



Research Article

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Assessing the Influence of Sustainable Tourism Practices on Conservation and Socio-Economic Development in Kosovo's Protected Areas

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Abstract

This study investigates the impact of sustainable tourism on the conservation of Kosovo's protected areas, offering insights into the synergy between tourism development and environmental preservation. Through a survey of 114 protected areas and an analysis of managers' responses to 15 questions, the research evaluates the effects of sustainable practices on local employment, biodiversity, environmental integrity, and the preservation of cultural heritage. Utilizing linear regression and correlation analysis, the findings reveal that sustainable tourism practices significantly contribute to local employment growth, biodiversity conservation, environmental protection, and the maintenance of cultural heritage. These outcomes illustrate that sustainable tourism not only upholds the ecological and social fabric of protected areas but also promotes economic advancement. The study highlights the essential role of sustainable practices in protected areas, emphasizing their importance in ensuring the long-term preservation of these regions while supporting local economies and cultural heritage. The research underscores the necessity of integrating sustainable tourism within protected areas to achieve a balanced approach to conservation and development.

Keywords: Sustainable Tourism, Protected Areas, Environmental Conservation, Economic Development, Cultural Heritage Preservation

1. Introduction

Within the discourse on the interaction between tourism and protected area conservation, suggesting an inherent conflict between the two. Martinez (2021) counters the traditional view of their

opposition by highlighting the emergence of protected areas as major tourist attractions. This development, argues Martinez, illustrates the sustainability of a synergistic relationship that can promote both tourism growth and environmental conservation (Martinez, 2021). However, in reality, globally protected areas have become focal points for tourist attraction, underscoring the potential for a symbiotic relationship between tourism development and environmental conservation. These places offer unique opportunities for promoting nature-based tourism, based on the principles of sustainability. Therefore, it is imperative that tourism in these areas is developed in a way that takes into account its multifaceted impacts - economic, social and environmental - aiming to harmonize the needs of visitors, the tourism industry, local communities and the environment. Sustainable tourism, by its design, should strengthen long-term conservation efforts, ensuring that natural heritage is not endangered by inappropriate management practices or unsustainable consumption of resources by tourists.

In Kosovo, a comprehensive study was undertaken through a printed survey questionnaire distributed across 114 protected areas to assess the prevalence and impact of sustainable tourism practices. This research, targeting the managers of these protected areas, aimed to explore how such practices influence conservation efforts, local employment, biodiversity, environmental integrity, and the preservation of cultural and historical values. The application of linear regression and correlation analyses facilitated a quantitative examination of the relationships between sustainable practices and their outcomes in these contexts.

Moreover, the International Union for Conservation of Nature (IUCN) provides a refined definition and guiding principles for protected areas, emphasizing their role in conserving nature alongside associated ecosystem services and cultural values. This framework categorizes protected areas based on their management objectives, ranging from strict nature reserves to areas managed for sustainable use of natural ecosystems, highlighting the diversity of approaches to conservation. This introduction contextualizes the study within these broader definitions and classifications, setting the stage for a detailed examination of sustainable tourism's role in enhancing the ecological, social, and economic fabric of protected areas in Kosovo.

2. Literature Review

The nexus between sustainable tourism and conservation within protected areas has been a focal point of environmental and tourism research, reflecting a paradigm shift towards recognizing the symbiotic relationship between tourism development and environmental preservation (Anderson & Clark, 2023; Bell & Morrison, 2019). The burgeoning interest in this field is propelled by the need to address the dual objectives of conservation and socio-economic development within protected regions (Johnson & Lee, 2022; Patel, 2021).

Sustainable tourism, characterized by its minimal environmental impact and contribution to local economies, emerges as a vital strategy for the conservation of biodiversity and cultural heritage (Buckley, 2012; Dwyer et al., 2014). This approach aligns with global and regional frameworks advocating for the balanced development of tourism in a way that supports conservation efforts while promoting local livelihoods (Gössling, 2015; Kosovo Institute for Nature Protection, 2019).

The positive impact of sustainable tourism practices on local employment and economic development within Kosovo's protected areas underscores the potential of these initiatives to enhance the living standards of local communities while fostering environmental stewardship (Kim & Lee, 2022; Lee, 2024). Such findings are corroborated by the annual reports from the Kosovo Environmental Protection Agency (2020), which highlight the ongoing efforts and outcomes of sustainable tourism practices in the region.

Moreover, the relationship between sustainable tourism practices and the protection of biodiversity and environmental health in protected areas has been substantiated through empirical studies, indicating a strong positive correlation between the implementation of sustainable practices and improvements in biodiversity and environmental conditions (Jones & Philips, 2016; Liu et al.,

2017). These results are further supported by guidelines and reports from international bodies such as UNWTO/UNEP (2005) and IUCN (1994, 2008), which provide a comprehensive framework for integrating sustainability into tourism and protected area management strategies.

The contribution of sustainable tourism to the preservation of cultural heritage also constitutes a significant aspect of the discourse, with research affirming the pivotal role of tourism in safeguarding cultural assets for future generations (Santos & Correia, 2023; Singh & Dixit, 2019). This is particularly relevant in the context of Kosovo, where the protection of cultural heritage within protected areas is intertwined with national identity and heritage conservation efforts.

This literature discussion underlines the multifaceted benefits of sustainable tourism practices in protected areas, ranging from economic and social advantages to conservation and cultural preservation outcomes. The collective evidence from Kosovo and broader international studies advocates for the continued integration of sustainable tourism practices as a cornerstone of protected area management and policy-making (Torres-Delgado & Saarinen, 2020; Wallace & Russell, 2018). As such, sustainable tourism not only represents a key driver for conservation and socio-economic development but also embodies a holistic approach to managing the delicate balance between human aspirations and environmental imperatives.

3. Sustainable Tourism as a Catalyst for Conservation and Development in Protected Areas

Reevaluating the perceived conflict between tourism and conservation within protected areas, the work of Anderson and Clark (2023) illuminates the potential for a synergistic relationship where tourism serves as a vital engine for both conservation and socio-economic growth. Their study brings to light the expanding role of nature-based tourism, anchored in sustainable practices, as fundamental to the safeguarding and enduring maintenance of these precious environments (Anderson & Clark, 2023). Complementing this, Lee (2024) dives into the critical need for sustainable tourism that judiciously integrates economic advancement with principles of social equity and environmental protection, addressing the comprehensive requirements of stakeholders (Lee, 2024). Moreover, Thompson (2024) articulates the significant contribution of sustainable tourism to the preservation of natural habitats. He stresses the essentiality of resource management practices that avert deterioration and uphold the continued existence of protected areas for the benefit and enjoyment of future generations (Thompson, 2024). Together, these viewpoints advocate for a progressive shift towards a sustainable tourism paradigm that not only buttresses but also elevates conservation aims and socio-economic prosperity, endorsing a harmonious strategy for the cultivation and conservation of protected domains.

In light of this, a comprehensive study was conducted within 114 protected areas in Kosovo to assess the extent and impact of sustainable tourism practices. Through a detailed survey administered to the managers of these areas, the research aimed to uncover the influence of such practices on local employment, biodiversity, environmental health, and the preservation of cultural heritage. Utilizing analytical methods such as linear regression and correlation analysis, the study provided quantitative insights into the positive correlations between sustainable tourism initiatives and their multifaceted benefits.

The findings underscore the significant role of sustainable practices in enhancing local employment opportunities, safeguarding biodiversity, protecting vital environmental resources (such as water, air, and soil), and conserving cultural and historical assets. Specifically, the research revealed notable impacts of sustainable tourism, including increased local employment (with a determination coefficient of 0.695 and a correlation coefficient of 0.834), enhanced biodiversity conservation (determination coefficient of 0.616 and correlation coefficient of 0.785), and heightened environmental protection (determination coefficient of 0.918 and correlation coefficient of 0.958). Additionally, the preservation of cultural and built heritage in these areas was markedly improved (determination coefficient of 0.778 and correlation coefficient of 0.882), alongside the achievement of significant economic benefits (determination coefficient of 0.824 and correlation coefficient of

o.908), collectively contributing to the broader development of these areas.

This research reaffirms the pivotal role of sustainable tourism in conservation and development strategies for protected areas, underscoring its essential function in aligning the goals of conservation with tourism. Demonstrating the practical advantages of sustainable practices, this study encourages the adoption of informed management and policymaking, which seeks to maintain the equilibrium between preserving natural environments and satisfying human desires for discovery and recreation.

In their analysis, Johnson and Lee (2022) explore sustainable tourism's capacity to serve as a critical junction between conservation efforts and tourism development. They emphasize that sustainable practices within protected areas not only safeguard environmental integrity but also provide a framework for enhancing visitor experiences in a responsible manner (Johnson & Lee, 2022). Smith (2023), further delves into how evidence-based sustainable tourism practices inform better policy and management decisions, promoting a balanced approach to environmental conservation and human leisure activities (Smith, 2023).

Additionally, Henderson (2023) highlights the importance of sustainable tourism in contributing to the long-term preservation of protected areas. Through his examination of various sustainable tourism initiatives, Henderson advocates for strategies that prioritize ecological conservation while enabling educational and leisure opportunities for tourists (Henderson, 2023).

4. Evolving Conservation Efforts: The Expansion of Protected Areas in Kosovo

The history of nature protection in Kosovo and the establishment of protected areas is marked by distinct phases, each contributing significantly to the region's environmental conservation efforts. The journey began in the mid-20th century, specifically between 1950 and 1970, laying the foundational stones for nature conservation in Kosovo. This initial phase was symbolized by the declaration of the first protected zone, "Gazimestan," in 1950. By the onset of the 1970s, the commitment to preserving Kosovo's natural heritage had resulted in the establishment of 19 protected areas, showcasing the burgeoning recognition of the importance of conservation.

The subsequent period, spanning from 1970 to 1988, witnessed a remarkable surge in conservation activities within Kosovo. During these pivotal years, the number of sanctuaries dedicated to the preservation of nature significantly expanded, with 36 new areas being formally recognized for their ecological, geological, and cultural value. This era underscored a growing acknowledgment of the intrinsic and utilitarian values of natural areas, which necessitated legal protection to safeguard their uniqueness and biodiversity for future generations.

The momentum of conservation efforts gained further acceleration from 2000 to 2018, a time frame that saw an unprecedented increase in the dedication of land to protected status. Over 100 areas of natural significance were legally protected during this period, with additional sites identified and proposed for protection. This phase represented a critical mass in the commitment to environmental stewardship in Kosovo, reflecting a broader global awareness of the urgent need to preserve the planet's dwindling natural resources.

The period from 2015 to 2019 marked yet another significant chapter in Kosovo's conservation narrative. Within these four years, the portfolio of protected areas was enriched with 72 new designations, diversifying the types of protected areas to include 18 strict reserves, 51 nature monuments, one nature park, and two protected landscapes. By the year 2020, the total count of protected areas in Kosovo had reached an impressive tally of 210, encompassing an area of 125,814.1 hectares. This expanse signifies 11.53% of Kosovo's total territory, underscoring a substantial commitment to conservation that not only preserves the ecological balance but also contributes to the cultural and historical tapestry of the region.

This chronological overview of the development of protected areas in Kosovo reflects a deepening and evolving commitment to environmental protection and sustainable management. The progression from a single protected area to over two hundred is a testament to the growing recognition of the critical importance of preserving natural habitats and biodiversity. As Kosovo

continues to expand and enrich its network of protected areas, it sets a commendable example of conservation that harmonizes ecological integrity with cultural and historical preservation, paving the way for future initiatives in nature conservation and sustainable development.

Table 1. Protected nature zones by category in Kosovo (2020)

Category according to IUCN	Name	Number	Area in hectares	Share in %
I	Strict nature reserves	19	10 885,82	0,99
II	National parks	2	115 957	10,6
III	Monuments of nature	182	6 039	0,56
V	Natural park	1	5 934	0,5
V	Protected areas	5	2 152	0,2
V	Specially protected area for birds	1	109,5	0,01
	Total	210	125 814,1	11,53

Source: Survey 2023

4.1 Strategic Challenges and Sustainable Tourism Development in Protected Areas

Managers of protected areas globally face the complex task of balancing multiple, occasionally divergent objectives. They are tasked with offering enriching, educational, and significant tourist experiences, generating revenue for conservation efforts, while simultaneously mitigating the ecological risks posed by over-tourism, urban expansion, and pollution stemming from tourism activities. This balance is critical to ensuring that the ecological integrity of protected areas remains intact and that local communities are both involved in and benefit from these conservation efforts. This multifaceted challenge necessitates a strategic approach to the sustainable development of protected areas. Such an approach must prioritize the preservation of biodiversity, environmental health (including air, water, and soil quality), and the cultural heritage of local populations. Concurrently, it should leverage the economic potential of tourism to enhance the living standards of the local communities. The cornerstone of this strategy is the promotion of sustainable tourism—defined as tourism that comprehensively considers its economic, social, and environmental impacts both now and in the future, and strives to meet the needs of visitors, the industry, local environments, and host communities. The foundational principle guiding sustainable tourism in protected areas is that it must contribute to the long-term conservation of nature.

Addressing the complex requirements of sustainable development within protected areas, Bell and Morrison (2019) emphasize the importance of a strategy that encompasses the conservation of biodiversity, the protection of environmental health, and the preservation of cultural heritage. They argue for the utilization of tourism's economic potential to improve the livelihoods of local communities, underscoring the necessity of sustainable tourism practices that consider the long-term impacts on economic, social, and environmental spheres (Bell & Morrison, 2019). Moreover, Thompson (2020) highlights the critical role of sustainable tourism in ensuring that the development within these protected areas serves the dual purpose of conserving nature while also fulfilling the aspirations of local and global communities for meaningful engagement with nature (Thompson, 2020).

Further expanding on this topic, Patel (2021) discusses the principle that sustainable tourism should not only aim to minimize its footprint but also actively contribute to the conservation of natural resources. This involves creating tourism models that are sustainable over the long term, ensuring that activities are managed in a way that supports rather than detracts from conservation objectives (Patel, 2021). Lastly, Kim and Lee (2022) delve into the necessity for sustainable tourism initiatives to be consistent and integrated into the broader conservation efforts, advocating for practices that are carefully planned and executed to avoid negative impacts on the protected areas

(Kim & Lee, 2022). This contribution should be consistent and enduring, rather than temporary or sporadic, and must ensure that conservation efforts are not undermined by unsuitable or poorly managed tourist activities. Based on this principle, sustainable tourism should, from its policy inception through planning and management phases, aim to:

- Preserve the environmental and/or cultural attributes that attract tourists by maintaining key ecological processes and the area's aesthetic, spiritual, and natural heritage, thereby aiding in the conservation of biodiversity.
- Respect the rights and sociocultural authenticity of Indigenous peoples and local communities, preserve cultural heritage and traditional values, and foster intercultural understanding and tolerance.
- Promote sustainable economic opportunities, ensuring that the socioeconomic benefits of tourism are equitably distributed among all stakeholders and contribute to poverty alleviation through stable employment and income opportunities, as well as enhanced social services for host communities.
- Facilitate meaningful, high-quality visitor experiences that cultivate a deep-seated stewardship for nature and the protected areas.

Stakeholders responsible for the control and management of tourism in these areas are urged to adhere to these objectives. Tourism that fails to meet these standards of sustainability should not be permitted within protected regions. This paper focuses on the protected areas in Kosovo, with a particular emphasis on assessing the extent to which sustainable tourism practices are applied and their impact on these areas. The aim is to highlight the critical importance of sustainable practices in tourism for the protection and further development of protected areas. This includes enhancing local employment, safeguarding biodiversity, preserving environmental quality, and protecting the cultural heritage and traditions of local communities, all of which collectively contribute to the comprehensive conservation and advancement of these regions.

The primary hypothesis posited in this study is that sustainable tourism practices significantly contribute to the protection and development of protected areas. Additional research hypotheses explore the specific impacts of sustainable tourism on local employment, biodiversity conservation, environmental protection, and the preservation of cultural and built heritage, underlining the multifaceted benefits of sustainable tourism development in protected areas.

5. Materials and Methods: Investigating Sustainable Tourism Practices in Kosovo's Protected Areas

To elucidate the presence and impact of sustainable tourism practices within Kosovo's protected areas, a comprehensive research study was undertaken between March 15 and March 30, 2023. The investigation spanned 114 designated protected areas throughout Kosovo, encompassing a diverse array of conservation sites, including 100 natural monuments, 10 strict reserves, 2 national parks, and 2 additional protected landscapes. The primary tool for data collection was a meticulously designed printed survey questionnaire targeted at the managers of these protected areas.

The survey aimed to capture a detailed snapshot of the existing sustainable tourism practices by soliciting direct responses from those intimately involved with the management of these areas. Each response obtained from the survey corresponded to a unique protected area, ensuring a comprehensive coverage of the diverse range of conservation sites within Kosovo. The questionnaire comprised 15 closed-ended questions, each with pre-defined answer options. This format was chosen to streamline the data collection process and to facilitate the aggregation and analysis of the data. Managers were instructed to select the option that best represented the current state of sustainable tourism practices within their respective jurisdictions.

For the analytical phase of the study, the data were processed using the Statistical Package for the Social Sciences (SPSS), a robust tool for statistical analysis. Two key statistical methods were employed: linear regression and correlation analysis. The linear regression method was utilized to

assess the strength and nature of the relationship between the implementation of sustainable tourism practices and their outcomes on the conservation and development of the protected areas. Additionally, correlation analysis was conducted to explore the direction and degree of association between these variables.

These methodological approaches were integral in determining the extent to which sustainable tourism practices contribute to the dual objectives of protecting and fostering the development of protected areas in Kosovo. Through the application of these statistical techniques, the study aimed to provide empirical evidence on the effectiveness of sustainable tourism initiatives, thereby informing future conservation and management strategies in the region.

6. Results

The investigation into the effects of sustainable tourism practices on local employment within Kosovo's protected areas involved a strategic analysis, where specific survey questions pertaining to the implementation of sustainable practices were cross-referenced with those addressing local employment figures. This analytical approach enabled the calculation of both the coefficients of determination and correlation, offering insights into the relationship between sustainable tourism initiatives and employment opportunities for the local populace.

Table 2. Cross - tabulation of existence of sustainable practices and employees in the protected areas

			Employees			Total
			residents of the local community	nonresidents	Equally residents and nonresidents	
Existence of sustainable practices	Yes	Count Expected Count	70 50,4	4 2,9	8 28,8	82 82,0
	No	Count Expected Count	0 19,6	0 1,1	32 11,2	32 32,0
Total			70 70,0	4 4,0	40 40,0	114 114,0

Based on that, the following results were obtained (table 3 and 4)

- The coefficient of determination (R^2) is equal to 0,695
- The correlation coefficient (R) is equal to 0,834
- The overall regression $F(1,112) = 255,451$
- $\beta = 1,756$
- $p = 0$

Because $p < \alpha$ (0.05) i.e. $p = 0$ then the null hypothesis H_0 : Sustainable practices in tourism in protected areas do not contribute to increasing the employment of the local population is rejected and the hypothesis H_1 : Sustainable practices in tourism in protected areas contribute to increasing the employment of the local population is accepted.

The linear regression equation is as follows: $Y = -,512 + 1,756 X$

Table 3. Model Summary

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	,834	,695	,692	,52714

a. Predictors: (Constant), sustainable practices

Table 4. ANOVA ^a

Model	Df	Sum of squares	Mean square	F	Sig.
Regression	1	70.983	70.983	255.451 (1,112)	.000 ^b
Residual	112	31.122	.278		
Total	113	102.105			

a. Dependent variable: Employee

b. Predictors (Constant), sustainable practices

The coefficient of determination (R^2) is equal to 0,695. This means that 69,5% of the variability of Y (employment of the local population) is explained by X (the application of sustainable tourism practices in protected areas in Kosovo). The correlation coefficient (R) is equal to 0,834. This means that there is a very strong direct and positive relationship between X and Y, that is, that the increased application of sustainable practices in the field of tourism in protected areas in Kosovo will lead to an increase in the number of employed local people in those areas. Moreover, if the application of sustainable practices increases by 1, the employment of the local population in the protected areas will increase by 1,756.

To determine the impact of sustainable practices in protected areas on biodiversity, the issue related to the application of sustainable practices and the issue related to biodiversity in protected areas are cross-referenced (table 5).

Table 5. Cross-tabulation of the existence of sustainable practices and biodiversity protection in protected areas

			Biodiversity protection			Total
			I totally agree	I agree	I neither agree nor disagree	
Existence of sustainable practices	Yes	Count Expected Count	82 64,7	0 15,1	0 2,2	82 82,0
	No	Count Expected Count	8 25,3	21 5,9	3 ,8	32 32,0
Total			90 90,0	21 21,0	3 3,0	114 114,0

The following results were obtained (table 6 and 7)

- The coefficient of determination (R^2) is equal to 0,616
- The correlation coefficient (R) is equal to 0,785
- The overall regression $F(1,112) = 179,600$
- $\beta = 0,844$

Since $p < \alpha$ (0.05) i.e. $p = 0$ then the null hypothesis H_0 : Sustainable practices in tourism in protected areas do not contribute to increased protection of biodiversity is rejected and hypothesis H_1 : Sustainable tourism practices in protected areas contribute to increased biodiversity protection is accepted.

The linear regression equation is as follows: $Y = ,156 + ,844 X$

Table 6. Model Summary

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	,785 ^a	,616	,612	,30206

a. Predictors: (Constant), sustainable practices

Table 7. ANOVA

Model	Df	Sum of squares	Mean square	F	Sig.
Regression	1	16.387	16,387	179.600	.000 ^b
Residual	112	10.219	,091		
Total	113	26.605			

- a. Dependent variable: protection of biodiversity
- b. Predictors (Constant), sustainable practices

The coefficient of determination, which is 0,616, means that 61,6% of the changes in the dependent variable y (biodiversity protection) result from changes in the independent variable x (application of sustainable practices in protected areas). The correlation coefficient is 0,785, which means that there is a very strong and positive relationship between the independent and dependent variable.

The β coefficient is 0,844 and shows the change that will occur in the dependent variable y as a result of the change in the independent variable x. In this case, the coefficient indicates that an increase in the independent variable x by 1 will cause an increase in the dependent variable y by 0,844.

By crossing the issue related to the application of sustainable practices in the protected area and the issue related to the environment in protected areas (table 8), the impact that sustainable practices in protected areas have on the protection of the environment (air, water and soil) is determined.

Table 8. Cross-tabulation of the existence of sustainable practices and environment protection in protected areas

			Environment protection		Total
			I totally agree	I agree	
Existence of sustainable practices	Yes	Count	80	2	82
		Expected Count	57,5	24,5	82,0
	No	Count	0	32	32
		Expected Count	22,5	9,5	32,0
Total			80	34	114
			80,0	34,0	114,0

By applying the methods of linear regression and correlation, the following results are obtained (table 9 and 10)

- The coefficient of determination (R^2) is equal to 0,918
- The correlation coefficient (R) is equal to 0,958
- The overall regression F (1,112) = 1257,544
- $\beta = 0,975$

The linear regression equation is as follows: $Y = - ,049 + ,976 X$

Because $p < \alpha$ (0.05) i.e. $p = 0$ then the null hypothesis H_0 : Sustainable practices in tourism in protected areas do not contribute to increased environmental protection is rejected and hypothesis H_1 : Sustainable tourism practices in protected areas contribute to increased environmental protection is accepted.

Table 9. Model Summary

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	,958 ^a	,918	,917	,13199

- a. Predictors: (Constant), sustainable practices

Table 10. ANOVA ^a

Model	Df	Sum of squares	Mean square	F	Sig.
Regression	1	21.908	21,908	1257,544	.000 ^b
Residual	112	1.951	,017		
Total	113	23,860			

- a. Dependent variable: protection of the environment) air, water and soil)
- b. Predictors (Constant), sustainable practices

The coefficient of determination of 0,918 shows that as much as 91,8 % of the changes in the dependent variable y (environmental protection) are the result of the changes in the independent variable x (application of sustainable practices in protected areas). The correlation coefficient of 0,958 means that there is a very strong and positive (almost ideal) relationship between the independent variable x and the dependent variable y. The β coefficient is 0,975, which means that an increase in the independent variable x, i.e. an increase in sustainable practices by 1, will result in an increase in the dependent variable y, i.e. environmental protection in protected areas by 0,976.

By crossing the question concerning the application of sustainable practices in the field of tourism in protected areas with the question concerning the economic effects arising from sustainable tourism development for the protected area (table 11), the following results are obtained (table 12 and 13)

- The coefficient of determination $R^2 = 0,824$
- The correlation coefficient $R = 0,908$
- The overall regression $F(1,112) = 523,893$
- $\beta = 1,413$

The linear regression equation is as follows: $Y = - ,389 + 1,413 X$

Table 11. Cross-tabulation of the existence of sustainable practices and economic effects

			Economic effects			Total
			i totally agree	i agree	i neither agree nor disagree	
Existence of sustainable practices	Yes	Count Expected Count	80 57,5	5 14,4	0 10,1	82 82,0
	No	Count Expected Count	0 22,5	18 5,6	14 3,9	32 32,0
Total			80 80,0	20 20,0	14 14,0	114 114,0

Since $p < \alpha (0.05)$ i.e. $p = 0$ then the null hypothesis H_0 : Sustainable practices in tourism in protected areas do not contribute to increasing the economic effects of the protected area is rejected and hypothesis H_1 : Sustainable tourism practices in protected areas contribute to increasing the economic effects of the protected area is accepted.

Table 12. Model Summary

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	,908 ^a	,824	,822	,29620

- a. Predictors: (Constant), sustainable practices

Table 13. ANOVA ^a

Model	Df	Sum of squares	Mean square	F	Sig.
Regression	1	45,963	45,963	523,893	.000 ^b
Residual	112	9,826	,088		
Total	113	55,789			

a. Dependent variable: economic effects

b. Predictors (Constant), sustainable practices

The coefficient of determination of 0,824 shows that as much as 82,4% of the changes in the dependent variable y (increasing the economic effects of the protected area) are the result of the changes in the independent variable x (application of sustainable practices in protected areas). The correlation coefficient is 0,908, which means that there is a very strong and positive (almost ideal) relationship between the independent variable x (application of sustainable practices in protected areas) and the dependent variable y (increasing the economic effects of the protected area). Moreover, if the independent variable X increases by 1, it will cause an increase in the dependent variable Y (increasing the economic effects of the protected area) by 1,413.

The application of sustainable practices in the field of tourism in protected areas in Kosovo contribute to the protection of cultural heritage.

It can be seen by applying the method of linear regression and cross-correlation data from the issues related to the application of sustainable practices and the protection of cultural heritage in protected areas in Kosovo (table 14).

Table 14. Cross-tabulation of the existence of sustainable practices and protection of cultural heritage in protected areas

			Cultural heritage			Total
			i totally agree	i agree	I neither agree nor disagree	
Existence of sustainable practices	Yes	Count Expected Count	82 61,1	0 18,0	0 2,9	82 82,0
	No	Count Expected Count	3 23,9	25 7,0	4 1,1	32 32,0
Total			85 85,0	25 25,0	4 4,0	114 114,0

The results are as follows (table 15 and 16)

- The coefficient of determination $R^2 = 0,778$
- The correlation coefficient $R = 0,882$
- The overall regression $F(1,112) = 393,414$
- $\beta = 1,031$

The linear regression equation is as follows: $Y = - ,031 + 1,031 X$

Since $p < \alpha (0.05)$ i.e. $p = 0$ then the null hypothesis H_0 : Sustainable practices in tourism in protected areas do not contribute to the protection of cultural heritage in these areas is rejected and hypothesis H_1 : Sustainable tourism practices in protected areas contribute to the protection of cultural heritage in these areas is accepted.

Table 15. Model Summary

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	,882 ^a	,778	,776	,24944

a. Predictors: (Constant), sustainable practices

Table 16. ANOVA ^a

Model	Df	Sum of squares	Mean square	F	Sig.
Regression	1	24.479	24,479	393,414	.000 ^b
Residual	112	6,969	,082		
Total	113	31.447			

a. Dependent variable: protection of cultural heritage

b. Predictors (Constant), sustainable practices

There is a very strong and direct connection between the application of sustainable practices in the field of tourism and the protection of cultural heritage in protected areas. This is shown by the correlation coefficient which is 0,882. At the same time, as much as 77,8% of the changes that occur in the cultural heritage in the protected areas are the result of changes in sustainable tourism practices. It shows the coefficient of determination which is 0,778.

If there are changes in sustainable practices in the field of tourism in protected areas in Kosovo by 1, they will cause a change of 1,031 in cultural heritage which can be seen from the coefficient β which is 1,031.

The calculations confirmed the special hypotheses and the main hypothesis of the research, which means that the application of sustainable practices in the field of tourism in the protected areas in Kosovo contributes to the protection and further development of these protected areas.

7. Findings and Discussion

The investigation into the effects of sustainable tourism practices on local employment within Kosovo's protected areas involved a strategic analysis. This analytical approach enabled the calculation of both the coefficients of determination and correlation, offering insights into the relationship between sustainable tourism initiatives and employment opportunities for the local populace (Johnson & Lee, 2022; Patel, 2021). The positive findings align with Buckley (2012) and Dwyer et al. (2014), who argue that sustainable practices in tourism significantly contribute to local development and employment.

The correlation coefficient (R) of 0,834 suggests a very strong direct and positive relationship between the implementation of sustainable practices and the increase in local employment (Smith, 2023; Anderson & Clark, 2023). This observation is consistent with the framework proposed by Gössling (2015), who emphasizes the role of sustainable tourism in fostering economic growth and enhancing local livelihoods in protected areas.

The cross-tabulation of the application of sustainable practices and biodiversity protection reveals a significant positive impact, with a correlation coefficient (R) equal to 0,785. This supports the notion by Jones & Philips (2016) and Liu et al. (2017) that sustainable tourism is pivotal for biodiversity conservation. The findings also underscore the importance of integrating sustainable practices into the management of protected areas, as advocated by Torres-Delgado & Saarinen (2020) and Wallace & Russell (2018).

Regarding environmental protection, the exceptionally high coefficient of determination ($R^2 = 0,918$) and correlation coefficient ($R = 0,958$) illustrate an almost ideal positive relationship between sustainable practices and environmental protection (Kim & Lee, 2022; Harper & Chang, 2020). This resonates with Weaver & Lawton's (2010) argument about the critical role of sustainable tourism in preserving natural environments, further reinforcing the necessity of such practices as outlined by Martinez (2021).

The economic effects of sustainable tourism practices revealed an 82,4% change in the dependent variable (economic effects of the protected area) resulting from the application of sustainable practices (Lee, 2024; Harper, D., & Chang, Y., 2020). This finding aligns with the discourse on the economic viability of conservation-focused tourism by Nguyen & Smith (2022), highlighting sustainable tourism as a catalyst for economic development.

Finally, the protection of cultural heritage in protected areas is significantly influenced by sustainable tourism practices, as demonstrated by a correlation coefficient of 0,882 and a coefficient of determination of 0,778 (Santos & Correia, 2023; Zhang & Tan, 2019). This confirms the essential role of sustainable practices in cultural heritage conservation, supporting the perspectives of Singh & Dixit (2019) on the importance of heritage tourism for archaeological site preservation.

The cumulative evidence from this investigation corroborates the special hypotheses and the main hypothesis of the research, unequivocally demonstrating that sustainable tourism practices contribute profoundly to the protection and further development of Kosovo's protected areas (Bell & Morrison, 2019; Thompson, R., 2020).

7.1 Implications and Recommendations

The study underscores the critical importance of sustainable practices in protected areas, highlighting their dual role in ensuring long-term conservation while supporting local economies and cultural heritage. The findings suggest that sustainable tourism practices significantly enhance environmental conservation and contribute to the socio-economic upliftment of local communities. To maximize these benefits, the following specific recommendations are proposed for policymakers and managers of protected areas:

- **Implement Community-Based Tourism Programs:** Engage local residents directly in tourism activities to ensure equitable distribution of economic benefits. These programs should be designed to foster community involvement and ownership of tourism initiatives.
- **Develop Eco-Friendly Infrastructure and Services:** Promote the establishment of environmentally sustainable facilities and services. This includes encouraging the use of renewable energy sources, sustainable waste management practices, and eco-friendly transportation options to minimize the ecological footprint of tourism activities.
- **Provide Training and Capacity-Building Programs:** Offer comprehensive education and training opportunities for local communities on sustainable tourism practices. This will enhance their skills and knowledge, enabling them to effectively participate in and benefit from tourism initiatives. Capacity-building programs should focus on sustainable business practices, conservation techniques, and customer service excellence.
- **Integrate Environmental Education Programs for Tourists:** Develop and implement educational programs aimed at tourists to promote responsible behavior and environmental awareness. These programs should include information on the local ecosystem, conservation efforts, and ways tourists can minimize their impact while visiting protected areas.
- **Establish Monitoring and Evaluation Systems:** Implement robust monitoring and evaluation frameworks to continuously assess the impact of sustainable tourism practices. This includes setting up indicators for environmental, social, and economic outcomes, and regularly collecting data to inform adaptive management strategies. Monitoring systems should be designed to provide actionable insights that can be used to refine and improve sustainable tourism practices over time.

Moreover, the study highlights the need for detailed insights into specific practices that have the greatest impact on conservation and socio-economic development. Policymakers and protected area managers should focus on:

- **Identifying and Scaling Best Practices:** Conducting case studies and pilot projects to identify the most effective sustainable tourism practices and scaling them up across other protected areas. This includes practices that have demonstrated significant positive impacts on biodiversity conservation, local employment, and cultural heritage preservation.
- **Enhancing Stakeholder Collaboration:** Strengthening collaboration between government agencies, local communities, non-governmental organizations, and the private sector. Effective stakeholder collaboration is crucial for the successful implementation and

sustainability of tourism initiatives.

- **Leveraging Technology and Innovation:** Utilizing technological advancements to enhance sustainable tourism practices. This includes the use of GIS and remote sensing for environmental monitoring, mobile applications for tourist education, and digital platforms for promoting community-based tourism initiatives.

Expanding on the implications of these findings, it is essential to provide targeted recommendations for policymakers and protected area managers to improve sustainable tourism practices effectively. By focusing on these areas, Kosovo can further its efforts in achieving a balanced approach to conservation and socio-economic development in its protected areas, setting a benchmark for other regions to follow.

8. Conclusions

In synthesizing the comprehensive investigation into sustainable tourism practices within Kosovo's protected areas, this study delineates the significant and multifaceted impacts of such practices on ecological conservation, socio-economic development, and cultural heritage preservation. Through strategic analysis and empirical evidence, it has been clearly established that the implementation of sustainable tourism practices plays a pivotal role in bolstering local employment, conserving biodiversity, protecting environmental quality, and safeguarding cultural and historical assets.

The study's analytical outcomes, highlighted by a coefficient of determination (R^2) of 0.695 and a correlation coefficient (R) of 0.834, provide compelling evidence of the economic benefits derived from sustainable tourism. These statistical indicators, alongside a regression coefficient (β) of 1,756, unequivocally affirm the positive impact of sustainable practices on job creation in communities adjacent to protected areas. Such findings underscore the economic viability and transformative potential of sustainable tourism to foster local development and livelihoods.

Furthermore, the research presents incontrovertible evidence of the contributions of sustainable tourism practices to the conservation of biodiversity and the protection of the natural environment, encompassing water, air, and soil quality. The significant positive outcomes in these areas, as demonstrated by the determination and correlation coefficients, attest to the efficacy of sustainable practices in achieving conservation objectives, while also facilitating socio-economic advantages.

The comprehensive benefits of sustainable tourism, as elucidated through linear regression analysis, underscore its instrumental role in advancing the holistic development of protected areas. This encompasses ecological and environmental gains, economic benefits, and the preservation of cultural heritage, thus supporting a multi-dimensional development framework that harmonizes conservation and development objectives.

In conclusion, this research articulates a compelling narrative for the broader adoption and continued refinement of sustainable tourism practices in protected areas. Kosovo's proactive approach in embracing these practices offers insightful lessons and a replicable model that underscores the transformative power of sustainable tourism as a catalyst for concurrent conservation and development goals. The implications of these findings transcend the local or national context, presenting a paradigm for global conservation efforts that leverages sustainable tourism as a key driver for a more sustainable and equitable world. This study not only champions the cause of sustainable tourism within the realm of conservation science and policy-making but also illuminates the path forward for leveraging tourism as a force for good in the global quest for sustainability.

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