

Exploring key indicators of community engagement in protected areas and natural park: Towards an ecotourism sustainable and development framework

Ruiz, Merle U. ✉

Graduate School, Lyceum of the Philippines University - Batangas, Philippines (meruiz@mcl.edu.ph)

Apritado, Jennie Margaret

Lyceum of the Philippines University - Batangas, Philippines (jmapritado@lpubatangas.edu.ph)



ISSN: 2243-7770
Online ISSN: 2243-7789

OPEN ACCESS

Received: 25 August 2024

Revised: 25 September 2024

Accepted: 2 October 2024

Available Online: 2 October 2024

DOI: 10.5861/ijrsm.2024.1291

Abstract

The study aimed to propose a framework for sustainable ecotourism development plan in CALABARZON region. The researcher determined the key indicators of community engagement in protected areas and natural park in the region of CALABARZON. It tested the significant difference in the responses when grouped according to demographic profiles of the respondents and tested the significant relationship among the given variables. The researcher used quantitative method and descriptive research design. The respondents of the study were 312 residents staying adjacent and currently working in ecotourism sites. The instrument was adapted from a previous study. Further, the Statistical test used for the study was based on the Shapiro Wilk test, Kruskal Wallis Test, Mann Whitney U-test to test the significant differences while, Spearman Rho for the test of relationship to determine significant relationship among three variables. The study concluded that a large percentage of the respondents were male aged between 31-39 and high percentage of engagement was between 1-3 years. Community satisfaction on quality of life across four domains of well-being were the key factors and foundational elements that led to positive impact on the interactions between residents and tourists. In addition, when locals are satisfied, they are not just more open and tolerant to tourists but also more inclined to engage in ecotourism activities. Lastly, the research paper proposed a framework. The study recommends to incentivize long-term engagement of residents, ecotourism management may develop educational and training programs for residents to enhance their knowledge and skills in ecotourism and hospitality to increase their engagement with tourists and to equip with skills while empowering them to actively participate in local ecotourism industry.

Keywords: community engagement, protected areas, natural park, ecotourism

Exploring key indicators of community engagement in protected areas and natural park: Towards an ecotourism sustainable and development framework

1. Introduction

In recent years, ecotourism has gained significant attention for its potential to promote sustainable development as such concept offers a strategy rooted in the principles of conservation, community participation, and support the well-being of local residents. Active community involvement is necessary to guarantee that the advantages of tourism are shared fairly, that the environment and culture are preserved, and that tourism promotes long-term community development, but it is also necessary for ecotourism to be completely successful. In the same manner, ecotourism and community engagement creates a win-win situation benefiting everyone involved. Thus, community engagement will be a key indicator of the viability of ecotourism close to the protected area. (Utama & Trimurti, 2021).

In the Philippines, the concept of ecotourism was presented in 1999 under Executive Order No. 111 which was the joint undertaking of the Department of Natural & Environmental Resources (DENR) and Department of Tourism (DOT). In 2011, the regional and local tourism offices of the DOT recommended top fourteen (14) tourist destinations. Five of these are declared ecotourism sites considered protected and natural parks located in the region of CALABARZON. Academic institutions, tourism stakeholders and other NGOs should be the forefront of sustainable tourism development. This research enriched the current understanding of critical indicators that define community engagement." in CALABARZON region toward developing sustainable ecotourism plan framework.

CALABARZON is situated in the south of Metro Manila in the Philippines comprising five provinces namely: Cavite, Laguna, Batangas, Rizal, and Quezon. The region is endowed with abundant natural resources and now emerging into an ecotourism destination. The study focused on nature base located in protected areas and declared by DOT and DENR ecotourism sites. The research location's established criteria led to the identification of the following ecotourism sites namely: Mount Makiling Forest Reserve & Panguil River Ecopark, and Majayjay Falls in Laguna, Wawa Dam Nature Reserve & Mount Daraitan & Tinipak River in Rizal, and Bangkong Kahoy in Dolores, Quezon. The participants were residents adjacent to ecotourism sites and involved in ecotourism project for least minimum of one year and operated purely nature -based and community-based tourism.

In ecotourism, the intricate relationship between community satisfaction with quality of life and their tolerance of host-tourist interactions is crucial. In this notion, examining these relationships and how they manifest in various settings, stakeholders involved in tourism can develop appropriate strategies shaping the engagement of communities within ecotourism developments, highlighting the significance of these relationships in fostering resilient and thriving ecotourism destinations in the region. Consequently, the study on exploring the key indicators of community engagement in protected areas and natural park in CALABARZON region remains uncertain. Engagement of the local community is vital to the success of ecotourism initiatives. The study outcome may provide valuable information for tourism stakeholders involved in ecotourism development and can be used in two ways. First, exploring key indicators of community engagement uncovers ways in which residents are empowered in tourism development, influencing their well-being and quality of life.; Second, understanding the perspective of the community can be basis of resolving potential conflicts among host, tourists, and other tourism stakeholders lead to increase local community engagement. Also, as an advocator of sustainable tourism research findings facilitates information to improve ecotourism plans and helps develop ecotourism sustainable development framework, enhancing collaboration efforts as core principle of ecotourism.

Objectives of the Study - This study explored the key indicators of community engagement in protected areas

and natural park. Specifically, it described the demographic profile in terms of age, gender, educational attainment, number of years involved in ecotourism, and location of ecotourism site ; determined the community satisfaction on quality of life in terms of health and safety, emotional, community, and material well-being; assessed the community tolerance on host-tourist interaction in terms of interaction engagement, attentiveness, confidence, and enjoyment; examined the community factors to support tourism in terms of community attachment, commitment, and involvement ; tested significant difference in respondents' views among the three variables when grouped according to the profile variables; tested if there are significant relationships between the main variables; and lastly, proposed a framework as basis for sustainable ecotourism development plan in CALABARZON region.

2. Methods

Research Design - This study used quantitative descriptive correlational research design. According to Creswell (2018) a descriptive-correlational study is a research design that describes the characteristics of a population or phenomenon and examines the relationship between two or more variables. It is a method of research that focuses on describing and understanding the relationships between variables without manipulating them. A test of significant difference utilized in the study to describe and understand the relationships between variables without manipulating them.

Participants of the Study - The proponent considered the most valuable representatives and people who are currently involved in an ecotourism project. As a qualifier the participants must be at least 18 years old, staying in proximity to ecotourism sites or currently working in protected areas, natural park. Based on the information by DOT CALABARZON regional office, the ecotourism sites considered nature based in Laguna consist of Mount Makiling Forest Reserve, Panguil River Ecopark , Majayjay Falls; in Rizal province it includes Wawa Dam Nature Reserve & Mount Daraitan and Tinipak River; and Bangkong Kahoy in Dolores, Quezon. Using Raosoft sample size calculator, the sample size of the study were 323 respondents participated in the study. Purposive sampling was used in the study.

Data Gathering Instrument - The researcher used an adapted questionnaire to obtain the needed data. The statements were modified to make appropriate on the current context. It was divided into four parts. A four-section questionnaire was developed to achieve the objective of the present study using survey questionnaires. First part was the demographic factors which include age, sex, educational attainment, and psychographic profile as number of years involved in ecotourism and location of ecotourism sites. Second part was taken from the study of Kim et al. (2013) consisting four variables namely health and safety, emotional, community, and material well-being consisting of five statement for each variable; Part three was taken from the study of Gamotea and Ylagan (2020) to measure community tolerance on host-tourist interaction, four variable were used consisting of the following: interaction engagement, attentiveness, confidence, and enjoyment where each variable have five statements used.

Part four was adopted from the study of Yaakop (2021) measuring community factors that support tourism consisting of three variables namely: community attachment, community commitment, and community involvement where each variable composed of five statements. The survey questionnaires were translated into Tagalog allowing participants to fully understand all the questions clearly. A pilot test was conducted among thirty (30) respondents which was composed of residents staying proximity to the DOT declared ecotourism sites in CALABARZON Region to determine the validity and reliability of the questionnaire. Based on statistical analysis the table below shows the result of Cronbach's Alpha of the three variables used in the study. According to reliability statistics provided by Cronbach's Alpha, every variable on the questionnaire yielded a result greater than 0.7. Thus, the questionnaire was reliable and valid for use in general.

Data Gathering Procedure - Upon approval of the study instrument, the researcher wrote a letter of consent addressed to the DENR or respective ecotourism sites. The total of 321 were considered as there were two outliers. The data gathering lasted for six weeks.

Ethical Considerations - The research study strictly adhered to the guidelines of the Data Privacy Act of 2012

under RA 10173 safeguarding the personal information of all participants involved. Participants were fully informed about the confidentiality of their personal information and responses, as well as its limitations. Furthermore, the identity of the respondents was not revealed either, except if they are residents where ecotourism sites are located and employees of ecotourism sites. All data were handled confidentially, and all participants were treated with respect.

Data Analysis - Frequency and percentage distribution were used to describe the demographic profile in terms of age, sex, educational attainment, and number of years involved in ecotourism. Weighted mean and rank were used to determine the community satisfaction on quality of life in terms of health and safety, emotional, community, and material well-being; to assess the community tolerance on host-tourist interaction in terms of interaction engagement, attentiveness, confidence, and enjoyment; to examine the community factors to support tourism in terms of community attachment, commitment, and involvement. The result of Shapiro-Wilk Test showed that p-values of all variables were less than 0.05 which means that the data set was not normally distributed. Therefore, Mann-Whitney U test for two groups and Kruskal Wallis test for more than two groups were used as part of the non-parametric tests to determine the significant differences. All analyses were performed using SPSS version 28.

3. Results and discussion

Table 1

Distribution of Respondents' Profile

Profile Variables	Frequency	Percentage
Age		
18 - 30 years old	74	23.1
31 - 39 years old	89	27.7
40 - 45 years old	86	26.8
46 - 59 years old	53	16.5
60 years old and above	19	5.9
Sex		
Male	225	70.1
Female	96	29.9
Educational Background		
Elementary	36	11.2
High School	116	36.1
Technical-Vocational	115	35.8
College Graduate	54	16.8
Number of years involvement in ecotourism		
1 - 3 years	132	41.1
4 - 6 years	103	32.1
7 - 9 years	49	15.3
More than 10 years	37	11.5
Location of Ecotourism Sites		
Majayjay Falls	31	9.7
Panguil River Ecopark	41	12.8
Mt. Makiling Forest Reserve	95	29.6
Mount Daraitan & Tinipak River	54	16.8
Wawa Dam and Pamitinan Protected Landscape	48	15.0
Bangkong Kahoy, Dolores Quezon	52	16.2

Table 1 presents the demographic profile of the respondents. Based on findings of the total 321 respondents most of the respondents aged between 31-39 and the least respondents had been indicated by age group about 60 years old above. This indicate that Individuals in such age groups range between 31-39, most often at a point of raising children and working to augment income for their families considering ecotourism can be a source of income. In terms of sex, 225 of the respondents were male, and 96 were female, representing 70.1 percent and 29.9 percent of the total respondents, respectively. This connoted that the high proportion of male involved in ecotourism can be attributed to the fact that most ecotourism activities involve physical exertion or working in remote locations, which can be perceived as more suitable for men due to harmful gender stereotypes restricting women's mobility and the issue of safety in certain destinations or activities might discourage women from

participating in ecotourism jobs. In relation to educational attainment a large proportion of the respondents of 116 were high school graduates representing (36.1 percent), while elementary level had least of 36 representing (11.2 percent). The high percentage of high school graduate can be attributed to the fact that the nature of a job in ecotourism does not require a formal degree. This denotes that bigger proportion of respondents involved for a shorter duration in ecotourism should therefore need further investigation. The unfulfilled promises regarding its potential to foster community development may lead to disillusionment and disengagement from ecotourism.

In terms of location, Mount Makiling Forest Reserve had the highest number of respondents about 95 representing (29.6 percent) while Majayjay Falls had the lowest number of respondents with 31 (9.7 percent) respectively. The higher response rate of Mount Makiling Forest Reserve which was managed by academic institution could be a factor where most residents want to be part of the successful ecotourism project compared to other residents who were hesitant to engage in the study as some local's residents might not see value in participating. On the case of Majayjay, due to presence of farmland most residents involved in agricultural farming rather than in ecotourism as farming provided them the basic food security and income for families, that might not be readily available in ecotourism which led them to limited participation in the study.

Table 2
Community Satisfaction on Quality of Life

Indicators	WM	VI	Rank
1. Health and Safety	3.46	Moderately Agree	3
2. Emotional	3.86	Agree	1
3. Community	3.40	Moderately Agree	4
4. Material Well-being	3.58	Agree	2
Composite Mean	3.57	Agree	

Table 2 shows the result of the analysis on community satisfaction that emotion is highly assessed with the weighted mean of 3.86; followed by material well-being (3.58); health and safety (3.46) and community (3.40). Individuals often prioritize their emotional well-being as a fundamental aspect of their overall quality of life. This might be due to personal experiences, cultural factors, or individual values. Whereas the availability of community resources and amenities can significantly impact satisfaction levels. Respondents may have perceived a lack of resources or amenities in their community, leading to lower satisfaction ratings. Several factors may contribute to this prioritization. Personal experiences, cultural influences, and individual values can all play a role in shaping individuals' perspectives on emotional well-being. In contrast, community satisfaction is influenced by a broader range of factors, including the availability of resources and amenities. Respondents who perceived a lack of resources or amenities in their community may have reported lower satisfaction levels, indicating the importance of community factors in overall well-being (Han, et al., 2023)

Table 3
Community Tolerance on Host-tourist Interaction

Indicators	WM	VI	Rank
1. Interaction Engagement	4.11	Agree	1
2. Interaction Attentiveness	3.90	Agree	4
3. Interaction Confidence	3.94	Agree	3
4. Interaction Enjoyment	4.08	Agree	2
Composite Mean	4.00	Agree	

Table 3 presents the summary results on community tolerance on host-tourist interaction were interaction engagement (4.11); interaction enjoyment (4.08); interaction confidence (3.94) and interaction attentiveness (3.90). Engagement often involves active participation, such as conversations, shared experiences, and involvement in local activities. This can lead to a more positive and memorable interaction for both hosts and tourists. While attentiveness is important, it might be seen as a necessary but not sufficient condition for a positive interaction. Engagement, on the other hand, is more likely to be associated with positive outcomes.

Attentiveness, while important, is not enough. It is the active participation in shared experiences, conversations, and local activities that truly fosters meaningful connections and positive

outcomes. This suggests that hosts should strive to create opportunities for engagement and interaction with tourists, going beyond simply being attentive and accommodating. By encouraging active participation, hosts can enhance the overall experience for both them and their guests, leading to more positive reviews, repeat business, and a stronger sense of cultural exchange (Hossen, 2023).

Table 4
Community Factors to Support Tourism

Indicators	WM	VI	Rank
1. Community Attachment	3.71	Agree	3
2. Community Commitment	4.22	Agree	2
3. Community Involvement	4.26	Agree	1
Composite Mean	4.06	Agree	

Table 4 posits the community factors to support tourism that involvement is highly agreed by the respondents (4.26); commitment (4.22) and attachment (3.71). Involvement often implies a more active role, such as participating in community events, volunteering, or contributing to local initiatives. This active participation can lead to a stronger sense of connection and belonging while attachment might be seen as more personal and less directly related to community development. Active involvement in community activities is crucial for fostering a strong sense of connection and belonging among residents and visitors. This can have significant benefits for tourism development, as a community that is engaged and invested in its local tourism industry is more likely to support and promote it.

Table 5
Difference of Responses on Community Satisfaction on Quality of Life When Grouped According to Profile

Profile Variables	U/H	p-value	Interpretation
Age			
Health and Safety	15.540	0.004	Significant
Emotional	4.216	0.378	Not Significant
Community	11.106	0.025	Significant
Material Well-being	4.176	0.383	Not Significant
Sex			
Health and Safety	9304.500	0.048	Significant
Emotional	9825.500	0.195	Not Significant
Community	10548.500	0.738	Not Significant
Material Well-being	9790.000	0.181	Not Significant
Educational Background			
Health and Safety	9.672	0.022	Significant
Emotional	0.806	0.848	Not Significant
Community	12.479	0.006	Significant
Material Well-being	6.240	0.101	Not Significant
Number of years involvement in ecotourism			
Health and Safety	30.070	<. 001	Highly Significant
Emotional	25.828	<. 001	Highly Significant
Community	42.533	<. 001	Highly Significant
Material Well-being	9.093	0.028	Significant
Location of Ecotourism Sites			
Health and Safety	50.622	<. 001	Highly Significant
Emotional	12.252	0.031	Significant
Community	61.910	<. 001	Highly Significant
Material Well-being	11.456	0.043	Significant

Table 5 presents the difference in responses of residents on community satisfaction in terms of health and safety when grouped according to the profile variables. It was revealed that there are significant differences when grouped according to age. There was a statistically significant difference of responses on community satisfaction in relation to health and safety when grouped according to age where the p-values obtained were less than 0.05. The post hoc test showed that the significant difference was contributed by the pairs 40 – 45 years old and 46 – 59 years old. This implies that residents between 40-45 years old and 46-59 age group hold distinct views regarding their health and safety due to potential risks associated with their nature of work in ecotourism.

When grouped according to sex, there was a statistically significant difference of responses on community satisfaction where a p-value was less than 0.05 which shows that there was significant difference of responses between male and female where the female respondents have higher assessment on health and safety. This connotes significant difference was found in terms of sex wherein female residents assess community satisfaction with health and safety higher compared to men as female aware on their limitations considering most ecotourism activities are strenuous in which it heightened concern about potential dangers in unfamiliar ecotourism environments. The study of Yurur (2021), it claimed that tourism development does not transform gender roles but instead extends them.

In educational attainment, there was a statistically significant difference of responses on community satisfaction where a p-values obtained were less than 0.05 which shows that there was significant difference of responses. Post hoc test showed that there was a significant difference of responses between technical vocational and elementary. Compared to residents who are elementary education might have simpler expectations for their community wherein just providing them with basic improvements like clean water or sanitation could significantly improve their satisfaction in terms of health and safety. The study conducted by Gonzalez et. al (2018) confirmed that the reliance of the host community on tourism, along with factors such as gender and education, significantly influences their desire to engage in exchange relationships with the visitors.

In ecotourism site, there was a statistically significant difference of responses on community satisfaction where a p-values obtained were less than 0.05. Post hoc test revealed that there was a significant difference of responses on health and safety between 1 – 3 years and 7 – 9 years. The significant difference of responses based on community satisfaction indicates that residents who have been involved in ecotourism for a longer period. When grouped according to location, there was a statistically significant difference of responses on community satisfaction wherein a p-values obtained were less than 0.05. Post hoc test showed that there was a significant difference of responses on health and safety between Mt. Makiling Forest Reserve and Panguil River Ecopark. This entails residents from Mt. Makiling Forest Reserve reported lower satisfaction in health and safety, emotional, and community aspects compared to other locations. Such differences in satisfaction could be attributed to variations in infrastructure, facilities, and management styles among the locations. Based on analysis, this was argued by the study of Poudel & Joshi (2020) which investigated the unfair distribution of profits in community-based ecotourism initiative and revealed that some residents concerned about their well-being and lacking access to improved healthcare facilities which resulted to lower satisfaction in health and safety.

Table 6 below shows on difference of responses on community tolerance on host-tourist interaction when grouped according to age, there was a statistically significant difference of responses on interaction attentiveness and interaction confidence wherein a p-values obtained were less than 0.05. Post hoc test showed that there was a significant difference of responses between 40 – 45 years old and 46 – 59 years old. Most likely ages 46-59 become more assured due to long experiences and exposure lead them to be more confident during the interaction compared to 40-45 where confidence level have not yet manifested to them. According to Çakar & Aykol (2023), different generations have different communication preferences.

In terms of significant difference on interaction attentiveness in relation to sex, this may be indicated on the basis on tasks or gender roles in ecotourism sites as men are more focus on generating income leading to less attentiveness during interactions whereas women might be more involved in community activities or hospitality roles, fostering higher attentiveness especially. Based on analysis, this was contradicted by the study of Chen & Qiu (2017), in which male respondents have a higher assessment and are more supportive of tourism development inside ecotourism areas compared to women. However, in the study of Tristani et al. (2022), it was revealed that women in tourism are primarily involved in house stays, food and beverage services, souvenir creation, and traditional dances.

Table 6

Difference of responses on Community Tolerance on Host-tourist Interaction When Grouped According to Profile

Profile Variables	U/H	p-value	Interpretation
Age			
Interaction Engagement	5.413	0.247	Not Significant
Interaction Confidence	20.761	< .001	Highly Significant
Interaction Enjoyment	6.432	0.169	Not Significant
Sex			
Interaction Engagement	9445.000	0.067	Not Significant
Interaction Attentiveness	9197.500	0.033	Significant
Interaction Confidence	9719.000	0.150	Not Significant
Interaction Enjoyment	10737.000	0.933	Not Significant
Educational Background			
Interaction Engagement	5.827	0.120	Not Significant
Interaction Attentiveness	11.915	0.008	Significant
Interaction Confidence	16.109	0.001	Significant
Interaction Enjoyment	5.170	0.160	Not Significant
Number of years involvement in ecotourism			
Interaction Engagement	16.512	0.001	Significant
Interaction Attentiveness	27.846	< .001	Highly Significant
Interaction Confidence	22.239	< .001	Highly Significant
Interaction Enjoyment	17.650	0.001	Significant
Location of Ecotourism Sites			
Interaction Engagement	24.594	< .001	Highly Significant
Interaction Attentiveness	59.445	< .001	Highly Significant
Interaction Confidence	31.124	< .001	Highly Significant
Interaction Enjoyment	18.296	0.003	Significant

In relation to interaction attentiveness significant difference revealed in terms of educational attainment can be interpreted as residents may have a deeper understanding of ecotourism principles and the importance of positive tourist interactions with higher educational background and such awareness could lead to increased attentiveness towards tourists compared to residents who are high school graduate which represent 52 percent of the population in the study who may have limited knowledge on the significance of tourist interactions which could lead to less attentiveness. Almeida et al. (2020) revealed that residents' perceptions of positive sociocultural influences increased with their level of education, and this was supported by Alrwajfah (2019) when residents perceived positive sociocultural impacts it can be indicated to local community satisfaction and increase their interaction attentiveness which is important factor in tourism development.

In the same manner, in relation to interaction confidence it entails that residents who are highly educated may have a better awareness on the ecotourism site, its cultural features, local ecosystem, and being conversant this knowledge base, they will be able to converse meaningfully and confidently with tourists. Compared to residents with lesser levels of education may not have had as much exposure in some foreign languages that visitors speak. This language barrier might make it difficult to communicate and make people feel less confident when interacting. As claimed by Almeida (2016), residents' opinions of positive sociocultural influences were found to be discriminated against based on their education level, which also decreased their level of interaction confidence and led to negative perceptions that impacted community satisfaction. Both the tourists' experience and impression of the place they visit, as well as the locals' acceptance and tolerance of them, are influenced by the interaction between visitors and locals.

Table 7 shows difference of responses on community factors to support tourism when grouped according to profile There was a statistically significant difference of response on community attachment when grouped according to age because the obtained p-value was less than 0.05. Post hoc test showed that there was a significant difference of responses between 40 – 45 years old and 18 – 30 years old. This indicate a significant difference that residents ages between 18-30 years, such age group still on the stage of being more idealistic and having a stronger desire to contribute to their community and lead to a stronger connection to the community.

Table 7*Difference of Responses on Community Factors to Support Tourism When Grouped According to Profile*

Profile Variables	U/H	p-value	Interpretation
Age			
Community Attachment	13.815	0.008	Significant
Community Commitment	7.848	0.097	Not Significant
Community Involvement	8.518	0.074	Not Significant
Sex			
Community Attachment	10481.000	0.672	Not Significant
Community Commitment	9839.000	0.194	Not Significant
Community Involvement	10701.500	0.892	Not Significant
Educational Background			
Community Attachment	5.253	0.154	Not Significant
Community Commitment	4.447	0.217	Not Significant
Community Involvement	2.123	0.547	Not Significant
Number of years involvement in ecotourism			
Community Attachment	27.469	<. 001	Highly Significant
Community Commitment	8.957	0.030	Significant
Community Involvement	4.485	0.214	Not Significant
Location of Ecotourism Sites			
Community Attachment	97.561	<. 001	Highly Significant
Community Commitment	43.757	<. 001	Highly Significant
Community Involvement	14.290	0.014	Significant

Significant at p-value<0.05

Based on analysis, this was similar to study of Aujero, (2020) wherein several issues have constrained ecotourism development in the Philippines that due to lack of coordination between the authorities and communities, which resulted of the local people to be involved in an ecotourism site. This was argued by Gannon et al., (2020) which cited that community attachment can stimulate residents support for tourism development when residents have a stronger attachment to their community however, they may oppose future development should they have experienced the negative effects of tourism development.

There was a statistically significant difference of responses on community attachment and community commitment when grouped according to number of years involvement in ecotourism because the obtained p-values were less than 0.05. Post hoc test revealed that there was significant difference of responses on community attachment between 1 – 3 years and more than 10 years.

Based on the findings, those respondents who have a longer year of involvement in ecotourism have higher assessment on community attachment and community commitment. Manifestly residents involved for longer durations tend to develop a stronger sense of attachment to their community and a greater commitment to the ecotourism project's success. This was argued by Wijaya et al (2018) which cited that residents with long-term involvement develop a strong sense of attachment to the place and a sense of belonging, incorporating the area into their identity. Likewise, duration of residence and life experiences, are factors for community attachment that can improve the bonding of one's feelings with the place of residence.

There was a statistically significant difference of responses on community factors when grouped according to location of ecotourism sites because the obtained p-value were less than 0.05. Post hoc test showed that there was a significant difference of responses on community attachment and community commitment Mt. Makiling Forest Reserve. Based on the findings, this connotes that those respondents located at Mt. Makiling Forest Reserve have lesser assessment on community attachment and community commitment. The result on significant difference of responses in terms of location on community factors to support tourism related to community attachment between Mt. Makiling Forest Reserve can be indicated that both ecotourism site was not fully owned and managed by the residents themselves. Based on analysis, this claim was supported by Gannon et al., (2020), having a strong sense of community may encourage locals to support tourism growth.

Table 8
Relationship Between Community Satisfaction and Community Tolerance

Variables	rho	p-value	Interpretation
Health and Safety			
Interaction Engagement	0.351**	< .001	Highly Significant
Interaction Attentiveness	0.529**	< .001	Highly Significant
Interaction Confidence	0.473**	< .001	Highly Significant
Interaction Enjoyment	0.340**	< .001	Highly Significant
Emotional			
Interaction Engagement	0.483**	< .001	Highly Significant
Interaction Attentiveness	0.528**	< .001	Highly Significant
Interaction Confidence	0.458**	< .001	Highly Significant
Interaction Enjoyment	0.513**	< .001	Highly Significant
Community			
Interaction Engagement	0.338**	< .001	Highly Significant
Interaction Attentiveness	0.438**	< .001	Highly Significant
Interaction Confidence	0.354**	< .001	Highly Significant
Interaction Enjoyment	0.388**	< .001	Highly Significant
Material Well-being			
Interaction Engagement	0.565**	< .001	Highly Significant
Interaction Attentiveness	0.446**	< .001	Highly Significant
Interaction Confidence	0.469**	< .001	Highly Significant
Interaction Enjoyment	0.381**	< .001	Highly Significant

Table 8 shows relationship between community satisfaction and community tolerance. As seen in the table, the computed rho-values ranging from 0.338 to 0.565 indicate a weak to moderate direct relationship among the sub variables of community satisfaction in relation to material wellbeing domain and community tolerance on interaction engagement. This connotes such strong correlations indicate that as interaction engagement, attentiveness, confidence, and enjoyment increase, the domains associated with community satisfaction also tend to increase. In the same notion, when residents health needs be met and feel safe on the community, they live in this cause less stress on their part and the more they will be open to interacting with their tourist thus creating a more positive social environment. Eusebio et al. (2018), argued that level of interaction with tourists affects the relationship between community engagement and support for tourism development wherein residents who are more engaged with tourists respond to tourism and tourists more positively.

Table 9
Relationship Between Community Satisfaction and Community Factors

Variables	rho	p-value	Interpretation
Health and Safety			
Community Attachment	0.459**	< .001	Highly Significant
Community Commitment	0.343**	< .001	Highly Significant
Community Involvement	0.158**	< .001	Highly Significant
Emotional			
Community Attachment	0.403**	< .001	Highly Significant
Community Commitment	0.386**	< .001	Highly Significant
Community Involvement	0.367**	< .001	Highly Significant
Community			
Community Attachment	0.491**	< .001	Highly Significant
Community Commitment	0.350**	< .001	Highly Significant
Community Involvement	0.228**	< .001	Highly Significant
Material Well-being			
Community Attachment	0.387**	< .001	Highly Significant
Community Commitment	0.290**	< .001	Highly Significant
Community Involvement	0.305**	< .001	Highly Significant

Table 9 presents relationship between community satisfaction and community factors. There was a statistically significant relationship between community satisfaction on community well-being and community factors because the obtained p-values were less than 0.01. This denotes a strong and statistically significant correlation between community engagement factors such as attachment, commitment, and involvement, and the overall satisfaction with different domains of community life, such as health and safety, emotional well-being,

community well-being, and material well-being. Residents who have a strong connection to their community often express greater satisfaction with their health and safety, emotional wellbeing, the overall community, and their material well-being. Commitment to the community was also associated with higher satisfaction in ecotourism areas that when residents are dedicated to the well-being of their community, they are more likely to view the environment of the community as satisfying. Similar findings on the studies of Lin et al., (2017) which revealed that the satisfaction with living quality and the desire of locals to participate in value co-creation in their community were positively impacted by a positive view of the benefits of tourism. While the study of Demirović et al., (2020) revealed the residents' support for sustainable tourism development is positively correlated with their general quality of life, sense of community, and perceived value for tourism development.

Table 10
Relationship Between Community Tolerance and Community Factor

Variables	rho	p-value	Interpretation
Interaction Engagement			
Community Attachment	0.348**	< .001	Highly Significant
Community Commitment	0.420**	< .001	Highly Significant
Community Involvement	0.304**	< .001	Highly Significant
Interaction Attentiveness			
Community Attachment	0.584**	< .001	Highly Significant
Community Commitment	0.529**	< .001	Highly Significant
Community Involvement	0.351**	< .001	Highly Significant
Interaction Confidence			
Community Attachment	0.475**	< .001	Highly Significant
Community Commitment	0.407**	< .001	Highly Significant
Community Involvement	0.335**	< .001	Highly Significant
Interaction Enjoyment			
Community Attachment	0.331**	< .001	Highly Significant
Community Commitment	0.332**	< .001	Highly Significant
Community Involvement	0.404**	< .001	Highly Significant

** . Correlation is significant at the 0.01 level

Table 10 shows relationship between community tolerance and community factors. Each relationship was statistically highly significant, as indicated by p-values of less than 001. In relation to interaction engagement, a correlation of 0.348 indicates that there was a moderate positive relationship between interaction engagement and community attachment, indicating that higher engagement can be linked to stronger attachment to the community.

This implies that enhancements in interaction quality are consistently associated with increases in community attachment, commitment, and involvement. The interaction attentiveness showed the strongest correlation with community engagement factors, highlighting its critical role. Thus, when residents pay closer attention to others within their community, it appears to significantly strengthen their attachment to, commitment to, and involvement in the community. Indeed, a strong and positive correlation between the quality of interactions and the level of community engagement. When residents had a commitment most likely concerned with social engagement and integration into community life where strong emotional connection manifested among residents to a particular community, rather than a dedication to one's community (Eusébio, et al., (2018).

In conclusion a clear, positive relationship between community tolerance and community engagement. Further enhancement on how people interact can be a valuable approach to fostering stronger community ties and active participation among community members. Therefore, such correlations highlight the importance of fostering not only a tolerance on interaction enjoyment of ecotourism, but more enhancement given to both the community's involvement and attachment to ecotourism development initiatives. Balancing these aspects can contribute to the sustainable success of community-based ecotourism projects. A framework has been proposed in the study.

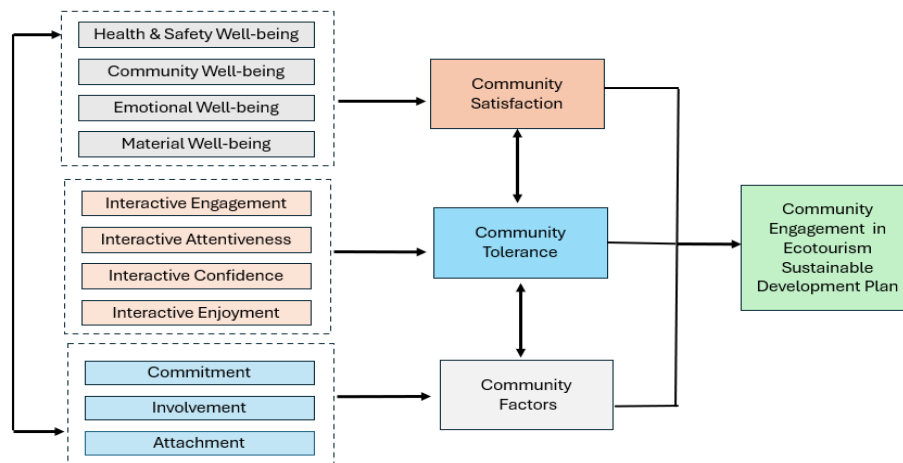


Figure 1: Ruiz' Framework for Sustainable Ecotourism Development Plan in CALABARZON region

This framework illustrates the relationship between three key variables that may influence community engagement in sustainable tourism development in CALABARZON. The connection between the satisfaction of the community with the quality of life, the tolerance of the community towards host-tourist interaction, and the factors supporting tourism ecotourism can be complex and deeply interrelated, affecting the engagement of the community in the sustainable development of ecotourism. When residents perceive progresses in these areas due to ecotourism, it intensifies satisfaction of community members, leading to address well-being. Thus, when ecotourism provides better infrastructure and services among residents involved in ecotourism in the region this may improve (health and safety) well-being; it may also foster self-esteem and a sense of cultural identity from ecotourism activities that may contribute to increase sense of pride which address (emotional well-being); and should transportation infrastructure and other services be provided among residents in ecotourism sites in the region this heightened (community well-being). Likewise, when community members had gained financially and enhanced their income due to employment or other business opportunities brought by ecotourism activities, this contributes to material well-being.

Community satisfaction appears to be a key driver of the welcoming and tolerant attitudes necessary for successful host-tourist interactions. This connection also strengthened once residents feel they are being part of the community (attachment); they abide with local and community policies (commitment); and residents may willingly share their knowledge within their community (involvement) in ecotourism activities. Thus, when community members become more involved and view themselves as active contributors and recipients, their sense of ownership and pride increases. This deep involvement may result in a greater commitment to the long-term success of ecotourism and fosters a positive, interactive relationship between the community and tourists. Essentially, the collective improvement of well-being and active participation in ecotourism activities creates a cycle where increased tolerance drives ongoing community development, which in turn supports a sustainable ecotourism industry. Understanding the connection of these variables allows policymakers to make well-informed choices that align tourism growth and tailored to the needs and interests of the community helping to improve community well-being, while upholding social balance and stability, essential for sustaining a destination's long-term growth. For tourism developers this can be basis to build a stronger brand by creating a favorable experience for both hosts and tourist, ultimately opening up more business prospects. This may be an avenue, empowering residents to be more engaged and connected leading to a greater sense of ownership and accountability for ecotourism. In general, promoting a constructive connection between the well-being of the community, tolerance, and support in ecotourism is essential for sustainable tourism growth. Such framework guarantees that the needs of both the local residents and those involved in the industry are in harmony, crucial toward developing sustainable ecotourism.

4. Conclusions and recommendations

Majority of the local community engaged in ecotourism were males, high school graduates, in their early adulthood and have been involved in the industry for only a few years. This limited engagement of locals poses an alarming trend and serious concern for a more sustainable and equitable approach to ecotourism development. The local communities at ecotourism sites prioritize the tourists' emotional well-being over material possessions which is a favorable indication that the ecotourism industry in the region has the potential to create strong and adaptable communities by emphasizing emotional well-being alongside health, safety, and community welfare. Community involvement stands out as the most significant factor in community support for ecotourism among locals in ecotourism sites. While all factors of community engagement on community satisfaction were significantly related with the quality of life, community tolerance on host-tourist interaction, and community support to tourism. A proposed comprehensive framework for developing an ecotourism sustainable plan ensuring ecotourism activity improves quality of life for local communities while fostering positive host-tourist interactions and increasing community engagement, ultimately creating a resilient and sustainable ecotourism model for the future. Meanwhile, the current study able to provide recommendations that ecotourism site management may collaborate with community-based NGOs or women's organizations for networking opportunities to build their skills, confidence, and leadership potential to engage more women, may create capacity building program to educate and train residents in various aspects of ecotourism and hospitality. Local community may be engaged in all stages of ecotourism planning and development particularly in creating rules and guidelines for tourist to ensure that ecotourism is conducted in a responsible manner as well as participation in the ongoing assessment of ecotourism activities. Future research studies may be conducted utilizing other statistical tools such as regression analysis to predict the multivariate nature of relationships for model testing and providing a more nuanced understanding of the phenomena being studied and with bigger sample size.

5. References

- Almeida-García, F.; Peláez-Fernández, M.Á.; Balbuena-Vázquez, A.; Cortés-Macias, R. (2016). Residents' perceptions of tourism development in Benalmádena (Spain). *Tourism. Management*, 54, 259–274. [Google Scholar]
- Alrwajfah, M. M., Almeida-García, F., & Cortés-Macias, R. (2019). Residents' perceptions and satisfaction toward tourism development: A case study of Petra Region, Jordan. *Sustainability*, 11(7), 1907.
- Aujero-Blanza, M. G. (2020). Roadmap of ecotourism development for emerging tourism destination in the Philippines.
- Çakar, K., & Aykol, Ş. (2023). The past of tourist behaviour in hospitality and tourism in difficult times: a systematic review of literature (1978–2020). *International Journal of Contemporary Hospitality Management*, 35(2), 630-656.
- Chen, B. X., & Qiu, Z. M. (2017). Community attitudes toward ecotourism development and environmental conservation in nature reserve: a case of Fujian Wuyishan National Nature Reserve, China. *Journal of Mountain Science*, 14, 1405-1418.
- Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approach* (5th ed.). Thousand Oaks, CA: Sage Publications
- Demirović Bajrami, D., Radosavac, A., Cimbalević, M., Tretiakova, T. N., & Syromiatnikova, Y. A. (2020). Determinants of residents' support for sustainable tourism development: Implications for rural communities. *Sustainability*, 12(22), 9438
- Eusébio, C., Vieira, A. L., & Lima, S. (2018). Place attachment, host–tourist interactions, and residents' attitudes towards tourism development: The case of Boa Vista Island in Cape Verde. *Journal of Sustainable Tourism*, 26(6), 890-909. <https://doi.org/10.1080/09669582.2018.1425695>
- Han, S., Ramkissoon, H., You, E., & Kim, M. J. (2023). Support of residents for sustainable tourism development in nature-based destinations: Applying theories of social exchange and bottom-up spillover. *Journal of Outdoor Recreation and Tourism*, 43, 100643.

- Hossen, J. (2023). Sustainable Tourism Development Through Community Engagement: a study on the role of local communities in Bangladesh.
- Gannon, M., Rasoolmanesh, S. M., & Taheri, B. (2020). Assessing the mediating role of residents' perceptions toward tourism development. *Journal of Travel Research*, 1–23. <https://doi.org/10.1177//0047287519890926>.
- Gemotea O. and Ylagan, A. (2023). Antecedents of community engagement among Island destination: basis for a cohesive community. *International Journal on Hospitality and Tourism Research*. 2(2). ISSN 2243-822X.
- Gonzalez, V. M., L. Coromina, and N. Galí. (2018). Overtourism: residents' perceptions of tourism impact as an indicator of resident social carrying capacity - case study of a Spanish heritage town. *Tourism Review*, 73(3): 277-296.
- Kumar, J., Mohanty, P., & Ragavan, N. A. (2023). Nature-based tourism and nature conservation: Exploring the elements and links. In *The Routledge Handbook of Nature Based Tourism Development* (pp. 490-504). Routledge.
- Lin, Z.; Chen, Y.; Filieri, R. Resident-tourist value co-creation: The role of residents' perceived tourism impacts and life satisfaction. *Tour. Manag.* 2017, 61, 436–442.
- Kim, K., Uysal, M., & Sirgy, M. J. (2013). How does Tourism in a Community Impact the Quality of Life of Community Residents? *Tourism Management*, 36: 527-540.
- Poudel, B., & Joshi, R. (2020). Ecotourism in Annapurna conservation area: Potential, opportunities and challenges. *Poudel, B. and Joshi*, 49-73.
- Trisanti, T., Nurhaeni, I. D. A., Mulyanto, M., & Sakuntalawati, R. D. (2022). The role of women in tourism: a systematic literature review. *KnE Social Sciences*, 545-554.
- Utama, I. B. B. R., Trimurti, C. P. (2020). "The perception toward development of agritourism destination in protected area from visitor perspective," *TEST Engineering & Management*, vol. 83, pp. 18237–18246.
- Wijaya, I. N. S., Purnamasari, W. D., & Sitaresmi, D. (2018). Defining place attachment in community base development program for urban settlement—a theoretical review. In *IOP Conference Series: Earth and Environmental Science* (Vol. 202, No. 1, p. 012052). IOP Publishing.
- Yaakop, A. Y., Bagul, A. H. B. P., & Ismail, F. (2021). Community Engagement Framework For A Sustainable Sea Turtle Conservation Marketing: A Conceptual Framework. *BIMP-EAGA Journal for Sustainable Tourism Development*, 10(1), 35-43.
- Yurur, G. (2024). Becoming temporarily protected, producing temporarily protecting places: how Syrian refugee women and children co-create place in Istanbul. *British Journal of Middle Eastern Studies*, 1-16.