

FACTORS INFLUENCING PERCEPTIONS OF LOCAL COMMUNITY ON 'KELULUT' HONEY AS AGROTOURISM PRODUCT

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ABSTRACT

The purpose of this study was to access local communities' perception on 'kelulut' bee as an agro tourism product. This paper presents the findings of factors affecting local communities' perception on 'kelulut' bee as an agro tourism product in Kampung Sungai Buah, Dengkil, Selangor. Attributes from past studies on impacts of agro tourism to local communities and their attitudes towards agro tourism in general were combined with the research on 'kelulut' or stingless bee honey industry. Factor analysis was used as tool in the reduction method. As the result, 41 attributes were identified to have significant contributions to this study and all these attributes were extracted into 13 different groups. Multiple regression analysis was employed to determine which factors were significant to depict local communities' perception on 'kelulut' bee as an agro tourism product and through findings, there were 6 factors found. This study can be used in evaluating local communities' perception on other new, potentially booming agro tourism products. The findings from this study would also be beneficial to conduct further studies in this area.

Keywords: Stingless Bee Farm; Impact; Rural Attraction; Agropreneur; Malaysia.

1. INTRODUCTION

According to the Third National Agricultural Policy (1998-2010), agro tourism is an activity that maximizes the use of farm settings and environment, as well as to promote hospitality. In Malaysia, agricultural areas and activities have many visitor attractions and have the potential to form the basis of destination development for tourists. With continuous support from various agencies and strategic planning and development programs, these areas could be developed into attractive destinations, which could provide authentic experiences to the tourists, for enjoyment, relaxation and education.

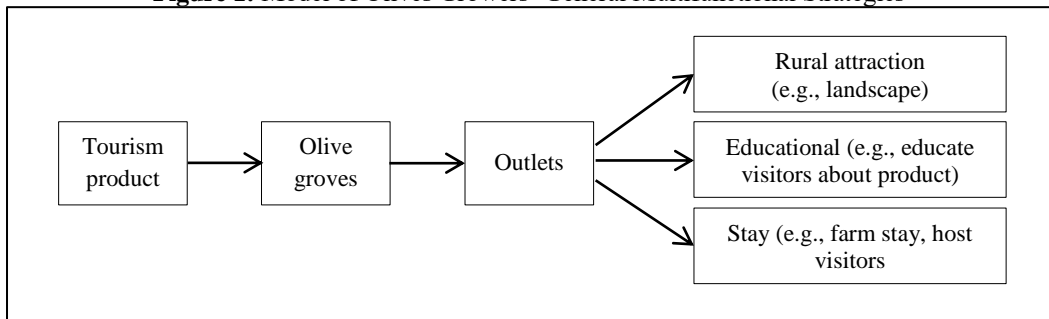
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Based on an interview done with a 'kelulut' bee farmer in Kampung Sungai Buah, Dengkil, Mr. Ismail (personal communication, October 5, 2015), there were several issues which needed to be highlighted. First, he emphasized on the financial constraints in maintaining the bees' houses and the general lack of knowledge and information about the 'kelulut' bees industry in Malaysia, including the potential of it to become an agro tourism product. Secondly, he mentioned production limitations of 'kelulut' bee honey, which was not consistent throughout the year, and this would affect demand from customers. Lastly, he admitted that local communities in Kampung Sungai Buah were mostly not aware of his 'kelulut' farm in their area due to lack of marketing efforts. From the problems mentioned earlier, it shows the contradicting situation that commonly comes up on the mass media about managing a 'kelulut' bee business, but for a new comer like Mr. Ismail, he is even more eager to find ways to sustain his business, of which he has almost given up on in the past. Therefore, a study on local communities' perception on 'kelulut' bee as an agro tourism product should be conducted to determine factors affecting local communities' perception on 'kelulut' bee as an agro tourism product and also, to determine which factors significantly influence their perception.

2. LITERATURE REVIEW

The term agro-tourism emerged in the late twentieth century. It includes agricultural farms that are related to tourism (Zoto et. al, 2013). Agro tourism is a part of rural tourism and allows visitors to visit farms and experience the daily life of farmers (Kunasekaran, Ramachandran, Yacob & Ahmad, 2011; Herman, Nur A'in, Ahmad, Ramachandran, 2014). Some attributes listed to give a better understanding on the concept of agro tourism include, sharing or independent accommodation at the owner's house; the involvement of whole farmers' or owners' family whose customs and traditions are preserved; and providing customers tranquility, away from the crowds, to receive good hospitality and feel attached to the nature (López, Javier, & García, 2006). Thus, the concept of agro tourism always emphasizes on the importance of providing authentic experiences to the visitors during their visit to the farm, to respect and value the culture of the local people, as well as to get close to nature (Kunasekaran & Gill, 2012).

Figure 1: Model of Olives Growers' General Multifunctional Strategies



'Kelulut' or stingless bee keeping is an activity that is generally practiced by the traditional communities. The characteristics of it are based on regional and traditional knowledge (Cortopassi-Laurino et al., 2006). In Australia, the products from 'kelulut' or stingless bees are sold at most tourism centres, souvenir shops, health food stores, restaurants, and not to forget, they are also sold online for quick purchasing (Halcroft, Spooner-Hart, Haigh, Heard, & Dollin, 2013). Since 'kelulut'

bee is still not widely commercialized in Malaysia, this study used the model of olives growers' general multifunctional strategies (Duarter Alonso, 2010) as shown in Figure 1 in order to determine the potential for 'kelulut' bee honey to be an agro tourism product.

This study also applies other agro tourism impact attributes, discussed in the Canary Island (Lopez and Calero Gracia, 2006). These attributes are demonstrated in Table 1:

Table 1: Some of the Agro Tourism Impacts Attributes Discussed the Canary Island (Lopez and Calero Gracia, 2006).

	Positive	Negative
Economics	Income increasing Create employment	Increase of public expenditure Price increasing
Socio-Culture	Provision of services and infrastructure for local people Cultural exchange Peace encouragement	A "sudden" change in local life and traditional culture Increase safety problems
Environment	To contribute to preserve environment To enhance awareness on environmental issues	Pressure on ecosystem and landscape Scarcity of resources Increase in residue

Many studies on the responsibility of businesses to the community, relate extensively to the financial or in-kind contributions businesses make to social-economic community programs (Boehm, 2005). Some significant factors that are seen as beneficial in tourism are like its ability to generate employment and diversify marginalized rural economies. It clearly shows that agro tourism can generate employment and strengthen socio-economic of local community because tradition, history and culture become attractions for tourists and products eventually play a highly representative role in confirming these tourist experiences (Di-Gregorio & Licari, 2006).

While agro tourism has the potential to create considerable economic and social benefits for local development, it can also be the root of many issues and problems for local communities (Sheridan, Duarte Alonso, & Scherrer, 2009). The negative impacts can include socio-cultural and environmental perspectives. Tourism may change the local community's perception to form a better understanding of the environment (Gössling, 2002; Ho, Chia, Ng & Ramachandran, 2013). Table 1 suggests that socio-culture and environmental perspectives carry more negative attributes for agro tourism.

In Australia, the awareness on the importance of nest conservation is increasing. With that, crop pollination services are developing, honey and cerumen are being harvested, and the indigenous community is participating in the development of the stingless bee industry. Bees also are used for public education in Australia, where we can see them alternatives in museums, exhibitions, gardens and schools in Australia, using social bee colonies to illustrate the beauty, complexity and fascination of nature. Topics such as sociality, parasitism, and pollination can be demonstrated using these insects, which gentle and easy to keep. These efforts integrated by Australia can be applied in Malaysia in order to create variety in agro tourism products in this country, as well as to create better visitor experiences.

3. METHODOLOGY

Goddard and Melville (2004) suggests an inductive approach for this study because the process begins with observations, after which theories are formulated towards the end of the research as a result of observations, followed by statistical analysis.

3.1. *Quantitative approach*

As the perception is a measure of one's belief and attitude, Sukamolson (2007) suggested that quantitative approach is suitable for this study. The Likert scale is considered in measuring respondents' perception.

3.2. *Study site*

Kampung Sungai Buah is located in Dengkil, Selangor and it is quite strategic as its location is nearby Putrajaya and Kuala Lumpur International Airport (KLIA). This study site can be considered as a rural area but the road and accessibility to this area is quite well managed. Some of the local communities here are involved in agricultural activities, such as planting fruits and vegetables, perhaps for their own food supply and for small businesses. There is 'kelulut' bee farming in Kampung Sungai Buah, Dengkil, which is owned by a young man but based on the first site visit, some of the local people in the area are not aware of this.

3.3. *Respondents*

The respondents were people from the local communities of Kampung Sungai Buah, Dengkil, Selangor. Their contribution to this study helped understand the perception towards 'kelulut' bee as an agro tourism product.

3.4. *Data collection*

Sets of questionnaire were used as instruments, in order to collect information and data from respondents. The questionnaire designed, consisted of nine sections; eight sections for Likert scale answers and one section of multiple choices, for socio-demographic section.

3.5. *Data selection*

The questionnaires were distributed to the local communities in Kampung Sungai Buah, Dengkil, Selangor using non-random purposive sampling. This sampling technique has also been referred to as judgmental sampling or expert sampling, able to represent the whole population of the study site (Battaglia, 2008). For this study, this technique was used to select a sample size from population through judgment, in order to get a viable representation of local communities; different socio-demographic factors also may lead to different perception among local communities on 'kelulut' bee agro tourism product. So, for this study, different socio-demographics were needed in order to determine socio-demographic factors that significantly influenced their perception.

3.6. *Data analysis*

Three types of data analysis were employed for this study to meet the two main objectives. Data analysis was conducted using SPSS version statistic 17. SPSS is the acronym for Statistical Package for the Social Science and it is one of the most popular statistical packages, which can perform highly complex data manipulation and analysis with simple instructions.

a. *Descriptive analysis*

Data analysis allows converting of raw data into a form that would make them easy to understand and interpret through rearranging, ordering, and manipulating data to generate descriptive information (Zikmund, 2003). Descriptive analysis was applied to describe different socio-demographic profiles of the respondents by looking at the percentage and mean value of each demographic factor.

b. *Factor analysis*

Factor analysis was used in this study as a form of reduction method. It reduced the number of variables and detected structures in the relationships between variables, which can be extracted into corresponding groups. (Hill and Lewicki, 2006)

c. *Multiple regression analysis*

Regression analysis is a statistical tool for the investigation of relationships between variables and to ascertain causal effect of one variable upon another (Sykes, 1993). In this study, the focus was to estimate the relationship between perception (dependent variable) and other independents variables, which were consisted of 13 factors reduced in the factor analysis, including the social-demographic, which, in this case, can be considered as relevant independent variables. The regression model used was:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_s X_m + u,$$

where

Y = dependent variable (overall satisfaction index)

X_m = independent variables

α = constant

s = coefficients

u = error term

4. RESULTS

Approximately 150 of questionnaires were used and analyzed. 45.3% of the respondents were male and 54.7% were female respondents. This slight imbalance in distribution of gender in the data collection may be attributed to the fact that the data collection was conducted on weekdays between 9a.m and 3p.m. Between these times, women respondents were more available compared to male respondents. As for education level, a majority of the respondents obtained secondary (68%), 15.3%

Table 3: Rotated Component Matric (cont.)

Rotated Component Matrix	Component												
	1	2	3	4	5	6	7	8	9	10	11	12	13
4) Youth participation	.733												
5) Health benefit		.666											
6) High income		.786											
7) Malaysia's agro tourism improvement		.784											
8) Future studies		.632											
9) 'Kelulut' bee farming concept			.419										
10) Agro tourism concept			.595										
11) Income generation from 'kelulut' bee as an agro tourism product			.596										
12) Economic stabilisation from 'kelulut' bee as an agro tourism product			.663										
13) Youth participation			.523										
14) Kg. Sungai Buah as agro tourism destination			.740										
15) Preservation of custom and tradition				.772									
16) Peace nurturing				.721									
17) Communication skill				.829									
18) Support from stakeholders				.700									
19) Trainings and talks				.485									
20) Financial support				.777									
21) 'Kelulut' bee farming for educational purposes						.427							
22) Pressure on ecosystem and landscape						.785							
23) Resources scarcity						.716							
24) 'Kelulut' bee in agro tourism in Malaysia							0.479						
25) Involvement in activities at 'kelulut' bee farm							0.483						
26) Information on 'kelulut' bee farming process							0.550						
27) Bring family to the agro tourism sites which use 'kelulut' bee							0.646						

Table 3: Rotated Component Matric (cont.)

Rotated Component Matrix	Component												
	1	2	3	4	5	6	7	8	9	10	11	12	13
28) Information about farmers' daily lives on the farm							0.449						
29) Provision for infrastructure								0.722					
30) More tree cutting								0.556					
31) Crowding								0.533					
32) Increase in residue								0.788					
33) Increase in market price									0.898				
34) Increase in public e									0.895				
35) Existence of 'kelulut' bee farm in Kg. Sg. Buah										0.808			
36) Experience farmers' daily lives										0.607			
37) 'Kelulut' bee for side income generation											0.767		
38) Awareness on environmental impact												0.892	
39) Level of knowledge on 'kelulut' bee in general													0.715
40) Knowledge of 'kelulut' bee farms in Malaysia													0.471
41) The need for technology													0.449

Factor 1- Attraction

- I think my place is suitable for 'kelulut' bee farming
- I prefer physical attractions in the 'kelulut' bee agro tourism farm, such as its landscape
- I prefer to visit the 'kelulut' agro tourism farm or factory to enhance my knowledge on 'kelulut' bee
- 'Kelulut' agro tourism farm can attract youth to stay & work in the village

Factor 2-Encouragement to Involve in 'Kelulut' Bee Farming

- I want to get involved in 'kelulut' bee farming because the honey is good for health
- I want to get involved in 'kelulut' bee farming because it can bring in a large income
- I want to get involved in 'kelulut' bee farming because I want to improve agro tourism in Malaysia
- I need more information about 'kelulut' bee farming

Factor 3-Knowledge on 'Kelulut' Bee as Agro Tourism Product

- I know how the farmers keep the 'kelulut' bee colonies
- I know that doing activities in 'kelulut' bee farm is a part of agro tourism
- I know the types of employment offered in the 'kelulut' bee agro tourism farm

- 'Kelulut' bee as an agro tourism product can improve the economy in my area
- Youths are the largest group involved in 'kelulut' bee farming
- My area is suitable for 'kelulut' bee agro tourism activities

Factor 4-Socio-cultural impacts

- Agro tourism activities in my area can preserve customs and traditions
- Agro tourism in my place can nurture peace for everyone
- Agro tourism in my place can create good interactions between local communities and tourists

Factor 5- Demand for 'Kelulut' Bee as an Agro Tourism Product

- To open up 'kelulut' bee agro tourism farm in my place, it requires a lot of support from stakeholders and agencies
- To open up 'kelulut' bee agro tourism farm in my place, it requires a lot of monetary investment
- Talks and trainings should be given to those who are interested in opening a 'kelulut' bee agro tourism farm

Factor 6-'Kelulut' Bee as Environmental educational Subject

- I want to enhance my knowledge about the 'kelulut' bee
- Agro tourism can cause pressure on ecosystem and landscape
- Agro tourism can cause scarcity of resources

Factor 7- Motivation to Visit 'Kelulut' Bee Agro Tourism Farm

- I have heard about 'kelulut' bee agro tourism farm
- I am interested to join activities at the 'kelulut' bee agro farm
- I want to visit the 'kelulut' bee agro tourism farm because I want to know how farmers keep their colonies
- I want to bring my family to 'kelulut' bee agro tourism farm when I get the chance
- I want to visit 'kelulut' bee agro tourism farm because I want to experience farmers' daily lives

Factor 8-Environmental impact

- Agro tourism can improve the infrastructure in my place
- 'Kelulut' bee farming can cause more tree cutting
- Agro tourism can cause crowding
- Agro tourism can cause increase in residue

Factor 9-Economic impact

- 'Kelulut' bee as an agro tourism product can increase its market price
- 'Kelulut' bee as an agro tourism product can increase public expenditure

Factor 10-Relationship between Local Communities and Farmers

- I know that there is a 'kelulut' bee farm in my area
- Agro tourism activities in my place can cause safety problems

Factor 11- Contribution of 'Kelulut' Bee as an Agro Tourism Product to Local Community

- 'Kelulut' bee as agro tourism product can generate income for local communities

Factor 12-Awareness on Environmental Impacts

- Agro tourism can enhance one's awareness towards the environment

Factor 13-Knowledge on 'Kelulut' Bee in General

- I know what a 'kelulut' bee is
- I know where 'kelulut' bees are commonly found
- I know the process of getting the honey

b. Regression Analysis

Table 4: Multiple Regressions with the Overall Perception

Independent Variables	Unstandardized Coefficients		t -value	p-value
	B	Std. Error		
(Constant)	0.924	.243	3.809	.000
Motivation to Visit 'Kelulut' Bee Agro Tourism Farm	.142	.056	2.541	.012
Preference of Types of Agro Tourism Product	.195	.049	3.956	.000
Encouragement to Involve in 'Kelulut' Bee Farming	.208	.052	3.995	.000
Economics Impacts	.231	.080	2.908	.004
Education Level- University	.237	.115	2.054	0.042
Gender	-1.45	.048	-3.021	0.003
R-Square: 0.558				
F-value: 30.102				
Sig of F Statistic: 0.000				

The determination coefficient, R^2 measures the proportion of the variation in the dependent variable explained by the independent variables. A higher R^2 would imply that the calculated Y equation line fits closer to the data points (Shuib, 1994). R-Square obtained from this model was 0.558, indicating approximately 56% of the variance in the dependent model, explained by the model. All p value is lesser than 0.05 ($p < 0.05$), which indicates that the model is significant.

Therefore, the final model of the study uses the General Linear Model,

$$\text{Local Communities' Overall Perception} = 0.924 + 0.142 \text{ Motivation to Visit 'Kelulut' Bee Agro Tourism Farm} + 0.195 \text{ Preference of Types of Agro Tourism Product} + 0.208 \text{ Encouragement to Involve in 'Kelulut' Bee Farming} + 0.231 \text{ Economics Impacts} + 0.237 \text{ University Education Level} - 1.45 \text{ DV Gender}$$

a) Motivation to Visit 'Kelulut' Bee Agro Tourism Farm

The respondents who were more motivated to visit the 'kelulut' agro tourism farm had a better perception compared to those who were not ($\beta = 0.142$, $p = 0.12$). Their interest influenced their perception on 'kelulut' bee as an agro tourism product.

b) Preference to the Types of Agro Tourism Products

Respondents who preferred more than one of three types of agro tourism products, suggested in the survey, had a stronger perception towards 'kelulut' bee as an agro tourism product ($\beta=1.95$, $p=0.002$). The value $p=0.000$ indicates that this factor carries the strongest predictors. Hence, it significantly influences local communities' perception on 'kelulut' bee as an agro tourism product.

c) Encouragement to Get Involved in 'Kelulut' Bee Farming

The respondents who were more encouraged to get involved in 'kelulut' bee farming had a more positive perception, in comparison to those who were less encouraged ($\beta=0.208$, $p=0.000$). The value indicates that this factor carries predictors. Therefore, it significantly influences the local communities' perception on 'kelulut' bee as an agro tourism product.

d) Economics impacts

The respondents who had a stronger belief that 'kelulut' bee as an agro tourism product in Kampung Sungai Buah can improve economy conditions at their place had a better perception than those who believed less ($\beta=0.231$, $p=0.04$).

e) Educational Level – University

The respondents who were university graduates contributed better to this perception because of the way they considered impacts of agro tourism as more critical, in comparison with those who obtained education at primary, secondary and college levels ($\beta=0.237$, $p=0.042$).

f) Gender

The male respondents had a smaller contribution to the perception of local communities' towards 'kelulut' bee as an agro tourism product in comparison with the female respondents. This was because male respondents were more difficult to be reached compared to females during the data collection.

5. CONCLUSION

The motivation to conduct this study was caused by the interest in identifying what factors affected local communities' perceptions, based on the impacts of agro tourism in general and the socio demographic of the local communities. After which, this study identified which factors were significant in influencing perception. Factor Analysis was employed in order to meet both objectives. Through these findings, 13 factors that influenced local communities' perception were found. All the attributes listed in the factors also included the impact attributes discussed in the Table 1. This indicated how respondents interpreted impacts, either positively or negatively, resulted in their overall perception on 'kelulut' bee as an agro tourism product.

Some of factors mentioned in this study would be useful for other new, potentially booming agro tourism products - for example the demand of 'kelulut' bee as a factor which affects perception of it as an agro tourism product. Stakeholders could use this paper to analyze 'kelulut' as an agro tourism

product, as well as other new and future agro tourism products. As for the motivation to visit 'kelulut' bee agro tourism farm, it would be beneficial for the 'kelulut' bee agro farm owners to improve their farm quality and provide variety to their agro tourism products at the farm so as to attract more visitors and improve their farm income.

Regression analysis showed that there were 6 factors which significantly influenced local communities' perception on agro tourism products. They were: motivations to visit the agro tourism farm, types of products preferred, encouragement to get involved in 'kelulut' bee farming, economic impacts, university level education and gender.

Even though this study came out with 13 factors, limitations of study could not be avoided. This study did not cover entrepreneur's knowledge, or local community development in detail. Other than, time constraint was also a factor. The data collection was done only on weekdays, from 9a.m to 3pm. And this resulted in a limited number of respondents for this study, as while conducting data collection, there were mostly housewives who were more available to reach, compared to men and career women. Thus, in order to improve the model and establish more variations of respondents with a wider socio-demographic range, this study should be conducted during weekends with longer time intervals.

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