Perceptions of Local Residents toward Impacts of Agro-tourism in Da Lat, Vietnam

Nha Thi Huynh Nguyen

A Thesis Submitted in Fulfillment of the Requirements for the Degree of

Master of Science in Community Ecotourism Management

Prince of Songkla University

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ABSTRACT

Vietnam has the abundant potential of tourism similar to some countries of the South-east Asia region and most the population living in rural areas based on agriculture production as a primary livelihood, however, the local authorities and scholars have paid less attention to participate in agro-tourism development. Meanwhile, most studies within the situation are done in developed countries, the developing countries have not had much attention paid to them, a few studies were carried out in Malaysia, Thailand, China. There are no sufficient studies investigating residents' perceptions toward agro-tourism impacts, and its effects on community participation in support of agro-tourism. Therefore, to address an aforementioned notable gap, the study about perceptions of local residents toward the impacts of agro-tourism was conducted in Da Lat, Vietnam.

The aimed study was to identify the perceptions of local residents toward agro-tourism impacts on the economy, socio-culture, environment; as well as their community participation in support of agro-tourism. Moreover, to determine the effects of socio-demographic factors on the residents' perceptions toward impacts of agro-tourism, and on their community participation in support of agro-tourism; to explore which factors of residents' perception toward agro-tourism impacts influenced on their community participation in support of agro-tourism.

Data obtained from a survey of 300 samples in Thai Phien village, Phuong 12 sub-district, Da Lat district, Lam Dong province, Vietnam based on the random sampling method. This study used descriptive statistics, independent t-test, one-way ANOVA analysis, and linear regression to analyze the data.

Results revealed that agro-tourism mostly brings positive impacts that outweigh the negative ones on the local community. In terms of residents' perception toward positive economic impacts, for instances, offering new livelihood chances to

locals, attracting investment to infrastructure improvement, contributing to diversifying local economic activities, providing an opportunity for direct sales of agricultural products to tourists. As regards positive socio-cultural impacts, local residents perceived that agro-tourism provides more recreational areas, opportunities for cultural exchange and educating visitors about agriculture, the motivation for the preservation of cultural identify and the pride of community in agricultural production. Concerning positive environmental impacts, residents also perceived that agro-tourism enhances the appearance of the community's landscape and influences positively on the perceptions of both local community and local authorities to preserve the natural environment and community resources as well. Notwithstanding agro-tourism contributes significantly to the well-being of the community, also brings negative impacts. Most revenues of agro-tourism end up with the tour operators and individuals outside the locality, while the community has received a low salary from these activities. In addition, the increasing number of agro-tourists, leading to putting pressure on infrastructures and public services, in particular, resulting in overcrowding, traffic congestion, and lack of parking lot in the community.

This study also pointed out that there were significant differences between the socio-demographic characteristics of residents and the residents' perceptions of local residents toward impacts of agro-tourism, and the community participation in support of agro-tourism development as well. Particularly, level of education, net household income, farm size, farm type, number of family member participated in agricultural production were significant differences with both the residents' perception toward agro-tourism impacts and their community participation in support of agro-tourism.

Moreover, the findings of linear regression model indicated that the residents' perceptions toward the positive impacts of agro-tourism on both economic and socio-culture influenced positively on their community participation in support of agro-tourism, whereas the residents' perceptions toward the negative impacts of agro-tourism on socio-culture showed a negative effect.

Therefore, the residents' perceptions toward agro-tourism impacts played a crucial role, thereby affecting on perceptions of local residents toward impacts of agro-tourism and their community participation in support of its development in the area.

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Nha Thi Huynh Nguyen

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CHAPTER 1: INTRODUCTION

1.1 Background

Currently, the agricultural context in the world is confronted with many challenges. The increasing number of farmers are moving away from traditional agricultural production since this has become unprofitable. In particular, although the majority of the population in rural areas and still base mostly on farming, many farms with small or medium size are facing financial difficulties due to increasing global competition, rising production expenses, low agricultural merchandise prices (Barbieri & Mshenga, 2008).

Moreover, many farmers are also faced with globalization, industrialization, and urbanization which redirects land from producing agriculture, and rising prices of farmland resulting in damage small-sized farms (Nickerson *et al.*, 2001; McGehee & Kim, 2004; Barbieri & Mshenga, 2008; Schilling *et al.*, 2012). Small-sized farms face the opinions of current agricultural context, either enlarge off-farm employment to earn additional income or develop alternative agricultural businesses (McGehee *et al.*, 2007; Ollenburg & Buckley, 2007).

Therefore, many farm households have to seek various ways to diversify on-farm and off-farm production for financial stability. Agro-tourism has appeared as an alternative enterprise solution to fully utilize agricultural resources, which can offer for the several potentials for economic benefits including higher profit margins (Barbieri & Mshenga, 2008), financial support to hold on traditional agricultural production and rural lifestyles (Fleischer & Tchetchik, 2005), the education of public about agriculture (Lobo *et al.*, 1999), simultaneously creating job opportunities for household members, especially farmers' wives (Yang, 2012) and diversity farm products and on-farm sales. Agro-tourism also allows farmers to foster interactions between hosts and guests, pursue personal hobbies and enhance the life quality of family (Tew & Barbieri, 2012).

Furthermore, according to Barbieri and Mshenga (2008), agro-tourism is one way to carry out this, since its fully utilize community resources and environmentally friendly. Agro-tourism also offers other benefits which expand the further way the farm, comprising reinforcing networks of community, traditions, and culture. In addition, the engagement of visitors usually in recreational activities and shopping in the community has

provided economic gains to the local economy (Fleischer & Tchetchik, 2005). In which the enhancement of physical infrastructures and public services have developed the community in term of socio-culture, moreover, it has contributed preservation and uplifting of the natural environment (Naidoo & Sharpley, 2016).

The incorporation of off-farm enterprises into their farms, agro-tourism has created new markets and chances for farm households to diversify agricultural productions and raise their incomes since many inhabitants living in urban areas are getting away from the rigors of city lifestyles and looking for agricultural experiences which are seen to be relaxing (Barbieri & Mshenga, 2008). Agro-tourism as a mean of farm diversification and attractive economic growth based on existing assets of the farm such as labor, land, equipment which can be underused for significant periods of time, simultaneously providing on-farm job chances for household members (Schilling *et al.*, 2012; Tew & Barbieri, 2012). In addition, it is also illustrated as a strategy of economic development since generating business opportunities for other sectors in the local economy (Tew & Barbieri, 2012). The development of agro-tourism can be successfully integrated into rural lifestyles, the local economy and natural environment without notably negative impacts.

Agro-tourism plays a vital role as a form of alternative tourism for rural areas which included small-scale farmers in many parts around the world. It has the ability to create benefits for the farm owners and in surrounding the local community (Malkanthi & Routry, 2011). It does not only meet increasing demand for activities based on nature but does also promote farmers to conserve farmland and nature-related amenities (Bagi & Reeder, 2012).

The increasing purchaser demand for local goods and services, especially fresh farm products, featuring of agro-tourism operators offered by pick-your-own operations. It also attracts urban residents to rural areas, especially younger generations, have an opportunity to undergo rural lifestyles and interactions with local people. Moreover, agro-tourism development as a motivation to stay and invest in their communities by it can improve "sense of place" for local people (Barbieri & Mshenga, 2008).

According to Schilling *et al.* (2012), the development of agro-tourism can be contributed benefits to farmers, visitors, and the community. As regard farmers, the potential benefits of agro-tourism for supplemental revenues, provision

of employment opportunities and tourism-related business for household members, retain agricultural lifestyles (Nickerson *et al.*, 2001; Ollenburg & Buckley, 2007; Tew & Barbieri, 2012). For visitors, there are precious experiences with rural lifestyles, engaging in farm-related recreational chances, learning about agricultural production. Concerning the community, tax revenues, opportunities for locals' job and local business, and improvement of the local economy.

1.2 Statement of the problem

In recent decades, a large number of studies has carried out on the development of agro-tourism enterprises and its perceived impacts in many parts of the world. Both Henderson (2009) and Srisomyong and Meyer (2015) stated that most studies within the 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; McGehee, 2007; Ollenburg and Buckley, 2007; Barbieri and Mshenga, 2008; 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 to the agro-tourism impacts of on socio-economic activities in the community (e.g. Songkhla and Somboonsuke, 2012; Tiraieyari and Hamzah, 2012; Yang, 2012; Shaffril *et al.*, 2015; Srisomyong and Meyer, 2015; Leh *et al.*, 2017). In addition, there are no sufficient studies of agro-tourism investigating the perceptions of local residents toward agro-tourism impacts which related to the economy, socio-culture as well as the environment, and its effects on community participation in support of the agro-tourism development.

Vietnam has the abundant potential of both agriculture and tourism similar to some countries of the South-east Asia region.

On the one hand, the number of international visitors visited Vietnam estimated 12,922,151 arrivals in 2017, increasing by 29.1% compared to the previous year (VNAT, 2018). Moreover, during the first 9 months of 2018, the number of international tourists reached 11,616,490 arrivals, which increased by 22.9% over the same period in 2017 (VNAT, 2018).

In particular, in Da Lat where this study was conducted, the number of tourist arrivals was around 3,380,000 arrivals during the first 6 months in 2018, increased by 9.6% compared to the same period in last year, in which, the number of international tourist arrivals was over 245,000 arrivals, increased by 19.8%. In 2018, Da Lat had an accommodation supply of 10,405 hotel beds of 411 hotels from one to five-star and 9,819 other tourist accommodations a total of 20,224 tourist accommodations. During the first 6 months of 2018, more than 2.3 million tourists lodged in hotels, and other tourist accommodations of 3.38 million arrivals, increased by 17.1% compared to the previous period. (Thanh pho Da Lat tinh Lam Dong - Portal, 2018)

In 2017, it has contributed to Gross Domestic Product (GDP) estimated VND468,291.0 billion (USD20,605.6 million), accounted for 9.4% of GDP, is predicted to increase by 6.2% to VND497,303.0 billion (USD21,882.17 million, 9.3% GDP) in 2018 (WTTC, 2018). The number of employment was 4,061,000 jobs, which occupied 7.6 % of total employment in last year, is forecasted to increase by 1.4% in this year to 4,117,000 jobs (7.6% of total employment) (WTTC, 2018).

On the other hand, the majority of the population living in rural areas based on agriculture as a primary livelihood. In the context of globalization, farmers have confronted with many difficulties since the global competition, rising production expenses, low agricultural merchandise prices. The increasing number of farmers are leaving away from their farms to look for a new livelihood.

Agro-tourism has emerged as an alternative solution to escape from these challenges. Simultaneously, it is an ideal opportunity for international tourists can witness the cultural identity of the different communities in the rural area whereas contributing to supplemental incomes for local people.

Meanwhile, agro-tourism was officially introduced in Malaysia and Thailand in 1991 and 1994 respectively (Songkhla & Somboonsuke, 2012; Mazlan & Juraimi, 2014); it has brought significant changes to socio-economic activities in these areas, and is a vital factor to diversity rural economy.

In fact, in the context of Vietnam in terms of the local government, the residents, and scholars have paid less interest to participate in the agro-tourism development and its impacts (negatively and positively). Thus, to address an

aforementioned notable gap in the literature, this study was carried out in Thai Phien flower village, Phuong 12 sub-district, Da Lat district, Lam Dong province, Vietnam.

Perceptions of positive effects might result in community participation to support the development of tourism and perceptions of negative ones could lead to retraction of local in participation for tourism development (Long & Kayat, 2011). Since the thoughtful understanding of perceptions of local residents toward agro-tourism impacts, leading to their active participation in agro-tourism, which plays a crucial role in support for the tourism development sustainably (Gursoy *et al.*, 2010).

Hence, this study investigated the perceptions of local residents toward impacts of agro-tourism in Da Lat, Vietnam.

1.3 Research Objectives

This study aims to investigate the perceptions of local residents toward the impacts of agro-tourism in Da Lat, Vietnam. The major objectives of this research are summarized as follows:

1) To identify the perceptions of local residents toward agro-tourism impacts on the economy, socio-culture, environment, and community participation in support of agro-tourism as well.
2) To determine the effects of socio-demographic factors on the perceptions of local residents toward impacts of agro-tourism and on their community participation in support of agro-tourism.
3) To explore which factors of residents' perceptions toward agro-tourism impacts on the economy, socio-culture, and the environment influenced on their community participation in support of agro-tourism.

1.4 Research Questions

This study aimed to address the following questions:

1) How do the residents perceive agro-tourism impacts on the economy, socio-culture, and the environment? How do they participate in support of agro-tourism?

2) What is the relationship between perceptions of local residents toward agro-tourism impacts, community participation in support of agro-tourism and socio-demographic factors of residents?
3) Which variables of residents' perceptions toward agro-tourism impacts explain on their community participation in support of agro-tourism?

1.5 Significance of the study

Results of this study provide useful information to the community developers and tourism policy-makers that about residents' perceptions of agro-tourism impacts and their community participation in support of agro-tourism, therefore, can make tourism schemes and tourism-based policies to encourage local people to participate in agro-tourism development. It also partly contributes to the research instrument development as a helpful measurement tool to evaluate residents' perception toward agro-tourism impacts for other researchers in various study sites.

1.6 Introduction of agro-tourism activities in Vietnam

Agro-tourism which has officially promoted in Vietnam since 2001 which supported by Netherlands International Development Agency, has created the basis for the program of agro-tourism development to the expansion of additional incomes and diversifying agricultural products for local communities. However, its development still considered at young stage compared to other countries in the South East Asia region such as Malaysia, Thailand, or Indonesia.

However, some outstanding agro-tourism destinations with various activities have brought significant benefits to locals, for instances as follows:

1.6.1 Moc Chau agro-tourism destination, Son Lan Province (Northern Vietnam)

Located at 1,000 meters above sea level, is an ideal location for tea production as the topography, altitude, and climatic conditions, produces many kinds of tea but it is famous for high-quality Oolong tea. Visitors can tour at the tea plantations to observe the tea production process and enjoy the spectacular landscape of the terraced fields as well. Several shops within Moc Chau not only sell tea but also offer free tea-tasting services. Moreover, the tour starts with visit strawberry farms in the area of Pine forest in Ang Village, visitors can join in picking your own strawberries. Local agricultural products

are sold on the roadsides. And the way of life of Hmong's ethnic people also introduced, visitors can learn about their culture and cultural exchange with the local community.

Figure 1 Moc Chau agro-tourism destination

Source: Vietnam National Administration of Tourism (2018)

1.6.2 Mu Cang Chai agro-tourism destination, Yen Bai Province (Northern Vietnam)

Rice terrace field is the main occupation of the villagers of Mu Cang Chai, and it demonstrates their ingenuity in conserving natural resources and living in harmony with nature. Visitors are welcome to observe and participate in the rice terrace field farming process, whether during the cultivation or harvest period, depending on the time of year. Moreover, visitors can observe the manufacture of hand-woven cloth as well as can buy products as souvenirs. The tour starts with learning the culture of the Mong community as an introduction to understanding their way of life. Visitors also get to cook and enjoy the delicious Mong's food.

Figure 2 Mu Cang Chai agro-tourism destination

Source: Vietnam National Administration of Tourism (2018)

1.6.3 Ba Vi agro-tourism destination, Hanoi

Offers numerous agricultural-themed activities at which visitors experience for themselves the local wisdom and ways of life of farmers. Visitors learn about dairy farming activities, such as the life cycle of cattle, milking process, cheese-making, ice-cream-making, etc. Visitors to the Ba Vi farm are also able to tour the tea plantations and observe the Oolong tea production process and enjoy free tea-tasting service.

Figure 3 Ba Vi agro-tourism destination

Source: Vietnam National Administration of Tourism (2018)

1.6.4 Tra Que vegetable village agro-tourism destination, Quang Nam Province (Central Vietnam)

A tour of a spacious garden based on an integrated agricultural system enables visitors to learn how to grow different types of plants and how they naturally support one another. Visitors enjoy tasting different kinds of fresh vegetables from the gardens and fresh fruits from the trees. Vegetable and fruit processing offer to visitors, fresh vegetables and fruits are taken from the gardens to process into a variety of products, including food and beverages. Furthermore, one-day working as a farmer, to provide experiences about agricultural cultivation to visitors. Visitors were explained about the origin and usage of each of these farming tools as well as traditional rice farming technique. During harvesting season, visitors also learn how to harvest rice using traditional methods.

Figure 4 Tra Que vegetable village agro-tourism destination

Source: Vietnam National Administration of Tourism (2018)

1.6.5 Phan Rang Vineyard agro-tourism destination, Ninh Thuan Province (Southeast Vietnam)

The topography and climate to grow grapes and produce quality wine. Activities for visitors include tours of the vineyard, observation of the grape cultivation process, learning about the history of the vineyard and winery, exploration of high-technology wine-making techniques, and enjoy free wine-tasting at the farm-shop, where visitors can buy bottles of quality wine and fresh grapes as well.

Figure 5 Phan Rang Vineyard agro-tourism destination

Source: Vietnam National Administration of Tourism (2018)

1.6.6 Da Lat agro-tourism destination, Lam Dong Province (Central Highlands Vietnam)

Located in Langbian plateau with picturesque scenery and cool temperatures, where visitors can enjoy high-technology agriculture. Activities within

the site, including temperature vegetable farming, with outdoor school for visitors, especially for students to learn how to grow temperature vegetables organically. Local people teach visitors all steps of farming, from involving preparation of the soil, propagation of seeds, planting seedlings, watering garden plots, and harvesting vegetables. Shopping at the farm outlet offers to visitors, as a distribution center for agricultural products from other farms within the area, and visitors are able to buy various kinds of vegetables and fruits at reasonable prices. Moreover, visitors can also observe the beautiful flower gardens and several interesting orchards and pick-your-own strawberries, baby cucumbers, cherry tomatoes and so on.

Figure 6 Da Lat agro-tourism destination

Source: Vietnam National Administration of Tourism (2018)

1.6.7 Buon Me Thuot agro-tourism destination, Daklak Province (Central Highlands Vietnam)

A coffee tour was established to provide visitors with the real story behind coffee beans, from growing the plant to processing the coffee beans into the cup, as well as giving a deep understanding of the lives of the coffee farmers. The coffee tour starts with learning the culture of the M'Nong and Ede community as an introduction to understanding their way of life, and coffee-growing principle. Visitor also get to cook and enjoy delicious M'Nong and Ede food. Visitors able to tour to a coffee plantation to observe the coffee growing process includes selecting the coffee variety and coffee plants, manage the integrated farming system, using organic fertilizer, cultivating the coffee cherries, and also the coffee beans picking process. Moreover, visitors can learn how the coffee beans are processed, soaking the coffee cherries, pulping the cherries to

get the coffee beans, washing, dryings, and storing the coffee beans. Besides that, roast the coffee beans, brew the coffee, and enjoy the smooth taste of fresh coffee also offered.

Figure 7 Buon Me Thuot agro-tourism destination

Source: Vietnam National Administration of Tourism (2018)

1.6.8 Tan Long Islet agro-tourism destination (Mekong River Delta – Southern Vietnam)

The tour starts with exploring the fishing communities' way of life, fishing communities start their day early and visitors can join them on their trip to Tien River, that is sub-river of Mekong River in Vietnam territory, the giant square fishnets are dropped to catch the fish. Visitors can simply observe or learn the technique. Apart from providing friendly and comfortable accommodation, homestay in this islet also serves as a learning center where visitors can develop an awareness of the history and custom of the people in Southern region, its ecosystem and agricultural activities, and the fishing communities' way of life, as well as learn to cook and taste the delicious local cuisine.

Figure 8 Tan Long Islet agro-tourism destination

Source: Vietnam National Administration of Tourism (2018)

1.6.9 Thoi Son Islets agro-tourism destination (Mekong River Delta, Southern Vietnam)

Its abundance of tropical fruits not only provides fruits for sale but also offers as a tourist destination where visitors can tour the orchards, these orchards enable visitors to get an on-hands experience of tropical fruit cultivation and learn the growing techniques. The orchard tour allows visitors to see a variety of local fruits ripening on the trees and enjoy the all-you-can-eat fruits freshly picked from the trees (buffet fruits). Visitors can observe the process of making coconut candy, rambutan or mangosteen in syrup, etc., and tasting with delicious local cuisine of the Southern region of Vietnam. Southern Fruit Festival, annually held at the end of May until the first of June, features fruit parades, fruit competitions, and an exhibition of local agricultural products. This festival also the opportunity for visitors to taste and buy a vast selection of freshly-picked produce from the orchards. Besides that, a boat tour around a small canal allows visitors to marvel at the beauty of coconut-water trees along to the canal.

Figure 9 Thoi Son Islet agro-tourism destination

Source: Vietnam National Administration of Tourism (2018)

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction about agro-tourism

In the current context, farm tourism, farm-based tourism, and vacation farms can be used as an alternative expression of agro-tourism; and agro-tourism is a specific subset of rural tourism (Barbieri & Mshenga, 2008; Phillip *et al.*, 2010). In other words, agro-tourism was defined based on farm enterprises as travel attractions for purposes of recreation and education, including a variety of activities (Schilling *et al.*, 2012).

Moreover, there are a variety of agro-tourism definitions in existence (Phillip *et al.*, 2010). According to Weaver and Fennell (1997) defined that agro-tourism is a rural business that integrated both a commercial tourism element and a working farm environment, Ollenburg and Buckley (2007) also claimed. Agro-tourism considered as any operation evolved on a farm is operating with the intention of tempting tourists (Barbieri & Mshenga, 2008). Bagi and Reeder (2012) referred agro-tourism as a commercial enterprise at working farms or ranches carried out for the entertainment of visitors which created additional incomes for farmers.

Phillip *et al.* (2010) based on three criteria: (1) whether the activity of visitors relied on a working farm; (2) the nature of contact between visitors and activity of agriculture (i.e. direct, indirect, passive); (3) whether the experience on agricultural activity of visitor is authentic.

Besides that, McGehee and Kim (2004) also found that most popular agro-tourism activities including pick-your-own operations, hayrides, educational tours for children, Christmas tree sales, petting zoos, and on-farm festivals. Moreover, wildlife watching, hunting, fishing were found as the most popular activities of agro-tourism (Weaver & Fennell, 1997). Day-trip activities including picking fruits and vegetables, petting zoos, and corn mazes were also defined by Che *et al.* (2005). Additionally, agro-tourism also comprised other activities such as wine tours, horseback riding, harvest festival, hospitality events and overnight service accommodation on farms and ranches (Schilling *et al.*, 2012).

2.2 Residents' perceptions toward the impacts of agro-tourism

Agro-tourism is developed which can produce both positive and negative impacts on the economic and socio-cultural context (Nickerson *et al.*, 2001; McGehee & Kim, 2004; Tew & Barbieri, 2012; Srisomyong & Meyer, 2015) and on the environment (Tiraieyari & Hamzah, 2012; Yang, 2012). However, it is mostly agreed that agro-tourism plays a vital role for community development (Flanigan *et al.*, 2014).

In the study conducted in Vietnam by Long and Kayat (2011), Huong and Lee (2017) suggested that tourism impacts on socio-culture and environment more strongly than it's on the economy. Thus, community participation in support of tourism development for other reasons beyond its economic impacts. In contrary to the findings of previous studies of Nickerson *et al.* (2001), McGehee and Kim (2004), confirmed that economic benefits as primary reasons. And social impacts, though played a crucial role, were not always the most crucial.

In this study, however, the perceptions of local residents toward the impacts of agro-tourism are divided into three factors (perceptions of local residents toward the impacts of agro-tourism on the economy, socio-culture, and the environment) as follows:

2.2.1 Residents' perceptions toward the economic impacts of agro-tourism

From the review of previous studies, it is offered that agro-tourism could create many benefits to farm households, farm visitors, and also the local communities. most of the studies on motivation in agro-tourism development are relevant to economic benefits, especially regarding additional revenues for farm households from serving tourists which can compensate for the fluctuation of prices of the agriculture, while simultaneously diversify agricultural activities (Lobo *et al.*, 1999; McGehee & Kim, 2004; Schilling *et al.*, 2012; Songkhla & Somboonsuke, 2012). In a study put forth by Lobo *et al.* (1999), agro-tourism contributes the flourishing of local economic activities, as a result, it could improve the production and on-farm sales of local agricultural products, and direct-marketing chances as well.

Moreover, agro-tourism creates tourism-related businesses such as souvenir shops, agricultural products sale, roadside stalls, tourist service enterprises including restaurants, accommodation, etc. (Choenkwan *et al.*, 2016). As a mean of the

local economic diversification, agro-tourism has been contributed to lessening poverty and enhance the livelihoods of local people (Hamzah *et al.*, 2012).

Notwithstanding, agro-tourism does make positive contributions to local communities, in the view of Songkhla and Somboonsuke (2012), too much concentration on it might lead to agricultural activities being interrupted. Fleischer and Tchetchik (2005) indicated that agriculture did not bring essential advantages for tourism, however, farmers who gained significant benefits from selling agricultural products to 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. In addition, Karabati *et al.* (2009) also indicated that the development of agro-tourism does not bring significant economic gains to their community as most of the benefits which generated from agro-tourism activities end up with the tour operator and individuals outside in the locality.

2.2.2 Residents' perceptions toward the socio-cultural impacts of agro-tourism

Many studies have discovered reasons based on socio-cultural benefits as incentives for the agro-tourism development, including preservation of rural lifestyles, raising awareness, maintenance of cultural identity and local customs, particularly, to maintain agricultural production (Barbieri & 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 experiences on the farm with visitors (Tiraieyari & Hamzah, 2012). Opportunity to meet new people from other parts around the world for locals to have a better understanding of other culture for the residents in the community. It is a reasonable tool for educating visitors about the value of agriculture to the local economy (Lobo *et al.*, 1999; Nickerson *et al.*, 2001; McGehee & Kim, 2004; Barbieri & Mshenga, 2008; Schilling *et al.*, 2012).

Moreover, agro-tourism provides job opportunities for local people as well (Barbieri & Mshenga, 2008; Schilling *et al.*, 2012; Tew & Barbieri, 2012; Choenkwan *et al.*, 2016). Particularly, as younger generations might gain an opportunity to stay and work on their farms (Ollenburg & Buckley, 2007). Besides, agro-tourism is offered as a solution to the issue of unemployment by lessening the flow

of migration to great cities to desire for uplifting living and working environment (Songkhla & Somboonsuke, 2012). Agro-tourism also expands employment opportunities on a large scale for both skilled and unskilled locals, in addition, lessening the gender bias problem since proffering chances to participate in agro-tourism are equal for both male and female (Pearce, 1990; Hamzah *et al.*, 2012; 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 & Hamzah, 2012). It could be one way to raise the pride of community and uplift their life quality (Barbieri & Mshenga, 2008; Karabati *et al.*, 2009; Shaffril *et al.*, 2015).

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

2.2.3 Residents' perceptions toward environmental impacts of agro-tourism

Other positive aspects of agro-tourism referred by Tiraieyari and Hamzah (2012) and Yang (2012) including the preservation of ecosystem and conservation of natural resources; it also raises awareness of local people to protect natural environment and improvement of a cleaner living environment. Agro-tourism contributes to fully utilize community resources (Nickerson *et al.*, 2001; McGehee & Kim, 2004).

In addition, the higher standard was recorded for physical infrastructures. Yang (2012) related that agro-tourism has improved living standards such as upgrade roads, better sanitation, and other public facilities, and greener

surrounding environment. Agro-tourism also gives a motive for the preservation of the beauty of landscapes in the community (Chuang, 2013).

However, Chuang, (2013) also mentioned that agro-tourism development has brought disadvantage for the area, including noise, environmental pollution, deterioration of natural resources, deconstruction of cultural heritage. Moreover, the growing of construction to address the lack of physical infrastructure and other public facilities destroyed the stability of land and natural environment.

The increasing number of tourists leading to overcrowding in the community, and more traffic congestions, more traffic accidents and the severe lack of parking lots (Yang, 2012). It also results in more litter and wastes, reducing the quality of the living environment in a surrounding area (Chuang, 2013). In particular, according to He (2011), the crowded visitors and means of transport produce substantial negative impacts on the local environment which included solid wastes, CO_2 emission, disposal of fuel, and noise pollution.

2.3 Motivations to participate in agro-tourism

According to Nickerson *et al.* (2001) indicated that agro-tourism is an alternative way for farmers to provide more supplemental incomes and diversify their farm operations. As a result of the study, these authors analyzed that the participation in agro-tourism development was origin from eleven motivations as follows: fluctuations in agriculture income, employment for family members, additional income, loss of government agriculture programs, meeting a need in the recreation/vacation market, tax incentives, companionship with guest/users, interest/hobby, better use of farm/ranch resources, successes of other farm/ranch recreation businesses, education of the consumer. The most concerned of farm owners were about fluctuations in agriculture income, thus, diversification strategies as a tool to reduce market fluctuations to stabilize their incomes.

Besides that, noneconomic motivations also can play a vital role in participating agro-tourism. In the study of Tew and Barbieri (2012), McGehee and Kim (2004), the vital motivations of farm owners choosing to incorporate their operations into agro-tourism facilities were the improvement of the life quality of community, keeping ranching and farming from generation to generation, moreover, educating

visitors about agriculture, serving personal hobby that related to entrepreneurial purposes.

In small-size household farmers, in addition, McGehee and Kim (2004) found that the perceived popularity of agro-tourism, farm owned acreage, the economic dependence on farming were crucial motivations for the community participation in support of agro-tourism development.

Furthermore, Bernardo *et al.* (2004) indicated that specific characteristics of the farm which included the experience of operators' farming, access to capital, operation's size were also crucial motivations in deciding the community participation in agro-tourism.

2.4 Social Exchange Theory

The numerous studies applied social exchange theory to evaluate the relationship between community participation in support of tourism and residents' perceptions toward tourism impacts (Gursoy *et al.*, 2002; Wang & Pfister, 2008; Látková & Vogt, 2012; Rasoolimanesh *et al.*, 2017).

As the social exchange theory mentioned, if residents perceived that tourism development brings positive impacts that surpass negative ones, they will participate in support of tourism (Gursoy *et al.*, 2002). In contrary, if residents perceived that the development of tourism brings negative impacts to exceed positive ones, community participation in support of tourism development will be limiting. In other words, a positive relationship was found between community participation and their perceptions of its development as benefits, and conversely, a negative one was found if tourism development was perceived as costs. Hence, community participation in support of agro-tourism development will be influenced by the perceptions of residents toward agro-tourism impacts, negatively or positively. In addition, community participation in process of support for agro-tourism development also can enhance the perceptions of residents toward agro-tourism impacts, thereby reversely affect their community participation in support of agro-tourism (Gursoy *et al.*, 2002).

McGehee and Andereck (2004) found that those who based on the development of tourism are likely to consider the positive impacts of tourism at a higher level and show greater participation in support for tourism activities. Moreover, some

studies have indicated that residents' perceptions were being affected by the level of tourism development (Perdue *et al.*, 1990). It means that residents in the community have differing perceptions of tourism development due to the various degree of tourism development. If residents perceived that tourism development as a positive perception, the tourism development will be a high level (Látková & Vogt, 2012). However, the tourism development at higher levels also can be a reason for residents' perceptions of tourism development become negative more (Perdue *et al.*, 1990).

Nonetheless, Allen *et al.* (1993) indicated that there was no relationship between perceptions of residents toward toursim development and the level of its development. Residents' perceptions are contingent on the development level of the community economy. According to these authors, residents living in an environment with a higher in level of economic development and a developed tourism industry perceived that tourism development are more likely to have positive perceptions than those living in an environment having a higher economic activity level and the tourism industry undeveloped or lower in economic activity level and the tourism industry developed. Particularly, those living in the community with a higher level of development of economy and tourism, have perceived tourism development as benefits and have more positive perceptions. If those living in an environment with economic activity at a higher level and a lower level of tourism development, tourism development does not value; whereas residents living with economic activity at a lower level and tourism development at a higher level are less likely to support tourism development since they have not perceived that tourism development as economic benefits. The benefits and costs of economic were also emphasized as factors influence on perceptions of tourism development, which was found in a study of McGehee and Andereck (2004).

Literally, the perceptions of local residents toward tourism impacts, positively or negatively, have affected significantly on residents' participation in tourism development (Látková & Vogt, 2012). The community willing to participate in support of tourism development if they perceived tourism development bring benefits to outweigh costs (McGehee & Andereck, 2004; Látková & Vogt, 2012).

2.5 Research Framework

This research framework included three factors, information of residents, residents' perceptions toward impacts of agro-tourism, and community participation in support of agro-tourism.

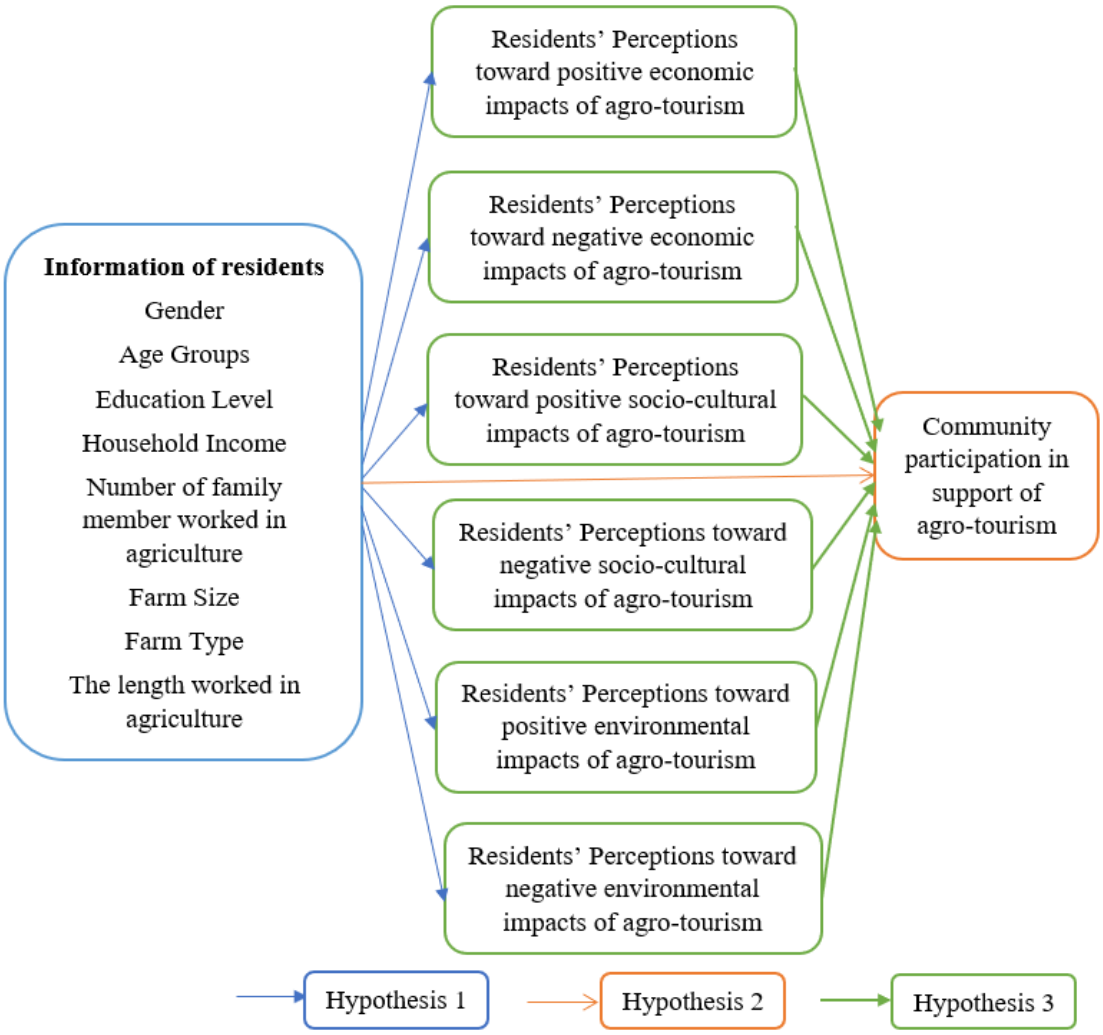

Figure 10 Research Framework

According to Bernardo *et al.* (2004) and McGehee & Kim (2004) indicated that specific characteristics of farm such as small-size household farms, farmer-owned acreage, economic dependence on farming, experiences of operators' farming, operator size, and access to capital were crucial motivations in deciding of perceptions of local community toward impacts of agro-tourism and community participation in support of agro-tourism. Hence, test the significance of relationships, between personal information of residents and residents' perceptions toward impacts of

agro-tourism on the economy, socio-culture, environment both positively and negatively; between personal information of residents and their community participation in support of agro-tourism were carried out.

According to Nickerson *et al.* (2001), McGehee & Kim (2004), Tew & Barbieri (2012) pointed out that economic motivations and non-economic motivations (socio-cultural) play a vital role in participating of residents in support of agro-tourism. Moreover, Long & Kayat (2011), Huong & Lee (2017) also indicated that socio-cultural and environmental impacts are primary factors affected on community participation in tourism. Therefore, test the significance of the relationship between residents' perceptions toward the impacts of agro-tourism on the economy, socio-culture, environment and community participation in support of agro-tourism were conducted.

2.6 Hypotheses

This study included three hypotheses as following:

Hypothesis 1: There were significant differences between perceptions of local residents toward the impacts of agro-tourism and socio-demographic of residents.

Hypothesis 2: There were significant differences between community participation in support of agro-tourism and socio-demographic of residents.

Hypothesis 3: There were significant differences the effect of perceptions of local residents toward impacts of agro-tourism on their community participation in support of agro-tourism.

In which test the significance of hypothesis 1 and 2 to response for objective 2 (to identify the personal information of resident influence on perceptions of local residents toward impacts of agro-tourism and their community participation in support of agro-tourism). And test the significance of hypothesis 3 to response for objective 3 (to explore which factors of perceptions of local residents toward impacts of agro-tourism influenced on their community participation in support of agro-tourism).

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction to the study site

Figure 2 illustrates the map of Thai Phien village, Phuong 12 sub-district, Da Lat district, Lam Dong province, Vietnam. Historically, Da Lat was discovered by French surveyor Alexandre Yersin in 1893. The area was later developed as a favorite tourist destination for Europeans in Indochina by the French government. 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 attract tourists. The dry season in Da Lat starting from December to March next year and an extended rainy season throughout the rest months. Da Lat is endowed with the natural environment, cool climate, and is a popular tourist destination, and also well-known as one of the oldest hill resorts in Vietnam. Nowadays, Da Lat is also known as an agro-tourism destination with fruit orchards, vegetables, and gorgeous flower villages was promoted to tourists (Thanh pho Da Lat tinh Lam Dong - Portal, 2018).

From 2009 to 2015, the local government has recognized four flower villages that meet the criteria of "traditional flower village" including Thai Phien, Van Thanh, Xuan Thanh, Ha Dong. Da Lat district is made up of sixteen sub-districts, nonetheless, the study only focused on Phuong 12 sub-district where is a highlight with Thai Phien flower village, located from 7 kilometers northeast of Da Lat center, Lam Dong province, Vietnam. Because of the year 2017, the People's Committee of Da Lat district issued a special resolution on the tourism development of flower villages in Da Lat district up to 2020 with an orientation to 2025, Thai Phien flower village has been chosen first for the development into an agro-tourism destination. It has opened chances for farm households to enlarge and diversify agricultural production into the agro-tourism activity (Thanh pho Da Lat tinh Lam Dong - Portal, 2018).

Thai Phien village is famous for a greenhouse agricultural production which applied new technologies using the automatic watering system for flowers, vegetables, and orchard farms, including 1,229 hectares of natural land, and 436

hectares of agricultural land. Specifically, the flowers area were 300 hectares in size, and the rest of lands is planted with artichoke and other vegetables. Thai Phien Village was established in 1956 with approximately 40 households and up till 2013, it had 1,209 farm households for agriculture production (Thanh pho Da Lat tinh Lam Dong - Portal, 2018).

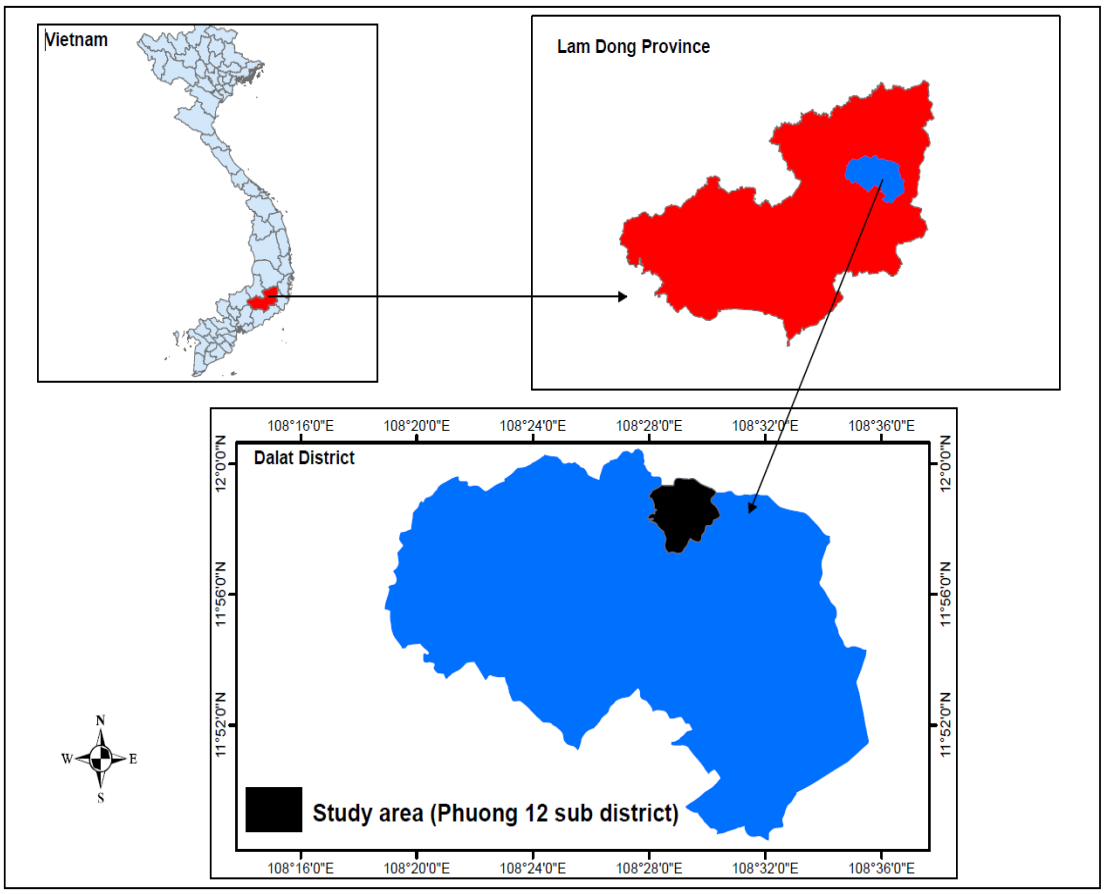

Figure 11 Study area

Source: Thanh pho Da Lat tinh Lam Dong - Portal (2018)

The flower festival is held every two years since 2005 for the first time, until now. In recent years, the village receives about four thousand visitors each year on average, focusing on the flower festival. Agro-tourism activities are available including farm tours for visitors to learn and do farming work, hands-on planting and picking of flowers, vegetables, and fruits in orchards or overnight at homestay with locals or at camping sites in the village to experience rural life (Thanh pho Da Lat tinh Lam Dong - Portal, 2018).

3.2 Population, Sample size, and Sampling method

The study used a limited population, the main target population was the residents of Thai Phien village, Phuong 12 sub-district, Da Lat district. The total of population of Thai Phien was 1,209 households (Statistics in 2013).

The sample size for the community of this study will be obtained by using Yamane (1967) formula:

$$n = \frac{\mathrm{N}}{1 + Ne^2}$$

where:

n: Sample size

N: Population size

e: Level of precision or sampling of errors which is $\pm 5\%$

Then,

$$n = \frac{1{,}209}{(1 + 1{,}209 * (0.05)^2)}$$

$$n = 300.559$$

$$n = 300$$

Therefore, the sample size was 300 samples who were representative of farm households, aged over 18 years old, of 1,209 farm households.

3.3 Research Instruments

The questionnaire was developed based on literature reviews of the previous studies which included three primary parts (Appendix B).

In the first part, the residents' perception of agro-tourism impacts on the economy, socio-culture, and environment including both positively and negatively. First, indicators proposed for the perceptions of economic impacts included ten statement-questions based on earlier studies of Lobo *et al.* (1999), Nickerson *et al.* (2001), Shaffril *et al.* (2015), Srisomyong and Meyer (2015). There were employment opportunity and more business activity for local people, additional incomes, diversity of the local economy, increase the living cost, an increase in demand to farm products of visitors, and so on. Secondly, nine statement-questions were employed to evaluate the perceptions of socio-cultural impacts based on studies of Pearce (1990), McGehee

and Kim (2004) Hamzah *et al.* (2012), Shaffril *et al.* (2015), by using indicators including fully utilize community resources, maintenance of cultural identify, enhancement the pride of their community about agriculture, encourage cultural exchanges between visitors and locals, an increase in confliction between hosts and guests, and crime rates were considered. Thirdly, perceptions of environmental impacts were evaluated using seven statement-questions from studies of Tiraieyari and Hamzah (2012), Yang (2012), Lupi *et al.* (2017), indicators suggested that agro-tourism has improved ecological awareness of both locals and authorities, improvement of the appearance of the community's landscape, preservation of natural environmental, however agro-tourism also increased environmental pollution, as well as overcrowding, more traffic congestions and lack of parking lots.

In the second part, community participation in support of agro-tourism was measured, six statement-questions captured from previous studies of Huong and Lee (2017), Long and Kayat (2011), McGehee and Andereck (2004). These including the financial support and the incentive policies promote agro-tourism should be provided by the local authority, and the community should be participated in developing agro-tourism planning, local people would like to see more tourists in their community, and they are also willing to participate in support of agro-tourism.

The third part, the profile of the respondents was also included. The socio-demographic characteristics of respondents were assessed with nine items: gender, age, level of education, net household income, occupation, farm type, farm size, number of family members involved in agriculture, length join in agriculture. Besides that, the opened-ended question giving respondents to give more their comments.

The instrumentation should be pretested, a reliability test was employed to appreciate the reliability of all of the observed variables. According to Nunnally (1978), the data was accepted if Cronbach's alpha coefficient ≥ 0.7, and corrected item-total correlation > 0.3. The results of the reliability test shown as Table 1 following, Cronbach's alpha values of all six factors were greater than 0.7 which ranged from 0.747 to 0.893, and corrected item-total correlation of all variables was greater than 0.3. Therefore, the instrumentation of this study was appropriate with literality of Nunnally (1978).

Table 1 Reliability Test

Variable Category	Cronbach's alpha (α)
Residents' perceptions toward positive economic impacts of agro-tourism	0.893
Residents' perceptions toward negative economic impacts of agro-tourism	0.756
Residents' perception toward positive socio-cultural impacts of agro-tourism	0.841
Residents' perception toward negative socio-cultural impacts of agro-tourism	0.747
Residents' perception toward positive environmental impacts of agro-tourism	0.763
Residents' perception toward negative environmental impacts of agro-tourism	0.826
Community participation in support of agro-tourism development	0.820

3.4 Research Design

The questionnaire was designed as closed-ended questions to obtain primary data from local resident who was representative of farm household aged over 18 years old by using simple random sampling method. A Five-point Likert scale (1 referring as strongly disagree and 5 referring as strongly agree), was used to evaluate each statement-question. Besides that, the questionnaire was added mixed opened – ended questions after each section to get more specific comments from respondents. The initial questionnaire was the English version and translated into Vietnamese version.

The pilot survey was carried out in October 2017. Meeting with informative persons and local authority officers of Phuong 12 sub-district was organized to get primary information of local residents which included population, socio-demographic characteristics of locals, and the activities of agro-tourism in this area. Besides that, the questionnaire was discussed, in particular, some questions related to overview information of local residents (farm size, net household income, level of education, etc.), and was adjusted appropriately with the socio-economic situation of the locality. Using purpose sampling method to collect 30 samples those were representative of Phuong 12 sub-district to evaluate these statement-questions. The feedback proved that the questionnaire could be understandable.

The official survey was performed between February and March 2018. The hard copies of the official questionnaire were delivered to the on-site farm by using

combine with both random sampling method and convenience sampling method to make sure better representativeness. The questionnaire took each respondent between 15 and 20 minutes to complete this survey. After receiving the questionnaire which returned from respondents, the surveyor rechecked the questionnaire again to ensure it does not have any missing value.

3.5 Data Analysis

The data of this study were analyzed which comprised of four phases as follows,

In the first phase, factor analysis was conducted to evaluate the factor structure of all observed variables as a technique of the reduce data method. The standard of factor analysis comprises of Eigenvalue ≥ 1, total variance explained ≥ 50%, Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) > 0.5, the significance of Bartlett's test < 0.05, factor loadings > 0.5 as literality mentioned by Hair *et al.* (2010). Factor analysis was carried out separately, the first group of the variables regarding residents' perceptions toward agro-tourism impacts, and the second of group the variables concerning community participation in support of agro-tourism.

In the second phase, descriptive statistics were employed to examine the profile information of respondents, and to describe the residents' perceptions toward the impact of agro-tourism as well as their community participation in support of its development. Based on interval class was identified by Shaffril *et al.* (2015), however, in this study 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 the impacts of agro-tourism on the economy, socio-culture, environment, and the community participation in support of agro-tourism development as well.

In the third phase, independent t-test and one-way analysis of variance (one-way ANOVA) tests with Turkey post hoc and Tamhane's T2 post hoc tests as the statistic technique to test the hypotheses 1 and 2, whether there were significant differences among the perceptions of local residents toward agro-tourism impacts and

their community participation in support of agro-tourism with socio-demographic characteristics of respondents.

In the fourth phase, the linear regression analysis was used to evaluate the effect of the residents' perceptions toward impacts of agro-tourism (independent variables) on their community participation in support of agro-tourism (dependent variable). In other words, the linear regression method was used to test the significance of hypotheses 3, whether there were significant differences the effect of perceptions of local residents toward impacts of agro-tourism on their community participation in support of agro-tourism. Using the stepwise method which is the combination between the forward and backward method where all observed variables are tested to find their significance to the model (Kahane, 2008).

The equation of the linear regression is expressed below (Kahane, 2008)

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n$$

where:

Y as a dependent variable (community participation in support of agro-tourism)

X_1 through X_n as independent variables (perceptions of local residents toward the impacts of agro-tourism on the economy, socio-culture and environment)

β_0 = Intercept

β_1 through β_n = regression coefficients

According to Kahane (2008), the best parameter was assessed through R Square (Coefficient of determination). R Square is a measure that indicates the proportion of Y explained by X. The value of R Square is between 0 and 1, closed to +1 imply that parameters in X can explain almost of Y behavior. It indicates that our regression model is in fit performance. Values close to 0 is the opposite in which X parameters have poor ability to explain of Y behavior. The model developed has to be free from the multicollinearity problem which can be assessed through Tolerance value > 0.1 and Variance Inflation Factor (VIF) < 10.

CHAPTER 4: RESULTS AND DISCUSSION

The study used both quantitative and qualitative method. The primary data was collected by a site survey, from local residents. A total of 300 questionnaires were distributed and 300 effective questionnaires were completed and returned with a response rate of 100%. This sample size was sufficient for performing the data analysis. The findings will be presented briefly, in tables and figures. The data was analyzed using various methods which included factor analysis, descriptive statistics, independent t-test, one-way ANOVA analyses, and linear regression model.

The results of the analyzed data shown as follows:

4.1 The respondents' profile

4.2 Factor analysis on perceptions of local residents toward agro-tourism impacts

4.3 Factor analysis of community participation in support of agro-tourism

4.4 Descriptive statistics on residents' perceptions toward agro-tourism impacts

4.5 Descriptive statistics on of community participation in support of agro-tourism

4.6 Distribution of responses for statement-questions

4.7 Effects of socio-demographic factors on perceptions of local residents toward impacts of agro-tourism

4.8 Linear regression analysis

4.9 Agro-tourism activities in Da Lat

4.1 The respondents' profile

Gender, in total of 300 respondents were included 42.3% of women (n = 127), and 57.7% of men (n = 173).

Age group, the largest age group was from 36 to 50 years old (n = 184, 61.3%) with the average age was 46.81 years old, followed by age group between 51 and 65 years old which accounted for 26.0% (n = 78), whereas 8.3% (n = 25) and 4.3% (n = 13), respectively, represented for respondents who aged 35 years old or less and respondents who aged 66 years old and more.

Level of education, the minority of respondents hold Certificate/Diploma or Bachelors' Degree (n = 36, 12.0%) while nearly a half of respondents (n = 144, 48.0%) possessed secondary school education, followed by 33.0% (n = 99) of respondents who hold high school education, and then those who hold primary school education occupied of 7.0% (n = 21).

Net monthly household income, 62.7% of respondents earned between VND26 million and VND50 million (roughly USD1,130 to USD2,170), followed by those who earned VND25 million and less (roughly under USD1,130) and between VND51 million and VND75 million (roughly USD2,171 to USD3,240) accounted for 17.0% and 16.3%, respectively. Respondents who earned more than VND75 million (more than USD3,240) occupied of only 4.0% (n = 12). The average of net monthly household income of local residents was VND41.267 million (roughly USD1,865).

Number of family members involved in agriculture, 70.0% of farm households have between 3 and 4 persons involved in agricultural production, whereas 17.3% and 12.7%, respectively, of farm households, have 2 persons or less and 5 persons or more involved in agricultural production. The average of the number of family members worked in agriculture was 3.39 persons.

Farm size, nearly two-thirds of the farm which surveyed (71.3%, n = 214) reported less than 3,000 m^2 in size, while farm size with 6,000 m^2 above accounted for only 2.0% (n = 6) and farm size between 3,001 m^2 and 6,000 m^2 occupied of 26.7% (n = 80). The average farm size of local residents was 2,924 m^2.

Farm type, the majority of respondents (n = 206, 68.7%) have owned their agricultural land (owner), while 31.3% (n = 94) have leased farm for agricultural cultivation (lessee).

Length joined in agriculture, 74.3% of respondents reported involved in agricultural production between 11 and 30 years, followed by those who joined in from 10 years and less accounted for 17.3% (n = 52). People joined in agriculture from more than 30 years occupied of the minority about 8.3 %. The average length involved in agriculture was 19.39 years.

Occupation, most interviewees were full-time farmers (n = 252, 84.0%), whereas only 16.0% (n = 48) of respondents worked in farm as part-time job.

Table 2 Profiles of the respondents

Variable	Categories	%	n	Mean	S.D.	Min	Max
Gender	Female	42.3	127				
	Male	57.7	173				
Age Group	35 years old or less	8.3	25	46.81	9.43	28	72
	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				
Net monthly household income	≤ VND25 million	17.0	51	41.27	17.46	12.5	112.5
	VND26–50 million	62.7	188				
	VND51–75 million	16.3	49				
	VND76–100 million	3.3	10				
	≥ VND 100 million	0. 7	2				
Number of the family member worked in agriculture	2 persons or less	17.3	52	3.39	0.92	2	6
	3 to 4 persons	70.0	210				
	5 persons or more	12.7	38				
Farm Size	3,000 m² and less	71.3	214	2,924	1,139.34	1,000	7,500
	3,001 m² - 6,000 m²	26.7	80				
	≥ 6,000 m²	2.0	6				
Farm type	Owner	68.7	206				
	Lessee	31.3	94				
Length joined in agriculture	10 years or less	17.3	52	19.39	8.62	3	50
	11 - 20 years	37.3	112				
	21 - 30 years	37.0	111				
	31 - 40 years	6.3	19				
	41 - 50 years	2.0	6				
Occupation	Full-time farmer	84.0	252				
	Part-time farmer	16.0	48				

4.2 Factor analysis on perceptions of local residents toward agro-tourism impacts

Factor analysis was presented applying the principal component method with varimax rotation to specify the dimensionality of the perceptions of residents toward impacts of agro-tourism. As this data-reduction technique, a factor analysis was showed in identifying factors and dimension sets that could interpret the perceptions of local residents toward the impacts of agro-tourism.

As table 3 mentioned, the results revealed six distinct factors, explaining 63.495% of the total variables; Eigenvalue was 1.417; KMO was 0.819; Bartlett's Test of Sphericity = 3221.717; and sig. at 0.000; all items were loaded greater than 0.5 on one factor only, and no item cross-loading greater than 0.4 on multiple factors (Hair *et al.*, 2010).

The first factor, "residents' perceptions toward positive economic impacts of agro-tourism", comprised of six observed variables (Cronbach's α was 0.893, factor loadings ranged between 0.662 and 0.853) which explained 21.603% of the total variance with Eigenvalue was 5.617. The second factor, "residents' perceptions toward positive socio-cultural impacts of agro-tourism", consisted of six observed variables (Cronbach's α was 0.841, factor loadings ranged between 0.656 and 0.772) that explained 12.006% of variability with Eigenvalue was 3.122. The third factor, "residents' perceptions toward negative environmental impacts of agro-tourism", comprised of four observed variables (Cronbach's α was 0.826, factor loadings ranged between 0.712 and 0.861), explaining 9.126% of the total variances with Eigenvalue was 2.373. The fourth factor labeled "residents' perceptions toward negative economic impacts of agro-tourism" comprised of four variables (Cronbach's α was 0.756, factor loadings ranged from 0.732 to 0.814) with 8.204 of variances explained and Eigenvalue of 2.133. The fifth factor, "residents' perceptions toward positive environmental impacts of agro-tourism", comprised of three variables (Cronbach's α was 0.763, factor loadings ranged from 0.797 to 0.837) which explained 7.106% and Eigenvalue was 1.847. The sixth factor labeled "residents' perceptions toward negative socio-cultural impacts of agro-tourism", comprised of three variables (Cronbach's α was 0.747, factor loadings ranged from 0.749 to 0.842) explaining 5.450% of total variances and Eigenvalue was 1.417.

Table 3 Factor analysis of residents' perceptions toward impacts of agro-tourism

Factors/items	Factor loading	Eigenvalue	% of variable
Factor 1: Residents' perception toward positive economic impacts of agro-tourism		**5.617**	**21.603**
Offers new business chances to locals	.853		
Contribute to diversify local economic activities	.834		
Increases additional income for the community	.814		
Attracts investment to infrastructure improvement	.743		
Provides employment opportunity for household members	.722		
Promotes the demand for local agricultural products	.662		
Factor 2: Residents perceptions toward positive socio-cultural impacts of agro-tourism		**3.122**	**12.006**
Promote the conservation of traditional culture	.772		
Opportunity for cultural exchanges and share experiences	.756		
To fully utilize the community resources	.753		
Enhances the pride of community in the agricultural culture	.672		
Provides more recreational areas for locals	.668		
Uplifts the quality of life and working condition	.656		
Factor 3: Residents' perceptions toward negative environmental impacts of agro-tourism		**2.373**	**9.126**
Results in overcrowded and noise	.861		
Deteriorates the beauty of natural landscapes	.829		
Cause in more litter in the community	.809		
Causes traffic congestion and lack of parking lot	.712		
Factor 4: Residents' perceptions toward negative economic impacts of agro-tourism		**2.133**	**8.205**
Mostly agro-tourism revenues belong to external tour operators	.814		
An increase in living cost due to the raising of good and service prices	.748		
Increases the price of farmland	.742		
Locals receive a low salary from agro-tourism activities	.732		

Table 3 Continued

Factors/items	Factor loading	Eigenvalue	% of variable
Factor 5: Residents' perceptions toward positive environmental impacts of agro-tourism		**1.847**	**7.105**
Improves the appearance)images(of the area	.837		
Preserves natural environment in the community	.822		
Influences positively on ecological awareness of locals and authorities	.797		
Factor 6: Residents' perceptions toward negative socio-cultural impacts of agro-tourism		**1.417**	**5.450**
An effect on indigenous dwellers' way of life	.842		
An increase in crime rates such as theft, violence, vandalism	.799		
Causes conflicts between tourists and locals	.749		

Notes: *Total variance explained: 63.495%; KMO = 0.819; Bartlett's Test of Sphericity = 3221.717; sig = 0.000*

4.3 Factor analysis of community participation in support of agro-tourism

Table 4 Factor analysis of community participation in support of agro-tourism

Factors/items	Factor loading	Eigenvalue	% of variable
Community participation in support of agro-tourism		**3.167**	**52.779**
Locals willing to be participating in support for agro-tourism	.791		
The community should be involved in agro-tourism development planning	.771		
Locals support new agro-tourism facilities which will appeal to more tourists	.735		
Locals would like to see more agro-tourism activities and tourists	.716		
The local authorities should financially provide support to enhance infrastructure for supporting agro-tourism	.701		
The local authorities should provide incentive policies and plans to direct agro-tourism	.634		

Notes: *KMO = 0.801; Bartlett's Test of Sphericity = 619.537; sig = 0.000*

The principal components method with varimax rotation was also initiated to identify six items of community participation in support of agro-tourism. Similarly, to identify factors and dimension sets that could interpret community participation in support of agro-tourism, data-reduction technique was performed. As findings showed in Table 4, six observed variables explained 52.779% of the total variances; KMO was 0.801; Chi-Square was 619.537 and the significance of 0.000; Eigenvalue was 3.167; factor loadings ranged between 0.634 and 0.791. These values indicated that data were appropriate with literality of Hair *et al.* (2010).

4.4 Descriptive statistics on residents' perceptions toward agro-tourism impacts

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

4.4.1 Residents' perceptions toward the economic impacts of agro-tourism

Three of the perceptions of local residents toward positive economic impacts of agro-tourism were varied between 3.59 and 3.46 (high level of perception) which revealed that offering new livelihood chances to locals, attracting investment to infrastructure improvement, and contributing to the diversity of local economy, respectively, were consistent with the findings of previous studies (Lobo *et al.,* 1999; Hamzah *et al.,* 2012; Schilling *et al.,* 2012; Songkhla & 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 fresh vegetables to respond demand of tourists. That 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 green living environment, which was similar to previous observations (Malkanthi & Routry, 2011; Yang, 2012; Srisomyong & Meyer, 2015). (presented in Table 5)

Table 5 Descriptive statistic of residents' perceptions toward economic impacts

Items	Mean	S.D.	Level of perception
Residents' perceptions toward positive economic impacts of agro-tourism	**3.31**	**.736**	**Moderate**
Promotes the demand for local agricultural products	3.22	.880	Moderate
Provides employment opportunities for household members	2.97	.935	Moderate
Increases additional income for the community	3.15	.947	Moderate
Contribute to diversify local economic activities	3.46	.937	High
Attracts investment to infrastructure improvement	3.48	.875	High
Offers new business chances to locals	3.59	.893	High
Residents' perceptions toward negative economic impacts of agro-tourism	**2.98**	**.611**	**Moderate**
Locals receive a low salary from agro-tourism activities	3.10	.856	Moderate
An increase in living cost due to the raising of goods and services prices	2.49	.752	Low
Increases the price of farmland	2.91	.796	Moderate
Mostly agro-tourism revenues belong to external tour operators	3.42	.812	High

The rest of the residents' perceptions toward positive economic impacts of agro-tourism (demand for farm products, supplemental income, and job opportunities) recorded a moderate level of perception (3.22; 3.15; and 2.97, respectively). The local community perceived that both job opportunities and residents' income have not increased significantly based on agro-tourism. These results were firmed by Karabati *et al.* (2009) since the lack of regular visits of tourists, in addition, the agro-tourists who come via tour operators and do not stay in the village, visit only flower 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. Thus, most of the benefits which generated from agro-tourism end up with the tour operators.

This study, however, indicated somewhat different from the findings of some previous studies in developing countries. Other studies emphasized that agro-tourism has created more employment opportunities and additional income for their community (e.g. Songkhla and Somboonsuke, 2012; Tiraieyari and Hamzah, 2012; Yang, 2012; Shaffril *et al.*, 2015; Srisomyong and Meyer, 2015; Choenkwan *et al.*, 2016)

Nonetheless, agro-tourism has provided the opportunity for increasing production and direct sales of agricultural products to tourists (mean = 3.22, moderate level of perception) that was found in some previous papers (Lobo *et al.*, 1999; Tew & Barbieri, 2012; Jęczmyk *et al.*, 2015; Shaffril *et al.*, 2015; Srisomyong & Meyer, 2015). Through flower festivals and annual tourism events that have attracted thousands of tourists to the farm, who might buy agricultural products such as organic vegetables, dried and fresh flower, and other souvenirs from residents.

Similarly, as the findings of Tew and Barbieri (2012) mentioned that agro-tourism attracts more tourists to their farms, those who not only buy agricultural products of these farms but also bring recreation-related revenues. Agro-tourism also contributes to support for farmers to expand small business including production and selling their farm products.

Meanwhile, the analysis found the lowest mean score was recorded for an increase in the cost of living (mean = 2.49, low level of perceptions) reflected that there was not increase the prices of goods and services. Since there was no significant increase in income from agro-tourism and the simple lifestyle of the local community as well (Karabati *et al.*, 2009). However, an increase in the price of farmland recorded at mean = 2.91, moderate level of perception. (presented in Table 5)

Besides that, agro-tourism has brought petty income for the community in Thai Phien village, demonstrated by statement local residents receive a low salary from agro-tourism activities that noted mean = 3.10 (moderate level of perception) in line with the done study of Shaffril *et al.* (2015). Most of their additional income obtained from direct selling farm products to visitors. In contrast, agro-tourism revenues generated belongs to the outside tour operators was recorded a high level of perception (mean = 3.42) since most tourists come via tour operators (Karabati *et al.*, 2009). Most residents are concerned about the unbalanced distribution of agro-tourism benefits, although each farm household might gain directly or indirectly benefit from agro-tourism activities,

most local residents have received limited benefits, the majority of these benefits goes to the tour company and outside individuals. (presented in Table 5)

On the other hand, lack of variety of agro-tourism activities, most agro-tourism destinations provides similar experiences to tourists result in reducing the attraction of agro-tourism activities in this area (Yang, 2012).

4.4.2 Residents' perceptions toward the socio-cultural impacts of agro-tourism

Table 6 Descriptive statistics of residents' perceptions toward socio-cultural impacts

Items	Mean	S.D.	Level of perception
Residents' perceptions toward positive socio-cultural impacts of agro-tourism	**3.49**	**.639**	**High**
Provides more recreational areas for locals	3.41	.855	High
Promote the conservation of traditional culture	3.46	.908	High
Enhances the pride of community in the agricultural culture	3.76	.850	High
Uplifts the quality of life and working conditions	3.04	.805	Moderate
Opportunities for cultural exchanges and share experiences	3.70	.817	High
To fully utilize the community resources	3.57	.895	High
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	**2.57**	**.648**	**Low**
An increase in crime rates such as theft, violence, vandalism	2.60	.797	Low
An effect on indigenous dwellers' way of life	2.57	.812	Low
Causes conflicts between tourists and locals	2.52	.778	Low

As presented in Table 6, the residents stated that agro-tourism provided more entertainment opportunities and recreational areas (mean = 3.41, high level of perception) for locals. Provision the opportunities for cultural exchange, share experiences and educate about agriculture to visitors was recorded at 3.70 (high level of perception). Not only to meet new people from other culture as a valuable experience that suggested in past studies (Pearce, 1990; Karabati *et al.*, 2009; Hamzah *et al.*, 2012; Shaffril *et al.*, 2015) but also to educate visitors about local traditional agriculture which is perceived as a positive experience that similar to the results (Lobo *et al.*, 1999; Nickerson *et al.*, 2001; McGehee & Kim, 2004; Ollenburg & Buckley, 2007).

The tourists have experienced rural life with the local people and were trained in flower production. Thanks to tourism events and the Da Lat flower festival, this has brought profound attractiveness to both international tourists from around the world and domestic tourists across the country, and they were fully utilized the community resources (mean = 3.57, high level of perception). This finding was confirmed in the study of Nickerson *et al.*, (2001), McGehee and Kim (2004). Agro-tourism has provided positive motivations for the maintenance of cultural identity and the pride of community to agricultural culture with the mean score at 3.46 and 3.76, respectively. However, the quality of life and working conditions recorded with a moderate level of perception (mean = 3.04). (presented in Table 6)

All of the items for perceptions of negative socio-cultural impacts recorded a low level of perception (mean = 2.57). The respondents stated that agro-tourism development does not damage their living such as stealing, drinking alcohol, in line with findings of Shaffril *et al.* (2015). There was not only an insignificant difference in changes to indigenous dwellers' way of life but also no notable confliction between hosts and guests (Karabati *et al.*, 2009; Srisomyong & Meyer, 2015). On the other words, agro-tourism has not caused negative impacts on socio-culture. (presented in Table 6)

4.4.3 Residents' perceptions toward environmental impacts of agro-tourism

Table 7 Descriptive statistics of residents' perceptions toward environmental impacts

Items	Mean	S.D.	Level of perception
Residents perception toward positive environmental impacts of agro-tourism	**3.51**	**.723**	**High**
Influences positively on ecological awareness of locals and authorities	3.56	.921	High
Improves the appearance)images(of the area	3.49	.901	High
Preserves natural environment in the community	3.47	.807	High
Residents' perceptions toward negative environmental impacts of agro-tourism	**2.60**	**.716**	**Low**
Causes traffic congestion and lack of parking lot	2.83	.849	Moderate
Cause in more litter in the community	2.55	.839	Low
Results in overcrowded and noise	2.53	.890	Low
Deteriorates the beauty of natural landscapes	2.49	.948	Low

The locals also agreed that the agro-tourism development has contributed to the well-being of the village. Its effects were perceived as being positive on the ecological awareness of both locals and authorities, the improvement of area appearance, and the preservation of natural environment, mean scores were recorded at 3.56, 3.49, and 3.47 (high level of perception), respectively, similar to the results of (Lupi *et al.*, 2017).

Raises awareness of both hosts and guests for the conservation of the natural environment in the area, so the natural environment can be better conserved. It is necessary to educate both local people and visitors what importance of environmental preservation and prevent the natural resources from being deteriorated (He, 2011). In fact, most local people are now well conscious of the need for environmental protection and ecosystem conservation, which is line with the study of (Yang, 2012).

On the other hand, the low mean score was recorded for crowded and noise (mean = 2.53, love level of perception) and the beauty of natural landscapes is deteriorated (mean = 2.49, low level of perception). Similarly, Hamzah *et al.* (2012) found that there was no effect on the natural surroundings and noise in the community as well. The litter from agro-tourism activities also recorded at a low level in the community, however, traffic congestion and lack of parking lots perceived as a significant negative impact (mean = 2.83, moderate level of perception). Due to the increasing number of tourists visiting in the area thereby lacking parking lots and limited infrastructure to meet visitor needs, moreover, traffic congestions and traffic accidents also happened regularly (Yang, 2012). (presented in Table 7)

Residents have used to bury, burn, even dump garbage and waste from agricultural production in the river or streams. Between 2014 and 2017, however, the local authorities not only promoted schemes on agro-tourism development at flower villages but also found a way to raise awareness of residents, built up pilot model waste collection center to collect used packages of pesticides in Phuong 12 sub-district. By organizing training courses, giving guidelines on how to classify garbage and waste from agricultural production to villagers via leaflets. Thanks to agro-tourism, positive results mentioned that a cleaner natural environment in surrounding the community, moreover villagers have planted more flowers and trees along to paths leading to agro-tourism destinations. Thus, in order to can be made beautiful nature and a better natural

environment, needs to protect the natural resources, and the participation of local authorities, local community, and visitors as a whole.

4.5 Descriptive statistics of community participation in support of agro-tourism

A notable result of this study indicated that community participation in support of agro-tourism in Thai Phien village was highly agreed amongst the local communities. They would like to see more agro-tourism activities and tourists and also to be personal participated in agro-tourism development in the future of Thai Phien village (mean = 4.00, mean = 3.76, high level of participation, respectively). In addition, the local government should not only provide financial support to improve physical infrastructure (mean = 3.61, high level) but also make incentive policies and strategic plans for agro-tourism development (mean = 3.94, high level). 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). (presented in Table 8)

Table 8 Descriptive statistics on community participation in support of agro-tourism

Items	Mean	S.D.	Level of participation
Community participation in support of agro-tourism	**3.71**	**.659**	**High**
Locals support new agro-tourism facilities which will appeal to more tourists	3.32	.948	Moderate
The local authorities should provide incentive policies and plans to direct agro-tourism development	3.94	.769	High
The local authorities should financially provide support to enhance infrastructure for supporting agro-tourism	3.61	.841	High
Locals would like to see more agro-tourism activities and tourists	4.00	.799	High
The community should be involved in agro-tourism development planning	3.64	.997	High
Locals am willing to be participating in support for agro-tourism	3.76	1.059	High

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, there is strongly concerned in most residents since lack of both financial support and tourism promotion policies for agro-tourism development from local authorities. Although the local authorities also assisted the community enhancing roads, sanitary, hosting flower festival and tea festival as well as marketing activities of agro-tourism in the community to tourists, the support still limited. The improvement of narrow roads and poor infrastructures were seen as essential needs to improve the accessibility of agro-tourism destinations in the community to visitors can reach easily to farms. Therefore, the local authorities played a crucial role not in only providing support about finance but also giving tourism schemes to promote agro-tourism in the community.

Besides that, it is necessary for the community should be a part of agro-tourism planning for agro-tourism development (mean = 3.64, high level). From the locals' 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 level of participation (mean = 3.32). (presented in Table 8)

Hence, the success of agro-tourism based on many factors, it does not only based on the active participation of community but also relied on the active support of local authorities in both financial support and priority policies (Kosmaczewska, 2008).

4.6 Distribution of responses for statement-questions

Overall, the distribution of responses for statement-questions concerned to the perceptions of local residents toward impacts of agro-tourism and their community participation in support of agro-tourism as in Figure 12-18.

Responses of statement-questions were less certainty and more variability in the Likert scale. However, most residents agreed that the statement-questions regarding perceptions toward the positive impacts of agro-tourism result in a positive skew.

4.6.1 Distribution of responses on the perceptions toward positive economic impacts of agro-tourism

Only 29% and 36%, respectively, agreed that agro-tourism development provides job opportunities for household members and increases supplemental income

for farm households, whereas 43% agreed that an increase the demand of local agricultural products to tourists. Further, almost 60% agreed or strongly agreed that it is inclined to offer new livelihood activities to locals, and around 50% of respondents recognized that the development of agro-tourism contributed for diversifying the local economy and increased attraction of investment to infrastructure improvement.

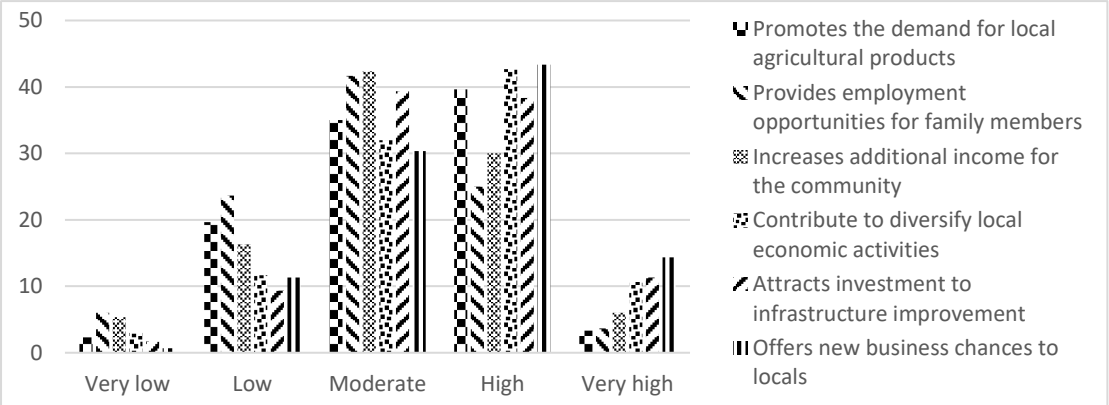

Figure 12 Distribution of responses on the perceptions toward positive economic impacts of agro-tourism (%)

4.6.2 Distribution of responses on the perceptions toward negative economic impacts of agro-tourism

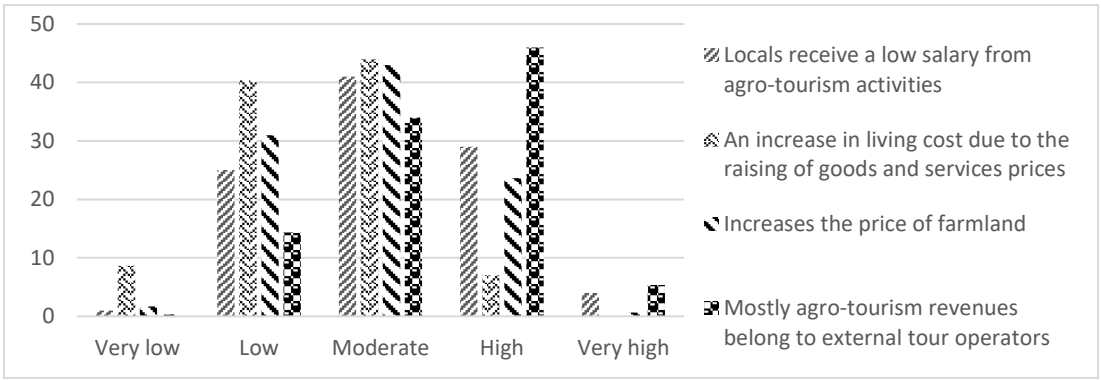

Figure 13 Distribution of responses on the perceptions toward negative economic impacts of agro-tourism (%)

Nearly half of respondents disagreed that an increase in living cost due to the raising of goods and services prices as a negative impact of agro-tourism. Interesting, more than haft of respondents agreed and strongly agreed that mostly benefits of agro-tourism activities go to the tour operators and individuals outside the locality. About 24% and 33%, respectively, agreed that the development of agro-

tourism could increase the farmland price and moreover, the local people are likely to receive a low salary from its activities.

4.6.3 Distribution of responses on the perceptions toward positive socio-cultural impacts of agro-tourism

There was strongly agreed that agro-tourism would enhance the pride of belonging to the community in the agricultural and cultural values, only 5% disagreed whereas 64% of respondents agreed with this statement-question. Further, 62% and 59%, respectively, agro-tourism would provide opportunities for cultural exchanges between tourists and locals and educate the public about agriculture, and also would fully utilize the community resources.

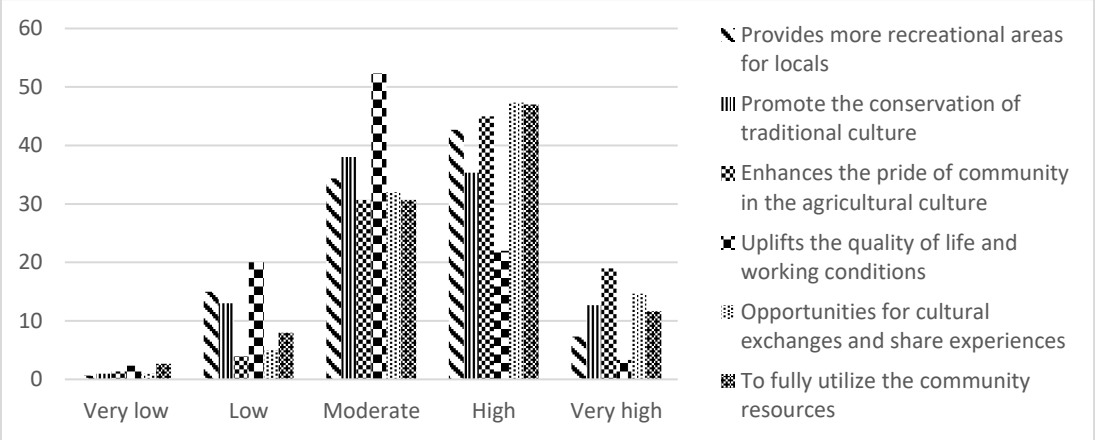

Figure 14 Distribution of responses on the perceptions toward positive socio-cultural impacts of agro-tourism (%)

However, the distributions of responses for uplifting the quality of life and working condition related to positive socio-cultural impact was relatively neutral. Almost 50% agreed that agro-tourism would provide more availability of entertainment opportunities and recreational area for local residents. Similar to provide an incentive for conserving traditional culture.

4.6.4 Distribution of responses on the perceptions toward negative socio-cultural impacts of agro-tourism

Almost 45%, 47%, and 50%, respectively, of respondents, disagreed or strongly disagreed that agro-tourism development is likely to increase crime rates, effect on indigenous dwellers' way of life, and cause conflict between tourists and

locals. Residents recognized that the negative impacts of agro-tourism were no significant to the community, only 10% agreed about its negative impacts.

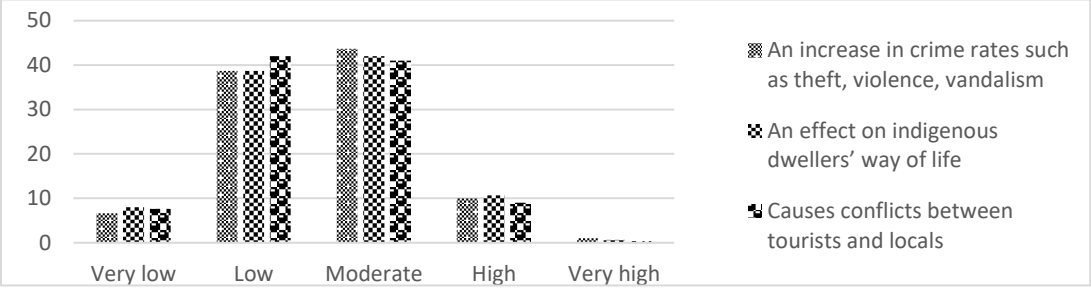

Figure 15 Distribution of responses on the perceptions toward negative socio-cultural impacts of agro-tourism (%)

4.6.5 Distribution of responses on the perceptions toward positive environmental impacts of agro-tourism

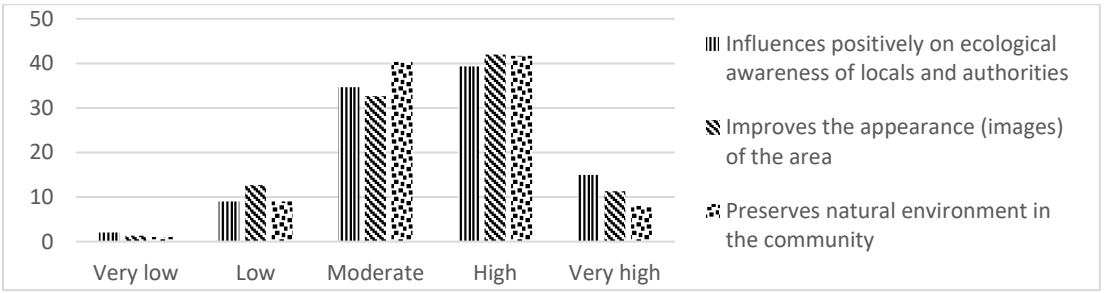

Figure 16 Distribution of responses on the perceptions toward positive environmental impacts of agro-tourism (%)

Almost 54% and 53%, respectively, of respondents, perceived that agro-tourism influences positively on ecological awareness of local people and local authorities, and improve the appearance of my community's landscape. Only 50% agreed that agro-tourism results in more incentive for the preservation of the natural environment in the community.

4.6.6 Distribution of responses on the perceptions toward negative environmental impacts of agro-tourism

The highest agreement of neutrality for an increase traffic jam and lack of parking lot, while almost half of respondents disagreed that agro-tourism is likely to cause the negative impacts as more litter in the community, overcrowded and noise, deteriorates the beauty of natural landscape in the community as issues.

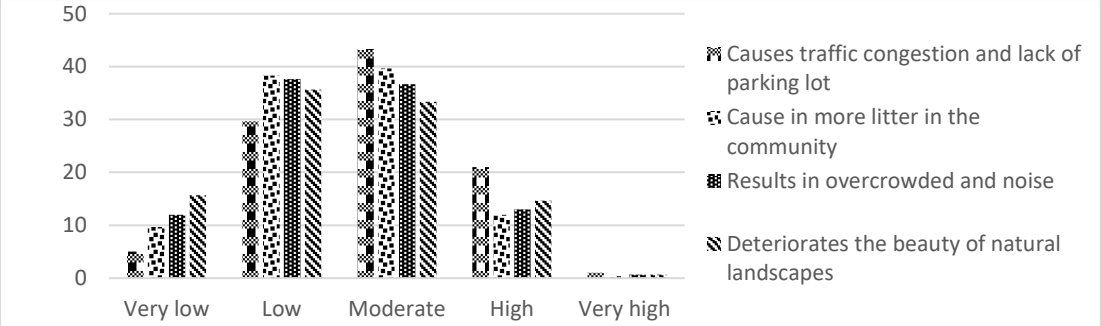

Figure 17 Distribution of responses on the perceptions toward negative environmental impacts of agro-tourism (%)

4.6.7 Distribution of responses on community participation in support of agro-tourism

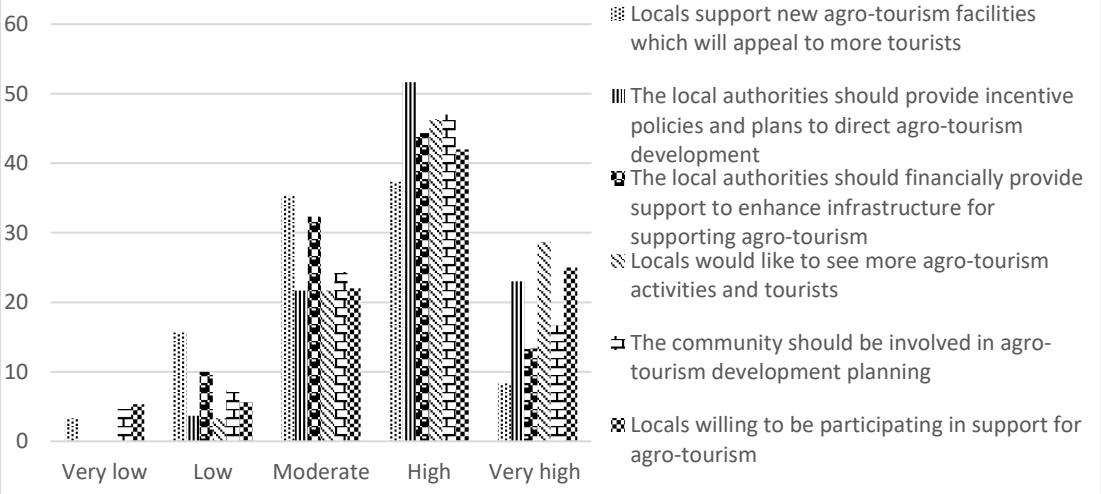

Figure 18 Distribution of responses on their community participation in support of agro-tourism (%)

Figure 18 demonstrated a positive skew for all construct indicators in term of the community participation in support of agro-tourism with 75% of respondents agreeing that would like to see more agro-tourism activities and tourists in their community and also perceiving that the local government should provide a financial support to improve infrastructure for supporting agro-tourism development. 67% agreement that willing to be participating in support of agro-tourism development, 64% agreement with the statement-question that the local community should be participated in planning of agro-tourism. 58% agreement that the local authorities should provide incentive policies and plans to guideline agro-tourism development, whereas only 46% agreed that support for new agro-tourism activities which will attract more tourists to the community.

4.7 Effects of socio-demographic factors on perceptions of local residents toward impacts of agro-tourism

One-way ANOVA analyses and independent t-test were carried out to examine hypothesis 1 and hypothesis 2 whether there were significant differences between factors in the research model and variables of respondents' socio-demographic characteristics. As a result, there was a no significant difference in the length joined in agriculture. Turkey post hoc and Tamhane's T2 post hoc were performed to comparison in the differences among factors, comprised of level of education, age group, number of family members involved in agriculture, net household income and farm size; meanwhile, independent t-test was employed to comparison in the differences between factors which included gender, occupation, and farm type.

4.7.1 Level of education

Table 9 Results of one-way ANOVA analyses for level of education

	Mean					**ANOVA**	
	Primary school	**Secondary school**	**High school**	**Certificate/ Diploma**	**Bachelor's Degree**	**F**	**Sig.**
Residents' perceptions toward positive economic impacts of agro-tourism	2.64	3.04	3.58	3.92	4.32	31.627	**.000*****
Residents' perceptions toward negative economic impacts of agro-tourism	3.05	2.97	2.96	2.91	3.21	.568	.686
Resident's perceptions toward positive socio-cultural impacts of agro-tourism	3.15	3.29	3.69	3.92	3.92	13.056	**.000*****
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	2.71	2.61	2.60	2.24	2.22	2.938	**.021***
Residents' perceptions toward positive environmental impacts of agro-tourism	3.48	3.54	3.49	3.61	3.11	1.135	.340
Residents' perceptions toward negative environmental impacts of agro-tourism	2.79	2.63	2.56	2.53	2.33	.962	.428
Community participation in support of agro-tourism	3.13	3.61	3.83	4.09	4.15	10.161	**.000*****

Notes: $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Based on table 9, the finding revealed that there was a significant main effect of level of education on the perceptions of local residents toward positive economic impacts of agro-tourism was found ($F_{(4,295)} = 31.627$; $p < .001$) for primary school ($\bar{x} = 2.64$), secondary school ($\bar{x} = 3.04$), high school ($\bar{x} = 3.58$), diploma education ($\bar{x} = 3.92$), bachelor's degree ($\bar{x} = 4.32$). Followed by, the level of education had a significant main effect on the perceptions of local residents toward positive socio-cultural impacts of agro-tourism ($F_{(4,295)} = 13.056$, $p < .001$) for primary school ($\bar{x} = 3.15$), secondary school ($\bar{x} = 3.29$), high school ($\bar{x} = 3.69$), diploma education and bachelor's degree ($\bar{x} = 3.92$). Level of education also had a significant main effect on the perceptions of local residents toward negative socio-cultural impacts of agro-tourism ($F_{(4,295)} = 2.938$, $p < .05$) for primary school ($\bar{x} = 2.71$), secondary school ($\bar{x} = 2.61$), high school ($\bar{x} = 2.60$), diploma education ($\bar{x} = 2.24$), bachelor's degree ($\bar{x} = 2.22$). The ANOVA showed significant differences ($F_{(4,295)} = 10.161$, $p < .001$) in community participation in support of agro-tourism between level of education for primary school ($\bar{x} = 3.13$), secondary school ($\bar{x} = 3.61$), high school ($\bar{x} = 3.83$), diploma education ($\bar{x} = 4.09$), bachelor's degree ($\bar{x} = 4.15$).

However, no significant main effect of level of education on the perception of local residents toward negative economic impacts and environmental impacts (positive and negative) of agro-tourism were found.

Table 10 Post hoc Test for level of education

Factors	Primary school	Secondary school	High school	Certificate/ Diploma	Bachelor's Degree
Residents' perceptions toward positive economic impacts of agro-tourism[1]	$2.64^{c,d,e}$	$3.04^{c,d,e}$	$3.58^{a,b,d,e}$	$3.92^{a,b,c,e}$	$4.32^{a,b,c,d}$
Resident's perceptions toward positive socio-cultural impacts of agro-tourism[2]	$3.15^{c,d,e}$	$3.29^{c,d,e}$	$3.69^{a,b}$	$3.92^{a,b}$	$3.92^{a,b}$
Resident's perceptions toward negative socio-cultural impacts of agro-tourism[2]	2.71	2.61	2.60	2.24	2.22
Community participation in support for the agro-tourism[2]	$3.13^{b,c,d,e}$	$3.61^{a,d,e}$	3.83^{a}	$4.09^{a,b}$	$4.15^{a,b}$

Notes: *[1]Tamhane's T2 post hoc test results with significance level at α = 0.05; [2]Turkey post hoc test results with significance level at α = 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.* [a] *= primary school,* [b] *= secondary school,* [c] *= high school,* [d] *= certificate/ diploma,* [e] *= bachelor's degree. For example, the first line reads that significant difference existed between those that hold primary school level and high school level, between those that hold primary school level and certificate/ diploma level, between those that hold primary school level and bachelors' degree level, and so on.*

The inter-group differences were significant when comparing between the level of education, including residents' perceptions toward the positive impacts of agro-tourism on the economy and socio-culture, and their community participation in support of agro-tourism.

Even though the level of education affected the perceptions of local residents toward negative socio-cultural impacts of agro-tourism, there was no significant difference between groups.

Residents' perceptions toward the effects of agro-tourism on the socio-economic improved progressively with the level of education. Those people holding low education (primary school level) had worse perceptions of agro-tourism impacts, which is similar to the finding of a study by Kosmaczewska (2008), Kuvan and Akan (2005), and less interested in participating as well. They did not consider that agro-tourism provides more employment opportunities, increases in additional income, and uplifts the quality of life for locals.

Meanwhile, those people with high education (bachelor's degree, certificate/diploma level) were more likely to assess the impact of agro-tourism with positive views and actively participating in support of agro-tourism. These results are consistent with the past studies (Haralambopoulos & Pizam, 1996; Teye *et al.*, 2002; Kosmaczewska, 2008; Long & Kayat, 2011).

In other words, local residents who hold higher education have higher awareness, and more educated residents are more engaged in support for the development of agro-tourism (Easterling, 2004).

4.7.2 Age group

Table 11 Results of one-way ANOVA analyses for age group

	Mean				ANOVA	
	35 years or less	**36-50 years**	**51-65 years**	**66 years or more**	**F**	**Sig.**
Residents' perceptions toward positive economic impacts of agro-tourism	3.75	3.31	3.22	3.05	3.968	**.009****
Residents' perceptions toward negative economic impacts of agro-tourism	2.88	2.99	2.96	3.12	.505	.679
Resident's perceptions toward positive socio-cultural impacts of agro-tourism	3.61	3.49	3.43	3.64	.769	0.512
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	2.28	2.57	2.59	3.00	3.683	**.012***
Residents' perceptions toward positive environmental impacts of agro-tourism	3.28	3.52	3.62	3.15	2.535	.057
Residents' perceptions toward negative environmental impacts of agro-tourism	2.26	2.60	2.64	2.92	2.921	**.034***
Community participation in support of agro-tourism	3.80	3.73	3.66	3.63	.419	.740

Notes: *$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$*

Based on table 11, the results pointed out that there was a significant main effect of age group on residents' perceptions toward positive economic impacts of agro-tourism ($F_{(3,296)} = 3.968$, $p < .01$) was found for those their aged, 35 years or less ($\bar{x} = 3.75$), 36-50 years ($\bar{x} = 3.31$), 51-65 years ($\bar{x} = 3.22$), 66 years or more ($\bar{x} = 3.05$). A significant main effect of age on residents' perceptions toward negative socio-cultural impacts of agro-tourism was found ($F_{(3,296)} = 3.683$, $p < .05$) for those their aged, 35 years or less ($\bar{x} = 2.28$), 36-50 years ($\bar{x} = 2.57$), 51-65 years ($\bar{x} = 2.59$), 66 years or more ($\bar{x} = 3.00$). And the ANOVA showed significant differences ($F_{(3,296)} = 2.921$, $p < .05$) of age on the residents' perceptions toward negative environmental impacts of agro-tourism for those their aged, 35 years or less ($\bar{x} = 2.26$), 36-50 years ($\bar{x} = 2.60$), 51-65 years ($\bar{x} = 2.64$), 66 years or more ($\bar{x} = 2.92$).

However, the ANOVA also did not show significant main effect of age on residents' perceptions toward negative economic impacts of agro-tourism and the perceptions of local residents toward the positive socio-cultural and environmental impacts of agro-tourism as well as their community participation in support of agro-tourism.

Table 12 Post hoc test for age group

Factors	35 years or less	36-50 years	51-65 years	66 years or more
Residents' perceptions toward positive economic impacts of agro-tourism	$3.75^{b,c,d}$	3.31^{a}	3.22^{a}	3.05^{a}
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	2.28^{d}	2.57	2.59	3.00^{a}
Residents' perceptions toward negative environmental impacts of agro-tourism	2.26^{d}	2.60	2.64	2.92^{a}

Notes: *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 2-5: i.e. ^{a} = 35 years or less, ^{b} = 36-50 years, ^{c} = 51-65 years, ^{d} = 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 ages 35 years or less and 51-65 years, between those their ages, are 35 years or less and 66 years or more.*

Generally, the youngest residents (those aged 35 years or less) having the best perceptions (Andriotis & Vaughan, 2003; Huh & Vogt, 2008; Long & Kayat, 2011), since they perceived that agro-tourism brings, for instance, supplemental income for farm household, diversifying of the local economic activities, and new business opportunities which related to tourism for local community. Meanwhile, the seniors (older than 65) having the worst perceptions of the negative impacts on socio-culture and environment, this was also found in the results of Haralambopoulos and Pizam (1996) indicated that elders are more concerned about the effects to the local community, for instance, an increase crime rates, a conflict between guests and hosts because differences of cultural background, more traffic congestion, and also lack of parking lot. Kosmaczewska (2008) also indicated that a negative perception was

revealed mostly by those aged 50 years and older, as regards, in this study, who were 66 years or more.

Particularly, there was a different perception between those aged 35 years or less and those more than 66 years regarding residents' perception of the negative impacts on socio-culture and environment. In which people who aged 35 years or less rated littering in their community as a major concern, whereas those who aged more than 66 years worries about the increase in crime rates as the main concern.

4.7.3 Number of family members involved in agriculture

Table 13 Results of one-way ANOVA analyses for number of family members involved in agriculture

	Mean			**ANOVA**	
	2 persons or less	**3-4 persons**	**5 persons or more**	**F**	**Sig.**
Residents' perceptions toward positive economic impacts of agro-tourism	3.10	3.28	3.81	12.056	**.000*****
Residents' perceptions toward negative economic impacts of agro-tourism	2.85	3.01	2.98	1.538	.216
Resident's perceptions toward positive socio-cultural impacts of agro-tourism	3.26	3.47	3.93	13.818	**.000*****
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	2.83	2.55	2.27	8.811	**.000*****
Residents' perceptions toward positive environmental impacts of agro-tourism	3.46	3.55	3.34	1.512	.222
Residents' perceptions toward negative environmental impacts of agro-tourism	2.82	2.58	2.39	4.320	**.014***
Community participation in support of agro-tourism	3.55	3.68	4.08	8.158	**.000*****

Notes: $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Based on table 13, the results revealed that there was a significant main effect of the number of family members involved in agriculture on residents' perceptions toward the positive economic impacts of agro-tourism ($F_{(2,297)} = 12.056$, $p < .001$) was found for the family has, 2 persons or less ($\bar{x} = 3.10$), 3-4 persons ($\bar{x} =$

3.28), 5 persons or more ($\bar{x}$ = 3.81). A significant main effect of the number of family members involved in agriculture on the perceptions of local residents toward the positive socio-cultural impacts of agro-tourism was found ($F_{(2,297)}$ = 13.818, p < .001) for those that family has, 2 persons or less ($\bar{x}$ = 3.26), 3-4 persons ($\bar{x}$ = 3.47), 5 persons or more ($\bar{x}$ = 3.93). The ANOVA showed significant differences ($F_{(2,297)}$ = 8.811, p < .001) of the number of family members involved in agriculture on the perceptions of local residents toward the negative socio-cultural impacts of agro-tourism for those that family has, 2 persons or less ($\bar{x}$ = 2.83), 3-4 persons ($\bar{x}$ = 2.55), 5 persons or more ($\bar{x}$ = 2.27). The number of family member involved in agriculture also had a significant main effect on the perceptions of residents toward negative environmental impacts of agro-tourism ($F_{(2,297)}$ = 4.320, p < .05) for those that family has, 2 persons or less ($\bar{x}$ = 2.82), 3-4 persons ($\bar{x}$ = 2.58), 5 persons or more ($\bar{x}$ = 2.39). And a significant main effect on community participation in support of agro-tourism was found ($F_{(2,297)}$ = 8.158, p < .001) for those that family has, 2 persons or less ($\bar{x}$ = 3.55), 3-4 persons ($\bar{x}$ = 3.68), 5 persons or more ($\bar{x}$ = 4.08).

However, no significant main effect of the number of family members involved in agriculture on the perceptions of local residents toward negative economic impacts and positive environmental impacts of agro-tourism were found.

Table 14 Post hoc Test for number of family members involved in agriculture

Factors	2 persons or less	3-4 persons	5 persons or more
Residents' perceptions toward positive economic impacts of agro-tourism	3.10^{c}	3.28^{c}	$3.81^{a,b}$
Residents' perceptions toward positive socio-cultural impacts of agro-tourism	3.26^{c}	3.47^{c}	$3.93^{a,b}$
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	$2.83^{b,c}$	$2.55^{a,c}$	$2.27^{a,b}$
Residents' perceptions toward negative environmental impacts of agro-tourism	2.82^{c}	2.58	2.39^{a}
Community participation in support of agro-tourism	3.55^{c}	3.68^{c}	$4.08^{a,b}$

Notes: *Turkey post hoc test results with significance level at α = 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. [a] = 2 persons or less, [b] = 3-4 persons, [c] = 5 persons or more. For example, the first line reads that significant differences existed between those that family has, 2 persons or less and 3-4 persons, between those that family has, 3-4 persons and 5 persons or more.

The perceptions of the positive socio-economic impacts of agro-tourism on the number of family members involved in agriculture gradually improved. As results showed in Table 14, those farm households which have more persons involved in agriculture were likely to have positive perceptions toward agro-tourism impacts, and actively participating in support of its development.

4.7.4 Net household income

Table 15 Results of one-way ANOVA analyses for net household income

	Mean					ANOVA	
	≤ 25	**26-50**	**51-75**	**76-100**	**>100**	**F**	**Sig.**
Residents' perceptions toward positive economic impacts of agro-tourism	2.77	3.28	3.75	4.33	4.50	22.103	**.000*****
Residents' perceptions toward negative economic impacts of agro-tourism	2.93	3.02	2.91	2.90	2.88	.461	.765
Resident's perceptions toward positive socio-cultural impacts of agro-tourism	3.12	3.41	3.96	4.45	4.08	23.069	**.000*****
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	2.90	2.58	2.27	2.13	2.33	7.922	**.000*****
Residents' perceptions toward positive environmental impacts of agro-tourism	3.68	3.50	3.43	3.13	3.83	1.663	.159
Residents' perceptions toward negative environmental impacts of agro-tourism	3.06	2.59	2.23	2.35	2.25	10.042	**.000*****
Community participation in support of agro-tourism	3.34	3.63	4.26	4.37	4.50	20.957	**.000*****

Notes: $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

As a result in Table 15, the net household income had a significant main effect on the perceptions of local residents toward positive economic impacts of agro-tourism ($F_{(4,295)} = 22.103$, $p < .001$) for those who earn, VND25 million or less ($\bar{x} = 2.77$), VND26-50 million ($\bar{x} = 3.28$), VND51-75 million ($\bar{x} = 3.75$), VND76-100 million ($\bar{x} = 4.33$), and VND100 million or more ($\bar{x} = 4.50$). The ANOVA showed significant

differences ($F_{(4,295)}$ = 23.069, p < .001) on the residents' perceptions toward positive socio-cultural impacts of agro-tourism for those who earn, VND25 million or less ($\bar{x}$ = 3.12), VND26-50 million ($\bar{x}$ = 3.41), VND51-75 million ($\bar{x}$ = 3.96), VND76-100 million ($\bar{x}$ = 4.45), and VND100 million or more ($\bar{x}$ = 4.08). A significant main effect of the net monthly household income on residents' perceptions toward negative socio-cultural impacts was found ($F_{(4,295)}$ = 7.922, p < .001) for those who earn, VND25 million or less ($\bar{x}$ = 2.90), VND26-50 million ($\bar{x}$ = 2.58), VND51-75 million ($\bar{x}$ = 2.27), VND76-100 million ($\bar{x}$ = 2.13), and VND100 million or more ($\bar{x}$ = 2.33). And the net household income also had a significant main effect on the perceptions of residents toward negative environmental impacts of agro-tourism ($F_{(4,295)}$ = 10.042, p < .001) for those who earn, VND25 million or less ($\bar{x}$ = 3.06), VND26-50 million ($\bar{x}$ = 2.59), VND51-75 million ($\bar{x}$ = 2.23), VND76-100 million ($\bar{x}$ = 2.35), and VND100 million or more ($\bar{x}$ = 2.25). Regarding community participation in support of agro-tourism, the ANOVA also showed significant differences ($F_{(4,295)}$ = 20.957, p < .001) for those who earn, VND25 million or less ($\bar{x}$ = 3.34), VND26-50 million ($\bar{x}$ = 3.63), VND51-75 million ($\bar{x}$ = 4.26), VND76-100 million ($\bar{x}$ = 4.37), and VND100 million or more ($\bar{x}$ = 4.50).

However, no main effect of the net monthly household income on the perceptions of local residents toward negative economic impacts and positive environmental impacts were found.

Table 16 Post hoc Test for net household income

Factors	≤ 25	26-50	51-75	76-100	>100
Residents' perceptions toward positive economic impacts of agro-tourism[1]	2.77[b,c,d]	3.28[a,c,d]	3.75[a,b,d]	4.33[a,b,c]	4.50
Residents' perceptions toward positive socio-cultural impacts of agro-tourism[2]	3.12[b,c,d]	3.41[a,c,d]	3.96[a,b]	4.45[a,b]	4.08
Residents' perceptions toward negative socio-cultural impacts of agro-tourism[2]	2.90[b,c,d]	2.58[a,c]	2.27[a.b]	2.13[a]	2.33
Residents' perceptions toward negative environmental impacts of agro-tourism[2]	3.06[b,c,d]	2.59[a,c]	2.23[a.b]	2.35[a]	2.25
Community participation in support of agro-tourism[1]	3.34[b,c,d]	3.63[a,c,d]	4.26[a.b]	4.37[a.b]	4.50

Notes: *[1]Tamhane's T2 post hoc test results with significance level at α = 0.05; [2]Turkey post hoc test results with significance level at α = 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. [a] = VND25 million or less, [b] = VND26-50 million, [c] = VND51-75 million, [d] = VND76-100 million, [e] = over VND100 million. For example, the first line reads that significant differences existed between those who earn, VND25 million or less and VND26-50 million, between those who earn, VND25 million or less and VND51-75 million, between those who earn, VND25 million or less and VND 75-100 million, and so forth.*

The perceptions of local residents toward impacts of agro-tourism and their community participation in support of agro-tourism gradually improved with the net household income. As the results (presented in Table 16) revealed that people who earned higher incomes were more likely to prefer agro-tourism and actively participated in support of its development.

In contrast, those who had lower income appreciated negatively toward impacts of agro-tourism and less concerned with participation. These results were consistent with the last studies (Milman & Pizam, 1988; Haralambopoulos & Pizam, 1996; Kuvan & Akan, 2005; Long & Kayat, 2011; Liu & Li, 2018). These studies indicated a relationship between loud income and positive perceptions of residents on agro-tourism impacts, those high-income residents are more likely to have positive perceptions would involve in the agro-tourism development more, contrary to lower-income residents would involve in its less.

In specific, the residents who earned VND25 million or less per month rated "enhance the pride of community to agricultural culture" as the first perception, then "opportunities for cultural exchange and share experiences" as the second perceptions.

Whereas those who earned between VND76 and 100 million per month rated "opportunities for cultural exchange and share experiences" as the first perceptions, then "attract investment in infrastructure improvement" and "contribute to diversifying local economy" as the second perceptions.

People earning VND25 million 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 who earned between VND76 and 100 million per month.

4.7.5 Farm size

Table 17 Results of one-way ANOVA analyses for farm size

	Mean			ANOVA	
	3,000m^2 or less	**3,001-6,000m^2**	**Over 6,000m^2**	**F**	**Sig.**
Residents' perceptions toward positive economic impacts of agro-tourism	3.14	3.69	4.36	26.242	**.000*****
Residents' perceptions toward negative economic impacts of agro-tourism	2.80	2.93	3.00	.379	.685
Resident's perceptions toward positive socio-cultural impacts of agro-tourism	3.32	3.88	4.28	32.517	**.000*****
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	2.65	2.38	2.06	7.015	**.001****
Residents' perceptions toward positive environmental impacts of agro-tourism	3.54	3.43	3.33	.817	.443
Residents' perceptions toward negative environmental impacts of agro-tourism	2.75	2.22	2.38	17.822	**.000*****
Community participation in support of agro-tourism	3.55	4.08	4.61	28.756	**.000*****

Notes: $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

As shown in table 17, the farm size had a significant main effect on the residents' perceptions toward positive economic impacts of agro-tourism ($F_{(2,297)}$ = 26.242, $p < .001$) for household who owned farm, sizes are 3,000m^2 or less ($\bar{x}$ = 3.14), 3,001-6,000m^2 ($\bar{x}$ = 3.69), and over 6,000m^2 ($\bar{x}$ = 4.36). A significant main effect of the farm size on residents' perceptions toward positive socio-cultural impacts was found ($F_{(2,297)}$ = 32.517, $p < .001$)) for household who owned farm, sizes are 3,000m^2 or less ($\bar{x}$ = 3.32), 3,001-6,000m^2 ($\bar{x}$ = 3.88), and over 6,000m^2 ($\bar{x}$ = 4.28). The ANOVA pointed out significant differences on residents' perceptions toward negative socio-cultural impacts ($F_{(2,297)}$ = 7.015, $p < .01$) for household who owned farm, sizes are 3,000m^2 or less ($\bar{x}$ = 2.65), 3,001-6,000m^2 ($\bar{x}$ = 2.38), and over 6,000m^2 ($\bar{x}$ = 2.06). On residents'

perceptions toward negative environmental impacts, the ANOVA also showed significant differences ($F_{(2,297)} = 17.822$, $p < .001$) for household who owned farm, sizes are 3,000m^2 or less ($\bar{x} = 2.75$), 3,001-6,000m^2 ($\bar{x} = 2.22$), and over 6,000m^2 ($\bar{x} = 2.38$). A significant main effect of the farm size on community participation in support of agro-tourism was also found ($F_{(2,297)} = 28.756$, $p < .001$) for household who owned farm, sizes are 3,000m^2 or less ($\bar{x} = 3.55$), 3,001-6,000m^2 ($\bar{x} = 4.08$), and over 6,000m^2 ($\bar{x} = 4.61$). However, no main effect of the farm size on the residents' perceptions toward negative economic impacts and positive environmental impacts were found.

Table 18 Post hoc Test for farm size

Factors	3,000m^2 or less	3,001-6,000m^2	Over 6,000m^2
Residents' perceptions toward positive economic impacts of agro-tourism[1]	3.14^{b,c}	3.69^{a,c}	4.36^{a,b}
Residents' perceptions toward positive socio-cultural impacts of agro-tourism[2]	3.32^{b,c}	3.88^{a}	4.28^{a}
Residents' perceptions toward negative socio-cultural impacts of agro-tourism[2]	2.65^{b}	2.38^{a}	2.06
Residents' perceptions toward negative environmental impacts of agro-tourism[1]	2.75^{b,c}	2.22^{a}	2.38^{a}
Community participation in support of agro-tourism[2]	3.55^{b,c}	4.08^{a}	4.61^{a}

Notes: *[1]Tamhane's T2 post hoc test results with significance level at α = 0.05; [2]Turkey post hoc test results with significance level at α = 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. [a] = 3,000m^2 or less, [b] = 3,001-6,000m^2, [c] = over 6,000m^2. For example, the first line reads that significant differences existed between household who owned farm, sizes are 3,000m^2 or less and 3,001-6,000m^2, between those who owned farmland, are 3,000m^2 or less in size and who owned over 6,000m^2 farmland size, between those their land size 3,001-6,000m^2 and over 6,000m^2.*

Regarding farm size, the large-size farm (over 6,000m2) having the best perceptions of agro-tourism impacts whereas the small-size farm (3,000m^2 or less) having the worst perceptions toward impacts of agro-tourism on the socio-economic.

As shown in Table 18, there were significant differences between farm households who owned farmland 3,000m^2 or less in size and those who owned more than 3,000m^2 farmland in size.

For instance, farm households who owned farmland 3,000m^2 or less in size could participate in the agro-tourism enterprise to enhance the pride of community to local agricultural culture, whereas those who owned more than 3,000m^2 farmland in size could involve in agro-tourism to get opportunities for the cultural exchange and share agricultural experiences to tourists. This was consistent with the finding of previous studies of Bagi and Reeder (2012).

4.7.6 Independent t-test for gender, occupation, and farm type

Table 19 Results of independent t-test for gender

Factors	Male	Female	t-test	Sig.
Residents' perceptions toward positive economic impacts of agro-tourism	3.30	3.34	-.467	.641
Residents' perceptions toward negative economic impacts of agro-tourism	2.99	2.96	.354	.724
Resident's perceptions toward positive socio-cultural impacts of agro-tourism	3.57	3.38	2.522	**.012***
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	2.55	2.59	-.451	.652
Residents' perceptions toward positive environmental impacts of agro-tourism	3.54	3.46	.995	.321
Residents' perceptions toward negative environmental impacts of agro-tourism	2.65	2.53	1.547	.123
Community participation in support of agro-tourism	3.75	3.66	1.226	.221

Notes: $^*p < .05$; $^{**}p < .01$; $^{***}p < .001$

As a result in Table 19, men were likely positive views than women to perceptions toward positive socio-cultural impacts of agro-tourism, a contrast to the findings of McGehee *et al.* (2007) showed that women were perceived to have higher motivation for agro-tourism business.

Table 20 Results of independent t-test for occupation

Factors	Full-time	Part-time	t-test	Sig.
Residents' perceptions toward positive economic impacts of agro-tourism	3.25	3.64	-3.407	**.001****
Residents' perceptions toward negative economic impacts of agro-tourism	2.97	3.03	-.644	.520
Resident's perceptions toward positive socio-cultural impacts of agro-tourism	3.49	3.46	.327	.744
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	2.59	2.43	1.578	.116
Residents' perceptions toward positive environmental impacts of agro-tourism	3.52	3.46	.516	.606
Residents' perceptions toward negative environmental impacts of agro-tourism	2.60	2.59	.066	.947
Community participation in support of agro-tourism	3.71	3.70	.025	.980

Notes: *$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$*

As the findings of Table 20, those who were part-time farmers are also more likely to positive thinking than those who were full-time farmers on perceptions toward positive socio-cultural impacts of agro-tourism.

Table 21 Results of independent t-test for farm type

Factors	Owner	Lessee	t-test	Sig.
Residents' perceptions toward positive economic impacts of agro-tourism	3.43	3.05	3.886	**.000*****
Residents' perceptions toward negative economic impacts of agro-tourism	2.97	2.98	-.042	.966
Resident's perceptions toward positive socio-cultural impacts of agro-tourism	3.57	3.32	3.018	**.003****
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	2.59	2.52	.863	.389
Residents' perceptions toward positive environmental impacts of agro-tourism	3.56	3.39	1.972	.050
Residents' perceptions toward negative environmental impacts of agro-tourism	2.67	2.44	2.617	**.009****
Community participation in support of agro-tourism	3.81	3.49	3.626	**.000*****

Notes: *$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$*

Farm households who owned their farm were more positive views on the perceptions toward positive impacts of agro-tourism on the economy and socio-culture as well as their community participation in support for agro-tourism compared to those who leased their farm for agricultural production. In particular, there was a significant difference between community participation in support of agro-tourism and those who owned their farmland, which was also found in studies of Bagi and Reeder (2012), McGehee and Kim (2004). However, those who leased their farm were less negative thinking related to their perceptions toward impacts of agro-tourism on the negative environment than those who owned their farm.

4.8 Linear regression analysis

A linear regression analysis was conducted to determine the relationship between residents' perceptions toward impacts of agro-tourism on the economy, socio-culture, environment and their community participation in support of agro-tourism (test significance of hypothesis 3)

Table 22 The average Spearman's on the residents' perceptions toward impacts of agro-tourism and their community participation in support of agro-tourism

	Correlations						
	PAR	**PECO**	**NECO**	**PSOCU**	**NSOCU**	**PENVI**	**NENVI**
PAR	1						
PECO	.560**	1					
NECO	-.026	-.038	1				
PSOCU	.499**	.057	-.010	1			
NSOCU	-.159**	-.079	.059	.085	1		
PENVI	.004	.048	.026	-.009	.046	1	
NENVI	-.096	-.097	-.004	-.038	.045	.068	1

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

Community participation in support of agro-tourism (PAR) as a dependent variable and the six components of residents' perceptions toward impacts of agro-tourism as independent variables, including residents' perceptions toward positive

economic impacts of agro-tourism (PECO), residents' perceptions toward negative economic impacts of agro-tourism (NECO), residents' perceptions of positive socio-cultural impacts of agro-tourism (PSOCU), residents' perceptions of negative socio-cultural impacts of agro-tourism (NSOCU), residents' perceptions of positive environment impacts of agro-tourism (PENVI) and residents' perceptions of negative environmental impacts of agro-tourism (NENVI).

Spearman's rank-order correlations coefficient between all independent variables (residents' perceptions toward impacts of agro-tourism) were significant (sig > 0.05).

Table 23 Linear regression analysis of community participation in support of agro-tourism (Coefficients)

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	**Std. Error**	**Beta**	**t**	**Sig.**	**Tolerance**	**VIF**
(Constant)	1.738	.214					
Residents' perceptions toward positive economic impacts of agro-tourism	.357	.049	.398	7.276	.000	.693	1.442
Residents' perceptions toward positive socio-cultural impacts of agro-tourism	.303	.056	.294	5.399	.000	.703	1.423
Residents' perceptions toward negative socio-cultural impacts of agro-tourism	-.104	.048	-.102	-2.190	.029	.950	1.052

Notes: *R Square =.385; Adjusted R Square =.378; F = 61.698; sig = .000*

The results revealed that three independent variables were significant and influenced on the community participation in support of agro-tourism development. There were "residents' perceptions toward positive economic impacts of agro-tourism" (PECO), "residents' perceptions toward positive socio-cultural impacts of agro-tourism" (PSOCU), and "residents' perceptions toward negative socio-cultural impacts of agro-tourism" (NSOCU). (presented in Table 23). In which, perceptions of local residents toward positive economic impacts and perceptions of residents toward

positive socio-culture impacts influence positively on community participation in support of agro-tourism, the effect of residents' perceptions toward negative socio-cultural impacts is negative.

According to Kahane (2008), the equation of the linear regression is expressed below,

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n$$

where:

Y as a dependent variable (community participation in support of agro-tourism development)

X_1 through X_n as independent variables (residents' perceptions toward the impacts of agro-tourism on the economy, socio-culture and environment)

β_0 = Intercept

β_1 through β_n = regression coefficients

From Table 23, the equation that predicts the factors affected on community participation in support of agro-tourism development as followings:

PAR = 1.738 + .357 PECO + .303 PSOCU – .104 NSOCU

The R Square was .385 and Adjusted R Square was .378 explained that a relationship existed. This linear regression model explained 37.8% of total variables. The strongest positive effect on the community participation in support of agro-tourism development observed for "residents' perceptions toward positive economic impacts of agro-tourism" (PECO) (β = .357), followed by "residents' perceptions toward positive socio-cultural impacts of agro-tourism" (PSOCU) (β = .303), whereas "residents' perceptions toward negative socio-cultural impacts of agro-tourism" (NSOCU) (β = - .104) were negative effect on the community participation in support of agro-tourism development. (presented in Table 23)

From the findings of testing hypotheses, the perceptions toward positive economic impacts of agro-tourism influence significantly on their community participation in support agro-tourism. Moreover, the perceptions toward socio-cultural impacts of agro-tourism also influenced significantly on their community participation in support of its development. In other words, residents will participate in support of agro-tourism development if the positive impacts of agro-tourism on the economy and socio-culture are perceived. In contrary, they will not

participate in support of agro-tourism when the negative socio-cultural impacts are perceived from agro-tourism.

Community participation in support of agro-tourism do not hinge on the perceptions of local residents toward negative economic impacts but depend on their perceptions toward negative social-cultural impacts of agro-tourism. Furthermore, their residents' perceptions toward the environmental impacts of agro-tourism (negative and positive) of agro-tourism also do not influence their community participation in support of agro-tourism.

This is consistent with the finding of Nickerson *et al.* (2001), McGehee and Kim (2004), which emphasized the role of the perceptions of residents toward socio-economic impacts on their community participation in support of agro-tourism. However, this result is not appropriate with previous studies which reported by Long and Kayat (2011), Huong and Lee (2017), those explored that the impacts of tourism on economic not considered as the most important, while impacts of tourism on socio and environment are the most crucial issues.

"Residents' perceptions toward positive economic impacts of agro-tourism" were positively contributing 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 area (Lobo *et al.*, 1999; Jęczmyk *et al.*, 2015; Shaffril *et al.*, 2015).

"Residents' perceptions toward positive socio-cultural impacts of agro-tourism" were also positive influences since it was vital in both to fully utilize the community resources and enhance the community pride (Nickerson *et al.*, 2001; McGehee & Kim, 2004; Karabati *et al.*, 2009; Naidoo & Sharpley, 2016). An increase in cross-cultural communication, the understanding of the community which provided opportunities for educational and cultural exchange of community life between farmers/entrepreneurs and tourists (Pearce, 1990; Karabati *et al.*, 2009; Naidoo & Sharpley, 2016). It could give an incentive for the preservation of community cultural identity, which might increase the attractiveness of agro-tourism destination (Barbieri & 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.

In addition, the study was also identified “residents’ perceptions of negative socio-cultural impacts of agro-tourism” as a negative impact on the community participation in support of agro-tourism development. Due to the locals perceived that agro-tourism development leads to an increase in crime rates and effects on indigenous dwellers’ way of life in the community.

Thus, regarding community participation in support of agro-tourism, the residents’ perceptions toward impacts of agro-tourism on economic and socio-culture play a more important role than the impacts of agro-tourism on the environment.

4.9 Agro-tourism activities in Da Lat

Da Lat district has been a popular destination for Vietnamese visitors, is also well known for growing temperate vegetables and fruit orchards, beautiful flower farms, and tea plantations.

The Da Lat flower festival is held every two-year from the end of December to the first of January at Lam Vien Square, Da Lat center established by local authority agencies and local farmers. Besides flowers displays, flower parades and flower competitions are also outstanding activities of this festival. It also offers an opportunity for visitors to buy local agricultural products, such as flowers, temperate vegetables and fruits, and handicrafts. (Figure 19)

Figure 19 Da Lat Flower Festival

Source: Thanh pho Da Lat tinh Lam Dong - Portal (2018)

Specialty-crop farms are the main agro-tourism destinations, including flower farms, temperate vegetable farms, and fruit orchards. There are four villages

growing exotic flowers such as roses, carnations, gerberas, lavenders, sunflowers, and so on. These flowers making the landscape in the area become more beautiful to attract visitors. Tourists can visit these farms to observe the flower growing process from local farmers, including selecting flower plant/flower seeds, managing the integrated farming system, using organic fertilizer, cultivating flowers, harvesting and storing the flowers. Therefore, visitors can learn how the flowers are processed, and they are able to buy them at reasonable prices. Besides that, the tour also starts with exploring the culture of the local community to understanding their way of life, and flower-growing principles. (Figure 20)

Figure 20 Agro-tourism activities at flower farms
Source: Thanh pho Da Lat tinh Lam Dong - Portal (2018)

Tourists can visit the hydroponic vegetable farms to learn how vegetables are grown without soil. Various visitors visiting the hydroponic vegetable farms which apply the latest technology in cultivation. Visitors are free to explore countless plots where different varieties of vegetable seeds are grown. Some plots serve as a laboratory where numerous types of seeds of vegetables for cultivation, and other plots are used to demonstrate the propagation of seeds, planting the seeds, watering garden plots, and harvesting vegetables. Visitors are also invited to taste various salads made from vegetables freshly picked from the farms. (Figure 21)

Figure 21 Aro-tourism activities at hydroponic vegetable farms
Source: Thanh pho Da Lat tinh Lam Dong - Portal (2018)

The tour calls at strawberry fruit orchards (strawberry farm, cherry tomato farm, giant pumpkin garden, Pepino melon farm, etc.). Most of the groups visiting the strawberry farms are students, and families with young children, visitors can observe and learn how the temperate fruits are grown, and also participate in picking your own fruits with the farmers. Apart from touring the orchards, visitors can also enjoy local food and processed fruits as well, such as strawberry in syrup, strawberry in jam. Visitors are able to buy various kinds of fresh fruits and other products at farm outlet or at roadside stalls close to the strawberry farms. (Figure 22)

Figure 22 Agro-tourism activities at a strawberry farm and giant pumpkin farm
Source: Thanh pho Da Lat tinh Lam Dong - Portal (2018)

Herb and native vegetable garden, a tour of the spacious garden based on an integrated agricultural system enables visitors to learn how to grow different types of plants and the medicinal properties of herbs grown in here. The herb garden provides

health care services by traditional medicines of around 500 kinds of medicinal plants such as sweet grass, lingzhi mushroom, especially Ngoc Ling ginseng. Besides that, this garden also provides other services such as homestay, dining, farm outlet where sell specialty products of this garden. (Figure 23)

Figure 23 Agro-tourism activities at herb and native vegetable garden
Source: Thanh pho Da Lat tinh Lam Dong - Portal (2018)

Moreover, visitors are able to tour the coffee plantations to see weasel coffee production process, and the process is finished by brewing and tasting the weasel coffee. Besides that, exploring the culture of the local community, participating in outdoor barbecue and see gong performances with the local people. Visitors can buy souvenirs and quality coffee in farm outlet. (Figure 24)

Figure 24 Agro-tourism activities at a coffee plantation
Source: Thanh pho Da Lat tinh Lam Dong - Portal (2018)

Visitors can visit at the tea plantations to observe the tea picking process and to enjoy the spectacular landscape of terraced fields. Several tea shops also offer visitors not only quality tea products but also free tea-tasting services. In addition to the tour of tea plantation, annually tea culture festival is held in December with a variety of activities to attract visitors such as tea parades, tea competition, an exhibition of local tea products. (Figure 25)

Figure 25 Agro-tourism activities at a tea plantation
Source: Thanh pho Da Lat tinh Lam Dong - Portal (2018)

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The aims of the study were to identify the perceptions of local presidents toward the impacts of agro-tourism and their community participation in support of agro-tourism by using both descriptive and inferential statistics. The study was conducted by evaluating the residents' perceptions toward impacts of agro-tourism on the economy, socio-culture, environment and investigating the relationship between community participation in support of agro-tourism and residents' perceptions toward agro-tourism impacts. This study was also examined whether there were significant differences between socio-demographic characteristics of residents and community participation in support of agro-tourism, as well as residents' perceptions toward agro-tourism impacts.

The findings revealed that residents' perceptions toward impacts of agro-tourism are more likely to the positive perceptions than the negative ones for themselves and their community. In particular, the perception of local residents toward the positive impacts of agro-tourism mentioned that their communities were significant changes based on agro-tourism development, for instances, the attraction more and more investment to the community, provision new opportunities related to tourism operation for local people, the local economy has diversified thank to agro-tourism activities, the encouragement for production and direct sales of farm products to response demand of visitors for agricultural products increasingly.

In addition to economic impacts mentioned, residents evaluated that agro-tourism has brought changes on socio-cultural aspects. Provision more entertainment opportunities and recreational areas have contributed change of the quality of life of community better. Agro-tourism has contributed to fully utilized the resources of the community, an increase of the community pride in local culture, and also the preservation of traditional cultural values. Furthermore, this was an opportunity for cultural exchange and share experience about agricultural production between locals and visitors.

Moreover, the perceptions of both local authorities and local communities to environmental preservation have improved by the time. And the image of the community has enhanced thanks to the uplifting of public infrastructure and other facilities.

These findings were firmed in past studies of McGehee and Andereck, (2004), Tew and Barbieri (2012), Shaffril *et al.* (2015), Srisomyong and Meyer (2015).

Nonetheless, the community also faced the perceptions toward negative impacts of agro-tourism development. For instances, mostly agro-tourism revenues still end up with travel agencies instead of belonging to local people. And the increasing number of tourists also results in traffic congestions and lack of parking lot in the community.

The study demonstrated that there were significant differences between the demographic characteristics of residents and the perceptions of residents of agro-tourism impacts and community participation in support of agro-tourism development as well. Specifically, demographic characteristics of respondents which included educational background, household income, size of farm, farm ownership types, family member numbers participated in agriculture were significantly different on both the residents' perceptions of agro-tourism impacts and their community participation in support of its development. In other words, thanks to the various ways that residents with distinctly individual characteristics undergo the effects of agro-tourism, they see it differently. These results of this study are appropriate with some findings of the past studies (Milman & Pizam, 1988; Haralambopoulos & Pizam, 1996; Teye *et al.*, 2002; Andriotis & Vaughan, 2003; Kuvan & Akan, 2005; Huh & Vogt, 2008; Long & Kayat, 2011).

From the linear regression models, there was significant between community participation in agro-tourism development and the perceptions of residents toward the positive impacts of agro-tourism on the economy and socio-culture while no significant the environment. The findings pointed out that residents' perceptions toward agro-tourism impacts on the economy and socio-culture are more significant in their community participation in support of agro-tourism than the perceptions of the environmental impacts. It is no wonder, the perceptions of economic and socio-cultural impacts positively as being essential motivations to the community involved in the agro-tourism activity, which was consistent with the results of McGehee and Kim, (2004), Tew and Barbieri (2012), Srisomyong and Meyer (2015), and also confirmed by the study of Nickerson *et al.* (2001). Furthermore, this study also showed that community participation in support of agro-tourism could be affected negatively due to

residents perceived negatively of the socio-cultural impacts, thereby they are likely to support less for agro-tourism.

As the social exchange theory mentioned, therefore, the locals will be inclined to participate in agro-tourism if they perceived that its development will bring back the benefits surpass the costs. In other words, the locals will be willing to participate in support of agro-tourism if improved the well-being in their community (Látková & Vogt, 2012). Thus, the findings of the study do not contradict the social exchange theory.

5.2 Recommendations

This study gives useful information regarding perceptions of local residents toward impacts of agro-tourism and its effects on the community participation in support of the agro-tourism development. It was seen as a helpful method to address the negative impacts and to develop long-term solutions.

Since the lack of variety of agro-tourism activities, currently, most of the agro-tourism destinations in Da Lat just service sightseeing, pick-your-our fruits in orchards, sell agricultural products at farm outlets and join in activities of agricultural cultivation with farmers. So, agro-tourism does not bring additional income significantly to locals. Therefore, the role of private sector in offering agro-tourism programs in Da Lat is necessary, such as homestay program and other recreational activities organized at on-farm to attract visitors regularly and extend their time stay in the agro-tourism destinations. Such new agro-tourism programs will contribute to offer new employment opportunities to members of farm families as well as increase supplemental income for farmers. Hence, agro-tourism revenues not only go to travel agencies and external individuals as before but also belong to locals. The development of long-term collaboration between the operators of the agro-tourism in Da Lat and travel enterprises of private sector in an effort not only to attract both domestic and international tourists but also to the equitable distribution of profits in the agro-tourism value chain to improving the perceptions of local residents, which related to the economic contribution of agro-tourism to the local community.

Besides that, the result of this study indicated that age influence on residents' perceptions, especially the youngers have positive views about the impacts

of agro-tourism on socio-economic. Therefore, training courses or workshops about agro-tourism should be introduced to the young farm families that perceived agro-tourism development as the economic gains.

Moreover, those are owners in large-size farm also perceived that agro-tourism brings significant benefits to socio-economic and are likely to actively participate in developing agro-tourism in the locality. Thus, the trips to visit other outstanding agro-tourism destinations as an opportunity to disseminate the knowledge on issues of agro-tourism business to these farmers and also show to them what they could do with their resource for agro-tourism aims.

Besides that, the residents also perceived the negative impacts of agro-tourism on the environment. Since the infrastructure is poor, in particular, the lack of wide roads and parking lot for tourist-van, therefore the increasing number of tourists causing more traffic congestion and traffic accidents also happen regularly in the locality. Therefore, the investment of both local community and local government into improving infrastructure will contribute to addressing the demand of tourists with agro-tourism activities in Da Lat.

In conclusion, the positive changes in perceptions of local residents toward impacts of agro-tourism will be strengthening the participation of local communities in support of agro-tourism that was an important element to ensure the success of agro-tourism activities.

5.3 Limitation of the study and suggestion for further research

All most questionnaire was distributed at Thai Phien Village. Thus, the findings of this study cannot be generalized to include all residents' perception of agro-tourism development. Further research should be examined in a larger scale in different study sites and should be used other sampling technique to obtain enriched results. It would be useful to carry out comparative studies of the perceptions of farm households toward agro-tourism development in various locations and propose guidelines to promote agro-tourism development rather than focusing on the only perceptions of local residents toward impacts of agro-tourism and their community participation in support of its development.

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APPENDIX A

Reliability Analysis

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Residents' perceptions toward positive economic impacts of agro-tourism (PECO)				
Cronbach's alpha = 0.893				
PECO1	16.66	14.547	.625	.888
PECO2	16.91	13.915	.677	.881
PECO3	16.73	13.356	.760	.867
PECO4	16.41	13.300	.780	.864
PECO5	16.39	14.447	.647	.885
PECO6	16.28	13.475	.800	.861
Residents' perceptions toward negative economic impacts of agro-tourism (NECO)				
Cronbach's alpha = 0.756				
NECO1	8.82	3.555	.523	.716
NECO2	9.42	3.803	.548	.702
NECO3	9.01	3.729	.525	.713
NECO4	8.50	3.455	.617	.662
Residents' perceptions toward positive socio-cultural impacts of agro-tourism (PSOCU)				
Cronbach's alpha = 0.841				
PSOCU1	17.53	10.912	.538	.830
PSOCU2	17.48	10.257	.619	.815
PSOCU3	17.17	10.726	.580	.822
PSOCU4	17.90	10.969	.575	.823
PSOCU5	17.24	10.263	.717	.796
PSOCU6	17.37	9.992	.687	.801
Residents' perceptions toward negative socio-cultural impacts of agro-tourism (NSOCU)				
Cronbach's alpha = 0.747				
NSOCU1	5.10	1.867	.588	.645
NSOCU2	5.12	1.754	.636	.586
NSOCU3	5.17	2.064	.499	.744
Residents' perceptions toward positive environmental impacts of agro-tourism (PENVI)				
Cronbach's alpha = 0.763				
PENVI1	6.96	2.266	.573	.708
PENVI2	7.03	2.210	.628	.643
PENVI3	7.06	2.542	.588	.693
Residents' perceptions toward negative environmental impacts of agro-tourism (NENVI)				
Cronbach's alpha = 0.826				
NENVI1	7.57	5.384	.530	.833
NENVI2	7.85	5.051	.647	.783
NENVI3	7.87	4.559	.748	.735
NENVI4	7.91	4.510	.691	.763
Community participation in support of agro-tourism (PAR)				
Cronbach's alpha = 0.820				
PAR1	18.95	10.994	.596	.789
PAR2	18.32	12.407	.487	.811
PAR3	18.65	11.746	.553	.798
PAR4	18.26	11.845	.574	.795
PAR5	18.63	10.482	.645	.778
PAR6	18.51	10.037	.668	.773

Post hoc Test

Multiple Comparisons

Dependent Variable: PECO
Tamhane

(I) Level of education	(J) Level of education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Primary School	Secondary School	-.40559	.15166	.119	-.8679	.0567
	High School	-.94757*	.15239	.000	-1.4114	-.4838
	Certificate/ Diploma	-1.28869*	.16836	.000	-1.7913	-.7861
	Bachelors' Degree	-1.68452*	.16474	.000	-2.1821	-1.1870
Secondary School	Primary School	.40559	.15166	.119	-.0567	.8679
	High School	-.54198*	.08151	.000	-.7724	-.3116
	Certificate/ Diploma	-.88310*	.10846	.000	-1.2033	-.5629
	Bachelors' Degree	-1.27894*	.10276	.000	-1.5978	-.9601
High School	Primary School	.94757*	.15239	.000	.4838	1.4114
	Secondary School	.54198*	.08151	.000	.3116	.7724
	Certificate/ Diploma	-.34112*	.10948	.032	-.6639	-.0183
	Bachelors' Degree	-.73695*	.10383	.000	-1.0581	-.4158
Certificate/ Diploma	Primary School	1.28869*	.16836	.000	.7861	1.7913
	Secondary School	.88310*	.10846	.000	.5629	1.2033
	High School	.34112*	.10948	.032	.0183	.6639
	Bachelors' Degree	-.39583*	.12610	.036	-.7755	-.0161
Bachelors' Degree	Primary School	1.68452*	.16474	.000	1.1870	2.1821
	Secondary School	1.27894*	.10276	.000	.9601	1.5978
	High School	.73695*	.10383	.000	.4158	1.0581
	Certificate/ Diploma	.39583*	.12610	.036	.0161	.7755

*. The mean difference is significant at the 0.05 level.

Dependent Variable: PSOCU
Tukey HSD

(I) Level of education	(J) Level of education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Primary School	Secondary School	-.14435	.13843	.835	-.5243	.2356
	High School	-.53776*	.14237	.002	-.9285	-.1470
	Certificate/ Diploma	-.76587*	.17707	.000	-1.2519	-.2799
	Bachelors' Degree	-.76587*	.21445	.004	-1.3545	-.1773
Secondary School	Primary School	.14435	.13843	.835	-.2356	.5243
	High School	-.39341*	.07737	.000	-.6058	-.1811
	Certificate/ Diploma	-.62153*	.13066	.000	-.9801	-.2629
	Bachelors' Degree	-.62153*	.17806	.005	-1.1102	-.1328
High School	Primary School	.53776*	.14237	.002	.1470	.9285
	Secondary School	.39341*	.07737	.000	.1811	.6058
	Certificate/ Diploma	-.22811	.13483	.441	-.5982	.1420
	Bachelors' Degree	-.22811	.18114	.716	-.7253	.2691
Certificate/ Diploma	Primary School	.76587*	.17707	.000	.2799	1.2519
	Secondary School	.62153*	.13066	.000	.2629	.9801
	High School	.22811	.13483	.441	-.1420	.5982
	Bachelors' Degree	.00000	.20952	1.000	-.5751	.5751
Bachelors' Degree	Primary School	.76587*	.21445	.004	.1773	1.3545
	Secondary School	.62153*	.17806	.005	.1328	1.1102
	High School	.22811	.18114	.716	-.2691	.7253
	Certificate/ Diploma	.00000	.20952	1.000	-.5751	.5751

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: NSOCU
Tukey HSD

(I) Level of education	(J) Level of education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Primary School	Secondary School	.10780	.14953	.952	-.3026	.5182
	High School	.11833	.15380	.939	-.3038	.5405
	Certificate/ Diploma	.47817	.19129	.093	-.0469	1.0032
	Bachelors' Degree	.49206	.23166	.213	-.1438	1.1279
Secondary School	Primary School	-.10780	.14953	.952	-.5182	.3026
	High School	.01052	.08358	1.000	-.2189	.2399
	Certificate/ Diploma	.37037	.14114	.069	-.0170	.7578
	Bachelors' Degree	.38426	.19235	.270	-.1437	.9122
High School	Primary School	-.11833	.15380	.939	-.5405	.3038
	Secondary School	-.01052	.08358	1.000	-.2399	.2189
	Certificate/ Diploma	.35985	.14565	.100	-.0399	.7596
	Bachelors' Degree	.37374	.19568	.314	-.1633	.9108
Certificate/ Diploma	Primary School	-.47817	.19129	.093	-1.0032	.0469
	Secondary School	-.37037	.14114	.069	-.7578	.0170
	High School	-.35985	.14565	.100	-.7596	.0399
	Bachelors' Degree	.01389	.22633	1.000	-.6073	.6351
Bachelors' Degree	Primary School	-.49206	.23166	.213	-1.1279	.1438
	Secondary School	-.38426	.19235	.270	-.9122	.1437
	High School	-.37374	.19568	.314	-.9108	.1633
	Certificate/ Diploma	-.01389	.22633	1.000	-.6351	.6073

Multiple Comparisons

Dependent Variable: PAR
Tukey HSD

(I) Education level	(J) Education level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Primary School	Secondary School	-.47619*	.14531	.010	-.8750	-.0773
	High School	-.69505*	.14946	.000	-1.1053	-.2848
	Certificate/ Diploma	-.96230*	.18589	.000	-1.4725	-.4521
	Bachelors' Degree	-1.01786*	.22512	.000	-1.6357	-.4000
Secondary School	Primary School	.47619*	.14531	.010	.0773	.8750
	High School	-.21886	.08122	.057	-.4418	.0041
	Certificate/ Diploma	-.48611*	.13716	.004	-.8626	-.1096
	Bachelors' Degree	-.54167*	.18692	.033	-1.0547	-.0286
High School	Primary School	.69505*	.14946	.000	.2848	1.1053
	Secondary School	.21886	.08122	.057	-.0041	.4418
	Certificate/ Diploma	-.26726	.14154	.326	-.6557	.1212
	Bachelors' Degree	-.32281	.19016	.437	-.8447	.1991
Certificate/ Diploma	Primary School	.96230*	.18589	.000	.4521	1.4725
	Secondary School	.48611*	.13716	.004	.1096	.8626
	High School	.26726	.14154	.326	-.1212	.6557
	Bachelors' Degree	-.05556	.21994	.999	-.6592	.5481
Bachelors' Degree	Primary School	1.01786*	.22512	.000	.4000	1.6357
	Secondary School	.54167*	.18692	.033	.0286	1.0547
	High School	.32281	.19016	.437	-.1991	.8447
	Certificate/ Diploma	.05556	.21994	.999	-.5481	.6592

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: PECO
Tukey HSD

(I) age group	(J) Age group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
35 years old and less	36 to 50 years old	.43507*	.15464	.027	.0355	.8346
	51 to 65 years old	.52658*	.16674	.009	.0958	.9574
	66 years old and more	.69538*	.24808	.028	.0544	1.3363
36 to 50 years old	35 years old and less	-.43507*	.15464	.027	-.8346	-.0355
	51 to 65 years old	.09151	.09802	.787	-.1618	.3448
	66 years old and more	.26031	.20821	.595	-.2776	.7983
51 to 65 years old	35 years old and less	-.52658*	.16674	.009	-.9574	-.0958
	36 to 50 years old	-.09151	.09802	.787	-.3448	.1618
	66 years old and more	.16880	.21734	.865	-.3927	.7303
66 years old and more	35 years old and less	-.69538*	.24808	.028	-1.3363	-.0544
	36 to 50 years old	-.26031	.20821	.595	-.7983	.2776
	51 to 65 years old	-.16880	.21734	.865	-.7303	.3927

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: NSOCU
Tukey HSD

(I) Age group	(J) Age group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
35 years old and less	36 to 50 years old	-.28522	.13639	.158	-.6376	.0672
	51 to 65 years old	-.30547	.14706	.163	-.6854	.0745
	66 years old and more	-.72000*	.21879	.006	-1.2853	-.1547
36 to 50 years old	35 years old and less	.28522	.13639	.158	-.0672	.6376
	51 to 65 years old	-.02025	.08645	.995	-.2436	.2031
	66 years old and more	-.43478	.18363	.086	-.9092	.0397
51 to 65 years old	35 years old and less	.30547	.14706	.163	-.0745	.6854
	36 to 50 years old	.02025	.08645	.995	-.2031	.2436
	66 years old and more	-.41453	.19168	.136	-.9098	.0807
66 years old and more	35 years old and less	.72000*	.21879	.006	.1547	1.2853
	36 to 50 years old	.43478	.18363	.086	-.0397	.9092
	51 to 65 years old	.41453	.19168	.136	-.0807	.9098

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: NENVI
Tukey HSD

(I) Age group	(J) Age group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
35 years old and less	36 to 50 years old	-.34462	.15109	.105	-.7350	.0457
	51 to 65 years old	-.38423	.16291	.088	-.8051	.0367
	66 years old and more	-.66308*	.24238	.033	-1.2893	-.0369
36 to 50 years old	35 years old and less	.34462	.15109	.105	-.0457	.7350
	51 to 65 years old	-.03961	.09577	.976	-.2871	.2078
	66 years old and more	-.31846	.20342	.400	-.8440	.2071
51 to 65 years old	35 years old and less	.38423	.16291	.088	-.0367	.8051
	36 to 50 years old	.03961	.09577	.976	-.2078	.2871
	66 years old and more	-.27885	.21235	.555	-.8275	.2698
66 years old and more	35 years old and less	.66308*	.24238	.033	.0369	1.2893
	36 to 50 years old	.31846	.20342	.400	-.2071	.8440
	51 to 65 years old	.27885	.21235	.555	-.2698	.8275

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: PECO
Tukey HSD

(I) Number of family members involved in agriculture	(J) Number of family members involved in agriculture	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2 persons or less	3 to 4 persons	-.18004	.11004	.232	-.4392	.0792
	5 persons or more	-.71525*	.15162	.000	-1.0724	-.3581
3 to 4 persons	2 persons or less	.18004	.11004	.232	-.0792	.4392
	5 persons or more	-.53521*	.12524	.000	-.8302	-.2402
5 persons or more	2 persons or less	.71525*	.15162	.000	.3581	1.0724
	3 to 4 persons	.53521*	.12524	.000	.2402	.8302

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: PSOCU
Tukey HSD

(I) Number of family members involved in agriculture	(J) Number of family members involved in agriculture	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2 persons or less	3 to 4 persons	-.20626	.09493	.078	-.4299	.0174
	5 persons or more	-.67460*	.13080	.000	-.9827	-.3665
3 to 4 persons	2 persons or less	.20626	.09493	.078	-.0174	.4299
	5 persons or more	-.46834*	.10804	.000	-.7228	-.2138
5 persons or more	2 persons or less	.67460*	.13080	.000	.3665	.9827
	3 to 4 persons	.46834*	.10804	.000	.2138	.7228

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: NSOCU
Tukey HSD

(I) Number of family members involved in agriculture	(J) Number of family members involved in agriculture	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2 persons or less	3 to 4 persons	.28095*	.09791	.012	.0503	.5116
	5 persons or more	.56140*	.13490	.000	.2436	.8792
3 to 4 persons	2 persons or less	-.28095*	.09791	.012	-.5116	-.0503
	5 persons or more	.28045*	.11143	.033	.0180	.5429
5 persons or more	2 persons or less	-.56140*	.13490	.000	-.8792	-.2436
	3 to 4 persons	-.28045*	.11143	.033	-.5429	-.0180

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: NENVI
Tukey HSD

(I) Number of family members involved in agriculture	(J) Number of family members involved in agriculture	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2 persons or less	3 to 4 persons	.23878	.10964	.077	-.0195	.4970
	5 persons or more	.43396*	.15106	.012	.0781	.7898
3 to 4 persons	2 persons or less	-.23878	.10964	.077	-.4970	.0195
	5 persons or more	.19518	.12478	.263	-.0987	.4891
5 persons or more	2 persons or less	-.43396*	.15106	.012	-.7898	-.0781
	3 to 4 persons	-.19518	.12478	.263	-.4891	.0987

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: PAR
Tukey HSD

(I) Number of family members involved in agriculture	(J) Number of family members involved in agriculture	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2 persons or less	3 to 4 persons	-.13126	.09973	.387	-.3662	.1037
	5 persons or more	-.53205*	.13741	.000	-.8557	-.2084
3 to 4 persons	2 persons or less	.13126	.09973	.387	-.1037	.3662
	5 persons or more	-.40079*	.11351	.001	-.6682	-.1334
5 persons or more	2 persons or less	.53205*	.13741	.000	.2084	.8557
	3 to 4 persons	.40079*	.11351	.001	.1334	.6682

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: PECO
Tamhane

(I) Net monthly household income	(J) Net monthly household income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
25 million VND or less	26 – 50 million VND	-.50475*	.11796	.001	-.8455	-.1640
	51 – 75 million VND	-.97039*	.13047	.000	-1.3451	-.5957
	76 – 100 million VND	-1.55882*	.13093	.000	-1.9430	-1.1747
	More than 100 million VND	-1.72549	.19840	.122	-4.4852	1.0342
26 – 50 million VND	25 million VND or less	.50475*	.11796	.001	.1640	.8455
	51 – 75 million VND	-.46564*	.08810	.000	-.7183	-.2130
	76 – 100 million VND	-1.05408*	.08878	.000	-1.3370	-.7711
	More than 100 million VND	-1.22074	.17351	.498	-12.1599	9.7185
51 – 75 million VND	25 million VND or less	.97039*	.13047	.000	.5957	1.3451
	26 – 50 million VND	.46564*	.08810	.000	.2130	.7183
	76 – 100 million VND	-.58844*	.10484	.000	-.9052	-.2716
	More than 100 million VND	-.75510	.18224	.619	-6.6265	5.1163
76 – 100 million VND	25 million VND or less	1.55882*	.13093	.000	1.1747	1.9430
	26 – 50 million VND	1.05408*	.08878	.000	.7711	1.3370
	51 – 75 million VND	.58844*	.10484	.000	.2716	.9052
	More than 100 million VND	-.16667	.18257	.999	-5.9847	5.6514
More than 100 million VND	25 million VND or less	1.72549	.19840	.122	-1.0342	4.4852
	26 – 50 million VND	1.22074	.17351	.498	-9.7185	12.1599
	51 – 75 million VND	.75510	.18224	.619	-5.1163	6.6265
	76 – 100 million VND	.16667	.18257	.999	-5.6514	5.9847

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: PSOCU
Tukey HSD

(I) Net monthly household income	(J) Net monthly household income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
25 million VND or less	26 – 50 million VND	-.28777*	.08859	.011	-.5309	-.0446
	51 – 75 million VND	-.84167*	.11225	.000	-1.1498	-.5336
	76 – 100 million VND	-1.32908*	.19406	.000	-1.8617	-.7964
	More than 100 million VND	-.96242	.40448	.124	-2.0726	.1478
26 – 50 million VND	25 million VND or less	.28777*	.08859	.011	.0446	.5309
	51 – 75 million VND	-.55390*	.09000	.000	-.8009	-.3069
	76 – 100 million VND	-1.04131*	.18210	.000	-1.5411	-.5415
	More than 100 million VND	-.67465	.39888	.441	-1.7695	.4202
51 – 75 million VND	25 million VND or less	.84167*	.11225	.000	.5336	1.1498
	26 – 50 million VND	.55390*	.09000	.000	.3069	.8009
	76 – 100 million VND	-.48741	.19471	.093	-1.0218	.0470
	More than 100 million VND	-.12075	.40479	.998	-1.2318	.9903
76 – 100 million VND	25 million VND or less	1.32908*	.19406	.000	.7964	1.8617
	26 – 50 million VND	1.04131*	.18210	.000	.5415	1.5411
	51 – 75 million VND	.48741	.19471	.093	-.0470	1.0218
	More than 100 million VND	.36667	.43465	.917	-.8263	1.5597
More than 100 million VND	25 million VND or less	.96242	.40448	.124	-.1478	2.0726
	26 – 50 million VND	.67465	.39888	.441	-.4202	1.7695
	51 – 75 million VND	.12075	.40479	.998	-.9903	1.2318
	76 – 100 million VND	-.36667	.43465	.917	-1.5597	.8263

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: NSOCU
Tukey HSD

(I) Net monthly household income	(J) Net monthly household income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
25 million VND or less	26 – 50 million VND	.32395*	.09794	.009	.0551	.5928
	51 – 75 million VND	.63665*	.12409	.000	.2961	.9772
	76 – 100 million VND	.76863*	.21454	.004	.1798	1.3575
	More than 100 million VND	.56863	.44715	.709	-.6587	1.7959
26 – 50 million VND	25 million VND or less	-.32395*	.09794	.009	-.5928	-.0551
	51 – 75 million VND	.31271*	.09950	.016	.0396	.5858
	76 – 100 million VND	.44468	.20131	.179	-.1079	.9972
	More than 100 million VND	.24468	.44096	.981	-.9656	1.4550
51 – 75 million VND	25 million VND or less	-.63665*	.12409	.000	-.9772	-.2961
	26 – 50 million VND	-.31271*	.09950	.016	-.5858	-.0396
	76 – 100 million VND	.13197	.21525	.973	-.4588	.7228
	More than 100 million VND	-.06803	.44750	1.000	-1.2963	1.1602
76 – 100 million VND	25 million VND or less	-.76863*	.21454	.004	-1.3575	-.1798
	26 – 50 million VND	-.44468	.20131	.179	-.9972	.1079
	51 – 75 million VND	-.13197	.21525	.973	-.7228	.4588
	More than 100 million VND	-.20000	.48050	.994	-1.5188	1.1188
More than 100 million VND	25 million VND or less	-.56863	.44715	.709	-1.7959	.6587
	26 – 50 million VND	-.24468	.44096	.981	-1.4550	.9656
	51 – 75 million VND	.06803	.44750	1.000	-1.1602	1.2963
	76 – 100 million VND	.20000	.48050	.994	-1.1188	1.5188

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: NENVI
Tukey HSD

(I) Net monthly household income	(J) Net monthly household income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
25 million VND or less	26 – 50 million VND	.46973*	.10672	.000	.1768	.7626
	51 – 75 million VND	.82923*	.13521	.000	.4581	1.2003
	76 – 100 million VND	.70882*	.23376	.022	.0672	1.3504
	More than 100 million VND	.80882	.48722	.460	-.5285	2.1461
26 – 50 million VND	25 million VND or less	-.46973*	.10672	.000	-.7626	-.1768
	51 – 75 million VND	.35950*	.10841	.009	.0619	.6571
	76 – 100 million VND	.23910	.21935	.812	-.3630	.8412
	More than 100 million VND	.33910	.48048	.955	-.9797	1.6579
51 – 75 million VND	25 million VND or less	-.82923*	.13521	.000	-1.2003	-.4581
	26 – 50 million VND	-.35950*	.10841	.009	-.6571	-.0619
	76 – 100 million VND	-.12041	.23454	.986	-.7642	.5233
	More than 100 million VND	-.02041	.48760	1.000	-1.3587	1.3179
76 – 100 million VND	25 million VND or less	-.70882*	.23376	.022	-1.3504	-.0672
	26 – 50 million VND	-.23910	.21935	.812	-.8412	.3630
	51 – 75 million VND	.12041	.23454	.986	-.5233	.7642
	More than 100 million VND	.10000	.52356	1.000	-1.3370	1.5370
More than 100 million VND	25 million VND or less	-.80882	.48722	.460	-2.1461	.5285
	26 – 50 million VND	-.33910	.48048	.955	-1.6579	.9797
	51 – 75 million VND	.02041	.48760	1.000	-1.3179	1.3587
	76 – 100 million VND	-.10000	.52356	1.000	-1.5370	1.3370

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: PAR
Tukey HSD

(I) Net monthly household income	(J) Net monthly household income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
25 million VND or less	26 – 50 million VND	-.28929*	.09245	.016	-.5430	-.0355
	51 – 75 million VND	-.92190*	.11714	.000	-1.2434	-.6004
	76 – 100 million VND	-1.03007*	.20251	.000	-1.5859	-.4742
	More than 100 million VND	-1.16340*	.42210	.048	-2.3219	-.0049
26 – 50 million VND	25 million VND or less	.28929*	.09245	.016	.0355	.5430
	51 – 75 million VND	-.63262*	.09392	.000	-.8904	-.3748
	76 – 100 million VND	-.74078*	.19003	.001	-1.2624	-.2192
	More than 100 million VND	-.87411	.41625	.223	-2.0166	.2684
51 – 75 million VND	25 million VND or less	.92190*	.11714	.000	.6004	1.2434
	26 – 50 million VND	.63262*	.09392	.000	.3748	.8904
	76 – 100 million VND	-.10816	.20319	.984	-.6659	.4495
	More than 100 million VND	-.24150	.42242	.979	-1.4009	.9179
76 – 100 million VND	25 million VND or less	1.03007*	.20251	.000	.4742	1.5859
	26 – 50 million VND	.74078*	.19003	.001	.2192	1.2624
	51 – 75 million VND	.10816	.20319	.984	-.4495	.6659
	More than 100 million VND	-.13333	.45358	.998	-1.3783	1.1116
More than 100 million VND	25 million VND or less	1.16340*	.42210	.048	.0049	2.3219
	26 – 50 million VND	.87411	.41625	.223	-.2684	2.0166
	51 – 75 million VND	.24150	.42242	.979	-.9179	1.4009
	76 – 100 million VND	.13333	.45358	.998	-1.1116	1.3783

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: PECO
Tamhane

(I) Farm size	(J) Farm size	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
3,000m² and less	3,001m² to 6,000m²	-.54992*	.08650	.000	-.7588	-.3411
	More than 6,000m²	-1.21937*	.11103	.000	-1.5581	-.8806
3,001m²to 6,000m²	3,000m² and less	.54992*	.08650	.000	.3411	.7588
	More than 6,000m²	-.66944*	.12336	.001	-1.0145	-.3244
More than 6,000m²	3,000m² and less	1.21937*	.11103	.000	.8806	1.5581
	3,001m² to 6,000m²	.66944*	.12336	.001	.3244	1.0145

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: PSOCU
Tukey HSD

(I) Farm size	(J) Farm size	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
3,000m² and less	3,001m² to 6,000m²	-.55752*	.07605	.000	-.7367	-.3784
	More than 6,000m²	-.95613*	.24023	.000	-1.5220	-.3903
3,001m² to 6,000m²	3,000m² and less	.55752*	.07605	.000	.3784	.7367
	More than 6,000m²	-.39861	.24565	.238	-.9773	.1800
More than 6,000m²	3,000m² and less	.95613*	.24023	.000	.3903	1.5220
	3,001m² to 6,000m²	.39861	.24565	.238	-.1800	.9773

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: NSOCU
Tukey HSD

(I) Farm size	(J) Farm size	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
3,000m² and less	3,001m² to 6,000m²	.26464*	.08331	.005	.0684	.4609
	More than 6,000m²	.59242	.26316	.065	-.0275	1.2123
3,001m² to 6,000m²	3,000m² and less	-.26464*	.08331	.005	-.4609	-.0684
	More than 6,000m²	.32778	.26910	.443	-.3061	.9616
More than 6,000m²	3,000m² and less	-.59242	.26316	.065	-1.2123	.0275
	3,001m² to 6,000m²	-.32778	.26910	.443	-.9616	.3061

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: NENVI
Tamhane

(I) Farm size	(J) Farm size	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
3,000m² and less	3,001m² to 6,000m²	.52579*	.08012	.000	.3327	.7189
	More than 6,000m²	.37266*	.09867	.013	.0835	.6618
3,001m² to 6,000m²	3,000m² and less	-.52579*	.08012	.000	-.7189	-.3327
	More than 6,000m²	-.15313	.10615	.439	-.4483	.1421
More than 6,000m²	3,000m² and less	-.37266*	.09867	.013	-.6618	-.0835
	3,001m² to 6,000m²	.15313	.10615	.439	-.1421	.4483

*. The mean difference is significant at the 0.05 level.

Multiple Comparisons

Dependent Variable: PAR
Tukey HSD

(I) Farm size	(J) Farm size	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
3,000m² and less	3,001m² to 6,000m²	-.52593*	.07932	.000	-.7128	-.3391
	More than 6,000m²	-1.06205*	.25056	.000	-1.6522	-.4718
3,001m² to 6,000m²	3,000m² and less	.52593*	.07932	.000	.3391	.7128
	More than 6,000m²	-.53611	.25622	.093	-1.1396	.0674
More than 6,000m²	3,000m² and less	1.06205*	.25056	.000	.4718	1.6522
	3,001m² to 6,000m²	.53611	.25622	.093	-.0674	1.1396

*. The mean difference is significant at the 0.05 level.

Linear regression analysis

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.566[a]	.321	.319	.54408	
2	.612[b]	.375	.371	.52292	
3	.620[c]	.385	.378	.51961	1.731

a. Predictors: (Constant), PECO
b. Predictors: (Constant), PECO, PSOCU
c. Predictors: (Constant), PECO, PSOCU, NSOCU
d. Dependent Variable: PAR

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.679	1	41.679	140.794	.000[b]
	Residual	88.216	298	.296		
	Total	129.894	299			
2	Regression	48.680	2	24.340	89.011	.000[c]
	Residual	81.214	297	.273		
	Total	129.894	299			
3	Regression	49.975	3	16.658	61.698	.000[d]
	Residual	79.919	296	.270		
	Total	129.894	299			

a. Dependent Variable: PAR
b. Predictors: (Constant), PECO
c. Predictors: (Constant), PECO, PSOCU
d. Predictors: (Constant), PECO, PSOCU, NSOCU

Correlations

		PAR	PECO	NECO	PSOCU	NSOCU	PENVI	NENVI
PAR	Correlation Coefficient	1.000	.560**	-.026	.499**	-.159**	.004	-.096
	Sig. (2-tailed)	.	.000	.652	.000	.006	.947	.098
	N	300	300	300	300	300	300	300
PECO	Correlation Coefficient	.560**	1.000	-.038	.057	-.079	.048	-.097
	Sig. (2-tailed)	.000	.	.514	.344	.256	.411	.095
	N	300	300	300	300	300	300	300
NECO	Correlation Coefficient	-.026	-.038	1.000	-.010	.059	.026	-.004
	Sig. (2-tailed)	.652	.514	.	.858	.310	.656	.948
	N	300	300	300	300	300	300	300
PSOCU	Correlation Coefficient	.499**	.057	-.010	1.000	.085	-.009	-.038
	Sig. (2-tailed)	.000	.344	.858	.	.142	.879	.513
	N	300	300	300	300	300	300	300
NSOCU	Correlation Coefficient	-.159**	-.079	.059	.085	1.000	.046	.045
	Sig. (2-tailed)	.006	.256	.310	.142	.	.426	.432
	N	300	300	300	300	300	300	300
PENVI	Correlation Coefficient	.004	.048	.026	-.009	.046	1.000	.068
	Sig. (2-tailed)	.947	.411	.656	.879	.426	.	.231
	N	300	300	300	300	300	300	300
NENVI	Correlation Coefficient	-.096	-.097	-.004	-.038	.045	.068	1.000
	Sig. (2-tailed)	.098	.095	.948	.513	.432	.231	.
	N	300	300	300	300	300	300	300

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

APPENDIX B

List of papers

This thesis is based on the following papers:

Nha Thi Huynh Nguyen, Suvit Suwanno, Weerapon Thongma and Parichart Visuthismajarn. The Attitudes of Residents towards Agro-tourism Impacts and Its Effects on Participation in Agro-tourism Development: The Case Study of Vietnam. African Journal of Hospitality, Tourism and Leisure, Volume 7 (4) – (2018) ISSN: 2223-814x. Copyright: © AJHTL /Author/s- Open Access-Online @ http//: www.ajhtl.com (SCOPUS)

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African Journal of Hospitality, Tourism and Leisure, http//: www.ajhtl.com

Published Papers

African Journal of Hospitality, Tourism and Leisure (Indexing Scopus**)**

African Journal of Hospitality, Tourism and Leisure, Volume 7 (4) - (2018) ISSN: 2223-814X

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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Corresponding author*

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

APPENDIX C

Household Survey Questionnaire

Survey on perceptions of local residents toward impacts of agro-tourism in Da Lat, Vietnam. The aim of this survey is to collect data and information for the thesis of Master of Science - Program in Community Ecotourism Management at Faculty of Environmental Management, Prince of Songkla University, Hat Yai Campus, THAILAND. The data were obtained from this survey will be used for academic aim only. Thank you for your kind collaboration in this survey!

Part 1. How is your perceptions towards agro-tourism impacts?

= "Highly disagree", 4 = "disagree", 3 = "neutral", 2 = "agree", 1 = "strongly agree"

Residents' perceptions toward positive economic impacts of agro-tourism (PECO)		**1**	**2**	**3**	**4**	**5**
PECO1	1. Promotes the demand for local agricultural products					
PECO2	2. Provides employment opportunities for household members					
PECO3	3. Increases additional income for the community					
PECO4	4. Contribute to diversify local economic activities					
PECO5	5. Attracts investment to infrastructure improvement					
PECO6	6. Offers new business chances to locals					
Residents' perceptions toward negative economic impacts of agro-tourism (NECO)		**1**	**2**	**3**	**4**	**5**
NECO1	1. Locals receive a low salary from agro-tourism activities					
NECO2	2. An increase in living cost due to the raising of goods and services prices					
NECO3	3. Increases the price of farmland					
NECO4	4. Mostly agro-tourism revenues belong to external tour operators					

Your comments:

……

……
……
……
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……
……

Residents' perceptions toward positive socio-cultural impacts of agro-tourism (PSOCU)		**1**	**2**	**3**	**4**	**5**
PSOCU1	1. Provides more recreational areas for locals					
PSOCU2	2. Promote the conservation of traditional culture					
PSOCU3	3. Enhances the pride of community in the agricultural culture					
PSOCU4	4. Enhances the pride of community in the agricultural culture					
PSOCU5	5. Opportunities for cultural exchanges and share experiences					
PSOCU6	6. To fully utilize the community resources					
Residents' perceptions toward negative socio-cultural impacts of agro-tourism (NSOCU)		**1**	**2**	**3**	**4**	**5**
NSOCU1	1. An increase in crime rates such as theft, violence, vandalism					
NSOCU2	2. An effect on indigenous dwellers' way of life					
NSOCU3	3. Causes conflicts between tourists and locals					

Your comments:

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……
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……
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……
……

Residents' perceptions toward positive environmental impacts of agro-tourism (PENVI)		**1**	**2**	**3**	**4**	**5**
PENVI1	1. Influences positively on ecological awareness of locals and authorities					
PENVI2	2. Improves the appearance (images) of the area					
PENVI3	3. Preserves natural environment in the community					
Residents' perception toward negative environmental impacts of agro-tourism (NENVI)		**1**	**2**	**3**	**4**	**5**
NENVI1	4. Causes traffic congestion and lack of parking lot					
NENVI2	5. Cause in more litter in the community					
NENVI3	6. Results in overcrowded and noise					
NENVI4	7. Deteriorates the beauty of natural landscapes					
Your comments: …… …… …… …… …… ……						
Part 2. What is your opinion about the community participation in support for agro-tourism? 5 = "Highly disagree", 4 = "disagree", 3 = "neutral", 2 = "agree", 1 = "strongly agree"						
Community participation in support of agro-tourism (PAR)		**1**	**2**	**3**	**4**	**5**
PAR1	1. Locals support new agro-tourism facilities which will appeal to more tourists					
PAR2	2. The local authorities should provide incentive policies and plans to direct agro-tourism development					
PAR3	3. The local authorities should financially provide support to enhance infrastructure for supporting agro-tourism					

PAR4	4. Locals would like to see more agro-tourism activities and tourists					
PAR5	5. The local community should be involved in agro-tourism development planning					
PAR6	6. Locals willing to be participating in support for agro-tourism					

Your comments:

……

……

……

……

……

……

……

Part 3. General information

Name: ……

Gender: Male ☐ Female ☐

Age: ……

Education:

Primary school ☐ Secondary School ☐ High School ☐

Certificate/Diploma ☐ Bachelors' Degree ☐

Net household income: ……VND/month

Number of family member involved in agriculture: ……

Farm size: ……

Farm type: Owner ☐ Lessee ☐

Length joined in agriculture in agriculture: ……. year(s)

. Occupation: Full-time Farmer ☐ Part-time Farmer ☐

This is the end of the questionnaire!

Thank you for your kind collaboration.

APPENDIX D

Respondents' Survey (February and March 2018)

Respondents' Survey (February and March 2018) (Cont.)

VITAE

Name Nha Thi Huynh Nguyen

Student ID 5910920045

Educational Attainment

Degree	Name of Institution	Year of Graduation
Bachelor of Business Administration (In field of Tourism)	Quy Nhon University, Vietnam	2014

Scholarship Awards during Enrolment

1. Thailand's Education Hub for Southern Region of ASEAN countries, Prince of Songkla University, 2016 – 2018 (Grant No: THE-AC 095/2016)
2. Graduate School Dissertation Funding for thesis, Prince of Songkla University, for Masters' Degree 2017

Work – Position and Address

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List of Publication and Proceeding

Nha Thi Huynh Nguyen, Suvit Suwanno, Weerapon Thongma and Parichart Visuthismajarn. The Attitudes of Residents towards Agro-tourism Impacts and Its Effects on Participation in Agro-tourism Development: The Case Study of Vietnam. African Journal of Hospitality, Tourism and Leisure, Volume 7 (4) – (2018) ISSN: 2223-814x. Copyright: © AJHTL /Author/s- Open Access- Online @ http//: www.ajhtl.com (SCOPUS)

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