# Predictors of Geotourism in Cavinti, Laguna, Philippines Underground River and Cave Complex

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Abstract - Geotourism is a new form of tourism that focuses on the landscape of a specific area and connects sustainability to all elements of the community in which people interact with the environment. This paper aims to identify the predictors of Geotourism and present a Geotourism framework that can assist the Local Government Unit and the local community for the future preservation and conservation of the Cavinti underground river and cave complex. Aside from identifying and determining predictors, the researchers' important aim was to assess community involvement and determine the potential benefits of tourism. The descriptive research and analytical technique of descriptive survey was used to determine the predictors. A verified, pilot-tested-adapted, researcher-made questionnaire was used in the data collection which was done via online survey using Microsoft forms. Data gathered was tabulated and handled appropriately with privacy and informed permission. The researchers used a reliability test, as well as weighted mean and analysis of Variance (ANOVA) while regression analysis has been used to verify the potential predictors of Geotourism by assessing community engagement and the potential advantages of tourism in the protected area of the Cavinti Underground River and Cave complex. As per the study's findings, the significant predictors include enhancing quality of life, opportunity, protecting natural heritage, and recreational activities, which accounted for 72.5 percent of the variation in sustainable impacts. After validating the predictors of Geotourism in Cavinti, the researchers proposed a predictor of Geotourism framework with its major variables: opportunity under community engagement and increasing quality of life, protecting natural heritage, and recreational under potential benefits. The proposed framework was created by the researchers for the community and the long-term sustainability of the attraction.

Keywords – cave, Geotourism, sustainable tourism

## INTRODUCTION

Tourism is a diverse sector made up of several different enterprises. The main thread is that it provides visitors with goods and services. Tourism also refers to any practice connected to the short-term travel of people to areas away from where they normally live. That's why the tourism industry is the leading sector of the world, and why the economies of many nations are primarily driven by their tourism trade. Other than that, tourism gives a wide range of benefits: containing economic profits for countries and receiving many tourists, due to the money they spend not only on their own stay in the attraction or destination but also on local businesses, especially in developed areas. It also offers a vast number of positions for people employed in existing and well-known tourist attractions.

Sustainable tourism was created, mainly by academics, in Central Europe. Sustainable tourism study has now moved to the second-generation level, with modern and diverse multidisciplinary research areas addressing significant holistic challenges and opportunities. Twenty research areas are established that need immediate attention for sustainable tourism to become the trend [1]. However, relationships between sustainable and tourism, analysis of the current complexities of approaching sustainability and tourism, and a passing review of the opportunities for tourism to lead to the transformational reforms needed to shift towards a fully sustainable community [2]. Tourism must be recognized and handled in a larger sense of sustainability. In addition, proactive approaches to the

transition to a sustainable approach to tourism and leisure are necessary if sustainability is to be assured [3].

Ecotourism is a progressive system that proposes a solution to the main issue: hunger and biodiversity loss [4]. Ecotourism assists in protecting the environment, managing biodiversity, alleviating poverty and socio-economic growth. It influences cultural, social, and economic elements of the society and the whole population. In the 1980s, at the onset of sustainable change, ecotourism arose as a way of channeling tourism revenues into conservation and growth [5]. Outdoor recreation and other facets of conventional tourism are often mixed with ecotourism; affect analyzes prefer to focus on their ecological or social consequences [6].

Geotourism is one of the newest ideas in travel study today. Over the last few decades, the rise of Geotourism has also slowly increased. The current analysis identifies the need for a broader body of scientific study focused on Geotourism sustainability (including the real impacts of Geotourism on geospatial climate, ecology, and biodiversity of Geotourism areas), stakeholders and their dynamic interrelationships, awareness of the successful management of key Geotourism challenges, and the belongings of Geotourism on the communities [7]. The integrity of geo-tourist attractions is within an important factor in geo-tourist attractions to influential and inherent values. Naturally, if the reputation of geo-tourist attractions is compromised by environmental and human problems, it would lead to lower geo-tourist attraction prices. Meanwhile, the concepts assigned to attractions like Geotourism are defined by the appropriate and personal considerations of individuals at the human level [8].

Cavinti underground river and cave complex is in Barangay Paowin Cavinti, Laguna which was opened to the public last March 30, 2013. Approximately thirty minutes to one hour was the Transportable time from Santa Cruz to Cavinti Municipal Office. However, fifteen minutes was the travel time from Cavinti Municipal Office to Brgy. Paowin. Cavinti underground river and cave complex is one of the attractions in Laguna proved that summer and holidays are more fun in the Philippines. The local government unit of the Cavinti tourism office provides assistant for the tourists. They also discussed the precautionary measures before entering the cave for the safety of climbers [9].

In pursuing this study, the researchers chose this topic to conduct community-based research on sustainability and to classify predictors of Geotourism in the Cavinti underground river cave and complex. The research would be a great aid not only for The Cavinti underground river and cave complex attraction but also for the community of Cavinti Laguna. The goal of the researchers in carrying out this study is to ensure the preservation, promotion, and protection of the attraction. The place is in the province of Laguna which made it accessible to the researchers because they are only residing within the area. Another purpose of this is to focus on Geotourism since few researchers focus on it. With that, researchers can add knowledge about Geotourism and can help the future generation.

The Cavinti underground river and cave complex is also rich in natural resources as well as natural attractions that offer activities and scenic views for daring visitors. Developing and conducting research in Cavinti underground river cave and complex will be a pleasure for the researchers, as there are many attractions within the region as well as in the Philippines that are not completely explored and created but have a very great potential to be a Geotourism destination not only here in the Philippines but in different parts of the world.

#### **OBJECTIVES OF THE STUDY**

The main purpose of this study was to: identify the Predictors of Geotourism of Cavinti underground river cave and complex, more specifically to assess the community involvement in tourism development of the Cavinti underground river and cave complex in terms of family, passion, confidence, and opportunity; determine the predictors that may affect the sustainable tourism from the community in Cavinti Underground river and cave complex in terms of social impact, cultural impact, environmental impact, economic impact, and territory impact; determine the potential benefits of tourism in the protected area of Cavinti underground river and cave complex in terms of economic opportunity, protecting natural heritage, cultural heritage, enhancing the quality of life, and recreational; confirm the possible predictors of Geotourism through the assessment of the community involvement and the potential benefits of tourism in the protected area of Cavinti underground river and cave complex; and propose a Geotourism framework for Cavinti underground river and cave complex.

## MATERIALS AND METHODS

#### **Research Design**

The descriptive analysis is the study that the researchers used. A fact-finding analysis with sufficient and detailed interpretation of results is a descriptive research tool. It stresses what currently happens, such as existing circumstances, processes, circumstances, or another occurrence. The researchers also used the analysis approach of a descriptive survey, which is a mechanism for collecting, evaluating, classifying, and tabulating data on the natural, cultural, and economic impacts of the Cavinti underground river. To collect information needed in the analysis, the survey questionnaires were prepared. Statistical methods for statistical treatment, such as weighted mean, frequency and ratio, and measurement of variance, were used to extract the data from the questionnaire. These methods and approaches for statistics were explored in detail.

## Respondent of the Study

The residents of Cavinti, Laguna and 18 years old and above were the research respondents because they were the ones informed about the topic of the research and near to the underground river and cave complex. The researchers computed the sample size of 125 using the G-power statistical power analysis, with an impact size of 0.15, an alpha error of 0.10, and a power of 0.90.

## **Research Locale**

The underground river and cave complex is located in the Philippines and it is one of the provinces of Laguna's attractions. Furthermore, it is located in the municipality of Cavinti, in Brgy. Paowin.

## **Research Instrument**

The instrument that the researchers used was a survey questionnaire. The questionnaire is divided into three sections. Part one is to assess the community involvement in the tourism development of the Cavinti underground river and cave complex. No Cronbach alpha is available. Therefore, the questionnaire even though it is adopted from Tourism Planning and Local Community Participation: Veron-Tourism Planning and Local Community Participation: Veron-Punta Cana Municipal District, Dominican Republic Punta Cana Municipal District, the Dominican Republic yet it is modified, subject to pilot test and content analysis [10]. Part two is to determine the predictors that may affect sustainable tourism from the community in Cavinti underground river and cave complex in terms of social impact, cultural, environmental, economic impact, and territory impact. The researchers adopted the two factors which are the economic impact and environmental impact. The Cronbach alpha of 0.909 for economic impact and 0.803 for environmental impact indicates the reliability of the questionnaire. The researchers adopted from, Public-Private Partnerships for Sustainable Tourism in Batangas Province, Philippines [11].

The last part of the questionnaire is about determining the possible benefits of tourism in the protected area of Cavinti underground river and cave complex in terms of; economic opportunity, protecting natural heritage, cultural heritage, enhancing the quality of life, and recreational. It is a researcher-made questionnaire and subject for pilot test and content analysis by the adviser, statistician, and field expert. The first set of the questionnaire used a 4- point Likert scale with 4 as highly participated up to 1 which is not highly participated. However, both second and third sets of questionnaires answer using 4 points Likert scale with 4 as strongly agree up to 1 which is strongly disagree.

## **Data Gathering Procedure**

The people who live in Cavinti, Laguna that are 18 years old and above were approached by the researchers. The researchers did an online survey using Microsoft forms and asked help from the SK Vice president and at the same time the President of Tourism Community in Cavinti, Laguna to share the questionnaire with the community. Other than that, the researchers also join to the different groups in Cavinti and asked permission from the admin to post for the survey in the members of the group who are living in Cavinti. The researchers also personally message the people living in Cavinti using social media platforms.

#### **Ethical considerations**

As stated, all participants wrote acknowledgment of their involvement in research through a signed note. Participants were aware of the study's aims while being told that their answers would be regarded as confidential and used for scholarly reasons and sensitive research purposes only. All the information that will be gathered is going to be tabulated and correctly handled with privacy.

#### **Data Analysis**

The researchers used a reliability test to examine the data. While weighted mean was used in the following; assessment of community involvement in tourism development of the Cavinti cave complex, predictors that may affect the sustainable tourism from the community in Cavinti, potential benefits of tourism in the protected area of Cavinti underground river and cave complex. While Analysis of Variance (ANOVA)

is a mathematical method used to compare groups based on potential variations in the overall mean of a quantitative measure.

Regression Analysis has been used to verify the potential predictors of Geotourism by assessing community engagement and the potential advantages of tourism in the protected area of the Cavinti Underground River and Cave complex.

#### **RESULTS AND DISCUSSION**

Table 1. The community involvement in tourism development of the Cavinti Underground River and Cave Complex in terms of Family

Complex in terms of Family					
Indicator	Mean	SD	V.I	Rank	
I'm encouraging other family members to visit the Cavinti Underground River and Cave Complex.	3 70	0.51	НР	1.5	
<ol><li>Me and my family members should help in developing th Cavinti Underground River and Cave Complex.</li></ol>	e 3.47	0.56	P	3	
<ol> <li>Me and my family members should help in protecting the Cavinti Underground River and Cave Complex.</li> </ol>	3.70	0.51	НР	1.5	
<ol> <li>I educate family members about the Cavinti Underground River at Cave Complex.</li> </ol>	3.38	0.75	P	4	
5. I and my family members would benefit from Cavinti Underground River at Cave Complex.	3.60	0.55	НР	2	
Composite Mean	3.57	0.57	HP		

Legend: 3.50 - 4.00 = Highly Participated (HP); 2.50 - 3.49 = Participated (P); 1.50 - 2.49 = Not Participated (NP); 1.00 - 1.49 = Highly Not Participated (HNP)

Table 1. presents the community involvement in the tourism development of the Cavinti underground river and cave complex in terms of family. Based on the table most of the respondents are highly participated to encourage, to help, and to be involved in the Cavinti underground river and cave complex development (3.57). This means regarding family members are very involved that the Cavinti Underground River needs to improve and promote. Involvement of family members spans from in decision-making participation processes to encouragement of other family members advancement. of the destination and to sustain in terms of tourism development of the Cavinti underground river and cave complex.

At the same time, two indicators have the same with highly participated which are the Family in Cavinti encouraging other family members (3.70) and by helping to protect the underground river and cave complex (3.70). By encouraging the family members and by helping each other to protect and promote the underground river and cave complex. Families are a significant and expanding market for tourism development.

From the same table, the respondents encouraging other family members to look in on the Cavinti Underground River and cave complex (3.70). Me and my family members should help in protecting the Cavinti Underground River and cave complex (3.70). And me and my family members would benefit from the development of the Cavinti underground river and cave complex (3.60). Lastly, me and my family should help in developing the Cavinti underground river and cave complex (3.47). And I educate family members about the Cavinti underground river and cave complex (3.38). Lastly, the community in Cavinti also participated to educate their family regarding the underground river and cave complex (3.38). As a part of the community, it is important to educate everyone and to participate in different activities to enhance the beauty of the underground river and cave complex.

Table 2. Assess the community involvement in tourism development of the Cavinti Underground River and Cave Complex in terms of Passion

Indicator	Mean	SD	V.I	Rank
One of my interest is to     participate in the development     of Cavinti Underground River     and Cave Complex	3.55	0.73	НР	1.5
I personally participated in the decision-making process regarding tourism development.	3.18	0.89	P	3
3. I am free to decide whether I'll participate in the development of Cavinti Underground River and Cave Complex	3.55	0.59	НР	1.5
<ol> <li>I like to operate a business in the Cavinti Underground River and Cave complex.</li> </ol>	3.23	0.84	P	2
Composite Mean	3.38	0.57	P	

Legend: 3.50 - 4.00 = Highly Participated (HP); 2.50 - 3.49 = Participated (P); 1.50 - 2.49 = Not Participated (NP); 1.00 - 1.49 = Highly Not Participated (HNP)

It can be gleaned from Table 2 that most of the respondents participated in tourism development in Cavinti underground river and cave complex through

passion (3.38). This means that the community in Cavinti is really interested in the attraction on their place.

Meanwhile, two indicators got the same mean which the respondents highly participated by their interest in developing Cavinti underground river and cave complex and they are free to decide whether they will participate in the development of Cavinti underground river and cave complex (3.55). This means that the passion and decision of the community are important in how they participate in the development of Cavinti.

From the same table, one of the interests of the community is to participate in the development of the Cavinti underground River and cave complex and they are free to decide whether they will participate in the development of the Cavinti Underground River and Cave Complex (3.55). They want to operate the business in Cavinti underground river and cave complex (3.23) which also ranked second among other indicators. The last sign is that they were directly involved in the tourist development decision-making process. (3.18).

Lastly, the respondents also participated in personally becoming a part of the tourist development decision-making process in Cavinti underground river and cave complex (3.18) which rank the lowest among other indicators. People in the community have different passions or interest and most of our respondents are 18-25 years of age and the youth in the community are involving their self in terms of tourism so that the community was engaged process on a personal level.

Table 3. presents the community involvement in tourism development of the Cavinti underground river and cave complex in terms of confidence. All the indicator and most of the respondents they are highly participated (3.59). In a one community with an attraction need to have improvement and by boosting the confidence of the community, by helping each other to have tourism growth they need to enhance as well to maintain the beauty of the underground river and cave complex to be well-known.

Meanwhile, the respondents are highly participated in terms of by helping to promote and to be develop attractions and well-known (3.70). To boost the confidence of an attractions, it is very important to have community involvement specially the confidence of the community in Cavinti, they are believed that the underground river and cave complex have big potential to be well-known attractions.

Table 3. Assess the community involvement in tourism development of the Cavinti Underground River and Cave Complex in terms of Confidence

Indicator	Mean	SD	V.I	Rank
I will help to retain rules in terms of improvement of Cavinti underground river and cave complex.	3.65	0.63	НР	2
2. I want to be part of the tourism growth of the Cavinti underground river and cave complex to measure my own capabilities.	3.53	0.63	НР	3
3. I'm helping to determine the place's own capacity enhancement will demonstrate more confidence for the future itself.	3.50	0.68	НР	4
4. I will help to promote the Cavinti Underground river and cave complex to be develop attractions and well-known.	3.70	0.46	НР	1
Composite Mean	3.59	0.47	HP	

Legend: 3.50 – 4.00 = Highly Participated (HP); 2.50 – 3.49 = Participated (P); 1.50 – 2.49 = Not Participated (NP); 1.00 – 1.49 = Highly Not Participated (HNP)

Based on the table, the respondents willing to help to promote the Cavinti underground river and cave complex to be develop attractions and well-known (3.70). Also, respondents willing help to retain the rules in terms of improvement of Cavinti underground river and cave complex (3.65). And the respondents want to be part of the tourism growth of the Cavinti underground river and cave complex to measure their own capabilities (3.53). Lastly, they are helping to determine the place's own capacity enhancement will demonstrate more confidence for the future itself (3.50). Lastly, the community in Cavinti are helping to determine the own capacity of the underground river and cave complex to enhance the confidence of the attraction as well as the community (3.50). All attractions have their own capacity the underground river and cave complex is a one-of-a-kind tourist attraction. This attraction is need to be recognized with the help of the community.

It can be gleaned from table 4 that most of the respondents highly participated in tourism development in Cavinti underground river and cave complex through opportunity (3.74).

Table 4. The community involvement in tourism development of the Cavinti Underground River and Cave

**Complex in terms of Opportunity** 

Indicator	Mean	SD	V.I	Rank
1. Local communities must				
be informed of the				
opportunities provided by	3.73	0.48	HP	4
Cavinti underground river				
and cave complex.				
2. I believed that the elected				
officials should take	3.74	0.49	HP	2
decisions on the growth of	3.74	0.47	111	2
tourism.				
3. Tourism provides many				
worthwhile employment	3.74	0.46	HP	2
opportunities.				
4. Tourism generates income	3.74	0.44	HP	2
Composite Mean	3.74	0.32	HP	

Legend: 3.50 - 4.00 = Highly Participated (HP); 2.50 - 3.49 = Participated (P); 1.50 - 2.49 = Not Participated (NP); 1.00 - 1.49 = Highly Not Participated (HNP)

This indicates that most responders are involved in the tourist development of the Cavinti subterranean river cave and complex because of a chance encounter. Meanwhile, three indicators got the same mean the first one is they believed that the elected officials should take decisions on the growth of tourism in Cavinti underground river and cave complex, second one is tourism in Cavinti underground river and cave complex provides many worthwhile employment opportunities and lastly tourism in Cavinti underground river and cave complex generates income in the community (3.74) ranked as the first among other indicators. This means that in terms of opportunity, the tourism in Cavinti should provide employment among the community for their economic growth.

Lastly, the respondents also highly participated by being informed about the opportunities provided by the Cavinti underground river and cave complex (3.73) also got the lowest among other indicators but still got the highest mean. This means that in terms of opportunity, the respondents really participated into it and since they are living in that place, they must be the one who will be the informed first when there are opportunities available in Cavinti underground river and cave complex.

Table 5, most of the participants highly participated in the community involvement in tourism development of the Cavinti underground river and cave complex (3.57). Performing community service allows encourages you to get more active in the community where you live. In terms of Family, Passion, and Community Engagement, community involvement

broadens your horizons by aiding you in understanding the needs of the society and individuals you are aiming to serve through the project on which you are volunteering, Confidence, and Opportunity.

Table 5. Summary table of the community involvement in tourism development of the Cavinti Underground

Variables	WM	SD	VI	Rank
Family	3.57	0.40	HP	3
Passion	3.38	0.57	P	4
Confidence	3.59	0.47	HP	2
Opportunity	3.74	0.32	HP	1
Composite Mean	3.57		HP	

## River and Cave Complex.

Legend: 3.50-4.00 = Highly Participated (HP); 2.50-3.49 = Participated (P); 1.50-2.49 = Not Participated (NP); 1.00-1.49 = Highly Not Participated (HNP)

Meanwhile, most of the respondents also highly participated in assessing the community involvement in terms of opportunity (3.74) and ranked as the highest among all other variables. It is because the community sees the potential of the Cavinti Underground River and cave complex have a place as a tourist destination.

Lastly, respondents also participated in the community involvement in terms of passion or interest (3.38) which rank as the lowest among all other variables. Some people in the Cavinti don't have the passion for this kind of activities that the Cavinti Underground River and complex have. But this is a good opportunity to make it a passion to help the community to promote this destination.

Table 6. The predictors that may affect the sustainable tourism from the community in Cavinti Underground River and Cave Complex in terms of Social Impact

Indicator	Mean	SD	V.I	Rank
1. The relationship between				
tourists and local				
communities in tourist	3.76	0.43	SA	1
destinations is a social				
activity.				
2. The promotion of the				
attraction creates income	3.68	0.49	SA	3
for the local communities.				
3. Social impacts of tourism				
are vital to ensuring the	3.71	0.45	SA	2
sustainable management				
of the tourism industry				
4. Tourism can have				
negative impacts on	3.45	0.75	A	4
communities.				
Composite Mean	3.65	0.35	SA	

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 6, shows that the respondents strongly agree that social impact is one of the predictors that may affect sustainable tourism from the community in the Cavinti underground river and cave complex (3.65). It means that the social impact can help for the sustainability and development of the Cavinti underground river and cave complex. Social Activity is very important especially when they have cooperation and unity to develop the attraction.

Meanwhile, most of the respondents strongly agree in tourism locations, the interaction between tourists and local populations is a social activity (3.76), which ranked the first among other indicators. This means that the interpersonal cooperation of both tourist and local communities is important for the growth of the destination as well as for the growth of the economy of the place. According to the same table, the marketing of the Cavinti subterranean river and cave complex generates consequences of tourism in the Cavinti subterranean river and cave complex are also critical to the tourist industry's long-term sustainability (3.71).

Lastly, the respondents also agree that tourism in Cavinti underground river and cave complex can have negative impacts on communities (3.45) which rank the lowest among other indicators. The respondents are aware that it can have negative impacts on the community if the tourist in the specific destination is not responsible for the cleanliness and taking care of the natural resources in the attraction.

Table 7 shows that the respondents strongly agree that the cultural impact is one of the predictors that may affect the sustainable tourism from the community in Cavinti underground river and cave complex (3.67). It means that cultural impact helps the city to be sustained and developed its beauty. Tourist must know what the culture of the destination is so that they are aware on how to properly communicate and get along to the city.

It shown on the table that the respondents strongly agree that tourism provide new opportunities and source of revenues (3.70) which got the highest rank among all indicators. This means that the tourism really helps the community interms of the opportunities and revenues that the Cavinti underground river cave and complex provided. The community of Cavinti are also the very first one who get the opportunity to work when there is a hiring in the tourism attraction.

Three indicators on the table shows the same result of mean. The first is that poor population engagement in cultural and tourist activities is a major impediment to the expansion of cultural tourism. (3.66).

Table 7. The predictors that may affect the sustainable tourism from the community in Cavinti Underground River and Cave Complex in terms of Cultural Impact

Indicator	Mean	SD	V.I	Rank
1. The low participation of the population in cultural and				
tourist activities is a crucial constraint on the growth of cultural tourism	3.66	0.61	SA	3
2. The tourist developers need				
to consider the behavior of	3.66	0.49	SA	3
tourists, space and tourism				
services in order to set up sustainable cultural tourism				
destinations.				
3. Tourist can learn the history				
of Cavinti underground river	3.66	0.51	SA	3
and cave complex and people in Cavinti's way of life				
because of cultural impact.				
4. Tourism provides new				
opportunities and source of	3.70	0.46	SA	1
revenues.				
5. When I visit the Cavinti				
underground river cave and				
complex, I absorb not only	3.65	0.51	SA	5
spaces, but also the picture				
of a city / destination.				
Composite Mean	3.67	0.35	$\mathbf{S}\mathbf{A}$	

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)

Next, the tourist developers need to consider the behavior of tourists, space and tourism services in order to set up sustainable cultural tourism destinations (3.66). Tourist can learn the history of Cavinti underground river and cave complex and people in Cavinti's way of life because of cultural impact (3.66).

Lastly, the respondents also strongly agree that when they visited the Cavinti underground river cave and complex, they absorb not only spaces, but also the picture of a city / destination (3.65). It is the lowest among other indicators but still got the highest mean. The feeling of the tourist that visited to the beauty of Cavinti underground river and cave complex are not similar, so that they have their own opinion and experiences.

Table 8 expresses that all the respondents strongly agree that environmental impact is one of the predictors that may affect the sustainable tourism from the community in Cavinti underground river and cave complex (3.69). This means that the impact of the environment on the community especially the Cavinti underground river and cave complex are very crucial because it helps its attraction to enhance its beauty and gives fresh and clean air to the community.

Table 8. The predictors that may affect the sustainable tourism from the community in Cavinti Underground River and Cave Complex in terms of Environmental Impact

Indicator	Mean	SD	V.I	Rank
1. Tourist attraction/ facilities				
will improve the				
community's appearance.	3.78	0.44	SA	1
2. Awareness of				
environmental protection				
laws will be strengthening	3.70	0.48	SA	2.5
among the locals.				
3. Improvements in Cavinti				
underground river and cave				
complex may affect	3.69	0.53	SA	3
significant natural features,				
archaeological property,				
and religious sites.				
4. There will be migration of				
new residents that can cause	3.58	0.60	SA	4
overcrowding in the area.				
5. Stricter regulations/laws				
will be formulated and				
implemented to protect our	3.70	0.49	SA	2.5
environment.				
Composite Mean	3.69	0.33	SA	

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)

Meanwhile, the respondents strongly agree that tourist attraction/facilities will improve the community's appearance (3.78) ranked as first among all other indicators. The respondents believed that the tourist spot and attraction will improve the beauty of their place because it caught the attention of the people and because of that, many tourists will visit their attractions and their place will have a chance to be well known in different parts of the world.

Stated on the table that two indicators got the same mean, which is the awareness of environmental protection laws will be strengthened among the locals and strict regulations/laws will be formulated and implemented to protect our environment (3.70). Followed by the improvements in Cavinti underground river and cave complex may affect significant natural features, archaeological property, and religious sites (3.69). The respondents also strongly agree with the last indicator but it got the lowest mean which is there will be migration of new residents that can cause overcrowding in the area (3.58). It means that the respondents somehow worrying about the migration of new residents because their area will become overcrowded.

The table 9 shows that the respondents strongly agree that economic impact is one of the predictors that may affect the sustainable tourism in Cavinti underground river and cave complex (3.70).

Table 9. The predictors that may affect the sustainable tourism from the community in Cavinti Underground River and Cave Complex in terms of Economic Impact

Indicator	Mean	SD	V.I	Rank
1. There will be more vital				
and active economy				
brought by tourism	3.77	0.42	SA	5
development.				
2. Tourism will help balance				
the economy in our area.	3.74	0.46	SA	3
3. Tourism infrastructure will				
provide the kinds of job	3.66	0.48	SA	2
people need.				
4. Tourism will provide new				
tourism services and	3.75	0.43	SA	4
products.				
5. Cost of living will increase	3.61	0.54	SA	1
because of tourism.				
Composite Mean	3.70	0.32	SA	

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)

This means that the respondents have an idea on how economic impact will help the community and its place. From the same table, respondents strongly agree that there will be more vital and active economy brought by tourism development (3.77) ranked first among the given indicators under economic impact. Tourism attraction like Cavinti underground river and cave complex can give its place a growth in economy if it will be developed and sustain by the community and the people who will visit the place. Another thing that can benefit the community if it will be develop is the opportunity that they will get.

It is also indicated on the table that the tourism in Cavinti underground river and cave complex will provide new tourism services and products to the people in the community (3.75). Followed by this, tourism in Cavinti underground river and cave complex will help to balance the economy in the area (3.74). The next one is the tourism infrastructure in Cavinti underground river and cave complex will provide the kinds of job that the people in Cavinti needed (3.66).

Lastly, the respondents strongly agree that the cost of living in Cavinti will increase because of tourism (3.61) ranked as the lowest among other indicators This means that the people who are not really living and just renting in the place will be affected because the cost of living will increase because of tourism. This is somehow like when the place has lots of establishments and totally developed and all you need is there and you can access all of the things you need, the cost of living in the place will increase.

Table 10. The predictors that may affect the sustainable tourism from the community in Cavinti Underground River and Cave Complex in terms of Territory Impact

	Indicator	Mean	SD	V.I	Rank
1.	The Geotourism takes a view of the territory's natural resources as a way of encouraging specialized, educational and sustainable tourism.	3.74	0.44	SA	1
2.	The territory is distinguished by its unusual geological diversity.	3.55	0.56	SA	5
3.	Tourism competitiveness depends on the sustainable use of territorial assets.	3.65	0.53	SA	2
4.	The local climate and territory location can affect the people in the community.	3.59	0.54	SA	3
5.	Geotourism has the ability to function as a strategy to conserve the biophysical and cultural characteristics	3.57	0.53	SA	4
	of the territory.  Composite Mean	3.62	0.38	SA	

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 10 shows that the respondents strongly agree that territory impact is one of the predictors that may affect sustainable tourism in the Cavinti underground river and cave complex (3.62). It means that the territory helps to sustain the tourism attraction within the place by its natural resources and its beauty. When we say territory, it is owned and cannot be replaced by anyone, but it can be developed by sustaining it, with the help of the community and the government sectors.

The respondents strongly agree that the Geotourism takes a view of the territory's natural resources as a way of encouraging specialized, educational, and sustainable tourism (3.74) which ranked as the first among other indicators. This means that the Geotourism concerned is to encourage every student to use this for educational purposes to sustain the place and to be accessible to all. Sustainable tourism like Cavinti underground river and cave complex can offer different satisfaction to the people who will visit the place.

The tourism in Cavinti underground river and cave complex competitiveness depends on the sustainable use of territorial assets (3.65) Followed by the local climate and territory location can affect the people in the community in Cavinti underground river and cave complex (3.59). Next is the Geotourism can function as

a strategy to conserve the biophysical and cultural characteristics of the territory in Cavinti underground river and cave complex.

Concurrently, the respondents also strongly agree that the territory is distinguished by its unusual geological diversity (3.55) which rank as the lowest among all other indicators but still got the high result. It means that territories have different characteristics like on different attractions here in the Philippines, some of the attractions have their uniqueness of the territory. The impact of the territory gives a positive effect to its traction because of its natural beauty.

Table 11. Summary table of the predictors that may affect the sustainable tourism from the community in Cavinti Underground River and Cave Complex

Variables	WM	SD	VI	Rank
Social Impact	3.65	0.35	SA	4
Cultural	3.67	0.35	SA	3
Environmental	3.69	0.33	SA	2
Economic Impact	3.70	0.32	SA	1
Territory Impact	3.62	0.38	SA	5
Composite Mean	3.66		SA	

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 11 shows that most of the respondents Strongly agree that these 5 variables are the predictors that may affect sustainable tourism in Cavinti (3.66). On the other side, it can contribute to the environmental preservation and protection of the river underground and cave complex of Cavinti. It is a way to raise awareness of the environment and a mechanism to fund and increase the economic significance of the protection of natural areas.

From the same table, respondents also strongly agree that economic impact is one of the predictors that may affect the sustainability in Cavinti (3.70) which rank as the highest among all other variables. Cavinti Underground River and cave complex have grown to be an important industry with an impact on the growth of the Cavinti economy. The major advantages of this tourist destination are the generating of cash and the development of jobs. It is the most important source of income in Cavinti.

Lastly, Respondents strongly agree that one of the predictors that may affect sustainable tourism in Cavinti is the territory impact (3.62) and ranked as the lowest among all other variables. Territory impact in Cavinti signifies that the territory's natural resources and natural beauty contribute to sustaining the area's tourism attractiveness. When we say territory, we mean

it is owned and cannot be replaced, but it may be developed by sustaining it with the assistance of the community and government sectors.

Table 12 The potential benefits of tourism in protected area of Cavinti Underground River and Cave Complex in terms of Economic Opportunity

Indicator	Mean	SD	V.I	Rank
1. Economic growth helps to				
sustain and expand	3.72	0.47	SA	1.5
employment within the				
Cavinti community.				
2. Economic growth is a				
system of programs and	3.66	0.47	SA	3
services intended to				
improve economy in				
Cavinti.				
3. Tourism has become a				
significant sector and has	3.72	0.45	SA	1.5
an influence on the growth				
of the Cavinti underground				
river and cave complex.				
Composite Mean	3.70	0.37	SA	

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 12 shows to determine the potential benefits of tourism in the Cavinti Underground River and Cave Complex are protected area. The respondents strongly agree that the cave is a secured area in terms of economic opportunity (3.70). In a place with different attraction have typically become areas where people would know economic opportunities developing talents, seeking employment, and launching new businesses. Meanwhile, the respondents strongly agree that the economic growth in Cavinti is really big help to sustain and expand the employment in the community (3.72).

Also, the respondents strongly agree that tourism has a significant sector and has an influence on the growth of the Cavinti underground river and cave complex (3.72). Economic growth is a basic requirement for growing internal support and it is the outcome of both increases in community and increases in productivity growth. As a result, the rate of economic growth determines the absolute limit under Cavinti underground river, and cave productivity can rise.

Economic growth helps to sustain and expand employment within the Cavinti community (3.72). and tourism has become a significant sector and influences the growth of the Cavinti underground river and cave complex (3.72). Lastly by presenting environmental and cultural history, local environments enrich the lives of the people that live and work within them. And

lastly, economic growth is a system intended to improve the economy in Cavinti (3.66).

Lastly, the respondents still strongly agree that the economic growth in Cavinti is a process of services and programs aimed at boosting the economy (3.66). By boosting and improving the Cavinti Underground River and cave complex it will help the community to enhance and to maintain economic growth.

Table 13. The potential benefits of tourism in protected area of Cavinti Underground River and Cave Complex in terms of Protecting Natural Heritage

Indicator	Mean	SD	V.I	Rank
1.By representing environmental and cultural history, local environments enrich the lives of the	3.74	0.44	SA	1
people that live and work within them.  2. The strong natural heritage conservation initiatives should begin with an inventory of this geosite.  3. Natural heritage should be preserved by the LGU and by the help of the community of Cavinti for the future generations.	3.58	0.54	SA SA	3
Composite Mean	3.66	0.38	SA	

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 13 show that the Cavinti underground river and cave complex, which is "the respondents strongly agreed that have big potential benefits in terms of protecting natural heritage (3.66). Perhaps by protecting the natural heritage it will reflect and shapes the traditions, beliefs, and desires of the community, thus establishing the national identity of Cavinti. Also like this natural heritage are extremely significant because they have a sense of belonging and stability in a fast-changing environment for future generations. Every natural heritage has hugely important benefits for the community like Cavinti because they have this underground river and cave complex.

Meanwhile, the respondents also strongly agreed that the local environments will enrich the lives of the community in Cavinti in terms of work through the help of the environmental and cultural history that they have (3.74). People are inextricably tied to the landscape of the environment in which our everyday lives unfold. We are dependent on nature for vital, life-sustaining resources clean air and water, a healthy environment. It also helps the community to stand out and be recognized not only in the place but also in all aspects.

From the same table, the respondents strongly agreed by representing environmental and cultural history, local environments enrich the lives of the people that live and work within them (3.74). and Natural heritage should be preserved by the LGU and by the help of the community of Cavinti for future generations (3.66). lastly, the strong natural heritage conservation initiatives should begin with an inventory of this geosite (3.58).

Additionally, the respondents are also strongly agreed that the strong natural heritage conservation initiatives should begin with an inventory of this geosite (3.58). The respondents are believed that the strong natural heritage must begin in the inventory of geosite. Also, the natural heritage has relationships between the populations to determine the potential on it on the tourism sector.

Table 14. The potential benefits of tourism in protected area of Cavinti Underground River and Cave Complex in terms of Cultural Heritage

Indicator	Mean	SD	V.I	Rank
1. The cultural heritage help shape the beliefs, values and perspectives of individual residents living around Cavinti Underground River and Cave Complex.	3.73	0.45	SA	2
2. With the help of tourism, the cultural heritages in Cavinti Laguna specifically the underground river and cave are able to be more known and patronize.	3.67	0.47	SA	3
3. Cultural heritage is a more powerful tool that can help for the for economic growth in Cavinti underground river	275	0.42	C A	1
and cave complex.  Composite Mean	3.75 3.72	0.43 <b>0.34</b>	SA SA	1

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 14. show the respondents are strongly agreed that the cultural heritage have potential benefits of tourism in protected area in Cavinti cave (3.72). In terms of cultural heritage, the Cavinti underground river and cave complex it is a big potential in terms of natural environmental, because the cultural can be distinguished in three different way. Cultural Heritage is an example of the way of life that a society has built and transferred on from generation to generation.

In the Cavinti underground river and cave complex, cultural heritage is a more effective tool for economic growth (3.75). Cultural heritage makes us realize our

cultural diversity, and its comprehension fosters shared understanding and enhanced interaction between various communities. Also, Cultural heritage is important to protecting the cave. It provides to the communities with an unbreakable bond for the economic growth and to those cultural values, principles, practices, and beliefs that encourage them to protect the cave.

From the same table, Cultural heritage is a more powerful tool that can help for the for economic growth in Cavinti underground river and cave complex (3.75). The cultural heritage help shape the beliefs, values and perspectives of individual residents living around Cavinti Underground River and Cave Complex (3.73). With the help of tourism, the cultural heritages in Cavinti Laguna specifically the underground river and cave can be more known and patronize (3.67).

Lastly, the respondents strongly agreed the Cavinti Laguna's cultural heritages, especially the underground river and cave, will become more well-known and visited. (3.67). By the help of the community of Cavinti the underground river and cave complex will become well-known tourist spot. A lot of tourists will go and visit the underground river and cave complex and because of their involvement with that activity they can use the social media to promote and to encourage more tourist to visit this beautiful and natural environmental cultural heritage.

Table 15. The potential benefits of tourism in protected area of Cavinti Underground River and Cave Complex in terms of Enhancing Quality of Life

Indicator	Mean	SD	V.I	Rank
1. The quality-of-Life Balance				
measures things like				
fulfilment, contribution,				
commitment, and work-life	3.74	0.44	SA	1
balance, in terms of one's				
personal perception in				
Cavinti.				
2. For each people in Cavinti,				
the meaning of quality of life				
is very personal and needs				
special attention when	3.60	0.49	SA	3
providing health.				
3. Many citizens in Cavinti may				
see their lives as good if they	3.71	0.51	SA	2
have a sense of inner peace.				
Composite Mean	3.68	0.35	SA	

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 15 shows that the respondents strongly agreed that the potential benefits of tourism in the Cavinti Underground River and Cave Complex

protected area in terms of enhancing the quality of life (3.68). By promoting the underground river and cave complex in Cavinti, it will help the community to enhance their life. The enhancing quality of life is a fundamental ambition that propels individuals and societies into the future of the cave.

Meanwhile, the respondents strongly agreed in Cavinti, the quality-of-Life Equilibrium test like satisfaction, contribution, dedication, and work-life balance depending on one's understanding (3.74). The quality of life in Cavinti will become better because of the help of the tourism income of the community. It also helps the residents to have their work in place. They can souvenir store, or to be a tourist guide and many more good opportunities of the better quality of life.

Overall column evaluates factors like fulfilment, contribution, dedication, and work-life balance in terms of one's viewpoint in Cavinti (3.74). Many Cavinti residents may consider their life to be excellent if they have a sense of inner calm (3.71). The notion of quality of life is extremely personal for each person in Cavinti and requires special consideration when delivering health care (3.60). Quality of life is a highly subjective measurement of satisfaction that influences many financial decisions. Financial stability, work fulfilment, family life, fitness, and safety are all factors that contribute to one's quality of life.

Table 16. The potential benefits of tourism in protected area of Cavinti Underground River and Cave Complex in terms of Recreational

111	Indicator	Mean	SD	V.I	Rank
1.	Environmental attribute expectations will help guide tourism management in underground river and cave complex.	3.78	0.42	SA	1
2.	The government in Cavinti support of protected and recreational areas,				
	recreational benefit, and contribution to the economy of natural areas can be used.	3.67	0.47	SA	3
3.	A better understanding of community needs in respect to recreation and leisure activities in underground river and cave complex.				
		3.70	0.50	SA	2
	Composite Mean	3.71	0.36	SA	

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 16 show that the respondents strongly agreed with the recreational benefits of tourism in the protected area of Cavinti Underground River and Cave Complex (3.71). Effectively controlled protected areas are a vital tool for protecting the Cavinti underground river and cave complex, preserving valuable ecosystems, creating resistance to climate change, maintaining water quality, conserving natural resources, and driving economic success.

Moreover, respondents strongly agreed that the expectations for environmental attributes would help tourism management in the underground river and cave complex (3.78). The respondents believed that the environment is a very big help to the tourism management of the underground river and cave complex. It is also nice that the respondents are believed in the recreational actives of the underground river and cave complex.

For the overall column, environmental attribute expectations will help guide tourism management in underground rivers and cave complexes (3.78). A better understanding of community needs in respect to recreation and leisure activities in underground river and cave complex (3.70). The government in Cavinti's support of protected and recreational areas, recreational benefit, and contribution to the economy of natural areas can be used (3.67).

Additionally, the government in Cavinti support of protected and recreational areas, recreational benefits, and contribution to the economy of natural areas can be used (3.67). An attraction development must have a vital rule with the government. The support of the government will make the Cavinti underground river and cave complex to maintaining the beauty and to know the best recreational activities for this kind of attraction.

Table 17. The summary table of the potential benefits of tourism in protected area of Cavinti Underground River and Cave Complex

Variables	CM	SD	VI	Rank
Economic Opportunity	3.70	0.37	SA	3
Protecting Natural Heritage	3.66	0.38	SA	5
Cultural Heritage	3.72	0.34	SA	1
Enhancing Quality of Life	3.68	0.35	SA	4
Recreational	3.71	0.36	SA	2
Overall Composite Mean	3.69		SA	

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 17 shows that most of the respondents strongly agreed that the five variables are the potential

benefits of tourism in the protected area of the Cavinti underground river and cave complex (3.69) encourages the growth of numerous other economic areas. Other advantages of tourism include the strengthening of a country's balance of payments, developing new job opportunities, and enhancing cultural legacy.

From the same table, most of the respondents strongly agreed that cultural heritage is one of the potential benefits of tourism (3.72) and ranked as the highest among all variables. In terms of cultural heritage, the Cavinti underground river and cave

complex have a large potential in terms of the natural environment because cultures may be separated in three ways. Cultural heritage is an example of a way of life that civilization has created and passed down from generation to generation.

Lastly, respondents strongly agree that protecting natural heritage is also one of the potential benefits of tourism in the protected area of Cavinti (3.66) and ranked as the lowest among all variables. Also, protecting the natural heritage will reflect and influence the community's customs, beliefs, and goals. Therefore, developing Cavinti's national identity. Natural legacy, like this, is incredibly important because it provides a feeling of belonging and stability in a rapidly changing world for future generations. Every natural asset has immensely vital advantages for the community, such as Cavinti's subterranean river and cave complex.

The proposed framework of significant predictors of Geotourism in the Cavinti underground river and cave complex was made by the researchers for the community and sustainable development of the attraction.

On the framework, various colors are shown so that the viewer can easily determine where the variable belongs. The Geotourism located in the center represents the Cavinti underground river and cave complex while the two arrows pointed at it were the major variables which are the community involvement and potential benefits. The opportunity is under the community involvement while the enhancing quality of life, Recreational and Protecting Natural heritage is under the potential benefits.

However, two arrows differ from left to right, enhancing the quality of life and protecting natural heritage, because they are focusing on the growth and sustainability of both the community and its attractions, and by protecting natural heritage, they would boost the quality of life of the people living in Cavinti underground river and cave complex.

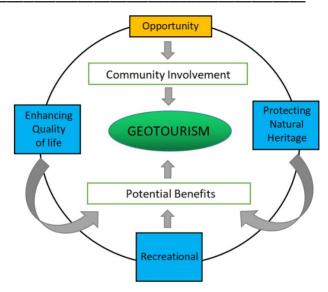


Figure 1. Geotourism Framework for Cavinti Underground River and Cave Complex

#### CONCLUSION AND RECOMMENDATION

The researchers assessed the community involvement in tourism development of the Cavinti underground river and cave complex in terms of family, passion, confidence and opportunity. Wherein respondents concluded that they are highly participated to almost all of the variables except in terms of passion which got the result that they only participated on it. But on its overall result in assessing the community, they are participating in the tourism development of Cavinti underground river and cave complex. In determining the predictors, the respondents concluded that they strongly agree that the five impacts which are social, cultural, environmental, economic and territory impact are the predictors that may affect the sustainable tourism from the community in Cavinti underground river and cave complex. Almost all the predictors got the highest result which means that all of the impact can be positive or negative but most of it, give positive impact to the community and the attraction itself. The respondents strongly agree on all the possible benefits of tourism in the protected area of the Cavinti subterranean river and cave complex in terms of economic opportunity, protection of natural and cultural heritage, enhancement of quality of life, and recreational opportunities. In determining all of this, the respondents concluded that all of the variables have potential benefits to the protected area of the attraction especially the cultural heritage that got the highest result among all of the variables given. It

concluded that the significant predictors are enhancing quality of life, opportunity, protecting natural heritage and recreational with 72.5% of the variation in sustainable impacts is attributed to these significant predictors. The primary or an initial Geotourism framework was created from the results of possible predictors of Geotourism thru the assessment of the local people involvement and the possible benefits of tourism in protected area for underground river and cave complex in Cavinti is proposed by the researchers.

The community in Cavinti should be involve more in tourism development of underground river and cave complex, so that the economy of the place will grow and it be well known in different parts of the world. It also needs to become their passion or interest to visit their own attraction first, before visiting others because it is the best thing to do as concern and good resident of the place. Cavinti underground river and cave complex should continue to determine their predictors that will help the community to have sustainable tourism. Researchers can also help to support the attraction by presenting the framework with the assistance of local government units, so that the community can maintain the attraction's appearance and cleanliness. People in the community and the government in Cavinti should not stop determining the potential benefits of tourism in the protected area of Cavinti, especially how it can market itself and become a well-known destination. It will also a big help if the LGU will conduct a proper planning and limit the visitors in the attraction so that it will not be damage by overcrowding. The proposed primary framework of Geotourism in Cavinti may be used by the upcoming researchers and the community to sustain and develop its attraction. Future researchers may conduct related studies and include variables not included in this study.

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