of nature recreation, a significant form of business, and an important part of cultural heritage (Stedman & Heberlein 2001; Willebrand 2009; Hunter & Watts 2010). Hunting can have huge contribution not only to a game and habitat development but also to the economical growth, benefits and income for local communities (Msoffe et al. 2007; Willebrand 2009; Gran et al. 2018). Hunting tourism, as a part of hunting management, is categorized as a consumptive activity within wildlife tourism (Tremblay 2001; Higginbottom & Tribe 2004; Lovelock 2008; Keskinarkaus & Matilainen 2010) and represents the journey and activities of hunters whose primary motive is hunting game (Brainerd 2007; Leader-Williams 2009; Nygard & Uthardt 2011). As a selective form of tourism, it is an additional source of income for peripheral or underdeveloped regions where other forms of tourism are poorly developed (Baker 1997; Gunnarsdotter 2006; Lindsey et al. 2006; Samuelsson & Stage 2007; Lindsey et al. 2007; Rutanen et al. 2007;

Willebrand 2009). This fact is of great importance as residents of remote peripheries at the micro-regional level usually suffer from their remoteness from towns and cities where a variety of job opportunities are concentrated (Kubeš & Podlešáková 2021). In recent decades, tourism space and the spatial aspects of tourism have been of interest to different academic research groups (Butowski et al. 2018). Hunting tourism can have a significant positive effect on the local community (Chardonnet et al. 2002; Samuelsson & Stage 2007; Sharp & Wollscheid 2009; Mbaiwaa & Stronza 2010; Moravčík & Konôpka 2013; Naidoo et al. 2016) and bring it considerable regional economic benefit (Bauer & Herr 2004; Vagner et al. 2011). Although the tourism industry has certain importance for the economy and regional development, tourism can have significant negative environmental impacts (Švajda et al. 2018). Developing new kinds of outdoor tourist activities and hospitality services in order to create more economic growth sometimes may cause many issues such as degradation of the environment and biological diversity (Pongpattananurak 2018).

*Corresponding author. Vladimir Marković, e-mail: vladimir.markovic@dgt.uns.ac.rs

© 2023 Authors. This is an open access article under the CC BY 4.0 license.

Funds raised through hunting tourism could be returned to these regions through direct investment in habitat and sustainable wildlife management (Leader-Williams 2009). Through hunting tourism, which takes place in rural areas and usually not during the main tourist season, it is possible to offer tourist capacities and additional placement of local products and services (Ristić 2017).

The main objective of this research was to estimate the impact of hunting tourism activities on roe deer (*Capreolus capreolus*), as a most important hunting tourism game species, with a focus on the region of Vojvodina. The Vojvodina region, as the most developed hunting tourism destination in Serbia with the best-organized hunting grounds managed by hunting clubs, represents favourable habitats for numerous and diverse game species, including roe deer. Most of the foreign hunters visiting Serbia come to hunt roe deer in Vojvodina.

2. Materials and methods

2.1. Study area

The Vojvodina region is situated in the northern part of Serbia and is a part of the Pannonia Basin. Vojvodina borders Hungary to the North, Romania to the East, Croatia to the West, and the rivers Danube and Sava to the South. Vojvodina is an area rich in water and fertile land, which are the two most important renewable resources. Vojvodina is a lowland area that is disturbed by two mountains, relatively small in height so that they barely cross the upper border of the hills (Ristić 2017). It is characterised by vast area of arable land (75%), intersected by wetlands, meadows and pastures (7%) which makes suitable habitats for numerous and diverse game species. On the other hand, this region is one of the poorest forest area with about 6% of territory covered by forest (Marković et. al 2020). What's more, Vojvodina as a typical agricultural region is strongly influenced by human-induced modifications of habitat. Although these circumstances deteriorate habitat conditions, ability of some game species such as roe deer to adapt to diverse conditions and circumstances is crucial. Officially data shows that number of the roe deer at the beginning of hunting season is constantly growing from 117,000 in 2011; 120,000 in 2013; 127,000 in 2015; 133,000 in 2017; 141,000 in 2019 to 143,000 in 2021 (Statistical office of the Republic of Serbia 2023). Vojvodina region was the pioneer, and nowadays is still the leading region in Serbia in game and habitat management activity and protection (Ristić et al. 2009). The study area includes 154 hunting grounds. Hunting organizations in Vojvodina own the largest agricultural land, since Vojvodina is lowland region with the highest agriculture area in Serbia with low forest coverage. The hunting grounds in Vojvodina encompass 2,158,012 ha. Vojvodina stands out as

a region in Serbia with the highest number of hunting grounds since it covers around a quarter of territory of Serbia and it gathers around half of all hunting grounds in the country. This is due to the fragmentation of hunting grounds which occurred recently in Vojvodina in order to establish new hunting regions (Lavadinović 2016).

Hunting tourism in Serbia, and especially in Vojvodina, gradually developed in the second half of the 20th century. Its peak was in the 1980s. During this period, when hunting-tourist traffic was the most intensive in these areas, significant foreign funds were generated through hunting tourism both for hunting grounds and for tourism organizations (Ristić et al. 2009). Vojvodina was a very popular hunting and tourist destination among foreign European hunters, and the largest part of the proceeds was invested in game production, marketing, import of hunting equipment, scientific research projects in hunting, etc.

2.2. The Nordic model

In order to estimate the direct economic impact of roe deer hunting tourism in Vojvodina region, the Nordic model was applied. The Nordic model measures the economic and employment effects of tourism in specific spatial settings, and there are two approaches – the income model and the expenditure model (Stiernstrand 1996; Saarinen 2003). In this research, focus was on the expenditure model analyzing money spent by tourist hunters in the one hunting ground in Vojvodina and in whole Vojvodina region. The expenditure model analyzes the sums of money spent by tourists in the given region (Saarinen 2003) and examines tourists' total expenditures on different tourism services and products (Stiernstrand 1996). This paper examines tourists' expenditures on different hunting tourism services and products.

2.3. Data collection and analysis

Analysis (SPSS version 11; SPSS Inc., Chicago, IL, USA) is based on information gathered from the interviews with hunting ground managers and hunting tourism outfitters during 2021. The focus of data collection was data from year 2019, before COVID pandemic period. The survey among tourist hunters was not a possible method for data collection, since hunting ground managers considered that the questions of consumption and costs are very sensitive and were not willing to burden their tourists with this kind of questionnaire. Therefore, the interviews were carried out among hunting ground managers, hunting guides, and hunting tourism outfitters from which the relevant data on the average consumption of tourist hunters during one hunting tourist journey was obtained.

Authors considered the interview convenient method for collecting information, since the most of necessary data could have been found in documents in hunting ground or hunting outfitter. Thus, hunting managers, hunting guides, gamekeepers and hunting outfitters didn't have to recollect their memory in the interview situation.

In first phase of analysis, statistics data about roe deer hunting was collected. For analysis of the economic impact of roe deer hunting, one of the renowned hunting grounds in Vojvodina region was also chosen. This hunting ground had all necessary hunting tourism data collected and available. From this hunting ground, data on tourist stays, trophy value, and weight of trophies culled were used. Data on the number of organized tourist hunts, prices of each organized hunt, other fees that hunters pay for the organizers, and additional services during hunting tourism activities that were charged were, also, collected from hunting ground database.

In second phase, the interviews were conducted. In Vojvodina, there are 21 hunting grounds that organize tourist hunts on roe deer. The interviews were conducted with professionals (2 hunting managers, 3 hunting guides, 2 gamekeepers, and 2 hunting outfitters) from 9 hunting tourism destinations which area of 277,009 ha makes 48% of area of 21 hunting tourism oriented hunting grounds, i.e. 12.8% of total area of Vojvodina (Fig. 1).

The interview was designed with 16 questions divided into two themed sections – Roe deer hunting and Cus-

tomor Economics (Table 1). From these interviews data on the tourists' origin, average tourist stays and average additional spending of hunters (spending other than fees paid for the hunting tourism trip) were obtained.

In third phase, calculation of tourist hunters' expenditure in chosen hunting ground and local community was

Table 1. Questions asked during interviews.

Roe deer hunting	Tourist hunters
1. What was the number of organized hunts of roe deer in 2019 and 2020 in your hunting ground?	1. From which countries do tourist hunters come to your hunting ground?
2. What was the number licenses sold for domestic tourists in 2019 and 2020 in your hunting ground?	2. How many days does the average domestic tourist hunter spend in your hunting ground?
3. What was the number of foreign tourists coming to hunt roe deer in 2019 and 2020 in your hunting ground?	3. How many days does the average foreign tourist hunter spend in your hunting ground?
4. What was the price for each organized hunt that the hunting ground gets from the hunting agencies?	4. What is the average daily spending of a tourist hunter in your hunting ground?
5. What were the other fees that the hunters pay for the hunting that your hunting ground gets?	5. What is the average daily spending of a domestic tourist hunter in your hunting ground?
6. Are these fees based on the number of people or they are individual?	6. What is the average daily spending of a foreign tourist hunter in your hunting ground?
7. What is the percentage of foreign tourist hunters in relation to the total number of tourist hunters in your hunting ground?	7. What is the average daily spending on other activities (besides hunting)?
8. How many tourist hunters visit your hunting ground annually?	8. What is the location of accommodation facilities – in or out of the hunting ground? Which facilities are used for accommodation and meals?

Source: authors.

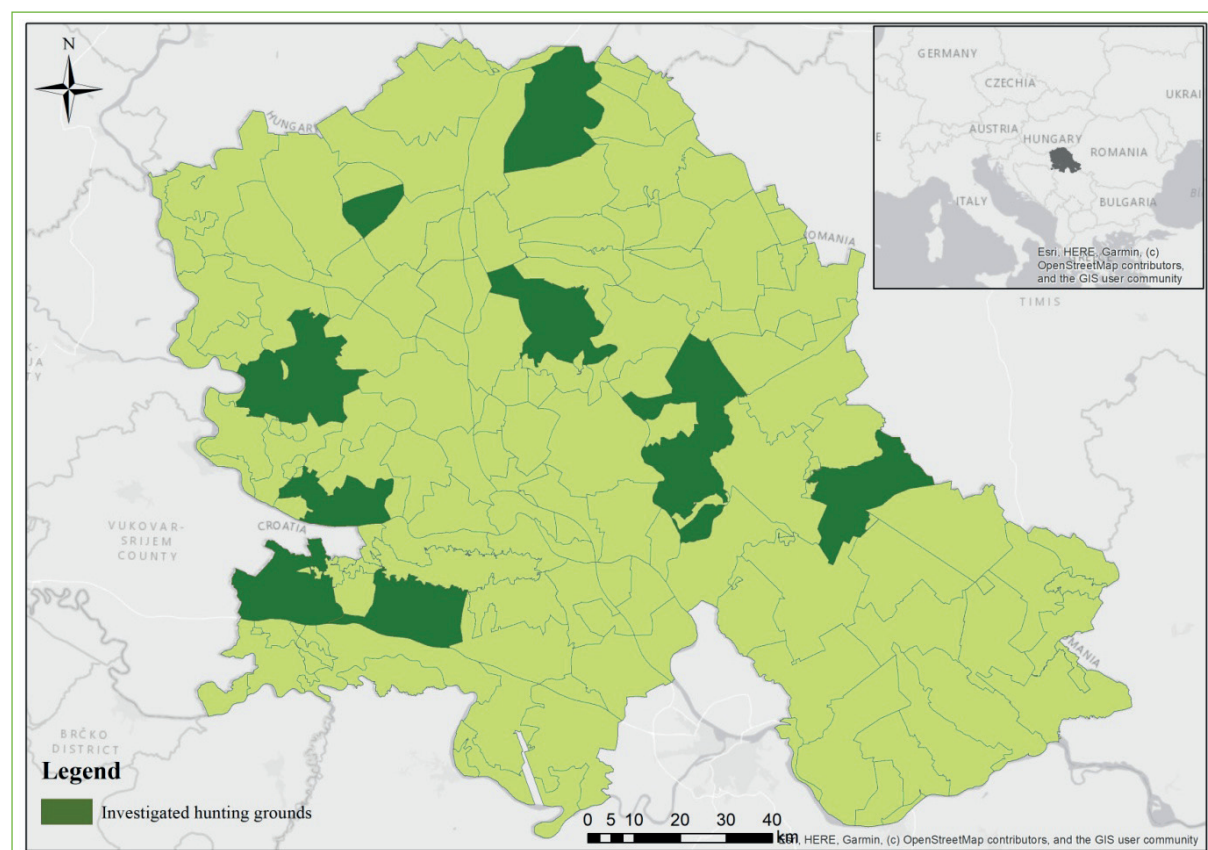


Fig. 1. Map of investigated hunting grounds in the study area.

done based on collected data in that hunting destination during roe deer hunting season in 2019.

In fourth phase, calculation of tourist hunters' expenditure and economic impact in Vojvodina region was done based on collected data from interviews for roe deer hunting season in 2019.

3. Results

3.1. Economic impact of roe deer hunting in one hunting ground

Foreign hunter tourists who came to hunt roe deer in Vojvodina were from Switzerland, Austria, Germany, and France; a significant number of domestic tourist hunters were also recorded, especially in the beginning of the COVID pandemic period. The length of stay of tourist hunters ranged from 2 to 6 days.

In order to gain insight into the average number of shot roe deer, number of tourist in hunting ground and trophy values of shot roe deers, the data on shooting in chosen hunting ground for a period of several years ago were analyzed (Table 2). Foreign tourist hunters on average shoot more individuals with a higher trophy value compared to domestic tourist hunters. Consequently, their hunting arrangements have a significantly higher price than those for domestic tourist hunters.

Table 2. Number of tourist hunts, number of tourists and number of medal roe deer shot during period 2014–2021.

Year	Amount of hunts		Number of tourists		Roe deer shot		
	Domestic	Foreign	Domestic	Foreign	Gold medal	Silver medal	Bronze medal
2014	4	13	3	6	6	8	10
2015	3	5	1	3	1	7	2
2016	13	17	13	7	2	2	9
2017	18	12	15	5	7	7	7
2018	2	6	2	2	5	2	7
2019	11	4	8	3	2	7	7
2020	12	5	11	1	1	0	0
2021	3	3	3	1	4	2	2

Source: authors.

The collected data in this hunting ground showed that for the period from 2014 to 2021, the maximum trophy value of roe deer was 175.43 CIC points and 730 g weight. The average weight of the trophy was 492.4 g (Table 3) and this weight was used further in analyzing tourist expenditure during roe deer hunting season.

Table 4 shows the maximum, minimum, and average weight of trophies in the medal and the trophy value of trophies shot in hunting tourism in 2019. Using the

Table 3. Price [€], trophy weight [g], and value [CIC points] of roe deer hunted by tourists and hunting club members in period 2014–2021 (n = 176).

	Minimum	Maximum	Mean	Std. Deviation
Price	150.0	8,010.0	1,866.29	1,480.31
Trophy weight	211.0	730.0	492.4	91.69
Trophy value	39.54	175.43	106.34	25.28

Source: authors.

price lists of roe deer and data on the exact weight of the trophies, it was calculated that the hunting ground had an income of € 35,184 from these roe deer trophies in the 2019 roe deer hunting season. Therefore, this was the income for hunting grounds just from hunted game as element of hunting tourism product. Further, in order to calculate entire income for local community, other elements of hunting tourism product were considered.

Table 4. Price [€], trophy weight [g], and value [CIC points] of roe deer hunted by tourists, hunting season 2019 (n = 16).

	Minimum	Maximum	Mean	Std. Deviation
Price	1,257.0	4,050.0	35,184.0	2,199.0
Trophy weight	473.0	610.0	8,596.0	537.25
Trophy value	105.28	137.30	1,857.57	116.09

Source: authors.

Direct income for the local community was calculated with the collected data on the number of domestic and foreign hunters (8 domestic and 3 foreign), their average length of stay, average costs for accommodation, food and other additional fees except game (Table 5). Results show that in this local community € 375 were spent by tourist hunters on organization of tourist hunt fees (€ 25 × 15 tourist hunts), € 110 on hunting licenses (€ 10 per hunter), € 770 per accommodation (€ 35 for night and breakfast in facilities × 11 tourists × 2 days), € 880 per catering services (€ 40 for meals during day × 11 tourists × 2 days), € 225 for hunting guide fees (€ 15 × 15 tourist hunts) and € 440 for other services (€ 20 × 11 tourist × 2 days) such as souvenirs and other entertainment. Tourist expenditure on hunting tourist agency fee was not consider here, since hunting tourist agency is not from the local community. In 2019, during the roe deer hunting season the local community had an income of € 38,084 which was earned from 11 tourist hunters.

Table 5. Direct hunting tourism income [€ excluding VAT] and its distribution by categories of expenditure during roe deer hunting season in one chosen local community in 2019.

Category of expenditure	Category share [%]	Direct tourism income [€ excl. VAT]
Game trophies	92.39	35,184
Organisation of tourist hunt	0.98	375
Payment for hunting licenses	0.29	110
Accommodation	2.02	770
Catering services	2.31	880
Transportation inside hunting ground	0.26	100
Hunting guide	0.59	225
Other services	1.16	440
Total per roe deer hunting season in one local community	100	38,084

Source: authors.

3.2. Economic impact of roe deer hunting in Vojvodina region generally

In order to assess direct economic impact of roe deer hunting in Vojvodina region (Table 6), average prices of one roe deer hunted by tourists for the period from 2014 to 2021 (Table 2) were considered.

Table 6. Average direct hunting tourism income and its distribution by categories for one tourist per day and for whole region per hunting day.

Category of expenditure	Category share [%]	Income from one tourist per day [€ excl. VAT]	Income for Vojvodina in one hunting day [€ excl. VAT]
Game trophies	88.16	1,866	274,302
Tourist agency	4.72	100	14,700
Accommodation	1.65	35	5,145
Other services	0.74	20	2,940
Catering services	1.89	40	5,880
Organisation of tourist hunt	1.18	25	3,675
Hunting guide	0.71	15	2,205
Payment for hunting licenses	0.47	10	1,470
Transportation inside hunting ground	0.47	10	1,470
Total	100	2,121	311,787

Source: authors.

Based on the interviews and statistical data, tourist hunter's average expenditure was calculated (Table 6). One local community in Vojvodina has in average income of € 2,121 from one tourist per hunting day. From this, € 1,866 were in average spent on game trophies fee, which is price for average weight of roe deer trophy of 492.4 g. Besides game fee, tourist spend in average € 100 for tourist agency fee, € 25 on fee for organization of each tourist hunt, € 10 on hunting licenses, in average € 35 per accommodation, € 40 per catering services, € 15 for hunting guide fees for each tourist hunt, € 10 for transportation inside hunting ground and € 20 for other services such as souvenirs and other entertainment.

In Vojvodina, 21 hunting grounds organize tourist hunts on roe deer. Since data about the exact number of roe deer hunters was not available at national statistic database, that number came out from interviews with hunting tourism experts in Vojvodina (7 hunters on average per one hunting destination and 2 days average length of stay). Thus, in 2019 there were 147 (21 × 7) roe deer tourist hunters and the direct economic income of roe deer hunting tourism was (€ 2,121 × 147 tourists × 2 days) € 623,574.

4. Discussion

Previously, there has been little research assessing the economic impact of hunting tourism. Previous research in the field of hunting tourism in Serbia indicates the origin of tourists, length of stay, and some of the preferences such as type of game or type of hunting ground. Matejević et al. (2022) analyzed hunter tourist satisfaction state, finding that among foreign tourist hunters in Serbia, the largest numbers originate from Germany, Hungary and Austria. A slightly smaller number of foreign hunters were tourists from Great Britain, Bosnia and Herzegovina, Slovenia, Slovakia, Croatia, Montenegro, Italy, Qatar, France, Belgium and Switzerland. Armenski (2008) points out that hunters from Germany spend an average of € 3,000 per hunting arrangement, and hunters

from Italy spend an average of € 1,000 per hunting tourism arrangement.

Ristić (2017) analyzed average annual direct income from hunting tourism activities on feathered game in Vojvodina from 1950 to 2000. The main game species managed by hunting clubs in Vojvodina and central Serbia are the roe deer as the most sought-after offers on the tourism market in Serbia (Matejević et al. 2022), as well as the wild boar (*Sus scrofa* L.) and the pheasant (*Phasianus colchicus* L.). Almost all national records of roe deer are shot in hunting grounds managed by hunting clubs in Vojvodina. In the period from 1979 to 1990, when hunting tourism in Vojvodina was the most intensive, an annual average of € 792,840 was earned from the cull of pheasants, partridges (*Perdix perdix* L.), turtle doves (*Streptopelia turtur* L.), quails (*Coturnix coturnix* L.) and wild ducks (*Anas platyrhynchos* L.). In the period from 1979 to 2000, an average of € 481,008 per year was spent on shooting fees (turtle doves, quails, pheasants, wild ducks, partridges...). The highest foreign income in that period came from the tourist hunt of pheasants (annual average € 172,212), then from the tourist hunt of turtledoves (annual average € 130,699) and quail (annual average € 56,289). Analyzing the broader economic effect, Ristić (2017), concludes that in the period from 1979 to 2000, from the organization of hunting, boarding services, and taxes, a total of € 18,177,740 was realized in Vojvodina. For the same period, Ristić (2017) also states data on the tourist shooting of roe deer, in which an average of € 41,297 was made annually. According to Pajić (2014), the roe deer cull by hunting tourists in Vojvodina in the hunting season 2001/2002 year was 354 heads. In the same year, the number of foreign tourist hunters in Vojvodina was 1,320 which generated an income of 22,760,555 dinars (about € 380,000) Pajić (2014) presents data on the number of roe deer culled in the second decade of the 21st century, and states that the highest tourist cull was recorded in 1988 (1,983 heads), followed by a decrease in the number of heads shot in hunting tourism, and in 2013 that number was only 62 heads.

All these previous research were based on some unofficial datasets from hunting tourism stakeholders and assumption. In this study, calculation was based on the Nordic model which is recognised as suitable for studies conducted in rural regions where a lack of data is continuous (Rögnvaldsdóttir 2016). The expenditure Nordic model analyzes the sums of money spent by tourists in the given region (Saarinen 2003) and examines tourists' total expenditures on different tourism services and products (Stiernstrand 1996). Rinne & Saastamoinen (2005) recommend the Nordic model to be applied to small or medium local and regional economies. This model applied on one part of hunting tourism activities in Vojvodina showed economic impact of hunting tourism in one local community, but also in whole region of Vojvodina. Even a small number of tourist were engaged in hunting tourism activities, income from these activities was sig-

nificant. Given that the region of Vojvodina has mostly rural characteristics, the results of this study showed that hunting tourism can significantly contribute to the development of these areas. Other forms of tourism can be developed in more urban parts of Vojvodina, and hunting tourism could have a significant economic impact on communities in the most remote areas of Vojvodina.

5. Conclusion

In determining the impact of specific forms of tourism, such as hunting tourism, there is no uniform methodology that would determine the procedure for calculating the importance of inbound hunting tourism on the economy of the state. Hunting tourism is type of tourism that is based on the use of natural resources, such as game and preserved natural wildlife habitat and all hunting tourism activities are conducted in areas without much potential for developing other forms of tourism. Developing of hunting activities on one or more game species could bring significant economic benefits to these kinds of local communities. The regional economic impact of hunting tourism in Vojvodina is significant given the small number of tourists from whom significant income is generated.

Although, there are limitations within this study in terms of availability of data, which demands further research, certain benefits arise from our results. Economic impact analysis of hunting tourism is a very important construct for hunting tourism and the economy of a hunting ground destination or region. Resources raised through hunting tourism are later used in these regions through direct investment and as a tool for sustainable wildlife management. The results may lead to an easier update of regional action and development plans by taking into account hunting tourism investment and development. This study confirms that this kind of methodology could be of value for hunting tourism economic effects analysis. However, although this study demonstrated significant financial gains, the ecological and economic sustainability of hunting tourism is crucial and must be considered in future development process.

Professionals who will decide in the future on the development of hunting tourism are a key prerequisite for the correct solution in this area. Only if they are familiar with the rural environment, the possibilities for developing hunting tourism, the economic, environmental, and social consequences of their decisions they will be able to move the sector in the right direction. When hunting tourism is conducted in such a sustainable mode, it can be considered as a tool for the conservation of wild populations. This suggests that it is possible to use hunting tourism as a way of balancing natural resource conservation and economic development under the preconditions of making effective policies to encourage and help local

people to participate in tourism business and to benefit from it.

References

- Armenski, T., 2008: Strategy of hunting tourism development in Backa district. Dissertation, University of Novi Sad, 254 p.
- Baker, J., 1997: Trophy hunting as a sustainable use of wildlife resources in Southern and Eastern Africa. *Journal of Sustainable Tourism*, 5:306–321.
- Bauer, J., Herr, A., 2004: Hunting and fishing tourism. In: Higginbottom, K. (ed.): *Wildlife Tourism: impacts, management and planning*. Common Ground Publishing, Altona, p. 57–75.
- Brainerd, S., 2007: Convention on the conservation of European wildlife natural habitats: European charter on hunting and biodiversity. Norwegian association of hunters and anglers, Oslo, 23 p.
- Butowski, L., Makowska-Iskierka, M., Pokojski, W., 2018: Tourism space versus tourism destination: methodological considerations and empirical testing of their development. *Geografie*, 123:85–106.
- Chardonnet, P., des Clers, B., Fischer, J., Gerhold, R., Jori, F., Lamarque, F., 2002: The value of wildlife. *Revue scientifique et technique (International Office of Epizootics)*, 21:15–51.
- Gunnarsdotter, Y., 2006: Hunting tourism as ecotourism: Conflicts and opportunities. In: Gössling, S., Hultman, J. (eds.): *Ecotourism in Scandinavia: Lessons in theory and practice*. CAB International, Wallingford, p. 172–198.
- Higginbottom, K., Tribe, A., 2004: Contributions of wildlife tourism to conservation. In: Higginbottom, K. (ed.): *Wildlife tourism: impact, management and planning*. Common Ground Publishing, Altona, p. 99–123.
- Hunter, C., Watts, D., 2010: Cross-country comparison on social sustainability findings. In: Matilainen, A., Keskinarkaus, S. (eds.): *The social sustainability of hunting tourism in Northern Europe*. Ruralia-instituutti, Helsinki, p. 102–110.
- Lavadinović, V., 2016: Analysis of the hunting sector in Republic of Serbia. Dissertation, Faculty of Environment and Natural Resources, Albert-Ludwigs-Universität, Freiburg im Breisgau, 191 p.
- Leader-Williams, N., 2009: Conservation and hunting: Friends or foes? In: Dickson, B., Hutton, J., Adams, B. (eds.): *Recreational hunting, conservation and rural livelihoods*. John Wiley & Sons, London, p. 9–24.
- Lindsey, P. A., Alexander, R., Frank, L. G., Mathieson, A., Romanach, S. S., 2006: Potential of trophy hunting to create incentives for wildlife conservation in Africa where alternative wildlife-based land uses may not be viable. *Animal Conservation*, 9:283–291.

- Lindsey, P. A., Roulet, P. A., Romanach, S. S., 2007: Economic and conservation significance of the trophy hunting industry in sub-Saharan Africa. *Biological Conservation*, 134:455–469.
- Lovelock, B., 2008: *Tourism and the consumption of wildlife: Hunting, shooting and sport fishing*. Routledge, New York, 312 p.
- Kubeš, J., Podlešáková, N., 2021: Human and demographic capital in peripheries of the Pilsen Region, Czechia. *Geografie*, 126:97–122.
- Marković, V., Matejević, M., Kovačević, M., Ristić, Z., Đeri, L., Ponjiger, I., 2020: Forestland-cover changes 2012–2018 in hunting grounds in Vojvodina. *Economics of Agriculture*, 67:1059–1070.
- Matejević, M., Blesic, I., Kalabova, M., Ristic, Z., Ponjiger, I., Djeri, L., 2022: Differentiation of the attributes that influence tourist hunters' satisfaction in Serbia. *Human Dimensions of Wildlife*, 27:522–535.
- Keskinarkaus, S., Matilainen, A., 2010: The social sustainability of hunting tourism in Finland. In: Matilainen, A., Keskinarkaus, S. (eds.): *The social sustainability of hunting tourism in Northern Europe*. Ruralia-instituutti, Helsinki, p. 102–110.
- Mbaiwaa, J. E., Stronza, A. L., 2010: The effects of tourism development on rural livelihoods in the Okavango Delta, Botswana. *Journal of Sustainable Tourism*, 18:635–656.
- Moravčík, M., Konôpka, J., 2013: Kľúčové problémy lesníctva, spracovania dreva a poľovníctva – návrhy na ich riešenie / Key issues of forestry, wood-processing industry and hunting – addressing them and proposals. *Central European Forestry Journal*, 58:211–223.
- Msoffe, F., Mturi, F. A., Galanti, V., Tosi, W., Wauters, L. A., Tosi, G., 2007: Comparing data of different survey methods for sustainable wildlife management in hunting areas: the case of Tarangire–Manyara ecosystem, northern Tanzania. *European Journal of Wildlife Research*, 53:112–124.
- Naidoo, R., Weaver, L. C., Diggle, R. W., Matongo, G., Stuart-Hill, G., Thouless, C., 2016: Complementary benefits of tourism and hunting to communal conservancies in Namibia. *Conservation Biology*, 30:628–638.
- Nygard, M., Uthardt, L., 2011: Opportunity or threat? Finnish hunters' attitudes to hunting tourism. *Journal of Sustainable Tourism*, 19:383–401.
- Pajić, L., 2014: *Role and importance of Vojvodinian hunter's enterprise in hunting tourism*. MSc thesis, University of Novi Sad, Faculty of Sciences, Novi Sad, 89 p.
- Pongpattananurak, N., 2018: Impacts from tourism development and agriculture on forest degradation in Thap Lan National Park and adjacent areas. *Agriculture and Natural Resources*, 52:290–297.
- Rinne, P., Saastamoinen, O., 2005: Local economic role of nature-based tourism in Kuhmo municipality, Eastern Finland. *Scandinavian Journal of Hospitality and Tourism*, 5:89–101.
- Ristić, Z., 2017: *Hunting tourism in Vojvodina from 1950 to 2008*. University of Novi Sad, Faculty of Sciences, Novi Sad, 89 p.
- Ristić, Z., Marković, V., Dević, M., 2009: Development of hunting tourism in Vojvodina. *Geographica Pannonica*, 13:105–114.
- Rögnvaldsdóttir, L.B., 2016: Economic impacts of tourism: Analysis at the sub-national level in Iceland. Faculty of Life and Environmental Sciences, Reykjavík, 108 p.
- Rutanen, J., Matilainen, A., Muuttola, M., Tittonen, K., 2007: Hunting and hunting tourism in Finland – country overview. In: Matilainen, A. (ed.): *Sustainable hunting tourism – business opportunity in Northern Areas*. Ruralia-instituutti, Helsinki, p. 9–19.
- Saarienen, J., 2003: The regional economics of tourism in Northern Finland: The socio-economic implications of recent tourism development and future possibilities for regional development. *Scandinavian Journal of Hospitality and Tourism*, 3:91–113.
- Samuelsson, E., Stage, J., 2007: The size and distribution of the economic impacts of Namibian hunting tourism. *South African Journal of Wildlife Research*, 37:41–52.
- Sharp, R., Wollscheid, K. U., 2009: Recreational hunting in North America, Europe and Australia. In: Dickson, B., Hutton, J., Adams, B. (eds.): *Recreational hunting, conservation and rural livelihoods*. Wiley-Blackwell, London, p. 25–38.
- Stedman, R. C., Heberlein, T. A., 2001: Hunting and rural socialization: contingent effects of the rural setting on hunting participation. *Rural Sociology*, 66:599–617.
- Stiernstrand, J. O., 1996: The Nordic model: A theoretical model for economic impact analysis of event tourism. *Festival Management and Event Tourism*, 3:165–174.
- Švajda, J., Masný, M., Koróny, S., Mezei, A., Machar, I., Taczanowska, K., 2018: Visitor profiling using characteristics of socio-demographic and spatial behavior as tools to support the management of protected mountain areas. *Geografie*, 123:461–478.
- Tremblay, P., 2001: Wildlife tourism consumption: Consumptive or non-consumptive? *The International Journal of Tourism Research*, 3:81–86.
- Vagner, J., Muller, K. D., Fialova, D., 2011: Second home tourism in light of the historical-political and socio-geographical development of Czechia and Sweden. *Geografie*, 116:191–210.
- Willebrand, T., 2009: Promoting hunting tourism in north Sweden: opinions of local hunters. *European Journal of Wildlife Research*, 55: 209–216.

Other sources

Statistical office of the Republic of Serbia <https://data.stat.gov.rs/Home/Result/13040601?languageCode=en-US>. Accessed in January 2023.