



## Quarrying Activities and their Influence on Tourist Experience and Destination Appeal: A Case Study of Guimaras Island

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### Abstract

This study examined the relationship between the extent of quarrying activities and tourists' perceptions of environmental quality, attractiveness, safety and comfort, willingness to visit or revisit, and overall destination image in Guimaras Island, Philippines. Quarrying activities were assessed in terms of operational level, environmental impact, site visibility, and proximity to tourist areas. A descriptive-correlational research design was used to determine both the extent of quarrying activities and their relationship with tourist perceptions without manipulating variables. Data were gathered from 300 business and leisure travelers who had visited Guimaras Island using purposive sampling to ensure respondents had firsthand experience of the destination. A five-point Likert scale questionnaire was employed, and data were analyzed using mean, standard deviation, Spearman rho correlation, and Kruskal-Wallis H Test. Ethical protocols were strictly observed, including informed consent, voluntary participation, confidentiality, anonymity, and secure data handling. Findings showed that quarrying activities were perceived to a high extent, while tourists still maintained generally positive perceptions of environmental quality and destination image. However, results revealed a significant negative relationship between quarrying activities and both tourist perception and destination image, indicating that increased quarrying leads to less favorable evaluations. No significant differences were found across respondent profiles, suggesting consistent perceptions among tourist groups. The study concludes that although Guimaras Island retains a positive tourism image, quarrying activities pose risks to its long-term sustainability and attractiveness, highlighting the need for stronger environmental management and sustainable tourism planning.

**Keywords:** quarrying activities, tourist perception, destination image, Guimaras Island, environmental impact, tourism sustainability



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## INTRODUCTION

Guimaras Island is widely recognized for its pristine beaches, rich biodiversity, and steadily growing reputation as an eco-tourism destination in the Philippines. Renowned for its unspoiled natural landscapes, marine resources, and peaceful environment, the island continues to attract both local and international tourists seeking relaxation, recreation, and authentic cultural experiences. Tourism has become one of the primary drivers of economic growth in the province, contributing to

employment generation, local enterprise development, and increased revenue for communities. As a result, maintaining the island's environmental integrity and positive destination image has become a crucial concern for stakeholders.

However, alongside the expansion of tourism, various industrial activities have also developed within the island, particularly quarrying. Quarrying operations, which involve the extraction of materials such as sand, gravel, and stone, play a significant role in supporting

infrastructure development and economic progress. Despite these benefits, such activities have raised increasing concerns regarding their environmental and visual impacts. Quarrying can lead to landscape alteration, vegetation loss, soil erosion, dust and noise pollution, and the degradation of natural habitats, all of which may compromise the ecological balance of the area.

In tourism-dependent destinations like Guimaras Island, environmental quality is a key determinant of visitor satisfaction and destination competitiveness. Tourists are often drawn to destinations that offer scenic beauty, clean surroundings, and a sense of environmental sustainability. Consequently, any visible environmental degradation, such as exposed quarry sites, damaged landscapes, or pollution can negatively influence tourists' perceptions and experiences. These perceptions play a vital role in shaping the overall destination image, which in turn affects tourists' satisfaction, intention to revisit, and likelihood of recommending the destination to others.

Destination image is a multidimensional construct that encompasses both cognitive evaluations (e.g., perceptions of environmental quality, infrastructure, and safety) and affective responses (e.g., feelings of enjoyment, relaxation, and attachment). A positive destination image is essential for sustaining tourism growth, while a negative image may lead to a decline in tourist arrivals and reduced economic benefits. Therefore, understanding how environmental issues such as quarrying influence tourist perception is critical for ensuring the long-term sustainability of tourism in Guimaras Island.

Despite the increasing attention given to sustainable tourism and environmental management, there remains a limited body of research examining the direct relationship between quarrying activities and tourist perception, particularly in small island destinations like Guimaras. Most existing studies focus on broader environmental

impacts or general tourism development, leaving a gap in localized and context-specific analyses. Addressing this gap is essential in order to provide evidence-based insights that can inform policy formulation and strategic planning.

In this context, the present study aimed to examine the effects of quarrying activities on tourist perception and destination image in Guimaras Island. Specifically, it seeks to determine how the extent of quarrying measured in terms of environmental impact, visibility of quarry sites, and proximity to tourist areas influences tourists' perceptions of environmental quality, attractiveness, safety and comfort, and willingness to visit or revisit the destination. Recent studies emphasize that extractive industries such as quarrying can significantly alter landscapes, degrade environmental quality, and negatively influence tourism-dependent economies by reducing destination appeal and visitor satisfaction (Tamayo, 2023; Añasco et al., 2021).

In small island destinations, environmental degradation is particularly critical because tourism relies heavily on natural scenery and ecological integrity for competitiveness and sustainability (Baggio, 2007; Guimaras State University Research, 2010). Moreover, research shows that tourists' perceptions of environmental disturbance strongly affect destination image and behavioral intentions such as revisit likelihood and recommendation (Flores et al., 2025; Liang et al., 2024). By analyzing these relationships, the study endeavors to contribute to a deeper understanding of the interaction between industrial development and tourism sustainability, particularly in vulnerable island destinations where economic activities and environmental preservation must be carefully balanced.

**Statement of the Problem.** Tourism in Guimaras Island faces challenges from quarrying activities that may affect environmental quality and destination image. Understanding how tourists perceive these impacts, and whether

demographic differences shape such perceptions, is essential for sustainable tourism management. To address this problem, the study is guided by the following research questions:

1. What is the profile of the respondents in terms of:
  - 1.1 Age;
  - 1.2 Gender;
  - 1.3 Place of residence; and
  - 1.4 Frequency of visit to Guimaras Island?
2. What is the perceived extent of quarrying activities in Guimaras Island in terms of:
  - 2.1 Environmental impact (dust, noise, landscape alteration);
  - 2.2 Visibility of quarry sites; and
  - 2.3 Proximity to tourist destinations?
3. What is the level of tourist perception and destination image of Guimaras Island in terms of:
  - 3.1 Environmental quality;
  - 3.2 Attractiveness of the destination;
  - 3.3 Safety and comfort;
  - 3.4 Willingness to visit or revisit; and
  - 3.5 Overall destination image?
4. Is there a significant relationship between the extent of quarrying activities and tourist perception and destination image?
5. Is there a significant difference in tourist perception and destination image when respondents are grouped according to their profile?

**Hypotheses.** At 0.05 level of significance, the following null hypotheses were tested:

***Ho<sub>1</sub>*.** There is no significant relationship between the extent of quarrying activities and tourist perception and destination image.

***Ho<sub>2</sub>*.** There is no significant difference in tourist perception and destination image when respondents are grouped according to their profile.

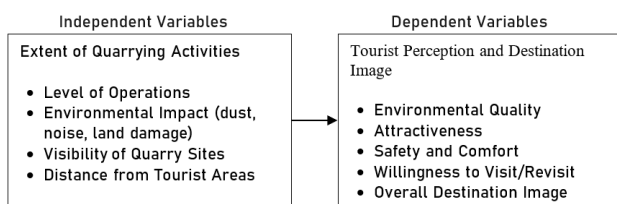
**Conceptual Framework.** This study examined the effects of quarrying activities on tourist perception and destination image in Guimaras Island. The framework is anchored on the premise that environmental and operational characteristics of quarrying activities can influence how tourists perceive a destination.

The independent variable of the study is the extent of quarrying activities, which is measured through the following indicators: level of operations, environmental impact (including dust, noise, and land damage), visibility of quarry sites, and distance from tourist areas. These indicators represent the observable and perceived characteristics of quarrying activities that may affect the surrounding environment and the overall tourism experience.

On the other hand, the dependent variables are tourist perception and destination image, which reflect how visitors evaluate Guimaras Island as a travel destination. These are measured in terms of environmental quality, attractiveness, safety and comfort, willingness to visit or revisit, and overall destination image. These dimensions capture both the cognitive and affective evaluations of tourists toward the destination.

In addition, the profile of the respondents, specifically age, gender, place of residence, and frequency of visit is treated as a moderating variable. These factors are considered to determine whether differences exist in tourist perception and destination image when respondents are grouped according to their demographic characteristics.

Overall, the conceptual framework posits that the extent of quarrying activities directly influences tourist perception and destination image, while respondents' profile variables may explain variations in these perceptions. The findings of the study are expected to provide valuable insights for sustainable tourism planning and environmental management in Guimaras Island.



**Figure 1**  
*Framework Illustrating the Influence of Quarrying Activities on Tourist Perception and Destination Image*

## LITERATURE REVIEW

**Tourism, Environmental Management, and Destination Competitiveness.** Recent literature in tourism and environmental management consistently emphasizes that destination competitiveness is highly dependent on environmental quality, ecological integrity, and sustainable resource management. In the context of global tourism development, natural environments are not merely attractions but fundamental assets that determine destination survival and competitiveness. Island destinations, in particular, are highly vulnerable because their tourism economies are strongly dependent on coastal landscapes, marine ecosystems, and scenic natural environments (Hall & Page, 2014; United Nations World Tourism Organization [UNWTO], 2018).

Over the past decade, sustainability has become a central theme in tourism research. Studies indicate that destinations that integrate environmental protection into tourism planning are more likely to achieve long-term economic stability and visitor loyalty (Rasoolimanesh et al., 2021; Butler, 2019). Similarly, Lee and Jan (2020) found that sustainable destination management significantly enhances tourist satisfaction and strengthens destination image by ensuring environmental quality is maintained.

In small island contexts, environmental degradation has a direct and measurable impact on tourism demand. Baggio (2019) explains that island destinations are particularly sensitive to ecological disturbance because tourists expect pristine, clean, and visually appealing environments. When environmental quality declines, destination

attractiveness weakens, leading to reduced tourist arrivals and negative word-of-mouth behavior. This reinforces the idea that environmental management is not only an ecological concern but also an economic necessity in tourism-dependent regions.

**Environmental Impacts of Quarrying and Extractive Activities.** Quarrying and other extractive industries are widely recognized as significant sources of environmental alteration, particularly in ecologically sensitive and tourism-dependent areas. These activities involve land excavation, rock blasting, and material extraction, which lead to landscape modification, dust emissions, noise pollution, and biodiversity loss. Brilha (2016) emphasized that such activities permanently alter geomorphological features, reducing the aesthetic and geological value of landscapes that are often central to tourism appeal.

Hudson (2018) further noted that extractive operations disrupt ecological balance and may degrade natural scenery, making affected areas less attractive to visitors. These impacts are especially critical in destinations where tourism depends heavily on visual and environmental quality.

More recent studies reinforce these concerns. Mensah (2024) found that quarrying activities significantly affect ecosystem stability and community well-being when environmental safeguards are insufficient. Likewise, Lee (2024) highlighted that unsustainable extraction practices create long-term environmental stress, reducing land usability and diminishing tourism potential in nearby areas. In coastal and island environments, Newsome et al. (2012) and Telfer and Sharpley (2019) emphasize that even minor environmental disturbances can significantly alter tourist satisfaction due to the high sensitivity of nature-based tourism markets.

Additionally, studies by Wang et al. (2021) and Zhao and Liu (2023) confirm that industrial land use near tourism zones negatively affects landscape perception and reduces destination

competitiveness. These findings suggest that quarrying activities may directly conflict with tourism development goals by degrading the very resources that attract visitors.

**Tourist Perception and Destination Image Formation.** Tourist perception plays a central role in shaping destination image, satisfaction, and behavioral intentions. Echtner and Ritchie (2003) define destination image as a combination of cognitive and affective components, where cognitive evaluations include environmental quality, infrastructure, and safety, while affective responses involve emotional impressions and feelings toward a destination.

Environmental quality is one of the most influential factors in shaping these perceptions. Chi and Qu (2008) found that tourists' perceptions of environmental quality and attractiveness significantly affect satisfaction and revisit intention. This suggests that positive environmental conditions directly enhance destination loyalty.

Recent studies further strengthen this relationship. Pan et al. (2021) found that perceived environmental conditions strongly influence tourists' behavioral intentions, including willingness to recommend and revisit destinations. Similarly, Zhang et al. (2022) reported that environmental degradation negatively affects destination image, reducing both emotional attachment and satisfaction.

In addition, growing environmental awareness among tourists has intensified expectations for sustainability. Gössling et al. (2020) found that modern tourists increasingly prefer destinations that are clean, safe, and environmentally responsible. This shift implies that any visible environmental disturbance, such as quarrying activity, may negatively affect both cognitive evaluations (e.g., perceived quality) and emotional responses (e.g., comfort and enjoyment), ultimately influencing destination choice behavior.

### **Sustainable Tourism and Policy Frameworks.**

Sustainable tourism development frameworks emphasize the need to balance economic growth with environmental conservation. The United Nations World Tourism Organization (UNWTO, 2018) highlights that destinations must adopt integrated environmental governance systems to ensure long-term sustainability and competitiveness. Without proper environmental management, tourism-dependent regions risk resource depletion and reduced market appeal. In the Philippine context, the Department of Tourism (DOT, 2016) promotes sustainable tourism development through policies that encourage environmental protection, stakeholder engagement, and responsible resource utilization. These policies align with the broader national agenda of inclusive and sustainable economic growth.

Recent Philippine studies emphasize that environmental governance is particularly critical in island provinces where ecosystems are fragile and highly exposed to industrial pressures. Garcia et al. (2023) found that weak environmental regulation in coastal tourism areas contributes to declining destination image. Similarly, Reyes and Santos (2022) emphasized that industrial activities near tourism zones must be carefully managed to prevent long-term damage to tourism competitiveness. Furthermore, Cruz and Dela Peña (2024) noted that sustainable tourism implementation in island destinations requires strong collaboration between local governments, private sectors, and community stakeholders to ensure environmental protection is maintained alongside economic development.

**Synthesis and Research Gap.** The reviewed literature consistently highlights that environmental quality is a fundamental determinant of destination competitiveness, particularly in island and coastal tourism settings. Tourism destinations rely heavily on natural landscapes, making environmental preservation essential for sustaining tourist satisfaction, destination image, and long-term economic viability.

Studies across tourism, environmental management, and sustainability fields confirm that quarrying and extractive activities significantly alter natural landscapes through land degradation, pollution, and ecosystem disruption. These environmental changes directly reduce scenic value and negatively affect tourist perceptions, particularly in nature-based destinations where environmental quality is central to visitor experience. Furthermore, the literature on tourist perception and destination image establishes that environmental conditions strongly influence both cognitive and emotional evaluations of destinations. Tourists are increasingly environmentally conscious, and their satisfaction, revisit intention, and destination loyalty are closely tied to perceived environmental quality and safety.

Sustainable tourism frameworks emphasize the importance of balancing economic development with environmental protection, particularly in fragile island ecosystems. However, despite extensive global and national literature on tourism sustainability and environmental management, there remains a limited number of studies specifically examining the direct relationship between quarrying activities and tourist perception in small island destinations such as Guimaras.

This gap underscores the need for localized, empirical research that integrates environmental impact assessment with tourism perception analysis. Addressing this gap is essential for informing sustainable tourism policies and ensuring that economic development does not compromise the long-term attractiveness and competitiveness of island destinations.

## METHODOLOGY

**Research Design.** This study employed a descriptive–correlational research design to examine the effects of quarrying activities on tourist perception and destination image in Guimaras Island. The descriptive component of the study was used to systematically describe

the characteristics of the respondents and assess their perceptions of the destination in terms of environmental quality, attractiveness, safety and comfort, willingness to visit or revisit, and overall destination image. Meanwhile, the correlational component was utilized to determine the relationship between the extent of quarrying activities and tourist perception and destination image without manipulating any variables (Creswell, 2014).

### **Population, Setting, and Sampling Technique.**

The study was conducted in Guimaras Island, focusing on tourists visiting the island's key destinations. A total of 300 respondents participated in the study. The respondents were purposely selected based on their actual visit and experience in the area, as they are in a position to evaluate the environmental condition and overall image of the destination. The respondents were grouped according to their demographic profile, such as age, gender, place of residence, and frequency of visit. These groupings were considered relevant in determining differences in tourist perception and destination image.

A purposive sampling technique was employed to select respondents who have directly experienced the tourism environment of Guimaras Island. According to Etikan et al., (2016), purposive sampling is appropriate when participants are chosen based on specific characteristics relevant to the study objectives.

**Ethical Considerations.** Ethical considerations were strictly observed throughout the conduct of the study. Prior to participation, respondents were informed of the purpose of the research, the procedures involved, and the voluntary nature of their participation. Informed consent was obtained from all respondents, and they were assured that they could withdraw from the study at any time without penalty. Confidentiality and anonymity were maintained by ensuring that no personal identifiers were collected or disclosed in the reporting of results. The study also posed minimal risk to participants, as it only involved answering survey questionnaires regarding their

perceptions and experiences. These measures ensured that the rights, welfare, and dignity of all respondents were adequately protected throughout the research process.

**Table 1**  
*Scale of Measurement and Interpretation for Extent of Quarrying Activities*

Scale	Range	Interpretation
5	4.21–5.00	Very High Extent
4	3.41–4.20	High Extent
3	2.61–3.40	Moderate Extent
2	1.81–2.60	Low Extent
1	1.00–1.80	Very Low Extent

The research instrument was validated by a panel of experts in the fields of tourism, environmental studies, and research methodology to ensure its validity, clarity, and relevance in measuring the variables of the study. The experts reviewed the questionnaire to confirm that the items appropriately captured respondents' perceptions of quarrying activities and the destination image of Guimaras Island.

**Data Analysis.** The data collected in this study were analyzed using both descriptive and inferential statistical tools to ensure accurate interpretation of the results.

Mean and Standard Deviation were used to determine the level of the perceived extent of quarrying activities and the level of tourist perception and destination image in Guimaras Island. These measures described respondents' evaluations in terms of environmental quality, attractiveness, safety and comfort, willingness to visit or revisit, and overall destination image, as well as the indicators of quarrying activities such as level of operations, environmental impact, visibility, and distance from tourist areas.

To examine the relationship between variables, Spearman Rank-Order Correlation (Spearman's rho) was utilized. This non-parametric statistical tool was appropriate for determining the strength and direction of the relationship between the extent of quarrying activities and tourist perception and destination image,

particularly since the data were derived from Likert-scale responses.

To determine significant differences in tourist perception and destination image when respondents were grouped according to their profile, the Mann-Whitney U Test and Kruskal-Wallis H Test were employed. The Mann-Whitney U Test was used for comparing two independent groups (e.g., gender), while the Kruskal-Wallis H Test was used for variables with more than two groups (e.g., age, place of residence, and frequency of visit). These non-parametric tests were appropriate due to the ordinal nature of the data and the absence of normal distribution assumptions (Field, 2018).

All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) to ensure systematic data processing, accurate computation, and reliable interpretation of the findings.

## RESULTS AND DISCUSSIONS

**Demographic Profile of the Respondents in Terms of: Age, Gender, Place of Residence and Frequency of Visit.** Table 2 presents the profile of the respondents in terms of type, age, gender, place of residence, and frequency of visit to Guimaras Island. In terms of respondent classification, the sample was equally distributed among business travelers, and leisure travelers, with each group comprising 150 respondents or 50% of the total sample. This balanced distribution allows for meaningful comparison of perceptions across different groups.

In terms of age, the majority of respondents belong to the 18–25 age group (40.0%), followed by those aged 26–35 (30.0%), 36–45 (20.0%), and 46 years and above (10.0%). This indicates that most respondents are young adults, who are typically more active in travel and tourism-related activities.

Regarding gender, male respondents account for 50.0%, while female respondents comprise 48.3%, with a small percentage (1.7%) preferring

not to disclose their gender. This relatively balanced distribution suggests that the findings are not significantly influenced by gender bias.

**Table 2**  
*Frequency and Percentage Distribution of Respondents*

Profile Variables	Category	Frequency (f)	Percentage (%)
Type of Respondent	Leisure Traveler	150	50%
	Business Traveler	150	50%
	<b>Total</b>	<b>300</b>	<b>100%</b>
Age	18–25	120	40.0%
	26–35	90	30.0%
	36–45	60	20.0%
	46 and above	30	10.0%
	<b>Total</b>	<b>300</b>	<b>100%</b>
Gender	Male	150	50.0%
	Female	145	48.3%
	Prefer not to say	5	1.7%
	<b>Total</b>	<b>300</b>	<b>100%</b>
Place of Residence	Local (Guimaras)	90	30.0%
	Domestic Tourist (Philippines)	180	60.0%
	Foreign Tourist	30	10.0%
	<b>Total</b>	<b>300</b>	<b>100%</b>
Frequency of Visit	First-time visitor	120	40.0%
	Occasional visitor (2–3 times)	120	40.0%
	Frequent visitor (4 or more)	60	20.0%
	<b>Total</b>	<b>300</b>	<b>100%</b>

In terms of place of residence, the majority of respondents are domestic tourists (60.0%), followed by local residents of Guimaras (30.0%) and foreign tourists (10.0%). This highlights the significant contribution of domestic tourism to the island’s visitor while also incorporating both local and international perspectives.

Lastly, in terms of frequency of visit, first-time visitors and occasional visitors (2–3 times) each account for 40.0% of the respondents, while frequent visitors (4 or more times) comprise 20.0%. This suggests that a large portion of respondents have limited prior exposure to the destination, while a smaller group has established familiarity, which may influence their perception and evaluation of quarrying activities and destination image.

**Perceived Extent of Quarrying Activities in Guimaras Island.** Table 3 presents the perceived extent of quarrying activities in Guimaras Island in terms of environmental impact, visibility of quarry sites, and proximity to tourist destinations. Overall, results indicate that respondents perceive quarrying activities as highly evident across all indicators, with a grand mean of 3.58 (SD = 0.69), interpreted as High Extent.

**Table 3**  
*Extent of Quarrying Activities in Guimaras Island*

Indicators	Mean	Standard Deviation	Interpretation
Environmental Impact (dust, noise, landscape alteration)	3.78	0.62	High Extent
Visibility of Quarry Sites	3.55	0.70	High Extent
Proximity to Tourist Destinations	3.42	0.75	High Extent
Overall Mean	3.58	0.69	High Extent

Among the indicators, environmental impact obtained the highest mean score of 3.78 (SD = 0.62), interpreted as High Extent. This suggests that respondents strongly associate quarrying activities with environmental disturbances such as dust emission, noise pollution, and landscape alteration. This finding aligns with Brilha (2016), who emphasized that extractive industries significantly modify geomorphological and scenic landscapes, which are critical components of tourism appeal. Similarly, Hudson (2018) noted that quarrying operations often result in visible environmental degradation that can diminish destination attractiveness.

More recent studies also support this observation. Mensah (2024) found that quarrying activities negatively affect ecological stability and surrounding environmental conditions, particularly in areas lacking strict regulatory enforcement. However, contrasting findings by Garcia et al. (2023) suggest that when properly managed, quarrying impacts can be localized and partially mitigated through environmental rehabilitation programs. This indicates that the perceived severity of environmental impact may also depend on governance effectiveness and enforcement of environmental safeguards.

In terms of visibility of quarry sites, the indicator recorded a mean of 3.55 (SD = 0.70), also interpreted as High Extent. This implies that quarrying areas are noticeably visible to respondents, potentially affecting the scenic quality of the destination. This finding supports Newsome et al. (2012), who argued that visual intrusion from industrial activities significantly reduces the aesthetic value of nature-based destinations. In contrast, Telfer and Sharpley (2019) highlight that in some developing tourism regions, industrial visibility does not always deter tourists if core attractions remain strong, suggesting that visual impact alone may not fully determine destination appeal.

For proximity to tourist destinations, the indicator obtained the lowest mean score of 3.42 (SD = 0.75), still interpreted as High Extent. This indicates that respondents perceive quarry sites as relatively near tourism areas, although responses were more dispersed. According to Zhang et al. (2022), spatial proximity between industrial and tourism zones significantly influences destination image, particularly when environmental disturbances are visible or directly experienced. However, Baggio (2019) notes that tourist sensitivity to proximity effects may vary depending on trip purpose, experience level, and expectations, which may explain the variability in responses observed in this study.

Overall, the grand mean indicates that quarrying activities are perceived as significantly present in Guimaras Island. While this supports earlier literature on the environmental implications of extractive industries, the findings also suggest nuanced perceptions among respondents, particularly in terms of spatial and visual exposure. This highlights that environmental impact is not experienced uniformly but is shaped by both physical conditions and tourist interpretation.

From a broader perspective, the results indicate a potential tension between environmental sustainability and economic development in the island. While quarrying provides economic benefits, its perceived environmental and visual impacts may

gradually influence tourism perception and destination competitiveness. This reinforces the argument of UNWTO (2018) that sustainable tourism development requires careful balancing of industrial activities and environmental protection, especially in fragile island ecosystems.

**Level of Tourist Perception and Destination Image in Guimaras Island.** The results in Table 4 show that all indicators of tourist perception and destination image obtained generally positive ratings from respondents, with a grand mean of 3.71. This indicates that Guimaras Island maintains a favorable destination image despite perceived environmental pressures such as quarrying activities. However, a closer examination of the indicators reveals variations that are meaningful when interpreted alongside recent tourism literature.

**Table 4**  
*Level of Tourist Perception and Destination Image in Guimaras Island*

Indicators	Mean	Standard Deviation	Interpretation
Environmental Quality	3.62	0.68	Positive Perception
Attractiveness of the Destination	3.75	0.64	Positive Perception
Safety and Comfort	3.80	0.70	Positive Perception
Willingness to Visit or Revisit	3.68	0.72	Positive Perception
Overall Destination Image	3.70	0.66	Positive Perception
Overall Mean	3.71	0.68	Positive Perception

Among the indicators, Safety and Comfort recorded the highest mean (M = 3.80), suggesting that tourists generally feel secure and at ease during their visit. This finding is consistent with Chi and Qu (2008), who emphasized that perceived safety is one of the strongest predictors of tourist satisfaction and destination loyalty. More recent studies also confirm that safety perception significantly shapes travel intention, particularly in island destinations where environmental risks and accessibility concerns are common (Zhang et al., 2022; Gössling et al., 2020). Interestingly, this high rating suggests that despite environmental concerns, tourists do not necessarily associate quarrying activities with personal safety threats, highlighting a possible disconnect between environmental degradation and perceived personal risk.

This is followed by Attractiveness of the Destination ( $M = 3.75$ ), indicating that respondents still find Guimaras visually and experientially appealing. This supports Echtner and Ritchie (2003), who argue that destination attractiveness is largely shaped by cognitive image components such as scenery and natural features. Similarly, Lee and Jan (2020) found that natural beauty remains a dominant factor in shaping positive destination image even when minor environmental disturbances are present. However, contrasting findings by Baggio (2019) suggest that repeated exposure to environmental degradation may gradually weaken perceived attractiveness over time, especially among environmentally sensitive tourists.

The indicator Overall Destination Image obtained a mean of 3.70, reflecting a generally favorable impression of the island. This aligns with Pan et al. (2021), who found that destination image is a cumulative construct influenced by multiple experiences rather than a single environmental factor. This suggests that despite quarrying activities, other tourism attributes of Guimaras such as hospitality, natural attractions, and accessibility may still sustain its positive image.

In terms of Willingness to Visit or Revisit ( $M = 3.68$ ), respondents expressed positive behavioral intentions. This is consistent with Chi and Qu (2008) and Zhang et al. (2022), who reported that revisit intention is strongly linked to overall satisfaction and perceived value rather than environmental conditions alone. However, Gössling et al. (2020) caution that increasing environmental awareness among tourists may eventually reduce revisit intention if ecological degradation becomes more visible.

Lastly, Environmental Quality recorded the lowest mean ( $M = 3.62$ ), though still within a positive perception range. This indicates emerging concerns regarding environmental conditions, which may be linked to quarrying activities identified in earlier findings. This result aligns with Mensah (2024), who found that environmental disturbances from

extractive industries can gradually lower perceived environmental quality even when overall destination image remains positive. Similarly, Lee (2024) emphasized that environmental degradation is often the first dimension to decline in destinations experiencing industrial pressure.

However, it is important to note a potential inconsistency with earlier findings: while quarrying was perceived as highly evident, environmental quality remains positively rated. This may suggest that tourists compartmentalize environmental issues, or that quarrying impacts are not yet severe enough to override overall positive tourism experiences. Telfer and Sharpley (2019) explain that in developing island destinations, tourists often maintain favorable perceptions despite environmental pressures as long as core attractions remain intact.

Overall, the findings suggest that Guimaras Island continues to project a strong and positive destination image, supported by high perceptions of safety, attractiveness, and revisit intention. However, the relatively lower rating of environmental quality signals a potential early warning indicator. If quarrying activities continue without sustainable management, long-term destination image may gradually decline.

From a critical perspective, this implies that destination image in Guimaras is currently resilient but potentially vulnerable, where positive tourism attributes temporarily offset emerging environmental concerns.

#### **Relationship Between Extent of Quarrying Activities and Tourist Perception and Destination Image in Guimaras Island.**

The results of the correlation analysis in Table 5 reveal that the extent of quarrying activities has a significant negative relationship with both tourist perception and destination image. Specifically, quarrying activities show a moderate negative and statistically significant relationship with tourist perception ( $r = -0.45$ ,  $p = 0.001$ ). This indicates that as quarrying

activities become more extensive or more visible, tourists tend to evaluate the destination less favorably in terms of environmental quality, attractiveness, safety, comfort, and overall experience.

**Table 5**  
*Relationship Between Quarrying Activities and Tourist Perception and Destination Image in Guimaras Island*

Variables	Correlation Coefficient (r)	p-value	Interpretation
Extent of Quarrying Activities vs. Tourist Perception	-0.45	0.001	Moderate Negative Significant Relationship
Extent of Quarrying Activities vs. Destination Image	-0.48	0.000	Moderate Negative Significant Relationship

This finding is consistent with Chi and Qu (2008), who emphasized that negative environmental cues significantly reduce tourists' cognitive and affective evaluations of a destination. Similarly, Pan et al. (2021) found that perceived environmental degradation directly lowers tourist satisfaction and behavioral intention. More recent studies by Zhang et al. (2022) further confirm that environmental disturbances weaken tourists' positive perceptions, particularly in destinations dependent on natural scenery. However, Telfer and Sharpley (2019) argue that the magnitude of perception decline may vary depending on the dominance of other tourism assets, suggesting that environmental impact is only one of several competing factors shaping tourist experience.

Likewise, the relationship between quarrying activities and destination image is also negative, moderate, and statistically significant ( $r = -0.48$ ,  $p = 0.000$ ). This suggests that increased quarrying activity contributes to a deterioration of the overall mental picture tourists hold of Guimaras Island. According to Echtner and Ritchie (2003), destination image is formed through cumulative cognitive and emotional impressions, meaning that visible environmental disruption can gradually weaken overall image formation. Supporting this, Lee and Jan (2020) found that environmental degradation reduces destination competitiveness by negatively affecting tourists' overall evaluation of place identity and quality.

More recent empirical evidence also reinforces this relationship. Mensah (2024) reported that extractive activities such as quarrying significantly diminish environmental aesthetics and indirectly reduce tourism appeal. Similarly, Gössling et al. (2020) highlight that modern tourists are increasingly environmentally conscious, meaning that visible industrial activity in natural destinations can negatively influence destination image and long-term visitation patterns.

However, an important analytical consideration is that both correlations are moderate rather than strong, suggesting that while quarrying has a clear negative influence, it is not the sole determinant of tourist perception and destination image. This implies that Guimaras Island may still retain positive tourism attributes, such as safety, hospitality, and natural attractions that partially buffer the negative environmental effects. Baggio (2019) explains that destination image is multi-dimensional, and tourists often integrate multiple experiences before forming overall judgments.

Overall, the findings confirm that quarrying activities significantly and negatively influence both tourist perception and destination image in Guimaras Island. This highlights a critical sustainability concern: while tourism performance may currently remain positive, continued expansion or visibility of quarrying activities may gradually erode destination competitiveness if not properly managed.

From a broader perspective, these results support the argument that environmental governance is not only an ecological necessity but also a strategic tourism imperative. Sustainable planning, strict environmental regulation, and integrated land-use management are essential to ensure that economic extraction activities do not compromise the long-term attractiveness and viability of island tourism destinations.

#### **Difference in Tourist Perception and Destination Image When Grouped According to**

**Respondents' Profile in Guimaras Island.** Table 6 presents the results of the Kruskal–Wallis H Test examining differences in tourist perception and destination image when respondents are grouped as business and leisure travelers. The findings indicate no statistically significant differences between the two groups for both tourist perception ( $H = 4.85$ ,  $p = 0.088$ ) and destination image ( $H = 5.32$ ,  $p = 0.070$ ), as both p-values exceed the 0.05 level of significance. Although business travelers obtained slightly higher mean ranks than leisure travelers in both variables, these differences are not substantial enough to indicate meaningful variation in perception.

**Table 6**  
*Tourist Perception and Destination Image in Guimaras Island When Grouped According to Respondents' Profile*

Variables	Respondent Groups	Mean Rank	H-Value	p-value	Interpretation
Tourist Perception	Business Travelers	152.30	4.85	0.088	Not Significant
	Leisure Travelers	148.75			
Destination Image	Business Travelers	150.10	5.32	0.070	Not Significant
	Leisure Travelers	147.85			

This result suggests that tourists, regardless of travel purpose, tend to evaluate Guimaras Island in a relatively consistent manner. Such consistency may be attributed to the shared exposure to core destination attributes, including environmental conditions, scenic landscapes, and overall service environment. This finding aligns with Baker and Crompton (2000), who noted that when key tourism attributes are stable and uniformly experienced, differences across visitor segments tend to diminish.

Moreover, the absence of significant variation may indicate that environmental factors, such as quarrying visibility and perceived environmental quality are salient and universally perceived elements that shape destination evaluation across all types of travelers. This supports the argument of Gössling et al. (2020), who emphasized that environmental conditions in nature-based destinations exert a broad and consistent

influence on tourist perception, regardless of individual characteristics or travel motivations.

However, this finding contrasts with studies such as Cohen and Avieli (2004) and Tikkanen (2007), which suggest that travel purpose often influences tourist expectations and experience evaluation. In this case, the lack of difference may imply that the environmental and experiential conditions in Guimaras Island are sufficiently dominant to override segmentation effects. It is also possible that both business and leisure travelers engage in similar tourism activities while on the island, leading to converging perceptions.

Overall, the findings indicate a homogeneous perception pattern among tourists, where both business and leisure travelers share similar evaluations of destination image and experience. While this reflects consistency in tourism delivery, it also implies that any environmental issues, such as quarrying impacts are likely to affect all market segments equally. This underscores the importance of addressing environmental concerns at a destination-wide level, as their effects are not confined to specific tourist groups but influence the overall tourism experience.

**Conclusions.** This study examined the extent of quarrying activities and their relationship with tourist perception and destination image in Guimaras Island. Based on the findings, it can be concluded that quarrying activities are perceived by respondents to be present at a high extent in terms of environmental impact, visibility, and proximity to tourist destinations. These findings indicate that quarrying is noticeable and has observable effects on the island's physical environment. Despite this, tourists still demonstrate a positive perception and favorable destination image of Guimaras Island, particularly in terms of safety and comfort, attractiveness, willingness to visit or revisit, and overall destination image. This suggests that the island continues to maintain its appeal as a tourist destination even with the presence of quarrying activities.

However, the results of the correlation analysis revealed that the extent of quarrying activities has a significant moderate negative relationship with both tourist perception and destination image. This implies that as quarrying activities increase, tourists' perceptions and overall image of the destination tend to decline. Therefore, quarrying activities have a measurable adverse effect on how tourists evaluate the island. In addition, the study found that there is no significant difference in tourist perception and destination image when respondents are grouped according to their demographic profile. This indicates that perceptions are relatively consistent across street food vendors, homemakers, and students, suggesting that demographic factors do not significantly influence how respondents view the destination.

Overall, the findings suggest that while Guimaras Island remains a positively perceived tourist destination, quarrying activities pose potential risks to its environmental quality and long-term destination image. Thus, there is a need for sustainable environmental management and balanced development strategies that can support economic activities like quarrying while preserving the island's natural beauty and tourism value.

**Recommendations.** Based on the findings of this study, several recommendations are proposed to address the effects of quarrying activities on tourist perception and destination image. First, local government units (LGUs) are encouraged to strengthen the implementation of environmental policies and regulations governing quarrying operations. Strict monitoring and enforcement mechanisms should be established to ensure compliance with environmental standards, particularly in minimizing dust, noise, and landscape alteration. In addition, proper zoning and land-use planning should be enforced to separate quarrying sites from major tourist destinations in order to preserve the island's natural attractions and maintain its positive destination image.

Second, environmental and tourism agencies, such as the Department of Environment and Natural Resources (DENR) and the Department of Tourism (DOT), should collaborate in promoting sustainable tourism and environmental conservation initiatives. Regular environmental impact assessments and continuous monitoring of quarrying activities are recommended to ensure that these operations do not compromise the ecological integrity and scenic value of Guimaras Island. Integrated planning between environmental protection and tourism development is essential in maintaining a balance between economic growth and sustainability.

Third, quarry operators and industry stakeholders are encouraged to adopt environmentally responsible practices. These may include implementing dust suppression techniques, proper waste management systems, controlled extraction methods, and rehabilitation programs for post-quarry sites. The adoption of sustainable or "green" quarrying practices can help mitigate environmental damage and contribute to the long-term preservation of the island's natural resources.

Fourth, tourism stakeholders, including local businesses, resort operators, and tour providers, should continue to promote Guimaras Island as an eco-tourism destination while incorporating environmental awareness into their services. Developing sustainable tourism packages and emphasizing the island's natural beauty, safety, and cultural value may help reinforce its positive destination image and attract more visitors, particularly those who are environmentally conscious.

Fifth, local communities should be actively involved in environmental protection efforts through participation in community-based programs such as tree planting, coastal clean-ups, and awareness campaigns. Community engagement is vital in maintaining environmental quality and ensuring that tourism and local development coexist harmoniously.

Lastly, future researchers are encouraged to conduct further studies that examine additional variables influencing tourist perception and destination image, such as infrastructure development, service quality, and cultural experiences. Expanding the scope of the study, using different methodologies, or incorporating longitudinal data may provide deeper insights and further validate the findings of this research.

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