

Exploring Tourist Desires: A Journey into Sustainability In Bukit Lawang's Ecotourism

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Abstract

This research aims to understand tourist preferences and evaluate the conditions of sustainable tourism in Bukit Lawang, an ecotourism area known for its rich biodiversity. By utilizing conjoint analysis, the study identifies key attributes important to tourists, aiding managers in designing programs that enhance visitor satisfaction. The research method combines a simple quantitative and qualitative approach, including interviews with tourism business managers, Pokdarwis actors, and local communities, as well as field observations to grasp the dynamics of tourism. A total of 100 respondents were involved through a questionnaire developed on the Gform platform, focusing on preferences related to nature activities, accommodation, and transportation. The analysis results show that teenagers and university students have a high interest in activities such as jungle trekking, creating opportunities for ecotourism development. The majority of respondents come from outside the region, indicating the potential for local tourism growth. Community involvement in tourism management is crucial to preserving the authenticity of culture and the environment. By focusing on tourist preferences and strengthening local participation, Bukit Lawang has the potential to achieve sustainable tourism that benefits all stakeholders. This study provides a guide for stakeholders in formulating responsible tourism policies and creating a successful model for sustainable destination development.

Keywords: Tourist preferences, sustainable tourism, ecotourism in bukit Lawang

1. INTRODUCTION

Ecotourism areas are regions characterized by unique natural beauty, encompassing both biotic and abiotic elements such as endemic flora and fauna, climate conditions, and the social and cultural aspects of local communities (Lathifah et al., 2020). Bukit Lawang is renowned for its stunning hills, pristine environment, clear rivers, and as a habitat for protected wildlife, such as orangutans (Karim et al., 2023). Located in Langkat Regency, North Sumatra Province, Indonesia, Bukit Lawang is a tourist destination that implements a forest-based ecotourism approach. Internationally, Bukit Lawang is situated within the Gunung Leuser National Park (TNGL), a UNESCO World Heritage site. Nationally, it is also recognized as one of the National Tourism Development Areas (KPPN), demonstrating that Bukit Lawang is a valued ecotourism destination, serving as a model for the integration of tourism and conservation, even though these are often seen as conflicting interests (Liyushiana et al., 2023).

A 2023 study on the analysis of community and government participation in the development of the tourism sector in Bukit Lawang, Bahorok Subdistrict, found that while Bukit Lawang's ecotourism offers great potential and opportunities for tourism industry growth, it is crucial to take



careful steps to positively harness these resources. This aims to maximize the existing tourism attractions, providing benefits for both the government and the local community. Achieving this requires collaboration to gradually and sustainably introduce and promote the area's various attractions (M. Avizal Ramadhan, 2023). Research on tourist preferences is essential in this context, as it helps to implement sustainable tourism in Bukit Lawang, ensuring that the growth of the tourism industry not only brings economic benefits but also preserves the environmental and cultural heritage.

In practice, tourism is governed by the Global Code of Ethics for Tourism, which aims to reduce negative impacts on the environment and culture while increasing benefits for sustainable development and poverty alleviation. This Code emerged in response to the potential for tourism development to disrupt the balance of nature, culture, and the well-being of local communities. Without careful and responsible implementation, tourism can negatively impact the local economy, society, and culture, potentially threatening the very environment and traditions that attract visitors. When tourism management exceeds the carrying capacity of an area, it can disrupt the natural balance, degrade environmental quality, and endanger local cultures and traditions. In the worst-case scenario, tourist destinations may become unsustainable for future generations (Hubner et al., n.d.).

The principles of sustainable tourism cover several important aspects. First, they involve optimizing the benefits derived from natural resources while preserving vital ecological processes and protecting biodiversity. Second, sustainable tourism seeks to respect the social and cultural authenticity of local communities by preserving their cultural heritage and traditional values, supporting cross-cultural understanding, and promoting tolerance. Finally, the concept emphasizes ensuring long-term economic sustainability for businesses in the tourism sector. This includes providing fair socio-economic benefits for all stakeholders, such as employment opportunities, sustainable income, social services for local communities, and initiatives to alleviate poverty. By adhering to these principles, sustainable tourism aims to create a harmonious balance between economic development, social well-being, and environmental conservation (Sitorus et al., 2024).

A 2020 study on strategies and policies in the management of conservation tourism found that the challenges faced include limited stakeholder involvement, particularly from the Langkat Regency Government, weak enforcement of regulations related to the environment and cleanliness, a lack of information and tourism promotion efforts, and low awareness and mindset among the community about the importance of ecotourism and conservation efforts (Susilawati et al., 2020). Understanding tourist preferences and implementing sustainable tourism become crucial in the face of these challenges in Langkat Regency. By understanding tourists' preferences, the local government and other stakeholders can focus on improving environmental and cleanliness regulation enforcement and enhancing tourism information and promotion in line with visitor expectations. This can create a more tourist-friendly environment, raise local community awareness about conservation values, and ultimately support the successful implementation of sustainable tourism in Bukit Lawang.

A 2019 study on Bukit Lawang's land use for sustainable tourism found that tourism and conservation activities in Bukit Lawang are not yet integrated into a land-use plan that supports the sustainability of tourism. Currently, the land division in the area only includes conservation land, plantations, and community-owned land without considering the needs of sustainable tourism (Nurlisa Ginting & Selly Veronica, 2019). With proper research, solutions can be found to ensure that tourism activities in Bukit Lawang provide long-term benefits for both the environment and the local community, while preserving the area's uniqueness and sustainability through the implementation of sustainable tourism.

Researching tourist preferences and sustainable tourism in Bukit Lawang is essential to understanding the needs and expectations of visitors to the area. Known as a nature tourism destination rich in biodiversity, particularly orangutans, Bukit Lawang attracts a variety of tourists from different backgrounds. By identifying tourist preferences, destination managers can develop programs that are more suitable and appealing to visitors, thereby enhancing the tourism experience and visitor satisfaction. This research also provides insights into the most important aspects for

tourists, such as accommodation, transportation, and nature activities, which in turn can help in better tourism planning and development.

A 2024 study on tourists' preferences for Bali's cultural attributes found that conjoint analysis successfully depicted tourist preferences and provided valuable insights into understanding tourists' preferences for cultural tourism in Bali (Liyushiana, 2024). Conjoint analysis is a powerful approach for uncovering tourists' preferences for different attributes and understanding how these attributes interact (Adiguna et al., 2020). Conjoint analysis can identify the relative importance of various attributes considered important by consumers, as well as the utility they associate with each attribute (Parasto et al., 2018).

Researching tourist preferences in Bukit Lawang is crucial to optimizing the management of the destination. By understanding visitors' needs and expectations, managers can develop programs that not only increase tourist satisfaction but also support sustainable tourism. Similar research conducted in Bali using conjoint analysis successfully depicted tourists' preferences, providing important insights into the most influential attributes for visitors. Conjoint analysis, as a powerful method, can identify the attributes deemed important by tourists and understand how these attributes interact. This underscores the importance of researching tourist preferences in designing effective and sustainable tourism development strategies in Bukit Lawang.

Additionally, research on sustainable tourism in Bukit Lawang is highly relevant in the context of climate change and environmental preservation. As awareness of the negative impacts of mass tourism on the environment increases, it is important to understand how tourist preferences align with sustainability principles. This research can identify strategies to promote tourism that is not only economically profitable but also ecologically and socially responsible. This could include promoting eco-friendly tourism activities, reducing the carbon footprint in transportation, and developing sustainable accommodation facilities.

Ultimately, the findings of this research can provide valuable input to local stakeholders, including local governments, tourism managers, and local communities, in making informed decisions regarding tourism management in Bukit Lawang. By understanding tourists' preferences and integrating them into sustainable tourism planning, stakeholders can create a more attractive and sustainable destination, improve the quality of life for local communities, and preserve the existing natural and cultural wealth. This research not only contributes to tourism development in Bukit Lawang but also plays a role in broader environmental and cultural preservation efforts.

This research aims to understand tourist preferences and assess the conditions of sustainable tourism in Bukit Lawang, an ecotourism area with natural beauty, endemic flora and fauna, and high conservation value. Integrating sustainability principles into tourism planning is crucial for preserving the environment while meeting visitor needs. Using conjoint analysis, this study will identify important attributes for tourists, enabling destination managers to design programs that enhance visitor satisfaction. Additionally, this research aims to guide local stakeholders in formulating ecologically and socially responsible tourism policies, making Bukit Lawang a successful example of sustainable destination development.

2. RESEARCH METHODOLOGY

This study combines a simple quantitative research method with preference analysis and a qualitative approach. The researcher conducted data analysis using a qualitative approach, focusing on gathering in-depth information from the field through interviews. The research was carried out in the Bukit Lawang Ecotourism area, located in Langkat Regency. The primary data sources for this research were obtained directly from informants, including tourism business managers, members of the local tourism awareness group (Pokdarwis), and local residents living around the Bukit Lawang Ecotourism area.

In addition to interviews, the researcher also conducted field observations at the Bukit Lawang Ecotourism site to collect relevant additional data. These observations aimed to understand the environmental conditions, visitor interactions with the local community, and the dynamics of ongoing tourism activities. By combining interviews and observations, the researcher hoped to gather

comprehensive and representative data to support further analysis regarding sustainable tourism and visitor preferences in Bukit Lawang.

This research also employed a quantitative approach using conjoint analysis to explore tourists' preferences for nature tourism visits in Bukit Lawang. Through conjoint analysis, the study aimed to measure and understand the respondents' relative preferences for various attributes related to nature tourism. These attributes included nature activities, accommodations, tourist typology, length of stay, expectations, and transportation. The development of these attributes was based on literature reviews, previous studies, consultations with tourism experts, and preliminary research, with the goal of providing a comprehensive picture of the factors influencing tourists' choices.

The data collection process was conducted by developing a questionnaire via the Gform platform, consisting of two sections: demographic questions and questions about respondents' preferences for combinations of attributes presented in the form of stimulus cards. A total of 16 stimulus cards were used to provide variations in tourist preferences. The study involved 100 respondents from both inside and outside Bukit Lawang, with sampling done using the convenience sampling method. After the questionnaire was distributed online, the collected data were analyzed using conjoint analysis to generate the relative weights of each attribute influencing tourist preferences, with the help of statistical software like SPSS.

3. FINDINGS AND DISCUSSION

Bukit Lawang is a tourist area located in Desa Perkebunan, Bahorok Subdistrict, Langkat Regency, North Sumatra Province. Desa Perkebunan Bukit Lawang covers an area of 1,926.60 hectares, and within this region, there is a river that serves as a tourist attraction for local residents. Bukit Lawang is also situated within Gunung Leuser National Park and is part of the ecotourism zone, making it one of the potential tourist destinations in the park. Desa Perkebunan Bukit Lawang is located 11 km from the subdistrict capital of Bahorok and 80 km from the regency capital of Langkat. The administrative boundaries of Desa Perkebunan Bukit Lawang are as follows:

- To the north, it borders Air Tenang, Sawit Seberang Subdistrict.
- To the south, it borders Bungara, Bahorok Subdistrict.
- To the east, it borders Timbang Lawan, Bahorok Subdistrict.
- To the west, it borders Gunung Leuser National Park, Leuser Subdistrict.

As one of the tourist attractions featuring rare wildlife, particularly the orangutan, which can only be found in Gunung Leuser National Park, Bukit Lawang is frequently visited by both local and international tourists. Bukit Lawang began attracting more visitors after a Swiss organization established an orangutan rehabilitation center in 1973. Since then, the area has seen an influx of both international and local tourists.

A. Tourist Preference Analysis in Bukit Lawang

The data from the respondents who completed the questionnaire, according to:

1) Respondents' Age

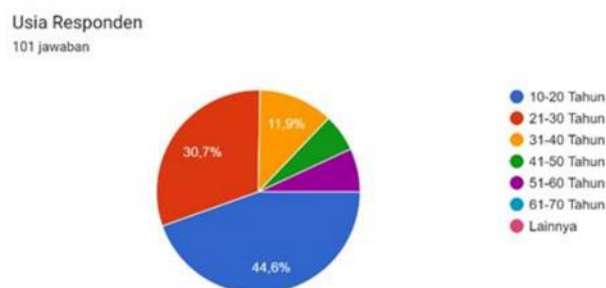


Figure 1. Respondent data based on age
Source: Authors, 2024

Based on the data obtained from the distribution of questionnaires, the respondents who participated in this study are students who are currently on vacation in Bukit Lawang. The results of the questionnaire indicate that the majority of respondents are aged between 10 and 20 years, accounting for 44.6% of the total respondents.

2) Respondents' place of origin

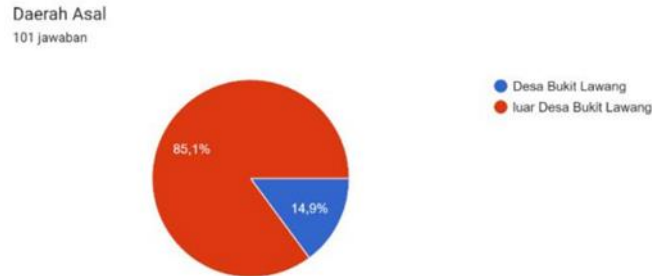


Figure 2. Data based on respondents' place of origin
Source: Authors, 2024

From the results of the distributed questionnaire, it is evident that the majority of respondents, accounting for 85.1%, come from outside the village of Bukit Lawang. This indicates that the destination has a strong appeal for tourists from various regions. The high figure signifies substantial potential in the tourism sector, which can bring economic benefits to the local community through increased income from accommodation, culinary offerings, and tourism services.

Moreover, the presence of visitors from outside can encourage cultural interaction and enhance awareness of the importance of environmental conservation, although efforts must be made to preserve local wisdom. This data suggests that tourism managers in Bukit Lawang should continuously develop effective marketing strategies to attract more tourists while ensuring the sustainability of tourism in the area.

3) Respondents' Occupation

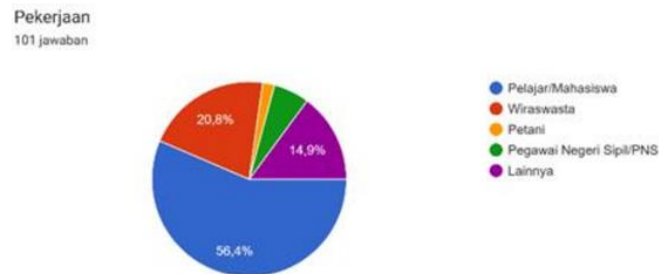


Figure 3. Data based on respondents' occupation.
Source: Authors, 2024

From the results of the distributed questionnaire, it was revealed that the majority of respondents consist of students, accounting for 56.4%. The dominance of this age group indicates that Bukit Lawang is an attractive destination for young people, who tend to seek challenging and educational vacation experiences. This opens up opportunities for tourism managers to develop programs and activities that align with the interests and needs of students, such as ecotourism activities, environmental education programs, and cultural events involving the local community. By focusing on this segment, Bukit Lawang can enhance its appeal as a sustainable tourist destination and contribute to the development of a more inclusive and responsive tourism industry for the younger generation.

4) Results of Conjoint Analysis

- Utility Value

Table 1. Utility Value

Utilities	Utility Estimate	Std. Error
Nature Activities		
Jungle Tracking	0.005	0.061
Rafting	-0.006	0.061
Swimming	0.001	0.061
Accommodation		
Guest House	0.064	0.061
Villa	-0.053	0.061
Homestay	-0.011	0.061
Tourist Typology		
Individual	-0.075	0.061
Family	0.048	0.061
Group	0.027	0.061
Duration of Visit		
Half Day	-0.004	0.061
Full Day	-0.042	0.061
Overnight (2-3 Days)	0.046	0.061
Expectations		
Natural Beauty	0.090	0.061
Local Community Products	0.024	0.061
Activities	-0.113	0.061
Transportation		
Car	-0.028	0.061
Motorcycle	-0.072	0.061
Bus	0.100	0.061
(Constant)	4.277	0.043

Source: Authors, 2024

a) Nature Activities

From the data obtained, it is evident that Jungle Tracking activities have a higher interest level, with a value of 0.005, compared to swimming activities, which only have a value of 0.001. This indicates that Jungle Tracking is more appealing to tourists, possibly because it offers a deeper and more interactive experience with nature. Meanwhile, tourists' interest in Rafting activities appears to be lower, with a value of -0.006, indicating a decline in interest. The lack of interest in Rafting may be due to various factors, such as safety concerns, insufficient facilities, or even a lack of promotion regarding the activity. This data suggests that tourism managers in Bukit Lawang should focus more on the development and promotion of Jungle Tracking while considering strategies to increase tourist interest in Rafting activities.

b) Accommodation

The data indicates that tourists have a preference for staying in guest houses, with a value of 0.064, compared to homestays, which have a value of -0.011, and villas, which show even lower interest at -0.053. The high interest in guest houses suggests that this type of accommodation may offer greater comfort, facilities, or a more appealing experience for tourists. Conversely, the low interest in homestays and villas indicates that tourists may be less attracted to the experiences offered by these two types of accommodations, possibly due to factors such as service quality, pricing, or lack of promotion. These findings provide important insights for accommodation managers in Bukit Lawang to focus on the development and improvement of guest houses, as well as finding ways to attract tourists to homestays and villas, such as enhancing facilities and services or conducting more effective marketing campaigns.

c) Tourist Typology

The data shows that tourists have a preference for traveling with family, with a value of 0.048, compared to group travel, which shows a value of 0.073, and individual travel, which has a negative value of -0.075. This indicates that tourists prefer a more intimate and familiar vacation experience with family members, which may offer more comfort and security than traveling in larger groups. Meanwhile, the



negative value for individual travel indicates a lack of interest or preference for solo experiences, which could be due to factors such as loneliness, lack of social support, or a desire to share valuable moments with loved ones. These findings provide important insights for tourism managers in Bukit Lawang to focus on family-oriented tour packages, such as child-friendly activities, comfortable accommodations, and experiences that can be enjoyed together, to meet tourists' preferences and needs.

d) Duration of Visit

The data indicates that tourists prefer travel experiences with an Overnight duration (2-3 days), which has a value of 0.046, compared to Half Day trips showing a negative value of -0.004 and Full Day trips having a value of -0.042. This suggests that tourists tend to seek a deeper and more comprehensive holiday experience, allowing them to explore the destination more freely and enjoy various activities without rushing. The negative values for Half Day and Full Day trips indicate that tourists are less interested in short trips, possibly due to time constraints or an inability to fully experience the beauty and cultural richness that Bukit Lawang offers within a short timeframe. These findings present opportunities for tourism managers to develop attractive and diverse tour packages for Overnight trips, including engaging activities, comfortable accommodations, and delicious culinary offerings, to meet the needs and preferences of tourists seeking richer and more satisfying experiences.

e) Expectations

The data shows that tourists have a low interest in activities, with a value of -0.113, indicating that they are not very engaged or do not find appeal in the available activities. Conversely, although there is a positive value of 0.024 for local products, this figure suggests that tourists are only slightly interested or do not feel that these products are relevant to their experiences. However, tourists seem to enjoy the beauty of nature more, with a value of 0.090, indicating that the visual aspects and aesthetic experiences of the destination are major factors in attracting their attention. These findings indicate that tourism managers in Bukit Lawang need to evaluate and improve the existing activity offerings to make them more appealing to tourists. Additionally, focusing on promoting the natural beauty and aesthetic experiences offered, such as trekking in the forest, wildlife observation, or stunning natural views, could be more effective in enhancing the destination's appeal to visitors.

f) Transportation

Tourists prefer a driving experience that can accommodate more people and provide comfort during the journey. Conversely, the use of cars shows a negative value of -0.028, and motorcycles have a value of -0.072, indicating a lack of interest in both transportation modes. This preference may be due to several factors, such as the comfort, safety, and accessibility offered by buses, which can accommodate groups of tourists well and provide opportunities for social interaction during the journey. Furthermore, traveling by bus can also provide a more enjoyable and relaxing experience for tourists, as they do not have to worry about navigation or parking. These findings provide insights for tourism managers to consider developing efficient and comfortable bus transportation services to enhance tourists' experiences at the destination.

- Importance Values

Table 2. Importance Values

Importance Values	
aktivitas_alam	15.102
akomodasi	15.684
tipologi_wisatawan	17.188
lama_berkunjung	17.843
ekspetasi	15.633
transportasi	18.549

Averaged Importance Score

Source: Authors, 2024

Based on the results of the questionnaire regarding important values, each measured attribute indicates its level of importance to the visiting tourists. Transportation recorded the highest value of 18.549, making it the primary factor influencing tourists' decisions to visit. This is followed by the



duration of visit (17.843) and tourist typology (17.188), which also shows that aspects of travel and tourist characteristics play a significant role in the tourism experience. Meanwhile, accommodation (15.684), expectations (15.633), and nature activities (15.102) hold lower values, although they remain important; transportation clearly emerges as the top priority in this context.

Tourists' choice to use buses as their main mode of transportation reflects a preference for comfort and ease of access during their journeys. Buses not only accommodate more passengers but also allow tourists to interact with one another, creating a stronger social atmosphere. This is especially true for respondents aged between 10 and 20 years, who make up 44.6% of the sample; for them, using buses may be a more appealing option due to their flexibility and affordability. With the growing interest of the younger generation in collective travel experiences, this mode of transportation becomes relevant in designing more inclusive tourism services.

These findings provide valuable insights for tourism managers to focus on improving transportation services, particularly buses, to meet the needs and preferences of young tourists. Developing better infrastructure and transportation services can enhance the attractiveness of the destination and provide a more enjoyable experience for tourists. Additionally, increasing promotion and information regarding available transportation services can help tourists make more informed choices, thereby boosting visits and visitor satisfaction at the tourist destination.

- Validity and Reliability

Table 3. Importance Values

Correlations ^a		
	Value	Sig.
Pearson's R	.819	.000
Kendall's tau	.630	.000

a. Correlations between observed and estimated preferences

Source: Authors, 2024

Based on the analysis of the questionnaire data, the correlation results show that the Pearson's correlation coefficient is less than 0.819, while Kendall's tau is less than 0.630. These values indicate a strong relationship between the variables measured in the questionnaire. In the context of the research, a Pearson correlation coefficient close to 1 suggests a positive and significant linear relationship, while Kendall's tau also indicates consistency in ranking between two variables.

Furthermore, with a p-value obtained from this analysis of less than 0.005, we can conclude that the data is valid and statistically significant. This indicates that the questionnaire results are reliable and can be used to draw conclusions about the preferences and behaviors of the tourists studied. The validity of this data provides confidence that the relationships found between the variables are not coincidental and can serve as a basis for further decision-making in this research.

Overall, the results of this correlation analysis provide a strong foundation for developing further insights into the factors influencing tourists' choices. With assured data validity, researchers can proceed with a deeper exploration of the dynamics of relationships between variables and the practical implications that can be applied in destination management and enhancing the tourist experience.

B. Sustainable Tourism Analysis in Bukit Lawang

The Global Sustainable Tourism Council (GSTC) is an organization that plays a role in developing and disseminating sustainability criteria for the tourism industry. The sustainability criteria formulated by the GSTC are known as the GSTC Criteria. These criteria are built upon four main pillars that form the foundation for sustainable tourism practices. These criteria are implemented in Ecotourism in Bukit Lawang:

1. Pillar of Sustainability in Management

The management of the destination in Bukit Lawang demonstrates a collaborative effort between local government and the community to create a balance between tourism growth and environmental preservation. By developing a destination management plan that includes visitor limits, conservation

zones, and monitoring of tourism activities, the authorities have taken proactive steps to control the negative impacts of tourism. These measures are crucial to prevent environmental damage that may arise from an increasing number of visitors while ensuring that the ecosystems surrounding Bukit Lawang are maintained. The establishment of conservation zones also serves to protect natural habitats and rare species, such as orangutans, which are a major attraction for tourists.

Regular participatory forums showcase the commitment to involve all stakeholders in the decision-making process. By engaging homestay owners, tour guides, and local residents, this approach not only creates a sense of ownership and shared responsibility but also ensures that the perspectives and needs of all parties are considered. The active participation of the local community in tourism planning and development enhances the sustainability of these initiatives, as they possess in-depth knowledge of the local environment and culture. Additionally, these forums facilitate the exchange of ideas and solutions for challenges faced in tourism management, creating a synergy between economic development and environmental preservation in Bukit Lawang.

2. Pillar of Social Sustainability

The well-being of the local community in Bukit Lawang is a crucial aspect of sustainable tourism development. Through ecotourism initiatives and homestays, local residents gain significant economic benefits, improving their living standards through job opportunities and additional income. This approach also includes economic empowerment through local businesses, which not only provides financial support but also enhances the community's capacity to face challenges resulting from tourism growth. With skills training and education, the community is prepared to optimize existing potentials, creating an adaptive and competitive community in the tourism industry.

The positive impact of tourism in Bukit Lawang is reflected in the homestay model, which strengthens interactions between tourists and the local community. Tourists staying with local families not only contribute economically but also enhance understanding and appreciation of the local culture. Moreover, community engagement programs in conservation and destination management foster a sense of ownership and responsibility towards the local natural and cultural heritage. These impacts are not only financial but also social and psychological, with the community feeling more involved and empowered in preserving their environment and culture.

The involvement of the community in tourism-related decision-making in Bukit Lawang is a vital pillar in creating social sustainability. Through participatory forums and open dialogue, local residents are given the opportunity to express their ideas, concerns, and aspirations, allowing tourism policies to reflect local needs and values. Additionally, educational and environmental awareness programs also contribute to enhancing community understanding of the importance of environmental preservation and sustainable practices. Through innovation and collaboration among local communities, stakeholders, and non-governmental organizations, Bukit Lawang strives to create a tourism environment that is not only attractive to visitors but also empowers local communities and preserves the existing cultural and natural uniqueness.

3. Pillar of Economic Sustainability

Increasing revenue from the tourism sector in Bukit Lawang is one of the key pillars in creating sustainable tourism. With the presence of accommodations, restaurants, and various tourism activities, local residents have access to significant sources of income. This positive contribution not only boosts the local economy but also strengthens the economic resilience of the community by creating a stable income flow. This increase in income is vital for maintaining the well-being of the community, ensuring that they can meet basic needs and gain better access to education, health services, and infrastructure.

The growth of tourism in Bukit Lawang also opens opportunities for local trade and service businesses, such as souvenir shops, food stalls, and transportation services. The existence of these businesses is an integral part of the tourism ecosystem that supports each other. The economic benefits gained are not only felt by business owners but also contribute to the overall development of the community. By encouraging local community involvement in this sector, tourism serves not only as a source of income but also strengthens social and cultural ties between tourists and residents.

Furthermore, tourism in Bukit Lawang positively impacts job growth and entrepreneurship. New job opportunities created in the tourism sector, such as tour guides, accommodation staff, and restaurant servers, contribute to reducing unemployment rates. Training and skills development programs also enhance community engagement in the tourism sector, supporting inclusivity and providing opportunities for locals to actively participate in managing their destination. With the increasing number of tourists, the

community is encouraged to establish small and medium-sized enterprises, which further enhance economic sustainability and strengthen local capacity to manage and utilize resources responsibly. Thus, tourism in Bukit Lawang focuses not only on economic gains but also on improving social and environmental well-being, aligning with the principles of sustainable tourism.

4. Pillar of Environmental Sustainability

Analysis of conservation efforts for natural heritage in Bukit Lawang shows that this area is committed to the principles of sustainable tourism, particularly in the context of biodiversity protection and resource management. Bukit Lawang, located within the Leuser Mountain National Park, is home to a rich biodiversity, including rare species such as the Sumatran orangutan. Efforts to protect these species and the tropical rainforest ecosystem are integral to tourism activities. Understanding and appreciating biodiversity not only educate tourists but also build a collective awareness of the importance of preserving the environment for future generations.

Restricting trekking routes is a strategic step to minimize negative impacts on natural habitats, especially for endangered species and endemic flora. By managing access and visitor numbers, Bukit Lawang aims to maintain the integrity of the environment and minimize disturbances to fragile ecosystems. This approach aligns with sustainable tourism principles that prioritize environmental protection while still providing adequate tourism experiences for visitors. These efforts are beneficial not only for ecosystems but also for responsible tourism development.

In the context of resource management, Bukit Lawang faces challenges related to water and energy, which are addressed through sustainable practices such as efficient use of water resources and environmentally friendly technologies. Initiatives like reforestation and sustainable agriculture not only support the conservation of natural resources but also maintain ecosystem balance to ensure long-term sustainability. Effective waste management systems, including recycling and organic waste processing, help maintain environmental quality by minimizing negative impacts on water and soil. Emission control through the use of sustainable transportation and renewable energy demonstrates Bukit Lawang's commitment to reducing its carbon footprint and emission impacts, making it a model for other tourism destinations in implementing sustainable practices that benefit the environment and local communities.

C. Analysis of Tourism Conditions in Bukit Lawang

The analysis of tourism conditions in Bukit Lawang within the context of sustainable tourism concepts reveals a complex interaction among competitive forces, the threat of substitute products, the power of suppliers, the power of buyers, and the threat of new entrants.

- **Competitive Forces:** Competition among accommodation providers and tourism services in Bukit Lawang fosters innovation and improvement in service quality. Each lodging option, such as the greenhouse at Jungle River Homestay and the use of bamboo materials at Ecolodge, competes not only on comfort but also on environmentally friendly approaches. This aligns with the principles of sustainable tourism, which emphasize the importance of environmental preservation while providing unique experiences for tourists.
- **Threat of Substitute Products:** Bukit Lawang has advantages over other destinations in North Sumatra due to its status as part of the Leuser National Park. By adopting an ecotourism approach and implementing environmental preservation regulations, Bukit Lawang strives to minimize the negative impacts of tourism. This approach not only protects biodiversity but also enhances the destination's appeal by offering more authentic and responsible experiences.
- **Power of Suppliers:** The local community plays a crucial role as suppliers of services and products, ranging from souvenirs to licensed tour guides. Their involvement not only boosts the local economy but also provides opportunities for community members to actively participate in tourism development. This mutually beneficial relationship between suppliers and the destination strengthens both economic and social sustainability.
- **Power of Buyers:** Visitor satisfaction is heavily influenced by the quality of available accommodations and services. Reviews and ratings from travelers serve as crucial sources of information that impact the decisions of potential tourists. By focusing on unique experiences, such as trekking to see orangutans, Bukit Lawang can attract more tourists who are concerned about sustainability and conservation.
- **Threat of New Entrants:** The potential emergence of new tourist destinations around Bukit Lawang presents challenges that could affect visitor numbers. However, if this development occurs with a

focus on sustainable tourism principles, such as environmental preservation and local community empowerment, it can create a mutually beneficial tourism ecosystem. Government support and community initiatives to develop tourism potential in surrounding villages can also strengthen Bukit Lawang's position in the sustainable tourism industry.

Overall, the development of tourism in Bukit Lawang demonstrates a commitment to sustainable tourism principles, including environmental preservation, local community empowerment, and providing valuable experiences for tourists. By effectively managing these factors, Bukit Lawang can continue to thrive as an attractive and sustainable tourism destination.

The analysis of tourist preferences in Bukit Lawang indicates that the teenage and student age group, which dominates the respondents, has a strong interest in natural activities such as Jungle Tracking. This preference not only reflects their tendency to seek interactive vacation experiences but also creates opportunities for tourism managers to focus on developing ecotourism. The high appeal of outdoor activities can be integrated with sustainable tourism principles, where efforts to preserve the environment can synergize with engaging experiences for the younger generation. Tourist interactions with nature and local culture through homestays can raise awareness of the importance of conservation, which can further support social and economic sustainability in the area.

Additionally, the majority of respondents coming from outside Bukit Lawang indicates significant potential for local tourism growth. With 85.1% of respondents originating from other areas, tourism managers can enhance marketing strategies to attract more visitors and diversify their offerings. Community involvement in management and decision-making is also crucial to ensuring that tourism growth does not undermine local culture and environment. By encouraging local participation, Bukit Lawang can optimize the economic benefits of the tourism sector while maintaining the authenticity and sustainability of the destination. Through the development of programs that align with tourist preferences and strengthen community engagement, Bukit Lawang can achieve sustainable tourism that benefits all stakeholders.

4. CONCLUSION

The conclusion drawn from the analysis of tourist preferences in Bukit Lawang indicates that the majority of respondents are students aged between 12 and 20 years and come from outside the village, suggesting significant potential in the tourism sector to support the local economy. Jungle Tracking is the preferred activity, while accommodation preferences lean towards guest houses. Tourists tend to prefer vacationing with their families and opt for longer stays, indicating an interest in immersive experiences. Bus transportation is deemed the most important, reflecting the younger generation's preference for comfort and social interaction during their travels. With strong data validity, these findings provide insights for tourism managers to design more effective and sustainable strategies to attract visitors.

Based on the analysis of the implementation of sustainability criteria from the Global Sustainable Tourism Council (GSTC) in Bukit Lawang, it can be concluded that the development of tourism in this area demonstrates a strong commitment to sustainable tourism principles. The four pillars of sustainability—management, social, economic, and environmental—are effectively integrated, creating synergy between environmental preservation and local community empowerment.

- **Management Sustainability Pillar:** Collaboration between local government and the community in destination management, including visitor limits and conservation zones, demonstrates efforts to minimize the negative impacts of tourism and protect the ecosystem.
- **Social Sustainability Pillar:** Ecotourism initiatives and homestays provide economic benefits to the local community, improving living standards and fostering a sense of ownership over their culture and environment.
- **Economic Sustainability Pillar:** The growth of the tourism sector has increased local income, created job opportunities, and strengthened economic resilience, contributing to the well-being of the community.

- Environmental Sustainability Pillar: Conservation efforts and natural resource management undertaken in Bukit Lawang reflect a commitment to protecting biodiversity and reducing environmental footprints.

By effectively managing these factors, Bukit Lawang not only becomes an attractive tourist destination but also serves as a model of sustainable tourism that can be adopted by other regions. This success relies on ongoing collaboration among all stakeholders to achieve a balance between economic growth and environmental preservation.

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