

Effectiveness of Environmental Policy in Popular Tourist Destinations

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Abstract This study deals with the critical link between environmental policy and the growing tourism industry in popular and frequently visited tourist destinations. The aim of the research is to evaluate the effectiveness of environmental policy in tourist destinations and the relationship between environmental protection indicators and tourist attractiveness. The study employs graphic comparison and an interdisciplinary approach that combines the ecological sphere and sustainable tourism policy analysis to identify the complex relationship between political measures and their environmental, social, and economic consequences. Thematic research and data analysis revealed the absence of a dependency between a country's tourist attractiveness and the state of the environment (effectiveness of state environmental policy), travel and tourism development, and sustainable development policy. The research emphasizes the lack of standardized evaluation indicators as an obstacle to policy effectiveness evaluation. The findings gave grounds for the adaptive and context-sensitive propositions to facilitate cooperation between stakeholders, including public authorities and the tourism sector, in order to jointly create approaches that promote responsible tourism practices and environmental protection. The study provides practical recommendations for the development of evaluation criteria that comprehensively consider both environmental and economic factors in continuous monitoring systems. The research

contributes to the discussion on achieving a harmonious balance between a thriving tourism economy and the preservation of the natural heritage of the busiest tourist destinations. The prospects for further research include identifying additional factors influencing the popularity of tourist routes in different countries.

Keywords Environmental Policy, Tourism Activity, Efficiency, Government Management, Sustainable Development

1. Introduction

In recent years, the rapid growth of world tourism has created both opportunities and challenges for environmental protection. Popular tourist destinations, often valued for their natural beauty and cultural heritage, have faced increasing pressure from the influx of visitors, leading to various environmental problems. In response, the state and business entities are implementing a variety of environmental policies to strike a balance between tourism development and environmental protection.

In view of the relevance of the issue, research and evaluation of the effectiveness of environmental policy in

the context of popular tourist destinations is important. Examining the complex relationship between tourism development and environmental protection, it is necessary to understand the extent to which this state policy has succeeded in mitigating the negative impact on ecosystems, biodiversity, and local communities.

In the first quarter 2023, international tourist arrivals reached 80% of the pre-pandemic level (-20% in the first quarter 2019) thanks to strong results in Europe and the Middle East. International tourism increased by 86% compared to the same period of the last year, showing continued growth. In the first quarter of this year, 235 million tourists made international trips, which is twice as much as during the same period in 2022. The Middle East was the first region in the world to recover pre-pandemic indicators for the first quarter 2023, which received the best indicators (+15%). Over the same period of 2023, Europe reached 90% of pre-pandemic levels due to the significant intra-regional demand [1].

The growth of the tourism sector determines the relevance of the issue of identifying best practices, assessing gaps in the existing state policy, and providing recommendations for increasing the effectiveness of environmental protection measures in popular tourist destinations through comprehensive data analysis and case studies of specific tourist objects. The evaluation of the effectiveness of environmental policies in popular tourist destinations should focus on promoting the development of responsible tourism that preserves the natural heritage for current and future generations.

The aim of the study is to evaluate the effectiveness of environmental policies in popular tourist destinations and achieve the established goals of environmental protection, identify possible ways to optimize existing policies to obtain the maximum positive interaction between tourism and environmental protection measures.

Research objectives:

1. Analyse the state of environmental policy in the most visited tourist destinations and features in individual countries.
2. Identify the main environmental challenges arising from intensive tourism in the selected destinations and analyse the impact of tourist activities on the environment.
3. Determine the effectiveness of measures and approaches to environmental protection, evaluate their impact on the preservation of natural resources and spatial ecological systems.
4. Propose recommendations for improving environmental policy in popular tourist destinations in order to achieve a balance between tourism development and environmental preservation.

2. Literature Review

The relationship between the environment and tourism is

complex, given that nature has become a tourism product. Much of the tourism industry is directly dependent on activities in natural areas and the environment. The demand for natural, sustainable tourism grew, especially after the COVID-19 pandemic [2]. At the same time, tourism causes environmental degradation through the construction of infrastructure in natural areas, habitat fragmentation, increased global carbon emissions, and direct damage to ecosystems by visitors. The increasing number of tourists beyond the ecological and social carrying capacity creates damage to the resource potential and natural assets that are interesting for vacationers and reduces the relevance of tourist routes [3].

A sustainable environment involves a clean and green natural landscape, pristine marine and coastal areas, biodiversity, socio-cultural, and historical values that attract tourists and create opportunities for local communities to host visitors. The growth of tourism and environmental sustainability become interdependent elements in this sense. The growth of tourism and increasing number of visitors have a direct impact on the quality of sustainable and green tourism [4-6].

The World Tourism Organization (UNWTO) considers the tourism industry as one of the most economically promising, accounting for more than 10% of global GDP [7]. From 1.442 billion international tourists in 2018, the number could reach an estimated 1.8 billion by 2030 [8]. International tourism in the world has more than doubled over the past 25 years: 1.08 billion international arrivals in 1995, 2.4 billion in 2019 [9]. Directly or indirectly, national and international tourism accounted for 10.3% of global GDP and 330 million jobs in 2019 [10].

Current studies show that international tourism and the activities of the tourism sector cause an increase in the number of tourists, energy costs, carbon dioxide emissions and air pollution, which gradually affects climate change [11]. Tourism activity is defined as harmful to the ecological state in comparison with the socio-economic benefits that such a sphere creates at the level of communities or the state [12,13]. In addition to the above, pollution of tourist locations includes solid waste, sewage, noise, oil and chemicals, use of transport, architectural pollution, and others. Moreover, poorly controlled and inappropriately designed tourist infrastructure deteriorates the quality of the environment. This results in an overconsumption of natural resources, an increasing waste and pollution, and low-quality services [8].

Understanding the complex issues briefly outlined by the researchers gives an impetus for the development of an approach aimed at preserving the quality of the environment. Ecotourism policy involves a clearly defined set of principles that commit to preserving the environment, experiences, and economic benefits [14]. Ecotourism demonstrates a positive and responsible attitude of tourists and tourism business owners to the protection and preservation of all components of the existing ecosystem [15].

Another approach considers the implementation of green technologies in infrastructure facilities in order to reduce environmental damage. The published Infrastructure for Climate Action Report suggests that the state implement sustainable infrastructure as one of the modern ways of combating climate change. A total of 79% of all greenhouse gas emissions mainly relate to infrastructure and are the cause of the fight against climate change and its mitigation. Sustainable infrastructure assumes that the design, construction and operation of such facilities will not reduce social, economic, and environmental parameters [16,17].

In the current conditions, planning which is based on the sustainable ecotourism principles is the standard in destination management, with the goal of creating an effective compromise between business interests and environmental sustainability. It is appropriate to regulate the development and growth of tourism by the principles of ecotourism based on the fact that the established model provides long-term socio-economic and ecological advantages to the local community, ecological integrity. In other words, ecotourism becomes an effective tool for combating environmental degradation and ensures a stability of ecosystems [15].

A number of studies demonstrate the key importance of the development of transport infrastructure based on green technologies, which will increase the sustainability of the tourism sector and the aviation industry [18,19]. It should be noted that one of the main ways is still the introduction of cleaner energy to strengthen the stability of the local economy, for which tourism is crucial [20,21]. The researchers provide recommendations for the implementation of green infrastructure and systems at airport facilities, which will increase energy sustainability in one of the directions of the state strategy for mitigating carbon emissions [22,23]. Various strategies applied by the state should mitigate the negative impact of tourism on climate change, because the tourism sector must adapt to new climate realities. Studies that analysed the habits of tourists in 160 countries from 2009 to 2013 proved that the impact of tourism on global emissions is four times higher than expected. Neither responsible travel behaviour nor technological improvements have reduced the growth of the tourist footprint [24]. The real situation shows that the goal of reducing greenhouse gas emissions by 50% by 2050 may be jeopardized if effective enough measures are not taken to positively change the current trends related to the tourism sector [25].

It is important to prioritize sustainable tourism in environmental and climate policy, which will contribute to the decarbonization goals [26]. Climate-friendly and sustainable tourism can provide sustainable livelihood options for many communities, especially in developing countries that are economically dependent on tourism [27,28]. The general state of the studied issue indicates that it is important to take comprehensive measures for the implementation of the state environmental policy, which

involves the appropriate development of the tourism industry, the use of green infrastructure and technologies.

3. Methods

The research procedure involves several stages, namely: (1) determining the dependence of indicators of the ecological state on the number of tourists [29,30]; (2) determining the relationship between the level of travel and tourism development and the indicator of environmental performance; (3) correlation analysis of policy indicators of sustainable development goals, indicators of tourist attractiveness and the state of development of the tourism industry [29,31,32].

When selecting the countries for the study, attention was focused on the indicator of the number of arrivals (tourist attractiveness rating) during the year. The study included the countries with more than 10 million tourists (France, USA, Mexico, Spain, Italy, Croatia, China, Turkey, Greece, Austria, Ireland, Czech Republic) [30].

Based on the research methodology, the dependence between tourist attractiveness, development of the tourism industry and environmental protection and sustainable development policy, which determines the preservation of the environment as a priority, was determined. The research methodology provided the use of graphic comparison methods to identify the effectiveness of environmental policy in popular tourist destinations.

The Environmental Performance Index (EPI), which assesses the state of the environment and the vitality of the ecosystem, is used as indicators that demonstrate the effectiveness of environmental protection policy; The Index of Sustainable Development Goals (SDGs), which is one of its components, demonstrates the level of environmental protection and biodiversity. Another factor - the Travel and Tourism Development Index (TTDI) identifies and measures a set of factors and policies that ensure the sustainable development of the travel and tourism sector, which contributes to the development of the country and includes such areas as business environment, safety and security, health and hygiene, human resources and the labour market, readiness for ICT [32].

The 2022 Environmental Performance Index (EPI) provides a summary of the state of sustainable development worldwide. Using performance indicators, the EPI ranks countries by climate change performance, environmental health, and ecosystem viability. These indicators are used to evaluate how close countries are to the established goals of environmental policy on a national scale [29].

The degree of influence of the results of the state environmental policy, sustainable development policy (consequences of environmental policy) and the state of development of the field of travel and tourism on the tourist attractiveness of the country were identified using the graphic method of comparison.

4. Results

The EPI indicators and data on the number of tourists in the countries selected for the study [29,30] were used to obtain a graphical demonstration of the parameter dependence (Figure 1).

The results (Figure 1) give grounds to state that in most studied countries the state of the environment (the

effectiveness of the state environmental policy) does not affect the tourist attraction (the coefficient of determination is less than 1%). Such countries as France, the USA, Mexico, China, Turkey, where it is possible to see some correspondence, can be called a conditional exception.

Consider the correlation of indicators of the ecological state of the level of development of the travel and tourism sphere in similar countries (Figure 2).

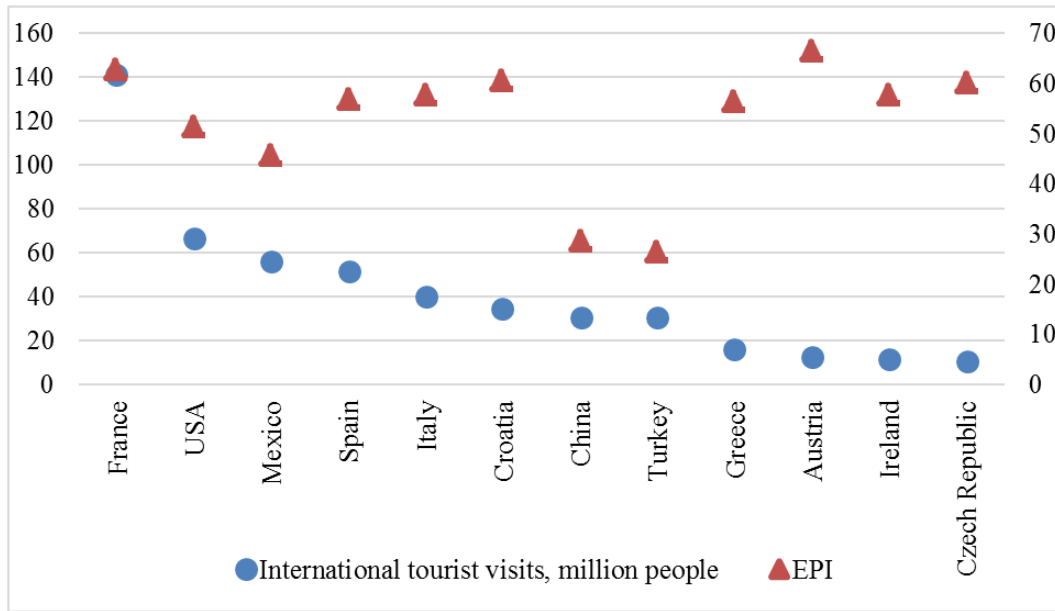


Figure 1. The relationship between the number of tourists (tourist attractiveness rating) and the Environmental Performance Index (EPI) [29,30]

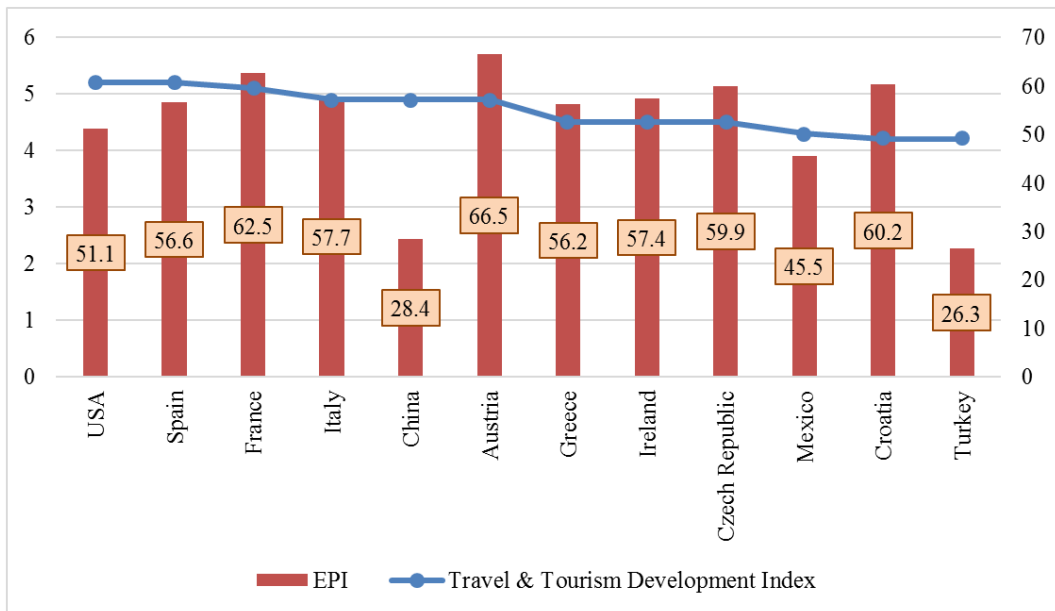


Figure 2. The relationship between the Travel and Tourism Development Index and the Environmental Performance Index (EPI) [29,32]

Just as in the previous model, we see a relatively low correspondence between the two indicators (the coefficient of determination is less than 1%), which indicates a weak dependence of the development of the tourism sector on the national environmental policy.

The level of sustainable development of the travel and tourism sector and the number of tourists will be analysed below (Figure 3).

The results obtained from the graphic analysis (Figure 3) demonstrate a somewhat complex situation, which reflects certain contradictions related in general to the system of public management of sustainable development, the

formation and development of the tourism sphere, hospitality and recreation, and the actual attractiveness of the country in quality of tourist visits. Having fairly high indicators of achieving the sustainable development goals, which are based on the creation of environmental sustainability and a sufficiently developed tourism sphere, some countries (Austria, the Czech Republic, Ireland, Greece) have a significantly lower number of tourist visits than competitors (France, Spain, the USA, Mexico). This demonstrates the need for other additional factors that can more objectively describe the state of the specified problem.

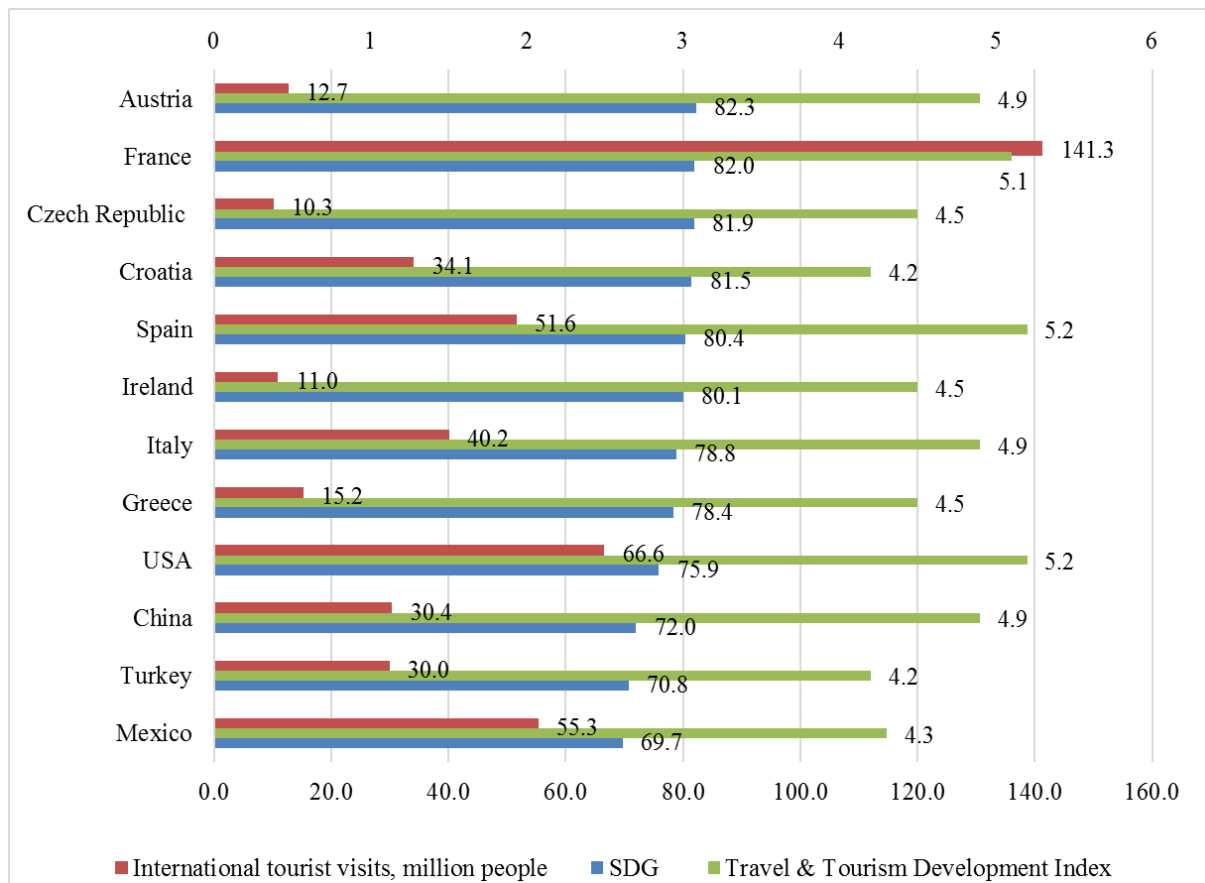


Figure 3. The relationship between the level of Sustainable Development, the Travel and Tourism Development Index and the number of tourists [30,31,32]

5. Discussion

It should be noted that the research methodology was based on the use of data on the countries that received the largest number of tourists (over 10 million), which does not take into account the rest of the countries engaged in tourism activities and having a significant amount of tourists. Besides, the use of data for only one year, which may demonstrate a certain market situation or the impact of certain large-scale events (for example, the years of the COVID-19 pandemic and the post-pandemic period) can be called a limitation. The availability of recent open data also relied on the possibility of using published statistics [30].

The results of the study confirm the existing evidence, which is widely reviewed in the academic literature, that in general there is a complex relationship between tourism attraction and its outcomes and environmental protection and damage caused [33]. The obtained data correlate with the study [34]. When studying the factors of tourist attractiveness, they established that environmental protection was an important motive for almost half of the respondents, while other factors (such as beaches, cultural heritage, museums, local cuisine, transport accessibility, architecture, suitable climate, health services) were important for the second half of the respondents.

Analysis of the country's environmental performance indicator showed that the tourist flow is higher in countries with a higher level of environmental status and compliance with environmental legislation. However, a small indicator of dependence (correlation coefficient – 0.41) shows that other factors influence the choice of a place of rest [35]. The results of countries with high traffic (more than 10 million tourists) showed a significantly lower correlation coefficient, which may indicate both the result of the post-pandemic period and a wider set of additional factors of the countries' attractiveness. Regarding the impact of sustainable development policy, which is determined in the study, similar published results can be found. For example, an analysis of 139 countries regarding the contribution of improving environmental sustainability to the growth of their tourism level demonstrated the following. The results suggest that improved environmental policy and regulation will contribute to the growth of tourism. But the growth of tourism entails environmental pollution. However, despite the positive impact of environmental sustainability on tourism development, there are other factors that affect the attractiveness for tourists (accommodation quality, number of tourist resources, accessibility of the destination, supply) [12].

Another study [28] heavily criticizes the results of international tourism for its negative impact on the environment and contribution to climate change. The increase in tourism activities leads to so-called "overtourism", which increases the direct negative impact on tourist destinations and the well-being of local

residents [36,37].

As we can see from the results, state intervention is appropriate in the concept of sustainability of ecotourism and environmental preservation, namely: the creation of a regulatory and legal framework for conducting tourism business and quality standards; provision of budget support for ecosystem conservation and restoration projects; promotion and implementation of environmental measures; setting limits on excessive tourism and quality standards for infrastructure [15,38]. In turn, it is quite difficult to prove that environmental policy is effective, based on the need for a certain time for its manifestations, the unevenness of environmental measures or the "redundancy" in the tourism sector.

A qualitatively developed and adaptive nature protection policy remains the key issue. Although many destinations have made significant progress in mitigating their negative environmental impact, the remaining challenges require constant evaluation and improvement of strategies [39]. Evaluation of the effectiveness of environmental protection policies in popular tourist destinations gives contradictory results.

The indicators used to evaluate performance vary widely between destinations and lack standardized criteria. The lack of standardization is related to the complexity of ecosystems, cultural factors, and varying degrees of enforcement capacity in different regions. Each destination has unique environmental and socio-cultural characteristics, which makes it difficult to create a universal set of criteria for measuring performance.

Local context significantly influences the outcomes of conservation policies, and attempting to create a standardized evaluation system may oversimplify the nuances of policy impacts [40]. Ecosystems, social structures, and enforcement capabilities are dynamic and interdependent, making it difficult to encapsulate all relevant variables into a single system.

The inconsistent evaluation of environmental protection policies in popular tourist destinations is explained by the complexity and contextual specifics of both ecosystems and human relations in these regions. This problem is exacerbated by the lack of standardized evaluation criteria, which is further complicated by the dynamic and interdependent nature of environmental and sociocultural factors.

The results of the study show that the level of tourism development is based on key directions: the quality of the environment (natural and climatic factors, ecological features and uniqueness); infrastructural support, social and economic factors (hospitality, amenities, cultural uniqueness, economic efficiency, accessibility); historical, cultural and religious places and attractions. It should be noted that tourist attraction has not become completely dependent on the state environmental policy, because tourists do not always seek to get to ecologically clean places. Additional factors can be tourism marketing measures of the state, positioning of individual tourist

spots and routes. At the same time, it is quite difficult to monitor the consequences of environmental policy not in the country as a whole, but in relation to particular attractive destinations.

The following should be proposed as separate approaches that may have an impact on the effectiveness of environmental protection policy and the methodology for determining the state of the environment.

The relevant public authorities implementing environmental policy should develop a flexible evaluation system that will allow destinations to adapt metrics to their specific ecological and socio-cultural characteristics, while adhering to the general environmental principles.

Based on the peculiarities of approaches in different countries, it is necessary to promote cross-border cooperation in order to establish common positions on key evaluation criteria, recognizing regional differences while promoting coherence. Furthermore, continuous monitoring systems should be implemented that take into account the changing nature of ecosystems and local dynamics, allowing timely adjustments of public policy and evaluation methodologies.

An important direction is the involvement of local communities, environmental experts, representatives of state authorities and representatives of the tourism industry in the formation of evaluation criteria, ensuring comprehensive consideration of both environmental and economic factors. Understanding the inertia of the results of environmental measures, it is necessary to encourage a long-term perspective that recognizes that the effectiveness of public policy can manifest itself over long periods, requiring evaluations that span several years.

Eliminating the barriers of inconsistent assessment requires recognizing the complexities of each destination and striking a balance between standardized evaluation and context-specific approaches. Such a methodology should contribute to a more accurate and integrated understanding of the effectiveness of environmental protection policies in popular tourist destinations.

6. Conclusions

Through a many-aspect analysis of the complex relationship between tourism, conservation and policy frameworks in popular tourist destinations, the study demonstrated a multifaceted understanding of the effectiveness of environmental conservation strategies. The presented results emphasize the need for a careful balance between the promotion of tourism development and the preservation of natural and cultural heritage that attracts visitors.

The study reveals a clear pattern when the effectiveness of public preservation policies is combined with the contextual characteristics of each destination. This relationship is demonstrated by the fact that conservation achievements are not the same in all regions due to their

inherent diversity of ecosystems, local cultures and different capacities to implement appropriate policies. The data emphasized the importance of adopting an integrated approach that goes beyond traditional preservation paradigms. An effective environmental policy requires the integration of environmental, social and economic aspects, emphasizing the complex relationships that determine its results.

The analysis showed that an effective environmental policy is multidimensional and covers ecological, socio-cultural, and economic aspects. The success of this policy depends on comprehensive planning, active public involvement, technology implementation and continuous monitoring. However, there is no universal approach; the uniqueness of each destination requires individual solutions that take into account local ecological and cultural nuances.

The results of the study make it obvious that a universal approach cannot cope with the complexity of environmental policy evaluation. Instead, a dynamic, context-sensitive strategy is needed that emphasizes the collaborative efforts of governments, local communities, researchers, and the tourism industry to identify individual indicators of success.

This path is not complete despite the progress made in coordinating the growth of tourism with nature conservation. The effectiveness of environmental protection policies in popular tourist destinations depends on the constant adaptation and improvement of strategies that would correspond to the dynamics of the development of the tourism industry and the imperatives of environmental management. The study advocates a paradigm shift towards locally relevant integrative approaches adapted to the complex state of each destination, promoting a sustainable coexistence between the attractiveness of tourism and the imperative to preserve natural assets of our planet.

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