Effectiveness of Local People's Perception on Ecotourism Participation in Bromo Tengger Semeru National Park, Indonesia

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ABSTRACT

Support of local people is important things regarding successful ecotourism management. Ranu Pani is located in Bromo Tengger Semeru National Park (BTSNP), Indonesia. This study aims was to examine how residents' views and the relationship between perception, attitude, communication and participation on ecotourism. A questionnaire survey was conducted to get the data. For analyzing data, it used regression analysis through SPSS. The results showed that there was a relationship between positive perception, communication and participation. Most of respondents agreed ecotourism would like to improve attractiveness of the community, and raise incomes. Regarding communication, residents would like to give information and feel happy when visitors asking them about their nature and culture. Regarding attitude, most of respondents supported with national park management. However, they were only 58.7% satisfied with development of national park. Therefore, the authority should improve their capacity to provide more employment opportunities and to escalate residents-national park relationship.

INTISARI

Dukungan masyarakat lokal merupakan hal yang penting dalam kesuksesan pengelolaan ekowisata. Ranu Pani terletak di Taman Nasional Bromo Tengger Semeru, Indonesia. Penelitian ini bertujuan untuk menguji bagaimanakah pandangan masyarakat dan hubungan antara persepsi, sikap, komunikasi dan partisipasinya pada ekowisata. Penelitian ini menggunakan survey dengan kuesioner. Sedangkan untuk menganalisa data, penelitian ini menggunakan analisis regresi melalui SPSS. Hasil penelitian menunjukan bahwa ada hubungan antara persepsi positif, komunikasi dan partisipasi. Sebagian besar responden setuju bahwa ekowisata akan meningkatkan ketertarikan masyarakat, dan meningkatkan pendapatan. Terkait komunikasi, masyarakat ingin memberikan informasi dan merasa senang jika pengunjung menanyakan tentang alam dan budaya. Terkait sikap, sebagian besar masyarakat mendukung pengelolaan Taman Nasional. Namun, kepuasan mereka terhadap perkembangan Taman Nasional hanya 58,7%. Sehingga, pengelola sebaiknya meningkatkan kapasitas untuk menyediakan lebih banyak kesempatan kerja dan meningkatkan hubungan masyarakat dan Taman Nasional.

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1. Introduction

According to Gurung (1995), Metha & Heinen, (2001), Wells & Brandon (1993) successful protected area management will not be gained without cooperation and support from local communities (Lai & Nepal, 2006: 1117). Furthermore, Redford et al., (2006) stated that “protected areas of all types will not survive without people inside them using them in sensible ways, or those outside them respecting them and defending them” (Wang & Yamamoto, 2009: 68).

Besides, in many cases conservation aims create conflicts with local community perceptions, needs and desires protected areas management (Ciocanea et al., 2016:71). For instance, conflicts in Bantimurung Bulusaraung (Babul) National Park, the conflict is related to Babul border boundary, and the utilization of the natural resources contained within National Park (Kadir, 2013:189).

Also, according to Pearce (1980), to know public support for tourism development, examination of local people's attitude towards tourism is essential in the determination of local domestic policy, planning and management responses to tourism (Jimura, 2011:291). Therefore, local people perception, attitude and participation should be stimulated for more effective ecotourism management.

Bromo Tengger Semeru National Park is one of the national parks in Indonesia. In 2015, Bromo Tengger Semeru National Park (BTSNP) area along with Mount Arjuno had been designated as a biosphere reserve by UNESCO in Paris, France. This appointment is an international recognition of the sustainability of forest ecosystem management in Indonesia amidst the abundance of information and facts on the destruction of Indonesia's forests. With the establishment of BTSNP as a biosphere reserve, it is believed to promote the conservation of biodiversity and integrated and sustainable ecosystem management based on local knowledge and wisdom (Ministry of Environment and Directorate General of Natural Resources and ecosystems Conservation, 2016:1).

BTSNP is a conservation area that has high biodiversity and has the potential of nature tourism and quite prominent when compared with other national parks. The diversity and resource of tourism objects and attractions of Bromo Tengger Semeru National Park are well known and become a tourist destination for domestic tourists and foreign tourists. According to BTS statistics report 2016 (Ministry of Environment and Directorate General of Natural Resources and ecosystems Conservation, 2017), tourist visits from year to year continue to increase, and non-tax state revenue (PNBP) BTSNP at the end of 2017 reached more than IDR.20.000.000.000,-.

Implementation of tourism in the BTS area may be categorized as ecotourism. Su et al., (2014) stated that in and around many parks and the protected area has been and implemented ecotourism in many forms throughout the world. Moreover, The International Ecotourism Society (TIES) in 2015 defined ecotourism as:

Responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education.

From the definition of ecotourism above, principles of ecotourism, namely: consider environment and conservation, social welfare and education. Further, regulation of Home Affairs Ministry Number 33 the year 2009 stated that principles of ecotourism development are conformity of species and characteristic of ecotourism, conservation, economic, education, give satisfaction and experience for visitors, community participation, and accommodate indigenous knowledge.

One of the uniqueness in BTS tourism objects is "Yadnya Kasodo" ceremony. It is a holiday for Tenggerese community to commemorate "Dharma" or good victory against "Adharma" or bad things. This ceremony is held on the date of 14th and 15th of a full moon at 12th month according to the Tenggerese calendar. And it is held on "Pura Poten" and Mount Bromo. This event become a uniqueness for BTS due to there is no event in another place. Then, it becomes a destination and unique tourist attraction for the tourists.

A large number of outsiders visiting Bromo Tengger Semeru National Park could have both positive and negative impact on people's lives, whether socially, economically or environmentally. Regarding with tourism industry context, tourism businesses, local people, visitors receiving service and employees are in a bilateral communication, and the interaction between these individuals plays a vital role in visitor satisfaction (Taymergen and Meric (2002) in Ceylan et al., 2012:1101). So, communication has an important role in a successful ecotourism.

Moreover, management of ecotourism in the BTS region may cause a conflict because of conflict of interest, both interests of society, and interests of the state in the national park use. Also, conflicts can occur because of differences in perceptions between community itself and among the population with governments. Conflicts may happen, and it could hurt many parties if not solved appropriately and adequately (Kadir, 2013:189). So, it is needed to get the same understanding among stakeholders and to make an in-depth study of that problem.

From the problems that emerge above, this study intended to investigate the effectiveness of local people's perception of ecotourism participation in Ranu Pani

village Bromo Tengger Semeru National Park (BTSNP), Indonesia.

2. Theory

2.1 Local People and Perception

According to Statistics of Indonesia, residents are those who settled in an area of set at least six months or less than six months but intend to settle. Local residents in the context of national parks (NPs) or protected areas (PAs) mean that people who are living within or in nearby national parks or protected areas and usually use resources in the surroundings of NPs or PAs. Then, perception is the recognition and awareness of local people to interpret situations and problems (Sirivongs & Tsuchiya, 2012:93).

Moreover, perception defined by Robbin (2011:169) as: the process of the individual to manage and interpret the impression of their sensory to give the meaning to their environment. Also, Robbin (2011:175) defined perception was the individual process to regulate and interpret the impression of their sensory to give the meaning to their environment. Based on the definition above could be concluded that perception was the process that carried out by the individual to dig the object and interpret the fact, situations, and problems so that it could give the meaning to their environment. Each of the individuals has different perceptions because they accepted distinct impression from various sources.

Besides the perception of local people, this study will investigate on attitude, participation, and communication. Attitude can be considered supportive, neutral or opposing regarding the situations and problems. Moreover, participation implies abilities and behaviours of residents towards involvement in NP management, directly or indirectly (Sirivongs & Tsuchiya, 2012:93). Furthermore, there have been many definitions of communication. However, they are some common points related to it, as transferring, interaction, and sharing with others (Genc, 2017:512). Baguley 1994 (Genc, 2017:512) defines communication as the process that occurs when ideas, information, and feelings are conveyed between individuals or groups of individuals for deliberate purposes. Then, the communication process is essential things that it is done to inform, convince, motivate, and provide mutual understanding.

2.2 Ecotourism

Historically, the term 'ecotourism' was adopted to describe the nature-tourism phenomenon (Wallace & Pierce (1996) cited in Donohoe and Needham, 2006:193).

The International Ecotourism Society (TIES) defines ecotourism as responsible travel to natural areas

that conserves the environment, sustains the well-being of the local people, and involves interpretation and education (TIES, 2015). According to World Conservation Union (WCU) (Nugroho, 2011), the definition of ecotourism is a journey to the pristine natural places, respecting the nature and cultural heritage, supporting conservation efforts, no result negative impact, and give social, economic benefits and also involving local people participation.

Further, Brandon (1996:1-2) explained that ecotourism is seen as a potential vehicle to disruption of the ecosystem, provide environmental, socio-economic and cultural benefits at both local and national. Claims for ecotourism's potential are generally based on three fundamental assumptions, that ecotourism can: offer a source of financing for development or maintenance of natural or culturally significant sites; catalize for local economic growth, and provide needed foreign exchange and national level benefits.

More specifically, conservationists see ecotourism as one of the promising strategies for providing funds for conservation and justifying its importance. Also, to providing a source of revenue for parks and industry representatives and governments conservation, there are numerous examples generally regard ecotourism as equivalent to where ecotourism is claimed to ensure the economic justification for park protection.

2.3 Ecotourism in Indonesia

In Indonesia, implementation of tourism (ecotourism) refers to Act Number 10/2009 about Tourism and Regulation of Home Affairs Ministry number 33/2009 about Manual of Ecotourism Development in Region. One of ministry performing ecotourism is the ministry of environment and forestry. In the ministry of environment and forestry, mostly of ecotourism is held in protected areas and national parks.

Ecotourism in Indonesia started to become an essential concept since 1995 when there were a national seminar and workshop hosted by Pact-Indonesia and 'Wahana Lingkungan Hidup Indonesia' (WALHI) in Bogor. Focuses strengthen the Indonesian ecotourism movement, the participants in the Second National Workshop on Ecotourism held in Bali on 1-5 July 1996, agreed on the formation of the Indonesian Ecotourism Society (*Masyarakat Ekowisata Indonesia*, MEI). The scope of activity for this society is: increasing awareness about the need for conservation of potential natural tourism resources in Indonesia; developing the quality of education which has an environmental perspective for tourists who visit ecotourism destinations; and providing economic benefits in a proportional manner to the communities in the ecotourism destination areas.

Since 1996, the discussions, workshops and strategic planning and implementation of ecotourism in

Indonesia have increased. It encouraged MEI to run its first meeting in 1997 in Flores (NTT), and in 1998 in Tana Toraja, Sulawesi Selatan (Sudarto, 1999 cited in Dalem, 2000:86).

2.4 Ecotourism in Bromo Tengger Semeru National Park

In the recent year, the popularity of national parks for recreational purposes in many countries is rising. As a selected place for ecotourism, national park covers both an opportunity and challenge because although the tourism development can produce some economic benefits, it can also negatively impact the natural environment and socio-cultural circumstances. The opportunity is to offer the beautiful view of national park resources for ecotourism that will provide visitors' satisfaction. On the other hand, the challenge is to realize the harmonizing component of the national park, which is to conserve the scenery and the natural resources, also the historical objects and the wildlife therein. It can prove to be complicated under conditions of high visitation to the national park. A strategy that could be formulated and implemented by the government and the private sector in managing the NP combining both the opportunity and challenge is by getting revenues from using of the resources by charging entrance (Nuva & Shamsudin, 2009:173).

According to Cribb 1995 (Cochrane, 2006:984), tourism in Bromo has a long history, by the 20s and 30s there were overland tours of Dutch colonial comers and other foreigners to view the dramatic scenery. Further, development was interrupted for 25 years by World War II, the Indonesian independence struggle, and subsequent political, economic, and civil chaos. Also, according to Dalton 1978, by the mid-70s Bromo was again well established on itineraries for foreigners due to its outstanding scenery and place close to the main overland route through Java (Cochrane, 2006:984).

In the information book of Bromo Tengger Semeru National Park (BTSNP, 2015) was stated that it has many tourism objects or destinations. There is divided into 3 (three) groups, namely: Bromo Tengger area, Semeru area, and culture and tradition. And then, every group has uniquely and the special attraction itself.

BTSNP, further, is a conservation area with rich biodiversity, unique ecosystem and strong local culture. There are approximately 1025 species of plants and 158 wildlife species. It is also a water catchment area for 'Brantas and Sampean' watershed. Not only rich in biodiversity but also has various ecosystem from tropical rainforest to savannah. For Tenggerese, an indigenous community who live in around the park, BTSNP also has an important role in the preservation of their culture and tradition. There is a Hindu's temple in the middle of Tengger Crater for praying and

conducting traditional ceremonies. Bromo Crater also an important place for Tenggerese to throw their offerings in 'Yadnya Kasodo' ceremony. Ancient inscription and statues in Mt. Semeru also become evidence of the importance of BTS for culture, history and tradition (Balai Besar Taman Nasional Bromo Tengger Semeru (Great Hall of Bromo Tengger Semeru National Park), 2015).

To enjoy the tourism objects, tourists should pay a fee to get benefits from them. BTSNP take a fare based on government regulation number 12/2014 concerning kind and tariff of non-tax state revenue. The number of tourists and non-tax state revenue can be seen in Table 1.

Table 1 Number of Tourists and Total Non-Tax State Revenue in The Last Ten Years

No.	Year	Number of Tourists	Non Tax Revenue (Rp)
1.	2008	95,556	620,500,750
2.	2009	151,540	887,087,000
3.	2010	163,204	998,890,000
4.	2011	125,471	834,560,500
5.	2012	275,874	1,534,760,050
6.	2013	552,644	2,924,613,415
7.	2014	536,338	15,171,195,500
8.	2015	474,011	15,170,625,787
9.	2016	485,675	18,438,747,196
10.	2017	647,463	21,998,787,714

Source: Analytical result, 2018

2.5 Conceptual Framework

This study adopted a conceptual framework from Sirivongs and Tsuchiya research. Their framework was positive perception (P), negative perception (N), attitude (A), and participation (S). And this study, we proposed one variable, namely communication between local people with the tourists (C).

Then, the conceptual framework of this study could be seen in figure 1.

Figure 1 The Conceptual framework (adopted from Sirivongs & Tsuchiya, 2012)

Based on the conceptual framework above, this study proposed several hypotheses:

- H1: Positive Perceptions (P1 – P9) have positive effects on attitude, participation and communication;
- H2: Negative Perceptions (N1 – N7) have negative effects on attitude, participation and communication;
- H3: Attitude (A1 – A3) have positive effects on participation; and
- H4: Communication (C1 – C3) have positive effects on perception and participation.

3. Research Method

This study conducted in Ranu Pani Village, Senduro Sub-district, Lumajang Regency, East Java Province on May 30th to June 8th 2018. It is located within in BTSNP area. It was chosen as a research site because it is “one of the BTS area face” and the last village before enjoying nature scenery and have unique elements of society and activities.

Then, this study used a structured questionnaire survey by face to face interviews. It was used to get residents’ responses and understanding towards ecotourism in the national park area. And the type of questionnaire is a closed questionnaire. Moreover, the questioner items (perception, attitude, and participation) adopted from Wang & Yamamoto research (2009:69). While, communication question items are identified from the selected literature of psychological empowerment (Boley et al., 2015). Questionnaire items could be seen in Table 2.

Table 2 Questionnaire Items

Code	Questionnaire Items
Positive Perception (P)	
P1	Improve Local Economic Development
P2	Increase chances of employment
P3	Raise incomes of local residents
P4	Increase opportunities for education
P5	Increase local public security
P6	Improve attractiveness of the community
P7	Protect local environment
P8	Improve Roads
P9	Improve other public service facilities
Negative Perception (N)	
N1	Increase crime rate
N2	Increase environmental pollution
N3	Destroy local ecosystems and natural landscape
N4	Decrease income from forestry
N5	Decrease income from agriculture
N6	Increase crop damage by wildlife
N7	Increase the need for maintenance activities
Attitude (A)	
A1	Strongly support national park development.
A2	Satisfied with the current development of the national park
A3	The national park has brought many benefits to the local community.
Participation (S)	
S1	We have a responsibility to protect the local natural environment.
S2	Benefit from the national park administration should be widely shared by

Code	Questionnaire Items
S3	local people. Participation in Jobs provided by the national park/protected area
S4	We have right to participate in decision-making on the development of the national park/protected area.
S5	If have an opportunity, attend training courses.
S6	If there is an appropriate organization, would participate in volunteer work, such as planting trees, collecting litter.
Communication (C)	
C1	We feel happy when any visitors ask about our customs ('Yadnya Kasodo', 'Karo' ceremony).
C2	We would like to give some information related to our nature and culture to the visitors.
C3	Communicate with visitors make us pride and self-respect/ self-esteem related to our tourism potential.
C4	Visitors ask about traditional clothes ('sarong').

Source: Wang & Yamamoto (2009)

The response format of the questionnaire used five points Likert scale, namely: strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). And, to determine the number of respondents, the study used a random sampling. It was used to get and to understand what local people know and how they viewed towards National Park, particularly on ecotourism. Further, to obtain primary data, this study collected data from a questionnaire survey regarding perception, attitude, participation and communication of local people.

Also this study collected secondary data through interviews, observation, documents, and other reliable sources as complementing data. The interviews and observation were done to attain deeply information and confirmation of respondents toward ecotourism.

To analyze the data, this study used regression correlation analysis through Statistical Package for Social Sciences (SPSS). Correlation analysis informs the level of association between two continuous variables, and it defines how much a given relationship fitted by a straight line. Whereas, regression analysis is used to depict the linear dependence of the dependent variables from one or more independent variables (Tripepi et al. 2008:806).

4. Results and Discussion

4.1 Demographic Profile of Respondents

The Demographic of respondents from the survey could be seen in Table 3.

Table 3 Demographic Profile of Respondents

Characteristics	Frequency	Percentage (%)
<i>Gender</i>		
Male	44	69.8
Female	19	30.2
<i>Age (Years)</i>		
17-29	18	28.6
30-39	22	34.9
40-49	13	20.6
50 and above	10	15.9
<i>Education</i>		
No formal education	3	4.8
Not graduate from	4	6.3
Elementary School		
Elementary School	38	60.3
Junior High School	5	7.9
Senior High School	9	14.3
Diploma/ Bachelor Degree	4	6.4
<i>Residence Periods (Years)</i>		
20 and less	43	68.2
More than 20	20	31.8

Source: Analytical result, 2018

4.2 Local People's Perception, Attitudes, and Participation on Ecotourism

Overall, from the figure 2, it could be seen that respondents had positive views about ecotourism. More than 60% of responses were positive (agreed) from P1 to P9 questions (Table 2 and Fig.2). And the most positive response in positive perception questions is P8 ("Improve Roads"), 85.71%. Meanwhile, the lowest positive response is P5 ("Increase local public security"), 66.6%. And for this question, other respondents also selected score of 3 (neutral), about 25%.

Figure 2 Local people's responses of positive perceptions

Source: Analytical result, 2018

Further, regarding negative perception (Table 2 and Fig.3), local people gave a score of 2 (disagree with the statement of negative perception) over 80% to questions N1, N3, and N6 ("Increase crime rate, Destroy local ecosystems and natural landscape, and Increase crop damage by wildlife in the national park"), respectively. And, for statement N4, they disagreed about 50%. And on the other hand, almost 80% of respondents gave a

score of 4 (agree with statement of negative perception) to N7 ("Increase the need for maintenance activities") questions.

Figure 3 Local people's responses of negative perceptions

Source: Analytical result, 2018

For attitude statements, and proportion (Table 2 and Fig.4) more than 70% of local people supported the development of national park with a score of 4 to A1 ("Strongly support national park development"). Even, some (20%) of respondents gave a score of 5 to it. And for statement A2, respondents gave a score of 4 only 58.73% about satisfaction to national park development. Also, local people feel benefits from national park activities. It may be seen on responses from statement A3 ("The national park has brought many benefits to the local community"). 82.5% of respondents gave a score of 4 with this question.

Figure 4 Local people's responses of attitude

Source: Analytical result, 2018

Related to residents' participation, more than 60% of respondents agreed to participate in national park activities, particularly on ecotourism (Table 2 and Fig.5). Even, for statement S1, S5, and S6 ("We have responsibility to protect the local natural environment; If have an opportunity, attend training courses; and If there is an appropriate organization, would participate in volunteer work, such as planting trees, collecting litter"), most local people gave a score of 4 (approximately 90%) to that statements. On the other hand, for question S2, local people only agreed 63.5%.

It means that all this time, communities feel that management authority has not fully shared benefits from national park administration to local people.

Figure 5 Local people's responses on participation
Source: Analytical result, 2018

4.3 Communication between Tourists and Local People

In this study, the author tried to propose other aspect to be asked to local people related to the ecotourism, communication aspects. Here, communication means interaction between local people with the visitors through speaking, asking, sharing and transferring information, news and idea. In communication items, this study proposed four statements, namely: "We feel happy when any visitors/ tourists ask about our customs; We would like to give some information related to our nature and culture to the visitors/ tourists; Communicate with visitors/ tourists make us pride and self-respect/ self-esteem related to our tourism potential; and Visitors/ tourists ask about traditional clothes".

In term of communication, overall, most of the respondents agreed to the statements. Over 80 % of local people gave a score of 4 to question C1, C2, C3, and C4. Also, only 3.2% of respondents disagreed about communication statements.

Figure 6 Local people's responses on communication
Source: Analytical result, 2018

4.4 Relationship between Perception, Attitudes, Communication, and Participation

As mentioned earlier, to obtain the objectives of this study, survey data were analyzed using descriptive statistics to explore the relationship between the variables. And to investigate the relationship between variables, it used correlation regression analysis through SPSS.

Table 4 Descriptive Analysis of Positive Perception, Negative Perception, Attitude, Participation, and Communication

Variables	Number of Respondents	Min.	Max.	Mean	Standard deviation
P	63	3.00	4.30	3.8286	.25742
N	63	2.00	3.60	2.6095	.33201
A	63	1.00	4.70	3.8286	.50623
S	63	2.80	4.50	3.7762	.32563
C	63	3.30	4.50	3.9984	.20359
Number of valid samples	63				

Source: Analytical result, 2018

Table 4 shows that mean score of residents responses on every question items were 3.8286, 2.6095, 3.8286, 3.7762, and 3.9984 for positive perception, negative perception, attitude, participation, and communication, respectively. Also, a number of valid samples are 63.

To investigate whether among variables correlated or not, this study examined it through Pearson Correlation of two-tailed. This analysis depicted that there was a relationship among positive perception (P), attitude (A), participation (S), and communication (C) with correlation coefficient .276, .364 and .392 at significant level .05, .01 and .01, respectively (Table 4). Therefore, null hypothesis (H0) and H2 were rejected and H1, H3 and H4 were accepted.

Further, between participation and communication, there is a relationship with a coefficient value of .479 (Sig .000, <.01). It meant that there was a direct relationship in which increasing in P, A, and C would lead to an increase of S.

Table 5 Results of Correlation Test Among Positive Perception, Negative Perception, Attitude, Participation and Communication

		P	N	A	S	C
P	Pearson Correlation	1	-.064	.276*	.364**	.392**
	Sig.(2-tailed)		.620	.029	.003	.001
	N	63	63	63	63	63
N	Pearson Correlation	-.064	1	-.029	.084	-.088
	Sig.(2-tailed)	.620		.819	.512	.493
	N	63	63	63	63	63
A	Pearson Correlation	.276*	-.029	1	.093	.130

	P	N	A	S	C
Sig.(2-tailed)	.029	.819		.467	.309
N	63	63	63	63	63
S Pearson Correlation	.364**	.084	.093	1	.479**
Sig.(2-tailed)	.003	.512	.467		.000
N	63	63	63	63	63
C Pearson Correlation	.392**	-.088	.130	.479**	1
Sig.(2-tailed)	.001	.493	.309	.000	
N	63	63	63	63	63

*Correlation is significant at the 0.05 level (2-tailed).
 **Correlation is significant at the 0.01 level (2-tailed).

Source: Analytical result, 2018

Further, to do regression analysis, this study combined some variables except combination of P, S and C. Because they were correlated with each other (multicollinearity), so the analysis should neglect one of them. And, ANOVA test can show variations in perception, attitude, communication, and participation of local people and the results are shown in Table 7, 10, and 13.

Table 6 Model Summary of Positive Perception, Negative Perception, Attitude Toward Communication

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.411 ^a	0.169	0.127	0.038

a. Predictors: (constant) A, N, P.

Source: Analytical result, 2018

Table 7 ANOVA of Positive Perception, Negative Perception and Attitude on Communication

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig
1	Regression	.018	3	.006	4.000	.012 ^b
	Residual	.087	59	.001		
	Total	.104	62			
a. Dependent Variable C						

Source: Analytical result, 2018

Table 8 Measurement of Regression Model on Communication By Positive Perception, Negative Perception and Attitude Variables

Coefficients ^a					
Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Beta		
1	(Constant)	.567		6.661	.000
	P	.301	.380	3.088	.003

Coefficients ^a					
Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Beta		
	N	-.039	-.064	-.542	.590
	A	.026	.065	.530	.598

a. Dependent Variable C

Source: Analytical result, 2018

Based on the R value (Table 6), constant predictors (P, N, and A) influence on the dependent variable (C) about 41.1 %. And, the accuracy level of this model is 99.9%.

Then, 'B' coefficient (Table 8) shows that how far every single predictor contributes to communication. There have been positive numbers for both positive perception (P) and attitude (A). And, only negative perception (N) has a negative number. Higher positive perception and attitude value are associated with higher communication and reverse. In another hand, higher negative perception is associated with the smaller communication. Further, the regression model is:

$$Y = 0.567 + 0.301X_1 - 0.039X_2 + 0.026X_3$$

However, only positive perception is statistically significant (Sig .003, <.01) on communication. According to R value (Table 9), constant predictors (N, A and S) correlated with the dependent variable (C) about 50.5 %. And, the accuracy level of this model is 99.9%.

Then, 'B' coefficient (Table 11) shows that how far every single predictor contributes to communication. In one hand, there has been a positive correlation between participation (S) and attitude (A) with communication (C). While, there is a negative correlation between N with C. Further, the regression line model is:

$$Y = 0.580 + 0.043X_1 + 0.299X_2 - 0.079X_3$$

However, only participation predictor is statistically significant (Sig .000, <.01) to communication.

Table 9 Model Summary of Negative Perception, Attitude, and Participation on Communication

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.505 ^a	.255	.217	.036

a. Predictors: (Constant) N, A, S.

Source: Analytical result, 2018

Table 10 ANOVA of Negative Perception, Attitude and Participation on Communication

ANOVA ^a					
Model		Sum of Squares	Df	Mean Square	F Sig
1	Regression	.027	3	.009	6.736 .001 ^b
	Residual	.078	59	.001	
	Total	.104	62		
a. Dependent Variable: C					
b. Predictors: (Constant) N, A, S.					

Source: Analytical result, 2018

Table 11 Regression Model of Communication By Negative Perception, Attitude, and Participation

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. error	Beta	t Sig.
1	(Constant)	.580	.068		8.504 .000
	A	.043	.046	.107	0.946 .348
	S	.299	.072	.475	4.178 .000
	N	-.079	.069	-.130	-1.151 .254
a. Dependent Variable C					

Source: Analytical result, 2018

Table 12 Model Summary of Attitude and Participation on Communication

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.488 ^a	.238	.213	.036
a. Predictors: (constant) S, A.				

Source: Analytical result, 2018

Table 13 ANOVA of Attitude and Participation on Communication

ANOVA ^a					
Model		Sum of Squares	df	Mean Square	F Sig
1	Regression	.025	2	.012	9.390 .000 ^b
	Residual	.079	60	.001	
	Total	.104	62		
a. Dependent Variable: C					
b. Predictors: (Constant) S, A.					

Source: Analytical result, 2018

Table 14 Regression Model of Communication By Attitude, and Participation

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. error	Beta	t Sig.
1	(Constant)	.544	.061		8.953 .000
	A	.045	.046	.111	.974 .334
	S	.291	.071	.462	4.074 .000
a. Dependent Variable C					

Source: Analytical result, 2018

Due to negative perception is not a statistically significant effect on communication, this study tested attitude and participation aspect to examine how far A and S influence to C.

Then, according to correlation and regression analysis output, there has been a relationship between A and S with C. It means that attitude and participation together impact on communication amount of 48.8% (Table 12). Furthermore, it was seen at significance level, only participation that has a statistically significant influence on communication (Table 13 Sig .000, < .01). Also, the regression model equation is:

$$Y = 0.544 + 0.045X_1 + 0.291X_2$$

In general, this study showed that local people hold positive responses of perception, attitude, communication, and participation on ecotourism. However, based on correlation analysis, only positive perception, participation, and communication were strong related. Meanwhile, negative perception and attitude were not related to another factor. Nevertheless, the attitude was slight concerned with a positive impression.

The most positive responses on perception were P6 ("Improve attractiveness of the community"), and P8 ("Improve Roads"), 84.1% and 85.7% in agreement, respectively (Fig.2). When observing the circumstances of the village, the author saw that there had been an improvement of the road at that place. This point was also confirmed in interviews, a respondent explained that local government started considering about infrastructures in the village, such as improving roads and public facilities for electricity. Also, regarding question P6, some respondents said that community considered that they started participating on ecotourism since 2000, even after releasing '5 cm' film in 2012, the participation of community was changed increase.

The film took a shot in surrounding Mount Semeru as a background site. After that, the number of tourists visiting to BTS experienced an increase (it can be seen in Table 1). Then, it may cause participation of local people on ecotourism increase too. Participation forms are as food stall, souvenirs stall, as a porter, homestay

owner, parking services, motorcycle driver services and as a guide. Further, the output of regression analysis illustrated that there has been a significant correlation between statement P3 ('Raise incomes of local people') with participation. It meant that incomes generation may cause their participation in ecotourism. It is relevant with Wang and Yamamoto's conclusion (2009:76), they concluded that economic benefit is the most important driving aspects for participation of local people in nature reserve in Beijing area. Because one of principles of ecotourism is strive to maximize economic benefit for the host country, local business and communities (Wood, 2002:14).

Meanwhile, the lowest response on positive perception was P5 ("Increase local public security"), 66.6%. Then, it was slight contrasted to conclusion of Sirivongs and Tsuchiya research in Phou Khao Khouay National Protected Area (NPA) in Lao PDR. In Sirivongs and Tsuchiya research, they concluded that provision of public security was the most critical factor that influences local people's positive perception in NPA (2012:99). According to some respondents when interviewing, they considered that public security did not relate to ecotourism activities. However, they also concluded that income generation was also as the most important variable that effects on local people's positive views and it supported with finding this study.

For negative perceptions, a majority (over 80%) of local residents disagreed on statement N1, N3, and N6 ("Increase crime rate, Destroy local ecosystem and natural landscape, and Increase crop damage by wildlife in the national park"). It meant that local people viewed ecotourism may not cause a negative impact in NP. However, many (79.3%) of the residents agreed that ecotourism would increase the need for maintenance activities. It would be a logical reason if a place were developed as a tourism destination giving consequences to improve or enhance the needs for maintenance of the facilities.

In term of attitude question (A1 – A3), 77.7% of respondents hold a supportive attitude regarding national park (statement A1). Further, for question A3, 82.5% of residents perceived that national park had brought them some advantages. While, statement A2 was the lowest positive response of respondents, 58.73% who agreed to it. It meant that local people considered national park management has not been optimal yet. Therefore, management authority should improve their capacity to better governance.

Regression analysis output also showed that positive perception of residents on ecotourism significantly influenced their communication and participation (Table 6 and Table 9). Tutar and Yilmaz 2003 (Ceylan et al., 2012:1100) defined communication as "an essential element of human relations and it can be

defined as the process of transferring information, ideas or apprehension from one person to another person and people". In term of tourism industry context, tourism businesses, local people, visitors receiving service and employees are in a bilateral communication, and the interaction between these individuals plays a vital role in visitor satisfaction (Taymergen and Meric (2002) in Ceylan et al., 2012:1101).

And, based on survey results on communication statement, the majority (over 80%) of respondents agreed with communication questions (C1 – C4). Moreover, regarding with participation, over 60% of respondents indicated agreed on ecotourism participation, even more than 90% of respondents stated willingness to involve in some training courses and volunteer work. Then, from correlation test between education background of residents with P, N, A, C and S showed that respondents having education background in elementary school and below would like more to participate on ecotourism and to communicate to the visitors than respondents who had higher education background.

In Ranu Pani, there are some groups concerning on environmental aspects, such as 'Sahabat Volunteer' (Saver), and 'Gimbal Alas' helping authority to give a briefing to the visitors before hiking the mount Semeru and to collect the visitors' garbage. Also, there are fire-caring community ('*Masyarakat Peduli Api*') and conservation cadres.

5. Conclusion

Generally, residents in Ranu Pani had positive perception toward ecotourism in Bromo Tengger Semeru National Park. Then, there is a statistically significant correlation between perception, communication, and participation. And the most positive response on perception is improving attractiveness of the community, and raise incomes. It was likely due to respondents viewed that ecotourism give a chance to get another job and attract them to participate on it, also outside people would be interested to come and visit to their place. Ecotourism give benefits to local people direct and indirect, one of direct benefits is income generation.

Based on residents response of communication, local people would like to give information and feel happy when visitors asking them about their nature and culture. If there is a good communication between local people and the visitors, it may influence for visitor's satisfaction in one side. And in other side, it may increase local people's respect to their nature and culture. Also, they would like to participate in national park activities, for instance: attending training courses if have an opportunity, and would like to participate in

volunteer work, such as planting trees, and collecting litter.

Further, there has been a slightly relationship between attitude and positive perception. Regarding attitude, currently most of respondents supported with national park management. However, they were only 58.7% satisfied with development of national park.

Limitation of the research is relative few samples and did not examine about communication with management body yet. And, next study should expand the number of respondents and also confirm about communication between local people with management authority. Then, the findings of study are more comprehensive and complete.

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