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Research Article

Stakeholders Assessment of Carrying Capacity and Sustainability of Islas de Gigantes as a Tourist Destination

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ABSTRACT

This study aimed to determine the carrying capacity and sustainability of Islas de Gigantes as a tourist destination as assessed among the stakeholders and as inputs to a strategic tourism development plan. The study was conducted in October 2022. This survey-correlational research involved 225 stakeholders of Islas de Gigantes as stakeholders of the study. Using the sector representation, as guide, the simple random sampling technique was used in the selection of the stakeholders of the study. Two (2) researcher-made data-gathering instruments was used to gather data needed for the investigation— the Carrying Capacity of Islas de Gigantes as a Tourist Destination Assessment Scale and the Sustainability of Islas de Gigantes as a Tourist Destination Assessment Scale. Obtained data were analyzed using frequency counts, percentage analyses, means, and standard deviations, the t-test for independent samples, the One-way ANOVA, and the Pearson's *r*. The .05 alpha level was used as the criterion for the acceptance or rejection of the null hypotheses. Study results revealed that, generally, the stakeholders are males, younger, single, and high school graduates. Most are local tourists, government employees, have lower incomes, and represent a non-government organization. Most establishments had average monthly revenue of ₱100,000 or less, have 10 or more employees, and have without logistic support, transport provided and LGU support. The stakeholders assessed the carrying capacity of Islas de Gigantes as a tourist destination in terms of physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity, *above the desired carrying capacity* and the sustainability of Islas de Gigantes as a tourist destination in terms of optimal use of environmental resources, sociocultural authenticity of host communities, viable long-term economic operations, with *extreme sustainability*. The stakeholders differed significantly in their assessment of the carrying capacity of Islas de Gigantes as a tourist destination in terms of social carrying capacity when they were classified according to their personal characteristics in terms of civil status, educational background, and sector represented; in their assessment of the carrying capacity of Islas de Gigantes as a tourist destination in terms of economic carrying capacity when they were classified according to island characteristics in terms of average monthly revenue, manpower resources, transport availability, and LGU support; and in their assessment of the carrying capacity of Islas de Gigantes as a tourist destination in terms of physical or ecological carrying capacity when they were classified according to island characteristics in terms of LGU support. They differed significantly in their assessment of sustainability of Islas de Gigantes as a tourist destination in terms of sociocultural authenticity of host communities and viable long-term economic operations when they were classified according to their characteristics in terms of civil status, educational background and sector represented; in their assessment of the sustainability of Islas de Gigantes as a tourist destination in terms of optimal use of environmental resources when they were classified according to the island characteristics in terms of average monthly revenue, manpower resources, transport availability, and LGU support; and in their assessment of sustainability of Islas de

Gigantes as a tourist destination in terms of sociocultural authenticity of host communities when they were classified according to the island characteristics in terms of manpower resources. Finally, positive and significant relationships existed among stakeholders' assessment of the carrying capacity of Islas de Gigantes as a tourist destination in terms of physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity and the sustainability of Islas de Gigantes as a tourist destination in terms of optimal use of environmental resources, sociocultural authenticity of host communities, viable long-term economic operations.

Keywords: stakeholders' assessment, carrying capacity, susta9inability, tourist destination, environmental impact, ecotourism, sustainable tourism

Introduction

Background of the Study

The Gigantes Group of Islands, also known as Islas de Gigantes, is located in the far north, province of Iloilo, Philippines. The group consist of about ten islands, with Gigantes Norte and Gigantes Sur as the largest. The atmosphere on the islands is laid-back, but backpackers and budget tourists have increased their popularity. Carles, the last major settlement in northern Iloilo Province, is divided into 33 barangays and has a total of 11,204.68 hectares. Carrying capacity is a vital indicator of the extent and character of impacts on natural ecosystems and human-made sociocultural systems.

To help rural residents enhance or at least maintain their standard of living, economic development are becoming increasingly dependent on the creation of innovative approaches. However, economic development in rural regions has often been handled and planned on the fly, leading to double-digit unemployment rates in rural areas. Tourism is one sector of the service economy that is receiving more attention as a potential driver of local economic progress.

Sustainable tourism development and responsible tourism management apply to all types of tourism in all locations, from mass to niche markets. Sustainable tourism should protect vital ecological processes, preserve natural heritage and biodiversity, respect the sociocultural authenticity of host communities, guarantee long-term economic viability, and ensure equitable distribution of socioeconomic benefits.

With this development, sustainable tourism in Islas de Gigantes should not only keep tourists happy and healthy but also educate them on environmental protection and inspire action. Carrying capacity in an ecosystem refers to the size of the population or community that can support indefinitely upon available resources and services. Living within the limits depends on the number of resources available, the size of the community, and the number of resources everyone consumes. Community capital, including natural, human, social, and built capital, must be managed and improved over time for sustainability.

Along this line, political leadership in Islas de Gigantes must be robust to ensure extensive participation, development of a consensus, and inclusion of all relevant parties in the decision-making process. Sustainable tourism is a long-term goal that necessitates constant monitoring of impacts and the implementation of necessary preventative and remedial measures.

Objectives of the Study

This study aimed to determine the carrying capacity and sustainability of Islas de Gigantes as a tourist destination as assessed among the stakeholders and as inputs to a strategic tourism development plan.

Specifically, this study aimed to:

1. describe the profile of the stakeholders in terms of sex, age, civil status, educational background, employment status, average monthly income, and sector represented.

2. describe the profile of Islas de Gigantes in terms of tourist arrival, type of tourist, average monthly revenue, manpower resources, logistic support, transport availability, and LGU support.

3. determine the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of the carrying capacity of Islas de Gigantes as a tourist destination as assessed among the stakeholders taken as an entire group and classified according to sex, age, civil status, educational

background, employment status, average monthly income, and sector represented.

4. determine the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of carrying capacity of Islas de Gigantes as a tourist destination in terms of tourist arrival, type of tourist, average monthly revenue, manpower resources, logistic support, transport availability, and LGU support.

5. determine the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes as a tourist destination as assessed among the stakeholders taken as an entire group and classified according to sex, age, civil status, educational background, employment status, average monthly income, and sector represented.

6. determine the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes as a tourist destination classified according to tourist arrival, type of tourist, average monthly revenue, manpower resources, logistic support, transport availability, and LGU support.

7. determine if significant differences exist in the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of the carrying capacity of Islas de Gigantes as a tourist destination as assessed among the stakeholders taken as an entire group and classified according to sex, age, civil status, educational background, employment status, average monthly income, and sector represented.

8. determine if significant differences exist in the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of the carrying capacity of Islas de Gigantes as a tourist destination classified according to tourist arrival, type of tourist, average monthly revenue, manpower resources, logistic support, transport availability, and LGU support.

9. determine if significant differences exist in the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes as a tourist destination classified according to sex, age, civil status, educational background, employment status, average monthly income, and sector represented.

10. determine if significant differences exist in the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes as a tourist destination classified according to tourist arrival, type of tourist, average monthly revenue, manpower resources, logistic support, transport availability, and LGU support.

11. determine if significant relationships exist among the stakeholders' assessment of the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of the carrying capacity of Islas de Gigantes as a tourist destination and their assessment of the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes as a tourist destination.

Hypotheses

1. No significant differences exist in the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of the carrying capacity of Islas de Gigantes as a tourist destination as assessed among the stakeholders taken as an entire group and classified according to sex, age, civil status, educational background, employment status, average monthly income, and sector represented.

2. No significant differences would in the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of the carrying capacity of Islas de Gigantes as a tourist destination classified according to tourist arrival, type of tourist, average monthly revenue, manpower resources, logistic support, transport availability, and LGU support.

3. No significant differences would in the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes as a tourist destination classified according to sex, age, civil status, educational background, employment status, average monthly income, and sector represented.

4. No significant differences exist in the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes

as a tourist destination classified according to (a) tourist arrival; (b) type of tourist; (c) average monthly revenue; (d) manpower resources; (e) logistic support; (f) transport availability; and (g) LGU support.

5. No significant relationships would among the stakeholders' assessment of the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of the carrying capacity of Islas de Gigantes as a tourist destination and their assessment of the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes as a tourist destination.

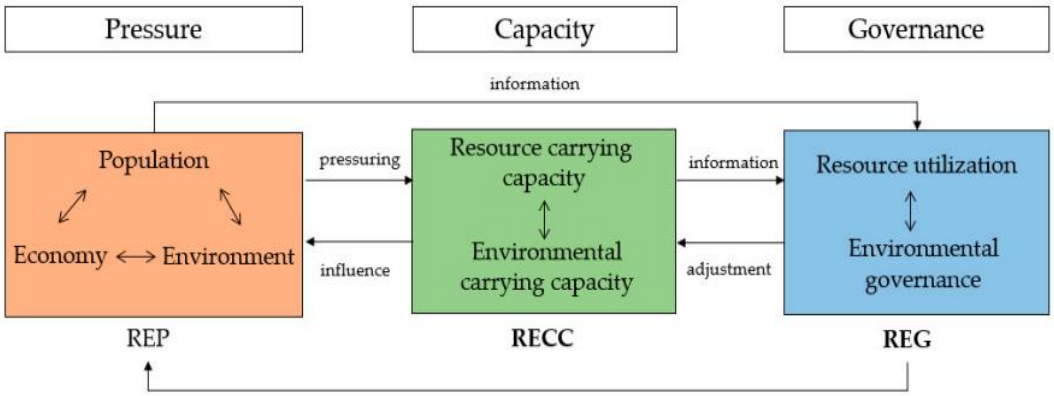
Theoretical Framework of the Study

The following theories lend support to the present investigation:

Pressure-Capacity-Governance (PCG) Conceptual Model (Bao, Wang, Han, & Liu, 2020).
As to carrying capacity, this study connects itself to the Pressure-capacity-governance (PCG) conceptual model by Bao, Wang, Han, & Liu (2020).

The PCG conceptual model was developed to investigate a system of precise evaluation indicators (see **Figure 1**). The model explains that, when people's irrational actions during the process of human resource use exceed the carrying capacity of regional resources and the environment, problems with food security and ecological destruction may put "pressure" on those resources and the environment as urbanization and industrialization progress. The original system is forced to implement governance mechanisms under different carrying capacity features. Therefore, the systematic pressure may be reduced by creating strategies and using innovative technology to release the resources and environmental carrying capacity. The state of resources and environmental systems will then alter as a result of additional demand brought on by governance actions.
With the pressure–capacity–governance (PCG) model as a guide, this study determined the carrying capacity of Islas de Gigantes in terms of physical, ecological, social, and economic factors as a construct.

Figure 1 *Pressure-Capacity-Governance (PCG) Conceptual Model* (Bao, Wang, Han, & Liu, 2020). Cyclic feedback



Diamond Model: A Sustainable Tourism Model (Adillón, 2019). In terms of the sustainability of Islas de Gigantes as a tourist destination, this investigation is also linked to the Diamond Model**:** A theoretical framework for the sustainable development of tourism by Adillón (2019).

The Diamond Model is an approach to sustainable tourism development that can help destination management organizations make the tough call of limiting tourist numbers when it's necessary.

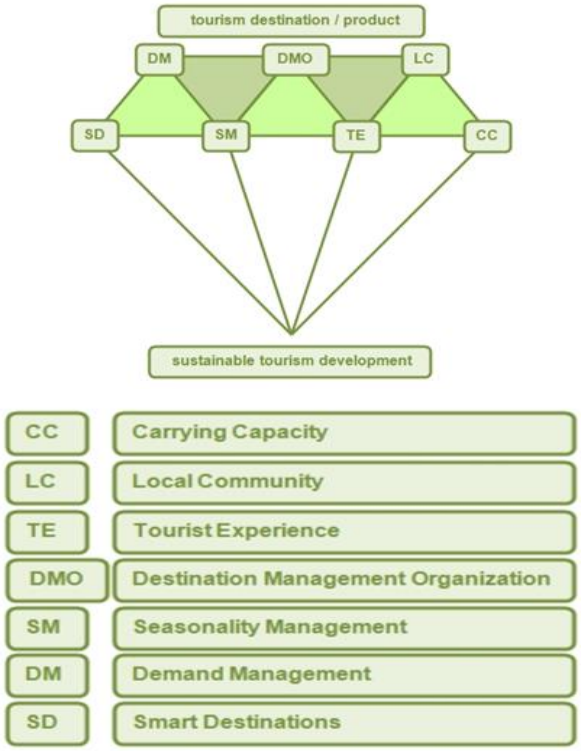
Under this framework, choices on regulating tourist arrivals in a given location are made not on the basis of gut feelings or the whims of political parties, but rather on the basis of objective arguments and standards. The success of the tourism activity itself must not be jeopardized by these decisions, which means that their focus must be on ensuring its adequate growth.

Using both some models developed over 20 years ago that are still relevant and newer concepts and techniques in the management of tourism zones, this article presents scholarly research that explains each of the seven major aspects that make up the DIAMOND MODEL in Figure 2. The model includes the necessary components and their inter dependencies for tourism's long-term viability and growth.

The diamond was selected as the model's emblem because it is a durable substance, reflecting the robust nature of the tourism industry; it is something precious, holding great value and necessitating special care; it is transparent, representing the model's adaptability; and it has many different shapes and faces, representing the many different ways in which it can be expanded.

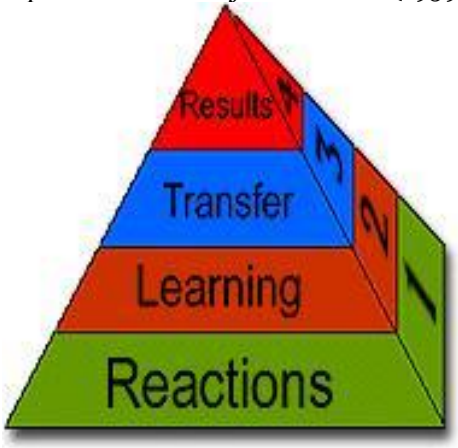
The goal of sustainable tourism in Islas de Gigantes is to both keep visitors happy and give them a memorable experience, while also educating them on the importance of their actions in the larger context of environmental protection.

Figure 2 *Diamond Model: A Sustainable Tourism Model* (Adillón, 2019).



***Kirkpatrick's Model of Assessment* (1959, 1975, 1993).** The study's methodology was based on the assessment principles presented by Kirkpatrick (1959, 1975, 1993). Each successive level of evaluation in Kirkpatrick's four-level model is connected with the data provided by the previous level. The first level of evaluation is the starting point for the next three. Each level's data is used as context for understanding the data in the following level. Hence, a more exact measure also necessitates a more thorough and laborious investigation, as is the case at each successive level (see Figure 3).

Figure 3 *Kirkpatrick's Model of Assessment* (1959, 1975, 1993).

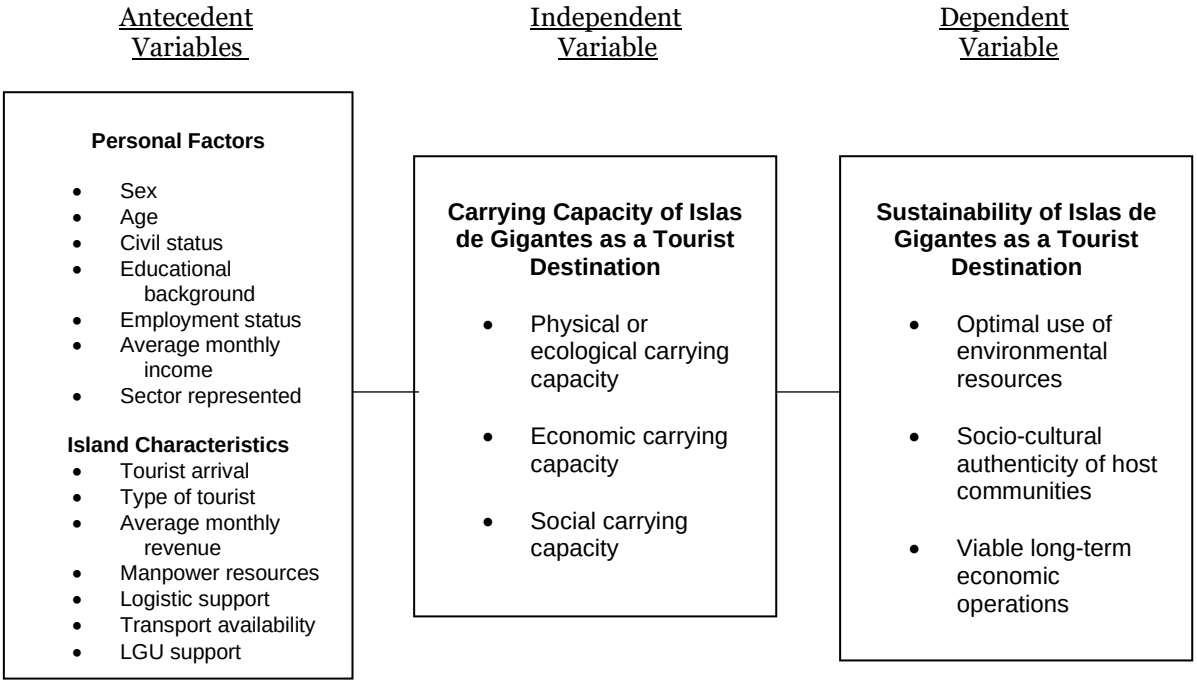


Conceptual Framework

This study aimed to determine stakeholders' assessment of carrying capacity and sustainability of Islas de Gigantes as a tourist destination.

The study assumed that the assessed sustainability of an island resort such as Islas de Gigantes could be the result of the Island's carrying capacity and certain identified stakeholders' personal and island characteristics.

Figure 2 Stakeholders' Assessment of Carrying Capacity and Sustainability of Islas de Gigantes as a Tourist Destination



Benefits from Study

This research aimed to determine the carrying capacity and sustainability of an island resort in Islas de Gigantes, benefiting residents, local government units, and tourists. The findings will aid in developing long-term plans, programs, ordinances, policies, and decisions for the islands' regeneration and protection. Future research can replicate the findings in other tourism destinations and raise awareness about sustainability.

Related Literature

Sustainability in the hospitality industry and carrying capacity are the major topics discussed in this section.

Sustainability in the Hospitality and Tourism Industry

Sustainability and Sustainable Development. Sustainability is a critical challenge for the travel sector. In this context, "sustainability" is the capacity to keep something going without interruption for an extended period of time (Mollenkamp, 2022). It aims to ensure that material goods and natural resources are not used up too quickly and can be used by future generations.
Economic, environmental, and social sustainability are the three pillars described by Mollenkamp (2022), or more colloquially as profit, planet, and people.

Reducing waste of both renewable and nonrenewable resources is more fundamental to economic sustainability than any other single issue. The focus of environmental sustainability is on the preservation of the environmental conditions necessary for continued human and economic activity, such as air and soil quality. Efforts to end hunger and poverty and fight inequality fall under the umbrella of "social sustainability," which examines the impact of economic systems on people.

Ozili (2022) argues that the concepts of sustainability and sustainable development are gaining traction in both the policy and academic communities. These two concepts have been at the forefront of discussions concerning foreign aid policy for the past two decades. The campaign for sustainability and sustainable development in the policy domain has been bolstered by recent events such as climate change (Aven, 2020), the race to reduce fossil fuel emissions (Leal Filho et al., 2019), the switch to renewable energy (Ozili, 2021), and the shift to a circular economy (Wackernagel, Hanscom, & Lin, 2017). With the hope that their findings will guide policy decisions aimed at achieving sustainable development goals, a group of academics and researchers set out to determine what factors help and what ones impede their achievement.

Politics, Political Economy, and Sustainable Development. O'Riordan and Voisey (1997), Cadman et al. (2015), Gale (2018), and Sabau (2020) are just a few of the researchers who have examined a wide range

of issues. They noted, for instance, that researchers have not yet looked at how political goals and government agenda can impede efforts to achieve sustainable development in studies of sustainability and sustainable development. There were a number of drawn-out conclusions: if damaging economic operations with politically significant stakeholders or owners are shut down as a result of adhering to sustainable development policies, those stakeholders and owners may oppose and impede government measures for sustainable development, making those aims unattainable; second, there is the issue of how much public money should be spent on sustainable development initiatives; third, there is the question of whether sustainable development should be prioritized nationally at the expense of other societal significant spheres of life; and fourth, if sustainable development is made a top priority at the national level, politicians may be able to influence financing decisions.

Carrying Capacity. In 1936, the term "carrying capacity" (CC) was used to represent the maximum allowable weight of cargo on a ship (Stankey, 1981). After initial success in ecology, the concept was adopted by the fields of biology, sociology, geography, recreation, and tourism. Despite numerous analyses of the literature on the topic, there remains no agreement on what is meant by the term "carrying capacity" (Zhang, 2016).

In tourism, "carrying capacity" is used to describe the maximum population density that can be sustained by an area's flora and fauna without threatening the health of the local ecosystem or the ability of future generations to enjoy it. Any particular area's carrying capacity is dynamic. It can be enhanced through technological advancements, but population growth typically has a negative impact.

Methodology

This section presents the research design, the target population and sampling procedure, the data-gathering instrument, the data-gathering procedure, and the data-processing and analysis procedure.

Research Design

The study assessed the sustainability and carrying capacity of Islas de Gigantes as a tourist destination among stakeholders using a survey-correlational method, and focusing on environmental resource optimal use, sociocultural authenticity, and long-term economic operations.

Target Population and Sampling Procedure

The study involved 225 stakeholders from Islas de Gigantes, using a simple random sampling technique to gather information from various sectors.

Inclusions Criteria. The study involved the sector representation of stakeholders in an island resort from July-August 2023, including tourists, residents, LGU officials, tourism sector, business sector, tour operators, school officials, and transport sector.

Data-Gathering Instruments

The study used Islas de Gigantes' Carrying Capacity and Sustainability as a Tourist Destination Assessment Scales, developed by researchers. The items included in the data-gathering instruments were sources from the researchers' readings, seminars, workshops, professional forums, teaching experience, and tourism indicators. Features were documented separately from the participants' personal profile.

Carrying Capacity of Islas de Gigantes as a Tourist Destination Assessment Scale

The Carrying Capacity of Islas de Gigantes as a Tourist Destination Assessment Scale was used to gather data on the stakeholders' assessment of the destination's carrying capacity. The scale consists of 21 items, and each item was scored based on agreement or disagreement with the statement.

To interpret the stakeholders' obtained mean score, the researcher used the following scale of means and corresponding interpretation:

The Scale of Means	*Interpretation*
4.20 – 5.00	Above the desired carrying capacity
3.40 – 4.19	Slightly above the desired carrying capacity
2.60 – 3.39	Within the desired carrying capacity
1.80 – 2.59	Slightly below the desired carrying capacity
1.00 – 1.79	Below the desired carrying capacity

Sustainability of Islas de Gigantes as a Tourist Destination Assessment Scale

The Sustainability of Islas de Gigantes as a Tourist Destination Assessment Scale was used to gather data on the stakeholders' assessment of the destination's sustainability. The scale consists of 14 items for optimal use of environmental resources, 10 items for sociocultural authenticity, and 10 items for viable long-term economic operations.

To interpret the stakeholders' obtained mean score, the researcher used the following scale of means and corresponding interpretation:

The Scale of Means	*Interpretation*
4.20 – 5.00	Extremely sustainable
3.40 – 4.21	Highly sustainable
2.60 – 3.39	Sustainable
1.80 – 2.59	Slightly sustainable
1.00 – 1.79	Not Sustainable

Validity and Reliability of the Data-Gathering Instruments

The Carrying Capacity of Islas de Gigantes as a Tourist Destination Assessment Scale was analyzed using SPSS software and checked for construct validity, stability, consistency, and reliability using the Kuder-Richardson Reliability test. The 48-item composite yielded factor loads between .501 and .885, with +.50 or higher factor loads being the norm. The Cronbach's alpha was .939, indicating its reliability as a tourist destination assessment scale.

Sustainability of Islas de Gigantes as a Tourist Destination Assessment Scale.

The Islas de Gigantes Sustainability Assessment Scale, consisting of 34 items, has a factor loading of +.50 or higher, with a Cronbach's alpha of.932, indicating high dependability. However, an appropriate coefficient is not available, and values close to .70 may be adequate for group-level comparisons. Overall, the scale is considered a good choice.

Ethical Consideration

Central Philippine University's Research Ethics Committee assessed and approved the researchers' research protocol. Furthermore, they take further measures in accordance with the Data Privacy Act of 2022 and the International Association of Testing and Certification (IATF) protocol for COVID-19 safeguards.

Voluntary Participation and Consent. All participants were adequately informed about the study's goals, methodology, and relevance before they made their participation decision. They were given full and accurate information, and their participation was completely voluntary. There was an opportunity for the stakeholders to say no.

While stakeholders were welcome to opt out at any moment if they felt uncomfortable with their involvement, it is important to note that they will not be compensated in any way.

Data-gathering Procedure

The researcher communicated the study's purpose and sought permission to administer the data-gathering instruments. These personally distributed and administered, with instructions for completion. Stakeholders were given 20-30 minutes to complete the questionnaires. After retrieval, scores and means were computed, and data were tallied, computer-processed, and interpreted using appropriate statistics.

Data Analysis Procedure

The following statistical tools were employed in the analysis of the obtained data:

Frequency count. Frequency counts were utilized to ascertain the number of stakeholders' responses that belonged to a class or a category.
Percentage analysis. Percentage analyses were used to determine which portion of the stakeholders belonged to a class or category of the independent variables.
Mean. Mean scores were used to determine the stakeholders' assessment of the carrying capacity and sustainability of Islas de Gigantes as a tourist destination.
Standard deviation. Standard deviations were used to determine the homogeneity or heterogeneity of the stakeholders in terms of their assessment of the carrying capacity and sustainability of Islas de Gigantes as a tourist destination.
The *t*-test for independent samples. The *t*-test for independent samples was utilized to determine the significance of the differences in the stakeholders' assessment of the carrying capacity and sustainability of

Islas de Gigantes as a tourist destination in two-level categories of the antecedent variables.

The One-Way Analysis of Variance (One-Way ANOVA). The **One-Way ANOVA** was used to determine significance of the differences in the stakeholders' assessment of the carrying capacity and sustainability of Islas de Gigantes as a tourist destination in three or more levels of categories of the antecedent variables.

Pearson's Product-Moment Coefficient of Correlation (Pearson's *r*). The Pearson's *r* was used to determine the significance of the relationships among the stakeholders' assessment of the carrying capacity of Islas de Gigantes as a tourist destination in terms of economic carrying capacity, and social carrying capacity and sustainability of Islas de Gigantes as a tourist destination in terms of optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations.

The .05 alpha level was used as the criterion for the acceptance or rejection of the null hypotheses.

Results

Stakeholders' Personal Factors

The study revealed that of the 225 valid stakeholder samples, majority are females, 145(64%), younger 147(65%), single 162(72%), and high-school graduates 179(80%). Large numbers belong to low average monthly income 109(48%), government employees 82(36%), and 51(23%) represent non-government organizations (see Table 1).

Table 1 *Stakeholders' Personal Factors*

Category	*f*	*%*
Entire Group	225	100
Sex		
Male	80	36
Female 145	64	
Age		
Younger (below 35 years old)	147	65
Middle aged (36-50 years old)	78	35
Civil status		
Single	162	72
Married	63	28
Educational background		
Elementary diploma	19	8
High-school diploma	179	80
Bachelor's degree holder	17	8
Master's degree Holder	10	4
Average monthly income		
Low (₱25,000 and less)	109	48
Average (₱ 26,000 – ₱50,000)	103	46
Higher (more than ₱50,000)	13	6
Employment status		
Unemployed	33	15
Self-employed	68	30
Government employee	82	36
Private company	42	19
Sector Represented		
Tourist	35	16
Island resident	37	16
Education/academe	29	13
Local government unit	44	20
Tour operator and tour guides	29	13
Non-government organization	51	23

Island's Characteristics

Data in Table 2 revealed that majority of the destination's visitors 214(94%) are local tourists within Iloilo, the destination's average monthly revenue is ₱100,000 and less 212(94%), and the destination's manpower resources are 10 employees or less 202(90%). The destination's logistic support 104(46%) and transportation availability 101(45%) were generally not provided and not available, with no LGU support 101(45%).

Table 2 *Island's Characteristics*

Category	*f*	*%*
Type of Tourist		
Local within Iloilo	214	94
Local within the Philippines but outside Iloilo	11	6
Average Monthly Revenue		
₱100,000 and less	212	94
₱101,000 – ₱250,000	13	6
Manpower Resources		
10 employees or less	202	90
11 – 25 employees	23	10
Logistic Support		
Not provided and not Available	104	46
Provided and very adequate 63	28	
Provided and adequate	58	26
Transportation Availability		
Not Provided and not available	101	45
Provided and readily available	66	29
Provided and available	58	26
LGU Support		
No Support	101	45
Very Strong Support	68	30
Strong Support	36	16
Moderate Support	20	9

Carrying Capacity of Islas de Gigantes as a Tourist Destination in terms of Physical or Ecological Carrying Capacity, Economic Carrying Capacity, and Social Carrying Capacity Classified According to Stakeholders' Personal Factors and Island's Characteristics

The study revealed that, except for those with elementary diploma, who assessed Islas de Gigantes' physical or ecological carrying capacity (*M* = 4.08, *SD* = .68), economic carrying capacity (*M* = 4.02, *SD* = .83), and social carrying capacity (*M* = 4.11, *SD* = .76) *slightly above the desired carrying capacity*, the stakeholders in all the other categories of the antecedent variables assessed the carrying capacity of Islas de Gigantes as a tourist destination in terms of physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity, were *above the desired carrying capacity*. This was revealed by obtained mean scores which fell within the 4.20–5.00 (see Table 3).

The obtained standard deviations, which ranged from .25-.70, indicated the homogeneity of the stakeholders, in terms of their assessment of the carrying capacity of Islas de Gigantes as a tourism destination as to physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity.

Sustainability of Islas De Gigantes in Terms of Optimal Use of Environmental Resources, Sociocultural Authenticity of Host Communities, and Viable Long-Term Economic Use of Operations Classified According to Stakeholders' Personal Factors and Island's Profile

The study likewise revealed that, except for those with elementary diploma, who assessed Islas de Gigantes' sustainability *i*n terms of optimal use of environmental resources (M = 4.14, SD = .78), sociocultural authenticity of host communities (M = 4.13, SD = .66), viable long-term economic use of operations (M = 4.18, SD = .74). This was revealed by obtained mean scores which fell within the 4.20–5.00 (see Table 4).

The obtained standard deviations, which ranged from .21-.74, indicated the homogeneity of the stakeholders, in terms of their assessment of the sustainability of Islas de Gigantes as a tourism destination as to of optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic use of operations

Table 3
Carrying Capacity of Islas de Gigantes as a Tourist Destination in Terms of Physical or Ecological Carrying Capacity, Economic Carrying Capacity, and Social Carrying Capacity

Category	Physical or Ecological Carrying Capacity			Economic Carrying Capacity			Social Carrying Capacity		
	SD	*M*	Description	*SD*	*M*	Description	*SD*	*M*	Description
Entire group	.47	4.46	Above the DCC	.51	4.46	Above the DCC	.49	4.45	Above the DCC
Personal Factors									
Sex									
Male	.52	4.41	Above the DCC	.52	4.50	Above the DCC	.47	4.41	Above the DCC
Female	.45	4.49	Above the DCC	.52	4.50	Above the DCC	.50	4.48	Above the DCC
Age									
Younger (below 35 years old)	.47	4.44	Above the DCC	.47	4.47	Above the DCC	.47	4.46	Above the DCC
Middle (36-50 years old)	.48	4.49	Above the DCC	.58	4.43	Above the DCC	.51	4.50	Above the DCC
Civil Status									
Single	.47	4.42	Above the DCC	.49	4.42	Above the DCC	.49	4.41	Above the DCC
Married	.46	4.56	Above the DCC	.53	4.54	Above the DCC	.46	4.56	Above the DCC
Educational Background									
Elementary Diploma	.68	4.08	Slightly above the DCC	.83	4.02	Slightly above the DCC	.76	4.11	Slightly above the DCC
High School Diploma	.44	4.49	Above the DCC	.45	4.50	Above the DCC	.44	4.48	Above the DCC
Bachelor's Degree	.41	4.51	Above the DCC	.55	4.50	Above the DCC	.44	4.53	Above the DCC
Master's Degree	.36	4.49	Above the DCC	.27	4.44	Above the DCC	.45	4.53	Above the DCC
Employment Status									
Unemployed	.38	4.48	Above the DCC	.50	4.50	Above the DCC	.50	4.45	Above the DCC
Self-employed	.50	4.41	Above the DCC	.55	4.33	Above the DCC	.51	4.39	Above the DCC
Government employee	.41	4.51	Above the DCC	.43	4.54	Above the DCC	.41	4.51	Above the DCC
Private company	.59	4.42	Above the DCC	.56	4.47	Above the DCC	.56	4.45	Above the DCC
Sector Represented									
Tourist	.55	4.27	Above the DCC	.70	4.25	Above the DCC	.66	4.21	Above the DCC
Island Resident	.39	4.55	Above the DCC	.35	4.62	Above the DCC	.35	4.60	Above the DCC
Education/Academe	.30	4.57	Above the DCC	.33	4.50	Above the DCC	.31	4.46	Above the DCC
Local Government Unit	.43	4.33	Above the DCC	.43	4.40	Above the DCC	.44	4.36	Above the DCC
Tour Operators and Guides	.41	4.59	Above the DCC	.45	4.62	Above the DCC	.37	4.63	Above the DCC
Non-government organizations	.56	4.49	Above the DCC	.56	4.41	Above the DCC	.54	4.49	Above the DCC
Island's Characteristics									
Type of Tourist									
Local within Iloilo	.48	4.45	Above the DCC	.50	4.45	Above the DCC	.48	4.45	Above the DCC
Local within the Philippines but outside Iloilo province	.47	4.46	Above the DCC	.58	4.51	Above the DCC	.56	4.52	Above the DCC
Average Monthly Income									
₱100,000 and less	.48	4.45	Above the DCC	.51	4.45	Above the DCC	.49	4.45	Above the DCC
₱ 101,000-₱250,000	.36	4.52	Above the DCC	.41	4.59	Above the DCC	.35	4.61	Above the DCC
Manpower Resources									
10 Employees and less	.48	4.43	Above the DCC	.52	4.43	Above the DCC	.50	4.43	Above the DCC
11-25 Employees	.33	4.46	Above the DCC	.35	4.69	Above the DCC	.21	4.71	Above the DCC
Logistic Support									
Not provided & not available	.53	4.38	Above the DCC	.54	4.40	Above the DCC	.54	4.38	Above the DCC
Provided & very adequate	.41	4.55	Above the DCC	.46	4.53	Above the DCC	.43	4.25	Above the DCC
Provided & adequate	.42	4.48	Above the DCC	.47	4.48	Above the DCC	.42	4.51	Above the DCC
Transportation Availability									
Not provided & not available	.53	4.37	Above the DCC	.55	4.39	Above the DCC	.55	4.36	Above the DCC
Provided & readily available	.34	4.58	Above the DCC	.37	4.58	Above the DCC	.37	4.57	Above the DCC
Provided & available	.47	4.48	Above the DCC	.55	4.43	Above the DCC	.47	4.48	Above the DCC
LGU Support									
No Support	.53	4.37	Above the DCC	.55	4.39	Above the DCC	.54	4.37	Above the DCC
Very Strong Support	.37	4.53	Above the DCC	.43	4.49	Above the DCC	.40	4.52	Above the DCC
Strong Support	.28	4.61	Above the DCC	.34	4.64	Above the DCC	.25	4.63	Above the DCC
Moderate Support	.64	4.37	Above the DCC	.68	4.37	Above the DCC	.64	4.36	Above the DCC

Note: Scale of Means	Interpretation
4.20 – 5.00	Above the DCC (desired carrying capacity)
3.40 – 4.19	Slightly above the DCC (desired carrying capacity)
2.60 – 3.39	Within the DCC (desired carrying capacity)
1.80 – 2.59	Slightly below the DCC (desired carrying capacity)
1.00 – 1.79	Below the DCC (desired carrying capacity)

Table 4
Sustainability of Islas de Gigantes in Terms of Optimal Use of Environmental Resources, Sociocultural Authenticity of Host Communities, Viable Long-Term Economic Use of Operations

	Optimal Use of Environmental Resources			Sociocultural Authenticity of Host Communities			Viable Long-Term Economic Use Of Operations		
	SD	*M*	Description	*SD*	*M*	Description	*SD*	*M*	Description
Entire group	.49	4.48	ES	.46	4.49	ES	.47	4.50	ES
Personal Factors									
Sex									
Male	.46	4.42	ES	.46	4.42	ES	.46	4.41	ES
Female	.51	4.51	ES	.46	4.54	ES	.50	4.52	ES
Age									
Younger (below 35 years old)	.47	4.50	ES	.46	4.49	ES	.46	4.48	ES
Middle (36-50 years old)	.53	4.44	ES	.47	4.51	ES	.48	4.52	ES
Civil Status									
Single	.48	4.45	ES	.46	4.45	ES	.49	4.44	ES
Married	.52	4.56	ES	.46	4.62	ES	.38	4.64	ES
Educational background									
Elementary diploma	.78	4.14	HS	.66	4.13	HS	.74	4.18	HS
High shool diploma	.43	4.51	ES	.45	4.51	ES	.42	4.52	ES
Bachelor's degree	.63	4.52	ES	.32	4.61	ES	.41	4.57	ES
Master's Degree	.29	4.46	ES	.40	4.46	ES	.51	4.42	ES
Employment status									
Unemployed	.48	4.51	ES	.41	4.57	ES	.36	4.55	ES
Self-employed	.53	4.38		.52	4.40		.52	4.41	
Government employee	.39	4.57	ES	.43	4.52	ES	.42	4.56	ES
Private company	.59	4.45	ES	.47	4.53	ES	.54	4.45	ES
Sector represented									
Tourist	.70	4.19	ES	.61	4.28	ES	.63	4.37	ES
Island resident	.33	4.56	ES	.35	4.67	ES	.35	4.57	ES
Education/academe	.33	4.49		.29	4.54		.27	4.40	ES
Local government unit	.44	4.44	ES	.46	4.35	ES	.47	4.40	ES
Tour operators and guides	.39	4.63	ES	.40	4.65	ES	.44	4.60	ES
Non-government organization	.51	4.50	ES	.46	4.52	ES	.50	4.49	ES
Island's Characteristics									
Type of tourist									
Local within Iloilo	.48	4.48	ES	.47	4.49	ES	.47	4.49	ES
Local within the Philippines but outside Iloilo province	.66	4.57	ES	.29	4.66	ES	.34	4.60	ES
Average monthly income									
₱100,000 and less	.50	4.46	ES	.47	4.49	ES	.47	4.48	ES
₱ 101,000 to 250,000	.27	4.73	ES	.29	4.64	ES	.30	4.73	ES
Manpower resources									
10 Employees and less	.51	4.71	ES	.48	4.70	ES	.48	4.48	ES
11-25 Employees	.21	4.46	ES	.25	4.69	ES	.35	4.61	ES
Logistic support			ES			ES			ES
Not provided & not available	.57	4.41		.50	4.45		.50	4.45	ES
Provided & very adequate	.39	4.57	ES	.41	4.55	ES	.40	4.57	ES
Provided & adequate	.42	4.51	ES	.45	4.51	ES	.47	4.49	ES
Transportation availability									
Not provided & not available	.57	4.39	ES	.50	4.44	ES	.50	4.44	ES
Provided & readily available	.31	4.58	ES	.35	4.61	ES	.37	4.57	ES
Provided & available	.47	4.48	ES	.55	4.43	ES	.55	4.43	ES
LGU support									
No Support	.57	4.39	ES	.49	4.43	ES	.50	4.44	ES
Very Strong Support	.35	4.53	ES	.41	4.52	ES	.42	4.51	ES
Strong Support	.25	4.67	ES	.23	4.66	ES	.26	4.67	ES
Moderate Support	.67	4.39	ES	.68	4.41	ES	.64	4.40	ES

Note: *The Scale of Means* *Interpretation*
4.20 – 5.00 Extremely sustainable (ES)
3.40 – 4.21 Highly sustainable (HS)
2.60 – 3.39 Sustainable (S)
1.80 – 2.59 Slightly sustainable (SlS)
1.00 – 1.79 Not Sustainable (NS)

Differences in the Assessment of the Physical or Ecological Carrying Capacity, Economic Carrying Capacity, and Social Carrying Capacity of Islas de Gigantes as a Tourist Destination Among the Stakeholders Classified According to Personal Profile and Island Characteristics

Physical or Ecological Carrying Capacity. Data in Table 5 reveal that the stakeholders differed significantly in their assessment of physical or ecological carrying capacity of Islas de Gigantes as a tourist destination when they were classified as to island characteristics in terms of manpower resources, $t(223) = 2.395$, $p = .017$.

No significant differences were noted in the assessment of physical or ecological carrying capacity of Islas de Gigantes as a Tourist Destination when they were classified as to personal characteristics in terms of sex, age, and civil status and island characteristics in terms type of tourist and average monthly income. Obtained *t*s were: 1.224, .633, 1.932, 1.122, and .480, respectively. All *p*s > .05.

Table 5

The t-test Results for Differences in the Assessment of the Physical or Ecological Carrying Capacity, Economic Carrying Capacity, and Social Carrying Capacity of Islas de Gigantes as a Tourist Destination Among the Stakeholders Classified According to Personal Profile in terms of Sex and Age and Island Characteristics in Terms of Type of Tourist, Average Monthly Income, and Manpower Resources

	Physical or Ecological Carrying Capacity				Economic Carrying Capacity				Social Carrying Capacity			
	M	*df*	*t-value*	*Sig.*	*M*	*df*	*t-value*	*Sig.*	*M*	*df*	*t-value*	*Sig.*
Personal characteristics												
Sex												
Male	4.42	223	1.224	.222	4.50	223	1.648	.101	4.41	223	1.079	.282
Female	4.51				4.50				4.48			
Age												
Younger (below 35 years old)	4.50	223	.633	.527	4.47	223	.563	.574	4.46	223	.033	.973
Middle (36-50 years old)	4.44				4.43				4.50			
Civil Status												
Single	4.45	223	1.932	.055	4.42	223	1.614	.108	4.41	223	2.110	.036
Married	4.56				4.54				4.56			
Island Characteristics												
Type of Tourist												
Local within Iloilo	4.45	223	1.122	.263	4.45	223	.345	.730	4.45	223	.448	.655
Local within the Philippines Outside Iloilo Province	4.46				4.51				4.52			
Average Monthly Income												
₱100,000 and less	4.45	223	.480	.632	4.45	223	.971	.332	4.45	223	1.165	.245
₱101,000 to 250,000	4.52				4.59				4.61			
Manpower Resources												
10 Employees and less	4.43	223	2.395*	.017	4.43	223	2.358*	.019	4.43	223	2.090*	.038
11-25 Employees	4.46				4.69				4.71			

The One-Way ANOVA results in Table 6 reveal that the stakeholders differed significantly in their assessment of the physical or ecological carrying capacity of Islas de Gigantes as a tourist destination when they were classified according to their personal profile in terms of educational background, $F(3,221) = 4.629$, $p = .004$ and sector represented, $F(5,219) = 3.097$, $p = .010$ and island characteristics in terms of transportation availability, $F(2,222) = 4.159$, $p = .017$ and LGU support, $F(3,221) = 3.305$, $p = .021$.

A post hoc test was conducted using the Scheffe' test. It was revealed that, in terms of educational background, those with elementary diploma ($M = 4.08$) had a significantly lower assessment of the physical or ecological carrying capacity of Islas de Gigantes as a tourist destination compared with those with high school diploma ($M = 4.49$), bachelor's degree ($M = 4.51$), and master's degree ($M = 4.49$).

As to sector represented, the tourists (M = 4.27) had a significantly lower assessment of the physical or ecological carrying capacity of Islas de Gigantes as a tourist destination compared with the island resident ($M = 4.55$), education/academe ($M = 4.57$), tour operators and guides ($M = 4.59$), and non-government organizations ($M = 4.49$).

In terms of transportation availability, those who indicated that transportation was not provided & not available ($M = 4.37$) had a significantly lower assessment of the physical or ecological carrying capacity of Islas de Gigantes as a tourist destination compared with those who indicated that transportation was provided and readily available ($M = 4.58$).

As to LGU support, those who indicated no support (M = 4.37) and moderate support (M = 4.37) had a significantly lower assessment of the physical or ecological carrying capacity of Islas de Gigantes as a tourist destination compared with those who indicated very strong support (*M* = 4.53) and strong support (*M* = 4,61). As revealed in the findings, educational background, sector represented, transportation availability and LGU support were factors found to significantly influence the stakeholders' assessment of the physical or ecological carrying capacity of Islas de Gigantes as a tourist destination.

No significant differences were noted in the stakeholders' assessment of physical or ecological carrying capacity of Islas de Gigantes as a tourist destination when they were classified according to their personal profile in terms of employment status and
island characteristics in terms of logistics support. Obtained *F*s were: .448 and .282, respectively. All *p*s > .05.

Economic Carrying Capacity. Data in Table 6 reveal that the stakeholders differed significantly in their assessment of economic carrying capacity of Islas de Gigantes as a tourist destination when they were classified as to island characteristics in terms of manpower resources, $t(223) = 2.358$, $p = .019$.
Manpower resources is a factor found to significantly influence the stakeholders' assessment of economic carrying capacity of Islas de Gigantes as a tourist destination.

No significant differences were noted in the assessment of economic carrying capacity of Islas de Gigantes as a Tourist Destination when they were classified as to personal characteristics in terms of sex, age, and civil status and island characteristics in terms type of tourist and average monthly income. Obtained *t*s were: 1.648, .563, 1.614, .345, and .971, respectively. All *p*s > .05.

The One-Way ANOVA results in Table 6 reveal that the stakeholders differed significantly in their assessment of economic carrying capacity of Islas de Gigantes as a tourist destination when they were classified according to their personal profile in terms of educational background, $F(3,221) = 5.509$, $p = .001$ and sector represented, $F(5,219) = 2.994$, $p = .012$ and island characteristics in terms of transportation availability, $F(2,222) = 3.171$, $p = .044$.

A post hoc test was conducted using the Scheffe' test. It was revealed that, in terms of educational background, those with elementary diploma (*M* = 4.02) had a significantly lower assessment of the economic carrying capacity of Islas de Gigantes as a tourist destination compared with those with high school diploma (*M* = 4.50), bachelor's degree (*M* = 4.50), and master's degree (*M* = 4.44).

As to sector represented, the tourists (*M* = 4.25) had a significantly lower assessment of the economic carrying capacity of Islas de Gigantes as a tourist destination compared with the island resident (*M* = 4.62), education/academe (*M* = 4.50), tour operators and guides (*M* = 4.40), tour operators and guides (M = 4.62) and non-government organizations (*M* = 4.41).

In terms of transportation availability, those who indicated that transportation was not provided & not available (*M* = 4.39) had a significantly lower assessment of the economic carrying capacity of Islas de Gigantes as a tourist destination compared with those who indicated that transportation was provided and very adequate (*M* = 4.58).

Educational background, sector represented, and transportation availability were factors found to significantly influence the stakeholders' assessment of the economic carrying capacity of Islas de Gigantes as a tourist destination. Tourists and means of transportation are among the important ingredients of economic carrying capacity of Islas de Gigantes as a tourist destination or for any tourist destination for that matter.

No significant differences were noted in the stakeholders' assessment of economic carrying capacity of Islas de Gigantes as a tourist destination when they were classified according to their personal profile in terms of employment status and island profile in terms of logistics support. Obtained *F*s were: 1.626, .031, and 2.615, respectively. All *p*s > .05.

Table 6 *One-Way ANOVA Results for Differences in the Assessment of the Physical or Ecological Carrying Capacity, Economic Carrying Capacity, and Social Carrying Capacity of Islas de Gigantes as a Tourist Destination when Classified According to Stakeholders Personal Characteristics and Island Characteristics*

	Physical or Ecological Carrying Capacity			Economic Carrying Capacity			Social Carrying Capacity		
	Between Groups	Within Groups	Total	Between Groups	Within Groups	Total	Between Groups	Within Groups	Total
Personal Profile									
A. Educational Background									
Sum of Squares	2.969	47.250	50.219	4.004	53.539	57.543	2.510	50.316	52.826
df	3	221	224	3	221	224	3	221	224
Mean Square	.990	.214		1.335	.242		.837	.228	
F	4.629*			5.509*			3.674*		
Sig	.004			.001			.013		
B. Employment Status									
Sum of Squares	.448	49.771	50.219	1.626	55.918	57.543	.490	52.336	52.826
df	3	221	224	3	221	224	3	221	223
Mean Square	.149	.225		.542	.253		.163	.237	
F	.663			2.142			.690		
Sig	.576			.096			.559		
C. Sector Represented									
Sum of Squares	3.316	46.903	50.219	3.682	53.861	57.543	4.376	48.450	52.826
df	5	219	224	5	219	224	5	219	223
Mean Square	.663	.214		.875	.246		.875	.221	
F	3.097*			2.994*			3.956*		
Sig	.010			.012			.002		
Island Characteristics									
A. Logistics Support									
Sum of Squares	.282	49.937	50.219	.031	57.512	57.543	.047	52.778	52.826
df	1	223	224	1	223	224	1	223	224
Mean Square	.282	.224		.031	.258		.047	.237	
F	1.260			.119			.200		
Sig.	.263			.730			.655		
B. Transportation Availability									
Sum of Squares	1.814	48.405	50.219	1.598	55.945	57.543	1.827	50.999	52.826
df	2	222	224	2	222	224	2	222	224
Mean Square	.907	.218		.799	.252		.914	.230	
F	4.159*			3.171*			3.977*		
Sig.	.017			.044			.020		
C. LGU Support									
Sum of Squares	2.156	48.063	50.219	1.972	55.571	57.543	2.365	50.461	52.826
df	3	221	224	3	221	224	3	221	224
Mean Square	.719	.217		.657	.251		.788	.228	
F	3.305*			2.615			3.452*		
Sig.	.021			.052			.017		

Social Carrying Capacity. Data in Table 6 reveal that the stakeholders differed significantly in their assessment of social carrying capacity of Islas de Gigantes as a tourist destination when they were classified as to island characteristics in terms of manpower resources, $t(223) = 2.090$, $p = .038$.

No significant differences were noted in the assessment of economic carrying capacity of Islas de Gigantes as a Tourist Destination when they were classified as to personal characteristics in terms of sex, age, and civil status and island characteristics in terms type of tourist and average monthly income. Obtained *t*s were: 1.079, .033, 2.110, .448, and 1.165, respectively. All *p*s > .05 (see Table 6).

The One-Way ANOVA results in Table 7 reveal that the stakeholders differed significantly in their assessment of social carrying capacity of Islas de Gigantes as a tourist destination when they were classified according to their personal profile in terms of educational background, $F(3,221) = 3.674$, $p = .013$ and sector represented, $F(5,219) = 3.956$, $p = .002$ and island characteristics in terms of transportation availability, $F(2,222) = 3.977$, $p = .020$ and LGU support, $F(3,221) = 3.452$, $p = .017$.

A post hoc test was conducted using the Scheffe' test. It was revealed that, in terms of educational background, those with elementary diploma ($M = 4.02$) had a significantly lower assessment of the social carrying capacity of Islas de Gigantes as a tourist destination compared with those with high school diploma ($M = 4.50$), bachelor's degree ($M = 4.50$), and master's degree ($M = 4.44$).

As to sector represented, the tourists ($M = 4.21$) had a significantly lower assessment of the social carrying capacity of Islas de Gigantes as a tourist destination compared with the island resident ($M = 4.60$),

education/academe (*M* = 4.46), tour operators and guides (*M* = 4.36), tour operators and guides (M = 4.63) and non-government organizations (*M* = 4.40).

In terms of transportation availability, those who indicated that transportation was not provided & not available (*M* = 4.36) had a significantly lower assessment of the social carrying capacity of Islas de Gigantes as a tourist destination compared with those who indicated that transportation was provided and very adequate (*M* = 4.57).

Educational background, sector represented, transportation availability, and LGU support were factors found to significantly influence the stakeholders' assessment of the social carrying capacity of Islas de Gigantes as a tourist destination. Island movements seem characterized by one's educational background, the sector one represents, the transport services available, and LGU support.

No significant differences were noted in the stakeholders' assessment social carrying capacity of Islas de Gigantes as a tourist destination when they were classified according to their personal profile in terms of employment status and island characteristics in terms of logistics support. Obtained *F*s were: .690 and .200, respectively. All *p*s > .05 (see Table 6).

Differences in the Assessment of the Sustainability of Islas de Gigantes as a Tourist Destination in Terms of Optimal Use of Environmental Resources, Sociocultural Authenticity of Host Communities, Viable Long-term Economic Use of Operations Among the Stakeholders Classified According to Their Personal Profile and Island Characteristics

Optimal Use of Environmental Resources. The *t*-test results in Table 7 reveal that the stakeholders differed significantly in their assessment of the optimal use of environmental resources when they were classified according to island characteristics in terms of manpower resources, $t(223) = 2.350$, $p = .020$.

No significant differences were noted in the stakeholders' assessment of the optimal use of environmental resources when they were classified according to their personal profile in terms of sex, age, and civil status and island characteristics in terms of type of tourist and average monthly income. Obtained *t*s were: 1.437, .850, 1.458, .641, and 1.912, respectively. All *p*s > .05.

Sociocultural Authenticity of Host Communities. The *t*-test results in Table 7 reveal that the stakeholders differed significantly in their assessment of the optimal use of sociocultural authenticity of host communities when they were classified according to personal profile in terms of civil status, $t(223) = 2.504$, $p = .013$ and island characteristics in terms of manpower resources, $t(223) = 2.306$, $p = .022$).

No significant differences were noted in the stakeholders' assessment of the sociocultural authenticity of host communities when they were classified according to their personal profile in terms of sex and age and island characteristics in terms of type of tourist and average monthly income. Obtained *t*s were: 1.862, .372, 1.205, and 1.176, respectively. All *p*s > .05.

Viable Long-term Economic Use of Operations. The *t*-test results in Table 7 reveal that the stakeholders differed significantly in their assessment of the viable long-term economic use of operations when they were classified according to personal profile in terms of civil status, $t(223) = 2.979$, $p = .003$.

No significant differences were noted in the stakeholders' assessment of the viable long-term economic use of operations when they were classified according to their personal profile in terms of sex and age and island characteristics in terms of type of tourist and average monthly income. Obtained *t*s were: 1.256, .529, .807, 1.857, and 1.294, respectively. All *p*s > .05.

Table 7 *The t-test Results for Differences in the Assessment of the Sustainability of Islas de Gigantes as a Tourist Destination in Terms of Optimal Use of Environmental Resources, Sociocultural Authenticity of Host Communities, Viable Long-term Economic Use of Operations Among the Stakeholders Classified According to Their Personal Characteristics and Island Characteristics*

	Optimal Use of Environmental Resources				Sociocultural Authenticity of Host Communities				Viable Long-Term Economic Use of Operations			
	M	*df*	*t-value*	*Sig.*	*M*	*df*	*t-value*	*Sig.*	*M*	*df*	*t-value*	*Sig.*
Personal Profile												
Sex												
Male	4.42	223	1.437	.152	4.42	223	1.862	.064	4.41	223	1.256	.210
Female	4.51				4.54				4.52			
Age												

Younger (below 35 years old)	4.50	223	.850	.396	4.49	223	.372	.710	4.48	223	.529	.597
Middle (36-50 years old)	4.44				4.51				4.52			
Civil Status												
Single	4.45	223	1.458	.146	4.45	223	2.504*	.013	4.44	223	2.979*	.003
Married	4.56				4.62				4.64			
Island Characteristics												
Type of Tourist												
Local within Iloilo	4.48	223	.641	.522	4.49	223	1.205	.229	4.49	223	.807	.420
Local within the Philippines Outside Iloilo Province	4.57				4.66				4.60			
Average Monthly Income												
₱100,000 and less	4.46	223	1.912	.057	4.49	223	1.176	.241	4.48	223	1.857	.065
₱101,000 to 250,000	4.73				4.64				4.73			
Manpower Resources												
10 Employees and less	4.71	223	2.350*	.020	4.70	223	2.306*	.022	4.48	223	1.294	.107
11-25 Employees	4.46				4.69				4.61			

Optimal Use of Environmental Resources. The One-Way ANOVA results in Table 8 reveal that the stakeholders differed significantly in their assessment of sustainability of Islas de Gigantes as a the optimal use of environmental resources when they were classified according personal profile in terms of educational background and sector represented and island characteristics in terms of transportation availability and LGU support. Obtained *F*s were: 3.439, 3.187, 3.146, and 3.533, respectively. All *p*s < .05.

A post hoc test was conducted using the Scheffe' test. It was revealed that, in terms of educational background, those with elementary diploma (*M* = 4.14) had a significantly lower assessment of the sustainability of Islas de Gigantes as a tourist destination in terms of the optimal use of environmental resources compared with those with high school diploma (*M* = 4.51), bachelor's degree (*M* = 4.52), and master's degree (*M* = 4.46).

As to sector represented, the tourists (M = 4.19) had a significantly lower assessment of the sustainability of Islas de Gigantes as a tourist destination in terms of the optimal use of environmental resources compared with the island resident (*M* = 4.56), education/academe (*M* = 4.49), tour operators and guides (*M* = 4.44), tour operators and guides (M = 4.63) and non-government organizations (*M* = 4.50).

In terms of transportation availability, those who indicated that transportation was not provided & not available (*M* = 4.39) had a significantly lower assessment of the sustainability of Islas de Gigantes as a tourist destination in terms of the optimal use of environmental resources compared with those who indicated that transportation was provided and very adequate (*M* = 4.58).

As to LGU support, those who indicated no support (M = 4.39) and moderate support (M = 4.39) had a significantly lower assessment of the sustainability of Islas de Gigantes as a tourist destination in terms of the optimal use of environmental resources compared with those who indicated very strong support (*M* = 4.53) and strong support (*M* = 4.67).

No significant differences were noted in the optimal use of environmental resources when they were classified according to personal profile in terms of employment status and island characteristics in terms of logistic support. Obtained *F*s were: 1.372 and .099, respectively. All *p*s > .05.

Sociocultural Authenticity of Host Communities.The One-Way ANOVA results in Table 8 reveal that the stakeholders differed significantly in their assessment of sociocultural authenticity of host communities when they were classified according to their personal profile in terms of educational background, $F(3,221) = 3.641$, $p = .050$.

A post hoc test was conducted using the Scheffe' test. It was revealed that, in terms of educational background, those with elementary diploma (*M* = 4.23) had a significantly lower assessment of the sustainability of Islas de Gigantes as a tourist destination in terms of the sociocultural authenticity of host communities compared with those with high school diploma (*M* = 4.51), bachelor's degree (*M* = 4.61), and master's degree (*M* = 4.46).

No significant differences were noted in the stakeholders' assessment of the sociocultural authenticity of host communities when they were classified according to their personal profile in terms of employment status and sector represented and island characteristics in terms of logistics support, transportation availability, and LGU support.. Obtained *t*s were: 1.326, 1.187, 1.452, and 2.775, and 2.544, respectively. All *p*s > .05.

Table 8 *One-Way ANOVA Results for Differences in the Assessment of the Sustainability of Islas de Gigantes as a Tourist Destination in Terms of Optimal Use of Environmental Resources, Sociocultural Authenticity of Host Communities, Viable Long-term Economic Use of Operations Among the Stakeholders When Classified According to Their Personal Profile and Island Characteristics*

	Optimal Use of Environmental Resources			Sociocultural Authenticity of Host Communities			Viable Long-Term Economic Use of Operations		
	Between Groups	Within Groups	Total	Between Groups	Within Groups	Total	Between Groups	Within Groups	Total
Personal Profile									
A. Educational Background									
Sum of Squares	2.408	51.588	53.996	1.666	46.464	48.130	2.197	46.992	49.189
Df	3	221	224	3	221	224	3	221	223
Mean Square	.803	.233		.555	.210		.732	.213	
F	3.439*			2.641*			3.444*		
Sig	.018			.050			.018		
B. Employment Status									
Sum of Squares	1.372	52.624	53.996	.851	47.279	48.130	1.054	48.135	49.189
df	3	221	224	3	221	224	3	221	223
Mean Square	.457	.237		.284	.214		.351	.218	
F	1.921			1.326			1.612		
Sig	.127			.267			.187		
C. Sector Represented									
Sum of Squares	1.507	52.489	53.996	.509	47.621	48.130	1.101	48.088	49.189
df	2	222	224	2	222	224	2	222	223
Mean Square	.753	.236		.255	.215		.550	.217	
F	3.187*			1.187			2.541		
Sig	.043			.307			.081		
Island Characteristics									
A. Logistic Support									
Sum of Squares	.099	53.897	53.996	.311	47.819	48.130	.143	49.046	49.189
df	1	223	224	1	223	224	1	223	223
Mean Square	.099	.242		.311	.214		.143	.220	
F	.411			1.452			.652		
Sig.	.522			.229			.420		
B. Transportation Availability									
Sum of Squares	1.488	52.508	53.996	1.174	46.956	48.130	.712	48.477	49.189
df	2	222	224	2	222	224	2	222	223
Mean Square	.744	.237		.587	.212		.356	.218	
F	3.146*			2.775			1.629		
Sig.	.045			.065			.198		
C. LGU Support									
Sum of Squares	2.471	51.526	53.996	1.606	46.523	48.130	1.668	47.521	49.189
df	3	221	224	3	221	224	3	221	223
Mean Square	.824	.233		.535	.211		.556	.215	
F	3.533*			2.544			2.585		
Sig.	.016			.057			.054		

Viable Long-term Economic Use of Operations.The One-Way ANOVA results in Table 8 reveal that the stakeholders differed significantly in their assessment of sociocultural authenticity of host communities when they were classified according to their personal profile in terms of educational background, $F(3,221) = 3.444$, $p = .018$.

A post hoc test was conducted using the Scheffe' test. It was revealed that, in terms of educational background, those with elementary diploma ($M = 4.18$) had a significantly lower assessment of the sustainability of Islas de Gigantes as a tourist destination in terms of the sociocultural authenticity of host communities compared with those with high school diploma ($M = 4.52$), bachelor's degree ($M = 4.57$), and master's degree ($M = 4.42$).

No significant differences were noted in the stakeholders' assessment of the sociocultural authenticity of host communities when they were classified according to their personal profile in terms of employment status and sector represented and island characteristics in terms of logistics support, transportation availability, and LGU support.. Obtained *t*s were: 1.612, 2.541, 652, and 1.629, and 2.585, respectively. All *p*s > .05.

Sustainable tourism as defined by the UN Environment Program and UN World Tourism Organization which emphasizes the idea that "tourism that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities" (Global Tourism Council, 2022). These are also among the concerns emphasized by the findings of the present investigation.

Relationships Would Exist Among the Stakeholders' Assessment of the Physical or Ecological Carrying Capacity, Economic Carrying Capacity, and Social Carrying Capacity as Constructs of the Carrying Capacity of Islas De Gigantes as a Tourist Destination and Their Assessment of the Optimal Use of Environmental Resources, Sociocultural Authenticity of Host Communities, and Viable Long-Term Economic Operations as Constructs of Sustainability of Islas De Gigantes as a Tourist Destination

The Pearson's *r* results in Table 9 reveal that positive and highly significant relationships existed among the stakeholders' assessment of the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of the carrying capacity of Islas De Gigantes as a tourist destination and their assessment of the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes as tourist destination. Obtained *r*s were .789, .839, .815, .786, .821, .850, .749, .742, .749, .806, .739, .778, .797, 798, , and .780, respectively. All *p*s < .05.

The stakeholders' assessment of the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of the carrying capacity of Islas de Gigantes as a tourist destination and their assessment of the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes as a tourist destination were positively and significantly related.

The findings tend to justify the maximum number of people that may visit a tourist destination at the same time, without destroying the physical, economic, sociocultural environment and an unacceptable decrease in the quality of visitors' satisfaction'.; the level of human activity an area can accommodate without the area deteriorating, the resident community being adversely affected or the quality of visitors experience declining' (Middleton & Hawkins Chamberlain, 1997); the growth limits an area can accommodate without violating environmental capacity goals" (Ortolano, 1984); tourism carrying capacity is determined not only in terms of ecology and the general deterioration of an area but it also needs to incorporate the visitors' experiences, and thus human values (Coccossis and Mexa, 2004).

The findings also tend to create and maintain the conditions under which humans and nature can exist in productive harmony that permit fulfilling the social, economic, and other requirements of present and future generations (Environmental Protection Agency, 2022).

Table 9 *Correlation Matrix*

Variables (n = 225)	Physical or Ecological Carrying Capacity		Economic Carrying Capacity		Social Carrying Capacity		Optimal Use of Environmental Resources		Socio-Cultural Authenticity of Host Communities		Viable Long-Term Economic Use of Operations	
	r	*r-prob*	*r*	*r-prob*	*r*	*r-prob*	*r*	*r-prob*	*r*	*r-prob*	*r*	*r-prob*
Physical or Ecological Carrying Capacity	-	-	.786**	0.000	.833**	0.000	.786**	0.000	.749**	0.000	.739**	0.000
Economic Carrying Capacity	.-	-	-	-	.815**	0.000	.821**	0.000	.742**	0.000	.776**	0.000
Social Carrying Capacity	-	-	-	-	-	-	.850**	0.000	.749**	0.000	.797**	0.000
Optimal Use of Environmental Resources	.-	-	.-	-	-	-	-	-	.806**	0.000	.795**	0.000
Socio-Cultural authenticity Of Host Communities	.-	-	.-	-	.-	-	.-	-	-	-	.780**	0.000
Viable Long-Term Economic Operations	-	-	-	-	.-	-	-	-	-	-	-	-

Summary of Major Findings

Majority of the stakeholders are males, younger, single, and high school graduates. A large number are local tourists, government employees, have lower incomes, and represent a non-government organization.In terms of island characteristics, most of the establishments had average monthly revenue of ₱100,000 or less and have

10 or more employees. A large number have no logistic support, no transport provided and, no LGU support.

The carrying capacity of Islas de Gigantes as a tourist destination in terms of physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity, was assessed a*bove the desired carrying capacity*.

The sustainability of Islas de Gigantes as a tourist destination in terms of optimal use of environmental resources, sociocultural authenticity of host communities, viable long-term economic operations, was assessed *extremely sustainable*.

Significant differences existed in the assessment of physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity of Islas de Gigantes as a tourist destination among the stakeholders classified as to educational background and sector represented and island characteristics in terms of transportation availability, and LGU support, and manpower resources.

*S*ignificant differences existed in the assessment of the optimal use of environmental resources among the stakeholders classified according to educational background, sector represented and island characteristics in terms of transportation availability, LGU support, and manpower resources .

*Sig*nificant differences existed in the assessment of the optimal use of sociocultural authenticity of host communities among the stakeholders classified according to civil status, educational background and island characteristics in terms of manpower resources.
Significant differences existed in the assessment of the viable long-term economic use of operations among the stakeholders classified according to civil status and educational background.
Positive and highly significant relationships existed among the stakeholders' assessment of the physical or ecological carrying capacity, economic carrying capacity, and social carrying capacity as constructs of the carrying capacity of Islas De Gigantes as a tourist destination and their assessment of the optimal use of environmental resources, sociocultural authenticity of host communities, and viable long-term economic operations as constructs of sustainability of Islas de Gigantes as tourist destination.

Conclusions

Generally, the stakeholders are females, younger (below 35 years old), single, high school educated, with lower average monthly income (₱25,000 and less). As to island characteristics, a dominant number are tourists, with 10 or less employees, logistic support are not provided and not available, with no support from LGU.

The findings affirmed the definition of carrying by the Committee on Tourism Sustainability (CTS)-UNEP-WTO, is the maximum number of people that may visit a tourist destination at the same time, without destroying the physical, economic, sociocultural environment and an unacceptable decrease in the quality of visitors' satisfaction'.; the level of human activity an area can accommodate without the area deteriorating, the resident community being adversely affected or the quality of visitors experience declining' (Middleton & Hawkins Chamberlain, 1997); the growth limits an area can accommodate without violating environmental capacity goals" (Ortolano, 1984); tourism carrying capacity is determined not only in terms of ecology and the general deterioration of an area but it also needs to incorporate the visitors' experiences, and thus human values (Coccossis and Mexa, 2004).

It appears that Islas de Gigantes creates and maintains the conditions under which humans and nature can exist in productive harmony that permit fulfilling the social, economic, and other requirements of present and future generations (Environmental Protection Agency, 2022). Sustainable tourism as defined by the UN Environment Program and UN World Tourism Organization emphasized as "tourism that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities" (Global Tourism Council, 2022) is affirmed by the findings.

Educational background, sector represented, transportation availability, and LGU support were factors found to significantly influence the stakeholders' assessment of the social carrying capacity of Islas de Gigantes as a tourist destination. Island movements seem characterized by one's educational background, the sector one represents, the transport services available, and LGU support.

Sustainable tourism as defined by the UN Environment Program and UN World Tourism Organization which emphasizes the idea that "tourism that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities" (Global Tourism Council, 2022). These are also among the concerns emphasized by the findings of the present investigation.

The findings tend to justify the maximum number of people that may visit a tourist destination at the same time, without destroying the physical, economic, sociocultural environment and an unacceptable decrease in the quality of visitors' satisfaction'.; the level of human activity an area can accommodate without the area deteriorating, the resident community being adversely affected or the quality of visitors experience declining' (Middleton & Hawkins Chamberlain, 1997); the growth limits an area can accommodate without violating environmental capacity goals" (Ortolano, 1984); tourism carrying capacity is determined not only in terms of ecology and the general deterioration of an area but it also needs to incorporate the visitors' experiences, and thus human values (Coccossis and Mexa, 2004).

The findings also tend to create and maintain the conditions under which humans and nature can exist in productive harmony that permit fulfilling the social, economic, and other requirements of present and future generations (Environmental Protection Agency, 2022).

Recommendations

Islas de Gigantes should continue to entice tourists, government employees, and lower-income individuals, particularly millennials seeking authentic, culturally rich experiences. As it is, island resorts rely on natural features and man-made attractions for revenue. Hence, the government through the local officials should extent support support needed from logistics, transportation, and policy making.

Islas de Gigantes has exceeded its capacity to accommodate a large number of visitors without causing damage to the environment or reducing visitor satisfaction. This growth is crucial for maintaining environmental capacity and incorporating visitors' experiences and human values. Likewise, government intervention should be provoked promptly.
Islas de Gigantes should continue exploring sustainable tourism, considering economic, social, and environmental aspects while considering host communities, environment, and visitors as a tourist destination. Working hand-in-hand with host communities, local government, and tourism officials could be a more feasible option.

Islas de Gigantes' carrying capacity as a tourist attraction is influenced by environmental factors, facilities, and new facility construction. It refers to the maximum number of visitors the area can support. An increase in visitors can enhance amenities and aesthetic appeal without negatively impacting other businesses. Tourism also improves local quality of life and social fabric, allowing tourists and locals to work together harmoniously.

Islas de Gigantes's long-term tourism sustainability is a debated topic. To ensure equitable socioeconomic benefits, it's crucial to respect cultural authenticity, conserve heritage, and efficiently use environmental resources. This is essential for tourism development, ecological processes, and biodiversity conservation.

The study found a positive correlation between stakeholders' evaluations of Islas de Gigantes' carrying capacity, economic carrying capacity, and social carrying capacity and its sustainability as a tourist destination. The goal is to determine the optimal human activity for the area, considering local quality of life and future generations' needs. Further feedback is suggested for a unique plan.

The study highlights the significance of Islas de Gigantes as a tourist destination, emphasizing its sustainability and carrying capacity. It suggests that local government units can use the findings to develop plans, policies, and strategies for tourism revival, while hotel owners can contribute to economic progress and environmental conservation.

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