



# Communities' support for tourism development and environmental conservation programmes in Ipo Watershed, Philippines

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## Abstract

This paper recognizes tourism's potential in balancing economic development of communities in the peripheries of watersheds with nature conservation. It was conducted in Ipo watershed which has 6,600 hectares of forest and provides fresh water to more than 13 million people in Metro Manila, Philippines. The objectives of the study are to determine the community's perception of tourism and identify factors affecting their support for tourism development and environment conservation. Survey questionnaires and face to face interviews were conducted to 102 respondents. To determine the relationship of different variables, Structural Equation Modelling was used. The study revealed that the communities have positive perception on tourism and in using the Motivation, Opportunity Ability model the study revealed that motivation and ability had significant effect with support for tourism development and environment conservation. The study contributes to the literature on tourism in protected area and can be used by the national and local government in formulating strategies in achieving sustainable protected area management.

**Keywords:** Community's perception, Ipo Watershed, motivation opportunity and ability model, support for tourism.

## Introduction

### Protected Areas

Aichi Target 11 states that by 2020 will have at least 17 percent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services. These are conserved through being effectively and equitably managed, are ecologically representative and well-connected systems of protected areas and other effective area-based conservation procedures, and integrated into the wider landscapes and seascapes (CBD International, 2017). In the April 2016 Protected Planet Report, the protected area coverage has totalled to 217,155 sq km from 244 countries and territories using the World Database of Protected Area (WDPA). Two hundred two thousand four hundred sixty-seven (202,467) have been identified as Terrestrial Protected Areas and 14,688 as Marine Protected Areas.

The Philippines has been considered as one of the "Mega-diverse" country's for hosting the most number of species. It asserts the highest levels of diversity and endemism of life forms and some of the most unique natural homes for species in this sphere. The Philippines has identified 228 Key Biodiversity Areas (KBA) covering 7.6 million hectares, including 128 terrestrial and 100 marine sites in the country. The KBAs are habitats of 209 worldwide threatened species, 419 endemic species of amphibians, reptiles, birds, mammals, and freshwater fishes, and 62 congregatory birds species. As a response to the threatening biodiversity degradation of the Philippines, the National Integrated Protected Areas System (NIPAS) was enacted in 1992. Throughout the history of habitual practices and formal legislated norms for guarding the Philippine natural resources, including twenty years of executing NIPAS, the country has been able to identify 240 Protected Areas covering 5.4 million hectares of land and sea, or about 13.6% of the total land area of the country and only



0.64% of the enormous marine area. Furthermore, 26 percent of the country's remaining forests are found in protected areas (Biodiversity Management Bureau, 2015).

### **Tourism's Role in sustaining Protected Areas**

Park Tourism can bring mass benefits to environment preservation, communities, economies and human experience. The world's protected area receives 8 billion visitations per annum; and the majority or 80% are in Europe and North America. These visits generate approximately US\$600M per year expenditures of tourist in the host country (Bamford et. al. 2015).

### **Rural Tourism in the Philippines**

Rural Tourism is viewed as an opportunity to empower local communities, particularly in emerging countries, to develop a more appropriate grassroots form of sustainable tourism than mass tourism and to add to local economic development and poverty reduction. Rural tourism is being practiced informally in some mountains including Protected Areas (PA) as alternative income sources for community members in the Philippines. Half or 54.7% of the Filipinos live in rural communities among the components of rural population are indigenous people, landless farmers, fisher folks and the mega poor.

### **Statement of the Problem**

Communities in the peripheries of Protected Area such as Ipo watershed play a vital role in conservation programmes. It is necessary to probe into the local residents' perception on tourism development and environment conservation in order to improve protected area management.

Specific Problems:

What is the perception of the communities in Ipo watershed with tourism development and conservation programmes being implemented by the government?

What are the factors which will affect the residents' willingness to support tourism development and environmental conservation programmes in Ipo watershed?

### **Significance of the Study**

The study would like to contribute to the field of commerce by lessening the social and economic impact of natural disaster such as floods, air pollution and climate change through sustainable Protected Area management which can be achieved by active participation of the communities in the periphery of watersheds in tourism development and conservation programmes. The model in the study can also be used in other types of protected area such as Protected Landscape and Seascapes, Marine Reserves and Natural Parks.

### **Literature Review**

#### **Community Perception of Rural Tourism**

Rural tourism involves tourists visiting a rural community where they are focused on the experience of nature and culture. Rural tourism has three elements: region or territory, residents and life system (Vitasurya, 2015). Rural tourism fuels local community economic growth because it generates service and job opportunities, supplementary sources of income, reevaluates their heritage symbols and identity (Nicolaidis, 2015; Mostafa et al., 2016). It creates jobs from different sectors like food, transportation, accommodation and other recreational activities. The primary application of tourism as a conservation and development tool in Protected Areas is that it boosts local economy while preserving ecological balance



through low-impact and is far less-consumptive in the use of the natural resources (Xu et. al. 2009). A number of similar terms have also been used together with Rural Tourism, having the same goal of developing tourism to safeguard a destination's cultural, landscape and natural heritage while at the same time enhancing the socio-economic welfare of communities. These include sustainable tourism, community-based tourism and ecotourism.

Zhang et. al, (2016) conducted a research on the importance and performance levels of nature-based tourism in Hong Kong to both on residents and tourists. Local people hold more elements in terms of socio-cultural and environmental sustainability of nature-based tourism in Hong Kong. The indicators about the environment are more important than the tourism economic incentive as perceived by the locals.

### **Community Support**

Community support is viewed as collaboration of the people in the local community and the local government. It is required that both parties are part of the implementation process, thus giving the locals the authority in the decision-making process (Sudesh, Prabhakaran, 2014). Sustainable development in rural tourism is based on the wisdom of the locals or natives since it relies on the community participation. The community must participate in the tourism process like being part of the tour, letting the tourists see their way of life, educating the tourists about the importance of environment preservation for their community and most especially in the decision-making process in terms of tourism (Vitasurya, 2015).

Communities are directly affected by the change of tourism industries and by subsequent dealings with tourists. These interactions can result in changes to community values, patterns of behavior, routines and community members' quality of life (Nicolaidis, 2015). In a study conducted by Job et al. (2013) in Wasini Village, Kenya, participation in tourism has led to improved income and enhanced standard of living in the village, a large portion of both direct and indirect jobs now depend on tourism. Tourism has in a way helped in the poverty reduction in some communities. It also reduces the impact of the community in the protected area since it made livelihoods dismissed such as small scale-fishery and survival agriculture. Tourism contributed a 15.5% value added income for the community in 2007.

### **Motivation, Opportunity and Ability Factors affecting support for Tourism**

There are several factors to consider which influence the community participation in rural tourism development and can be measured by Motivation, Opportunity and Ability (MOA) model. These factors can contribute toward a deeper understanding of community support and enable the development of sustainable conservation programmes and tourism development in the area.

Motivation as stated in MOA model encourages people in achieving their goals. Humans are born to be goal driven beings; behavior is driven by goals which encourage in being part of the decision making process. Rural tourism can positively affect the communities' daily lives, benefits like supplementary income, infrastructure projects for the community development and the promotion and preservation of local culture (Nicolaidis, 2015). It can also infer negative impacts such as rising in the value of property, increase in the commodity prices, overcrowding of tourists, introduction of vices like smoking, alcohol drinking and drugs in the community. Based on the study of Rasoolimanesh et al. (2017), residents' positive perception has impacts on their willingness to participate in conservation programmes and tourism development. They were eager to participate up to the highest level of community participation due to numerous benefits that the community will be receiving.



In the MOA model, opportunities refer to government regulations, political drive and, the availability of right channels which will encourage the community in participating in the rural tourism development. Opportunity emulates the extent to which current situation is positive to community participation. Community participation is impossible to achieve without the open networks between the members of the community and other entities involve in the tourism development. The level of community participation will rely heavily on the government regulation and implementation. In the same study, the effect of opportunity is significant with the highest level of community participation. When the residents realize that the government is interested in hearing their opinions in conservation programmes and tourism development, they are more willing to participate.

Informants' ability to participate in the rural tourism programme relies on their current skills, experience and education. Community members cannot participate in the tourism process without proper skills. In the above-mentioned study, the residents' participation has a significant relationship with their awareness and knowledge in conservation programmes and tourist development. The more they are aware of the benefits of the programmes and development, the more they want to participate in the decision making process.

## Research

### Methodology

#### Sample Size

Hair, Hult, Ringle and Sarstedt (2014) stated that the minimum sample size for PLS-SEM should be 10 times the maximum number of arrowheads pointing at a latent variable anywhere in the PLS path model. Following this rule of thumb, the minimum and actual sample size used in the study is given below:

**Table 1. Minimum Sample Size by Respondents**

Respondents' Description	Minimum number of respondents	Actual Sample Size
Community Residents	60	102

#### Study Site

The Ipo River Watershed is a portion of a whole system of raw water supply that serves 95% of Metro Manila (Corsame, 2016). It is located in Sitio Ipo, Barangay San Mateo, Norzagaray, Bulacan, about 42 km north of Metro Manila. Under Proclamation 391 of 1968 the watershed was established in 1920's. The Ipo watershed contributes 6.5 m<sup>3</sup> /s to the water supply of Metro Manila (Calderon et. al, 2004). The territorial authority is distributed to the following municipalities:

**Table 2. LGU covering Ipo Watershed (Corsame, 2016)**

Province/ Municipality/ Barangay	Area	
	Hectares	Percentage
Province of Rizal		
Rodriguez	398.6	5.5%
Barangay Macabud		



Province of Bulacan		
Norzagaray	4, 374.6	60.5%
Barangay San Lorenzo	2, 419.6	33.4%
Barangay San Mateo		
San Jose del Monte	43.5	0.6%
Barangay San Isidro		
<b>Total</b>	<b>7,236.3</b>	<b>100%</b>

### Data Measures

The study used path coefficient in determining the relationship of different variables. It is considered more standardized than linear regression weights for it can be used in knowing the possible causal relationship between constructs in a structural equation model.

### Data Gathering Procedure

Face to face interview and structured questionnaires was used in data gathering. The first section contains socio demographic profile of the respondents and the second section contains constructs which was measured using the liker scale with a scaling of 5 - Strongly Agree, 4 - Agree, 3 - neutral, 2 - Disagree and 1 – Strongly Disagree.

**Table 3. The Authors of Constructs used in the Questionnaires**

Respondents	Construct and Author
Communities	Local Resident Perception of Tourism (Zhang, 2016), Support for Tourism Development (Moghavvem, 2017), Motivation, Opportunity and Ability (Rasoolimanesh, 2015)

## Results

### Descriptive Statistics

#### Socio-Demographic Profile of the Respondents

The community participants were mostly female (64%), married or have a partner (81%), 36% were in middle age group, and the majority were elementary secondary degree graduates (97%), dominated by income earners below 10, 000 pesos (91%) and have a huge household size with 5 and above members per family (70%). The respondents are considered to be rural poor; there are families which only earn 2,000 to 3.000 per month.

**Table 4. Socio-Demographic Profile of the Community**

		Count	Percentage
Gender	Male	37	36%
	Female	65	64%
Age Bracket	18 - 30	26	25%
	31 - 42	29	28%
	43 - 60	37	36%
	61 and older	10	10%



Educational Attainment	Elementary	42	41%
	Secondary	47	46%
	Vocational	3	3%
	Bachelor's	10	10%
Marital Status	Single	19	19%
	Married	83	81%
Monthly Income	Below 10, 000	93	91%
	10, 001 – 20, 000	9	9%
No. of Households	1 - 2	11	11%
	3 - 4	19	19%
	5 - 6	36	35%
	7 and above	36	35%

### Communities' Perception of Tourism

Barangay San Isidro, Rodriguez Rizal has the highest positive perception of tourism for it is located near Mt. Balagbag – known tourist attraction in Ipo watershed as seen in table 5.

**Table 5. Residents' Tourism Perception**

Barangay	Positive Perception	Negative Perception
San Lorenzo	3.57	3.3
San Mateo	3.46	2.89
San Isidro/ Sitio Balagbag	4.15	2.14
San Isidro/ Lukutang Malaki	4.11	2.25
Average	<b>3.82</b>	<b>2.64</b>

### Relationship of Variables

**Table 6. Convergent validity and reliability statistics of the variables**

	Indicator/Item loading	AVE	CA	CR
<b>I. PercepTour</b>		<b>.63</b>	<b>.85</b>	<b>.90</b>
PercepTour1	.84			
PercepTour2	.84			
PercepTour3	.85			
PercepTour4	.68			
PercepTour5	.76			
<b>II. Motiv</b>		<b>.72</b>	<b>.80</b>	<b>.88</b>
PosMotiv	.87			
NegMotiv	.79			
IntMotiv	.88			
<b>III. Support</b>		<b>.68</b>	<b>.88</b>	<b>.91</b>
Support2	.83			
Support3	.73			
Support4	.84			



Support5	.85			
Support6	.86			
<b>VI. Opportunity</b>		<b>.90</b>	<b>.96</b>	<b>.98</b>
Opo1	.89			
Opo2	.98			
Opo3	.98			
Opo4	.96			
<b>V. Ability</b>		<b>.61</b>	<b>.67</b>	<b>.82</b>
Ability1	.70			
Ability2	.89			
Ability4	.74			

**Note:** Items with indicator loadings of .50 and below were removed. All retained items are statistically significant at 5% (i.e.,  $p < .05$ ). CA = Cronbach's Alpha. CR = Composite Reliability.

**Table 7. Discriminant validity statistics of the variables**

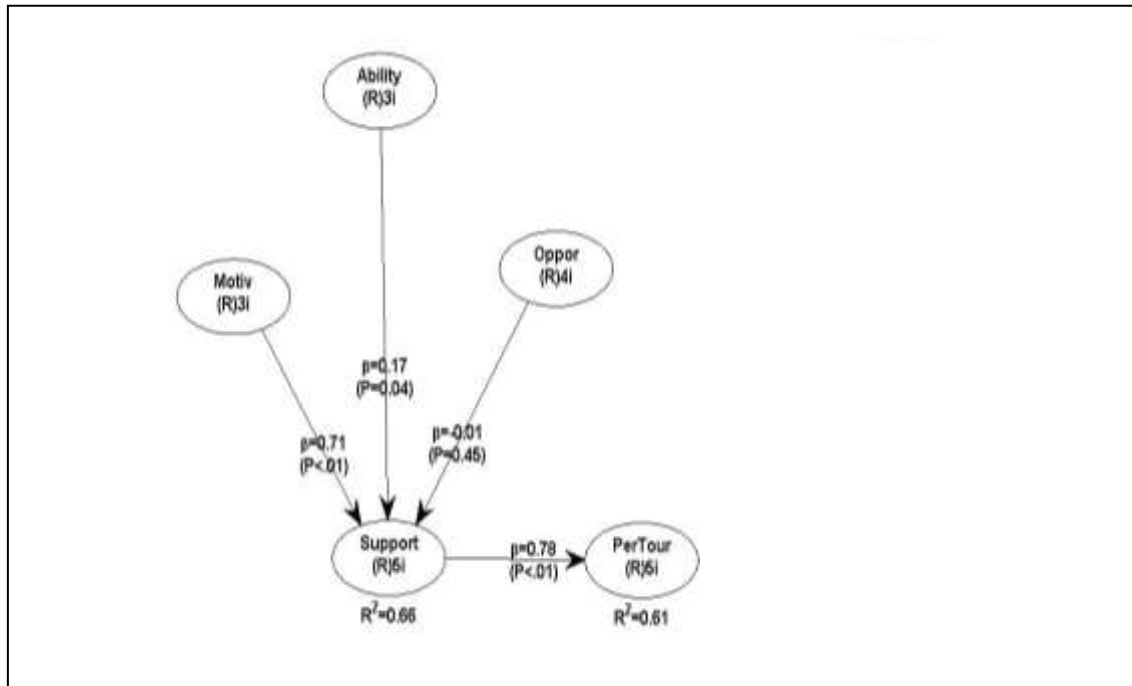
	Motiv	PerTour	Support	Oppo	Ability
Motiv	<b>(0.846)</b>				
PerTour	0.716	<b>(0.795)</b>			
Support	0.788	0.747	<b>(0.824)</b>		
Oppo	0.042	-0.145	-0.085	<b>(0.952)</b>	
Ability	0.316	0.152	0.255	0.570	<b>(0.781)</b>

Note: Diagonal elements are the square root of AVE between constructs. For discriminant validity, the diagonal elements should be larger than the off-diagonal elements.

**Table 8. Effects of the variable with Support for Tourism**

	Path coefficient	SE	p-value	f2
Support→PerTour	.783	.080	.000	.613
Motiv →Support	.713	.082	.000	.569
Opor→Support	-.013	.099	.446	.002
Ability→Support	.172	.095	.036	.089

**Figure 1. Motivation, Opportunity and Ability Model**



Model fit and quality indices:

Average path coefficient (APC)=0.421,  $P < 0.001$

Average R-squared (ARS)=0.579,  $P < 0.001$

Average adjusted R-squared (AARS)=0.571,  $P < 0.001$

Average block VIF (AVIF)=1.165, acceptable if  $\leq 5$ , ideally  $\leq 3.3$

Average full collinearity VIF (AFVIF)=2.643, acceptable if  $\leq 5$ , ideally  $\leq 3.3$

Tenenhuis GoF (GoF)=0.630, small  $\geq 0.1$ , medium  $\geq 0.25$ , large  $\geq 0.36$

The resulting average block (AVIF) for the model had a value of 1.165 which is less than 3.3. Both composite reliabilities (CR) and average variance extracted (AVE) estimates were examined to evaluate convergent validity. The value of the composite reliability for most of the constructs exceeded the 0.70 threshold. All items has indicator loading greater than .50 and statistically significant at 5% (i.e.,  $p < .05$ ). Such evidence provides overall support for construct validity.

## Discussion

The community perceived that tourism development in Ipo watershed will have a positive effect on their lives. The majority of them believe that more jobs will be created, and that the standard of living will increase and additional infrastructure like roads, day care and health centres will be established. According to Siu, Lee and Leung (2013), once there is a high positive perception in tourism the community will support tourism development programmes. In the Motivation, Opportunity and Ability (MOA) Model, data revealed that Motivation and Ability has a positive effect while null for Opportunity. The Opportunity portion of the model are consists of government interventions being done for tourism development and environment conservation in Ipo watershed. The government from the LGU up to the national level is not involving the community in decision making with regards to tourism and environment





development in the area, this was also evident during the interviews. For them the government is not interested in hearing their views, opinions and sentiments regarding tourism development and environment conservation programmes in the area. The positive effect of Motivation and Ability reveals that residents are willing to participate and feel knowledgeable in tourism development and environment conservation activities. The findings of the study are common to third world countries where the protected area management is in a bottom-up approach – and the community is more involved in the conservation rather than the government.

## Conclusion

Multiple researches demonstrate that tourism can be an important engine for economic growth of a Protected Area. It can generate income, employment and linkages of different businesses in the area. But impacts of tourism growth can be either positive or negative in the perception of the communities. The study revealed that communities in the periphery of Ipo watershed have a positive perception towards tourism, however, they see no intervention coming from the government in tourism development and environmental conservation. The lack of community participation in planning, decision making and implementation of conservation programmes in Ipo watershed can be detrimental in sustaining the protected area. The government needs to take a proactive role in planning and developing sustainable ecotourism strategy inside and outside the Protected Area (PA). The community can and must be tapped into by the local government in formulating strategic plans particularly in the “guided tour” aspect of tourism development programmes. Locals can help in discovering additional tourist spots in the area and enhancing tourists guiding by training local guides and formulating a long term training and accreditation programmes. Also, they can help in reforestation projects like tree planting and nurturing, seedling bank creation and custodian of the protected area.

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#### **Appendix A. Ipo Watershed PTO...**



#### **Appendix B. Mt. Balagbag (Ambrosia 2018)**

