Perception of Local Tourists on Environmental Issues of Top Beaches in Batangas

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Abstract – *Concerns regarding environmental pollution remain the largest cause of destruction in the ecosystem. Developing activities of humans on beaches of Batangas is not easy without tourists' participation. To improve the environment of top beaches in Batangas, facilitators need to gain insights from tourists. This study was undertaken to determine the significant difference in tourists' perception of environmental issues present on top beaches of Batangas. Their demographic profile, awareness, and perception of environmental issues were further evaluated. A total of 144 respondents participated in the study and were selected with the criteria of being a local tourist in one of the top beaches of Batangas using a quota sampling technique. Frequency and percentage distribution were used to evaluate the demographic profile and for their perception, a weighted mean was used. ANOVA was used to determine the significant difference between perception levels and demographics. Most female local tourists are within the age bracket of 18 to 25 years and are more likely to visit Batangas beaches. They also projected high awareness of environmental issues of top beaches in Batangas. These brought a negative impact on beaches that affected their stay. Odor and improper solid waste management were not included. The perception of local tourists was influenced by age and sex. This implies that when tourists recognize their sex and reach the age of 18, they become more observant of their environment. Results suggest including other variables such as ocean acidification, light pollution, and other marine environmental issues that could also influence perception. It is also suggested for future researchers to carry out a qualitative study on other beaches in the Philippines.*

Keywords – *beaches, environmental issues, quota sampling, solid waste management*

INTRODUCTION

Tourism implies the act of traveling to a destination away from a hometown. Staying in places for leisure, business, commercial, or recreational purposes for one year or less can be considered as an aspect of tourism [1]. While some were tourists at some point in their lives, it can still be difficult to describe what tourism is. The Province of Batangas is a place abundant in natural attractions, cultural heritage, and century-old churches. It is also known for its Taal Volcano, mountains, lakes, rivers, waterfalls, and forests. Most of all, it is proud of its pristine beaches. Litter is a big threat to marine wildlife, ecosystems, and food chains all over the world [2]. The weight of plastic waste on the land that is entering oceans is estimated at 275 million metric tons. This has been alarmable because the scale and efficiency of waste management systems determine the role that countries play in making the most of the uncapped wastes available to plastic marine waste. It is projected that the overall number of plastic wastes entering the ocean from the land will increase in 2025 without developing waste management facilities [3].

Environmental pollution is not recent but remains the largest human concern and the worldwide leading cause of illness and death in the ecosystem [4]. The activities of the human population through tourism, urbanization, industrialization, mining, and exploration are major components of global pollution. The effect is still reviewed because of its significant long-term implications despite the global focus on pollution. The situation wherein a large number of tourists tend to visit beaches in Batangas despite environmental issues it faces is a mystery. Through research, few significant

studies tackled the perception of local tourists on environmental issues of top beaches in Batangas.

Thus, this study aims to determine the significant difference in tourists' perception of environmental issues of top beaches in Batangas. The importance of environmental issues in the community illustrates distinctions for the improvement of Batangas province and evaluating their perception may provide help to facilitators on offering quality service and improved programs for orderliness in their area. Furthermore, conducting this study may give awareness to both tourists and facilitators on possible solutions for the betterment of beaches or beach resorts. They may acquire plans for monitoring schemes and formulate more appropriate programs for top beaches in Batangas. On the other hand, it can be a source of recommendations for present programs to enable further improvement and make them successful.

OBJECTIVES OF THE STUDY

The general objective of the study is to determine the perception of local tourists on environmental issues of top beaches in Batangas: Specifically, this study aims to: (1) determine the demographic profile of respondents, in terms of age and sex; (2) To assess the awareness of respondents on environmental issues of top beaches in Batangas; (3) Evaluate the level of perception among local tourists towards environmental issues of top beaches in Batangas, in terms of Pollution, Carrying capacity, Habitat modification, and Waste management; (4) To determine if there is a significant difference between the level of perception when grouped according to demographic profile. And lastly, propose an action plan based on the result.

MATERIALS AND METHODS

Research Design

The general objective of this study is to determine the perception of local tourists on environmental issues of top beaches in Batangas. In order to fill in this gap, the researchers used the descriptive analysis method along with a questionnaire to explore the nuances of the answers of respondents further and increase the depth of the analysis. Through the process of sorting, analysing, classifying, and tabulating data, the descriptive analysis method was obtained. In addition, the organized data was subjected to interpretation.

In order to obtain the necessary data, the researchers used the quantitative analysis approach using a questionnaire. This method highlights objective measurement and statistical or digital analysis of data using computational techniques to manipulate statistical data.

Respondents of the Study

Local tourists who already visited beaches in Batangas were participants of this study. The respondents were given a survey questionnaire and were guided to understand the study clearly. Quota sampling was used to determine the respondents, a sample methodology sort where data from a homogenous group are collected. This involves a two-step method in which the population filters information into two variables. Moreover, it can be conveniently administered and can be compared rapidly.

A total of 144 respondents participated in the study, with an effect size of 0.29, an alpha error of 0.05, and a power of 0.95. These subgroups were selected without further criteria aside from being local tourists of top beaches in Batangas and visited those top beaches six times using a quota sampling technique. This is determined by using the empirical G-Power. It is a method for the estimation of statistical power in analysing various studies.

Data Gathering Instrument

The primary tool used in this study is a survey. A survey is a quick and efficient way to obtain information from respondents. Checklist types of questions were used to help respondents answer easily. The researchers used a standardized survey for the evaluation of the study.

The survey is divided into three parts. (1) The profile of respondents serves as the independent variable of the research. This includes the name (optional), age, and sex. (2) The assessment of respondents' perception of environmental issues like pollution, carrying capacity, habitat modification, and waste management. (3) The evaluation of the awareness of local tourists on environmental issues of top beaches in Batangas serves as the dependent variable of the research.

To validate the survey, a Cronbach Analysis or pilot test was done before handling it to actual respondents. The results gathered were forwarded to the statistician and were tested to be valid in terms of reliability with the value of 0.926. The researchers utilized books, articles, journals, theses, and other reliable online sources to gather data and find necessary information for the study.

Data Collection

Local tourists who already visited beaches in Batangas were participants of this study. The respondents were given a survey and were guided to understand the study clearly. Quota sampling was used to determine the respondents, a sample methodology sort where data from a homogenous group are collected. This involves a two-step method in which the population filters information into two variables. Moreover, it can be conveniently administered and can be compared rapidly.

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Ethical Consideration

Respondents were given the option to include their name or not before proceeding with questions. In case respondents did not enter their names, the researchers did not force them to do so to give recognition to their rights given that unknown identification will not show any effect on the analysis of data.

Upon taking part in the study, everything obtained from respondents was restricted from being viewed by others aside from the researchers to value their privacy. The researchers also pledged not to release any information regarding answers to the questionnaire and that data gathered was only purposely used for the study to execute confidentiality.

The safety of the respondents was also prioritized by the researchers. Thus, they made sure to maintain the welfare of every participant as a focus of the study. The activity did not involve any risk to respondents upon participating. From the beginning and up to the end of data gathering, no respondent was harmed physically and emotionally.

Data Analysis

The researchers used different statistical methods to analyze data gathered such as demographic profile according to respondent's age and sex using frequency and percentage.

The weighted mean in the Likert Scale identified the perception of respondents. The Likert Scale is a four-point scale used to allow the individual to express an idea regarding a particular statement.

On the other hand, to determine the significant difference between the levels of perception based on demographic profile Analysis of Variance (ANOVA) was used, a statistical technique that assesses potential differences in a scale-level dependent variable by a nominal-level variable having two or more categories.

RESULTS AND DISCUSSION

It can be obtained that Table 1 shows that the highest in the range of 18 – 25 years old with 68.1 percent of the total population and the least is the 34 – 39 years old range with 6.3 percent. This shows that respondents who are young are mostly the ones who frequently visit the beach, this is due to the fact that at their age range, they are most likely to have the time and money to do so. As eloquently, younger people nowadays (aged 18 to 25) make up a subset of the millennial [5]. They are mostly internet natives, which means they currently live using modern digital technologies that can affect their decisions and perceptions.

Table 1. Frequency distribution of local tourists in terms in terms of age

Age	Frequency	%	Rank
18 – 25 years old	98	68.1	1
26 – 33 years old	12	8.3	3
34 – 39 years old	9	6.3	5
40 – 47 years old	15	10.4	2
48 years old and above	10	6.9	4
Total	144	100	

Table 2 presents that there are more female respondents (61.1%) than male respondents (38.9%). Sex and gender are essential when it comes to making decisions, building up connections, stabilizing engagements, and choosing interventions [6]. Evidence keeps on appearing that gives highlights to some theories that may happen depending on sex, gender, and other intersectional definitions under different situations.

Table 2. Frequency of local tourists in terms of sex

Age	Frequency	%	Rank
Male	56	38.9	2
Female	88	61.1	1
Total	144	100	

Table 3. Awareness of local tourists on environmental issues of top beaches in Batangas

Indicators	WM	VI	R
1. Individual citizens should be responsible for solving environmental problems.	3.66	HA	2
2. Plastics can destroy beaches.	3.79	HA	1
3. Chemicals that we use like sunscreen harm marine life on the beach.	3.27	A	5
4. Tourists should not overpopulate the beach.	3.65	HA	3
5. Improper waste disposal affects the beach.	3.53	HA	4
Composite Mean	3.58	HA	

Legend: 3.51 – 3.00 = Highly Aware (HA); 2.51 – 3.50 = Aware (A); 1.51 – 2.50 = Slightly Aware (SA); 1.00 – 1.50 Not Aware (NA)

Table 3 depicts the awareness of respondents regarding environmental issues of top beaches in Batangas. Based on data, the overall assessment of respondents' awareness of environmental issues was *highly aware*. Many regular beachgoers are much more knowledgeable and aware of beach environmental issues and their consequences [7]. This demonstrates that people are eager to strengthen their interest in environmental issues experienced on beaches.

Table 4. Perception of local tourists on environmental issues of top beaches in Batangas in terms of pollution

Indicators	WM	VI	R
1. Pollution affects my stay at the beach.	3.01	A	4
2. Pollution got much worse with the fame of the beach.	3.14	A	3
3. Pollution affects my choice of traveling to the beach.	2.96	A	5
4. Beach pollution is a potential threat to public health and safety.	3.59	SA	2
5. Pollution destroys the visual quality of the beach.	3.60	SA	1
Composite Mean	3.26	A	

Legend: 3.50 – 4.00 - Strongly Agree (SA); 2.50 – 3.49 – Agree (A); 1.50 – 2.49 – Disagree(D); 1.00 – 1.49 - Strongly Disagree (SD)

Table 4 indicates that three of the assessment of respondents on indicators of beach pollution was *agree*d and two *strongly agree*d with a composite mean score of 3.26. Beach pollution seems to have an impact on not just the environment of marine life, but rather on humans that are vulnerable to pollutants dumped in the sea [8]. Straightforwardly, most of the respondents *agree* that pollution negatively impacts unique beach environments where animals and plants are dependent and that polluted beaches threaten human safety and can restrict economic activity in the local city.

Pollution destroys the visual quality of the beach ranked first among items in Table 4 (3.60). This means most respondents *strongly agree* that pollution is very harmful since it contains almost all pollutants that can destroy the beauty of the beach. Last but not the least, *pollution affects their choice of traveling to the beach* ranked as the lowest indicator (2.96). Beach pollution, however, is intense and getting worse, which creates a direct and serious threat to human health and wellbeing. Possibly, respondents' considerations when choosing a beach are activities and the relaxation that they can experience on the beach.

Table 5. Perception of local tourists on environmental issues of top beaches in Batangas in terms of carrying capacity

Indicators	WM	VI	R
1. The beach is overcrowded which affects my stay.	2.81	A	5
2. The carrying capacity affects marine biodiversity and its aquamarine life.	3.11	A	1.5
3. The beach loses its attractiveness due to some site congestion.	3.11	A	1.5
4. The beach lacks staff for supervising and observing tourists' arrivals.	2.85	A	3.5
5. The beach has a limited supply of water and other natural resources.	2.85	A	3.5
Composite Mean	2.89	A	

Legend: 3.50 – 4.00 - Strongly Agree (SA); 2.50 – 3.49 – Agree (A); 1.50 – 2.49 – Disagree (D); 1.00 – 1.49 - Strongly Disagree (SD)

Table 5 reveals that respondents all *agree* with indicators under carrying capacity with a 2.89 composite mean score. Intelligibly, respondents have a higher understanding of this as a witness on how carrying capacity affects the beach environment. This is revealed in the study that the beach carrying capacity (BCC) has gained a lot of attention recently [9]. It is also one of the most effective methods for tourist control in beach areas, despite being widely mocked as inaccurate to quantify and difficult to prevent.

Two indicators acquired the highest weighted mean of 3.11 which are *carrying capacity affects the marine biodiversity and its aquamarine life* and *the beach loses its attractiveness due to some site congestion*. Respondents are enlightened that a beach builds its capacity for tourism activities, as well as a limit above which an environment can lean towards negative tourism effects. Respondents *agree* with the indicator with the least weighted mean which is *the beach is overcrowded which affects my stay* (2.81). Besides, hundreds of beach resorts in the city have a strong reputation on which majority of certain resorts have luxurious

accommodations and stunning beaches which are must-see. For other tourists, crowded beaches are unappealing; however, when the benefits of one of these famous beaches are considered, individuals end up experiencing more good times and enjoy their stay.

Table 6. Perception of local tourists on environmental issues of top beaches in Batangas in terms of habitat modification

Indicators	WM	VI	R
1. Some activities are likely to harm the underwater environment at the beach through habitat modification.	3.19	A	3.5
2. Some activities are likely to result in significant habitat modification or degradation.	3.19	A	3.5
3. There are projects at beaches that cause the destruction of habitat quality.	3.22	A	2
4. Commercial developments at the beach increase the rate of habitat modification.	3.25	A	1
5. Resort buildings destroy the beach's natural beauty.	3.10	A	5
Composite Mean	3.19	A	

Legend: 3.50 – 4.00 - Strongly Agree (SA); 2.50 – 3.49 – Agree (A); 1.50 – 2.49 – Disagree(D); 1.00 – 1.49 - Strongly Disagree (SD)

As shown in Table 6, the perception of local tourists on habitat modification of top beaches in Batangas, all had interpretations of *agree* for all indicators. Excessive consumption of the beach can result in habitat loss over time. Plants are destroyed as people walk on sand since they provide a different habitat for a variety of species of plants and animals, including those that are protected or endangered [10]. Results show that habitat modification is strikingly making an impact on the beach environment. Beaches are constantly expanding, and other creatures call them home. Apparently, these habitats are facing alarming levels of human effects, with industrial growth invading.

From the point of view of respondents, *commercial developments at the beach increase the rate of habitat modification* ranked first (3.25). This desire, which satisfies critical economic needs, contributes to a linear way to beach planning that focuses upon its precise coastal area with connections to leisure activities on beaches or spectacular views of the beach. Therefore, instances that respondents have encountered are the destroying of the real unique visual of the beach. Ranked last among indicators is *resort buildings destroy the beach's natural beauty* (3.10). Uncontrollable tourism developments and projects are commonly causing destruction to endangered natural resources and crowding out habitats.

Table 7 illustrates that the perception of local tourists as regards waste management on top beaches in Batangas got a composite mean of 2.56 which is interpreted as *agree* and shows that waste management is considered to be one of the factors that affect beaches. The main benefit of sustainable waste management is that it has a lower environmental impact through enhancing water and air quality as well as lowering greenhouse emissions [11]. Thus, waste management is an important concept throughout sustainable development, and it opens more possibilities of beneficial impacts on the beach.

Table 7. Perception of local tourists on environmental issues of top beaches in Batangas in terms of waste management

Indicators	WM	VI	R
1. The beach has an offensive odor within the area which affected my stay at the resort.	2.44	D	5
2. The beach resort has a poor response to waste minimization such as reuse, reduction, and recycle.	2.66	A	2
3. The beach resort lacks manpower for waste disposal.	2.67	A	1
4. The resort lacks control over hazardous services.	2.55	A	3
5. The resort does not have a properly established setup for solid waste management services.	2.48	D	4
Composite Mean	2.56	A	

Legend: 3.50 – 4.00 - Strongly Agree (SA); 2.50 – 3.49 – Agree (A); 1.50 – 2.49 – Disagree(D); 1.00 – 1.49 - Strongly Disagree (SD)

Among the indicators cited, *beach resort lacks manpower for waste disposal* (2.67) obtained the highest rank. In this matter, in spite of the rising influx of tourists and visitors, tourism stakeholders have not realized the importance of finding skilled workers. The least weighted mean and ranked the last is said to be the indicator *the beach has an offensive odor within the area which affected their stay at the resort* (2.55), acquiring a verbal interpretation of *disagree*. Therefore, instances are some top beaches in Batangas give a delightful ocean air and a distinctive smell which gives respondents a unique stay at the beach.

Table 8. Summary of perceptions of local tourists on environmental issues of top Beaches in Batangas

Indicators	WM	VI	Rank
Pollution	3.26	Strongly Agree	1
Carrying capacity	2.89	Agree	3
Habitat modification	3.19	Agree	2
Waste management	2.56	Agree	4
Composite Mean	2.97	Agree	

Legend: 3.50 – 4.00 - Strongly Agree (SA); 2.50 – 3.49 – Agree (A); 1.50 – 2.49 – Disagree (D); 1.00 – 1.49 - Strongly Disagree (SD)

Table 8 depicts that the summary of perceptions of local tourists on environmental issues of top beaches in Batangas has a composite mean of 2.97 with a verbal interpretation of *agree*. Environmental knowledge is a huge

challenge for human advancement. It is among the most important considerations for describing a country's community. It represents a variety of environmental factors, including people's perceptions, traits, and attitudes toward a more sustainable future [12].

Among indicators cited, pollution has the highest weighted mean of 3.26 and is ranked first. Since beaches are home to a diverse number of aquatic creatures, as well as plants, it is everyone's duty to do their part in keeping them safe so that marine organisms can survive over long periods of time. On the other hand, waste management (2.56) ranked last. Therefore, conceivably beaches have proper waste production being monitored. People must know that rather than being thrown away, waste can be used as a product or raw material. Any of these harmful chemicals could be immediately recycled leading to their risk to health.

Table 9. Difference between levels of perception when grouped according to age

Level of Perception	f-value	p-value	Interpretation
Pollution	3.357	0.012	Significant
Carrying Capacity	2.223	0.070	Not Significant
Habitat Modification	1.904	0.113	Not Significant
Waste Management	2.252	0.067	Not Significant

If the p-value is < 0.05, Significant (S). If the p-value is > 0.05, Not Significant (NS)

Table 9 illustrates environmental issues of top beaches in Batangas when grouped according to age. It is remarked that there is no significant difference on variables of carrying capacity (0.070), habitat modification (0.113), and waste management (0.067). Data, however, reveal that age has a high influence on respondents in terms of pollution since they have a deeper understanding of how it impacts society, as well as their way of living, mostly on beaches as tourists. Everyone who examines public perception mostly on the environment could demonstrate whether younger people are further extremely worried about environmental protection, unlike elderly adults. It is not an age-related mindset, as enthusiasm for environmental protection is increasingly growing among the elderly [13].

As the majority of the variables on environmental issues have no significant relationship to respondents' age, improvements in the beach should still be a thing. Pollution reduction improves the environment through preserving and restoring natural resources, thereby, stimulating economic development by encouraging factories to generate more effective and reducing the amount of pollution that needs to be managed by individuals, businesses, and municipalities.

Table 10. Difference between levels of perception when grouped according to sex

Level of Perception	f-value	p-value	Interpretation
Pollution	3.282	0.072	Not Significant
Carrying Capacity	5.878	0.017	Significant
Habitat Modification	0.005	0.943	Not Significant
Waste Management	0.725	0.396	Not Significant

If the p-value is < 0.05, Significant (S). If the p-value is > 0.05, Not Significant (NS)

Table 10 indicates that the assessment on levels of perception when grouped according to sex shows no significant difference on pollution (0.072), habitat modification (0.943), and waste management (0.396) since the obtained p-values were greater than the 0.05 alpha-level. There are possibilities that respondents lack awareness according to their sex on the majority of variables.

The evidence connecting gender equity with improved environmental conditions seems to have been around the world [14]. Women in power, are much more ready to trigger aside designated land resources and amend environmental issues agreements in places with much more women in parliament. In reality, there really is a connection between both the environment, as well as gender. When gender imbalance is strong, there exist forest deforestation, environmental damage, and many other indicators of environmental damage. Since their social support roles and survival practices are also strongly reliant upon environmental resources, people are committed advocates of preservation and regeneration.

Table 11. Proposed action plan

Key Result Area	Proposed Programs	Key Persons
Beach pollution	• Encourage people to use ecologically friendly products. • Engage in beach clean-ups to help decrease garbage and waste. • Recycle plastics • Minimize the quantity of polluted water in private residences.	Local tourists Beach owners Employees Local government
Carrying capacity	• Maintain a small coastal area, particularly the most beautiful beach spots, as pristine as possible. • Create certain protected areas between accommodations and establishments; maintain some sections of the larger coastal zone and surrounding areas entirely preserved	Beach owners Local government
Habitat modification	• Evaluate dangers of habitat loss and report on the scope of the subsequent loss and how to mitigate it. • Assess and select priority action locations. • Determine possible rehabilitation locations to help compensate for the area lost. • Establish local and provincial Agri-environment plans to keep the habitat in perfect condition and encourage involvement.	Beach owners Local government

Waste management	• Ensure that all individuals have access to appropriate and economical local waste disposal, as well as waste minimization through prevention and the 3Rs—reuse, reduce, recycle. • Eliminate unauthorized disposal and open burning, as well as enhance ultimate disposal and cleansing. • Ensure that commercial and perhaps other particular wastes are collected and treated properly (solid wastes, toxic chemicals, mining waste, e-waste, building and construction garbage, and so on.) • Ensure that liquid waste is properly disposed of and treated to the greatest extent possible. • Capacity enhancement, public awareness, and advocacy	Local tourists Beach owners Employees Local government

Conclusion and Recommendation

The demographic profile in terms of sex and age was taken and assessed. After careful evaluation, it was determined that most local tourists that are female and belonging to the age bracket of 18 to 25 years old are more likely to visit Batangas beaches than local male tourists. While the local tourists projected high awareness regarding present environmental issues of top beaches in Batangas and keeping this into perspective, it may help in implementing beach protection policies. Pollution, carrying capacity, and habitat modification can bring a negative impact on unique beach environments and threaten human safety that affects stay at the beach. Odor and improperly established setup for solid waste management service, however, were not issues that affected their stay. It has been determined that the perception of local tourists on environmental issues of top beaches in Batangas is greatly influenced by age and sex. The insignificant difference in their perception of environmental issues implies that when tourists recognize their sex and reach the age of 18, they become more observant of their environment and ready to sort out their priorities. Hence, their established awareness and perception varied according to age and sex.

The findings of the study arrived with recommendations for future researchers who will be studying the same topic to include other variables such as ocean acidification, light pollution, and others focusing on the marine environment itself aside from pollution, carrying capacity, habitat modification, and waste management that could also influence the level of perception of tourists. Given that the study was conducted mainly for top beaches of Batangas and does not include other top beaches from other provinces, it is also recommended to carry out a study within other top beaches in the Philippines or other tourist destinations such our mountains, rivers, or lakes that would be a great contribution to the growth of research about Philippine environment. Furthermore, a qualitative approach may be conducted, specifically a phenomenological study to evaluate the experiences of tourists on the subject matter and such study may also utilize a different method in determining perspectives of other respondents such as professors, industry experts, environmentalists, and residents around the area.

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