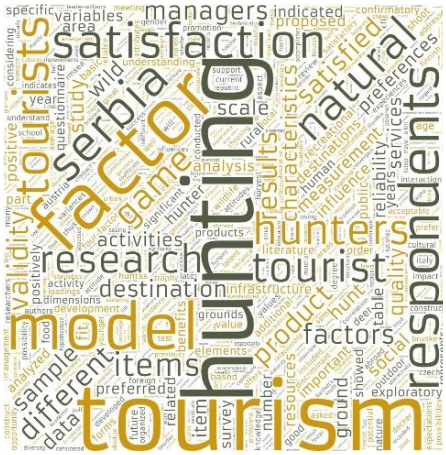
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# EXAMINE STRUCTURAL RELATIONSHIPS BETWEEN HUNTING TOURISM PRODUCT QUALITY AND TOURIST HUNTERS' SATISFACTION

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**Abstract:** The hunting tourism product is based on various hunting game and other types of services (accommodation, food, transport, educational services, cultural and recreational activities). This study reveals four factors that influence choosing a hunting destination and satisfaction with consuming tourism services. The study aimed to analyze the relationship between hunting tourism products quality and overall tourist satisfaction and to examine the measurement model for hunting tourists' satisfaction. This scale focuses on specific elements of hunting tourism products and contributes to a better understanding of the quality of hunting tourism offers. Using the CFA, the reliability and validity of the hunting tourism satisfaction scale (HUNTSS) were confirmed on the sample in Serbia, and this scale was validated as a reliable four-factor model which could be assessed for future research improvements. Results of SEM showed the influences of four factors of hunting tourism products on overall satisfaction.

**Keywords:** confirmatory factor analysis; hunting tourist satisfaction; hunting tourism; reliability; structural equation modelling; validity, hunting tourism product

**Highlights**

- Analyzing the relationship between hunting tourism products quality and overall tourist satisfaction.
- Examining the measurement model for hunting tourists' satisfaction.
- The four factors influence choosing a hunting destination and satisfaction with consuming tourism services.

## 1. Introduction

Hunting tourism is a part of hunting management and represents the journey and activities of hunters whose primary motive is hunting game (Brainerd, 2007; Leader-Williams, 2009; Nygard & Uthardt, 2011). Successful realization of hunting tourism activities is conditioned by the presence of a certain number of wild animals (Prentovic, 2005). One of the specificities of hunting tourism is that game represents the basic natural resource that determines the development of hunting tourism and, therefore, the basic motivator of hunting and tourist movements and activities (Brainerd, 2007; Leader-Williams, 2009; Nygard & Uthardt, 2011). Hunting tourism is a specific form of wildlife tourism and is categorized as a consumptive activity since natural resources are consumed during hunting activities, unlike other forms of tourism (Higginbottom, 2004; Lovelock, 2007; 2008; Matilainen & Keskinarkaus, 2010; Tremblay, 2001). There are different reasons why people go hunting. Some of them are winning preferred game trophies, enjoying the natural surroundings, testing hunting knowledge, moving beyond everyday life, adventure, self-actualization, and socialization (Floyd & Gramann, 1997; Gigliotti, 2000; Heberlein & Kuentzel, 2002; Komppula & Gartner, 2013; Manfredo et al., 2004; Radder, 2005; Suni & Pesonen, 2017). The hunting tourism product represents an integrated set of products, services, and other tourist values in the function of meeting the hunting tourism demand of potential clientele (tourists-hunters). The hunting tourism product should be designed to meet the requirements of hunter tourists. Prentovic (2005) indicates that the character of the hunting product of each particular hunting destination is determined by its natural characteristics as main hunting tourism resources and other segments of the tourist offer, such as the quality of hunting tourism infrastructure, hunting and tourism services, accessibility of hunting destination, transport possibilities within hunting destination, organizational elements and others. The main characteristics of hunting tourism products are the attractiveness of hunting grounds, accessibility of hunting tourist destinations, services on hunting tourist destinations, and hunting-tourism infrastructure (Prentovic, 2005; Martín-Delgado et al., 2020, Manojlović et al., 2021).

The aim of this study was to contribute to the literature about hunting tourism satisfaction by determining the relationship between hunting tourism products' quality with overall tourist satisfaction and examining and developing the measurement model for hunting tourists' satisfaction with hunting tourism products. The objectives of this study were to apply exploratory, confirmatory factor analyses and SEM to reveal and discover the main factors that influence choosing a hunting destination and satisfaction with consuming tourism services in a hunting destination.

## 2. Literature review

Few studies have addressed the motivations and preferences of hunters in Europe. Researchers have studied the motivation of resident hunters (Eliason, 2008; Floyd & Gramann, 1997; Gamborg, Jensen & Sandøe, 2017; Gigliotti, 2000; Hunt, Haider & Bottan, 2005). Hunt, Haider, and Bottan (2005) analyzed preferences among moose hunters in north-western Ontario. Their research showed that moose hunters preferred areas near the home, few encounters with other hunters, a high number of moose, many lakes, and easily accessible hunting areas. Komppula and Suni (2013) found out that a Finnish hunter tourist seeks novelty and social interaction during his hunting trip. The basic motive of tourist hunters is the hunting act, however, Komppula and Suni (2013) indicated that hunting tourism outfitters should have a better understanding of the customers` differences since not all hunting tourists value only an abundance of shots or bags. Later, Suni and Pesonen (2017) investigated Finnish hunting tourists' push and pull motivations. The strongest pull motives were those related to tourism services at the destination and those connected to discovering a new game, hunting techniques, and new hunting cultures. The less important motivators for Finnish tourist hunters are those related to the functionality of hunting areas as hunting destinations (distance, size of hunting area...). This research, also, indicates that hunting tourists are happy to return to hunting destinations where they feel comfortable and relaxed. In the Czech Republic, Kroupová et al. (2014) conducted research on the diversification of the demand for hunting tourism in this country. This research showed that a guided tour through the hunting area with professional guidance and game observation was one of the most interesting offers among hunting tourism participants in the Czech Republic.

Vaske et al. (1982) analyzed overall hunting satisfaction based on the effects of three dimensions – wildlife dimensions (bagging game, hunter's success…), social dimensions (presence of other hunters, interactions with other hunters…), and nature/sport dimensions (being outdoors, escape from daily routines, nature…). In the research of Decker et al. (1980), satisfaction with twelve components of the hunt (wildlife hunting skills, social interactions, and nature/sport) was analyzed as well as its relations with expectations and previous hunting experience. The hunting act is proven to be one of the most important predictors of satisfaction (Decker et al., 1980; Gigliotti, 2000; Vaske et al., 1982).

However, Hammitt et al. (1990) have shown that other predictors like nature, skill, and being outdoors could have more impact on hunter satisfaction than harvest success. Later, Gigliotti (2000) pointed out that the influence of harvest success on overall satisfaction is not simple and that harvest success can improve overall satisfaction to some extent. That research showed that other success-related factors (seeing wild game) had a more important influence on hunter satisfaction. Brunke and Hunt (2008) have, also, indicated that success-related variables (seeing the game, opportunity to harvest) have great influences on hunter satisfaction. Some of these researches, also, suggested that overall hunting satisfaction is significantly affected by tourists' expectations before hunting and accomplished expectations (Brunke & Hunt, 2007; Hammitt et al., 1990; Vaske et al., 1986).

Similar research was conducted in South Africa, when Radder and Han (2010) measured trophy hunters' satisfaction with their South African hunting safari experience. They used 29 items scale (18 related to positive hunting attributes and 11 related to negative hunting attributes). Their results showed that trophy hunters were most satisfied with the possibility to shoot preferred game, social interactions, and convenient accommodation. In a later study, Han and Radder (2011) investigated trophy hunters` perceptions of service quality and concluded that satisfaction is significantly influenced only by core service (primary benefits sought from the safari and the basic reason for the transaction of the hunting

outfitters). The research of Van der Merwe and Saayman (2015) revealed three factors important for trophy hunters' satisfaction – the success of the hunt, adventure, and infrastructure.

The latest research on hunting satisfaction (Gruntorad et al., 2020; Schroeder et al., 2017, 2019) analyzed the influence of hunt-specific factors on overall hunting satisfaction. Schroeder et al. (2017) with their research among Minnesota wild turkey hunters showed that harvest has a moderate relationship with hunter satisfaction, and later (Schroeder et al., 2019) indicated the influence of harvest opportunity on hunter satisfaction. They, also, showed the importance of appreciative experiences (enjoying the natural environment…) to hunter satisfaction, especially among non-successful hunters. Research in Nebraska confirmed these conclusions and indicated that seeing the game or having the opportunity to shoot game is important for satisfaction for all hunting activities in Nebraska (Gruntorad et al., 2020).

## 3. Research Methods and Material

### 3.1 Proposed model and hypotheses

The research model was established on the above literature review on hunting satisfaction and the theoretical background. The proposed model assumes that the four dimensions of hunting tourism product have a direct impact on tourist satisfaction as shown in figure 1. The research model proposes the following hypotheses:

**H1**: *Natural characteristics of hunting tourism destinations positively influence overall hunting tourism satisfaction.*

**H2:** *Human resources (hunting tourism services quality) positively influences overall hunting tourism satisfaction.*

**H3**: *Hunting tourism infrastructure positively influences overall hunting tourism satisfaction.*

**H4**: *Additional benefits positively influence overall hunting tourism satisfaction.*

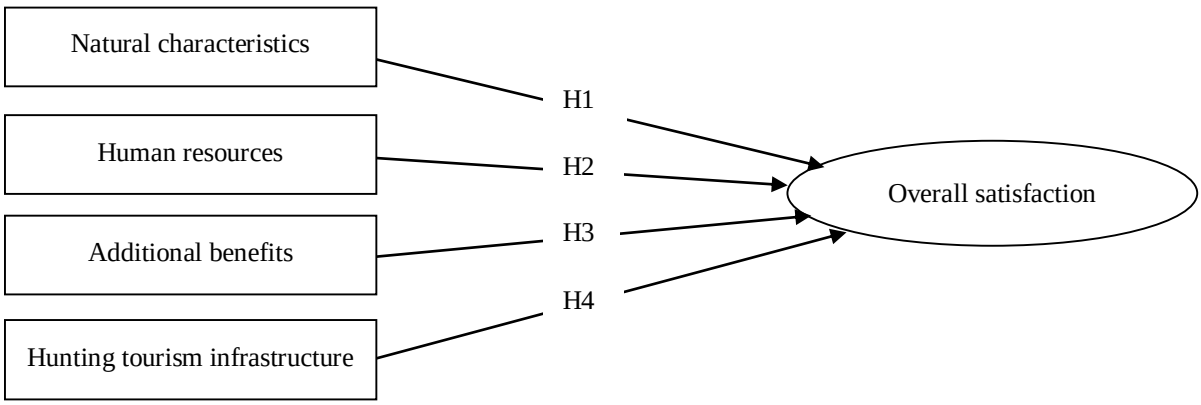



*Fig 1. Research framework proposed by the authors.*

### 3.2 Study Area

The survey was conducted in the period from April 2019 to February 2020, among tourist hunters who hunted in hunting tourist destinations in Serbia. Serbia has a long tradition of organized hunting which, together with its natural potential and favourable climate and orographic factors, represents a good-quality foundation for sustainable development of the hunting sector (Prentovic, 2005; Ristic, 2017). Hunting tourism was quite developed in this region during the 70s and 80s of last century, and Serbia, especially the northern part – Vojvodina, was one of the most famous hunting destinations in the region with up to 10,000 foreign hunters per year, mostly from Italy, Germany, Austria, Spain, United Kingdom, Belgium, France, Hungary, and Russia. After the worsening of the political situation in the country, in

the mid-1990s, the number of hunter-tourists decreased, which was most pronounced in 1999 when the smallest number of bags was recorded. Later, a gradual increase in the number of tourist hunters in Serbia is noted (Ristic, 2017).

### 3.3 Study Sample, and Data Collection

The survey was conducted in seven hunting destinations that are managed by public enterprises or by hunting clubs. The questionnaires were distributed by hunting managers and were filled out by tourists during their stay in the hunting tourist destination at the end of the hunting arrangement. The non-probability sampling was applied, since it was impossible to draw random probability sampling due to a small number of tourists and little possibility of accessing them. A total number of 450 questionnaires were distributed, and the response rate was 68% (*n* = 308). According to the data of the Republic Institute for Statistics of the Republic of Serbia, the number of tourist hunters is not recorded separately but is included in the total number of tourist arrivals and overnight stays. However, according to the records of overnight stays in hunting facilities and according to previous research (Ristic, 2017), the number of foreign tourist hunters in Serbia annually is about 700.

### 3.4 Survey Instrument

The questionnaire contained socio-demographic characteristics of respondents (gender, age, education, place of current and childhood residence) and hunting and hunting tourism related variables (participation in hunting activities, how long have they been hunting, in what countries they like to hunt, which game prefer to hunt, how many times during the year they travel abroad for hunting). The respondents were also asked if they prefer hunting in fenced hunting grounds or open hunting grounds, how many times they have been hunting in Serbia, and did they have successful hunting bag during this hunt.

In the second part of the questionnaire, respondents were asked to express their overall satisfaction with the hunting arrangement in Serbia on a 5-point Likert scale (5–very satisfied, 4–satisfied, 3–neutral, 2–not very satisfied, 1–not satisfied at all). In the fourth part respondents were asked to express their opinions about how much they were satisfied with specific elements of hunting tourism product in Serbia, also, on a 5-point Likert scale (5–very satisfied, 4–satisfied, 3–neutral, 2–not very satisfied, 1–not satisfied at all).

Before choosing elements of hunting tourism product that will be valued by respondents, literature on hunting and hunting tourism, hunters' and hunting tourists' preferences and satisfaction were reviewed. Items identified in previous research (Brunke & Hunt, 2008; Decker et al., 1980; Gigliotti, 2000; Han & Radder, 2011; Prentovic, 2005; Radder & Han, 2010; Schroeder et al., 2019; Truong, Foster, 2006; Vaske et al., 1982) were used to form the first version of the questionnaire. Later, an expert panel of three tourism academic researchers, three hunting destination managers, and one hunting tourism outfitter served as a focus group in the evaluation of scale and refining of the selected constructs and items. Items identified in this stage were assembled to form the initial item pool (27 items). A list of attitudes was identified based on hunting satisfaction literature (Han & Radder, 2011; Prentovic, 2005; Schroeder et al., 2019), tourists' satisfaction literature (Truong & Foster, 2006), and interviews with hunting tourism outfitters and hunting destinations` managers (table 1).

*Tab 1. Elements of hunting tourism product (new, taken, and adopted). Source: own elaboration*

| Element | Source |
|---|---|
| (I1) Trophy value of the game | new* |
| (I2) Abundance of game | Han & Radder, 2011 |
| (I3) A variety of different game in the hunting ground | new* |
| (I4) Attraction of hunting grounds | Schroeder et al., 2019 |
| (I5) Health condition of game in the hunting ground | new* |
| (I6) Functionality of the hunting ground (paths through forest…..) | new* |
| (I7) I have a possibility to see a lot of game in the hunting ground | Schroeder et al., 2019 |
| (I8) I have a possibility to shoot game in the hunting ground | Schroeder et al., 2019 |
| (I9) Fast service of hunting staff | Han & Radder, 2011 |
| (I10) Understanding client's needs | Han & Radder, 2011 |
| (I11) Ethical attitude of hunting workers toward game | Han & Radder, 2011 |
| (I12) Well-trained hunting guides | Han & Radder, 2011 |
| (I13) The professionalism of hunting guides | Han & Radder, 2011 |
| (I14) Successfully solving the problems of tourists | Han & Radder, 2011 |
| (I15) The hunting lodge and other facilities are fitting in the natural environment | Han & Radder, 2011 |
| (I16) The comfort of a hunting lodge | Han & Radder, 2011 |
| (I17) The hunting lodge's ambiance | new* |
| (I18) Arrangement and equipment of hunting lodge | new* |
| (I19) Quality of technical objects in the hunting ground | new* |
| (I20) Cleanliness of accommodation (hunting lodge) | Han & Radder, 2011 |
| (I21) Food and beverage quality | Han & Radder, 2011 |
| (I22) The methods of hunting | new* |
| (I23) Border and custom procedures about hunting weapons and equipment | new* |
| (I24) I can bring meat from the shot game home | Schroeder et al., 2019 |
| (I25) I can meet local culture and tradition | Truong, Foster, 2006 |
| (I26) I can visit other natural and cultural sites around the hunting area | Truong, Foster, 2006 |
| (I27) Additional tourist services (animation….) | new* |

*New proposed items based on the literature review and the interview with the focus group

### 3.5 Data Analysis

In order to describe the survey sample, the descriptive statistics methods were used (arithmetic means and standard deviations). To determine the main factors of preferences and satisfaction from different elements of a hunting tourism product and to detect scale dimensionality, exploratory factor analysis (EFA) was used. The appropriateness of factor analysis was determined by examining the Kaiser–Meyer–Olkin measure of sampling adequacy and the Bartlett's test of sphericity. After identifying the dimensions, a Cronbach's Alpha reliability test was conducted for each measurement scale in order to eliminate the inadequate variables. Any item with a below. 50 item-to-total correlation was eliminated (Chen & Hsu 2001; Zaichkowsky 1985). The Skewness and Kurtosis values were used to show the frequency distribution of numerical features. Further, the measurement model was estimated to check for innate construct validity and reliability, and the unidimensional characteristic of different latent factors using CFA (Afthanorhan et al., 2014). The confirmatory factor analysis was performed to redefine and validate the satisfaction measurement scales. The obtained data were processed by Statistical Package for Social Sciences Version 23 (SPSS), which was used for EFA calculus, and for the CFA and SEM analysis, authors applied R and RStudio (lavaan, semPlot and semTools packages).

## 4. Results

### 4.1 Respondent characteristics

The final study sample consists of 308 respondents, from which the majority of respondents were male (99%) and the most numerous tourists were hunters between 41 and 60 years (50.6%). Majority of the respondents had a secondary school education (29.5%). Half of the respondents (50.3%) were hunting tourists from Serbia, and the other half of respondents were from Germany, Hungary, Austria, Great Britain, Bosnia, Slovenia, Slovakia, Croatia, Montenegro, Italy, Qatar, France, Belgium, and Switzerland. Most of the respondents during childhood lived in a rural area (68.5%), while respondents mostly answered that their current residence is in an urban area (63.3%). Beside Serbia, Hungary, Germany, Austria, Bosnia and Croatia, respondents like to hunt in Slovakia, Poland, Slovenia, Italy, North Macedonia, and Czechia. Most of the respondents had more than ten years of hunting experience and traveled to some foreign hunting destination more than four times a year (31.1%), while others hunt abroad usually once or twice during the year. Most of the respondents prefer to hunt big game (deer and wild boar) in open hunting grounds. The main socio-demographic characteristics and hunting related topics of respondents can be seen in Table 2.

*Tab 2. Characteristics and hunting preferences of respondents. Source: own elaboration*

| **Gender:** | **%** | **Preferred hunting ground:** | **%** |
|---|---|---|---|
| Male | 99 | Fenced hunting ground | 35.4 |
| Female | 1 | Open hunting ground | 64.6 |
| **Education:** | | **Preferred game:** | **%** |
| Secondary school | 29.5 | Wild boar | 34.4 |
| Higher school | 26.9 | Red deer | 27.9 |
| Bachelor's degree | 27.6 | Roe deer | 15.3 |
| Master's degree | 7.5 | Fallow deer | 11 |
| PhD degree | 8.4 | Pheasant | 8.1 |
| | | Chamois | 1.3 |
| | | Jackal | 1.6 |
| | | Woodcock | 0.3 |
| **Age:** | | **Preferred hunting destination:** | **%** |
| Younger than 20 years old | 1.3 | Serbia | 47.4 |
| 21–40 years old | 26.9 | Hungary | 16.2 |
| 41–60 years old | 50.6 | Germany | 5.2 |
| More than 60 years old | 21.1 | Austria | 3.6 |
| | | Bosnia | 3.2 |
| | | Croatia | 3.2 |
| **Childhood residence:** | | **Current residence:** | |
| Urban | 31.5 | Urban | 63.3 |
| Rural | 68.5 | Rural | 46.7 |
| **How long have been hunting:** | | **Hunting abroad during the year:** | |
| Up to 10 years | | Never | 12 |
| 11 – 20 years | 30.5 | Once | 30.2 |
| 21 – 30 years | 36.8 | Twice | 26.6 |
| 31 – 40 years | 16.8 | Three times | 20.5 |
| More than 40 years | 10 | Four times | 1.3 |
| | 5.3 | Five times and more | 9.3 |

### 4.2 Exploratory factor analysis and descriptive statistics

Obtained data were factor analyzed using the principal component method and varimax rotation procedure to extract the sub-dimensions of those items. All factors with an eigenvalue greater than 1 and with factor loadings more than 0.5 were retained. The results, which suggested a four-factor solution, included 26 items and explained 61.98% of the variance. The Kaiser–Meyer–Olkin (KMO) overall measure

of sampling adequacy was 0.88 (Kaiser, 1974) indicating that the data were appropriate for the principal component model. The Bartlett's test (Bartlett, 1954) of sphericity was significant (p = 0.000). During the factor analysis, item I21 (*"*Food and beverage quality*"*) was eliminated because of the low factor loading value.

The first factor was labeled "*Natural characteristics"* and addressed issues related to game characteristics (trophy value, body condition) and abundance and diversity of game in hunting destination. This factor explained 35.93% of the total variance with a reliability coefficient of 0.889. The second factor was "*Human resources"*, explaining 11.12% of the total variance with a reliability coefficient of 0.885. This factor consisted of items related to the professionalism of hunting managers and other employees and the quality of hunting services. The third factor was named "*Additional benefits*" and explained 7.65% of the variance with a reliability coefficient of 0.898. This factor addressed issues related to complementary tourist services. The fourth factor, named "*Hunting tourism infrastructure*" accounted for 7.29% of the variance with a reliability coefficient of 0.864 and included items related to accommodation and catering facilities in hunting destination (Table 3).

*Tab 3. Results of Exploratory factor analysis and descriptive statistics. Source: own elaboration*

| Extracted factors | Items | Mean | SD | Factor loading | Eigenvalue | Variance explained |
|---|---|---|---|---|---|---|
| Factor 1: Natural characteristics | (I1) Trophy value of the game | 4.22 | .919 | .601 | 9.700 | 35.925 |
| | (I2) Abundance of game | 4.30 | .881 | .757 | | |
| | (I3) A variety of different game in the hunting ground | 4.18 | .929 | .766 | | |
| | (I4) Attraction of hunting grounds | 4.18 | .878 | .680 | | |
| | (I5) Health condition of game in the hunting ground | 4.48 | .733 | .665 | | |
| | (I6) Functionality of the hunting ground | 3.98 | .985 | .721 | | |
| | (I7) I have a possibility to see a lot of game in the hunting ground | 4.45 | .847 | .779 | | |
| | (I8) I have a possibility to shoot game in the hunting ground | 4.48 | .813 | .675 | | |
| Factor 2: Human resources | (I9) Fast service of hunting staff | 4.38 | .762 | .636 | 3.001 | 11.115 |
| | (I10) Understanding client's needs | 4.40 | .827 | .698 | | |
| | (I11) Ethical attitude of hunting workers toward game | 4.58 | .678 | .782 | | |
| | (I12) Well-trained hunting guides | 4.60 | .694 | .820 | | |
| | (I13) The professionalism of hunting guides | 4.57 | .720 | .812 | | |
| | (I14) Successfully solving the problems of tourists | 4.24 | .815 | .559 | | |
| | (I22) The methods of hunting | 4.41 | .839 | .585 | | |
| Factor 3: Additional benefits | (I23) Border and custom procedures about hunting weapons and equipment | 3.43 | 1.352 | .768 | 2.066 | 7.650 |
| | (I24) I can bring meat from the shot game to the home | 3.74 | 1.352 | .780 | | |
| | (I25) I can meet local culture and tradition | 3.56 | 1.224 | .862 | | |
| | (I26) I can visit other natural and cultural sites around the hunting area | 3.50 | 1.265 | .833 | | |
| | (I27) Additional tourist services | 3.31 | 1.377 | .806 | | |
| Factor 4: Hunting tourism infrastructure | (I5) The hunting lodge and other facilities are fitting in the natural environment | 4.01 | .811 | .605 | 1.969 | 7.294 |
| | (I6) The comfort of a hunting lodge | 3.99 | .783 | .756 | | |
| | (I7) The hunting lodge's ambiance | 3.94 | .832 | .781 | | |
| | (I8) Arrangement and equipment of hunting lodge | 4.01 | .757 | .763 | | |
| | (I19) Quality of technical objects in the hunting ground | 4.29 | .891 | .618 | | |
| | (20) Cleanliness of accommodation | 4.24 | .794 | .726 | | |

Descriptive statistics for the latent and observed variables are presented in Table 3. The results show that the most significant items were those considering the knowledge and professionalism of hunting guides and hunting managers. The possibility to see and to shoot game in the hunting area was of great importance for hunting tourists. The most insignificant items were those considering meeting local culture and tradition and visiting cultural sites around the hunting ground. The hunting tourists were the most

satisfied with those items considering hunting guides and hunting managers in Serbian hunting grounds, with their knowledge, professionalism, and ethical attitude towards the game. They were, also, satisfied with having the good possibilities to see a lot of different wild game and with the possibilities to shoot game in the hunting ground. As most insignificant items considering hunting tourists' satisfaction were those related to meeting local culture and tradition.

### 4.3 Confirmatory factor analysis and measurement model validity

A Confirmation Factor Analysis (CFA) was conducted to examine whether the four-factor model could be reliably confirmed. The measurement model was estimated to investigate construct validity and reliability. Firstly, the items with high factor loadings in EFA are employed in the measurement model for the CFA approach. The goodness-of-fit indices confirmed that the four-factor structure provided an acceptable fit to the data (TLI = 0.940; CFI = 0.946; RMSEA = 0.080), but standardized root mean square residual (SRMR = 0.083) did not provide acceptable fit according to Hu and Bentler (1999). In order to fulfill the requirement of CFA (the fitness index, reliability, and discriminant validity), item I19 (*Quality of technical objects in the hunting ground*) is removed from the measurement model owing to high values of absolute correlation residuals (Kline, 2015). According to the results after removing I19, all fit indices (TLI = 0.949; CFI = 0.954; RMSEA = 0.076; SRMR = 0.079) revealed a satisfactory fit.

The composite reliability values for the latent factors exhibited satisfactory levels exceeding the recommended minimum value of 0.7 (Hair et al., 2016; Kline, 2015). A convergent validity is accomplished when all item-to-factor loadings are significant and the AVE score is higher than .50 within each dimension (Fornell & Larcker, 1981). Results showed that all dimensions had AVE higher than .50 and CR higher than .70, which shows good convergent validity (Table 4).

Cronbach's α values for each factor were greater than 0.7. The results indicated that the alpha coefficients of the nine factors ranged from 0.847 to 0.898, this testifies that the scales of the obtained questionnaire have considerable reliability (Nunnally, 1978).

*Tab 4. Reliability of the instruments. Source: own elaboration*

| *Constructs* | *α* | AVE | CR |
|---|---|---|---|
| Natural characteristics | .889 | .577 | .889 |
| Human resources | .885 | .641 | .872 |
| Additional benefits | .898 | .708 | .905 |
| Hunting tourism infrastructure | .847 | .783 | .849 |

Discriminant validity was investigated by comparing the average variances extracted (AVEs) for each latent factor with the squared correlation estimates between latent constructs. The range of squared correlations based on total scores is from 0.074 to 0.299, which is lower than AVE, which confirms that all dimensions have sufficient discriminant validity (Fornell-Larcker, 1981).

*Tab 5. Correlation estimates and average variances extracted. Source: own elaboration*

| | Natural characteristics | Human resources | Additional benefits | Material resources |
|---|---|---|---|---|
| Natural characteristics | *.616* | | | |
| Human resources | 0.299209 | *.665* | | |
| Additional benefits | 0.074529 | 0.178084 | *.721* | |
| Hunting tourism infrastructure | 0.188356 | 0.225625 | 0.145924 | *.642* |

Note: Italics indicate average variances extracted (AVEs).

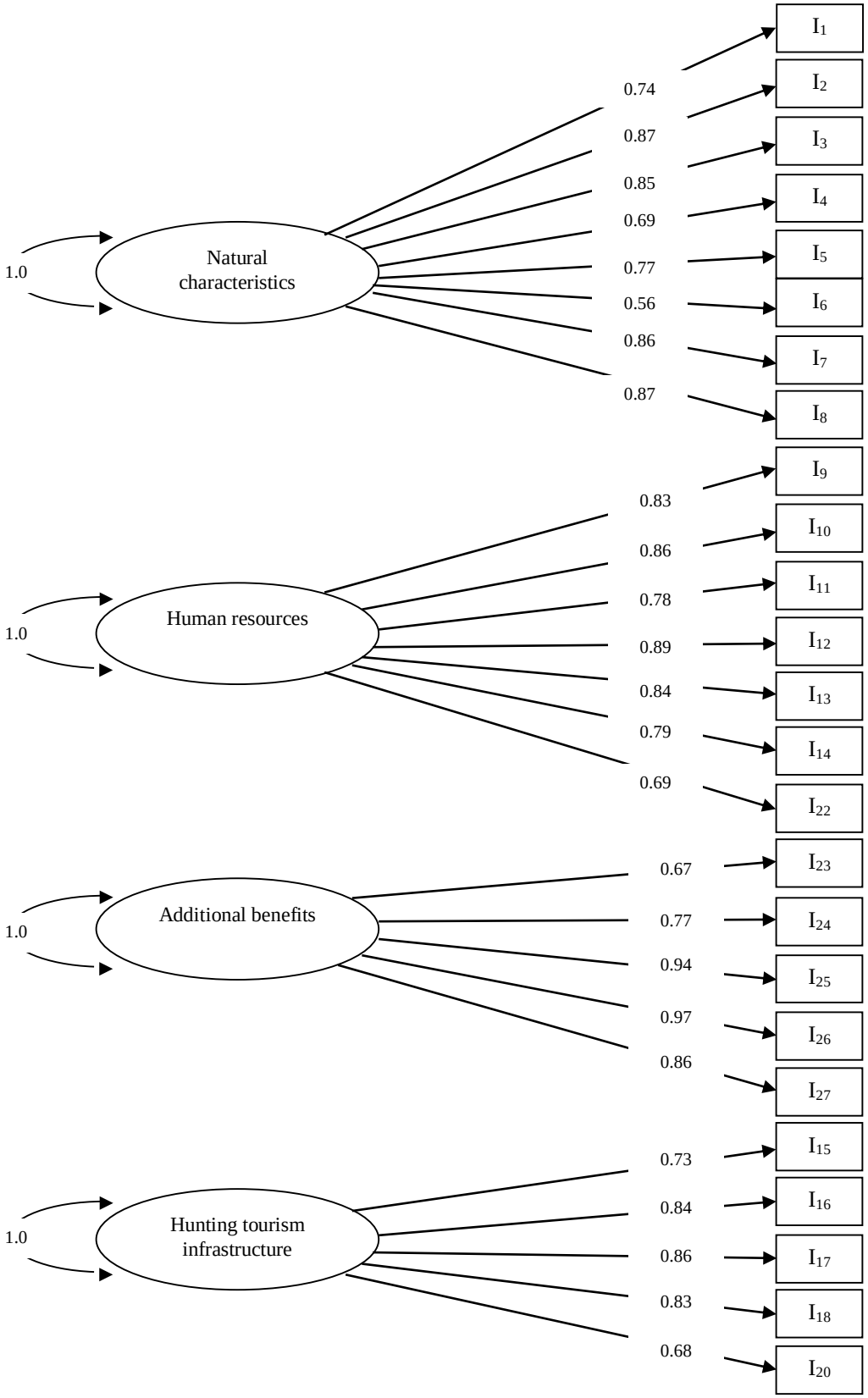



*Fig 2. Construct validity – CFA with standardized estimates. Source: own elaboration*

### 4.4 Results of the Path Model

The diversity of forms in the proposed model was estimated and the overall fit of the model has been considered satisfactory for the observed sample (CFI = 1.000; TLI = 1.000; RMSEA = 0.000; SRMR = 0.000; df = 4, p < 0.000). Fit indices were acceptable for referring to the hypothesized interrelations between each latent factor. Table 6 shows the outcomes of the hypothesized interactions in the proposed model. Natural characteristics on overall satisfaction indicated a significant and positive impact (β = 0.403, p < 0.000). Human resources (β = 0.247, p < 0.000), additional benefits (β = 0.093, p = 0.036), and hunting tourism infrastructure (β = 0.144, p = 0.019) were also found to positively affect the overall satisfaction, thus supporting H1, H2, H3, and H4.

*Tab 6. The results of model (standardized regression weights). Source: own elaboration*

| Hypothesized Paths | β | S.E. | *z*-Value | *p*-Value | Hypothesis |
|---|---|---|---|---|---|
| $H_1$: Natural characteristics → Overall satisfaction (+) | 0.403** | 0.078 | 5.936 | 0.000 | Supported |
| $H_2$: Human resources → Overall satisfaction (+) | 0.247** | 0.084 | 3.771 | 0.000 | Supported |
| $H_3$: Additional benefits → Overall satisfaction (+) | 0.093* | 0.030 | 2.092 | 0.036 | Supported |
| $H_4$: Hunting tourism infrastructure → Overall satisfaction (+) | 0.144* | 0.074 | 2.340 | 0.019 | Supported |

Note: *p < 0,05; **p < 0,01

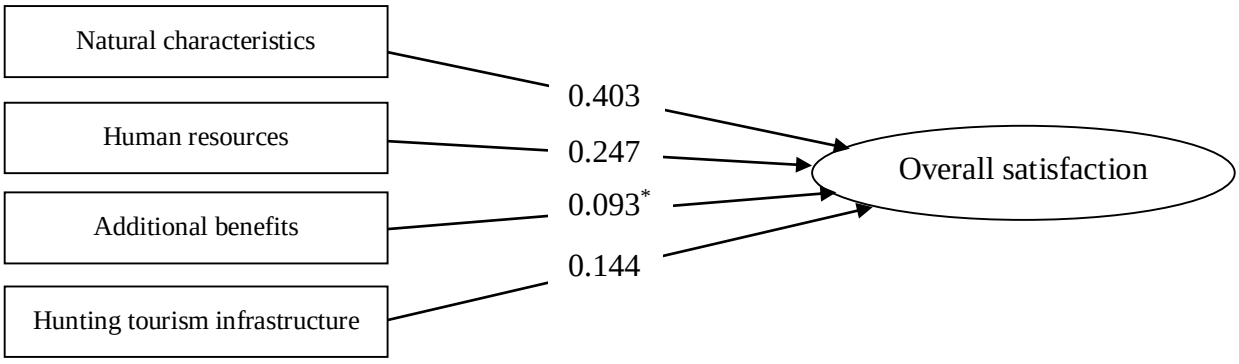



*Fig 3. The results of the path model based on standardized regression weights. Source: own elaboration*

## 5. Discussion

The current research was conducted in rural areas in Serbia where hunting tourism could have a significant function in promoting rural development. Hunting tourism destinations are located in peripheral areas where other sorts of tourism activities are usually not developed. Hunting is a source of income for rural communities and these local communities can have important economic benefits from hunting tourism (Bauer & Herr, 2004). Therefore, hunting tourism activities could have important economic, social, and ecological impacts on the development of rural regions. However, in order for hunting tourism stakeholders to know how to contribute to this development, it is necessary to determine what significantly affects their satisfaction with the tourist experience at a certain destination. This research was focused on tourist hunters from different European countries, which contribute, also, to understand the profile of European hunter.

The present study reports that natural characteristics of hunting grounds, such as game quality and health condition, numerous game populations, and attractive landscape, are the factor that most strongly influences tourist hunters, which support H1. They are followed by human resources, hunting tourism infrastructure, and additional benefits, which support H2, H3, and H4. Bearing in mind items that are included in this factor, these results confirmed results from some of the latest hunting satisfaction

research (Gruntorad et al., 2020; Han & Radder, 2011; Schroeder et al., 2017, 2019). Tourist hunters enjoy primarily seeing a beautiful landscape, wildlife habitats, and healthy wild animals which will give them a chance to have a successful hunt. However, results showed that hunter tourist from Europe during his hunting tourist activities, besides game abundance and nature environment, especially appreciate professional and experienced hunting managers that are capable to organizing safe hunting.

The hunting tourism literature demonstrates that success-related factors have an important influence on hunter satisfaction, and that, also, nature experiences during hunting activities raise the satisfaction of hunters. However, from the aspect of hunting tourism, understanding tourist hunters' preferences and satisfaction could help hunting destination managers better devise a hunting tourist product. Previous research on hunting satisfaction did not include a unique measurement scale, thus is difficult to compare results among different research. This study helps to better understand the needs of participants in hunting tourism activities. The HUNTSS scale was generated from items used in previous research in hunting tourism, hunting satisfaction and based on the hunting experiences of authors and interview in the focus group. The HUNTSS scale includes the expanded number of variables and a list of attributes that have not been analyzed together in literature.

The exploratory factor analysis was used to gain dimensionality of scale and to remove items with low or multiple loading factor coefficients. An item that was not statistically significant on their factor loading was eliminated (item "*food and beverage quality*"). The result of the HUNTSS construction supported internal consistency. The 26 items loaded on four factors domain: natural characteristics (8 items), human resources (7 items), additional benefits (5 items), and material resources (6 items). Natural characteristics, such as game-specific factors and habitat, influence the most hunting tourism satisfaction. Good habitat conditions that provide attractive hunting grounds and a variety and abundance of game in good health condition and trophy value, are most important to tourist hunters. However, human resource services, as an element of the hunting tourism product, have also proven to be a significant factor in hunting tourism satisfaction.

Using the CFA, the measurement model involved in this study was validated as a reliable four-factor model of 25 questions for measuring the satisfaction of tourist hunters with a hunting-tourist product. The CFA confirmed the four-factor HUNTSS, but reduced the number of items from 26 to 25. The item named "Quality of technical objects in the hunting ground" was removed because of high values of absolute correlation residuals (Beaujean, 2014). All other items were statistically significant to their respective factors.

The study's limitation is the convenient method that was used for collecting the sample, thus the reported results can not be generalized, since it is necessary to stratify the sample and conduct research on a larger sample. In the future, some new variables should be included, such as the price of hunting tourism product, value for money, and some new predictors such as specific game species, personality type, social aspect (interaction with the local community). There are, also, other moderator factors to consider such as socio-demographic data or situational factors (weather conditions, interaction with other hunters). A limitation of the present study was also that it was done only on hunting grounds in Serbia. Although the results of the current study presented a credible structure for the scale, there is surely a need for more research in order to confirm these results. In this regard, research undertaken in different hunting tourism destinations and different countries will be particularly valuable. Future research should include exploring the use of HUNTSS in other studies in order to examine it in different cultures and research settings and to refine it.

## 6. Conclusion

The aim of this study was to determine the relationship between hunting tourism product's quality with overall tourist satisfaction and examine the measurement model for hunting tourists' satisfaction with hunting tourism product. This scale focuses on different elements of hunting tourism product and offers a better understanding of the quality of hunting tourism product in one hunting destination. The HUNTSS could be a useful assessment tool for hunting managers, hunting outfitters, and academic researchers.

This scale was validated as a reliable four-factor model which could be assessed for future research improvements. The presented results could be used by hunting managers to better understand their current hunting product and find a way to improve it. This study reveals four factors that influence choosing a hunting destination and satisfaction with consuming tourism services, so hunting tourism operators could have insight into which element of hunting tourism products should be invested more.

There is not a sufficiently well-organized promotion of hunting and hunting tourism potential in Serbia. The results of this work showed that hunter tourists emphasized natural and human resources as the most important elements of the hunting tourism product. This indicates to actors in hunting tourism that they should work harder on the promotion of these elements and introduce these characteristics of the hunting tourism product in Serbia to a wider audience. For further development of hunting tourism in Serbia, market segments should be defined to focus well-designed marketing activities on them. Besides natural wealth, rural areas of Serbia are rich with different cultural values (history, local culture, multi-ethics environment, the tradition of local communities, gastronomy…), which should be more developed and included in the promotion activities. Hunting tourism could be the initiator for the development of other specific nature-based forms of tourism (rural tourism, wildlife tourism, ecotourism, glamping tourism) and include other members of local communities as well.

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