



# The Attitudes of Residents towards Agro-tourism Impacts and Its Effects on Participation in Agro-tourism Development: The Case Study of Vietnam

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## Abstract

This paper investigates the residents' participation in agro-tourism development by examining their attitudes towards the impacts of agro-tourism on economic, socio-culture, and environment. The data was obtained from a survey of residents in Thai Phien Village based on a random sampling method. Factor analysis, descriptive statistics, and comparing means and multiple linear regression were employed to analyze the data. The results reveal that agro-tourism mostly brings positive impacts that outweigh the negative ones on the local community, such as educating visitors about agriculture, enhancing the community pride about local culture, capturing the demands of tourists on the local agricultural products, diversifying local economic activities, encouraging cultural exchange, and also improving public infrastructure and the area appearances. The study also indicated the demographic characteristics of residents are likely to affect their attitudes towards agro-tourism impacts. Using a regression model, the findings yield that the positive impacts of both economic and socio-culture have contributed positively, meanwhile the negative impacts of socio-culture indicate a negative relationship with regard to the participation of local community in agro-tourism development. Thus, the locals' positive attitudes towards agro-tourism impacts play a vital role, thereby influencing their willingness to active participation in developing agro-tourism of the community. In order to improve the residents' positive attitudes, the local authorities can develop educational programmes or agro-tourism business model courses to apprise locals of the interests of agro-tourism to individuals as well as the community. It can also build up strategies based on local media, via local media, to provide the panorama of agro-tourism and its benefits on locals.

**Keywords:** residents' participation, residents' attitudes, agro-tourism impacts, agro-tourism development

## Introduction

Nowadays, the agriculture sector has been faced with growing challenges such as poor agricultural merchandise prices, rising production expenses, globalization, industrialization and urbanization, global market competition, and climate change; resulting to farm families to seek for diversification of on-and off-farm production for financial stability (McGehee and Kim, 2004; Barbieri and Mshenga, 2008; Schilling et al., 2012; Srisomyong and Meyer, 2015). Lessening of subsidized agricultural programs by the government makes agro-tourism an increasingly important means of diversification, to support sustainability in the context of rural communities



(Schilling et al., 2012; Petrović et al., 2017). Agro-tourism is increasingly and growing as a vehicle of alternative agriculture in the rural communities. As a result of fully utilized agricultural resources, there are increases in supplemental income, and the diversity of agricultural products (Lobo et al., 1999; McGehee and Kim, 2004; Barbieri and Mshenga, 2008; Schilling et al., 2012; Tew and Barbieri, 2012).

In recent decades, a large number of studies has been carried out on the development of agro-tourism enterprises and its impacts in many parts of the world. Both Henderson (2009) and Srisomyong and Meyer (2015) stated that most studies within this situation are done in developed countries such as Australia, New Zealand, North America, and Europe (e.g. Pearce, 1990; Nickerson et al., 2001; McGehee and Kim, 2004; Barbieri and Mshenga, 2008; McGehee et al., 2007; Ollenburg and Buckley, 2007; Schilling et al., 2012; Tew and Barbieri, 2012; Flanigan et al., 2014; Petrović et al., 2017), while the developing countries have not had much attention paid to them. A few studies were carried out in Malaysia, Thailand, China. Most of these studies consider the agro-tourism impacts on socio-economic activities in the community (e.g. Srisomyong and Meyer, 2015; Songkhla and Somboonsuke, 2012; Yang, 2012; Shaffril et al., 2015; Leh et al., 2017). In addition, there are no sufficient studies on agro-tourism investigating the attitudes of residents towards their impacts as it relates to the economy, socio-culture as well as the environment. Also, its impacts on participation to support the development of agro-tourism.

On the one hand, Vietnam has the abundant potential of both agriculture and tourism similar to some countries of the South-east Asian region, and the majority of residents based on agriculture as a primary livelihood. In fact, the local government, local people, and scholars have paid less interest to participate in the agro-tourism development and its impacts (negative or positive). Meanwhile, agro-tourism was officially introduced in Malaysia and Thailand in 1991 and 1994 respectively (Songkhla and Somboonsuke, 2012; Shaffril et al., 2015); It has brought significant changes to socio-economic activities in these areas, and is a vital factor to diversify the rural economy. Thus, to address an aforementioned notable gap in the literature, this paper was carried out in Thai Phien flower village, Da Lat district, Lam Dong province, Vietnam.

The main purpose of the study was to identify the residents' attitudes towards the impacts of agro-tourism on their economies, socio-culture as well as the environment. Moreover, to determine factors which are likely to influence the residents' perception of the impacts of agro-tourism as well as their effects on locals' participation to support its sustainable development. Positive effects might result in residents' participation to support the development of tourism activities and negative effects might result in residents' retraction of participation for tourism ones (Pham and Kayat, 2011). With the thoughtful understanding of the attitudes of residents towards tourism, it could effectively lead to enhancing their active participation in the industry, which therefore plays a critical role in support for and participation in tourism development and in the community's sustainably (Gursoy et al., 2010).

## **Literature Review**

### **Impacts of agro-tourism**

#### **Economic impacts**

From the review of previous research, it is offered that agro-tourism can create many benefits to farms, farm visitors, and the local communities. Most of the studies on motivation in agro-tourism development has related to economic benefits, as regards additional revenue for farm families from serving tourists which can compensate for the fluctuation of prices of the agriculture and diversify agricultural activities (McGehee and Kim, 2004; Schilling et al., 2012; Lobo et al., 1999; Songkhla and Somboonsuke, 2012). In a study put forth by Lobo et al. (1999), agro-tourism contributes to the flourishing of the local economic activities, and as a result, it can improve attraction and local products demand, as well as direct-marketing opportunities.



Furthermore, agro-tourism creates related tourism businesses such as souvenir shops, agricultural products sales, roadside stalls, tourist service enterprises including restaurants, accommodation, etc. (Choenkwan et al., 2016). As a vehicle of the local economic diversification, agro-tourism has contributed to lessening poverty and enhance livelihoods of the local people (Tiraieyari and Hamzah, 2012).

Notwithstanding, agro-tourism does make positive contributions to local communities, however, in the view of Songkhla and Somboonsuke (2012), too much concentration on it may lead to agricultural activities being interrupted. Fleischer and Tchetchik (2005) indicated that agriculture did not bring essential advantages for tourism, nevertheless, it is the farmers who gained significantly from selling agricultural products to the visitors. Shaffril et al. (2015) found that the possibility raises the living cost due to rising demand for local products but also posed problems for the community who got low income.

### **Socio-cultural impacts**

Many studies have discovered reasons based on social and cultural benefits as incentives for the agro-tourism development, including preservation of rural lifestyles, raising awareness, maintenance of cultural identity and local customs, particularly in concerns to maintain agricultural production (Barbieri and Mshenga, 2008; Schilling et al., 2012). Cultural exchange as a vital motivation can offer chances for younger generations to meet new people from the different culture in their area (Pearce, 1990), and simultaneously share their rural lifestyles and their life experiences on the farm with visitors (Tiraieyari and Hamzah, 2012). It is a reasonable tool for educating visitors about the agricultural values to the local economy (Lobo et al., 1999; McGehee and Kim, 2004; Barbieri and Mshenga, 2008; Schilling et al., 2012).

Furthermore, agro-tourism provides job opportunities for local people (Barbieri and Mshenga, 2008; Schilling et al., 2012; Tew and Barbieri, 2012; Choenkwan et al., 2016). Particularly, as younger generations might gain an opportunity to stay and work on their farms (Ollenburg and Buckley, 2007). Besides, agro-tourism is offered as a solution to the issue of unemployment by lessening the flow of migration to great cities with the desire to uplift the living and working environment (Songkhla and Somboonsuke, 2012). Agro-tourism also expands employment opportunities on a large scale for both skilled and unskilled locals, moreover, lessening the gender bias problem as the proffering chances to participate in agro-tourism are equal for both males and females (Pearce, 1990; Yang, 2012).

Agro-tourism has generated the connection between rural and urban population, and in this way, not only the local people have opportunities to get closer to the urban lifestyle but also the urban people have chances to gain insights into the rural lifestyle (Tiraieyari and Hamzah, 2012). It could be one way to raise the pride of community and uplift their life quality (Barbieri and Mshenga, 2008; Shaffril et al., 2015; Karabati et al., 2009). Yang (2012) related that agro-tourism has improved living standards, such as upgrade roads, better sanitation, and greener surrounding environment. In other words, it has also attracted more investment in improving social infrastructure and services in the local community.

However, these advantages bring with them disadvantages. In a previous study conducted by Pearce (1990), he stated that the development of agro-tourism activities might also cause confrontation between the local community and visitors due to the differences of cultural background. Karabati et al. (2009) revealed that visitors from the different cultures could face problems related to arguments among members of the family based on politics, religion, and culture. Society's evils such as theft, drugs, and excessive drinking leading to reduce social safety and order; also created inconsistency or deterioration of local community culture as agro-tourism might provide the spaces for conversion of culture between residents and visitors (Shaffril et al., 2015).

### **Environmental Impacts**

Other positive aspects of agro-tourism referred by Tiraieyari and Hamzah (2012) and Yang (2012) include the preservation of ecosystems and natural resources; it also raise awareness



of local people to the protect the natural environment. In addition, agro-tourism contributes to fully utilize the community's resources (McGehee and Kim, 2004; Nickerson et al., 2001; Ollenburg and Buckley, 2007). Nonetheless, its activities could as well lead to noise, environmental pollution of the community's surrounding, the deterioration of natural resources, deconstruction of cultural heritage and influence stability of land by requiring transportation, infrastructure, and facilities (Tiraieyari and Hamzah, 2012).

### **Agro-tourism in Vietnam and its development**

Agro-tourism which was officially promoted in Vietnam since 2001 and supported by Netherlands International Development Agency (SNV), has created the basis for the agro-tourism development program for the expansion of additional income and diversifying the agricultural products for local communities. A variety of agro-tourism activities, including farm tour of harvested agricultural products, the homestay to experience a lifestyle of the community and learn cultivation techniques on agricultural practices. Some outstanding agro-tourism attractions have brought significant impacts to locals. The trips to orchards and fish farms in the Mekong Delta, the vegetable gardens of Tra Que Village and the fishing village of Cham Islet in Hoi An ancient town. And the trips to farms in Da Lat on which the application of new technologies has been conducted on production.

Da Lat is renowned as a resort city with romantic scenery and moderate weather for tourists. It is also well known for greenhouse agricultural productions, including 4,500 hectares employing the latest farming technologies, in addition, a Da Lat mark has been made for their vegetables and flowers (Thanh pho Da Lat tinh Lam Dong - Portal). The abundance of beautiful natural scenery and unique environment which contrasted with the other parts of Vietnam as well as the increment in the number of both international and domestic visitors by the time, especially in 2017 made Da Lat a hot holiday spot, receiving approximately six million visiting tourists (Thanh pho Da Lat tinh Lam Dong - Portal). Thus, making Da Lat one of the most favorite tourist attractions in Vietnam, meanwhile, Thai Phien Village is also an outstanding agro-tourism destination of Da Lat with similar characteristics, to carry out this study.

## **Methodology**

### **Research Site**

Figure 1 illustrates the map of Thai Phien Village, Da Lat City, Lam Dong Province, Vietnam. Historically, the first European to discover Da Lat was Alexandre Yersin in 1893 and the city was established in 1912 and quickly became a favorite tourist destination for Europeans in Indochina. Located 1,475 meters above sea level (latitude 11°56'25"N and longitude 108°26'13"E) and situated about 300 kilometers northeast of Ho Chi Minh City. Even though it is a tropical country, Da Lat still has cool and pleasant climate of temperate regions with an average annual temperature of 17.8°C, has led it to be nicknamed the "city of eternal spring" so are a point of what makes Da Lat so appealing to tourists. The dry season in Da Lat commences from December to March each year and an extended rainy season throughout the rest months (Thanh pho Da Lat tinh Lam Dong - Portal).

From 2009 to 2015, Da Lat has recognized four flower villages that meet the criteria of "traditional flower village" including Thai Phien, Ha Dong, Van Thanh, Xuan Thanh village. Nonetheless, the study conducted in Thai Phien flower village, in Ward 12, located 7 kilometers northeast of Da Lat City Center, Lam Dong Province, Vietnam. In 2017, the People's Committee of Da Lat City issued a special resolution on the tourism development of flower villages in Da Lat city up to 2020 with an orientation to 2025, Thai Phien flower village has been chosen first for the development into an agro-tourism destination (Thanh pho Da Lat tinh Lam Dong - Portal).





evaluate that these questions could be understandable before conducting the official investigation in February 2018.

### Data Analysis

The Statistical Package for the Social Science (SPSS) version 20.0 was used to analyze data, comprised of four phases as follows. First of all, to examine the profile information of the respondents and the residents' attitudes towards the impact of agro-tourism, descriptive statistics were employed. Based on the interval class identified by Shaffril et al. (2015), this study's interval class was divided into five levels: the first level (very low) varied between 1.00 and 1.80, the second level (low) varied between 1.81 to 2.60, third level (moderate) varied between 2.61 and 3.40, the fourth level (high) ranged between 3.41 and 4.20, and the last level (very high) ranged between 4.21 and 5.00 to evaluate the mean score of agro-tourism impacts. Secondly, Cronbach's alpha coefficient was employed to appreciate the reliability of variances and exploratory factor analysis was also conducted as a data reduction technique. Thirdly, compare means were carried out to investigate whether there were significant differences between the individual characteristics of farm households and the attitudes of residents towards agro-tourism impacts and their participation in agro-tourism as well. Finally, the multiple linear regression analysis was employed to measure the influence of the residents' attitudes towards the impacts of agro-tourism (independent variables) on the participation in supporting agro-tourism development (dependent variables).

### Results and Discussion

#### Demographic characteristics of the respondents

The personal information of the respondents showed in Table 1, 42.3% were female (n =127), and 57.7% were male (n =173). The largest age group was between 36 and 50 years old (n = 184, 61.3%) with an average age of about 47 years. The minority of respondents held Certificate/ Diploma or Bachelors' Degree (n = 36, 12.0%) while nearly a half of respondents (n = 144, 48.0%) possessed secondary school degree. Regarding the monthly household income, 62.7% was between 26 million VND and 50 million VND (roughly USD1,130 to USD2,170). And 70.0% of farm households had between 3 to 4 persons involved in agricultural production, varying from 2 to 6 persons. In terms of farm size, nearly two-thirds of 300 respondents (71.3%) reported less than 3,000 m<sup>2</sup>, while land size with 6,000 m<sup>2</sup> and above, accounted for only 2.0% (n = 6). The majority of respondents (n = 206, 68.7%) have owned their agricultural land. Based on the number of years involved in agriculture of respondents, 74,3% reported involved in agricultural production between 10 and 30 years. On occupation, most interviewees were full-time farmers (n = 252, 84%).

**Table 1.** General information of respondents

Demographic characteristics	Categories	Percent	Frequency
Gender	Female	42.3	127
	Male	57.7	173
Age	35 years old or less	8.3	25
	36 - 50 years old	61.3	184
	51 - 65 years old	26.0	78
	66 years old or more	4.3	13
Level of education	Primary school	7.0	21
	Secondary school	48.0	144
	High school	33.0	99
	Certificate/ Diploma	8.0	24
	Bachelors' Degree	4.0	12
Monthly household income	25 million VND or less	17.0	51
	26 – 50 million VND	62.7	188
	51 – 75 million VND	16.3	49
	76 – 100 million VND	3.3	10
	More than 100 million VND	0.7	2
Number of the family member involved in agriculture	2 persons or less	17.3	52
	3 to 4 persons	70.0	210
	5 persons or more	12.7	38
Farm Size	3,000 m <sup>2</sup> and less	71.3	214



	3,001 m <sup>2</sup> to 6,000 m <sup>2</sup>	26.7	80
	More than 6,000 m <sup>2</sup>	2.0	6
<b>Farm ownership types</b>	You own	68.7	206
	You lease	31.3	94
<b>Length joined in agriculture</b>	10 years or less	17.3	52
	11 - 20 years	37.3	112
	21 - 30 years	37.0	111
	31 - 40 years	6.3	19
	41 - 50 years	2.0	6
<b>Occupation</b>	Full-time farmer	84.0	252
	Part-time farmer	16.0	48

### Factors of the attitudes of residents towards agro-tourism impacts

Factor analysis was used to verify the dimensions of 26 indicators of agro-tourism impacts applying the principal component method and varimax rotation. Based on the data-reduction technique, the factor identified could interpret residents' attitudes towards agro-tourism impacts related to economy, socio-culture, and environment. A separate analysis was conducted on each aspect. The findings are revealed in Table 2, the economic included six variables quoting positive impacts with factor loadings ranged between 0.728 and 0.873, Cronbach's  $\alpha$  was 0.893, which explained 39.344% of the total variance, which consisted of four variables indicating negative impacts with factor loadings varied from 0.738 to 0.809, and Cronbach's  $\alpha$  was 0.756, explaining 23.196% of the variability. In terms of the socio-culture, a total of six variables displaying positive impacts and three variables citing negative impacts with factor loadings ranged from 0.685 to 0.826 ( $\alpha = 0.841$ ) and from 0.753 to 0.865 ( $\alpha = 0.747$ ), respectively. Regarding the environment, three variables indicated positive impacts interpreting 29.268 % of variances and factor loadings ranged between 0.809 and 0.836 ( $\alpha = 0.763$ ), and four variables indicating negative impacts with 37.686 % total of variables explained ( $\alpha = 0.826$ , factor loadings varied between 0.717 and 0.873). Total variances of the economy, socio-culture, and environment explained were 62.540%, 59.796%, and 66.954%, respectively. Bartlett's test of sphericity was significant (sig. = 0.000) for all factors and the Kaiser-Meyer-Olkin (KMO) was 0.833 on the economy, 0.800 for socio-culture and 0.735 for the environment. These data were acceptable based on the criteria of exploratory factor analysis (Hair et al., 2010) and reliability coefficient (Nunnally, 1978).

**Table 2.** Factor analysis and descriptive statistics of residents' attitudes on agro-tourism impacts

Agro-tourism impacts	Factor Loadings		Descriptive statistics	
	Positive	Negative	Mean	SD
<b>Economic</b>				
Offers new business chances to locals	0.873		3.59	0893
Contribute to diversify local economic activities	0.862		3.46	0.937
Increases additional income for the community	0.843		3.15	0.947
Provides employment opportunities for family members	0.774		2.97	0.935
Attracts investment to infrastructure improvement	0.759		3.48	0.875
Promotes the demand for local agricultural products	0.728		3.22	0.880
Mostly agro-tourism revenues belong to external tour operators		0.809	3.42	0.812
An increase in living cost due to the raising of goods and services prices		0.754	2.49	0.752
Locals receive a low salary from agro-tourism activities		0.738	3.10	0.856
Increases the price of farmland		0.738	2.91	0.796
Eigenvalues	3.934	2.320		
% of variance explained	39.344	23.196		
Cronbach's $\alpha$	0.893	0.756		
KMO = 0.833; Chi-square = 1323.073; sig = 0.000.				
<b>Socio-culture</b>				
Opportunities for cultural exchanges and share experiences	0.826		3.70	0.817
To fully utilize the community resources	0.804		3.57	0.895
Promote the conservation of traditional culture	0.745		3.46	0.908
Uplifts the quality of life and working conditions	0.709		3.04	0.805
Enhances the pride of community in the agricultural culture	0.706		3.76	0.850



Provides more recreational areas for locals	0.685	3.41	0.855
An effect on indigenous dwellers' way of life		0.865	2.57
An increase in crime rates such as theft, violence, vandalism		0.815	2.60
Causes conflicts between tourists and locals		0.753	2.52
Eigenvalues	3.361	2.021	
% of variance explained	37.342	22.453	
Cronbach's $\alpha$	0.841	0.747	
KMO = 0.800; Chi-square = 886.987; sig = 0.000.			

#### Environment

Improves the appearance (images) of the area	0.836	3.49	0.901
Preserves natural environment in the community	0.821	3.47	0.807
Influences positively on ecological awareness of locals and authorities	0.809	3.56	0.921
Results in overcrowded and noise		0.873	2.53
Deteriorates the beauty of natural landscapes		0.838	2.49
Cause in more litter in the community		0.802	2.55
Causes traffic congestion and lack of parking lot		0.717	2.83
Eigenvalues	2.049	2.638	
% of variance explained	29.268	37.686	
Cronbach's $\alpha$	0.763	0.826	
KMO = 0.735; Chi-square = 728.113; sig = 0.000.			

The findings also indicated the mean scores for the variables by assessing the residents' attitudes on agro-tourism impacts. The highest mean score was attained for "positive socio-cultural impacts" (mean = 3.49), the second highest score was "positive environmental impacts" (mean = 3.51), followed by "positive economic impacts" (mean = 3.31), "negative economic impacts" (mean = 2.98), "negative environmental impacts" (mean = 2.60). The factor which scored the lowest mean was "negative socio-cultural impacts" (mean = 2.57).

### Residents' attitudes towards agro-tourism impacts

#### Economic impacts

Three of the positive economic impacts ranging from 3.59 to 3.46 (high mean score) which revealed offering of new business chances to locals, attracting investment to infrastructure improvement, and contributing to the diversity of local economy, has confirmed previous findings (Schilling et al., 2012; Lobo et al., 1999; Songkhla and Somboonsuke, 2012; Shaffril et al., 2015). Agro-tourism has stimulated the initiation of other types of local economic activities, for instance, the establishment of a dry flower showroom, restaurants, tent-cloth shops, specialty shops where the display and sell farm products such as Da Lat wine, fruit jam, artichoke tea, dried fruits, and vegetables to respond to demands by tourists. It is no wonder, agro-tourism has brought more positive improvement to public infrastructure in the community, not only improved roads, sanitation, and other public infrastructure but also contributed to a cleaner living environment, which is similar to previous observations (Srisomyong and Meyer, 2015; Yang, 2012; Malkanthi and Routry, 2011). The rest of the positive economic impacts (demand for farm products, additional income, and employment opportunities) recorded a moderate mean score (of 3.22, 3.15, and 2.97, respectively) (presented in Table 2). The local community perceived that both job opportunities and residents' income have not increased significantly based on agro-tourism. These results were confirmed by Karabati et al. (2009) since there is a lack of regular visits of tourists. Additionally, the agro-tourists who come via tour operators and do not stay in the village, visit flowers farms, vegetable farms or orchards on a daily basis. Most agro-tourism entrepreneurs do not sell entry ticket to tourists, so tourists do not spend money. This study indicated somewhat different findings from the results of some prior studies in developing countries. Other studies emphasized that agro-tourism has created more employment and additional income for their community (e.g. Srisomyong and Meyer, 2015; Songkhla and Somboonsuke, 2012; Yang, 2012; Shaffril et al., 2015; Choenkwan et al., 2016). Nonetheless, agro-tourism has provided opportunity for direct sales of farm products to tourists (mean = 3.22) that was found in some previous studies (Srisomyong and Meyer, 2015; Lobo et al., 1999; Tew and Barbieri, 2012; Shaffril et al., 2015; Jęczyk et al., 2015), via flower festivals that have attracted thousands



of tourists to the farm, who might buy farm products such as organic vegetables, dried and fresh flower, and other souvenirs from residents.

The analysis found an increase in living cost was recorded, the lowest mean score (mean = 2.49) reflected that there were no raising prices of goods and services, due to no significant increase in income from agro-tourism and simple lifestyle (Karabati et al., 2009). However, an increase in the price of farmland recorded at the moderate mean score (mean = 2.91). Besides that, agro-tourism has brought petty income for the community in Thai Phien Village, demonstrated by the local residents' statement of low salary from agro-tourism activities that recorded a mean of 3.10 (moderate level) in line with the conducted research of (Shaffril et al., 2015). Most of their additional income obtained from the direct selling of farm products to visitors. Conversely, agro-tourism income generated belongs to the outside tour operators recorded a high score (mean = 3.42) since most tourists come via tour operators (Karabati et al., 2009).

### **Socio-cultural impacts**

The residents stated that agro-tourism provided more recreational areas (mean = 3.41) for locals. Provision of opportunities for cultural exchange and education recorded 3.70, which not merely meet valuable experience of tourists as suggested in past studies (Pearce, 1990; Shaffril et al., 2015; Karabati et al., 2009), but also educates visitors about local agriculture and this is perceived as a positive experience that is similar to the results of Lobo et al., (1999). The tourists have experienced rural life with the local people and were trained on flower production. Thanks to tourism events and the Da Lat flower festival this has brought profound attractiveness of both international tourists from around the world and domestic tourists from across the country, and they fully utilize the community resources (mean = 3.57), This finding confirmed the prior studies (McGehee and Kim, 2004; Nickerson et al., 2001). Agro-tourism has provided positive motivation for the preservation of local culture and the pride of community in agricultural practices with mean scores of 3.46 and 3.76, respectively. However, the quality of life and working conditions recorded a moderate mean score (of 3.04).

All of the items for negative socio-cultural impacts recorded a low mean score (mean = 2.57). The respondents stated that agro-tourism does not damage their living such as stealing, drinking alcohol, in line with findings of a previous study by Shaffril et al., (2015). There was not only an insignificant difference in changes to indigenous dwellers' way of life but also no notable conflict between tourists and locals (Srisomyong and Meyer, 2015; Karabati et al., 2009). In other words, agro-tourism has not caused negative impacts on socio-culture significantly.

### **Environmental impacts**

The locals agreed that the development of agro-tourism has contributed to the well-being of the village. Its effects on the ecological awareness of both locals and authorities, the preservation of natural environment, and the improvement of area appearances were perceived as being positive, similar to the findings of (Lupi et al., 2017). On the other hand, the low mean score recorded with regard to overcrowding and noise (mean = 2.53) and the beauty of natural landscapes is deteriorated (mean = 2.49). Similarly, Tiraieyari and Hamzah (2012) found that there was no effect on the natural surroundings and causing noise in the community as well. The litter from agro-tourism activities also recorded low level in the community, nonetheless, traffic congestion and lack of parking lots perceived as a significant negative impact (mean = 2.83). Due to too few parking lots and limited infrastructure to meet visitor needs (Yang, 2012).

### **Residents' participation in future supporting agro-tourism development**

Factor analysis was also initiated to identify the dimensions of six items to enhance the participation of residents' in the further development of agro-tourism. The KMO was 0.801; Bartlett's test of sphericity was significant (Chi-Square = 619.537, sig. 0.000); Eigenvalue is 3.167, total variance of 52.779%; factor loadings varied from 0.634 to 0.791; citing that the



data were appropriate (Hair et al., 2010). Cronbach's alpha values of the six variables were 0.820 which is acceptable (Nunnally, 1978). (Table. 3)

**Table 3.** Factor analysis, descriptive statistics on residents' participation in support of agro-tourism development

Items	Factor Loading	Descriptive statistic	
		Mean	SD
I am willing to be participating in support for agro-tourism	0.791	3.76	1.059
The community should be involved in agro-tourism development planning	0.771	3.64	0.997
I support new agro-tourism facilities which will appeal to more tourists	0.735	3.32	0.948
I would like to see more agro-tourism activities and tourists	0.716	4.00	0.799
The local authorities should financially provide support to enhance infrastructure for supporting agro-tourism development	0.701	3.61	0.841
The local authorities should provide incentive policies and plans to direct agro-tourism development	0.634	3.94	0.769
Eigenvalues	3.167		
% of variance explained	52.779		
Cronbach's $\alpha$	0.820		

KMO = 0.801; Chi-square = 619.537; sig = 0.000.

A notable result of this study indicated that residents' participation in supporting agro-tourism development in Thai Phien Village was highly agreed amongst the local communities. They would like not only to see more agro-tourism activities and tourists but also to directly participate in agro-tourism development in the future of Thai Phien Village (mean = 4.00, mean = 3.76, respectively). Additionally, the local government should not only provide financial support to improve physical infrastructure (mean = 3.61) but also make incentive policies and strategic plans to direct agro-tourism development (mean = 3.94). The local government as a major authority, plays a vital role in developing agro-tourism and promoting community participation in the establishment of agro-tourism enterprises (Yang, 2012). Moreover, the government is also perceived as a potential tool to build on the well-being of the community via financial support, planning, marketing, and training, which found in the study by Srisomyong and Meyer (2015). In fact, the community is concerned about the limited support for the agro-tourism development from the local authorities including lack in both financial support and agro-tourism promotion strategies. Besides that, their community should be a part of agro-tourism planning for agro-tourism development (mean = 3.64). From the residents' view, the strategies of agro-tourism development related to the local community's needs, interests, and capacities (Shaffril et al., 2015) could be crucial measures. However, personal support in new agro-tourism facilities which will attract more tourists had a moderate mean score (mean = 3.32). (presented in Table 3)

### Mean Comparisons

To investigate the relationship between the personal characteristics of respondents, such as gender, farm ownership types, occupation, household income, education level, number of family members involved in agriculture, length joined in agriculture, farm size, age group and the locals' attitudes towards the impacts of agro-tourism and also their participation in support of the development of agro-tourism, ANOVA analysis and independent t-test were carried out. As a result, the only variable namely length joined in agriculture indicated no significant differences. Tukey post hoc test and Tamhane's T2 post hoc test were performed to compare the differences factors, including educational level, age group, number of family members involved in agriculture, household income and farm size.

Table 4 shows that the positive impacts on economy and socio-culture, and the participation in developing agro-tourism were the significant difference between people in diverse education levels. Even though education levels affected the negative socio-cultural impacts, there was no significant difference between groups. Those people holding lower educational level (primary school) had some critical thinking about the development of agro-tourism, which is similar to the finding of a study by Kuvan and Akan (2005). They did not consider that agro-tourism provides more employment opportunities, increases additional income, and uplifts the quality of life of locals. Meanwhile, those people with higher educational level (bachelor's

degree, certificate/diploma) were more likely to assess the impact of agro-tourism with a positive view. These results concurred with the findings of prior studies by Haralambopoulos and Pizam (1996), Pham and Kayat (2011), and Teye et al. (2002).

**Table 4.** Results of ANOVA for educational level

Factors	Primary school	Secondary school	High school	Certificate/ Diploma	Bachelors' Degree	F	Sig.
Positive economic impacts	2.64 <sup>c,d,e</sup>	3.04 <sup>c,d,e</sup>	3.58 <sup>a,b,d,e</sup>	3.92 <sup>a,b,c,e</sup>	4.32 <sup>a,b,c,d</sup>	52.497 <sup>1</sup>	0.000**
Positive socio-cultural impacts	3.15 <sup>c,d,e</sup>	3.30 <sup>c,d,e</sup>	3.69 <sup>a,b</sup>	3.92 <sup>a,b</sup>	3.92 <sup>a,b</sup>	13.056	0.000*
Negative socio-cultural impacts	2.71	2.61	2.60	2.24	2.22	2.938	0.021*
Participation in support for agro-tourism	3.13 <sup>b,c,d,e</sup>	3.61 <sup>a,d,e</sup>	3.83 <sup>a</sup>	4.09 <sup>a,b</sup>	4.15 <sup>a,b</sup>	10.161	0.000*

Note: <sup>1</sup> Asymptotically F distributed; \*\* Tamhane's T2 post hoc test results with significance level at  $\alpha = 0.05$ . Turkey post hoc test results with significance level at  $\alpha = 0.05$ . Superscript alphabets indicate that mean values are significantly different from the mean values in the equivalent columns. Alphabets denote column 2-6: i.e. <sup>a</sup> = primary school, <sup>b</sup> = secondary school, <sup>c</sup> = high school, <sup>d</sup> = certificate/ diploma, <sup>e</sup> = bachelors' degree. For example, the first line reads that significant differences existed between those that hold primary school level and those that hold high school level, between those that hold primary school level and those that hold certificate/diploma level, between those that hold primary school and those that hold bachelors' degree level, and so on.

For the age groups (in Table 5), residents' attitudes towards varied impacts are recorded to be affected by their age, and generally, the younger respondents are more likely to have positive perceptions towards the positive impacts of economy (Pham and Kayat, 2011; Huh and Vogt, 2008; Andriotis and Vaughan, 2003), for example, increase additional income for the community, contribute to diversifying the local economy, and provide new business chances for locals. On the contrary, the elders were more negative their views of the negative ones on socio-culture and environment, this was also found in the findings of previous studies (Haralambopoulos and Pizam, 1996). Particularly, there was a different perception between those aged 35 years or less and those more than 66 years in terms of the negative impacts of socio-culture and environment. In which people who aged 35 and less rated littering in their community as the major concern, whereas those who aged over 66 worries about the increase in crime rates as the main concern.

**Table 5.** Results of ANOVA for age groups

Factors	35 years or less	36-50 years	51-65 years	66 years or more	F	Sig.
Positive economic impacts	3.75 <sup>b,c,d</sup>	3.31 <sup>a</sup>	3.22 <sup>a</sup>	3.05 <sup>a</sup>	3.968	0.009
Negative socio-cultural impacts	2.28 <sup>d</sup>	2.57	2.59	3.00 <sup>a</sup>	3.683	0.012
Negative environmental impacts	2.26 <sup>d</sup>	2.60	2.64	2.92 <sup>a</sup>	2.921	0.034

Note: Tukey post hoc test results with significance level at  $\alpha = 0.05$ . Superscript alphabets indicate that mean values are significantly different from the mean values in the equivalent columns. Alphabets denote column 2-5: i.e. <sup>a</sup> = 35 years or less, <sup>b</sup> = 36-50 years, <sup>c</sup> = 51-65 years, <sup>d</sup> = 66 years or more. For example, the first line reads that significant differences existed between those their ages, are 35 years or less and 36-50 years, between those aged 35 years or less and 51-65 years, between those their ages, are 35 years or less and 66 years or more.

As showed in Table 6, those households which have more persons involved in agriculture were likely to have positive attitudes towards agro-tourism impacts.

**Table 6.** Results of ANOVA for the number of family members involved in agriculture

Factors	2 persons or less	3-4 persons	5 persons or more	F	Sig.
Positive socio-cultural impacts	3.26 <sup>c</sup>	3.47 <sup>c</sup>	3.93 <sup>a,b</sup>	13.818	0.000
Positive economic impacts	3.10 <sup>c</sup>	3.28 <sup>c</sup>	3.81 <sup>a,b</sup>	12.056	0.000
Negative socio-cultural impacts	2.83 <sup>b,c</sup>	2.55 <sup>a,c</sup>	2.27 <sup>a,b</sup>	8.811	0.000
Negative environmental impacts	2.82 <sup>c</sup>	2.58	2.39 <sup>a</sup>	4.320	0.014
Participation in agro-tourism development	3.55 <sup>c</sup>	3.68 <sup>c</sup>	4.08 <sup>a,b</sup>	8.158	0.000



Note: Tukey post hoc test results with significance level at  $\alpha = 0.05$ . Superscript alphabets indicate that mean values are significantly different from the mean values in the equivalent columns. Alphabets denote column 2-4: i.e. <sup>a</sup> = 2 persons or less, <sup>b</sup> = 3-4 persons, <sup>c</sup> = 5 persons or more. For example, the first line reads that significant differences existed between those that family has 2 persons or less and those that family has 3-4 persons, between those that family has 3-4 persons and those that family has 5 persons or more.

Regarding farm size, there were significant differences between farm households who own 3,000m<sup>2</sup> or less and those who own more than 3,000m<sup>2</sup> of land. For instance, farm householders who own 3,000m<sup>2</sup> or less could participate in the agro-tourism enterprise to enhance the pride of community to local agricultural practices, whereas those who own more than 3,000m<sup>2</sup> could be involved in agro-tourism to get opportunities for the cultural exchange aspects and share agricultural experiences with tourists. (Table 7)

**Table 7.** Results of ANOVA for farm size

Factors	3,000m <sup>2</sup> or less	3,001-6,000m <sup>2</sup>	Over 6,000m <sup>2</sup>	F	Sig.
Positive economic impacts	3.14 <sup>b,c</sup>	3.69 <sup>a,c</sup>	4.36 <sup>a,b</sup>	65.146 <sup>1</sup>	0.000**
Positive socio-cultural impacts	3.32 <sup>b,c</sup>	3.88 <sup>a</sup>	4.28 <sup>a</sup>	32.517	0.000*
Negative environmental impacts	2.75 <sup>b,c</sup>	2.22 <sup>a</sup>	2.38 <sup>a</sup>	22.417 <sup>1</sup>	0.000**
Negative socio-cultural impacts	2.65 <sup>b</sup>	2.38 <sup>a</sup>	2.06	7.015	0.001*
Participation in agro-tourism development	3.55 <sup>b,c</sup>	4.08 <sup>a</sup>	4.61 <sup>a</sup>	28.756	0.000*

Note: <sup>1</sup> Asymptotically F distributed; \*\* Tamhane's T2 post hoc test results with significance level at  $\alpha = 0.05$ . \*Turkey post hoc test results with significance level at  $\alpha = 0.05$ . Superscript alphabets indicate that mean values are significantly different from the mean values in the equivalent columns. Alphabets denote column 2-4: i.e. <sup>a</sup> = 3,000m<sup>2</sup> or less, <sup>b</sup> = 3,001-6,000m<sup>2</sup>, <sup>c</sup> = over 6,000m<sup>2</sup>. For example, the first line reads that significant differences existed between farm households who own 3,000m<sup>2</sup> or less and those who own 3,001-6,000m<sup>2</sup>, between those who own are 3,000m<sup>2</sup> or less and those who own over 6,000m<sup>2</sup>, between those their land size is 3,001-6,000m<sup>2</sup> and those their land size is over 6,000m<sup>2</sup>.

The results (in Table 8) revealed that people who had higher incomes were more likely to prefer agro-tourism and actively participated in support of its development. Conversely, those who had lower incomes, appreciated negatively in impacts of agro-tourism and were less concerned in participation. This is in line with the findings by Kuvan and Akan (2005), Haralambopoulos and Pizam (1996), Pham and Kayat (2011), Milman and Pizam (1988), Liu and Li (2018), which indicated a relationship between loud income and positive perceptions, those high-income residents with more positive perceptions would participate in the development of agro-tourism more, contrary to lower-income residents would participate in it less.

Particularly, the residents who earn 25 million VND or less per month rated “enhance the pride of community to agricultural culture” as the first perception, and then “opportunities for cultural exchange and share experiences” as the second, while those who earn between 76 and 100 million VND per month rated “opportunities for cultural exchange and share experiences” as the first perception, then “attract investment in infrastructure improvement” and “contribute to diversity local economy” as the second perception. People earning 25 million VND or less per month rated “effect on indigenous dweller’s way of life” as the first concern, whereas “cause more litter in their community” as the first concern for those earning between 76 and 100 million VND per month.

**Table 8.** Results of ANOVA for household income

Factors	25 or less	26-50	51-75	76 -100	Over 100	F	Sig.
Positive economic impacts	2.77 <sup>b,c,d</sup>	3.28 <sup>a,c,d</sup>	3.75 <sup>a,b,d</sup>	4.33 <sup>a,b,c</sup>	4.50	46.258 <sup>1</sup>	0.000**
Positive socio-cultural impacts	3.12 <sup>b,c,d</sup>	3.41 <sup>a,c,d</sup>	3.96 <sup>a,b</sup>	3.45 <sup>a,b</sup>	4.08	23.069	0.000*
Negative environmental impacts	3.06 <sup>b,c,d</sup>	2.59 <sup>a,c</sup>	2.23 <sup>a,b</sup>	2.35 <sup>a</sup>	2.25	10.042	0.000*
Negative socio-cultural impacts	2.90 <sup>b,c,d</sup>	2.58 <sup>a,c</sup>	2.27 <sup>a,b</sup>	2.13 <sup>a</sup>	2.33	7.922	0.000*
Participation in support for the agro-tourism development	3.34 <sup>b,c,d</sup>	3.63 <sup>a,c,d</sup>	4.26 <sup>a,b</sup>	4.37 <sup>a,b</sup>	4.5	28.111 <sup>1</sup>	0.000**



Note: <sup>1</sup> Asymptotically F distributed; <sup>\*\*</sup> Tamhane's T2 post hoc test results with significance level at  $\alpha = 0.05$ . <sup>\*</sup>Turkey post hoc test results with significance level at  $\alpha = 0.05$ . Superscript alphabets indicate that mean values are significantly different from the mean values in the equivalent columns. Alphabets denote column 2-6 i.e. <sup>a</sup> = 25 million VND or less, <sup>b</sup> = 26-50 million VND, <sup>c</sup> = 51-75 million VND, <sup>d</sup> = 75-100 million VND, <sup>e</sup> = over 100 million VND. For example, the first line reads that significant differences existed between those that earn 25 million VND or less and those that earn 26-50 million VND, between those that earn 25 million VND or less and those that earn 51 – 75 million VND, between those that earn 25 million VND or less and those that earn 75-100 million VND, and so on.

The results in Table 9, show that men were likely more positive than women with regard to positive socio-cultural impacts, contrary to the findings of McGehee et al. (2007) who showed that women were perceived to have greater aptitudes for agro-tourism business. Those who are part-time farmers are also likely to be more positive thinking than those who were full-time farmers on positive socio-cultural impacts. Farm families who own their farm had more positive views on the positive impacts of economic and socio-culture, as well as the participation in support for agro-tourism development compared to those who leased their farm for agricultural production.

**Table 9.** Results of t-test for gender, occupation, and farm ownership types

Factors			t-test	Sig.
Gender				
Positive socio-culture impacts	Male	Female		
	3.57	3.38	2.522	0.012
Occupation				
Positive economic impacts	Full-time farmer	Part-time farmer		
	3.25	3.64	-3.407	0.001
Farm ownership types				
Positive economic impacts	You own	You lease		
	3.43	3.05	3.886	0.000
Positive socio-culture impacts			3.018	0.003
Negative environmental impacts			2.617	0.09
Participation in support for the agro-tourism development			3.626	0.000

### Regression analysis

A linear regression analysis was employed to identify if the components were significant, influencing the participation for further enhancement of agro-tourism development. The participation in further supporting the agro-tourism development was a dependent variable and the six components of agro-tourism impacts were perceived to be independent variables.

The results yielded that three components were significant and influence on the participation in agro-tourism development including “positive economic impacts”, “positive socio-cultural impacts” and “negative socio-cultural impacts”. The adjusted  $R^2 = .378$  explained that a relationship existed and explained 37.8% of total variables by this relationship. The strongest positive effect on the participation in further supporting for the agro-tourism development observed for “positive economic impacts” ( $\beta = .398$ ), followed by “positive socio-cultural impacts” ( $\beta = .294$ ), while “negative socio-cultural impacts” ( $\beta = -.102$ ) were negatively affected the participation in further supporting the agro-tourism development. (shown in Table 10)

**Table 10.** Multiple regression

Independent Variables	$\beta$	t	Sig.
Positive economic impacts	.398	7.276	.000
Positive socio-cultural impacts	.294	5.399	.000
Negative socio-cultural impacts	-.102	-2.190	.029

Note.  $R^2 = .385$ , adjusted  $R^2 = .378$ ,  $F = 61.698$ , sig = .000

“Positive economic impacts” contributed to the participation of residents since agro-tourism was not only an occasion for direct sales of agricultural products, but also a new business chance in their community. Simultaneously, it also brought the diversity of farm and economic activities in the rural areas (Lobo et al., 1999; Shaffril et al., 2015; Jęczynek et al., 2015). “Positive socio-cultural impacts” had also positive influences since it was vital in both to fully



utilize the community resources and enhance the community pride (McGehee and Kim, 2004; Nickerson et al., 2001; Karabati et al., 2009; Naidoo and Sharpley, 2016). An increase in cross-cultural communication enhances the understanding of the community by providing opportunities such as educational and cultural exchanges of community life between farmers/entrepreneurs and tourists (Pearce, 1990; Karabati et al., 2009; Naidoo and Sharpley, 2016). It could give an incentive for the preservation of the community cultural identity, which might increase the attractiveness of agro-tourism (Barbieri and Mshenga, 2008; Schilling et al., 2012). These socio-cultural impacts were also seen as essential motivations to promote the local community involved in agro-tourism. On the one hand, the study also verified “negative socio-cultural impacts” on the participation, since the locals perceived that agro-tourism leads to increase in crime rates and effect on indigenous dwellers’ way of life in Thai Phien Village. On the other hand, the study indicated that there was no relationship found between the attitudes of residents on the positive and negative environmental impacts and the participation in the development of agro-tourism. Likewise, no relationship exists between their negative economic impacts and participation.

### **Conclusions and recommendations**

The aim of this study was to examine the attitudes of residents towards varied agro-tourism impacts as well as investigate their effects on the participation in the development of agro-tourism by employing both descriptive and inferential statistics.

The findings indicated residents perceived agro-tourism has brought more positive impacts than negative ones for themselves and the local community. Especially, they perceived that agro-tourism has contributed significant changes to their living such as diversification of local economic activities, and stimulation in tourism-related business opportunities. Furthermore, their quality of life has changed compared to before that due to agro-tourism provides more recreational opportunities and a variety of farming activities. It fully capitalizes on the local community resources and enhancement of their pride in the local community culture. The study has emphasized not only the impetus of cultural exchange and meet new people but also the education and share the farming techniques between locals and visitors. Additionally, the awareness of both the authorities and the community of the contribution of agro-tourism in the conservation of natural environment has enhanced more than prior. The infrastructure improvement such as road, sanitation, parking plot; and the landscape of this area. These findings were firmed in the past studies of Tew and Barbieri (2012), Shaffril et al. (2015), and Srisomyong and Meyer (2015). These positive impacts played an important role in changing positively the residents’ attitudes.

The study proved that general information of residents affected their attitudes on the impacts of agro-tourism, and their participation to support the development of agro-tourism. In other words, thanks to the various ways that residents with distinctly individual characteristics undergo the effects of agro-tourism, they see it differently. The results of this study are appropriate with some results of the past studies (Pham and Kayat, 2011; Kuvan and Akan, 2005; Haralambopoulos and Pizam, 1996; Teye et al., 2002; Huh and Vogt, 2008; Andriotis and Vaughan, 2003; Milman and Pizam, 1988) The level of education, income, farm size, type of farm ownership, number of family member worked in agriculture influence on both the perception of residents and their participation.

In the study site, the locals appreciated the agro-tourism impacts on economic and socio-culture which surpassed the environmental impacts. A significant positive relationship was found among the participation of local community in agro-tourism, positive economic impacts, and positive socio-cultural impacts. These findings are not surprising, and the positive impacts on economic and socio-culture as primary motivations enhance the participation in agro-tourism, which is similar to the findings of McGehee and Kim's (2004) study, and is also supported by the findings of Nickerson et al. (2001). On the other hand, this study has also identified negative socio-cultural impacts such as a negative influence on the locals’ participation, which tends to be lessening support for agro-tourism. Thus, locals tend to



participate in agro-tourism if they perceive that agro-tourism brings back the effective proceeds rather than costs. In the other words, the locals are likely to willing to support for and participate in tourism if their attitudes assess on impacts are positive (Sharma and Gursoy, 2015).

A deeper understanding of the elements which can affect residents' participation to support the development of agro-tourism are vital for planners. Because the development of tourism is successful and sustainable depending on participating actively in the local community (Sharma and Gursoy, 2015). Thus, this research provides useful information to tourism policy-makers as a vehicle to assess both internal and external factors which may affect residents' attitudes positively or negatively. Therefore, it could be essential in order to address the negative impacts influence residents' motivation to participate in agro-tourism.

The local government can build up educational programmes or agro-tourism business model courses to apprise locals of the interests of agro-tourism to individuals as well as the community to obtain larger locals' participation to support its development (Shaffril et al., 2015; Sharma and Gursoy, 2015). Because the study also indicated that the educational influence on residents' attitudes, especially, those people holding higher educational level had positive views about agro-tourism.

Besides that, planners and policy-makers can also build up strategies based on local media, via local media to provide the panorama of agro-tourism and its effects on locals (Sharma and Gursoy, 2015). In the context of the study site, local media via a monthly meeting of Farmers' Union to convey the benefits of agro-tourism to their communities. Thanks to these strategies it will be possible to obtain more and more positive perceptions of the local community. Furthermore, the annual flower festival has played a vital role in the positive changes in residents' attitudes. It is seen as an opportunity for residents to display agricultural resource and for cultural exchange and shared experience between locals and tourists, and also provide chances for locals to convert the negative perceptions to positive ones about the development of agro-tourism.

In addition, the development of business collaboration between locals and travel enterprises in an effort not only to appeal to both domestic and international tourists but also to the equitable distribution of profits in the tourism value chain to uplifting the residents' positive attitudes, which related to the economic contribution brings local communities. This shows that agro-tourism may be sustainable development in the community if the positive perceptions maximized, more the locals' positive perceptions lead to being likely to their active participation.

Future studies could be examined in a larger sample in different research sites and could use other sampling technique to obtain enriched results. It would be useful to carry out comparative studies of the attitudes of farm households towards agro-tourism impacts in various locations and propose guidelines to promote agro-tourism development rather than focusing on residents' perception.

**Acknowledgements:** The author would like to thank the contribution of all interviewees. Special thanks to Mr. Le Khac Dong for his helpful comments, Mr. Lamin K. Marong for checking English on an initial version of this paper, and Prince of Songkla University grants for this study.

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