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Special Issue

Rural Tourism

Edited by

Dr. Fabio A. Madau and Prof. Dr. Corrado Ievoli



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Dex-Based Evaluation of Sustainable Rural Tourism in Bosnia and Herzegovina

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Abstract: The research objectives presented in this paper are to assess the current state of Bosnia and Herzegovina's rural tourism offer and to recommend a course of action for its development based on the model's data that was gathered from subject-matter experts. In this paper, the multicriteria analysis method DEX (Decision EXpert) was utilized to assess the capacity of rural tourism in Bosnia and Herzegovina (BIH) and to obtain the results. All establishments were rated "very good", seeing that they made use of the natural beauty that BIH has to offer. The outcomes of using this model were used to generate suggestions for the long-term development of rural tourism in BIH. The contribution of the employed model is in the developed starting points for the advancements of rural tourism in BIH, and the proposed model presents a novel method for evaluating a nation's tourism potential that could be used in future studies in other tourism-related fields as well. The limitations of this paper stem from the fact that not all tourist establishments were considered due to the lack of unified records for all of these establishments. The model used in this research, on the other hand, is applicable to all tourist capacities, which is an advantage.

Keywords: rural tourism; DEX method; sustainable tourism



Citation: Puška, A.; Štilić, A.; Nedeljković, M.; Maksimović, A. Dex-Based Evaluation of Sustainable Rural Tourism in Bosnia and Herzegovina. *Tour. Hosp.* **2022**, *3*, 919–930. <https://doi.org/10.3390/tourhosp3040059>

Academic Editors: Fabio A. Madau and Corrado Ievoli

Received: 29 October 2022

Accepted: 8 December 2022

Published: 9 December 2022

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1. Introduction

Tourism could be defined as an economic activity in which people travel and stay somewhere other than their usual abode for the purpose of relaxation, entertainment, recreation, and leisure [1]. The key factor driving global economic growth is tourism [2]; thus, in order to grow, the local community must work on developing its tourist potential [3]. It could be argued that the level of growth of tourism is critical for the development of the local community, as it influences the overall development of the country [4].

With modern tourism, all of the criteria that influence the development of the tourist product must be taken into account. Meeting the criteria of the economic, ecological, and social dimensions is essential for the sustainable growth of tourism. In order to achieve sustainable development of rural tourism, it is necessary to consider current and future economic, social, and ecological impacts when implementing sustainability in rural tourism [5]. In order to ensure that future generations can utilize these resources, it is also important to respect natural, social, and economic factors [6]. The legacy for future generations must be protected when implementing sustainable rural tourism, and if possible, the conditions for the protection of present resources owned by rural settlements must be improved.

Due to the importance of these criteria for the development of tourism, it is necessary to apply a comprehensive approach to the evaluation of the tourist potential. This decision-making or evaluation challenge is addressed by utilizing the multicriteria analysis (MCDA)

approach. When deciding amongst different alternatives that are offered and each of these alternatives should be assessed using sets of criteria, MCDA is usually employed [7].

The decision support model's objective is to provide a tool for enhancing the long-term growth of rural tourism in Bosnia and Herzegovina (BIH) in order to raise the standard of this tourist offer. The evaluation of economic, social, and ecological criteria makes up the proposed methodological model, and the current condition of sustainable rural tourism in BIH will be assessed using these criteria. By doing so, examination of both the advantages and disadvantages of this tourism offering in BIH will be enabled. As a result, an assessment will be conducted using expert-defined decision rules, and a new methodology for assessing the tourism offer will be provided along with guidelines for the development of rural tourism based on it. This assessment will be based on sustainable rural development and will employ sustainability criteria.

In this research, complex decision-making will be used in conjunction with the DEX method (Decision EXpert) to evaluate the sustainable rural offer in BIH. The DEX method operates on the linguistic values of the criteria, and the result is also in the form of a linguistic value, making the decision in human thinking style [8]. Since the DEX method uses "if-then" rules to accomplish these operations, the decision rules for criteria and between criteria must first be established in order to obtain a result in the form of a linguistic value. The application of the decision-making model includes: presenting the problem using hierarchy and decision-making rules, evaluating criteria and alternatives in decision-making, and analyzing the obtained data from the model using sensitivity analysis or discussion of the obtained results. The given decision-making model's objective is to analyze the tourist offer for selected tourist capacities in rural areas.

The fact that the current state of rural tourism offer will be analyzed and that the recommendations for the long-term development will be made reflects the managerial implications of this research. These recommendations will assist managers in boosting the performance of their capacities through the expansion of the tourist offering based on the conclusions drawn from the research. Because tourists are one of the contributing factors to a country's economic growth, this will have an impact on both the local communities and overall growth.

After a brief introduction, this research paper will discuss the idea of rural tourism and how important it is to the growth of a nation's tourism industry. Section 3 will then be used to describe the DEX method. The results will evaluate and compare various rural tourist offers to identify both the positive and negative aspects of this type of tourism. The obtained results will be reviewed in further detail in Section 5 in order to present the most important results as well as the advantages and disadvantages of the utilized decision-making model.

2. Literature Review

Sustainable rural tourism has received special attention as a significant research topic in Europe and Asia, as evidenced by a steady increase in research on the subject from 2009 to 2019 [9]. The foundation of rural tourism lies in the concept of a small population, a traditional society and culture, and locally regulated organic growth, and as seasonality is low in rural destinations, it could be argued that rural tourism promotes a year-round activity [10]. To be recognized as an authentic rural tourist destination, a site must cover a number of criteria, including rural environment, economics, history, and location [11]. The significance of rural tourism stems from the fact that it is a compatible and complementing traditional activity that cannot be replaced by any other tourist offer. Every rural community needs to diversify its economic activities in order to generate enough income for households and attain a certain standard of living [12] or, in the bottom line, to "survive", especially in times of weak market growth and low capital and asset investment. The concept of rural societies' and communities' sustainability could be considered genuine, because it makes use of the skills it has developed over time for surviving and making the most of all byproducts and products from all forms of production.

The improvement of locals' quality of life, the creation of new jobs, the preservation of both cultural and natural heritage, the economic expansion of businesses, and the development of the region's reputation are all positive effects that can be directly attributed to the development of tourism in rural areas. Positive effects could be seen through the increasing values of the surrounding natural environment, improvements to public transportation systems and community spaces, and the opportunity to engage in recreational activities [9]. Rural tourism could be considered as the most important for the preservation of traditional crafts, in that cultural values are prevented from disappearing completely due to the fact that different preserved natural features are used as marketing tools. It is also important to mention that rural women's empowerment comes through the commercialization of women's knowledge and skills, and since rationing and saving have always accompanied villages and their residents, what is now known as "recycling" has been practiced in rural areas since "the dawn of time" [12].

From the perspective of the tourists, rural tourism is expected to offer integration in an idealized environment that is significantly different from the urban. Rural tourism allows an escape from urban stress factors such as pollution [13], noise, artificial living conditions, and overcrowded environments. Rural tourism could be described as a "rural idyll" [14], because it includes opportunities for pleasure and satisfaction that come from natural beauty, culture, and traditions, as well as a genuine hospitality dimension originating from a "home" or "back to the roots" feeling.

Furthermore, the influence of COVID-19 on rural tourism cannot be overlooked. Numerous studies [15–18] showed that after the pandemic, travel demands changed in favor of more "mindful and meaningful" tourist destinations. This change was acknowledged and supported by the European Union project EU4AGRI [19], which included 1.25 million euros allocated for investments in rural tourism in BIH. The project's goals included developing economic activities in rural areas, creating new jobs and keeping those that already existed, as well as preserving the natural and cultural heritage while also attending to the needs for recovery brought on by the COVID-19 pandemic. We must, however, keep in mind that sustainable development calls for both economic and environmental balance, and to achieve this, it is essential to strike a balance between rural exploitation and protection during the touristification process in order to prevent environmental harm, the overexploitation of local resources, and infrastructure overload [20].

To examine the current state of rural tourism facilities in BIH and to provide recommendations for how they should be developed in the future belongs to multicriteria decision analysis, as the perception of quality in rural tourism accommodations is influenced by a variety of criteria including attitudes toward rural tourism, experiences, and the relationship between those factors [11]. It should be noted that in the much of the research, geographic information systems (GIS) are deployed for collection of the primary data on the subject, and further, the decision support models such as Élimination Et Choix Traduisant la Réalité (ELECTRE), The DEcision-MAking Trial and Evaluation Laboratory (DEMATEL), Analytical Hierarchy Process (AHP), Preference Ranking for Organization Method for Enrichment Evaluation (PROMETHEE), Stochastic Multicriteria Acceptability Analysis (SMAA), Ordered Weight Averaging (OWE), Decision EXpert (DEX), Full Consistency Method (FUCOM), Measurement Alternatives and Ranking according to the COMpromise Solution (MARCOS), and other methods and techniques are widely used in assessing the subject of rural tourism, and different methods are employed in a variety of conducted research.

For instance, to choose among projects of rural tourism development in the Timok region [21] or to analyze the land-use suitability and rural tourism activities in case of Yenice in Türkiye region [22], the ELECTRE method was employed. A GIS-based fuzzy DEMATEL model was utilized for the ecotourism development and area evaluation in Erzurum, Turkey [23], and an evaluation of ecotourism sites in the Black sea region was conducted using AHP and PROMETHEE [24]. For the purpose of supporting EV sharing in rural areas, SMAA was used in the case of Nordic rural areas [25]. Fuzzy AHP was

used for solving ecotourism suitability decision-making problems in the case of Babol in Iran [26]. Furthermore, in the case of selecting the best location for ecotourism in the east and center of Fars province in Iran, the AHP and OWA methods were used [27], and the theory of rough sets was applied to the evaluation model supporting sustainable local development strategies in the case of Etna in Italy [28]. Sustainable development of ethnovillages in BIH and development of rural tourism in Republic of Srpska was supported by the DEX method [29,30], and on a more local scale, the sustainable rural tourism potential of the Brčko District of BIH was evaluated by FUCOM and fuzzy MARCOS methods [31], and fuzzy PIPRECIA and fuzzy MARCOS methods for an assessment of improving the sustainable agrotouristic offer [32]. The researched literature allows for the conclusion that the management of the rural tourist offer requires the use of MCDA methods; thus, to analyze the rural tourism in BIH, the DEX method was employed in this research.

3. Materials and Methods

The model of sustainable rural tourism development in BIH includes three basic sustainability criteria: economic, social, and ecological. These are the core criteria for implementing rural tourism sustainability. The economic criteria should allow for a certain profit and make such a rural object economically viable. This cannot be accomplished solely by strengthening economic criteria, as social criteria must also be included in the process. The inclusion of these criteria creates a social connection among all actors who interact with the tourist offer: the tourist offer provider and the locals who need assistance improving that offer come first, and they should all be involved in improving the conditions in these rural settlements. Furthermore, this growth must be accompanied by increased ecological and environmental protection. To achieve the sustainable rural development of specific facilities, it is therefore necessary to consider all of these criteria.

The goal of the proposed model is to assess the current state of certain rural tourism facilities in BIH and to provide recommendations for future development. Additionally, guidelines will be provided on what needs to be improved in order to implement sustainable rural tourism. To conduct this research, a research sample of four rural facilities was formed using the database of bhselo.ba, an organization that promotes the development of rural areas. After forming a basic set and arranging tourist facilities alphabetically, four of them were chosen at random. These are the following facilities: Zlatni Bor, Gabela, Grabež, and Galić.

Following the selection of rural tourist facilities, experts were selected to match the requirements of this research. First, ten experts from BIH were chosen after an Internet search was conducted to identify those who have written on this subject and have the most experience in rural tourism. Four of the ten experts were then contacted and offered their participation in the research. A decision-making model was developed in collaboration with these experts in order to apply the evaluation of sustainable rural tourism. These experts were subjected to a Delphi-based survey [33]. This approach is reflected in the following. First, the experts evaluated the alternatives based on predefined criteria. These assessments were systematized and processed before being sent back to the experts for reconciliation, and the experts produced the final evaluations after two rounds. Email communication was used for this purpose.

The decision-making model is based on three basic sustainability criteria, each of which is further divided into two sub-criteria, resulting in the final division of three final criteria by each sub-criterion (Figure 1). There is the same number of final criteria and sub-criteria for each criterion; thus, all criteria were fairly represented in the evaluation. There are the same number of final criteria and sub-criteria for each criterion. Furthermore, because the analysis will be performed using the DEX method, the model has been adapted to reflect this. Unlike other multicriteria analysis methods, the DEX method processes data in the form of linguistic scales and presents the results in linguistic form, which is a benefit of this method [34].

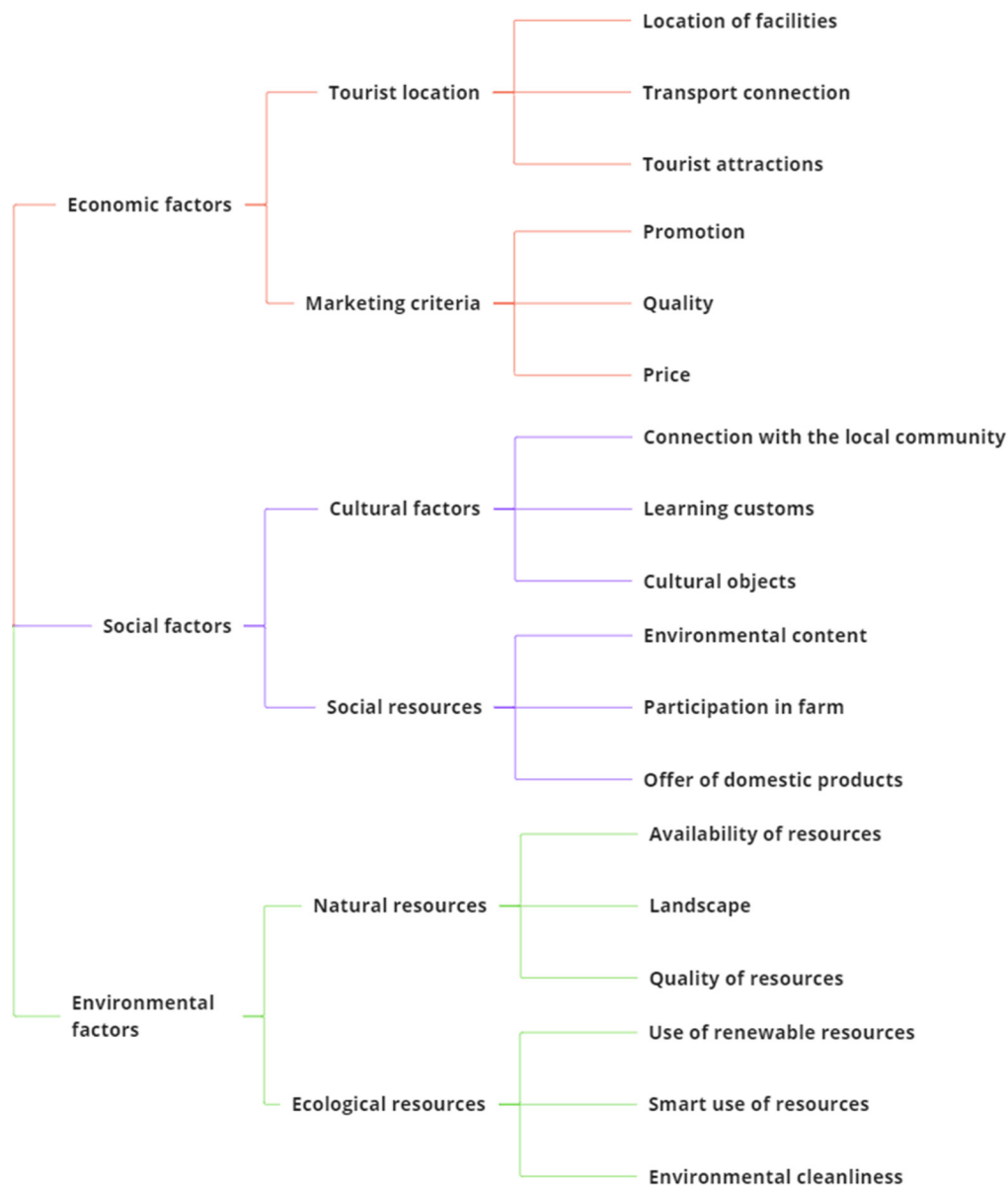


Figure 1. Structure management of sustainable development of rural tourism in BIH.

For the purposes of the DEX method, the model should include:

- Hierarchy, which is presented in the form of a decision tree, where each criterion branches into sub-criteria, up to the final criteria, which are called “leaves”.
- A value scale that determines all values of criteria and sub-criteria up to the final criteria.
- The membership function that determines the value of criteria and sub-criteria based on the final criteria.

The criteria were formed as follows:

The economic factor consists of the following sub- criteria:

- Marketing criteria. This criterion aims to examine price, quality, and promotion. This criterion will consider the cost of a bed and breakfast, what rural facilities have to offer in terms of quality improvement, and how these facilities are promoted.
- Tourist location. This criterion aims to examine the tourist attractions that are available in this facility and its surroundings, as well as the facility’s transportation connections and location.

The social factor consists of the following sub-criteria:

- Cultural factors. This criterion takes into account topics such as whether there are cultural facilities close by, whether people can learn about local customs, and how connected people are to the local community.
- Social resources. This criterion looks at the availability of entertainment venues, whether they sell local goods made on-site or in the local community, and whether visitors have the opportunity to help on the farm that is a part of the facility.

The ecological factor consists of the following sub-criteria:

- Natural resources. This criterion aims to examine the availability of natural resources around these facilities, the landscape around these facilities, and the quality of these resources.
- Ecological resources. This criterion examines whether the facilities use sustainable resources, whether they use natural resources wisely, and how clean the environment around the facility is.

In order to simplify decision-making, three value scales will be used. A scale of values from “unacceptable” to “very good” will be used for the final evaluation of the alternatives. The scale from “unacceptable” to “good” will be applied for the main criteria and its sub-criteria, and the scale from “bad” to “good” will be applied for the final criteria.

After the value scales have been determined, it is necessary to use membership functions. Using the example of the value scale of the final grade, it will be explained how the membership function is formed (Table 1).

Table 1. Decision rules.

	Economic Factors	Social Factors	Environmental Factors	Sustainable Rural Tourism Development in B&H
	33%	33%	33%	
1	unacceptable	unacceptable	-	unacceptable
2	unacceptable	<=middle	<=middle	unacceptable
3	unacceptable	-	unacceptable	unacceptable
4	<=middle	unacceptable	<=middle	unacceptable
5	<=middle	<=middle	unacceptable	unacceptable
6	-	unacceptable	unacceptable	unacceptable
7	unacceptable	>=middle	<i>good</i>	middle
8	unacceptable	<i>good</i>	>=middle	middle
9	>=middle	unacceptable	<i>good</i>	middle
10	middle	middle	middle	middle
11	>=middle	<i>good</i>	unacceptable	middle
12	<i>good</i>	unacceptable	>=middle	middle
13	<i>good</i>	>=middle	unacceptable	middle
14	middle	middle	<i>good</i>	good
15	middle	<i>good</i>	middle	good
16	<i>good</i>	middle	middle	good
17	>=middle	<i>good</i>	<i>good</i>	<i>very good</i>
18	<i>good</i>	>=middle	<i>good</i>	<i>very good</i>
19	<i>good</i>	<i>good</i>	>=middle	<i>very good</i>

- The value of the final node will be “unacceptable” if the value of two or more criteria is “unacceptable”, or if two criteria have the value “middle” and the third criterion has the value “unacceptable”.
- The value of the final node will be “middle” if the value of one criterion is “unacceptable”, the second criterion is “middle”, and the third criterion is “good”, or if one criterion is “unacceptable” and the other two criteria are “good”, or if the value is of all “middle” criteria.

- If the value of one criterion is good, i.e., if the value of two criteria is “middle” and the value of the third criterion is “good”, the value of the final node will be “good”. If one of the criteria is rated as “unacceptable”, the value “good” cannot be assigned.
- The value of the final node will be “very good” if the values of two criteria are “good” while the value of the third criterion is “middle”. The value of this criterion cannot be “very good” if any of the criteria has the value “unacceptable”.
- When determining this value scale, 27 rules were formed in this manner. Membership functions for other criteria and sub-criteria were also determined using these concepts.

4. Results

When evaluating rural tourist facilities, the Delphi method was used. First, e-mails were sent to the experts, along with a table containing the final criteria that they were to evaluate. They graded it from “bad” to “good” and returned the completed sheets. The ratings were then processed and returned to the experts to be reconciled. Ratings were agreed upon after two iterations. Table 2 displays the results of this research. According to these research results, the two rural tourist facilities, Zlatni Bor and Galić, were rated “very good”. The Gabela facility was rated “good”, while the Grabež facility was rated “middle”. Based on the individual evaluations of the final criteria, it was determined that all of these objects have advantages and disadvantages, so the best rural tourist facility will not be chosen in this research project, but the current state of the observed facilities will be reviewed.

Table 2. Gradings of the selected BIH rural tourism facilities.

Attribute	Zlatni Bor	Gabela	Grabež	Galić
Sustainable rural tourism development in B&H	<i>very good</i>	good	middle	<i>very good</i>
Economic factors	middle	middle	middle	<i>good</i>
Marketing criterion	<i>good</i>	middle	middle	middle
Price	<i>good</i>	<i>good</i>	<i>good</i>	middle
Quality	middle	bad	middle	middle
Promotion	middle	<i>good</i>	bad	middle
Tourist location	unacceptable	middle	middle	<i>good</i>
Tourist attractions	middle	<i>good</i>	middle	<i>good</i>
Transport connection	bad	bad	middle	<i>good</i>
Location of facilities	middle	middle	middle	middle
Social factors	<i>good</i>	<i>good</i>	middle	<i>good</i>
Cultural factors	middle	middle	middle	<i>good</i>
Cultural objects	middle	middle	middle	middle
Learning customs	middle	middle	middle	middle
Connection with the local community	middle	middle	middle	<i>good</i>
Social resources	<i>good</i>	<i>good</i>	middle	<i>good</i>
Entertainment content	middle	middle	middle	middle
Offer of domestic products	middle	middle	middle	middle
Participation in the farm	<i>good</i>	<i>good</i>	middle	<i>good</i>
Environmental factors	<i>good</i>	middle	middle	middle
Natural resources	<i>good</i>	<i>good</i>	<i>good</i>	<i>good</i>
Availability of resources	<i>good</i>	<i>good</i>	<i>good</i>	<i>good</i>
Landscape	<i>good</i>	middle	middle	<i>good</i>
Quality of resources	<i>good</i>	middle	middle	middle
Ecological resources	middle	unacceptable	unacceptable	unacceptable
Use of renewable resources	bad	bad	bad	bad
Smart use of resources	middle	middle	middle	middle
Environmental cleanliness	<i>good</i>	middle	middle	middle

The rural tourist facility Zlatni Bor had 11 of the 27 auxiliary criteria rated as “good”, while three criteria were rated as “unacceptable” or “bad”, which represent the worst ratings. The other criteria were rated “middle”. The Gabela rural tourist facility had 8 criteria that were graded “good”, while four criteria had the grade “unacceptable” or “bad”. A total of 15 criteria had a “middle” rating. The rural tourist facility Grabež had a “good” rating for three criteria, an “unacceptable” or “bad” rating for three criteria, while the other criteria received a “middle” rating. The rural tourist facility Galić was

rated “good” for 12 criteria, “unacceptable” or “bad” for two criteria, and “middle” for the other criteria.

By analyzing the criteria that were rated “unacceptable” or “bad”, we came to the conclusion that the biggest problem with these facilities is that they do not use renewable resources. None of the analyzed facilities have solar panels to heat water for tourists. Furthermore, the rural tourist facility Grabež has a “bad” rating in terms of promotion, because this facility is not visible on any online medium either as an official website or as an account/page on social networks. The Gabela facility’s accommodation facilities are of poor quality: in the rooms, tourists are renting out old beds and wardrobes that have not been restored and are in poor condition. However, there are some basic issues that facilities cannot influence, such as road connection and tourist access to these facilities, which are therefore more challenging. The quality and availability of resources are two advantages of these facilities.

Radar charts created with the DEXi software tool were used for a detailed assessment of individual rural tourism facilities. Because the main sustainability criteria were observed, the main graphs are presented in the shape of a triangle. The hexagonal shape of the sub-criteria represents the six that were used in total. Because the outer limits of these geometric bodies represent the best values of the corresponding criterion, as the value of the sub-criterion decreases, it is graphically represented by approaching the center of these objects. The lowest value is represented in the hexagon figures’ center.

Observing the values of the main criteria, it can be seen that the rural tourist facilities Zlatni Bor and Galić have two main criteria rated as “good” (Figure 2). For the Zlatni Bor facility, these are social and ecological criteria, while for the Galić facility, these are economic and social criteria. The rural tourist facility Gabela has one main criterion rated as “good”, and that is the social criterion, while the rural tourist facility Grabež has all the main criteria rated as “middle”.

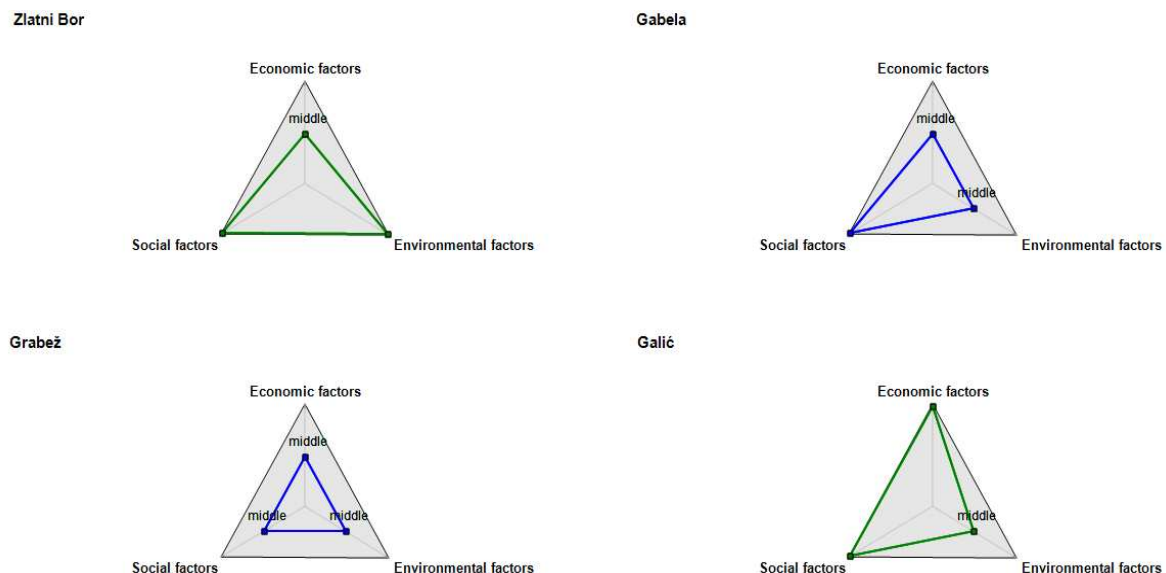


Figure 2. Evaluation of rural tourist facilities by the main criteria.

Observing the results for the sub-criteria, it can be concluded that the rural tourist facility Galić has the highest ratings, namely: tourist location, cultural factor, social factor and natural resources (Figure 3). This is followed by the Zlatni Bor facility with the three highest rated sub-criteria: marketing criteria, social factors and natural resources. The Gabela facility has two sub-criteria that are rated the best: social factors and natural resources, while the Grabež facility has only natural resources rated as best. When it comes to the least rated sub-criteria, the ecological resources criterion stands out because renewable resources are not used in these facilities, resulting in an extremely low rating.

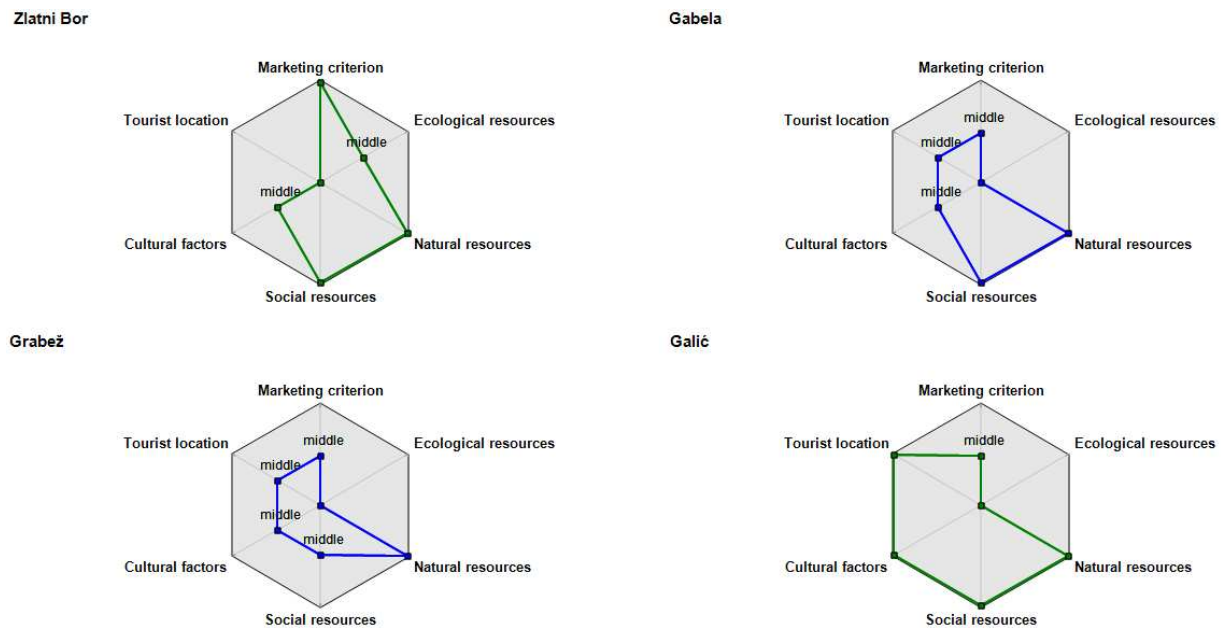


Figure 3. Evaluation of rural tourist facilities by the sub-criteria.

5. Discussion

In order to evaluate the current situation and to provide suggestions for improving the sustainability of rural tourism, a multicriteria model was used in this research to analyze the rural tourist facilities in BiH. When analyzing these facilities, it was necessary to evaluate them using the set criteria, and an expert decision-making model based on the evaluations of four experts was used in this process. Using the Delphi method, data were gathered, and to obtain the results, a decision model adapted to the DEX method had to be developed. Four rural tourist facilities were randomly selected for analysis, and each of these alternatives was examined using this model.

An overview of the present state of selected facilities was conducted to examine the advantages that these facilities must employ as well as the shortcomings that must be addressed in order to achieve the sustainable development of rural tourism in BiH. Basic sustainability criteria were used as the starting point for evaluating the sustainability of these facilities. Economic, social, and ecological criteria make up these basic criteria [35]. Each of these criteria was divided into two sub-criteria, which were then divided into three final criteria. The criteria are given equal weight in this manner. Taking into account all of these criteria helped to analyze the long-term sustainability of these facilities.

According to the findings, the rural tourist facilities of Zlatni Bor and Galić were rated as “very good”. These facilities capitalized on BiH’s advantages in the development of rural tourism. Affordable prices and pristine, unspoiled nature are two of these benefits [29]. Looking at the economic criterion, it was determined that the problem with all of these facilities is the road connection. The foundation for tourism development is transportation connectivity [36]; thus, more effort is required to improve access to these facilities. This must be accomplished by expanding the road network, not only to allow access to these facilities, but also throughout all of BiH. While they alone can’t do anything about this issue, rural tourist facilities can do something about their promotion.

All facilities should step up their marketing efforts in order to reach as many potential visitors as possible and encourage them to visit. This would promote the country’s tourism potential and improve its image among international tourists. Using social media is the simplest way to advertise the tourist offerings [37]. All rural tourist attractions must have active social media accounts that they can update with photos and information, as nowadays, before physically visiting a place, a tourist will first explore it virtually [38].

Similar promotional activities were suggested by other researchers in the field [39]; thus, they can be employed to the promotion of rural tourism in BiH as well.

In order to strengthen the tourist offer, the local community must be connected to the rural tourist facilities, and also, the local community will be strengthened if food is purchased from local farmers and producers. A population exodus from rural settlements will occur if the local community is not strengthened. The population will, however, continue to reside in rural areas if better living conditions are offered [31]. The local community must therefore be established as a partner in order to promote rural tourism through presentation of cultural heritage to attract tourists.

Agriculture, which continues to be the primary economic activity in rural communities, must be experienced by visitors through involvement in farm work. Acquainting tourists with the farm and participating in activities such as fruit-picking and making products from the fruits and vegetables available at the facility forms the foundation for the expansion of rural tourism. Due to the involvement of tourists in these activities, the facility becomes more exciting to tourists [40], making them happier with the offer as a natural outcome. The inclusion of tourist participation in daily operations in the offerings of rural tourist facilities is necessary for this reason. The second is the perception that the visitor is aware of the preparations made for him and that he helped with them; thus, local food and drink must be encouraged in these facilities. Rural tourist facilities must capitalize on the hospitality [7] that exists in these areas in order to satisfy tourists and encourage them to return, as only satisfied tourists will [41].

Natural resources exist in all of the rural tourist facilities that have been observed and must be utilized to promote tourism, but these natural resources must be preserved for future generations. Therefore, when boosting the tourist experience, these facilities need to pay closer attention to the use of sustainable energy sources, primarily by installing solar collectors [42]. Tourists should primarily experience the beauty of nature at these facilities, much supported by the local community in terms of cleanliness of the area for the best possible impression. However, when boosting a rural community's tourist offering, it is important to proceed with caution. As tourist capacity grows, so does the number of tourists, and it must not be forgotten that the natural environment must be protected. This can only be accomplished through the use of sustainable tourism that protects the natural environment [43] in these communities.

According to the results of this research, BiH has abundant natural resources for the growth of rural tourism. To improve the rural tourism offer, it is imperative to analyze all of the advantages and disadvantages, and it is necessary to capitalize on the advantages while addressing the disadvantages in order to improve the sustainability of rural tourism in BiH.

6. Conclusions

In this paper, the application of a multicriteria model for rural tourist facilities analysis in BiH was demonstrated, using the DEX method. A model adapted to this method was formed, and sustainability criteria were applied for the purpose of analysis of these facilities. In addition, an expert assessment of selected rural tourist facilities was also applied using the Delphi method. These facilities were chosen randomly in order to represent rural tourism in BiH.

The obtained results showed that two rural tourist facilities were rated "very good", namely the facilities of Zlatni Bor and Galić. The object Gabela was rated as "good", while the object Grabež was rated as "middle". The most serious issues with these facilities are the promotion of this type of tourism, road connections, and the lack of use of renewable energy sources. Sustainable tourism must be promoted in BiH in order to protect the natural resources available to the local communities where these facilities are located.

A limitation of this study is the use of the Delphi method to reconcile the expert opinions. The use of authentic expert opinions to follow is required in future research with various fuzzy methods that can be applied on the occasion. Another limitation of the

conducted research is that only four facilities were considered. The goal of this research, however, was not to analyze all facilities, but to provide guidelines for the development of rural tourism in BiH using these facilities as examples. Future research must evaluate all objects thoughtfully in order to obtain a realistic image from the subject. Additionally, in order for rural tourism to thrive in BiH, this research offers what needs to be improved in these facilities.

The used model should be improved in future research so that it can be applied to other areas of tourism as well. Following that, the rural tourism offer in BiH must be compared to the offer in other countries in order to determine BiH's global position in rural tourism. This would allow for a comparison and the adoption of best practices from around the world to strengthen rural tourism in BiH. In order to rank these facilities and obtain the results in numerical form, it would also be possible to use other MCDA methods in future studies.

Author Contributions: Conceptualization, A.P., A.Š. and M.N.; methodology, A.P.; software, A.P.; validation, A.Š., M.N. and A.M.; formal analysis, A.P.; investigation, M.N.; resources, M.N.; data curation, A.Š.; writing—original draft preparation, A.P. and A.Š.; writing—review and editing, A.Š.; visualization, A.Š.; supervision, M.N.; project administration, M.N.; funding acquisition, A.M. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

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