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## RESEARCH ARTICLE

# DEVELOPING LOCAL COMMUNITY'S PERCEIVED IMPACTS SCALE ON ECOTOURISM DEVELOPMENT IN TASIK KENYIR, MALAYSIA

<sup>1</sup>Engku Nor Kamilah Engku Hassan, <sup>1,\*</sup>Ahmad Shuib, <sup>2</sup>Shazali Johari  
and <sup>3</sup>Puvaneswaran Kunasekaran

<sup>1</sup>Institute of Agricultural and Food Policy Studies, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia

<sup>2</sup>Faculty of Forestry, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia

<sup>3</sup>Center of Research and Innovation in Tourism (CRiT), Taylor's University Malaysia, 47500 Selangor, Malaysia

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### ABSTRACT

This paper presents the findings on the development of key attributes that form the local community's perceived impacts scale of ecotourism development in Tasik Kenyir, Malaysia. The study was guided by the specific objective: to develop a measurement scale that captures the local community's perceived impacts on ecotourism development in Tasik Kenyir. Attributes from previous researches on perceptions of local community towards ecotourism impacts were combined with newly found factors obtained through initial exploratory investigation on the local community to produce a new set of measurement scale. Questionnaires were distributed to 260 heads of household in three villages in Tasik Kenyir. Exploratory Factor Analysis (EFA) was used to reduce the 46 attributes on perceptions of the communities. The findings of the study indicate that 25 attributes are identified to have significant relations on the local community's perceived impacts scale in ecotourism development; that selected attributes are regrouped into 7 factors. These factors account for 68% of the variances in the data set. The findings of this study can be used to conduct further studies on empowerment of communities in ecotourism development.

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## INTRODUCTION

Ecotourism is a type of the tourism that can be described as an interpretive tourism that consists of conservation, understanding and appreciation of the environment and cultures of the site visited (Yacob, 2010). Ecotourism is defined by the International Union for the Conservation of Nature and Natural Resources (IUCN) (Ceballos-Lascurain, 1993) and endorsed by Ministry of Tourism and Culture Malaysia (MOTAC) an 'environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature, that promotes conservation, has low visitor impact and provides the beneficially active socio-economic involvement of local populations' (MOTAC, 2000). Ecotourism also focuses on the natural environment and is often in several of forms including nature tourism, wilderness tourism, low impact tourism and sustainable tourism (Yacob, 2010).

Since ecotourism has minimum negative impact on the environment, it is economically, socially and environmentally sustainable. Tourists want to stay close to the local communities at the ecotourism sites in order to know more about the traditions and cultures of the local communities as well as natural beauties of the tourism places. From a sustainable perspective, ecotourism can be defined as a tourism that promotes and acts as a catalyst for environmental protection that tries to find a balance between the five main factors of the ecotourism sustainable model, which are economic development, environmental protection, cultural protection, social development and political development (Gouvea et al., 2008; Rani and Mohd Kassim, 2010). Ecotourism can also be defined from an educational perspective, it necessitates attracting tourists to a natural environment that are unique by enhancing nature conservation through education that leads to changes in attitude among local people and government (Rani and Mohd Kassim, 2010). Therefore, sustainability is generally understood to be a combination of social, economic and environmental aspects (Kunasekaran et al., 2017). In the context of nation's economy or a specific region, tourism can create inclusivity since tourism has a strong relationship with the other domestic

\*Corresponding author: Ahmad Shuib

Institute of Agricultural and Food Policy Studies, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia

economic activities (Mbaiwa, 2003; May Ling *et al.*, 2014). Through this understanding, tourism may be considered as a catalyst for national and regional development (Mbaiwa, 2003; Sharpley, 2002; May Ling *et al.*, 2014), by promoting employment (Ahmad, 1995; Herbig and O'Hara, 1997; Johari *et al.*, 2015; May Ling *et al.*, 2014), entrepreneurial opportunities for local people (Herbig and O'Hara, 1997), increasing foreign exchange earnings, creating a balance of payment advantages and providing important infrastructure developments (Mbaiwa, J. E., 2003; May Ling *et al.*, 2014). Spencer and Nsiah (2013) content that the benefits derived from tourism development should be understood by local communities so that they will support tourism development. Local residents agree that tourism bring more investment and local businesses (Liu and Var, 1986; Ahmad, 1995; Wei *et al.*, 2013).

**Ecotourism in Tasik Kenyir:** In the 11<sup>th</sup> Malaysian Plan 2016-2020, ecotourism is strategized to become a premier segment of the tourism industry by utilizing the biodiversity assets achieved through extensive protection and conservation and supported by targeted branding and promotion activities. To ensure the sustainability of the sector, ecotourism products will be developed along the value chain of high-yield tourism by inviting reputable investors who are sensitive to conservation and preservation of nature and wildlife. For the visitors several experience-enriching elements, such as tourism facilities, interpretive centres, safety measures and communication will be strengthened. It is emphasized that the development of ecotourism will also offer greater opportunities for local communities to participate in related income-generation activities to raise the living standards. In the Malaysia National Ecotourism Plan, Tasik Kenyir in Terengganu has been identified as one of the ecotourism sites.

Its selection is also influenced by the natural and environmental attractions, educational opportunities and cultural experiences and involvement in conservation and ecological adventure for tourists and the active participation of local people in tourism activities (ECER Master Plan, 2007). Studies on perception of local communities on impacts of ecotourism development in Tasik Kenyir is lacking. To bridge this knowledge gap, the present study investigates and measures the perception of local community on the impacts of ecotourism development. Realizing the potentials of the ecotourism development and the existence of a knowledge gap, this research attempts to achieve the following specific objective which is to develop a measurement scale that captures the local community's perceived impacts on ecotourism development in Tasik Kenyir. Table 1 shows the statistics of tourist arrival to Tasik Kenyir from 2008 to 2017. The proportion of tourist arrival increases in the period as a result of ecotourism development in that area. Tasik Kenyir has become a popular ecotourism destination for tourists around the world.

**Ecotourism impacts:** Tourism development affects the community in many ways such as the impacts of tourism towards the participation of community. Many researchers have observed that level and type of impacts of tourism can influence participation of the residents in tourism development. It is also shown that the impacts of tourism can either be positive or negative to the local residents. Thus, understanding the tourism impacts on local communities is essential in order to maintain the sustainability and long term success of the

tourism industry (Diedrich and Garcı'a-Buades, 2009; Aref *et al.*, 2009). Tourism allows and gives opportunities for local people to participate in the development and to get the benefits from its development (Gani *et al.*, 2012; Yahaya, 2008) as well as to conserve the uniqueness of their culture (Murphy, 1985). Furthermore, the important benefits associated with the involvement of local community in tourism include creating employment, lessening poverty, preventing destruction of the culture and the environment compared to the traditional mass tourism, increasing self esteem of local community, and helping the community to earn income in order to promote local economic development (Bendick and Egan, 1995; Murphy and Williams, 1999; Gordon, 2004; Shemshad and Mohammadi, 2012). In order to increase the participation of local people in tourism and also to protect the livelihoods of local people, the government must ensure that the ecotourism development will guarantee development the community obtains the social, ecological, economic and cultural benefits (Bhuiyan *et al.*, 2011) and at the same time has to ensure the attractiveness of living environment are protected (Tsaor *et al.*, 2006).

## MATERIALS AND METHODS

There are 260 households with a total of 1202 villagers that made up the population of Kampung Basong, Kampung Pasir Dula and Kampung Padang Setebu (Majlis Daerah Hulu Terengganu, 2016). The three villages were chosen because the location is closest to the Tasik Kenyir and the local community has a high chance to participate in the ecotourism sector. In this study the sampling unit was head of household thus instead of using samples, the study adopted a census, hence all heads of household were included in the survey and each of the head of household had an equal opportunity to participate in this research. The instrument used in this research was a structured questionnaire. Face to face interview was conducted in Malay language among the heads of household in the three villages. The items used in the questionnaires were a mixture of relevant items used in previous studies and newly developed questions. The final instrument for the study contained three constructs, namely economic impacts (18 items), environmental impacts (13 items) and sociocultural impacts (15 items). All of the statements are developed based on existing literature on tourism impacts. To test for reliability, a pilot study was conducted by distributing 30 questionnaires which initially contained 62 items to a sample of the community under study. Based on the pilot study outcomes, the questionnaire was redesigned. The final sets of questionnaire consisted of 3 factors and 46 items on the perceptions towards impacts of ecotourism development.

## RESULTS AND DISCUSSION

**Socio Demographic Profiles:** The study has found that all of the villagers in Tasik Kenyir are Malay and Muslim. A slight majority of the respondents (56.5%) are female. The gender imbalance of respondents is not unusual since the male members are working and their wives and children are the ones willing to be interviewed at the time of data collection. The highest percentage (26.9%) of respondents is in a range of 38-47 years. It is consistent with their marital status where most of the respondents (75.4%) are married and having their own families. Majority of the respondents (74.2%) have income below RM1000 per month. This is not uncommon in the rural setting since self-employment is the most common type of employment (38.5%).

**Table 1. Tourist arrival in Tasik Kenyir (2008-2017)**

Years	Total tourists
2008	133,569
2009	189,388
2010	225,570
2011	275,241
2012	397,005
2013	467,678
2014	649,394
2015	706,223
2016	507,502
2017	808,336

Sources: Central Terengganu Development Authority (KETENGAH, 2018)

**Table 2. Socio demographic profile of the respondents**

Variables	Frequency	Percent (%)
<b>Gender</b>		
Male	113	43.5
Female	147	56.5
<b>Age group</b>		
18-27	23	8.8
28-47	124	47.7
48-67	91	35.0
Above 68	22	8.5
<b>Marital status</b>		
Single	22	8.5
Married	196	75.4
Widow	42	16.2
<b>Level of education</b>		
Non formal	18	6.9
Primary	45	17.3
Secondary	165	63.5
STPM/Diploma	30	11.5
Degree	2	0.8
<b>Occupation</b>		
Government/Private sector	101	39.2
Self-employed	100	38.5
Housewife	41	15.8
Retired/Unemployed	17	6.6
<b>Income (RM)</b>		
0-1000	193	74.2
1001-2000	55	21.2
2001-3000	10	3.8
Above 3001	2	0.8

**Table 3. Rotated Component Matrix**

Rotated component matrix	Component										
	1	2	3	4	5	6	7	8	9	10	11
Air pollution	.809										
Noise pollution	.881										
Water pollution	.789										
Waste product	.796										
Natural environment	.832										
Traffic congestion	.760										
Fears toward security risks	.725										
Social infrastructure		-.756									
Cultural activities		.786									
Valuable experience		.784									
Environmental education			.774								
Environmental diversity			.737								
Community environment			.857								
Wildlife protection				.752							
Community growth					.742						
Younger generation						.715					
Economic benefits						.837					
Communication facilities							.823				
Transportation facilities							.901				
Increase the investors								.790			
Recreation opportunities								.727			
Increase retailing sectors									.772		
Cultures understanding										.743	
Image of village											.814
Quality of life											.792
Eigen value	6.222	3.942	2.964	2.759	2.645	2.642	2.418	2.337	2.188	1.828	1.786
% of variance	13.527	8.569	6.444	5.998	5.750	5.743	5.258	5.080	4.757	3.973	3.883
% of cumulative variance	13.527	22.095	28.539	34.537	40.287	46.030	51.288	56.368	61.125	65.098	68.981

In terms of education levels, the majority of respondents (63.5%) are having the secondary school as the highest level of education. This is mainly due to the financial constraints and is common in villages in remote areas.

**Factor Analysis:** Factor analysis is carried out to develop the scale for the local community's perceived impacts on ecotourism development. Items are reorganized according to the accurate groupings (factors). Before undertaking the factor analysis, the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test have been conducted to assess the suitability of the data collected. According to the Bartlett's Test of Sphericity, a significant level of  $p < 0.06$  should be obtained for the factor analysis to be considered suitable. The result shows that the significance level is .000. The Exploratory Factor Analysis (EFA) for perceptions of local community towards ecotourism impacts are tested using the varimax rotation. The result of the Kaiser-Meyer-Olkin (KMO) measure of sampling is 0.578. Kaiser (1974) recommends that a value greater than 0.5 as acceptable. The results of EFA are shown in Table 3. The 25 out of 46 items are distributed accordingly in 7 factors. All items have factor loadings above 0.7, explaining 68.98% of total variance. Based on the table 3, the 11 factors regrouped into 7 factors. Some of the items are combines because has the similarities with each other.

#### Factor 1: Positive Environmental Externalities

- Ecotourism will decrease the air pollution in this development area. (0.809)
- Ecotourism will decrease the noise pollution in this development area. (0.881)
- Ecotourism will decrease the water pollution in this development area. (0.789)
- Ecotourism will decrease the number of waste product in this village. (0.796)
- Ecotourism will not damage the natural environment in this village. (0.832)
- Ecotourism will not cause the traffic congestion in this village. (0.760)
- Ecotourism will not cause fears toward security risks among the local people. (0.725)

All these items loaded are directly related to positive environmental externalities. The items explain the positive side of environmental effects to the local people in ecotourism area. There are the positive items which directly and indirectly contribute to local people's health. In order to provide good health condition and safety, these items should be produced (Syamimi *et al.* 2018). The result also shows that the pollution on the physical environment (air, noise and water) of Tasik Kenyir are incontrollable. The local communities in Tasik Kenyir are living in good and protected environment. They agree and are satisfied that natural environment, traffic congestion and volume of waste material may decrease if development is managed properly even though annual tourist arrival increases.

#### Factor 2: Direct Community Benefits

- Ecotourism will increase the quality of social infrastructures in this village. (-0.756)
- Ecotourism promotes the various cultural activities among the local people life. (0.786)
- Meeting with tourists from various countries is a valuable experience. (0.784)

- Ecotourism will increase understanding of different cultures. (0.743)

Factor 2 is named as direct community benefits because all the items are contributing directly to the local community. The local communities in Tasik Kenyir are satisfied that the ecotourism development in that area has improved the quality of social infrastructures such as roads, schools, religious facilities and community facilities. Besides, ecotourism helps in promoting local community's culture for example traditional food, costume and games to tourists. In addition, ecotourism directly increases the valuable experience when they socialize with tourists. Apart from that, all the items are closely related to socio-cultural factor and stands out as the main factor that may influence local community to participate in ecotourism development (Eshliki and Kaboudi, 2012).

#### Factor 3: Environmental Awareness

- Ecotourism can provide environmental education or interpretation for local community. (0.774)
- Environmental diversity must be valued and protected. (0.737)
- Community environment will be protected for future generation. (0.857)
- Ecotourism will increase wildlife protection in this development area. (0.752)

The items loaded are directly related to ecotourism and environment. All the statements in the factor imply the sentiments of the community towards the protection of natural environment. To the community, the development of the ecotourism should not be at the expense of the natural resources and the community own environment. The local people believe that they must play an important role in protecting and preserving the environment and must to increase the awareness towards the environment in their residence.

#### Factor 4: Community Well-being

- Ecotourism will speed up growth of the villages. (0.742)
- Ecotourism can ensure the younger generations continue working in Tasik Kenyir. (0.715)
- Ecotourism can produce more economic benefits than cost for local people. (0.837)
- Ecotourism will increase the retailing sectors in this village. (0.772)

Factor 4 shows the forms of community well-being derived from ecotourism development in the area. A community who stays longer at their original location usually means that they feel happy to be there (Veenhoven, 2005). This situation gives positive effects especially for younger members of the community. The result shows that ecotourism will ensure younger generations continue working in Tasik Kenyir. In addition, social exchange opportunities will be created when the benefits that local people received is more than the cost. Social exchange theory discusses the systematic and dynamic process by which people benefit from a sequence of interactions with society (Syamimi *et al.* 2018). The sequence of interaction will increase the community growth when people live in a happy and safe environment in their ecotourism area. It will also prevent conflicts between local people and tourists in the ecotourism area.

### Factor 5: Accessibility

- Ecotourism will improve the communication facilities in this village. (0.823)
- Ecotourism will improve the transportation facilities in this village. (0.901)

Both of the variables in Factor 5 are related to accessibility. The common characteristics found in the variables are improvement of the communication and transportation facilities, although meant for tourists but will benefit the local community. Furthermore, proper and working facilities in ecotourism area will provide comfortable living conditions to local communities. Thus, Perdue *et al.* (1990) has revealed that those people who get the benefits from ecotourism will support the ecotourism development.

### Factor 6: Opportunities for outsiders

- Ecotourism will increase investors in this ecotourism development. (0.790)
- Ecotourism will provide recreation opportunities for local people in this village. (0.727)

Ecotourism development opens up the opportunities for outsiders to get involved in ecotourism. In addition, advantages gained from ecotourism increase the chance of investors to contribute in several development projects in that area such as in Kenyir Waterpark. When the Kenyir Waterpark was built, it indirectly provides recreation opportunities for local people.

### Factor 7: Destination Image and Quality

- Ecotourism will increase the image of village. (0.814)
- Ecotourism will increase the quality of life for local people in this village. (0.792)

Destination image and quality is the most suitable titled for this factor because both of the items are directly related to the image and quality of the village. Gallarza *et al.* (2002) acknowledges the importance of the destination quality in supporting the performance of tourism and considerably influences the creation of the destination image. In tourism marketing, the researchers suggest that images are more important than any tangible resources because the tourists are motivated to act or not to act based on the perceptions rather than reality.

### Conclusion and recommendations

The Exploratory Factor Analysis (EFA) is carried out to develop a new scale of measurement on local community's perceived impacts on ecotourism development. The findings show that 7 factors of local community's perceived impacts on ecotourism development consist of 'Positive Environmental Externalities', 'Direct Community Benefits', 'Environmental Awareness', 'Community Well-being', 'Accessibility', 'Opportunities for Outsiders' and 'Destination Image and Quality'. The results of this study are consistent with the theory of sustainability development and the Social Exchange Theory. In addition, all the new factors are related to the sustainability development dimension (economic, environmental and sociocultural). Local people in Tasik Kenyir area who are involved directly with ecotourism

development tend to have high positive perceptions on ecotourism impacts because they directly receive economic benefits. At the same time, other communities who are not directly involved in ecotourism are still receive the impacts of development. In addition, there are limitations that need to be highlighted in this research which is limitation of respondent. The data collection was focused on head of households in three villages only in Mukim Hulu Telemong. For future research, the local community should be included and not only focusing on head of households in others villages in Mukim Hulu Telemong because it might be influenced by ecotourism in Tasik Kenyir. Last but not least, relevant authorities and related organizations may be able to use the information concerning the perceptions of the local communities on the impacts of the development in their planning for future development in order to ensure the ecotourism development is sustainable.

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