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Sustainable nature tourism transformation: The strategic role of green tourism in West Java

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Abstract: This study examines the role of Green Marketing, Social Media, Destination Image, and Tourist Perception on Green Tourism and Sustainability in West Java. This study uses quantitative research methods. It was conducted in a natural tourism area where there are 355 natural attractions in West Java, which are divided into two types of environmental services: 205 forest areas and 150 places outside the forest area. The results of the analysis show that Green Marketing has no effect on Green Tourism and Sustainability due to low tourist awareness. On the other hand, Social Media and Destination Image contribute positively by increasing tourist awareness of sustainable tourism. Tourist Perception has no direct effect, indicating that understanding alone is not enough to encourage real action. Green Tourism contributes significantly to Sustainability through conservation, education, and resource management. This study emphasizes the importance of effective marketing strategies and the role of social media in encouraging tourists to behave more responsibly.
Keywords: *Destination image, Green tourism, Sustainability, Social media, Tourist perception.*

1. Introduction

Tourism encompasses various elements such as tourists, destinations, travel, and other supporting industries. Indonesia has various types of tourism, including nature, social, and cultural tourism spread from Sabang to Merauke. This sector is one of the main pillars of the national economy. In addition to its stunning natural beauty, Indonesia is also rich in cultural heritage, art, and traditions that can attract domestic and foreign tourists. As a tropical country, Indonesia has extraordinary tourism potential. The concept of creative villages and ecotourism is now the main focus in improving the regional economy. Indonesia's geographical advantages include rows of beautiful hills, more than 17,100 islands, exotic beaches, and cultural diversity from more than 300 ethnicities and 742 languages. In addition, 59% of Indonesia's territory is tropical forest, which is a habitat for various species of flora and fauna, strengthening the country's ecotourism appeal.

The tourism sector not only fulfills the recreational needs of the community, but also plays an important role in economic growth. Tourism activities are a necessity for various groups, both upper middle and lower middle, as a means of relieving stress and improving the quality of life [1]. In 2023, Indonesia's tourism sector succeeded in exceeding the target of foreign tourist visits. Countries with the largest contributions include Malaysia (16.28%), Australia (12.26%), Singapore (12.11%), China (6.75%), and Timor Leste (6.24%). In addition, this sector contributed foreign exchange earnings of US$10.46 billion and contributed 3.8% to GDP. The number of domestic tourist trips until October 2023 reached 688.78 million, exceeding the pre-pandemic figure in 2019.

The development of the tourism sector requires adequate infrastructure and superstructure support, including accommodation services, transportation, travel agencies, restaurants, and entertainment. However, this sector is often criticized for its negative impacts on the environment and society, such as moral pollution and urban damage. The trend of returning to nature or nature-based tourism is

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increasingly in demand. Tourists tend to choose unique natural destinations to enjoy the beauty of nature while learning about local culture [2]. Ecotourism as part of special interest tourism is defined by Weaver [3] as a journey to a relatively undisturbed natural area with the aim of studying, admiring, and enjoying local biodiversity and culture, both traditional and modern.

All types of commercial tourist attraction (ODTW) businesses in Indonesia in 2023 experienced positive growth. These businesses are divided into six categories, with Artificial Tourist Attractions dominating with 1,457 businesses (34.64%), followed by Natural Tourism with 1,435 businesses (34.12%), and Water Tourism with 679 businesses (16.14%). Cultural Tourism, Amusement Parks, and Tourism Areas contributed 7.37%, 6.25%, and 1.48% respectively [4]. West Java is the province with the largest number of ODTWs, reaching 448 companies, while Gorontalo has the lowest number with only seven companies.

West Java is known for its natural beauty, from green mountains to enchanting waterfalls. With an area of 37,143.99 km² covering 27 regencies and cities Lawn, et al. [5] this province offers a variety of interesting natural destinations, supported by cool air and captivating panoramas typical of volcanic mountains (antaranews.com, 2024). The Sundanese people's food culture is also closely related to its natural wealth. Wild and cultivated vegetables are the main part of typical Sundanese dishes, such as lalab served with shrimp paste chili sauce. This tradition reflects the harmonious relationship between the Sundanese people and nature, utilizing the fertility of the soil to produce fresh and natural food ingredients. West Java has a variety of cultural, historical, religious, and educational destinations spread across almost all regencies. Cities such as Bandung and Bogor are popular tourist centers, while areas such as Cirebon, Tasikmalaya, Majalengka, and Sukabumi offer natural beauty and the richness of Sundanese culture that is still preserved.

Sustainable tourism has become an important issue in the tourism industry in recent years. Many developing countries use tourism to drive economic growth, but too rapid development can damage the environment [6]. Sustainable tourism research now focuses on environmental protection, driven by factors such as the Industrial Revolution 4.0, social media, awareness of ecological issues, and increasingly stringent regulations. Domestic tourists are the main market, so increasing visits is an indicator of tourism success [7]. The tourism sector needs to shift to the concept of green tourism that utilizes green advertising, social media, and destination imagery to attract environmentally conscious tourists. Green tourism aims to minimize negative impacts on the environment, support nature conservation, and improve the welfare of local communities through environmentally friendly practices such as waste management, renewable energy, and natural habitat preservation.

In addition to preserving nature and biodiversity, green tourism also empowers local communities, creating incentives to preserve culture and the environment. Educating tourists about the importance of conservation encourages sustainable behavior and reduces negative impacts [8]. From an economic perspective, green tourism helps the tourism industry utilize limited resources efficiently to meet tourist needs and achieve business goals [9]. The enviro-preneurship approach encourages green supply chains and nature-based tourism governance, which can enhance coastal tourism and support sustainable development policies [10].

Green tourism is a form of sustainable tourism that prioritizes environmentally responsible tourist experiences, preserving local culture, and improving the economy of local communities [11, 12]. This concept is in line with the principles of green tourism which aim to reduce the negative impacts of nature tourism in West Java. In this context, the study focuses on the use of green marketing strategies by nature tourism destinations managed by the West Java Provincial Forestry Service. Green marketing, according to Peattie in Fu, et al. [13] aims to understand and meet customer needs in an environmentally friendly way, while Fu, et al. [13] emphasize the importance of creating sustainable products and promotions without damaging the ecosystem. In addition to meeting functional needs, this strategy must also consider the psychological and social aspects of tourists [14].

Green marketing plays an important role in building environmentally friendly ecotourism to support the economic, socio-cultural, and ecological sustainability of local communities [15]. Research

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shows that green marketing tools are positively related to tourist purchasing behavior in green destinations [16]. The results of previous studies have not always been consistent, especially regarding the size of the green tourist market, the effectiveness of the marketing mix, and the right communication channels [17]. The lack of empirical research related to the implementation of green marketing strategies has limited the knowledge of marketers and policy makers in utilizing this concept optimally.

Social media is a key variable in green marketing strategies because of its ability to promote destinations digitally and environmentally friendly. Through this platform, tourist destinations can showcase their sustainability efforts, increase tourist awareness, and encourage interest in visiting environmentally friendly locations [18]. In addition to strengthening the reputation of a destination, the use of social media can also reduce carbon footprints and operational costs. Previous studies have shown that social media plays an important role in influencing tourists' decisions regarding environmentally friendly destinations [19]. Several studies have revealed that direct information on site is still clearer and easier to understand than information obtained through social media [20].

There are 167 million social media users in Indonesia or around 60.4% of the total population, with an average usage time of 3 hours 18 minutes per day. The number of internet users reaches 212.9 million, and 98.3% of them access via mobile phones, making Indonesia the tenth highest in the world [21]. Digitalization of tourism through social media is an effective method to increase tourist visits because it allows tourism sector actors to promote destinations more widely and attractively [22]. A positive destination image plays an important role because tourists tend to choose places with a good reputation. If the destination is well managed, tourists will feel satisfied and have the potential to return or recommend to others [23].

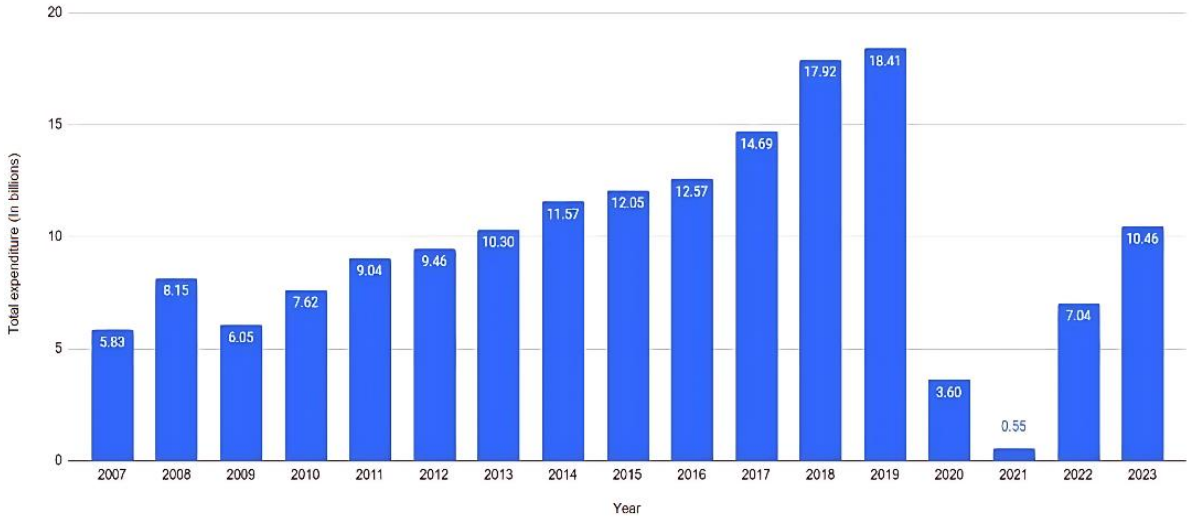

Figure 1.
Total Revenue from Tourists Visiting Indonesia.

Visitors spent more than $10.4 billion during their trips to Indonesia. For comparison, in 2019, tourist spending in Indonesia reached $18.4 billion. However, due to travel restrictions related to the COVID-19 pandemic, this figure dropped drastically to $3.6 billion in 2020. The decline continued in 2021, with spending only $548 million, down 86% from the previous year. Recovery began in 2022, when tourist spending increased to $7 billion, followed by a further 42% increase to $10.4 billion in 2023.

Destination image influences the decision-making process and loyalty of tourists Higgins-Desbiolles [24]. Li and Cao [25] found that image is not always directly related to the number of visits, because

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customer behavior plays a greater role in visiting decisions. Consumer behavior in choosing a destination is similar to a product purchasing decision, where preference for environmentally friendly destinations is the main consideration. Tourist perceptions also influence visiting decisions, which are formed through cognitive processes using the five senses to understand the information received [26, 27]. Positive perceptions of the concept of green tourism can encourage tourists' interest in visiting, although there is still a gap in understanding the concept of sustainability [28].

This study focuses on natural tourism destinations in West Java Province which are considered to have not developed optimally. Several destinations still face challenges in management and promotion, so that the level of tourist visits is relatively low. This condition can affect the sustainability of the natural tourism ecosystem in the area. This study aims to explore the potential of natural tourism in West Java to formulate a development model that supports the growth of the tourism sector sustainably.

2. Literature Review

2.1. Sustainability Tourism

The concept of sustainable tourism is defined as tourism that not only satisfies the current needs of tourists and local communities, but also protects and enhances future opportunities [29]. This approach views sustainability from the perspective of tourists through the term perceived sustainability, which includes long-term effects on the environment, social, cultural, and economic Dewi [30]. Gonçalves, et al. [31] emphasized that investment in the tourism sector must minimize negative impacts and be in harmony with the surrounding environment. Thus, in general, sustainable tourism aims to maintain the quality of the natural, socio-cultural, and economic environment for current and future generations.

This concept involves various stakeholders such as government, local communities, business actors, and tourists. The impact of sustainable tourism includes environmental, socio-cultural, and economic aspects, which require continuous innovation amidst today's global complexity [31-33]. However, research on sustainable tourism still faces challenges, especially in understanding the dimensions of sustainability and its application in the field [32, 33]. Sharpley inRoblek, et al. [34] noted that there is still limited evidence of the application of this concept in tourism practice. Bhatia, et al. [35] added that although social and environmental sustainability issues have emerged since four decades ago, the tourism industry has not fully achieved its sustainability goals.

Global attention to sustainability began at the 1992 Earth Summit in Rio de Janeiro and continued at the RIO+20 Organization [36] which reinforced the Brundtland Commission's principles of sustainable development. This approach emphasizes optimizing the use of local assets to meet current and future stakeholder needs, while ensuring a satisfying tourist experience. The World Tourism Organization recommends three main components in sustainable tourism, namely: (1) optimally utilizing environmental resources to preserve ecological processes and biodiversity (environmental component), (2) respecting the socio-cultural authenticity of local communities and encouraging intercultural tolerance (sociocultural component), and (3) ensuring long-term economic benefits, including job creation and social services for local communities (economic component) Letunovska, et al. [37]. Hashim, et al. [38] emphasized that sustainable tourism development does not only aim to satisfy current tourists, but also to protect future opportunities.

In measuring sustainability, several authors have proposed various indicators. Kalchenko, et al. [39] developed indicators for specific geographical areas, while Gica, et al. [40] used a multidimensional approach that included economic, social, and environmental dimensions. Tehseen, et al. [41] added an institutional dimension, while Bramwell and Rawding [42] expanded it to seven dimensions, including cultural, political, managerial, and governance. International organizations such as the Costanza, et al. [43] and Ghanem [44] generally focus sustainability on three main dimensions: environmental, socio-cultural, and economic [41, 45].

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2.2. Ecotourism

Ecotourism has developed into a concept that has attracted the attention of various stakeholders due to its ability to provide economic benefits while supporting the ecological preservation of destinations (Weaver in Abdellatif, et al. [46]. Tropical forests play an important role in supporting local community livelihoods, global carbon storage, and biodiversity conservation. Therefore, a strategic approach that integrates improving the quality of life of local communities with conservation efforts is crucial. In community-based ecotourism, local residents are directly involved in related economic activities, which not only improves welfare but also encourages natural resource conservation for the sustainability of ecotourism [5].

Ecotourism is defined as a journey undertaken to a natural area with the aim of understanding the culture and history of the surrounding environment, while ensuring the integrity of the area is maintained. In addition, ecotourism opens up income opportunities for local communities, so that they feel the direct benefits of efforts to conserve natural resources. This concept utilizes environmental services, both from the beauty and uniqueness of nature and the culture, way of life, and social structure of the local community. The three main elements emphasized in ecotourism are conservation, education, and empowerment of local communities [47].

From a macroeconomic perspective, ecotourism has a number of positive impacts Yoeti in Nekmahmud and Fekete-Farkas [48] including: opening up new business opportunities, providing jobs, increasing community income, encouraging economic equality through the multiplier effect of tourist spending, increasing government revenue through regional taxes and levies, increasing gross domestic product (GDP), and encouraging investment growth in the tourism sector and other economic sectors. Tourist visits to ecotourism destinations can also increase the productivity of local communities, which ultimately contributes to increased income, both from the formal and informal sectors (Central Statistics Agency/BPS).

2.3. Triple Bottom Line

Sustainability is influenced by various aspects without a single agreed definition, because its development is part of the change in organizational culture. Internal and external pressures drive organizations to adopt sustainable practices, so that the measurement of success that was once focused on profit has now evolved into a sustainable development framework [49]. The Triple Bottom Line (TBL) approach, first introduced by Elkington in 1996, evaluates business performance by balancing three main dimensions: social (people), environmental (planet), and economic (profit) [49, 50].

As a framework specifically designed for business, TBL emphasizes value creation across multiple dimensions with a balance between economic profit, environmental sustainability, and social justice. This framework requires organizations to evaluate the impact of their activities to ensure sustainability without harming the ecology or society, either due to internal preferences or legal regulations. The application of TBL is also an important part of corporate communication to strengthen transparency and accountability [51].

As an essential tool for addressing sustainability issues, TBL offers a holistic approach to assessing organizational performance. These three dimensions are key elements in creating business value in line with the principles of sustainable development: economic prosperity reflects productive capacity and quality of life, environmental sustainability relates to the ability of ecosystems to regenerate, and social justice ensures the fair distribution of resources among stakeholders. TBL's holistic approach not only supports resilience and innovation, but also strengthens companies' long-term competitiveness. As awareness of the relationship between business success and societal well-being increases, the application of TBL principles becomes a moral imperative as well as a key strategy for achieving competitive advantage and ensuring a sustainable future [52].

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2.4. Green Tourism

In recent years, the development of the tourism sector has provided significant economic benefits to various countries and driven an increase in tourist purchasing behavior. However, tourism development has also triggered detrimental ecological degradation. Green tourism has emerged as a solution by combining green marketing, conservation, education, environmental preservation, and socio-cultural impacts [1]. This concept has developed since the 1980s in response to new market opportunities and is aimed at creating sustainable rural development, differentiating it from mass tourism. In practice, pro-environmental behavior in green tourism focuses on conservation actions such as energy and water savings, waste reduction, green purchasing behavior, and protection of local culture through respect for local customs and environmental values [2].

Although tourism can improve the economy and social welfare, less than optimal handling can cause tourists to switch to cheaper destinations [6]. In the future, the pressure to develop tourism products that focus on sustainability, environmental friendliness, and nature conservation is expected to increase [7]. Tourism is often referred to as a smoke-free sector because it generates income and economic, social, and cultural benefits without the need for factories that produce pollution [9]. The development of tourism infrastructure requires a systematic approach to identify the main directions of growth, including the provision of services that are in accordance with consumer demand, adequate tourist transportation comfort, and the use of modern information technology [51].

2.5. Green Marketing

Green marketing is defined by the American Marketing Association (AMA) as follows: "Green marketing is the marketing of products that are presumed to be environmentally safe. Thus, green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising". Definition according to Lampe in Lu, et al. [6] "Marketing response to environmental impacts of product design, production, packaging labeling, use, and disposal are called green marketing". Green marketing covers many things before the product is sold to consumers. environmental marketing and ecological marketing are other terms that are often equated with green marketing [53].

Dahlstrom in Litheko [9] stated that green marketing includes a comprehensive evaluation of all activities related to consumption, production, distribution, delivery, advertising, and product packaging as an effort to respond to environmental issues, identifying green marketing indicators, namely: 1) Environmentally Friendly Products, 2) Environmentally Friendly Prices, 3) Environmentally Friendly Distribution, and 4) Environmentally Friendly Promotion.

Consumer concern for environmental and health issues drives the growth of green advertising. Green marketing, or green marketing, is an effort to produce environmental and health-based performance that was known in the late 1980s and early 1990s. Green marketing is a promotional effort to make changes that demonstrate individual fulfillment and goals to maintain, secure, and regulate the actual climate. Green marketing is a type of marketing that pays attention to the environment, which includes various actions such as changing production processes, changing packaging, and changing advertising [54]. The goal of green marketing is to sell goods that are not harmful to the environment while encouraging customers to be part of climate change. According to other experts, namely Dahlstrom in Nowacki, et al. [55] green marketing is the study of all actions and efforts related to consumption, production, distribution, promotion, packaging, and retrieving products in a way that is sensitive and responsive to environmental issues.

Companies start to consider implementing the green marketing concept after the economy develops and makes a profit [55]. In this case, all marketing mix activities 4P (Product, Price, Place, Promotion) are carried out in accordance with the green marketing concept because of the impact of the product on the environment.

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2.5.1. Green Product

Green products emerge due to increasing environmental problems such as global warming, pollution, and waste. Thus, consumers translate this into a strong commitment to buy environmentally friendly products. According to Firman, et al. [19] green products are environmentally friendly products that have a recycling process in their production, reducing or eliminating the level of danger, or negative impacts on the environment.

2.5.2. Green Price

One of the most important aspects in marketing is price. If there is a perceived value or benefit compared to other products, consumers will mostly be willing to pay for the added value. The added value will increase functionality, performance, taste or appeal. Objective measurements and perceived quality can determine the quality of the product. When compared to standard products, objective quality is described as a measurable and quantifiable product attribute. According to Kirgiz [56] green price is the pricing by companies that pay attention to the environment with additional costs due to efforts in reducing energy and resource efficiency. The determination of higher prices by companies is due to the investment costs that have been incurred in the process of making environmentally friendly products.

2.5.3. Green Place

Green place according to Mihalic [20] and Shang, et al. [21] is the selection of company distribution channels with the aim of avoiding environmental damage and ensuring that products are always available, so that it will have a big influence on consumers. Despite environmental concerns, only a few consumers really want to buy exclusive goods that are beneficial to the environment. In a green place, consumers must be able to get goods without spending a lot of energy or fuel through environmentally friendly distribution methods. Currently, it is necessary to develop for minimum energy use with maximum benefits by building new networks to reduce distribution costs through non-renewable resources [55]. The adverse effects left by non-renewable resources in the distribution process are numerous. One example is in hardware production, where many residues are left in transportation, warehousing, and customs.

2.5.4. Green Promotion

The reputation of the advertised product is the key to green marketing strategy. By promoting environmentally friendly products, consumers can change their behavior, for example, the habit of using plastic bags by the community can change if the promotion/advertisement about recycled plastic bags can be reused and will not damage the environment[56]. According to Kirgiz [56] all forms of green promotion including advertising, personal selling, sales promotion, direct marketing, and public relations are based on environmental concerns. Green messages are messages that want to be conveyed containing the positive impact of products on the environment such as making water and energy efficient products, using recyclable products, and not using animals in experiments.

2.6. Destination Image

Destination image plays an important role in tourism marketing because it influences tourists' behavioral decisions and intentions [13, 14]. This concept includes objective knowledge, prejudices, imaginations, and emotions of individuals about a location Fu, et al. [13] which are subjective and influenced by personal experiences as well as information from the media and social groups [16-18]. Destination image plays a major role in determining the choice of holiday destinations and is influenced by tourists' perceptions of environmental responsibility, natural beauty, culture, and the business and hospitality sectors [55]. According to the literature, destination image consists of two main components:

1. Perceptual and Cognitive: Relating to the value and attractiveness of destination elements, such as natural resources and tourist attractions [19].

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2. Affective: Referring to feelings and emotions triggered by the destination, which are influenced by visitor motivation [20, 21].

The cognitive component influences the affective component, while the socio-demographic characteristics of tourists also shape the perception of both[23-25]. In addition, direct experience at the destination has a major impact on the overall destination image, which is a combination of cognitive and affective elements [25, 26]. Destination image is built through information from various sources, including history, culture, and socio-economic conditions that influence the individual's perspective. The cultural factors of tourists' origins also influence their perceptions of a particular destination [26]. In an era of global mobility restrictions, new destinations face the challenge of building an image that can attract local and international tourists.

In the context of tourism, the concept of image is closely related to the theory of brand image. Litheko [27] defines image as the way consumers view a brand based on its functional qualities and psychological features. Altassan [28] adds that brand image is formed from associations stored in consumers' memories. Chiwaridzo and Masengu [29] emphasizes that destination attractions and activities are key elements in the tourism marketing mix, while interactions between local residents and tourists are important dimensions in building destination image.

2.7. Tourist Perception

Public awareness of the limitations of natural resources and the negative impacts of tourism is increasing. Individual perceptions are influenced by personal attitudes, social pressures, and environmental concerns, which motivate their actions, both positive and negative [31, 32]. Tourists' understanding of global issues, such as climate change and greenhouse gas emissions, influences their behavior towards environmental damage and encourages environmentally friendly travel.

Perception is influenced by a person's environment and situation [34]. According to Moeljadi, et al. [57] perception is a direct response through the five senses to understand something. This process includes selecting, organizing, and interpreting sensory information [27, 35]. In the context of tourism, perception is a tourist's view of a destination Hashim, et al. [38] which influences visiting decisions and recommendations to others [39-41].

Previous studies have shown that perceptions of national park sustainability are related to tourist satisfaction Tehseen, et al. [41] although most of them focus on foreign tourists. Therefore, further analysis is needed on the perceptions and levels of satisfaction of local tourists towards the sustainability of natural tourism areas to increase the attractiveness of destinations [58]. Attitude consists of three main components [45, 46, 59]:

1. Cognitive Component: Information or knowledge that a person has about the object of attitude, forming certain beliefs.
2. Affective Component: Feelings of like or dislike that are emotional and closely related to the value system.
3. Conative Component: Readiness to act in accordance with the object of attitude, which determines real behavior.

The combination of these three components influences tourists' decisions to visit, recommend, or return to certain tourist destinations, especially those that implement sustainability principles.

2.8. Social Media

Tourism organizations need to understand that social media marketing can increase consumer engagement, loyalty, and trust to strengthen their destination branding [48]. According toBoiko [47] and Law, et al. [59] social media marketing utilizes external factors that influence consumer responses, thus impacting purchasing interest. Social media has changed the way companies, customers, and stakeholders interact and communicate. Customers can search for product information, provide reviews, evaluate, and compare alternatives, all of which influence their purchasing decisions. In the context of

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tourism, social media acts as an additional marketing tool to support destination promotion strategies, strengthen brand awareness, increase sales, and foster customer loyalty [49, 50].

According toFaisal [51] and Lagodiienko, et al. [50] social media has several main indicators, such as interesting and enjoyable content that can encourage consumers to view and buy products, fast and direct two-way communication between sellers and buyers, and ease of consumers in finding product information. Social media also allows consumers to interact with each other through reviews or discussions that can influence purchasing decisions. In addition, social media facilitates communication with the general public without requiring large promotional costs and increases consumer trust in the information conveyed if the information is accurate and up-to-date. Faisal [51] and Pan, et al. [52] measured the effectiveness of social media marketing through four main dimensions, namely entertainment, interaction, trendiness, and customization. The entertainment dimension includes the use of fun social media and interesting content. The interaction dimension includes the platform's ability to share information, facilitate conversations, and allow users to provide opinions.

2.9. Research Hypothesis

Based on the results of the literature review analysis above, the author draws the following research hypothesis:

$H_{1:}$ *Green Marketing has an effect on Green Tourism.*
$H_{2:}$ *Social Media has an effect on Green Tourism.*
$H_{3:}$ *Destination Image has an effect on Green Tourism.*
$H_{4:}$ *Tourist Perception has an effect on Green Tourism*
$H_{5:}$ *Green Marketing has an effect on Sustainability*
$H_{6:}$ *Social Media has an effect on Sustainability*
$H_{7:}$ *Destination Image has an effect on Sustainability*
$H_{8:}$ *Tourist Perception has an effect on Sustainability*
$H_{9:}$ *Green Tourism has an effect on Sustainability*
$H_{10:}$ *Green Marketing has a positive effect on Sustainability mediated by Green Tourism.*
$H_{11:}$ *Social Media has a positive effect on Sustainability mediated by Green Tourism.*
$H_{12:}$ *Destination Image has a positive effect on Sustainability mediated by Green Tourism.*
$H_{13:}$ *Tourist Perception has a positive effect on Sustainability mediated by Green Tourism.*

The research framework is depicted in the following figure, which provides a visual representation of the relationships between the variables studied. This framework is based on theoretical foundations and previous research results that have been discussed. The author provides a simple illustration of how social media influences consumer engagement, loyalty, and trust in tourist destinations through this framework:

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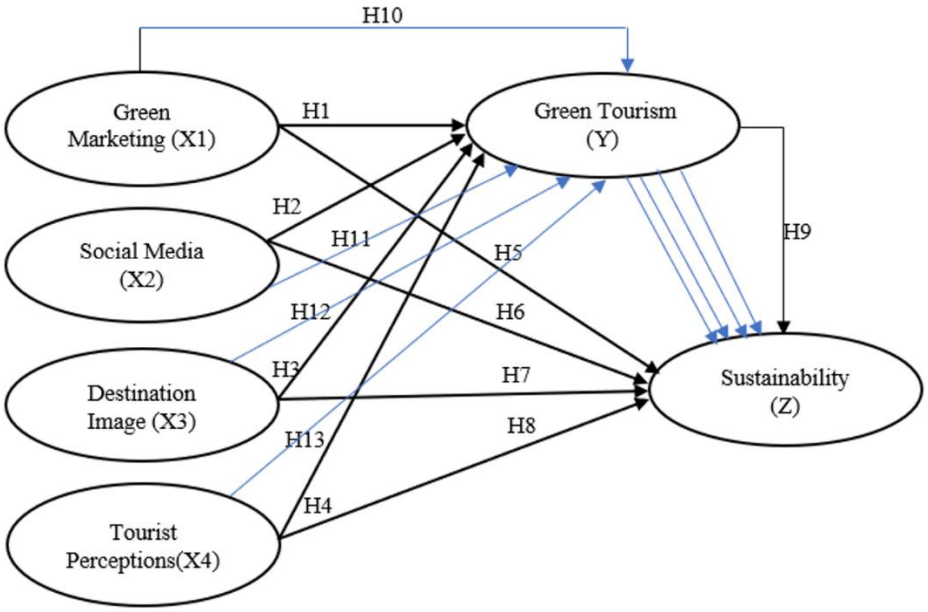

Figure 2.
Research Framework

3. Method

The focus of this study is to empirically test and analyze the influence of Green Marketing, Social Media, Destination Image, and Tourist Perception on green tourism and its implications for Sustainability. This research design uses a causal approach (causal studies), which aims to examine the influence between these variables. This research is based on hypothesis testing and is explanatory research, namely providing an explanation related to the object being studied. The type of research used is quantitative research. This research was conducted in a natural tourism area where there are 355 natural attractions in West Java which are divided into 2 types of environmental services, namely 205 forest areas and 150 places outside the forest area. Researchers focus more on the types of environmental services in forest areas spread across districts and cities in West Java with the aim of being more specific in conducting research.

This study has an infinite population, not known for sure. So the respondents of this study are tourists or visitors to the Natural Tourism Area who visit and have visited with a minimum age of 17 years. The unit of analysis of this study is individuals, namely local tourists who visit the Natural Tourism Area in West Java. The sampling that will be used as respondents uses non-probability sampling with a purposive sampling technique totaling 275 respondents. Data collection tools consist of questionnaires, and are tested through Validity Tests, Reliability Tests, with research procedures consisting of exploration, implementation, and reporting. This Research Data Test consists of Descriptive Statistical Analysis and Inferential Statistical Analysis (Assessing Outer Models and Inner Models).

4. Result and Discussion

4.1. Descriptive Statistical Analysis

Descriptive statistical analysis aims to describe, summarize, and present data in a form that is easier to understand without making inferences or generalizations to the population. Respondents' responses to questions about natural tourist locations that have been visited and are currently visited reflect their preferences and travel patterns. This data can provide insight into the most popular destinations, factors that influence the choice of tourist locations, and emerging travel trends among tourists. Analysis of

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these responses can help in understanding the level of popularity of a destination, the effectiveness of tourism marketing strategies, and the potential for developing tourism infrastructure and services in certain locations, the research data is presented in the following table:

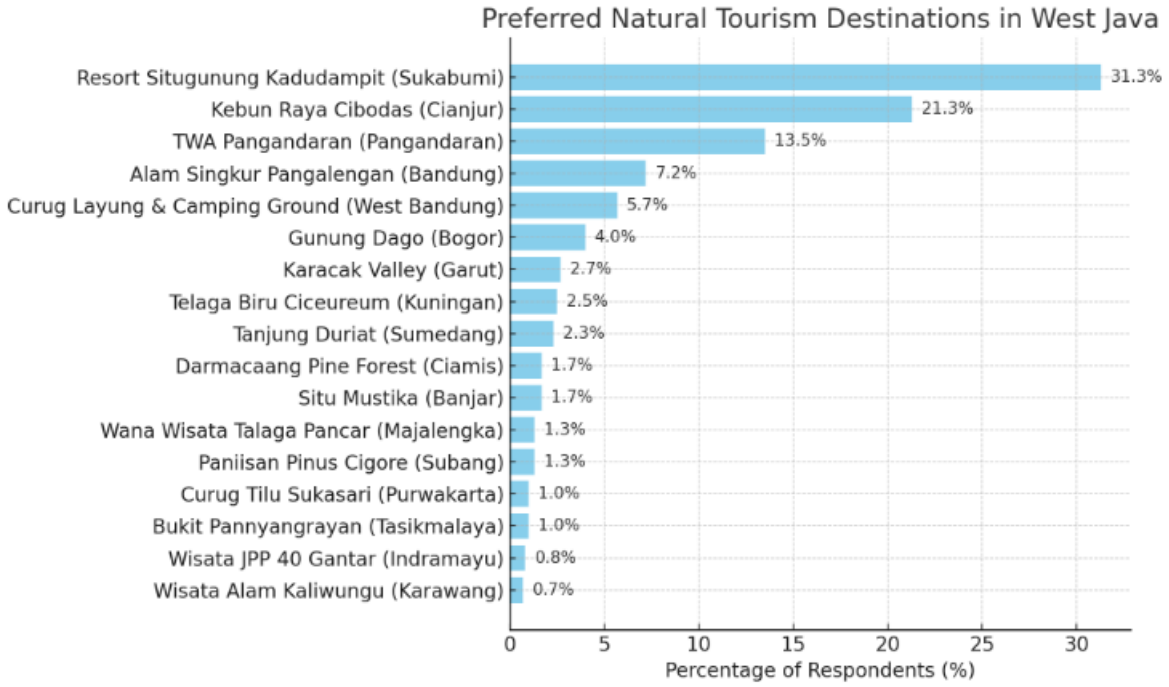

Figure 3.
Respondents' Choice of Natural Tourism Locations.

Situgunung Kadudampit Resort in Sukabumi Regency is the most visited natural tourist location by respondents (31.3%), followed by Cibodas Cipanas Botanical Gardens, Cianjur Regency (21.3%), and Pangandaran TWA, Pangandaran Regency (13.5%). Meanwhile, 14 other natural tourist destinations were each visited by more than 8% of respondents. Situgunung Resort is the main choice because it offers natural beauty such as suspension bridges, lakes, and fresh air. Its location is strategic and easily accessible from Jakarta and Bandung, supported by complete facilities such as camping areas and lodging. Effective promotion through social media and the green tourism concept it carries increases its appeal to tourists who care about environmental sustainability.

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Table 1.
Recapitulation of Variable Responses.

No	Variable	Dimensions	Score Obtained	Max Score	Percentage of Max Score	Category
1	Green Marketing	Police of Green product design	3,324	4,125	80.6%	Good
		Pricing of Green Product	2,133	2,750	77.6%	Good
		Distribution with Green Criteria	2,222	2,750	80.9%	Good
		Green Publicity and Green Sponsoring	2,199	2,750	80.0%	Good
	Total Score		9.878	12,375	79.8%	Good
2	Social Media	Entertainment	2,270	2,750	82.5%	Good
		Interaction	3,433	4,125	83.2%	Good
		Trendiness	2,251	2,750	81.9%	Good
		Customization	2,259	2,750	82.1%	Good
	Total Score		9.878	12,375	79.8%	Good
3	Destination Image	Cognitive	3,236	4,125	78.4%	Good
		Affective	1,635	2,750	59.5%	Good
		Conative	4,576	5,500	83.20	Good
	Total Score		9,447	12,375	76.34	Good
4	Tourist Perception	Attractions	5,724	6,875	83.3%	Good
		Amenities	2,025	2,750	73.6%	Good
		Accessibility	2,033	2,750	73.9%	Good
	Total Score		9,782	12,375	79.05%	Good
5	Green Tourism	Nature Based	3,230	4,125	78.3%	Good
		Supporting Conservation	2,248	2,750	81.7%	Good
		Sustainability	2,267	2,750	82.4%	Good
		Environmental Education	2,049	2,750	74.5%	Good
	Total Score		9,794	12,375	79.14%	Good
6	Sustainability	Environmental sustainability	3,009	4,125	72.9%	Good
		Cultural sustainability	3,075	4,125	74.5%	Good
		Economic sustainability	4,097	5,500	74.5%	Good
	Total Score		10,181	13,750	74.04%	Good

The data presented in Table 1 illustrates respondents' perceptions of the Green Marketing variable. Based on the data processing results, the total score for this variable is 9,878, equivalent to 79.82%, which falls under the "Good" category. Similarly, Table 2 presents respondents' responses regarding the Social Media variable, revealing a total score of 10,375 (82.53% - Good Category). Table 1 also provides insights into respondents' views on the Destination Image variable, with a total score of 9,447 (76.34% - Good Category). Additionally, respondents' perceptions of the Tourist Perception variable are reflected in the data, indicating a total score of 9,782 (79.05% - Good Category). The findings also highlight respondents' responses concerning the Green Tourism variable, showing a total score of 9,794 (79.14% - Good Category). Lastly, the Sustainability variable received a total score of 10,181 (79.04% - Good Category), as derived from the data processing results.

4.2. Structural Equation Model-Partial Least Square (SEM-PLS) Analysis

This research includes 55 manifest variables (indicators) and 6 latent variables. The measurement model (Outer Model) and structural model (Inner Model) are analyzed to evaluate the Structural Equation Model (SEM) using the Partial Least Square (PLS) approach.

4.3. Outter Model Test

Using PLS software, factor loadings for each construct indicator can be utilized to assess convergent validity, which ensures that the manifest variables within a construct exhibit a strong correlation. To determine convergent validity, the factor loading value must exceed 0.70, while the

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average variance extracted (AVE) and communality values should be greater than 0.5. The data from this study are presented in the following table:

Table 2.
Loading Factor Akhir

Variable (Symbol)	Dimensions	Indicator	Loading Factor	Note
Green Marketing (X1)	Police of Green product design	X1.3	0.780	Valid
	Distribution with Green Criteria	X1.7	0.867	Valid
Social Media (X2)	Entertainment	X2.1	0.825	Valid
		X2.2	0.806	Valid
	Interaction	X2.3	0.823	Valid
		X2.5	0.796	Valid
	Trendiness	X2.6	0.708	Valid
		X2.7	0.841	Valid
Destination Image (X3)	Cognitive	X3.2	0.743	Valid
		X3.3	0.707	Valid
	Conative	X3.6	0.778	Valid
		X3.7	0.882	Valid
		X3.8	0.869	Valid
		X3.9	0.785	Valid
Tourist Perception (X4)	Attractions	X4.1	0.779	Valid
		X4.2	0.764	Valid
		X4.3	0.796	Valid
		X4.5	0.750	Valid
	Amenities	X4.6	0.832	Valid
	Accessibility	X4.8	0.772	Valid
Green Tourism (Y)	Nature Based	Y.3	0.785	Valid
	Supporting Conservation	Y.4	0.809	Valid
		Y.5	0.831	Valid
	Sustainability	Y.6	0.833	Valid
		Y.7	0.812	Valid
	Environmental Education	Y.9	0.818	Valid
Sustainability (Z)	Cultural sustainability	Z.4	0.892	Valid
		Z.5	0.877	Valid
	Economic sustainability	Z.8	0.848	Valid

Table 2 provides information on the filler factor values for each manifest variable; if the filler factor values for all indicators compared to the latent variables are greater than 0.70, then the indicator is considered valid.

Table 3.
Average Variance Extracted (AVE).

Variable	Average Variance Extracted (AVE)
Green Marketing (GM)	0.679
Social Media (SM)	0.642
Destination Image (DI)	0.635
Tourist Perception (TP)	0.611
Green Toruism (GT)	0.664
Sustainability (S)	0.761

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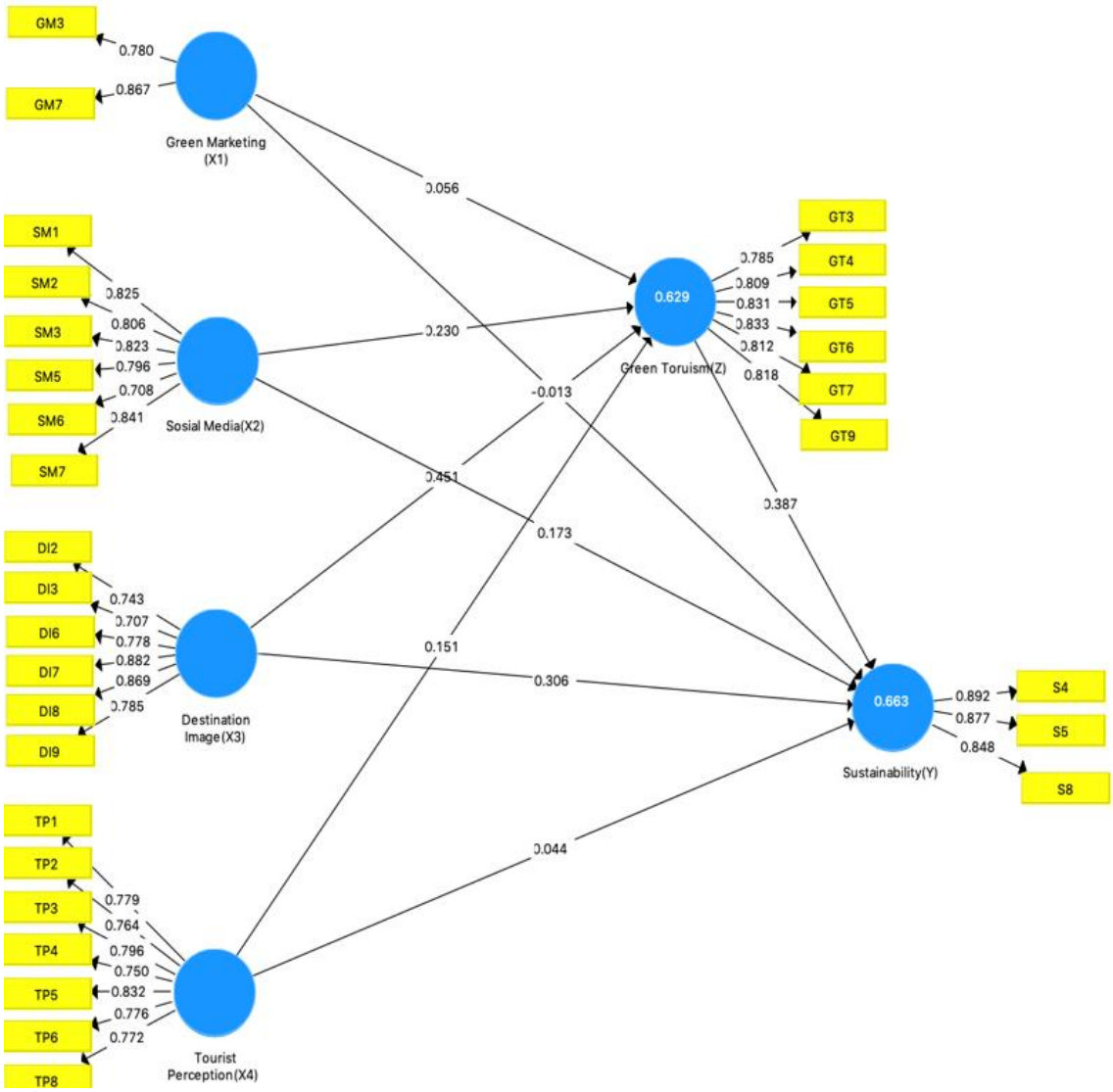

Figure 4.
Loading Factor Reestimation.

The data above shows that each of the six latent variables is considered valid in its explanation because their AVE values are greater than the specified value, which is 0.5. This shows that the AVE requirements are met by the use of the manifest variables, and that the Convergent Validity requirements have been met by all the stated manifest variables. Convergent Validity itself is the validity indicated by the scores produced by the instrument that measures.

4.4. Discriminant Validity

To determine discriminant validity, the path loading factor is used in conjunction with the construct and compared to the AVE and the correlation of the latent variable. If the correlation between the construct and its primary measurement or each indicator is higher than its correlation with other constructs, the variable is considered to have strong discriminant validity. The following are the cross-loading values:

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Table 4.
Cross Loading Factor.

Variable	Indicator	GM	SM	DI	TP	GT	S
GM	X1.3	0.780	0.423	0.452	0.428	0.364	0.378
	X1.7	0.867	0.526	0.515	0.384	0.496	0.434
SM	X2.1	0.447	0.825	0.573	0.498	0.564	0.547
	X2.2	0.428	0.806	0.549	0.520	0.563	0.559
	X2.3	0.479	0.823	0.567	0.556	0.550	0.586
	X2.5	0.500	0.796	0.555	0.493	0.537	0.529
	X2.6	0.418	0.708	0.559	0.542	0.488	0.477
	X2.7	0.517	0.841	0.628	0.572	0.580	0.557
DI	X3.2	0.485	0.561	0.743	0.570	0.640	0.556
	X3.3	0.412	0.578	0.707	0.616	0.584	0.524
	X3.6	0.481	0.524	0.778	0.511	0.543	0.576
	X3.7	0.436	0.600	0.882	0.610	0.623	0.661
	X3.8	0.502	0.575	0.869	0.633	0.668	0.666
	X3.9	0.497	0.572	0.785	0.581	0.561	0.581
TP	X4.1	0.458	0.613	0.653	0.779	0.563	0.603
	X4.2	0.413	0.571	0.625	0.764	0.622	0.547
	X4.3	0.397	0.597	0.616	0.796	0.541	0.537
	X4.4	0.363	0.418	0.456	0.750	0.403	0.392
	X4.5	0.354	0.497	0.554	0.832	0.492	0.470
	X4.6	0.291	0.381	0.481	0.776	0.446	0.394
	X4.8	0.351	0.465	0.587	0.772	0.499	0.463
GT	Y.3	0.420	0.556	0.605	0.560	0.785	0.610
	Y.4	0.411	0.542	0.615	0.531	0.809	0.603
	Y.5	0.470	0.581	0.669	0.567	0.831	0.648
	Y.6	0.425	0.597	0.644	0.560	0.833	0.666
	Y.7	0.412	0.539	0.599	0.541	0.812	0.589
	Y.9	0.444	0.523	0.572	0.477	0.818	0.598
S	Z.4	0.405	0.571	0.619	0.514	0.645	0.892
	Z.5	0.387	0.574	0.618	0.592	0.629	0.877
	Z.8	0.493	0.625	0.713	0.554	0.710	0.848

It is possible that the indicators used to measure the latent variables have met the requirements, as shown in the table above, because the cross-load factor values for the corresponding latent constructs are higher than other latent constructs.

4.5. Reliability Test

Composite Reliability (CR) and Cronbach's Alpha (CA) are two methods that can be used to evaluate the reliability of Partial Least Square (PLS):

Table 5.
Reliability Test Results

Variable	Cronbach's Alpha	Composite Reliability	Conclusion
Green Marketing (GM)	0.633	0.809	Reliable
Social Media (SM)	0.888	0.915	Reliable
Destination Image(DI)	0.883	0.912	Reliable
Tourist Perception(TP)	0.895	0.917	Reliable
Green Toruism(GT)	0.899	0.922	Reliable
Sustainability (S)	0.843	0.905	Reliable

The test results indicate that the data is reliable, demonstrating that all indicators consistently measure each variable. The Composite Reliability (CR) value exceeds 0.7, while the Cronbach's Alpha (CA) value is greater than 0.6, confirming the reliability of the measurements.

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4.6. Inner Model Test

The evaluation of this structural model aims to assess the relationship between latent variables. Testing is conducted by analyzing the path value to determine whether the influence is significant. The t-value of the path coefficient is obtained through bootstrapping. The following figure presents the bootstrapping results from this study:

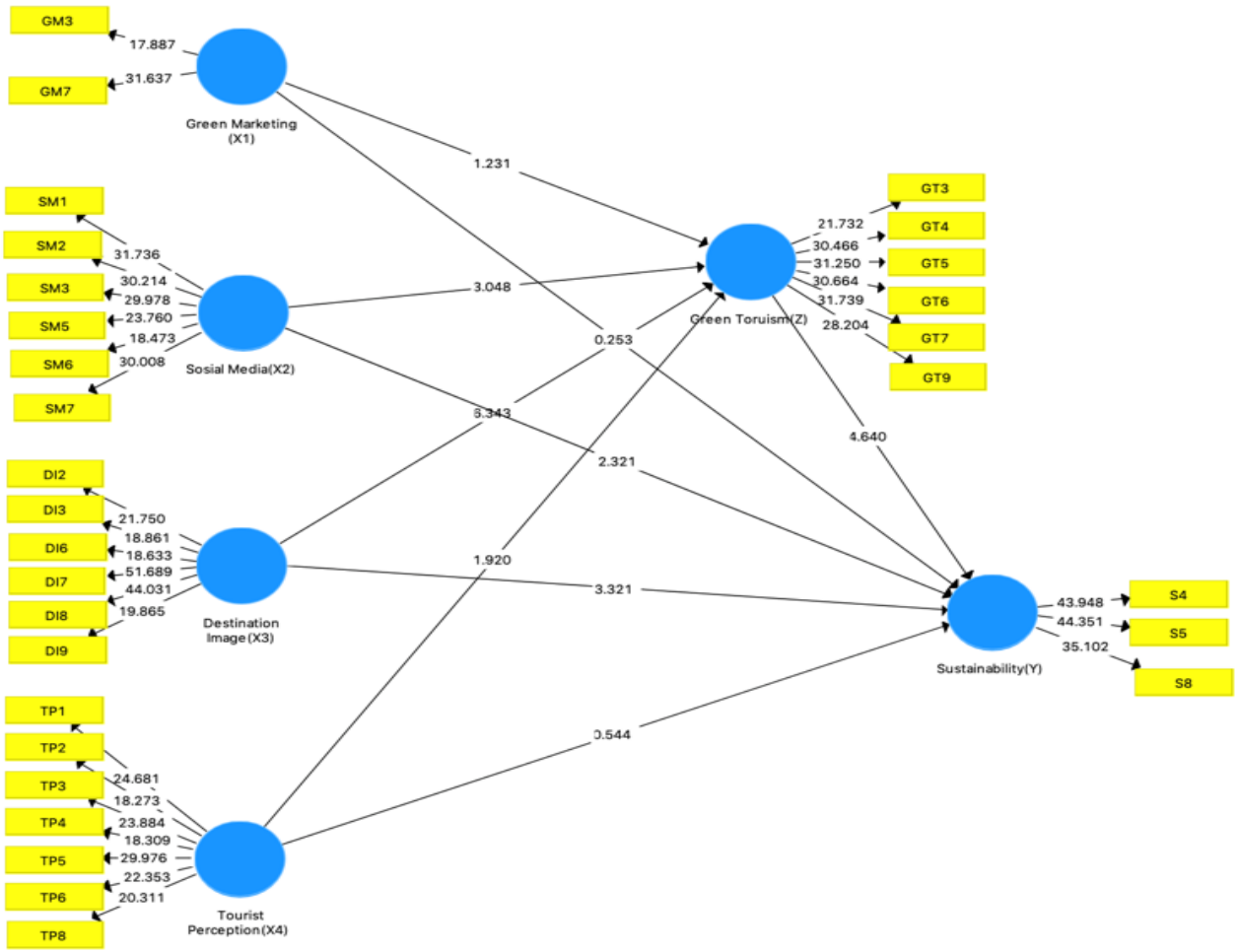

Figure 5.
Bootstrapping Result.

4.7. Hypothesis

The path coefficient, t-value or p-value, and coefficient value are used to determine whether the research hypothesis has a significant impact. The parameter coefficient value (initial example) is also displayed in the path significance test results, indicating the significance level of each research variable's influence. The results of the hypothesis testing in this study are presented in the following table:

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Table 6.
Path Significance Test.

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistic (0/STDEV)	P-Values
GM-GT	0.056	0.060	0.046	1.231	0.219
SM-GT	0.230	0.229	0.074	3.048	0.002
DI-GT	0.451	0.444	0.071	6.343	0.000
TP-GT	0.151	0.158	0.079	1.920	0.055
GM-S	-0.013	-0.013	0.050	0.253	0.801
SM-S	0.173	0.170	0.075	2.321	0.021
DI-S	0.306	0.309	0.092	3.321	0.001
TP-S	0.151	0.158	0.079	1.920	0.055
GT-S	0.387	0.389	0.084	4.640	0.000

Table 7.
Hypothesis Test Matrix.

H	Variable	Correlation	t-value	t-table	Information
H1	Green marketing → Green Tourism	0.056	1.231	1.96	No effect
H2	Social Media → Green Tourism	0.230	3.048	1.96	Positive Influence
H3	Destination Image → Green Tourism	0.451	6.343	1.96	Positive Influence
H4	Tourist perception → Green Tourism	0.151	1.920	1.96	No effect
H5	Green marketing → Sustainability	-0.013	0.253	1.96	No effect
H6	Social Media → Sustainability	0.173	2.321	1.96	Positive Influence
H7	Destination Image → Sustainability	0.306	3.321	1.96	Positive Influence
H8	Tourist perception → Sustainability	0.151	1.920	1.96	No effect
H9	Green Tourism → Sustainability	0.387	4.640	1.96	Positive Influence

This study applies a 95% confidence level. For a two-tailed hypothesis, the Path Coefficient score, represented by the t-statistic value, must exceed 1.96. Based on the Path Coefficient and t-statistic values in the table, the following conclusions can be made:

4.8. The Influence of Green Marketing on Green Tourism (H1)
H0: *Green Marketing does not have a significant effect on Green Tourism.*
H1: *Green Marketing has a significant influence on Green Tourism.*
Reject H0 and accept H1 if the t-value > t-table

To test the hypothesis, the t-value is used to assess the influence of Green Marketing on Green Tourism. With a t-value of 1.231, which is lower than 1.96 at a significance level of 0.05, it can be concluded that H0 is accepted, indicating no significant effect between Green Marketing and Green Tourism. The Green Marketing variable has an original sample value of 0.056 in a positive direction, suggesting that an improvement in Green Marketing would lead to a 0.056 increase in Green Tourism.

4.9. The Influence of Social Media on Green Tourism (H2)
H0: *Social Media does not have a significant influence on Green Tourism.*
H1: *Social Media has a significant influence on Green Tourism.*
Reject H0 and accept H1 if the t-value > t-table

To test this hypothesis, the t-value is used to assess the influence of Social Media on Green Tourism. With a t-value of 3.048, which exceeds 1.96 at a significance level of 0.05, it can be concluded that H1 is accepted, indicating a significant relationship between Social Media and Green Tourism. The Social Media variable has an original sample value of 0.230 in a positive direction, meaning that an improvement in Social Media will lead to a 0.230 increase in Green Tourism.

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4.10. The Influence of Destination Image on Green Tourism (H3)
H_0: Destination Image does not have a significant effect on Green Tourism.
H_1: Destination Image has a significant influence on Green Tourism.
Reject H0 and accept H1 if the t-value > t-table

To test this hypothesis, the t-value is used to evaluate the impact of Destination Image on Green Tourism. With a t-value of 6.343, which is greater than 1.96 at a significance level of 0.05, it can be concluded that H1 is accepted, indicating a significant effect between Destination Image and Green Tourism. The Destination Image variable has an original sample value of 0.451 in a positive direction, meaning that an improvement in Destination Image will lead to a 0.451 increase in Green Tourism.

4.11. The Influence of Tourist Perception on Green Tourism (H4)
H0: *Tourist Perception does not have a significant effect on Green Tourism.*
H1: *Tourist Perception has a significant influence on Green Tourism*
Reject H0 and accept H1 if the t-*value* > t-table.

To test this hypothesis, the t-value is used to assess the influence of Tourist Perception on Green Tourism. With a t-value of 1.920, which is lower than 1.96 at a significance level of 0.05, it can be concluded that H0 is accepted, indicating no significant effect between Tourist Perception and Green Tourism. The Tourist Perception variable has an original sample value of 0.151 in a positive direction, meaning that an improvement in Tourist Perception would lead to a 0.151 increase in Green Tourism.

4.12. The Influence of Green Marketing on Sustainability (H5)
H0: *Green Marketing does not have a significant effect on Sustainability*
H1: *Green Marketing has a significant influence on Sustainability*
Reject H0 and accept H1 if the t-value > t-table.

To test this hypothesis, the t-value is used to evaluate the effect of Green Marketing on Sustainability. With a t-value of 0.253, which is lower than 1.96 at a significance level of 0.05, it can be concluded that H0 is accepted, indicating no significant relationship between Green Marketing and Sustainability. The Green Marketing variable has an original sample value of -0.013 in a negative direction, meaning that an improvement in Green Marketing would result in a 0.013 decrease in Sustainability.

4.13. The Influence of Social Media on Sustainability (H6)
H0: *Social Media has no significant effect on Sustainability*
H1 : *Social Media has a significant influence on Sustainability*
Reject H0 and accept H1 if the value t-*value* > t-table.

To test this hypothesis, the t-value is used to assess the impact of Social Media on Sustainability. With a t-value of 2.321, which exceeds 1.96 at a significance level of 0.05, it can be concluded that H1 is accepted, indicating a significant relationship between Social Media and Sustainability. The Social Media variable has an original sample value of 0.173 in a positive direction, meaning that an improvement in Social Media will lead to a 0.173 increase in Sustainability.

4.14. The Influence of Destination Image On Sustainability (H7)
H0: *Destination image does not have a significant effect on sustainability*
H1: *Destination Image has a significant influence on Sustainability*
Reject H0 and accept H1 if the t-value > t-table.

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To evaluate this hypothesis, the t-value is used to measure the impact of Destination Image on Sustainability. With a t-value of 3.321, which is greater than 1.96 at a significance level of 0.05, it can be concluded that H1 is accepted, indicating a significant effect between Destination Image and Sustainability. The Destination Image variable has an original sample value of 0.306 in a positive direction, meaning that an improvement in Destination Image will result in a 0.306 increase in Sustainability.

4.15. The Influence of Tourist Perception on Sustainability (H8)
H0: *Tourist Perception does not have a significant effect on Sustainability.*
H1: *Tourist Perception has a significant influence on Sustainability.*
Reject H0 and accept H1 if the t-value > t-table.

To evaluate this hypothesis, the t-value is used to assess the impact of Tourist Perception on Sustainability. With a t-value of 1.920, which is lower than 1.96 at a significance level of 0.05, it can be concluded that H0 is accepted, indicating no significant effect between Tourist Perception and Sustainability. The Tourist Perception variable has an original sample value of 0.151 in a positive direction, meaning that an improvement in Tourist Perception would lead to a 0.151 increase in Sustainability.

4.16. The Influence of Green Tourism on Sustainability (H9)
H0: *Green Tourism does not have a significant effect on Sustainability*
H1: *Green Tourism has a significant influence on Sustainability*
Reject H0 and accept H1 if the t-value > t-table

To test this hypothesis, the t-value is used to examine the impact of Green Tourism on Sustainability. With a t-value of 4.640, which exceeds 1.96 at a significance level of 0.05, it can be concluded that H1 is accepted, indicating a significant effect between Green Tourism and Sustainability. The Green Tourism variable has an original sample value of 0.387 in a positive direction, meaning that an improvement in Green Tourism will lead to a 0.387 increase in Sustainability.

4.17. R-Square Test, Direct and Indirect Effects and Specific Indirect Effects

The following R Square value shows the influence of the dependent variable, the test results in this study are presented in the following table:

Table 8.
R Square Result

	R Square
Green Tourism (GT)	0.629
Sustainability (S)	0.663

Based on the coefficient of determination (R Square) in Table 8, the first sub-structure shows that the Green Tourism variable has an R Square value of 0.629, indicating that 62.9% of Green Tourism can be explained by the Green Marketing, Social Media, Destination Image, and Tourist Perception variables. In the third sub-structure, the Sustainability variable has an R Square value of 0.663, meaning that 66.3% of Sustainability can be explained by the Green Marketing, Social Media, Destination Image, and Tourist Perception variables.

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Table 9.
Direct and Indirect Influence.

Direct Influence		Indirect Influence		Total
GM – GT	0.056			0.056
SM – GT	0.230			0.230
DI - GT	0.451			0.451
TP – GT	0.151			0.151
GT – S	0.387			0.387
GM – S	-0.013	GM - GT – S (0.056 x 0.387)	0.022	0.009
SM – S	0.173	SM – GT – S (0.230 x 0.387)	0.089	0.262
DI – S	0.306	DI – GT – S (0.451 x 0.387)	0.175	0.481
TP – S	0.151	TP – GT – S (0.151 x 0.387)	0.059	0.209

Based on Table 9, it is known that from testing 4 indirect influences, 3 of them have a greater total influence when compared to the direct influence, namely Social Media, Destination Image and Tourist Perception.

Table 10.
Specific Indirect Effects.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Destination Image(X3) -> Green Toruism(Z) -> Sustainability(Y)	0.175	0.173	0.050	3.466	0.001
Green Marketing (X1) -> Green Toruism(Z) -> Sustainability(Y)	0.022	0.024	0.019	1.145	0.253
Social Media(X2) -> Green Toruism(Z) -> Sustainability(Y)	0.089	0.087	0.031	2.837	0.005
Tourist Perception(X4) -> Green Toruism(Z) -> Sustainability(Y)	0.059	0.062	0.036	1.631	0.104

Based on Table 10, the analysis identifies four indirect effects assessed through t-values and p-values. The relationship between Green Marketing and Sustainability, mediated by Green Tourism, does not show a significant effect. This is indicated by an original sample value of 0.022 and a p-value of 0.253 (> 0.05). The t-value of 1.145, which is lower than 1.96, confirms that Green Tourism does not serve as a mediator in this relationship, meaning Green Marketing does not significantly impact Sustainability through Green Tourism.

Conversely, in the relationship between Social Media and Sustainability, mediated by Green Tourism, a significant effect is observed, with an original sample value of 0.087 and a p-value of 0.005 (< 0.05). The t-value of 2.837 (> 1.96) suggests that Green Tourism strengthens the influence of Social Media on Sustainability. A similar trend is found in the relationship between Destination Image and Sustainability, where Green Tourism acts as a mediator. This relationship shows a significant effect, with an original sample value of 0.175 and a p-value of 0.001 (< 0.05). The t-value of 3.466, which exceeds 1.96, supports the conclusion that Destination Image contributes to Sustainability through the mediation of Green Tourism.

The relationship between Tourist Perception and Sustainability, mediated by Green Tourism, does not indicate a significant effect. With an original sample value of 0.059, a p-value of 0.104 (> 0.05), and a t-value of 1.631 (less than 1.96), it can be concluded that Green Tourism does not play a crucial mediating role in this relationship. Out of the four relationships analyzed, Green Tourism functions as a mediator only in the relationships between Social Media and Sustainability, as well as Destination Image and Sustainability. Meanwhile, for Green Marketing and Tourist Perception, the mediation effect of Green Tourism is not significant.

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5. Discussion

Lower Green Marketing scores on the Pricing of Green Product dimension can lead to a lack of understanding and knowledge of instruments regarding prices for environmentally friendly products when visiting natural tourist attractions such as forest area environmental services, where in the context of tourist visits to natural tourist attractions, it shows that the prices applied for environmentally friendly services or products at these tourist locations are considered less competitive or too expensive by visitors. The results of this study refute the research conducted byFaisal [51]; Nekmahmud and Fekete-Farkas [48] and Pan, et al. [52] which showed that Green Marketing has a significant effect on Green Tourism.

One of the reasons why Social Media can have a positive effect on Green Tourism is due to its ability to spread information and raise awareness widely and quickly. Social media allows eco-friendly nature tourism destinations to be known to a global audience, promote sustainable nature tourism practices, and inspire more people to get involved in nature conservation. The results of this study fully support previous studies byBorysova, et al. [7]; George [2] and Koščak and O'Rourke [1] which stated that Social Media has a positive effect on Green Tourism. The results of this study refute the research conducted by Borysova, et al. [7]; Faisal [10] and Litheko [9] which showed that Social Media had no effect on Green Tourism.

From the results of the study, the Destination Image scores obtained for each dimension are as follows: Cognitive with a score of 78.4%, Affective with a score of 59.5% and Conative with a score of 83.2%. These results indicate that the level of Destination Image among respondents is at a relatively good level, with the score for the Affective dimension being relatively lower compared to other dimensions. The results of this study provide full support to previous studies by Faisal [10] and Fu, et al. [13] showing that Destination Image has a positive effect on Green Tourism. The results of this study refute the research conducted by Fu, et al. [13]; Roman, et al. [14] and Zainol, et al. [15] showing that Destination Image has no effect on Green Tourism.

These results indicate that the level of Tourist Perception among respondents is at a relatively good level, with the score value for the Attractions dimension being relatively higher compared to other dimensions. One of the reasons why tourist perception does not affect green tourism could be related to the mismatch between perception and real action.

The results of this study refute the research conducted by Catibog-Sinha [17]; Hutsaliuk, et al. [16]and Zainol, et al. [15] which showed that Tourist Perception has an effect on Green Tourism. Also, the results of this study support the research conducted by Firman, et al. [19] tourists have a negative perception of the level of cleanliness of the city. Garbage, unclean air, and a non-green city view with a high density level are prominent impressions. Seraphin, et al. [18] negative perceptions can significantly reduce the likelihood of future visits, Mihalic [20] public perception of Chinese tourists visiting Bali tends to feel doubtful and disagree to be able to realize Sapta Pesona, which shows that Tourist Perception has no effect on Green Tourism.

The results of the study show that Green Marketing has no effect on Sustainability. One of the reasons why Green Marketing does not have a direct effect on sustainability in nature tourism is because its focus is more on promotion and branding than on real practices that support environmental conservation. The results of this study refute the research conducted by Choi, et al. [22]; Firman, et al. [19]; Mihalic [20] and Shang, et al. [21] which showed that Green Marketing has an effect on Sustainability. And the results of this study support the research conducted by Higgins-Desbiolles [24] and Nag, et al. [23] showing inconsistencies in the results, namely that very little has been done to assess whether eco-friendly tourists are large enough to represent a useful target market, knowledge about the implementation

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practices of green marketing is still limited to each of the marketers and policy makers so that Green Marketing has no effect on Sustainability Nature tourism in West Java.

Social media serves as an effective promotional tool, encouraging tourists to visit natural destinations in West Java in a more responsible and sustainable manner. The findings of this study align with previous research by Higgins-Desbiolles [24]; Jaelani, et al. [26] and Li and Cao [25] which demonstrate that Social Media positively influences Sustainability. However, these results contradict the studies of Altassan [28] and Jaelani, et al. [26] which suggest that Social Media has no significant indirect effect on Sustainability.

Additionally, the study confirms that Destination Image positively impacts Sustainability. It highlights that a strong and favorable destination image not only attracts more tourists but also influences their perception of the importance of conserving and protecting the natural environment they visit. These findings are consistent with prior research by Chiwaridzo and Masengu [29]; Gonçalves, et al. [31]; Gonia and Jezierska-Thöle [32] which establish a positive link between Destination Image and Sustainability. However, they contradict studies by Bhatia, et al. [35] and Roblek, et al. [34] and Sun, et al. [33] which argue that Destination Image has no significant indirect effect on Sustainability.

The results of the study show that Tourist Perception has no effect on Sustainability. One of the reasons why Tourist Perception does not have a direct effect on sustainability in nature tourism is that although tourist perceptions of sustainability are very important, they are not always directly proportional to real actions and tourist perceptions are often based on limited personal experience and do not always reflect a deep understanding of sustainability issues. These perceptions tend to be influenced by factors such as ease of access, available facilities, or personal enjoyment during travel, which may not be directly related to sustainable practices.

The results of this study refute the research conducted by Bhatia, et al. [35]; Hashim, et al. [38] and Letunovska, et al. [37] which showed that Tourist Perception has an effect on Sustainability. And the results of this study support the research conducted by Gica, et al. [40] and Kalchenko, et al. [39] foreign tourists have a negative perception of Manado City as a tourist destination from an environmental aspect. Gica, et al. [40] the understanding of the millennial generation regarding the concept of sustainable tourism development is still low. Wisnawa, et al. [60] public perception of Chinese tourists visiting Bali tends to feel doubtful and disagree with being able to realize sustainable tourism. Votsi, et al. [45] tourist perceptions found that the frequency of mentioning landscape features in reviews did not correlate significantly with the emotional attitudes of tourists, which shows that Tourist Perception has no effect on Sustainability.

Green Tourism in West Java prioritizes the preservation of natural environments, including forests, rivers, and wildlife. This is achieved through conservation efforts, effective waste management, and the adoption of renewable energy in tourism areas. The findings of this study fully support previous research by Boiko [47]; Law, et al. [59] and Nekmahmud and Fekete-Farkas [48] which demonstrate that Green Tourism contributes to Sustainability.

The study also reveals that Green Tourism does not mediate the relationship between Green Marketing and Sustainability, meaning there is no significant indirect effect of Green Marketing on Sustainability through Green Tourism. One possible explanation for this is the lack of consumer awareness or understanding of the Green Tourism concept, despite the crucial role Green Marketing plays in promoting sustainability.

Social media plays a vital role in disseminating information, raising awareness, and shaping public perceptions about the importance of sustainable tourism. By promoting Green Tourism practices, social media helps direct the behavior of tourists and stakeholders towards more environmentally friendly and

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responsible activities. Green Tourism as a mediator serves to strengthen the relationship between social media and sustainability. This concept encompasses tourism practices that prioritize conservation, reduce environmental impact, and support local economies.

The study findings indicate that Green Tourism serves as a mediator in the relationship between Destination Image and Sustainability, meaning that Destination Image significantly influences Sustainability through Green Tourism in West Java's nature tourism sector. When a strong Destination Image aligns with Green Tourism principles, its positive impact on sustainability becomes more pronounced. Green Tourism, which involves reducing environmental impacts, supporting conservation efforts, and strengthening local economies, enhances the connection between a positive Destination Image and sustainability objectives.

Conversely, the study reveals that Green Tourism does not mediate the relationship between Tourist Perception and Sustainability, indicating no significant indirect effect of Tourist Perception on Sustainability through Green Tourism. The findings suggest that millennials' understanding of sustainable tourism development remains relatively low, highlighting the need for targeted education tailored to their characteristics. Supporting this, research by Faisal [51] found that public perceptions of Chinese tourists visiting Bali tend to be skeptical, with doubts about their ability to uphold Sapta Pesona and contribute to sustainable tourism.

This study introduces innovation in the application of green marketing that not only focuses on the environmental promotion aspect but also builds stronger relationships with the surrounding community and tourism actors. This strategy provides a holistic approach that is relevant for nature tourism managers through an approach that unites people (community welfare), planet (environmental conservation), and profit (economic sustainability), this study offers new insights into how green tourism can become a pillar of sustainability, not only in terms of economy but also social and environment by integrating these variables.

6. Conclusion

Based on the analysis results, it was found that Green Marketing has no effect on Green Tourism and Sustainability due to the lack of awareness and understanding of tourists. On the contrary, Social Media and Destination Image play a significant role in supporting Green Tourism and Sustainability by increasing tourist awareness and perception. Tourist Perception itself has no direct influence on Green Tourism or Sustainability, indicating that understanding alone is not enough to encourage real action. Green Tourism has been shown to contribute positively to Sustainability through conservation practices and environmental education. These factors confirm that the success of sustainable tourism in West Java is highly dependent on effective promotion and involvement of tourists in environmentally friendly practices.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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References

[1] M. Koščak and T. O'Rourke, *Ethical and responsible tourism: managing sustainability in local tourism destinations*. Taylor & Francis, 2023.

[2] R. George, "Responsible tourism as a strategic marketing tool for improving the negative image of South Africa," *Worldwide Hospitality and Tourism Themes*, vol. 9, no. 5, pp. 543-554, 2017. https://doi.org/10.1108/whatt-07-2017-0031

[3] D. B. Weaver, "Ecotourism in the context of other tourism types," in The encyclopedia of ecotourism: CABI Publishing Wallingford UK, 2001, pp. 73-83.

[4] E. Purwanti, "Analisis deskriptif profil kemiskinan Indonesia berdasarkan data BPS tahun 2023," *AKADEMIK: Jurnal Mahasiswa Humanis*, vol. 4, no. 1, pp. 1-10, 2024.

[5] J. E. Lawn *et al.*, "Small babies, big risks: global estimates of prevalence and mortality for vulnerable newborns to accelerate change and improve counting," *The Lancet*, vol. 401, no. 10389, pp. 1707-1719, 2023.

[6] C.-W. Lu, J.-C. Huang, C. Chen, M.-H. Shu, C.-W. Hsu, and B. T. Bapu, "An energy-efficient smart city for sustainable green tourism industry," *Sustainable Energy Technologies and Assessments*, vol. 47, p. 101494, 2021.

[7] O. Borysova *et al.*, "Ecological tourism: Pandemic lessons for Ukraine," *Ukrainian Journal of Ecology*, vol. 11, no. 1, pp. 191-195, 2021. https://doi.org/10.15421/2019_795

[8] H. Abdelhady *et al.*, "Effect of convalescent plasma on organ support–free days in critically ill patients with COVID-19: a randomized clinical trial," *Jama*, vol. 326, no. 17, pp. 1690-1702, 2021.

[9] A. Litheko, "Management of eco-tourism through public-private partnerships in South Africa," *African Journal of Hospitality, Tourism and Leisure*, vol. 11, no. 6, pp. 2103-2127, 2022.

[10] F. Faisal, "Policies and strategies for green tourism development of the jeneberang river area in Makassar city," *Jurnal Kepariwisataan: Destinasi, Hospitalitas dan Perjalanan*, vol. 8, no. 2, pp. 285-297, 2024.

[11] W. H. Khan *et al.*, "COVID-19 pandemic and vaccines update on challenges and resolutions," *Frontiers in Cellular and Infection Microbiology*, vol. 11, p. 690621, 2021.

[12] N. Kurniyanti, I. Effendy, and I. Anggraini, "Service Quality Affects BPJS Patient Satisfaction at the Pematang Health Center, Serang Regency, Banten in 2024," *PROMOTOR*, vol. 7, no. 5, pp. 734-738, 2024.

[13] M. Fu, S. Huang, and S. Ahmed, "Assessing the impact of green finance on sustainable tourism development in China," *Heliyon*, vol. 10, no. 10, 2024.

[14] M. Roman, I. Kudinova, V. Samsonova, and N. Kawęcki, "Innovative Development of Rural Green Tourism in Ukraine," *Tourism and Hospitality*, vol. 5, no. 3, pp. 537-558, 2024. https://doi.org/10.3390/tourhosp5030033

[15] N. R. Zainol, F. A. Abdullah, and M. K. Rahman, "Exploring digitalization-driven in innovative eco-tourism sector," in Social Entrepreneurship and Social Innovation in Eco-Tourism: Springer, 2023, pp. 61-84.

[16] O. Hutsaliuk, I. Bondar, N. Sereda, O. Babych, and I. Shchoholieva, "Organization and management of the development of ecological tourism in a circular economy," presented at the E3S Web of Conferences, 255, 01026, 2021.

[17] C. Catibog-Sinha, "The role of nature-based tourism in the green economy: a broader perspective for conservation and sustainability in the Philippines," Routledge, 2015, pp. 79-92.

[18] H. Seraphin, A. C. Yallop, S. Seyfi, and C. M. Hall, "Responsible tourism: The 'why'and 'how'of empowering children," *Tourism Recreation Research*, vol. 47, no. 1, pp. 62-77, 2022.

[19] A. Firman, M. Moslehpour, R. Qiu, P.-K. Lin, T. Ismail, and F. F. Rahman, "The impact of eco-innovation, ecotourism policy and social media on sustainable tourism development: Evidence from the tourism sector of Indonesia," *Economic Research*, vol. 36, no. 2, 2023.

[20] T. Mihalic, "Sustainable-responsible tourism discourse–Towards 'responsustable'tourism," *Journal of cleaner production*, vol. 111, pp. 461-470, 2016.

[21] Y. Shang, Q. Yang, and Y. Pu, "Role of foreign direct Investment and political openness in boosting the eco-tourism sector for achieving sustainability," *Humanities and Social Sciences Communications*, vol. 11, no. 1, pp. 1-8, 2024.

[22] Y. E. Choi, C.-O. Oh, and J. Chon, "Applying the resilience principles for sustainable ecotourism development: A case study of the Nakdong Estuary, South Korea," *Tourism Management*, vol. 83, p. 104237, 2021.

[23] A. Nag, V. Kumar, V. Choudhary, A. Kumar, and R. Sharma, "Nurturing Nature and Local Well-Being in the Hills of Himachal Pradesh: Transformation Through Eco and Sustainable Tourism Practices," in Managing Tourism and Hospitality Sectors for Sustainable Global Transformation: IGI Global, 2024, pp. 157-168.

[24] F. Higgins-Desbiolles, "Sustainable tourism: Sustaining tourism or something more?," *Tourism Management Perspectives*, vol. 25, pp. 157–160, 2018.

[25] J. Li and B. Cao, "Resources policies for solar development and eco-tourism expansion in emerging economies," *Resources Policy*, vol. 88, p. 104460, 2024.

[26] A. K. Jaelani, M. J. Hayat, R. D. Luthviati, S. Al-Fatih, and M. M. Mujib, "Green tourism regulation on sustainable development: Droning from Indonesia and China," *JILS*, vol. 8, p. 663, 2023.

[27] A. Litheko, "Small tourism business growth through eco-tourism in Mahikeng, South Africa," *African Journal of Hospitality, Tourism and Leisure*, vol. 10, no. 1, pp. 256-269, 2021.

[28] M. A. Altassan, "Understanding the role of green organization culture and innovation between green hrm practices and environmental performance of SMEs in Saudi Arabia," *Pakistan Journal of Life & Social Sciences*, vol. 21, no. 2, 2023.

© 2025 by the authors; licensee Learning Gate

[29] O. T. Chiwaridzo and R. Masengu, "Rebuilding sustainable green tourism supply chain through technology adoption and social media branding in Zimbabwe post-COVID-19," *Environment, Development and Sustainability*, pp. 1-24, 2024.

[30] N. A. Dewi, "Strategi branding pariwisata Indonesia melalui wonderful Indonesia," in *Prosiding Seminar Nasional Komunikasi, Administrasi Negara Dan Hukum*, 2023, vol. 1, no. 1, pp. 161-168.

[31] E. C. C. Gonçalves, R. J. d. C. Guerra, and V. M. P. d. Figueiredo, "Green tourism and sustainability: The paiva walkways case in the post-pandemic period (portugal)," *Sustainability*, vol. 15, no. 18, p. 13969, 2023.

[32] A. Gonia and A. Jezierska-Thöle, "Sustainable tourism in cities—nature reserves as a 'new'city space for nature-based tourism," *Sustainability*, vol. 14, no. 3, p. 1581, 2022.

[33] X. Sun, J. Qing, S. A. A. Shah, and Y. A. Solangi, "Exploring the complex nexus between sustainable development and green tourism through advanced GMM analysis," *Sustainability*, vol. 15, no. 14, p. 10782, 2023.

[34] V. Roblek, D. Drpić, M. Meško, and V. Milojica, "Evolution of sustainable tourism concepts," *Sustainability*, vol. 13, no. 22, p. 12829, 2021.

[35] A. Bhatia, A. Sharma, and R. Sharma, "The transformative aspects of green tourism: A himalayan perspective. in sustainable tourism, part b: A comprehensive multidimensional perspective," Emerald Publishing Limited, 2024, pp. 67–84.

[36] W. H. Organization, "United nations conference on sustainable development," ed: January, 2012.

[37] N. Y. Letunovska, A. Kwilinski, H. Dzwigol, O. V. Liulov, and T. V. Pimonenko, "Sustainable tourism for the green economy," 2021.

[38] R. Hashim, Z. A. Latif, F. M. Merican, and N. Zamhury, "The praxis of langkawi's sustainable regeneration strategy through eco-tourism," *Procedia-Social and Behavioral Sciences*, vol. 170, pp. 49–57, 2015.

[39] S. V. Kalchenko, A. O. Hutorov, L. S. Bezuhla, O. A. Leushina, T. V. Popova, and O. V. Dorokhov, "Managing the socio-economic development of small forms of green tourism," *Bulletin of the Transilvania University of Brasov. Series II: Forestry• Wood Industry• Agricultural Food Engineering*, pp. 141-152, 2021.

[40] O. A. Gica, M. M. Coros, O. I. Moisescu, and A. C. Yallop, "Transformative rural tourism strategies as tools for sustainable development in Transylvania, Romania: A case study of Sâncraiu," *Worldwide Hospitality and Tourism Themes*, vol. 13, no. 1, pp. 124-138, 2021.

[41] S. Tehseen, K. Y. Ong, S. M. Hossain, and E. Andrews, "Sustainable Tourism: A Catalyst for the Green Economy," in The Need for Sustainable Tourism in an Era of Global Climate Change: Pathway to a Greener Future: Emerald Publishing Limited, 2024, pp. 53-67.

[42] B. Bramwell and L. Rawding, "Tourism marketing images of industrial cities," *Annals of Tourism research*, vol. 23, no. 1, pp. 201-221, 1996.

[43] R. Costanza *et al.*, *Building a sustainable and desirable economy-in-society-in-nature: Report to the United Nations for the 2012 Rio+ 20 Conference*. ANU Press, 2013.

[44] J. Ghanem, "Conceptualizing "the Tourist": A critical review of UNWTO definition," 2017.

[45] N.-E. P. Votsi, A. D. Mazaris, A. S. Kallimanis, and J. D. Pantis, "Natural quiet: An additional feature reflecting green tourism development in conservation areas of Greece," *Tourism Management Perspectives*, vol. 11, pp. 10-17, 2014.

[46] H. Abdellatif, B. Hicham, and B. Karim, "Responsible green tourism: A new path for eco-friendly tourism development," *International Journal of Economic Perspectives*, vol. 18, no. 2, pp. 560-589, 2024. https://doi.org/10.1016/j.tmp.2024.101281

[47] V. Boiko, *Green tourism as a perspective direction for rural entrepreneurship development*. Lviv-Toruń: Liha-Pres, 2020.

[48] M. Nekmahmud and M. Fekete-Farkas, "Green marketing, investment and sustainable development for green tourism," *Tourism in Bangladesh: Investment and development perspectives*, pp. 339-361, 2021.

[49] O. Gryshchenko, V. Babenko, O. Bilovodska, T. Voronkova, I. Ponomarenko, and Z. Shatskaya, "Green tourism business as marketing perspective in environmental management," *Global Journal of Environmental Science and Management*, 2022.

[50] V. Lagodiienko, H. Sarkisian, N. Dobrianska, I. Krupitsa, O. Bairachna, and O. Shepeleva, "Green tourism as a component of sustainable development of the region," *Management Theory and Studies for Rural Business and Infrastructure Development*, vol. 44, no. 3, pp. 254-262, 2022.

[51] S. M. Faisal, "Green tourism promotes sustainable development and combats climate change," *Clinical Medicine and Health Research Journal*, vol. 11, no. 12, pp. 70-89, 2024. https://doi.org/10.4324/9780203087183-14

[52] S.-Y. Pan, M. Gao, H. Kim, K. J. Shah, S.-L. Pei, and P.-C. Chiang, "Advances and challenges in sustainable tourism toward a green economy," *Science of the total environment*, vol. 635, pp. 452-469, 2018.

[53] Widyastuti, S. Parenrengi, and F. Tuzzahara, "Crafting freen halal tourism: Enhaching the nation's competitiveness," *International Journal of Innovation and Change*, vol. 8, no. 11, pp. 210-226, 2019.

[54] S. Widyastuti, "Sebuah sintesis pada literatur: strategi intervensi pemasaran hijau menuju pembangunan berkelanjutan (a synthesis of literature: a green marketing intervention strategy towards sustainability development)," *JRB-Jurnal Riset Bisnis*, vol. 2, no. 2, pp. 83-94, 2019.

[55] D. J. Nowacki, A. W. Stevens, R. K. Takesue, and E. E. Grossman, "Fluvial delivery and wave resuspension of sediment in a sheltered, urbanized Pacific Northwest estuary," *Estuaries and Coasts*, vol. 47, no. 1, pp. 32-47, 2024.

© 2025 by the authors; licensee Learning Gate

[56] M. S. Kirgiz, "Advancements in mechanical and physical properties for marble powder–cement composites strengthened by nanostructured graphite particles," *Mechanics of Materials*, vol. 92, pp. 223-234, 2016.
[57] D. Moeljadi, I. Kamajaya, and D. Amalia, "Building the KamusBesarBahasa Indonesia (KBBI) Database and Its Applications," in *Proceedings of the 11th International Conference of the Asian Association for Lexicography*, 2017, pp. 64-80.
[58] J. Said and M. Maryono, "Motivation and perception of tourists as push and pull factors to visit national park," in *E3S Web of Conferences*, 2018, vol. 31: EDP Sciences, p. 08022.
[59] A. Law, T. De Lacy, G. Lipman, and M. Jiang, "Transitioning to a green economy: the case of tourism in Bali, Indonesia," *Journal of Cleaner Production*, vol. 111, pp. 295-305, 2016.
[60] I. M. B. Wisnawa, A. A. R. Wijayanti, and S. Jokosaharjo, "Tourists expectation and perception toward Sangeh tourism village," *Journal of Business on Hospitality and Tourism*, vol. 5, no. 2, p. 218, 2019.

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