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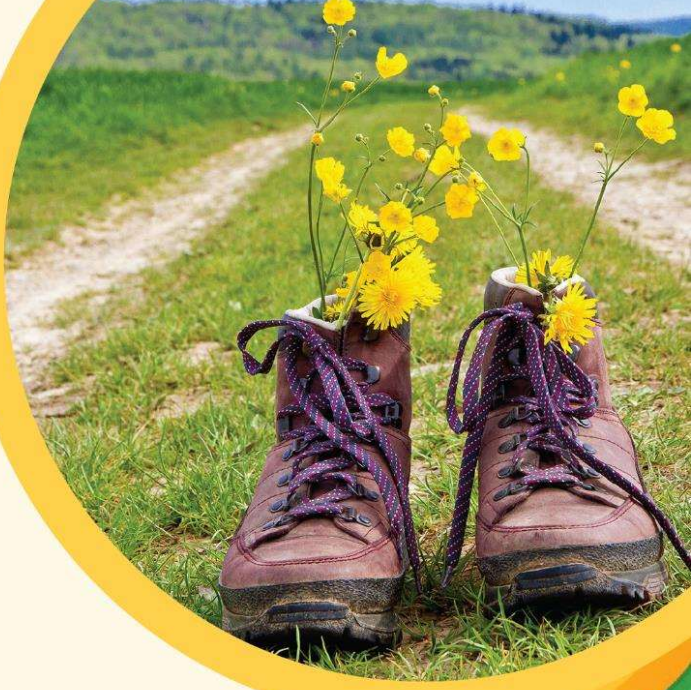

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12. THE AHP METHOD APPLICATION IN THE PROCESS OF SELECTING SUSTAINABLE ECODESTINATIONS FOR THE DEVELOPMENT OF ECOTOURISM

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ABSTRACT

This scientific paper investigates the application of Analytical Hierarchy Process (AHP) in the process of selecting a sustainable eco-destination for ecotourism development. The sustainable development of ecotourism requires a careful selection of an appropriate eco-destination that will simultaneously satisfy ecological, economic, and socio-cultural goals. The goal is to identify the key criteria and apply the AHP method for making informed decisions in the selection of eco-destinations that will meet the ecological, economic, and socio-cultural goals of sustainable development. The AHP method provides a structure for the systematic evaluation of criteria. These criteria include ecological sustainability, socioeconomic impact, cultural authenticity, and tourism infrastructure. Sub-criteria within each criterion help in a detailed analysis of the sustainability aspects of eco-destinations. In order to determine the weight values of the criteria and sub-criteria, methods such as questionnaires, interviews with experts and relevant literature are used. Through the mathematical modeling of the AHP method, a hierarchical comparison and assessment of the relative importance of each criterion is performed, in order to establish a hierarchical structure. Based on the obtained weight values, the ranking of potential eco-destinations is performed, which enables making informed decisions about choosing a suitable sustainable eco-destination for the development of eco-tourism. This method considers all relevant factors of sustainable development and helps to achieve a balance between ecological sustainability, economic prosperity, and socio-cultural authenticity. These studies contribute to the understanding of the importance of the AHP method in the process of selecting a sustainable eco-destination for the development of ecotourism. The combination of criteria and the AHP method provides structure and guidelines for decision makers and practitioners in the identification and evaluation of potential eco-destinations, thereby promoting sustainable development and improving the quality of eco-tourism destinations.

Keywords: AHP method; eco-destination; sustainable development; ecotourism; decision-making, criteria

JEL: D80, R58, L83

1. INTRODUCTION

Tourism is a mirror of the development of society, its material and cultural well-being, inter-neighbourly, interstate and world relations, phenomena, and processes. Economic and cultural wealth, desires and travel habits are the basic needs of millions of people (Todorov, et al., 2023:72).

At the beginning of the 21st century, tourism has become the world's primary economic branch, measured by all significant indicators. Taking the role of a leader and achieving a significant share in the world's gross national product and total employment, tourism has also assumed a significant responsibility in relation to the economic, social, cultural, and natural environment (Tomić, et al., 2003:96).

Ecotourism represents a key segment of the global tourism industry and is continuously gaining popularity in the modern world. This tourism product not only allows visitors to enjoy natural beauty and cultural wealth but also places special emphasis on nature conservation and sustainable development. In this context, the selection of appropriate eco-destinations becomes essential to ensure harmony between tourism activity and ecosystem preservation. Ecotourism is a tourist product that promotes the preservation of nature, cultural heritage, and local communities. It encourages responsible behaviour towards nature and promotes environmental protection awareness among tourists. In addition to providing unforgettable experiences to visitors, ecotourism plays a key role in supporting local economies and preserving biodiversity.

Although ecotourism has many advantages, its development can be challenging and carry risks for natural resources and local communities if sustainable practices are not applied. Sustainable eco-destinations are essential in order to minimize the negative impacts of tourism on the natural environment and ensure the long-term sustainability of this sector. This paper aims to investigate the application of the Analytical Hierarchy Process (AHP) as a tool for selecting sustainable eco-destinations in order to promote the sustainable development of ecotourism. Through the analysis of criteria and weights for the selection of eco-destinations, this paper will contribute to the understanding and improvement of the decision-making process in this key area of tourism.

2. THE CONCEPT OF SUSTAINABILITY IN ECOTOURISM

Immoderate and inappropriate consumption of all resources, which led to the devastation of the environment and the degradation of its values, causing harmful consequences for the natural and cultural heritage as well as for the population, caused numerous different reactions, giving rise to the creation of the concept of sustainable, balanced development. The concept of sustainable development represents a new strategy and philosophy of social development. At the very beginning of theoretical development and practical application, this concept was most often associated with environmental protection, i.e., ecology, and was associated with the desire to connect the concern for the survival of life on the planet with the preservation of natural resources. With further development and elaboration, sustainable development gains additional contexts and becomes more universal. Today, sustainable development implies general social development in

which all existing resources are used in such a way as to meet social needs with long-term preservation of resources (Krivošejev, 2014:81).

Sustainability is a key concept in ecotourism, denoting the ability to preserve natural and cultural resources over time. In the context of ecotourism, sustainability refers to achieving a balance between tourism activities and the preservation of ecosystems, local communities, and cultural heritage. This balance is necessary to ensure the long-term sustainability of this form of tourism.

Those who support the concept of sustainable development and nature conservation as their ultimate goal believe that the use of resources should be balanced. Nevertheless, for many, sustainable development represents a growing need for resources in order to improve or maintain the standard of living, and to allow new technologies to replace natural resources and enable the satisfaction of the greater needs of a growing population, without simultaneously having a negative impact on the environment (Dražić, 2020:17).

Ecotourism, through its basic concept and significance, represents a tourist approach aimed at preserving nature, while integrating the goals of sustainable tourism. Through carefully set criteria for sustainable eco-destinations, ecotourism fulfills its purpose, providing experiences that promote the preservation of the natural environment and improving the local community. This holistic approach involves achieving a balance between economic benefits from tourism and environmental protection, thus achieving synergy between the goals of sustainable tourism and specific sustainability standards in ecotourism. Through clearly defined objectives of sustainable tourism, ecotourism lays the foundation for responsible travel that not only enriches visitors, but also contributes to the long-term preservation of ecosystems and local cultures.

This concept combines economic, environmental, and social aspects to create a balance between tourism activities and the long-term preservation of natural and cultural values. Sustainability in ecotourism means the ability to preserve natural and cultural resources over time, while simultaneously meeting the needs of current generations of tourists and local communities, without endangering future generations. This concept aims to achieve a balance between tourism activities and the preservation of ecosystems, biodiversity, cultural heritage, and social values. Criteria for sustainable eco-destinations play a key role in the assessment and development of eco-tourism destinations. These criteria help ensure that tourism activities are carried out in accordance with the principles of sustainability, preserving nature, culture, and local communities.

The development of tourism cannot be viewed separately from the overall development and changes in concepts and approaches in managing and directing development. The period of dominance of the concept of economic growth and development corresponds to the dominance of the concepts of mass industrial tourism. In this concept, the economic approach and economic methods in tourism development planning prevailed. The success of tourism development is primarily evaluated by economic indicators (realized profit, employment, participation in the gross national product, etc.). In addition to positive medium-term economic effects, that approach also produced long-term negative spatial, environmental, and social effects. Those effects had a rebound effect on the reduction of the quality of the tourist offer and the drop in demand for tourist destinations with degraded space, resources and environment and damaged socio-cultural values and characteristics of local communities (Maksin, et al., 2009:15).

The World Tourism Organization UNWTO defines sustainable tourism as "tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, industry, the environment and host communities." This concept of sustainable tourism emphasizes the importance of a balance between tourism activities, nature conservation and social

prosperity, in order to preserve natural resources in the long term and support local development (UNWTO, 2013).

Sustainability in ecotourism includes the following key aspects: (Stojanović, 2011)

a) Conservation of nature: Sustainable ecotourism aims to minimize harmful effects on the natural environment. This includes the preservation of ecosystems, biodiversity, and natural resources as essential resources for ecotourism.

b) Social sustainability: The social dimension of sustainability entails respecting the rights of local communities, encouraging economic benefits for those communities, and promoting cultural diversity and traditions.

c) Economic sustainability: Ecotourism should be economically sustainable, providing stable sources of income for local communities and the tourism industry.

2.1. The concept and significance of ecotourism

Ecotourism, Responsible Tourism, Sustainable Tourism and Nature-Based Tourism have become dominant concepts since the mid-1980s. Responsible tourism is tourism that operates in such a way as to minimize the negative impact on the environment. Nature-based tourism is the term for any activity or trip with a focus on nature. It also includes mass tourism and thus differs significantly from ecotourism. Sustainable tourism is a way of optimal use of tourist resources, without degradation, with the possibility of use by future generations. What creates some confusion is the fact that all definitions of the aforementioned forms of tourism are debatable. What one person or company calls ecological, another defines as sustainable, and another defines as responsible. The main differences between these terms are motive and ethics. Are resources left intact for future generations? Is there a genuine effort to help local economies? Is local culture respected and appreciated, not just photographed? (Joksimović, 2022:80).

Ecotourism is becoming increasingly popular over time due to changes in tourist perception, increased environmental awareness and the desire to explore the natural environment. Ecotourism has become one of the fastest growing sectors of the tourism industry, with growth of 10-15% annually. At the same time, this tourism product is an increasing source of income for the long-term management and care of more than 33,000 protected areas around the world (Ibidem, 82).

2.2. Goals of sustainable tourism

The main goal of sustainable tourism is to enable people to enjoy and gain knowledge about the natural, historical, and cultural features of the environment, while preserving the integrity of the area and encouraging economic development and the well-being of local communities. The concept of sustainable tourism promotes: (Maksin, et al., 2009:15)

• Development of a high-quality tourist product that meets current tourist needs, while preserving tourist resources for future generations;

• Preservation and improvement of the quality of the environment, optimal use and protection of natural and cultural resources, goods and values;

• Economic development, preservation of social integrity and improvement of the quality of life of local communities in the tourist area;

• Affirmation and preservation of the cultural identity of the tourist area and traditional values, while contributing to intercultural understanding and tolerance;

• Economic profit (direct and indirect) from tourism and in tourism, as well as contribution to reduced poverty of the local population and

• Strategic planning and management of sustainable development of tourist areas.

In recent years, sustainability in the tourism industry has become a topic of increasing importance. A key concept in this area is sustainable development, which includes environmental, economic, and social aspects necessary to achieve sustainable growth and protect valuable natural and cultural resources. This approach emphasizes the need for a balance between economic benefit, environmental protection, and social prosperity to ensure long-term conservation of natural and cultural assets (Achmad, et al., 2023:83345).

2.3. Criteria for sustainable eco-destinations

In order to achieve sustainability in ecotourism, it is necessary to set certain criteria and guidelines. In practice, there are the following criteria for sustainable eco-destinations:

- Nature conservation: Protection and conservation of natural resources, including biodiversity, habitats, water resources and air. Sustainable ecotourism minimizes negative impacts on the natural environment, including reducing pollution and ecosystem degradation.
- Social sustainability: Respect and support for the rights and needs of local communities. This includes involving local residents in the planning and management of tourism activities, promoting cultural diversity, and supporting traditional ways of life.
- Economic sustainability: Creating economic profit for local communities and the tourism industry. Sustainable ecotourism should provide stable sources of income and jobs, promoting economic benefits at the local level.
- Eco-efficiency: efficient use of resources, minimization of waste and rational management of energy and water resources.
- Education and awareness: Raising awareness among tourists and local communities about the importance of preserving nature and cultural values. Education plays a key role in promoting responsible behavior towards nature and culture.
- Quality of tourist experience: Providing high quality tourist experiences. Activities that promote environmental awareness and close contact with nature. Preserving authenticity and authentic cultural experiences.
- Accessibility and management: Accessibility of the destination and tourism activities for different groups of people, including people with disabilities. Effective management of the destination to avoid excessive tourist pressures and preserve the quality of the experience.

Together, these criteria form the basis for the evaluation and development of sustainable ecotourism destinations. Their application helps preserve nature and culture, supports local communities, and contributes to the sustainable development of ecotourism. Essentially, sustainability in ecotourism aims at the harmonious coexistence of tourism and the natural

environment, creating positive social and economic impacts for local communities and promoting long-term conservation of resources for future generations.

Measuring sustainability in ecotourism can be challenging, but crucial to making informed decisions. Sustainability indicators, such as ecological footprint, economic benefits, social impacts, and biodiversity indices, can be used to assess the sustainability of ecotourism destinations. The concept of sustainability is central to ecotourism, as it allows tourism activities to be aligned with the goals of preserving nature, cultural resources, and local communities. Understanding sustainability and applying appropriate criteria are key to the development of ecotourism as a sustainable and responsible industry. In the following chapters, we will explore how the AHP method can be applied to facilitate the selection process of sustainable eco-destinations.

3. THE IMPORTANCE OF SUSTAINABLE ECODESTINATIONS

Modern tourists are looking for experiences that give them a sense of closeness to natural values and the local community. Any tourist destination that intends to attract such visitors must protect its resources and emphasize a sense of integration with the local community. According to research, the reasons why ecotourists differ from conventional tourists are as follows: (Bošković, 2020: 91)

- Stay in uninhabited destinations;
- Stay in untouched nature;
- Learning about life in the wild and nature;
- Observation of wild animals and plants;
- Getting to know the resident population and their culture;
- A sense of the benefits that the local community derives from travel;
- A challenge, both physically and intellectually.
- Depending on the interest in the environment, we can recognize two types of ecotourists in the literature: (Marković, 2019:27)

1. “Hard” ecotourists - these ecotourists are deeply interested in nature conservation and possess knowledge about ecology. They are willing to travel under more difficult conditions, with little comfort, in order to experience authentic experiences on specialized ecotourism trips. These tourists usually undertake long and specialized trips to areas that are relatively protected by nature, travel in small groups and often do not use the services of intermediaries such as travel agencies or tour operators, nor the services that the destination can provide.

2. “Soft” ecotourists - these ecotourists are also interested in nature and environmental protection but are more inclined to more comfortable travel conditions. They can use the services of travel agencies and tour operators to organize their ecotourism experiences. In addition, they are not necessarily as specialized as “hard” ecotourists and will often visit more popular destinations.

Table 1. Characteristics of "hard" and "soft" ecotourists

"Hard" ecotourists	"Soft" ecotourists
High environmental engagement	Low environmental commitment
Destination visits with a special focus	Destination visits that serve different purposes
Long journeys	Short-term trips
Smaller groups of ecotourists	Larger groups of ecotourists
Active physical participation	Passive physical participation
Physically demanding	Physically comfortable
Minimal services are expected	Services are expected
Intense connection with nature	Superficial connection with nature
Focus on individual experience	Focus on tourist guide interpretation
Independent travel organization	Organizing travel by tour operators

Source: Modified by author Todorov P. according to Weaver. D.B. 2005, 447.

We can talk about certain specificities of ecotourists. When it comes to the age structure, there is a relatively wide age range of participants in ecotourism, that is, both relatively young and older people are interested in this type of tourism. The age of the ecotourist determines the severity and type of activities they engage in on the trip, and is also related to the cost of the trip. When it comes to the gender structure, there is an equal interest of both women and men in ecotourism. The majority of ecotourists have a high level of education and usually travel in pairs. Ecotourists stay relatively longer at the destination, and also spend more compared to ordinary tourists (Stanišić, Lazarević, 2023:101).

The trips of these tourists are not driven by a great desire for experienced and exclusive experiences in ecotourism destinations. Instead, ecotourism activities and contents often form only part of their more comprehensive trips that have multiple goals or purposes.

Usually "hard" ecotourists opt for specialized ecotourism tours, while "soft" ecotourists integrate ecotourism as one of the aspects of a wider tourist experience (Table 1). It is important to note that both types of ecotourists play a significant role in the promotion of nature conservation and environmental awareness, each in their own way, thus contributing to ecotourism as a sustainable form of tourism (Rabotić, 2013:36).

Table 2. Types of protected areas in Serbia

Strict nature reserve	An area of unchanged natural features with representative natural ecosystems, intended exclusively for the preservation of the original nature, gene pool, ecological balance, monitoring of natural phenomena and processes, scientific research, which does not disturb natural features, values, phenomena and processes.
Special nature reserve	An area with unaltered or slightly altered nature, of particular importance due to its uniqueness, rarity or representativeness, and which includes the habitat of endangered wild species of plants, animals and fungi, without settlements or with rare settlements where people live in harmony with nature, intended for the preservation of existing natural features , gene pool, ecological balance, monitoring of natural phenomena and processes, scientific research and education, controlled visits and preservation of the traditional way of life.
National park	An area with a large number of diverse natural ecosystems of national importance, prominent landscape features and cultural heritage where people live in harmony with nature, intended to preserve existing natural values and resources, the overall landscape, geological and biological diversity, as well as to satisfy scientific, educational, spiritual, aesthetic, cultural, touristic, health-recreational needs and other

	activities in accordance with the principles of nature protection and sustainable development.
Monument of nature	A smaller unaltered or partially altered natural spatial entity, object or phenomenon, physically clearly expressed, recognizable and/or unique, representative geomorphological, geological, hydrographic, botanical and/or other features, as well as human-made botanical value of scientific, aesthetic, cultural or educational importance.
Protected habitat	An area that includes one or more types of natural habitats important for the conservation of one or more populations of wild species and their communities.
Landscape of exceptional features	An area with a recognizable appearance with significant natural, biological-ecological, aesthetic and cultural-historical values, which developed over time as a result of the interaction of nature, the natural potential of the area and the traditional way of life of the local population.
Nature park	An area of well-preserved natural values with mostly preserved natural ecosystems and picturesque landscapes, intended to preserve the overall geological, biological and landscape diversity, as well as to satisfy scientific, educational, spiritual, aesthetic, cultural, touristic, health-recreational needs and other activities aligned with the traditional way life and the principles of sustainable development.

Source: https://pzzp.rs/zastita-prirode/zasticena-podrucja.html

Ecological destinations usually include natural areas that are protected and have preserved natural characteristics and a rich diversity of wildlife. However, they can also include rural and even urban environments that have been somewhat altered. In Serbia, the Institute for Nature Protection prepares expert documents as a basis for the protection of certain areas. Protected areas in Serbia can be classified into seven different categories or types, namely: (Živković, 2009)

• National park;

• Nature park;

• Landscape of exceptional features;

• General and Special Nature Reserve;

• Monument of nature;

• Protected habitat (Table 2).

4. KEY CRITERIA FOR THE APPLICATION OF THE AHP METHOD

In the 1970s, Thomas Saaty developed the Analytical Hierarchy Process (AHP), which has been used for more than thirty years as a problem-solving method in multi-criteria decision-making (Saaty, 1970).

AHP is one of the most well-known methods in the field of scientific analysis of scenarios and decision-making through consistent evaluation of hierarchies, which are composed of objectives, criteria, sub-criteria, and alternatives. In addition, during the process of evaluating the elements of the hierarchy, until the end of the procedure and the synthesis of the results, the consistency of the decision-maker's thinking is checked and the accuracy of the obtained ranks of alternatives and criteria, as well as their weighting values, is determined (Savić, et al., 2015:597).

Analytical Hierarchy Process (AHP) modeling includes four basic phases: (Mihailović, 2016:21)

1. Structuring the problem: In this phase, the hierarchical structure of the problem is defined, which implies the identification of goals, criteria, sub-criteria, and alternatives. This step helps to clearly understand the problem elements and their interrelationship.

2. Mutual comparison of criteria and determination of relative weights of criteria: In this phase, the criteria are ranked in relation to their importance and the relative weights between them are determined. This is done by comparing pairs of criteria and using scaling to obtain numerical results.

3. Mutual comparison of alternatives and aggregating the usefulness of alternatives, i.e., determining the solution to the problem: In this phase, alternatives are considered and their mutual comparisons are made in relation to each criterion. After that, the criteria weights (from the previous stage) are used to calculate the total utility of each alternative. In this way, the problem is solved.

4. Sensitivity analysis: The last stage includes the sensitivity analysis of the solution to changes in the weights of criteria or changes in the ranking of alternatives. This helps in understanding how changes in input might affect the final decision making.

These stages form the core process of AHP and are used to make informed decisions in complex problems. Absolutely, structuring the problem and hierarchically defining objectives, criteria and alternatives are key steps in the multi-criteria decision-making process, including the Analytical Hierarchy Process (AHP). AHP offers a significant advantage through the hierarchical organization of criteria, which facilitates the efficient handling of complex problems (Ibidem).

The advantages of hierarchical structuring in AHP include:

1. More efficient analysis: Separating the problem into smaller components at different levels of the hierarchy allows the analyst to focus better on each aspect of the problem, thus simplifying the analysis and decision-making process.

2. Better understanding of the problem: The hierarchical structure allows the decision maker to understand better how different criteria and sub-criteria interrelate and contribute to the objectives, which helps in deeper understanding of the problem.

3. Easier information management: Hierarchical organization enables easier collection, organization, and management of information about criteria and alternatives.

4. Clarity and transparency: A hierarchical structure makes the decision-making process more transparent because it allows weights and preferences to be clearly associated with each level of the hierarchy.

Essentially, AHP allows decision makers to focus on specific aspects of a problem, thus facilitating assessment and evaluation process, and also contributing to a better understanding of complex situations. Hierarchical structuring is a key feature of AHP that makes it a powerful decision-making tool in various domains.

4.1. Advantages and limitations of the AHP method

According to research, the AHP method has proven to be the most frequently used technique and the most analyzed multi-criteria decision-making technique. This method has found its application in many areas: allocating resources, setting organizational priorities, creating business strategy,

qualitative management, business planning and many others. The reason for the frequent use of the AHP method is its simplicity, adaptability due to its hierarchical structure and the availability of software designed for it. However, despite its wide application and advantages compared to other methods, there are also certain limitations (Saaty, 2008).

Advantages of applying the AHP method:

1. Problem structuring: a key advantage is the ability of this method to structure very complex problems and enable decision makers to clearly separate objectives, alternatives and criteria.

2. Flexibility: the method is applicable in different areas and situations, from business analysis to environmental assessments.

3. Quantification of subjective evaluations: AHP is a tool that quantifies the subjective evaluations and preferences of decision makers. Through mathematical calculations, subjectivity is reduced which enables rational decision-making, while numerical results can be further compared and used more easily.

Limitations when applying the AHP method:

1. Careful analysis of the hierarchy: the application of the AHP method requires a careful analysis of the hierarchical structure and matrix, which requires additional time and work (Saaty, 2008).

2. Data quality: The quality and precision of the data used, and the estimated values directly affect the accuracy of the final result (Opricovic & Tzeng, 2004).

3. Complexity: AHP can be an overly complex tool, especially when applied for the first time. (Liberatore & Nydick, 2008).

5. CHOICE OF ECODESTINATION USING THE AHP METHOD

Two expert teams were formed for the purpose of choosing an eco-destination using the AHP method. The first team consists of experts from the tourism industry, and the second team consists of experts from local self-governments. Each team has three independent members with many years of experience in their respective fields of business. The experts from the tourism industry team gave their requirements that a certain eco-destination must fulfil in order to be considered suitable for tourism development. On the other hand, the experts from local self-governments team have set their criteria and priorities regarding eco-destinations with regard to local development and sustainability. Both teams will use the AHP method to evaluate and rank eco-destinations based on their specific requirements and criteria. The final result will help in the identification of eco-destinations that best suit both tourist development and local sustainability, which will significantly contribute to the improvement of the tourist offer and the preservation of the natural environment. In the specific example that will be shown in the rest of the paper, three national parks were selected: Fruška gora, Kopaonik and Stara planina[23].

According to the central register of protected areas, five national parks have been registered in Serbia, and after 41 years Serbia will get two new ones, which will have the highest level of protection (1st category of protection). Stara planina has been protected as a nature park until now, while the area Kučaj – Beljanica[1] has now been placed under state protection for the first time because of the preserved oak and beech forests, as well as other natural attractions such as caves,

[23] Names of mountains in Serbia

gorges and canyons. Also, according to the data of the central register, in Serbia there are 18 nature parks, 66 nature reserves, 23 landscapes of exceptional features, 238 nature monuments of botanical character, 73 nature monuments of geological and hydrological character and 6 protected habitats. In the process of declaration in all categories of protected areas, there are over 56 such areas, which indicates the importance and wealth of natural areas that our country has (Todorov, et al., 2023:10). A few key points that make Fruška gora a special destination: (https://www.npfruskagora.co.rs/cir/manastiri/)

• Natural beauty: Fruška gora is home to numerous beautiful landscapes, forests, lakes, and vineyards. This mountain offers excellent opportunities for hiking, walking, cycling and exploring natural beauty.

Cultural heritage: Fruška gora is known for its monasteries. The Fruška gora monasteries are a unique group of sacred buildings created in the period from the 15th to the 18th century. Of the 35 monasteries built, 16 have been preserved to this day. Throughout history, those monasteries have been a symbol of the national resistance of the Serbs to the Turkish Empire and the protectors of a great national treasure, embodied in sacred art and architecture, preserving the spirit and collective memory of the people. The following monasteries are active today: Krušedol, Petkovica, Rakovac, Velika Remeta, Divša, Novo Hopovo, Staro Hopovo, Jazak, Mala Remeta, Grgeteg, Beočin, Privina Glava, Šišatovac, Kuveždin, and Vrdnik - Ravanica.

• There are more than 15 Orthodox monasteries on the mountain, many of them dating back to the Middle Ages. This rich cultural heritage attracts people with an interest in religious history and architecture.

• Wine region: Fruška gora is also known for its vineyards and wineries. Here you can taste excellent wines and learn about vineyards dating back to the Roman Empire. It is an ideal place for lovers of wine and gastronomy.

• Water activities: There are several lakes on Fruška gora, including the large lake Tikvara. These lakes provide opportunities for swimming, fishing, and water sports.

• Historical monuments: Apart from monasteries, there are numerous other historical monuments on the mountain, including the remains of ancient fortifications and Roman roads. This makes Fruška gora an interesting destination for history enthusiasts.

• Proximity to Novi Sad: Fruška gora is located just a few kilometers from Novi Sad, the second largest city in Serbia. Visitors can easily combine a visit to this mountain with exploring the city of Novi Sad and its many attractions.

In 1981, Kopaonik was declared the third oldest national park in Serbia after National Park Đerdap. Kopaonik is the largest mountain center in Serbia and a popular destination for skiing during the winter. Apart from skiing, it offers numerous activities such as hiking, cycling and adventure sports during the summer. The mountain is known for its ski slopes, beautiful scenery, and numerous hotels and restaurants that attract visitors year-round. This park covers an area of about 120 km^2 and includes the areas of Kopaonik mountain and offers a variety of natural beauty and richness.

The main features of the National Park Kopaonik (https://npkopaonik.rs/kulturne-vrednosti/):

• Mountain beauty: National Park Kopaonik includes beautiful mountain landscapes with rich forests, pastures, and numerous species of flora and fauna. The mountain is home to many rare and endemic plant species.

- Bird species richness: This area is home to over 150 different birds, including eagles and falcons. This makes it a popular destination for ornithologists and bird lovers.
- Recreation: National Park Kopaonik is an excellent place for an active holiday all year round. Apart from skiing, visitors here can enjoy hiking, mountain biking, quad biking and much more.
- Cultural heritage: The cultural heritage of Kopaonik is inextricably linked with the mineral wealth of this mountain. As ore dictated the political strategy of the Roman Empire, Kopaonik (as an important Dardanian mining district) became part of the Dardanian mine and the products of these mines are found throughout the Empire (from the river Tiber in the west to Primorska Cezareja[24] in the east). Previous archaeological research, although of a small scale, has provided significant data on ancient sites on Kopaonik, among which Nebeske stolice, Suvo rudište and Metođe stand out.
- Winter sports: During the winter, Kopaonik becomes a popular destination for skiing and snowboarding. There are more than 20 trails of varying difficulty, making it suitable for skiers of all skill levels.
- National Park Kopaonik offers visitors the opportunity to enjoy nature, recreation, and explore cultural and historical sights. Whether you come for winter sports, hiking or simply relaxing in a natural environment, this park has a lot to offer.

Stara planina is a real treasure island. It was declared a nature park in 1997. This mountain beauty is an area with exceptional values from the point of view of the diversity of flora and fauna and their communities, as well as geomorphological, geological, hydrological and hydrogeological peculiarities, in which the traditional way of life and cultural assets are present. The area of Nature Park Stara planina is 142,219.64 hectares. Forty plant species grow on its slopes, which are protected as natural rarities in the territory of Serbia. Some of them are: dwarf iris, alpine pasqueflower, spring pheasant's eye, Kosovian peony, green alder, grayish oak, sundew, Balkan maple, martagon lily, marsh orchids, etc. (https://www.jpstaraplanina.rs/sr/priroda.html).

Numerous animal groups are widespread in this area, which contribute to the beauty of nature. The greatest diversity of birds in Serbia, the former Yugoslavia and most of the Balkans is present on Stara planina, and it is also included in the register of areas of international importance for the birds of Europe. The mammal fauna is represented by several species, especially the European ground squirrel, snow vole, lynx and bear (Ibidem).

With the declaration of the highest category of protection in 2023, National Park Stara planina along with Kučaj-Beljanica is the youngest national park in Serbia. Stara planina is one of the most beautiful and richest natural parks in Serbia. This park, located on the eastern borders of Serbia, includes the landscapes of Stara planina mountain and offers unique natural and cultural experiences.

Key features of National Park Stara planina: (https://www.jpstaraplanina.rs/sr/priroda.html)

• Mountain beauty: Stara planina is home to numerous wild animals, forests, streams and beautiful mountain landscapes. A variety of flora and fauna, including rare and endangered species, can be found here.

• Outdoor activities: National Park Stara planina offers plenty of opportunities for hiking, biking, mountain biking, fishing, and horseback riding. During the winter, visitors can enjoy skiing and sledding.

[24] An ancient and medieval port city on the coast of the Eastern Mediterranean

• Water attractions: This park includes numerous rivers, lakes and waterfalls that provide opportunities for fishing, swimming, and water recreation.

• Cultural heritage: On Stara planina there are many traditional villages and houses, with characteristic architecture and culture. Visitors can explore these authentic parts of Serbia and learn about local history and customs.

• Wildlife: A diverse fauna lives here, including bears, wolves, and eagles. National Park Stara planina is a favorite destination for lovers of wildlife and ecotourism.

• Nature conservation: National Park Stara planina aims to preserve nature and biodiversity. Numerous initiatives for nature protection and sustainable development are implemented here.

National Park Stara planina attracts visitors with its wild beauty, diverse activities, and opportunities to explore natural and cultural wonders. Regardless of the season, this park offers numerous opportunities to enjoy nature and discover the rich cultural heritage of this region.

5.1. Selection criteria

The basic matrix consists of 7 criteria that cover all the requirements that an eco-destination should contain. The defined criteria are:

1. Environmental sustainability

2. Biodiversity

3. Water and air quality

4. Ecological tourist facilities

5. Sustainable tourism

6. Renewable resources

7. Cultural heritage

Ecological sustainability is one of the key factors for choosing an eco-destination, as tourists increasingly seek destinations that care about the preservation of nature and the local environment. It is very important that eco-destination minimizes negative impacts on nature and ecological footprints, reduces resource consumption and supports renewable energy sources. This criterion is also important because it supports the local economy, engages the population, preserves tradition, and creates a balance between human activities and environmental protection.

The biological diversity of an eco-destination stands out for the preservation of diverse ecosystems and natural habitats of various plant and animal species. By visiting such destinations, tourists are educated about the importance of biodiversity and their roles in preserving the natural balance. An eco-destination that promotes biodiversity spreads awareness of efforts to conserve diverse ecosystems and species.

Eco-destinations that stand out for their water and air quality provide a healthier and better environment for visitors. Clean water means that tourists can enjoy springs, rivers, and lakes, supporting the preservation of the aquatic ecosystem. Similarly, high air quality ensures fresh and clean air for visitors, who often seek an escape from the polluted city environment precisely at such eco-destinations.

If the eco-destination has some tourist facilities, it will be more interesting and attractive to visitors. And if these objects are of ecological importance, they will develop awareness about nature conservation and reduction of tourism negative impact. Such facilities often use recycled materials and waste, renewable energy sources and apply all environmental protection measures. As a criterion, they are important because they create a balance between tourism and nature protection, and visitors are given the opportunity to support local initiatives on the protection of that particular eco-destination.
Sustainable tourism represents concern for the ecology, economy, and social aspect of an eco-destination. Through this type of tourism, traditional ways of life are preserved, tourists are educated about the ecological and cultural aspects of the destination, and the negative impact on nature and local culture is minimized.
Renewable energy sources are the greatest wealth that nature provides us, so it is important to look at this criterion for choosing an eco-destination. The use of renewable energy sources reduces the emission of harmful gases and the creation of a bad ecological climate at the destination itself and its surroundings. The use of solar energy, wind energy and water can encourage visitors to start turning more to these energy sources in their households.
The last but not the least important criterion is cultural heritage. The rich cultural heritage attracts tourists who want to have an authentic and unforgettable experience. Through cultural heritage, eco-destination preserves the tradition, architecture, art and customs of a region.

5.2. Determining the significance factor

The criteria that have been set must be compared with each other, in order to determine the weighting factors or importance factors for each individual criterion. This actually means that even if there are several criteria that must be taken into account when making a decision, not all of them will have equal weight and influential value on the final outcome.

Saaty defined a nine-point scale for assigning weights to attributes. The following table shows a nine-point scale.

Table 3. Nine-point scale Saaty, 1977

Importance intensity	Definition	Explanation
1	Equal preference	i and j equally important
3	Moderate preference	i is slightly more important than j
5	Strong preference	i is more important than j
7	Very strong preference	i is much more important than j
9	Extreme preference	i is absolutely more important than j
2, 4, 6, 8	A compromise between the above-mentioned values	When the decision maker cannot decide on one of the values
The reciprocal of the value above	If activity i has a certain value from the table when compared to activity j, then activity j has a reciprocal value when compared to i	

Source: authors.

A value of 9 is the greatest dominance of one attribute over another, while 1/9 (reciprocal value) is the least significant value that an attribute has in relation to its pair. The following table presents the results of the first expert team. Table number 5 shows the legend with the used criteria.

Table 4. Significance factors and the initial matrix with values

Criterion	C1	C2	C3	C4	C5	C6	C7	Importance of criterion (%)
C1	**1**	**7**	**3**	**5**	**1**	**5**	**7**	**33%**
C2	**1/7**	**1**	**1/7**	**1/5**	**1/5**	**1/3**	**1**	**3%**
C3	**1/3**	**7**	**1**	**3**	**3**	**5**	**5**	**20%**
C4	**1/5**	**5**	**1/3**	**1**	**7**	**3**	**3**	**18%**
C5	**1**	**5**	**1/3**	**1/7**	**1**	**1**	**5**	**13%**
C6	**1/5**	**3**	**1/5**	**1/3**	**1**	**1**	**1**	**6%**
C7	**1/7**	**1**	**1/5**	**1/3**	**1/5**	**1**	**1**	**4%**
Score	3.019	29.000	5.210	10.010	13.400	16.333	23.000	**100%**
	1.000	1.000	1.000	1.000	1.000	1.000	1.000	

Source: authors.

Table 5. Criterion legend

C1	Environmental sustainability
C2	Biodiversity
C3	Water and air quality
C4	Eco-tourism facilities
C5	Sustainable tourism
C6	Renewable resources
C7	Cultural heritage

Source: authors.

On the model presented, we can see that ecological sustainability was singled out as the most important criterion for choosing an eco-destination with 33%. A high percentage of significance was also recorded for *Water and Air Quality*, which is 20%, and *Eco-tourism Facilities* with 18%. Together, these three criteria represent over 70% of the total criteria importance, which in the next steps will greatly influence the final outcome of the selection. It is important to develop awareness among tourists about preserving nature and the local environment but reducing the tourism development negative impact and the natural reserves settlement. In addition to taking care of nature protection, it is important that eco-destination provides its visitors with healthy conditions in the form of quality water and clean air, and apart from that they can enjoy ecological tourist facilities. Such conditions further imply a better tourist potential, but without the exploitation of natural beauty.

Sustainable tourism is ranked with 13% of the total importance. Although everyone can score these criteria differently, these three criteria emphasize the development of tourism, but through the ecological aspects of preserving the eco-destination. The remaining three criteria, even if they carry a smaller percentage of importance, are certainly not negligible. From the table we can see that they are ranked as follows: *Renewable resources* with 6%, *Cultural heritage* with 4% and *Biodiversity* with 3%. Biodiversity and cultural heritage of eco-destinations is what distinguishes them from each other, so it is difficult to compare alternatives according to that criterion because sometimes not enough is known about these parameters, and at some distances cultural heritage may be absent.

5.3. Determination of useful value

The final solution to the analyzed problem of choosing an eco-destination is obtained after determining the useful value. Based on knowledge and experience, the second expert team evaluated each of the criteria for the three given alternatives with grades from 1 to 5.

The grading scale is:

• 1 - insufficient

• 2 - enough

• 3 - good

• 4 - very good

• 5 – excellent

The grade was formed as an average of the all three experts values and this part is very important, precisely because it requires a very good knowledge of the given eco-destinations.

Table 6. Evaluated eco-destinations

Criterion	Importance of criterion (%)	Fruška gora		Kopaonik		Stara planina	
		Evaluation of experts	Points	Evaluation of experts	Points	Evaluation of experts	Points
C1	33%	4	1.333	2	0.667	4	1.333
C2	3%	3	0.089	3	0.089	5	0.149
C3	20%	4	0.786	4	0.786	5	0.982
C4	18%	4	0.708	3	0.531	2	0.354
C5	13%	3	0.401	2	0.267	2	0.267
C6	6%	4	0.240	2	0.120	4	0.240
C7	4%	5	0.195	2	0.078	2	0.078
Score		4	**0.536**	3	**0.363**	3	**0.486**

Source: authors.

The ecological sustainability criterion did not receive the highest score for any of the three offered alternatives, which implies that there is room for development in this direction. The Fruška gora and Stara planina national parks were rated equally positively, while Kopaonik was rated a little lower.

When we talk about biodiversity, Stara planina is rated the best, with the highest rating of 5. Such results are not unexpected because we are talking about an eco-destination that is the least tourist-organized and visited of the 3 offered, thus preserving a greater number of plant and animal species. We can see similar ratings in the next criterion concerning water and air quality. Stara planina is characterized by a large number of springs and waterfalls, also the air is cleaner due to the altitude and the distance from urban settlements. On the other hand, Kopaonik is located at a high altitude, but due to increased commercialization and the development of various tourist facilities, it is rated somewhat lower.

When we talk about ecological tourist facilities, Fruška gora leads the way compared to other competitors. They offer visitors various contents, but there is definitely room for improvement in these areas, which is especially noteworthy for Stara planina, which is rated with grade 2.

Sustainable tourism is a criterion that is rated almost equally poorly by all three alternatives. As one of the important criteria, it significantly influences the choice of eco-destination. Sustainable tourism is important for informing visitors about the ecological and cultural aspects of the destination, as well as preventing the spread of negative impacts of tourism on the destination.

Natural reserves are the main carriers of renewable energy sources, but it is important that they are incorporated into the tourism of an eco-destination. Having such energy sources does not mean that they are used properly. The expert team rated Kopaonik the lowest, while Fruška gora and Stara planina have satisfactory ratings.

Without competition, Fruška gora received the highest marks in terms of cultural heritage. A large number of monasteries and buildings of historical importance set this destination apart from alternative options. The rich cultural heritage attracts visitors, but also helps in preserving the local tradition.

All in all, when the weighting factors and evaluations of all experts are recalculated, Fruška gora was chosen as the best eco-destination, followed by Stara planina, and then Kopanik.

6. DICUSSION OF OBTAINED RESULTS AND CONCLUSION

By systematically evaluating and prioritizing criteria such as environmental preservation, socio-cultural relevance, economic sustainability and destination management, the AHP method ensures a comprehensive consideration of various factors. This holistic approach is crucial in fostering responsible tourism practices, ensuring that the chosen ecotourism destination is aligned with the principles of sustainability and minimizes negative impacts on the ecosystem.

Also, the application of the AHP method in the process of selecting a sustainable ecotourism destination for the development of ecotourism represents a strong step towards achieving a balance between tourism development and nature conservation. This approach not only facilitates decision-making, but also advocates sustainable practices that can bring long-term benefits to the environment, local communities and tourists.

The conclusion of this scientific research, conducted using the AHP method for evaluating eco-destinations and making decisions in the context of eco-tourism and sustainable development, emphasizes the importance of precise assessment of criteria and priorities in the selection of appropriate destinations. The expert team evaluation analysis in this research, where Fruška gora, Stara planina and Kopaonik were the subject of analysis, illustrates the application of the AHP method as a powerful tool for quantitative assessment and ranking of eco-destinations.

This conclusion highlights three key aspects. First, the AHP method proved to be an effective instrument for the systematic and objective analysis of criteria relevant to eco-destinations, enabling the quantification of expert team assessments and making informed decisions. Second, when choosing an eco-destination, priority should be given to sustainable development and nature conservation. Destinations that achieve high marks in terms of sustainability should be a priority in the development of ecotourism. Third, it is important to set clear criteria and priorities that reflect the specific requirements and goals of ecotourism. In this case, factors such as sustainability and protection of the local population play a key role in the choice of destination. In conclusion, the AHP method provides a valuable framework for decision-making in the selection of eco-destinations in order to promote sustainable ecotourism. This methodological approach can be applied to other destinations in order to identify the most suitable locations for ecotourism

development, taking into account specific criteria and priority objectives of nature conservation and sustainable development.

Based on the AHP analysis for choosing the best ecotourism destination among Fruška gora, Stara planina and Kopaonik, we conclude that Fruška gora is the most suitable destination for ecotourism. Fruška gora received the highest marks in both expert teams (tourism industry and local governments), thanks to its high marks in sustainability, natural beauty and cultural heritage.

Stara planina also has its own attractions and brings in visitors, resulting in high ratings. Kopaonik, although popular, receives lower marks, primarily due to increased tourist traffic during the winter months, which is considered potentially dangerous for the local population and the environment. Considering this analysis and the priority criteria set by the expert teams, Fruška gora stands out as the best choice for an ecotourism destination in this competitive comparison.

Essentially, the application of the AHP method in the selection of an ecotourism destination goes beyond a mere decision-making tool, it serves as a catalyst for fostering a harmonious relationship between tourism growth and environmental preservation. By promoting sustainable practices, this method lays the foundation for a tourism industry that respects and protects the natural environment, enriches local communities and provides meaningful and responsible experiences for tourists.

Limitations in writing the paper are only part of the challenges the research has encountered. It is important to note that subjectivity in expert opinions, although identified as a potential limitation, is an inherent challenge in research of this type, where experts provide their own ratings and assessments. In addition, reliance on available data limits the precision of analyses, and an expanded approach to data collection is necessary to further improve the validity of the results.

In future research, additional refinement of the criteria used in the AHP analysis would be crucial. Developing more precise and specific criteria would allow a deeper understanding of the priorities of ecotourism destinations and better informed decisions. In addition, a wider range of interested parties' perspectives should be included to ensure a more complete analysis. This implies the inclusion of the local population, non-governmental organizations, and other relevant subjects whose views should be considered when evaluating the sustainability and suitability of destinations for ecotourism.

Conducting field assessments represents an additional dimension of future research. Direct observation of destinations enables the collection of examples of good practice, the identification of potential problems and a better understanding of actual conditions on the ground. This additional analysis would add depth to the evaluations and ratings of the expert teams, increasing the reliability of the results.

Special focus in future research should be devoted to the long-term impacts of ecotourism on local communities and ecosystems. This type of research would contribute to the development of more sustainable strategies and policies in the field of ecotourism. Monitoring long-term effects would allow a better understanding of how these initiatives affect local economic structures, socio-cultural dynamics and nature conservation, thereby informing future decisions and achieving more efficient tourism development.

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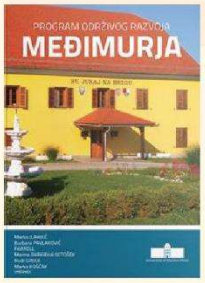
Međimurje u pokretu

TURISTIČKA ZAJEDNICA
BJELOVARSKO-BILOGORSKE ŽUPANIJE

TURISTIČKA ZAJEDNICA GRADA SAMOBORA

TURISTIČKA ZAJEDNICA SVETA NEDELJA

TURISTIČKA ZAJEDNICA GRADA JASTREBARSKOG



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