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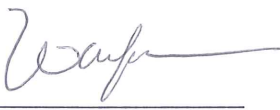
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摘要

当分析和管理某一区域的生态旅游开发对目的地的生态、经济和社会文化的影响时，可以从当地社区或居民的视角来研究，他们作为生态旅游主要的利益相关者之一不可或缺。本研究的目的是调查老挝 Namha 国家保护区中 Nalan 村的居民对生态旅游影响的感知，从生态旅游影响的角度出发，进行针对性的问卷设计。然后运用因子分析法分析问卷，从而了解生态旅游对生态、经济和社会文化的积极和消极影响。

研究发现：生态影响可分为两个组成部分即“环境质量”和“环境保护”，人们认为“当地社区、政府和其他有关利益相关者的保护意识的提高”对生态环境产生积极影响，因子分析等级最高；而“人口密集的旅游地点的交通堵塞”会对生态环境产生消极影响，因子分析等级最低。经济影响可分为“成本”和“效益”两个部分，人们认为“国家和地区发展的外国收入”是经济发展的推动因素；“增加生活成本”限制了经济的发展。社会文化影响可分为“社区文化素质”和“服务与基础设施”两个部分，人们认为“当地人与当地社区与游客之间的文化知识共享”可以促进社会文化的发展，因子分析等级最高；而“减少当地语言的使用”则不利于社会文化的发展。从因子分析结果可以看出，社区当地居民对生态旅游的影响的感知更为积极，从积极的影响水平来看显示为从中立到较高水平，负面影响的水平从中性到较低水平。

关键词:居民；感知；生态旅游影响；Nalan 生态旅游

Abstract

The local community or residents and their perceptions are a group of essential interest when analyzing and managing the ecological, economic, and socio-cultural impact of ecotourism development in a certain region. The objective of the research was to examine the residents' perceptions on ecotourism in the Nalan village located in Namha national protected area (Laos). With respect to tourism, using a questionnaire specifically designed for the purpose of this work. Then used factor analysis to analyze positive and negative impacts of ecotourism to ecological, economic, and socio-cultural.

The analysis found that ecological impacts can divided to 2 components names that "Environmental quality" and "Environmental conservation", such as the highest level of impact is *"increase in conservation awareness among local communities, authorities, and other concerned stakeholders"*, and *"traffic jam in the densely populated tourism places"* is the lowest level of impact; economic impacts can divided to 2 components names "Cost" and "Benefit", which the highest level of impact is *"foreign revenue for the local and regional development"*, and the lowest level of impact is *"increase the cost of living"*; and socio-cultural impacts can also divided to 2 components names "Scio-cultural quality" and "services and infrastructure", such as *"knowledge and experience sharing about cultures among local people and between local communities and tourists"* is the highest level of impact, and the lowest level of impact is *"decreasing the use of local language"*. From results can be explained that local people in community can perceived impacts of ecotourism more in positive side, seen from the positive impact levels are neutral to highest, but levels of negative impacts are from neutral to lowest.

Keywords: *residents, perceptions, ecotourism impacts, Nalan ecotourism.*

Abbreviations

UNCHE	United Nations Conference on Human and Environment
IUCN	International Union for Conservation of Nature and Natural Resources
UNCED	United Nations Conference on Environment and Development
NGOs	Non-governmental organizations
TIES	The International Ecotourism Society
TES	The Ecotourism Society
NPA	National Protected Area
KMO	Kaiser-Meyer-Olkin
UNESCO	The United Nations Educational, Scientific and Cultural Organization
DICT	The Department of Information, Culture, and Tourism
S.D.	Standard deviation
\bar{X}	Mean
Sig.	Significant

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1 Introduction

Forests are crucial not only for the livelihoods of thousands of village communities throughout the country, but also as an important economic resource for the country in its "new era of development" (Premrudee Daoroung, 1997).

Deeper recognition of the fact, that environmental destruction is directly related to the survival of human beings and should not be overlooked or ignored any more, ignited international efforts to balance environmental conservation and economic development. Since the United Nations Conference on Human and Environment (UNCHE) held in 1972 adopted the conservation of the earth environment as a universe priority by presenting the slogan "The Only One Earth", the concept of "sustainable development" was first introduced in the International Union for Conservation of Nature and Natural Resources (IUCN) in 1980 and the rules of "Environmentally Sound and Sustainable Development" became a dominant principle in the 80's and 90's. Since then, the concept of sustainable development came to be discussed internationally through Rio De Janeiro Declaration made by the United Nations Conference on Environment and Development (UNCED) (Mi-hee Kang, 2008).

Globally we are witnessing growing environmental destruction, particularly to the natural resource bases of underdeveloped countries. If ecotourism can generate profits for local economies, while protecting and conserving the natural resource base of that community, it could be a strong alternative for numerous countries. Evidence suggests that the ecotourism industry has been expanding at a rapid rate in recent decades (Dasenbrock, 2002). It is important to understand the positive and negative Environment impacts of the ecotourism for avoid or have the negative impacts in minimal, and obtain more benefit to the environment.

The ecotourism notion time by time gains the meaning like green tourism, nature tourism, and wild tourism. If used on purpose the ecotourism can be the source of ecosystem and the development of regional population's socio-economic welfare. If we take into consideration the poverty and deprivation of rural population who leave in mountainous regions, then the ecotourism can be the reduction factor of disbalance among social classes (Hazi E. and Rufat M., 2013). Ecotourism industry is growing so rapidly at global level that the current era may soon appear as the age of ecotourism. This holds true to the extent that tourism industry has, over the past decade, experienced growth rates as much as 120% and 60% in terms of number of tourists and revenues, respectively. As predicted by the World Tourism Organization, these figures will be three times by 2020 (A. Estelaji, H. Mojtabazadeh, M. Ranjbar & R. Sarvar, 2005).

Tourism development commonly has been advocated as an alternative to traditional natural resource-based economic development, such as timber production, agriculture, and mining. Recently, many advocates of tourism have promoted seemingly new tourism concepts, such as nature-based tourism, ecotourism, and sustainable tourism, among others. These new forms of tourism are promoted as an environmentally safe way for rural communities to generate income from natural resources (Jeffrey D. Kline, 2001). They are advocated particularly in developing countries because many developing countries possess a comparative advantage over developed countries in their ability to provide relatively pristine natural settings (Cater 1993). Affluence, education, and environmentalism all contribute to increasing visitation to wild lands and generate income for local communities through the expenditures of tourists such as lodging, transportation, food, guides, and souvenirs (Laarman and Sedjo 1992). Demand for these new forms of tourism, it is argued, arises from increased concern or interest in unique and fragile ecosystems and a growing desire to travel to new and exotic places, and an increasing number of people who have the financial means to do so (Seidl 1994).

The Nam Ha Ecotourism Project, a project of UNESCO-Lao National Tourism Administration, has provided a model for the development and operation of community-based ecotourism in Lao PDR's National Protected Areas, based on the principles of local ownership and stewardship of natural resources. The Namha project has provided alternative employment and income-generating opportunities to communities living in and around the 222,400 hectare Namha national protected area, allowing them to reduce unsustainable use and harvesting of natural resources in the national protected area (Equator initiative, 2006).

Namha is located in the remote northern province of Luang Namtha on Lao PDR's border with China, and includes some of the country's most significant wilderness areas. Altitudes range from river valleys and plains to northern highland peaks, supporting a broad range of habitats and biodiversity (Equator initiative, 2006).

Hence, protection of natural resources for environmental development for sustainable earth is important. Many theories have been written explaining the importance of ecotourism for conservation of nature and its resources. The literature has described the impact of ecotourism briefly (Buckley, 2008).

However, ecotourism have many benefit but we can't avoid the negative impacts of ecotourism. Local residents are those who live in the community. Communities are strengthened when organizations encourage and support diversity by engaging residents who are representative of the whole community. Therefore, this research will focus on the environmental impacts of ecotourism of livelihood of local community in Namha national protected area, Lao PDR. The specific objectives were the followings:

- 1) To see the positive and negative impacts of ecotourism from residents' perspective.
- 2) To investigate the residents' perceived impacts of tourist activities in the ecotourism areas.

2 Literature review

2.1 Protected area and tourism

Protected areas are definition as an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means. (IUCN, 1994).

There are now over 30,300 protected areas, totaling well over 13.2 million hectares covering 8.84% of the world's land area (Green and Paine, 1997). Both number and area have expanded greatly in recent decades about two thirds of the protected areas having been established within the last 30 years. Over the same period there has also been a significant increase in the number of countries with protected areas. These trends reflect accelerating and widespread concern for conservation and the growing political significance of environmental issues, a concern which also led to the signing of the Convention on Biological Diversity.

Protected areas will not survive unless they enjoy broad public support and this will not exist unless people's fundamental needs are met. Land use and resource management conflicts, inequities or impacts do not go away simply because an area is given protected status. When they are established by nation states or related entities, protected area boundaries often reflect considerations of sovereignty, governance and tenure as much as the environment types they seek to protect. For all these reasons, the planning and management of protected areas must be coordinated with the use and management of other areas rather than treated in isolation. The long term success of protected areas must be seen in the light of the search for more sustainable patterns of development in general (Adrian G. Davey, 1998).

Protected areas form the basis of the majority of conservation strategies, both nationally and internationally, in order to maintain natural ecosystems in an attempt to prevent threatened plant and animal species from becoming extinct. However, many animal and wild plant species lack sufficient populations within protected areas with many located outside of protected areas (Rodrigues et al, 2004). Therefore new protected areas need to be established in the future which will capture these threatened species.

Tourism within protected areas is one of a number of human values associated with protected areas. Tourism is the vehicle by which park managers come into greatest direct contact with society, and it provides a rich opportunity for explaining park values, ensuring their ongoing existence and directly contributing to human welfare through the reflective and active recreation opportunities they provide

“Protected areas need tourism, and tourism needs protected areas. Though the relationship is complex and sometimes adversarial, tourism is always a critical component to consider in the establishment and management of protected areas” (Eagles, P.F.J., S.F. McCool, and C.D. Haynes. 2002).

2.2 Ecotourism

Ecotourism is a sector of tourism, based on nature travel and including the principles of sustainability. Ecotourism is now defined as “responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education” (TIES, 2015). Whatever definition is used, ecotourism should have a positive impact on both natural areas and the local community. Ecotourism is one kind of sustainable tourism, based on nature, and usually following a distinct set of principles and good practices. Ecotourism complements other types of tourism, as the diagram at right shows. (Center for Ecotourism and Sustainable Development, Rainforest Alliance, the International Ecotourism Society, 2015).

Ecotourism is a form of tourism involving visiting fragile, pristine, and relatively undisturbed natural areas, intended as a low-impact and often small scale alternative to standard commercial (mass) tourism. Its purpose may be to educate the traveler, to provide funds for ecological conservation, to directly benefit the economic development and political empowerment of local communities, or to foster respect for different cultures and for human rights. Since the 1980s ecotourism has been considered a critical endeavor by environmentalists, so that future

generations may experience destinations relatively untouched by human intervention (Martha Honey, 2008).

Ecotourism has been defined as a form of nature-based tourism in the marketplace, but it has also been formulated and studied as a sustainable development tool by NGOs, development experts and academics since 1990. The term ecotourism, therefore, refers on one hand to a concept under a set of principles, and on the other hand to a specific market segment. The International Ecotourism Society (TIES) (previously known as The Ecotourism Society (TES)) in 1991 produced one of the earliest definitions: “Ecotourism is responsible travel to natural areas that conserves the environment and sustains the wellbeing of local people”.

Ecotourism is a sub-component of the field of sustainable tourism. Ecotourism aspires in all cases to achieve sustainable development results. However, it is important to clarify that all tourism activities be they geared to holidays, business, conferences, congresses or fairs, health, adventure or ecotourism should aim to be sustainable. This means that the planning and development of tourism infrastructure, its subsequent operation and also its marketing should focus on environmental, social, cultural and economic sustainability criteria.

Components of Ecotourism

Components of Ecotourism are include: Contributes to conservation of biodiversity, Sustains the wellbeing of local people, Includes an interpretation/learning experience, Involves responsible action on the part of tourists and the tourism industry, Is delivered primarily to small groups by small-scale businesses, Requires lowest possible consumption of non-renewable resources and Stresses local participation, ownership and business opportunities, particularly for rural people.

2.3 The environment impact of tourism

Areas with high-value natural resources, like oceans, lakes, waterfalls, mountains, unique flora and fauna, and great scenic beauty attract tourists and new residents (in-migrants) who seek emotional and spiritual connections with nature. Because these people value nature, selected natural environments are preserved, protected, and kept from further ecological decline. Lands that could be developed can generate income by accommodating the recreational activities of visitors. Tourist income often makes it possible to preserve and restore historic buildings and monuments. Improvements in the area’s appearance through cleanup or repairs and the addition

of public art such as murals, water fountains, and monuments (part of making a community ready for tourism) benefit visitors and residents alike. Tourism is generally considered a "clean" industry, one that is based on hotels, restaurants, shops and attractions, instead of factories (Glenn Kreag, 2001).

Tourism can also degrade an environment. Visitors generate waste and pollution (air, water, solid waste, noise, and visual). Natural resource attractions can be jeopardized through improper uses or overuse. Providing tourist services can alter the landscape's appearance. For instance, visual pollution may occur from billboard proliferation. As tourism develops, demand for land increases, especially for prime locations like beachfronts, special views, and mountains. Without forethought, natural landscape and open space can be lost. The destruction or loss of flora and fauna can happen when desirable plants and animals are collected for sale or the land is trampled. Tourists or the businesses that cater to them often remove plants, animals, rocks, fossils, coral, and cultural or historical artifacts from an area. Uncontrolled visitation or overuse by visitors can degrade landscapes, historic sites, and monuments. Where water is scarce, tourists can overwhelm the available supply. Travelers can also inadvertently introduce nonindigenous species, as can increases in the trade of animals and plants. A constant stream of visitors and domestic pets may disrupt wildlife by disturbing their breeding cycles and altering natural behaviors.

The main goals of our thesis are as follows:

- To figure out the positive and negative impacts of ecotourism in Namha national protected area from local residents' view.
- To investigate the residents' perceived impacts of tourist activities in the ecotourism areas and enhance the environmental awareness as a method to reduce the adverse effects on Environment of local residents.

2.4 Impacts of ecotourism in Kodagu district, India

Much of the research on the impact of tourism community treats social-demographic characteristics as essential independent variables to examine the differences in the various perceptions of tourism impacts on local community (Allen et al., 1988; Williams and Lawson, 2001). Among the previous studies on ecotourism impact, the objective usually focus on three aspects, including ecological impact, economic impact, and socio-cultural impact (Yen, 1994; Chen and Guo, 1995; Ap and Crompton, 1998; Ko and Stewart, 2002).

Especially, the ecotourism impact in Kodagu District, India found that the ecotourism development were contributed to environmental degradation, seen from the result of research shows that negative impacts have high levels, and low levels in positive impacts. Though, in some factors of positive impacts would notice better improvement.

Hence ecotourism in the district is not well established due to the lack of knowledge and awareness in the people. Stakeholders and concerned authorities would have lighting on this issue to proper and sustainable development of ecotourism in Kodagu district (Vishwanatha S., and Chandrashekara B., 2014(1)).

From the research on positive and negative impacts of ecotourism on economic in Kodagu district has shown that the amount of positive economic impacts of ecotourism has more. Even though, some respondent said they were received negative impact of ecotourism such as cost of living, high income distributed in out migration of local people, more imbalance in using of renewable and nonrenewable resource.

However, ecotourism in Kodagu district would not implemented in sustainable manner. If concerned authorities have observed these characteristics to make suitable policy and rules for reduction of negative impacts of ecotourism and more benefits to locals and respective revenue department (Vishwanatha S., 2014).

For impacts of ecotourism on socio-cultural in Kodagu district, India that also study in positive and negative impacts, from the result that shown very clearly that positive impacts of ecotourism on socio-cultural are higher than negative impacts.

However, Kodagu district have desirable potentiality to growth and development of ecotourism when it can implement in sustainable way with encourage of the concern people, local authorities and government (Vishwanatha S., and Chandrashekara B., 2014(2)).

3 Materials and methods

3.1 Study area

Nalan is one of many villages locate on Luangnamtha district. Nalan locate is around 20 km far from the city. Nalan village is bordered by South Nalan village to the east, Chloensouk village to the north, and Namha NPA to the west and south.

Background of Nalan Village

Nalan village was since in 1975. First group of people who founded this village was live in the forest of Namha NPA to avoid the war before. Untill 1968 this group were immigrated to Houaysay district, Bokeo province. In 1975 this group was moved back to Luangnamtha province again. Which at first only 27 family. Until 1989 Nalan village was separated into two villages because there is more population.

Now Nalan village is one of many villages, locate in northwest of Luangnamtha province, has total area of 656 hectares, they are 36 family, total population is 144 people (women 89 people). Nalan village is rich of natural resource because they are located in Nam ha NPA. Which suits, the development into Ecotourism site.

3.2 Data collection

Regard to the aims of the case study as well as the research problem, two main data collecting strategies namely survey questionnaire and documentary analysis methods were employed for the empirical data collection. These two strategies allow us to gather all possible information in different aspects, which might not be reached by only one method. The survey questionnaire helps to collect information from local people about the tourism activities that cause the impacts on Namha national protected area. The documentary analysis method is used to gather broad information from the valuable existing documents that could not be assessed by survey questionnaire.

For this study closed-ended questions were designed in order to call for responses, which narrow down the field of enquiry, since the respondents chooses among fixed responses. They also help the researcher to analyze easier the data since the response scan be directly compared and easily aggravated, they are versatile; surveys can be employed among people of all ages and they are replicated from one subject to another and many questions can be answered in a short

time. It should also be noted that close-ended questions could lead to bias since respondents are offered limited alternative replies.

The technique of local people interviewing is undertaken in order to reach the objectives since it is the most versatile and productive method of communication, enabled spontaneity, and also provided with: “The skill of guiding the discussion back to the topic outlined when discussions are unfruitful while it has the disadvantages of being very costly time consuming and can introduce bias through desires of the respondent to please the interviewer”.

3.3 Sampling design

In order to collect primary data the questionnaire survey technique will be used. For the purpose of this study random probability sampling is selected “sample sizes larger than 30 percent are appropriate for most research”. Having in mind these limitations, the sample size that will be consist in Nalan village, designed for the local people in these villages.

Also interview survey technique will be used. The sample population for the interviews will include accommodation providers and local authorities’ representatives.

3.4 Data analysis method

Factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables.

Factor analysis can also be used to generate hypotheses regarding causal mechanisms or to screen variables for subsequent analysis. Factor analysis was used to analyze the different types of impacts perceived by residents, maximum, minimum and mean value analysis to compare which impact is stronger.

After interview by questionnaire survey, check the data, screening the questionnaire that do not work out. Analysis the data from questionnaire and processed static correlation, with 95 percent certainty as a basis for acceptance data using basic statistics (including statistic, mean, and standard deviation), and include descriptive statistic such as factor analysis.

- Correlation of each impacts must higher than .30 (Wiersma, 1991) which the result found that correlation of each impact are higher than .30

- Considered the KMO should higher than 0.7 and (Burns, 1990). From the analysis found that the KMO from impacts of ecotourism on ecological, economic, and socio-cultural are higher than .70 that mean all data are appropriate to used factor analysis.

4 Results

Qualitative data gathered from semi-structured in-depth interviews reflect the positive and negative impacts of Ecotourism in Nam ha. Respondents were selected based on local people who stay and receive impacts from Eco tourism. Interviews lasted between thirty minutes to an hour. Notes were collected from interviews and additional notes were written once the interview was complete about personal observations and thoughts the interview.

4.1 Respondent's information

Respondents are 36 people, and almost are men, equal to 69.44%. For the age of respondents found that twenty people are aged between 41 to 60 years old, equal to 55.56% as shown in the below table.

Table 1: Respondent's information

Type		Amount	Mean (%)
Gender	Women	11	30.56
	Men	25	69.44
	Total	36	100.00
Age	21-30 years old	5	13.89
	31-40 years old	9	25.00
	41-60 years old	20	55.56
	More than 60 years old	2	5.55
	Total	36	100.00

Tourism in Nalan village

Tourism in Nalan village, Luangnamtha district, Luangnamtha province was since in 2000 after the Laos national tourism administration success survey about tourism routes in Nam ha national protected area under the project name "Ecotourism in Namha" by founding received from the UNESCO organization. This project was begun with Natural and cultural tourism site survey in Luangnamtha province by obtaining cooperation from various sections of private sector and government for survey villages in Nam ha national protected area.

From the survey and collect data from the field, team survey was considered Nalan village have sufficient conditions and suitable according to the objectives of the project, such as: rich

natural suitable for natural tourism. While, the cultural of the people still unique especially is the way of life of people in rural area in Laos.

Therefore, the Ecotourism in Nam ha project has agreed to accept Nalan to be a first point of Community Based Ecotourism. From that point, has become the beginning of new tourism routes in Nalan village until nowadays.

Model of ecotourism in Nalan village

Due to the special condition of area and tourism resources in this area. According to the government's target to develop Nalan in to “Community based Ecotourism”. Government agreed to designed tourism model as follows:

Model 1: The tourism model has defined in Nalan is model of natural tourism and cultural tourism under the name of “Natural hiking and see the local people's cultural”. This model is designed to two days and one night by starting at:

- First day: start from Chaluensouk village follow the hiking route to Nalan village which as the stayed of tourists.
- The second day: walking through Nalan Tai village(Khmu ethnic), Namkoy village(Lantan ethnic), and tourism route go to an end at Namlue village (Lao-huay ethnic)

Model 2: Is riding boat along the Namha River, which start from Namha village to Nalan village. That's take about four to five hours. The second day is riding from Nalong village along Namha river take about six to seven hours, and end at the Somsim-noy village.

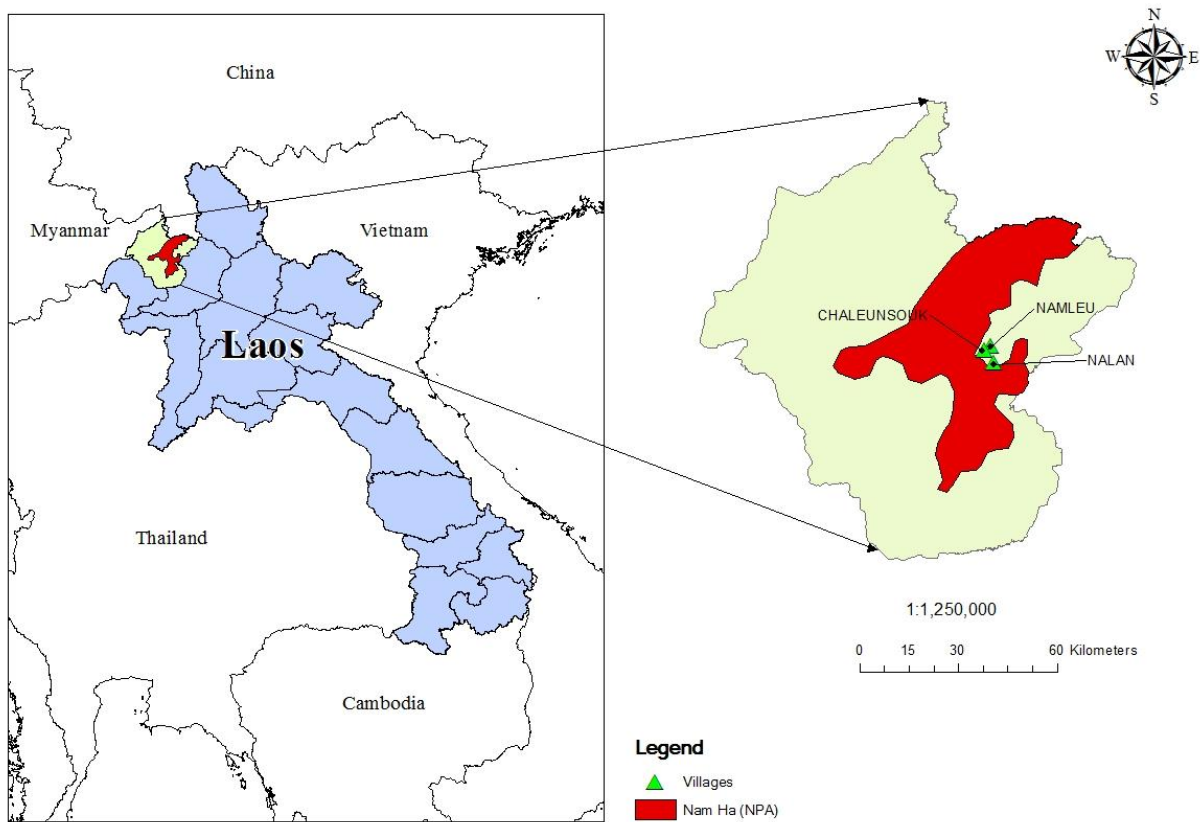


Figure 1: Nalan map.

After defined and designed the tourism route and model completed, to make progress of tourism in Nalan as well, especially the tourism guide to Nalan. The Department of Information, Culture, and Tourism (DICT) of Namtha district has established the institute responsible named: “Institute of tourism” by staffs of DICT to management information and news about tourism. By tourist who want to travel to Nalan should book a tourism program from Institute of tourism and pay money at least one day before going.

In principle, the tourism program price to Nalan are divers, by charge according to number of tourists as show in the table below:

Table 2: Prices of tourism programs

	Number of tourist	Price per person	Note
1	2 people	47 USD	
2	3 to 5 people	40 USD	
3	6 to 8 people	35 USD	

If consider from the tourism program, and according to the interview of people who responsible tourism can know, to receive visitors there is based on capability supports to avoid effects to environment in area and also in surrounding areas, such as: tourists to travel to Nalan should be not less than two people and a maximum of eight people.

The money from tourism will portion out to each section as follows:

- Department of protected area, will receive admission charge 20.000 kip from each tourists.
- The province guide will receive 200.000 kip per time.
- Traveling expenses for pick up and send tourists is 200.000 kip per time.
- Food for tourists and guide are 20.000 kip per person per meal.
- The local guide will receive 50.000 kip per day.
- Accommodation at Nalan village is 20.000 kip per person per night.

In addition, the income from tourism is divided to the Nalan development funds 8%, The tourism development funds 5%, and the last remainder is keep for administrate in the information office.

Every province guides can't belong under the travel agencies Therefore, the information office staff will design queue for them when will have a trip.

Tourism management in Nalan

From interviews of local people who is a responsible on tourism in Nalan and also the government responsible on tourism, all the opinions are match “Tourism in Nalan was formed by government in the establishment”.

Which in the beginning, to follow the guidance of the government to make receipts to community. The government become to be a stage center to management in the community. The mission that the government has taken for support tourism include:

1) Workshop and training

Workshop and training from the Nam ha tourism project for train to residents in Nalan include:

- Workshop and training about tourism, especially knowledge in the conservation of tourism resources.
- Workshop and training guides, service to tourists.

2) Support of capital

In the same time with workshop and training about tourism, the project also support some funds to community for build the facilities especially the village Homestay and kitchens, and equipment for serving to accommodations and kitchens.

3) To Establishment of Village agency responsible.

In order to make the operations of tourism convenient, the responsible agency has established the responsible and training services units for service to tourists, and divided to three groups:

- **Food service group**

The role of this group is to service food to tourists in the time tourists are stay in Nalan. For those who want to be a member of this group can apply by them self, by registration with the agency. But they have some conditions are: those who will become a member must healthy and no disease. After selection, in the group will be voting to select a group head and leader.

Each service when tourists visit, there must not less than three members of a group to service, and after service each time should have profit and that profit will keep being saving deposit of the group.

So, after all of members make a service, the group will be have a meeting to present the contained amount and divide to members, but will save 5% for be common purse. Members can borrow money from common purse to do agriculture or in the time of necessary. However, it still needs to save 2% to management in the group and for build the facilities to the kitchen.

- **Accommodation service group.**

The local homestay are for service tourists who want to stay in Nalan, homestay was got support funding to buy some materials, but for the work were the local people did. After building

completed, the Namha tourism project was support bedding, the home stay is can accommodate 8 tourists.

- **Local tourism guides**

Local tourism guides have responsibility to bring tourists to attraction around the village area. Therefore, people who would like to be a guide must healthy, have experienced about the hiking route, and must be trained from DICT before join this group.

Generally, the tourism in Nalan under the project Ecotourism in Nam ha, from the interview local people in Nalan said “after Nalan has been developed as tourism has made the better livelihood for local people”.

Currently, in Nalan have so much enough funding if compared with before, and villager who want to borrow this money is can borrow by low-interest late. They are also divided some money to support education, public health and other public social activities.

4.2 Overall impacts of ecotourism

Ecotourism, as a significant form of human activity, can have major impacts. The impact can be effect on the ecological, economic, and also socio-cultural. Hence, it's conventional to consider the ecotourism impacts. The impacts of tourism can be positive or beneficial, but also negative or detrimental. However, impacts of ecotourism will be positive or negative, can know from local people in community by using questionnaire survey.

From the data collection can use to fine the basic statistic such mean, standard deviation, and level of 16 variables, found that the positive impacts have impact levels from neutral to high, the highest level is *Increase in conservation awareness among local communities, authorities, and other concerned stakeholders (Q102)* with the level is 4.06; but the negative impacts are low to lowest levels of impact, which *Traffic jam in the densely populated tourism places* is the lowest level is 1.14

Table 3: Code, mean, standard deviation and level of ecological impacts 16 variables.

Ecological impacts of Ecotourism	Code	\bar{X}	S.D.	Level
• Increase in conservation awareness among local communities, authorities, and other concerned stakeholders	Q102	4.06	0.630	High
• Conservation is important in Namha National Protected Area	Q103	3.58	0.937	High
• Increased conservation and preservation of natural and cultural resources and natural and built landscape in the areas	Q104	3.31	1.117	Neutral
• Increase in the aesthetics of the areas	Q107	3.14	0.798	Neutral
• Increase in abundance and diversity of flora and fauna	Q108	3.03	0.878	Neutral
• Improved landscape characteristics and quality, both from an environmental and from cultural points of view	Q105	2.89	0.785	Neutral
• Well-preserved water resources, water bodies, and natural habitats	Q106	2.64	0.931	Neutral
• Destruction of natural habitats (i.e. fish and aquatic, reptile, mammal, amphibious and wildlife habitats, etc.)	Q111	2.50	1.231	Low
• Deterioration of archaeological sites, cultural monuments and heritages due to low carrying capacity of the sites	Q115	2.50	1.231	Low
• Soil erosion and landslide	Q113	2.19	0.591	Low
• Loss of nutrient quantity and quality	Q114	2.19	0.822	Low
• Noise pollution	Q112	2.14	0.867	Low
• Change in fauna behavior	Q109	1.86	0.899	Low
• Decrease in water and air quality	Q110	1.86	0.737	Low
• Increase waste in area after developed tourism	Q101	1.53	0.971	Lowest

• Traffic jam in the densely populated tourism places	Q116	1.14	0.424	Lowest
		2.54	0.866	Low

From table 3 shows that ecotourism not only provide positive impacts to community, but it's also promising that ecotourism in Nalan will provide high impacts on the strengthening of conservation status and the increase and improvement of conservation programs, increase the beauty of area, and activities committed. Similarly, Economic will provide by ecotourism for the stimulation to understand the value of their resources. As long as they are involved in ecotourism development, understand the purposes of local development through ecotourism and obtain direct benefits and indirect benefits from its process, they would help and care about conservation activities for a benefit of community. As mentioned by this group, one of the reasons that could make people in community more willing to safeguard natural resources and tourism resources in area is because these resources are the main attractions to pull tourists to visit in area. If natural resources and tourism resources disappeared, they will also lose their profits from tourism and other activities related tourism.

From the data collection by interview local people, can be used to find mean, standard deviation, and levels of 10 economic impact of ecotourism in Nalan. That found the level of impacts are different from lowest to the highest level, such as the lowest level impact is Increase in the cost of living with the impact level is 1.19; and the highest level impact is Foreigner revenue for the local economy with the impact level is 4.83

Table 4: Code, mean, standard deviation and level of economic impacts 10 variables.

Economic impacts of Ecotourism	Code	\bar{X}	S.D.	Level
• Foreign revenue for the local and regional development	Q202	4.83	0.447	Highest
• Increase in money in the local economy (i.e. increase in wealth in the local communities)	Q204	3.67	0.926	High
• Increased markets for local products and services	Q207	3.61	1.022	High
• Increase in economic benefits for the livelihood improvement of local households	Q206	3.28	0.914	Neutral

• Change in employment opportunities (i.e. increase in job availability which draws on expertise of local people)	Q201	3.00	0.717	Neutral
• Seasonality of income or employment causing unstable local economy	Q209	2.89	0.523	Neutral
• High income in out-migration of local people	Q210	2.61	0.964	Neutral
• Expansion in Handicraft products	Q203	2.08	0.554	Low
• Increase in money for local development	Q208	1.42	0.841	Lowest
• Increase in the cost of living (i.e. increased prices of local products and imported necessities)	Q205	1.19	0.525	Lowest
		2.9	0.74	Neutral

The local economy has received a very high positive impacts from ecotourism, especially from tourism activities; sales of tourism and other necessary products and services such as accommodations, food, transport, guiding and other; allocation of government budget for biodiversity conservation.

Most of the expert respondents comments that ecotourism development in Nalan would bring both direct positive benefits, and indirect positive benefits in many ways to local people in the community. They comment that although the chance of such impacts of local people are different according to the type and level of involvement, but they will increase if ecotourism has been developed properly. The results of analysis also show that the development of ecotourism in Nalan will not only improve development of local and community, but there is a high positive impacts on conservation activities through the support from community and volunteerism. Some respondents said that after realizing the benefits of ecotourism, value of natural resource, and tourism resource in the area, both through education and direct participation, they will participate in conservation processes. Seen from increasing of voluntary to join and support of conservation as well.

From data collecting about socio-cultural impacts of ecotourism in Nalan, all of 17 impacts can be used to fine mean, standard deviation and the level of impact. That the impact on socio-

cultural has different levels from low to high, but don't find Lowest or highest. Besides, it's can also be used to analysis and find components of impacts.

Table 5: Code, mean, standard deviation and level of socio-cultural impacts 17 variables.

Socio-Cultural Impacts of Ecotourism	Code	\bar{X}	S.D.	Level
• Knowledge and experience sharing about cultures among local people and between local communities and tourists	Q308	4.03	1.320	High
• Improved environmental education (i.e. a more environmentally informed communities)	Q304	3.83	0.941	High
• Improvement in infrastructure, both in terms of facilities and services	Q301	3.81	0.951	High
• Established ecotourism interest in the areas	Q305	3.58	0.806	High
• Better services (increase in diversification of local services)	Q302	3.50	0.971	High
• Prevention of people's out-migration	Q306	3.39	1.128	Neutral
• Reduction in domestic violence through equal participation in household earning and development between men and women	Q307	3.17	1.231	Neutral
• Rising up the materialism attitude among local people	Q314	3.14	0.798	Neutral
• Change from a slow to a fast pace of life	Q309	3.00	0.793	Neutral
• Commodification and commoditization of local culture and loss of traditional knowledge	Q311	2.89	1.214	Neutral
• Lack of sufficient infrastructure	Q310	2.78	1.045	Neutral
• Cultural and natural appreciation (i.e. encourage host communities and Eco tourists to value cultural and natural assets)	Q303	2.75	1.052	Neutral
• Disturbance of local cultural significant sites	Q312	2.67	1.014	Neutral

• Decrease in local cohesion of local communities	Q313	2.50	0.971	Low
• Decrease in traditional leisure activities	Q317	2.50	0.910	Low
• Local people and local guides tend to tell distorted information or to miss interpret the local cultural and natural resources	Q315	2.42	1.339	Low
• Decreasing the use of local language	Q316	2.31	1.215	Low
		3.07	1.041	Neutral

Almost of tourists come to travel in Nalan are foreigner, and they can't speak local language. Therefore, it's necessary to use a translator. In the early development of tourism, there used translator every times tour, but now have some local can speak English because the training about English, also guides learn from experience.

Ecotourism development also affects to the other side, some of the respondents said that environmental education programs has been designed for community to increase awareness about the value of tourism resources and natural resources in the area. From the perspective of cultural, ecotourism may adversely affected local community in several ways, if the management strategy of ecotourism resource is still not good enough. They said that if local people receive money from tourists because of their culture, they will try to show their culture to tourists for commercialize. Perhaps the patterns and characteristics of local cultural may be modified to respond to tourist interests, and if there a no tourism, local people may disrupted due to the show for tourism only.

4.3 Ecological impacts

Ecotourism in Nalan would give considerable amounts of positive impact on biodiversity, ecology, ecosystem and natural resources management in the area. From table below shows that tourism is to be developed as a responsible mechanism to help safeguard biodiversity, natural resources, and natural environment. Most of respondents said that when these natural attributes of Nalan areas are properly protected and local people help safeguard biodiversity, natural resources, and natural environment, they would provide socio-economic returns to the local people in community.

From the analysis found that two variables (Q101 and Q103) don't fit well with the factor analyze, and should possibly be deleted from the analysis.

Table 6: KMO and Bartlett's Test of ecological impacts 16 variables.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.855
	Approx. Chi-Square	854.361
Bartlett's Test of Sphericity	df	91
	Sig.	.000

In the factor analysis, it was found that of the 14 items in ecological impacts, the KMO value of 0.855 and significance level of 0.000 were obtained.

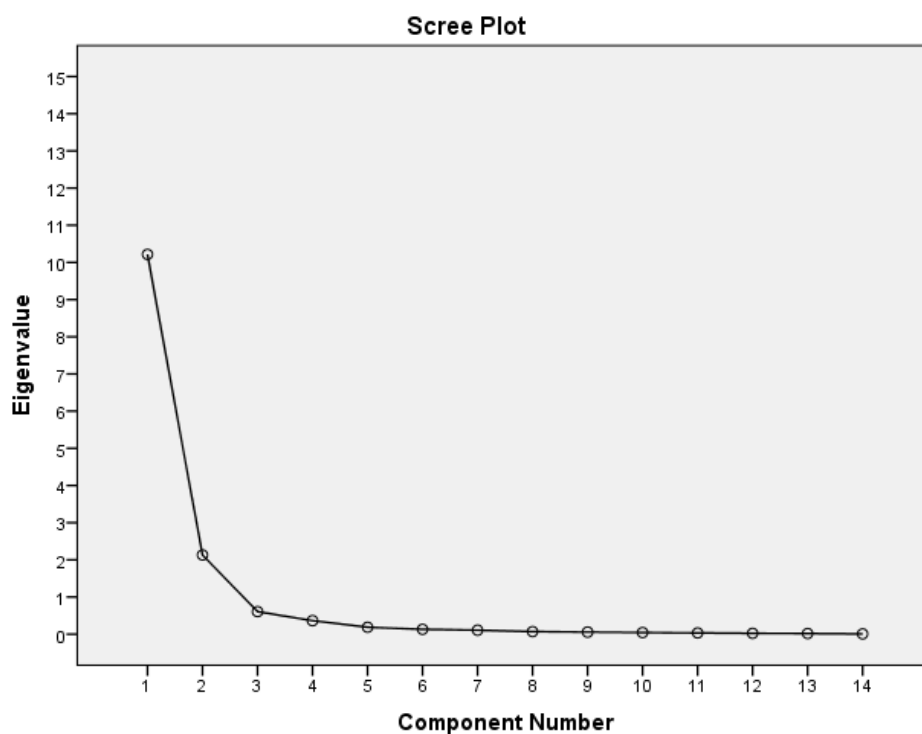


Figure 2: Scree Plot graph of ecological impacts

From figure 10 is scree plot graph that plot the Eigenvalues of each variables by the sort descending. To divided the component by consider from Eigenvalues are become lower quickly. Here, we consider only the component that have total initial eigenvalues more than 1, and there are only two components.

Table 7: Total Variance Explained of ecological impacts

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.217	72.982	72.982	10.217	72.982	72.982	9.655	68.962	68.962
2	2.131	15.220	88.202	2.131	15.220	88.202	2.694	19.240	88.202
3	.607	4.334	92.535						
4	.365	2.605	95.140						
5	.187	1.333	96.473						
6	.131	.938	97.410						
7	.108	.769	98.179						
8	.070	.501	98.680						
9	.057	.404	99.084						
10	.045	.319	99.403						
11	.034	.241	99.644						
12	.024	.169	99.813						
13	.018	.129	99.942						
14	.008	.058	100.000						

Extraction Method: Principal Component Analysis.

The analysis about ecological impacts of ecotourism by classification. Each impact must have extraction not less than .40, and in this research can divided into 2 components as follows:

First component contains of 11 variables and including: *Improved landscape characteristics and quality, both from an environmental and from cultural points of view (Q105), Destruction of natural habitats (Q111), Deterioration of archaeological sites, cultural monuments and heritages due to low carrying capacity of the sites (Q115), Decrease in water and air quality (Q110), Increase in abundance and diversity of flora and fauna (Q108), Change in fauna behavior (Q109), Well-preserved water resources, water bodies, and natural habitats (Q106), Loss of nutrient quantity and quality (Q114), Conservation is important in Namha National Protected Area (Q103), Noise pollution (Q112), and Increase in the aesthetics of the areas (Q107)* which could be named this component that “environmental quality”. This component have total initial Eigenvalues is 10.217

In this component can found negative impacts on low level, and the lowest levels which the lowest level is 1.86, and that are *Change in fauna behavior, and Decrease in water and air quality*. As for positive impacts with neutral to high level such as *Conservation is important in Namha national protected area* which weighs the level is 3.58

Table 8: Rotated Component Matrix of ecological impacts

Rotated Component Matrix^a

	Component	
	1	2
Q105	.963	.058
Q115	.958	.154
Q111	.955	.087
Q110	.952	.054
Q109	.940	.054
Q108	.937	.054
Q103	.899	.317
Q106	.896	.320
Q112	.896	.255
Q114	.894	.194
Q107	.873	.326
Q102	-.193	.935
Q116	-.318	-.874
Q104	.339	.774

Extraction Method: Principal Component

Analysis.

Rotation Method: Varimax with Kaiser

Normalization.

a. Rotation converged in 3 iterations.

Second component have 3 variables *Increase in conservation awareness among local communities, authorities, and other concerned stakeholders (Q102), Traffic jam in the densely populated tourism places (Q116), and increased conservation and preservation of natural and cultural resources and natural and built landscape in the areas (Q104)* which could be named this component that “environmental conservation”. This component have total initial Eigenvalues

is 2.131; two of variables in this component are positive impact, they are have the level from neutral 3.31 (Q104), to highest 4.06 (Q102); and it's only one negative variable is Q116 with the lowest level 1.14

The finding that the ecological impacts of ecotourism are perceived most favorably by local residents are believed that the development of ecotourism has also developed environmental, increase in conservation and awareness of natural resources. However, we can't refuse that ecotourism also have negative impacts, for Nalan ecotourism has seen a little negative impacts because Nalan is small community and ecotourism in Nalan have good management.

4.3 Economic Impacts

According to table 4, from comments of respondents that ecotourism have ability to generate high positive impacts on almost all economic aspects of ecotourism in Nalan. They believe that tourism development in the area would make considerable amount of economic returns to make local economic better. This could happen when income from ecotourism are more than costs business related ecotourism, including costs of environmental conservation.

Table 9: KMO and Bartlett's Test of economic impacts 10 variables.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.844
	Approx. Chi-Square	561.469
Bartlett's Test of Sphericity	df	45
	Sig.	.000

In the factor analysis of economic impact 10 variables found that the KMO value of 0.844 and significance level of 0.000 were obtained.

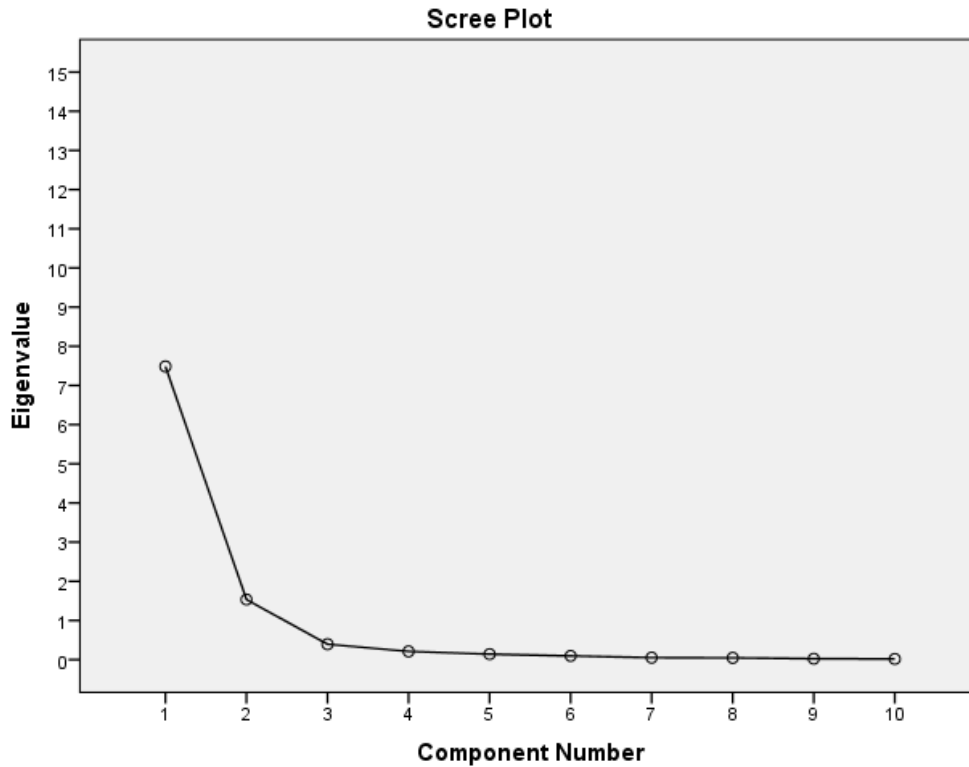


Figure 3: Scree Plot graph of economic impacts

From figure scree plot graph of the eigenvalues of each variables, we can found that all economic impacts of ecotourism can divided into two components, and both of them have the total initial eigenvalues more than 1.

Table 10: Total Variance Explained of economic impacts

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.487	74.866	74.866	7.487	74.866	74.866	4.910	49.102	49.102
2	1.534	15.342	90.208	1.534	15.342	90.208	4.111	41.106	90.208
3	.395	3.952	94.160						
4	.210	2.104	96.264						
5	.139	1.394	97.658						
6	.096	.956	98.614						
7	.051	.506	99.119						

8	.047	.468	99.587					
9	.025	.246	99.833					
10	.017	.167	100.000					

Extraction Method: Principal Component Analysis.

The first component have 5 variables which could be named this component that “cost” including *Increase in money in the local economy* (Q204), *Increase in the cost of living* (Q208), *High income in out-migration of local people* (Q210), *Increased markets for local products and services* (Q207), and *Expansion in Handicraft products* (Q203) with a different level from lowest to high. Such as lowest level is *Increase in the cost of living* that mean the cost of living in community is not increase or have a little increase; but the highest level of impact in this component is *Increase in money in the local economy* which a level is 3.67

Table 11: Rotated Component Matrix of economic impacts

Rotated Component Matrix^a

	<i>Component</i>	
	<i>1</i>	<i>2</i>
Q204	.926	.231
Q208	.925	.216
Q210	.902	.310
Q207	.887	.361
Q203	.799	.416
Q205	.118	.926
Q202	.344	.918
Q201	-.352	-.917
Q206	-.530	-.773
Q209	.649	.686

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

The Second component also consists of 5 variables which could be named this component that “benefit” including *Increase in money for local development (Q205)*, *Foreign revenue for the local and regional development (Q202)*, *Change in employment opportunities (Q201)*, *Increase in economic benefits for the livelihood improvement of local households (Q206)*, and *Seasonality of income or employment causing unstable local economy (Q209)*; they all are positive impacts and have different levels from neutral to the highest level which the highest level is *Foreign revenue for the local and regional development* which a level is 4.83

From the result of analysis showed that almost of local people believe that the ecotourism development would increase economy such as a job and income. Seen from the result that all of positive impacts have levels on neural to highest, but negative impacts are neutral to the lowest level.

The finding that the economic impacts of ecotourism are perceived most favorably by local residents are believed that ecotourism development are increase the community economy, local people tend to support ecotourism tourism acts as industry that can increase job, markets, income, and foreign revenue for development local economy.

4.4 Socio-Cultural Impacts

It is unquestionable that tourism development will affect to cultural, social system and fundamental livelihoods in community everywhere in the world. These impacts also can be positive and negative impacts, local people in community would be able to receive benefits from ecotourism development both directly and indirectly. From the result of analysis the impacts of ecotourism to people in Nalan are different, but ecotourism will provide high positive impacts as well. From interviews show that ecotourism were simulate the local economy, there are high positive impacts on distribution and improve the local products and services as well.

Table 12: KMO and Bartlett's Test of socio-cultural impacts 17 variables.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.881
	Approx. Chi-Square	1184.394
Bartlett's Test of Sphericity	df	136
	Sig.	.000

For socio-cultural impact of ecotourism, after analysis 17 variables found that the KMO value of 0.881 and significance level of 0.000 were obtained.

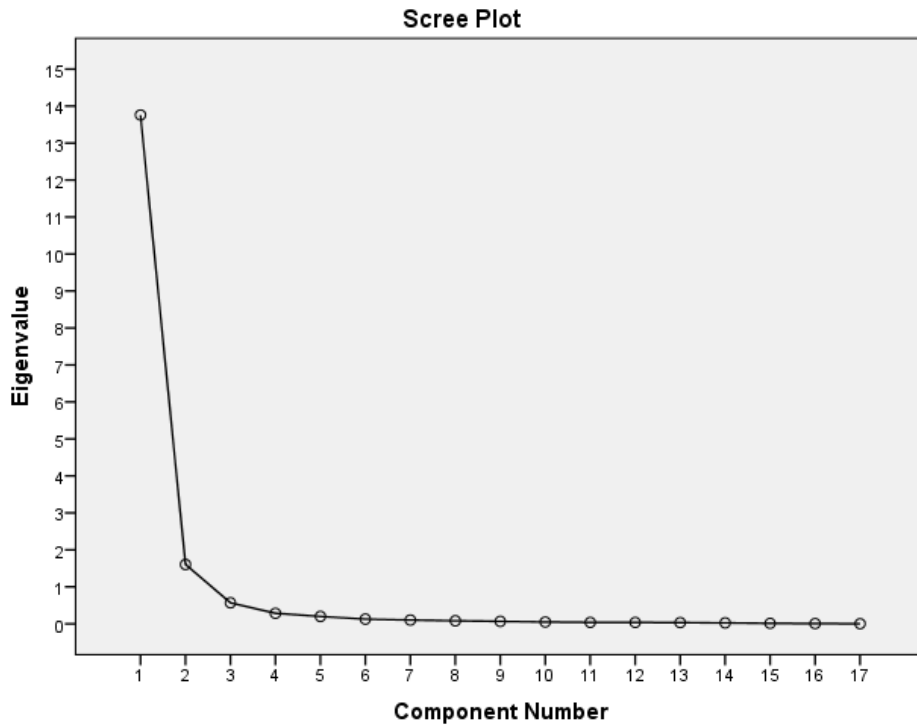


Figure 4: Scree Plot graph of socio-cultural impacts

From results of analysis can used to draw a scree plot graph, which the result we can found that socio-cultural impacts of ecotourism can be classified by the total initial eigenvalues should more than 1, and we found that 2 components.

Table 13: Total Variance Explained of socio-cultural impacts

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.760	80.940	80.940	13.760	80.940	80.940	13.600	79.999	79.999
2	1.604	9.437	90.377	1.604	9.437	90.377	1.764	10.378	90.377
3	.569	3.345	93.721						
4	.284	1.669	95.391						
5	.200	1.176	96.567						
6	.127	.749	97.316						
7	.103	.604	97.920						
8	.081	.479	98.399						
9	.067	.395	98.794						
10	.050	.294	99.089						

11	.038	.226	99.315					
12	.037	.217	99.532					
13	.032	.187	99.719					
14	.025	.145	99.865					
15	.013	.074	99.939					
16	.006	.038	99.977					
17	.004	.023	100.000					

Extraction Method: Principal Component Analysis.

First component have 15 variables such as *improved environmental education (Q304)*, *Established ecotourism interest in the areas (Q305)* etc. which could be named this component that “socio-cultural quality”. In this factor there are equally negative and positive impacts, but levels of impacts are different. Because, negative impacts have impact levels from neutral to low, such as *Decreasing the use of local language* which the impact level is 2.31; for positive impacts are neutral to high level, for example *Knowledge and experience sharing about cultures among local people and between local communities and tourists* which the impact level is 4.03

Table 14: Component Matrix and Rotated Component Matrix of socio-cultural impacts

Rotated Component Matrix^a

	Component	
	1	2
Q307	.971	.108
Q311	.966	.084
Q316	.957	-.162
Q315	.956	-.142
Q312	.953	.127
Q310	.951	.166
Q306	.950	.106
Q303	.947	.186
Q313	.947	.129
Q309	.947	.009
Q317	.944	.098
Q314	.932	.073
Q304	.929	.252

Q305	.926	-.087
Q308	.849	.376
Q302	.222	-.892
Q301	.486	.755

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser

Normalization.

a. Rotation converged in 3 iterations.

The second component, there are only 2 variables including *Better services* (Q302), and *Improvement in infrastructure, both in terms of facilities and services* (Q301) which could be named this component that “services and infrastructure”. Both of them are positive impacts on socio-cultural which high impact levels from 3.50 to 3.81

All result of the analysis on socio-cultural impacts of ecotourism showed that tourism development in Nalan would improve positive impacts on socio-cultural in community, seen from the results of analysis showed that levels of positive impacts are neutral to high, which the highest level is 4.03 that is *Knowledge and experience sharing about cultures among local people and between local communities and tourists* and this is a positive impact. But for the negative impacts are neutral to low level, such as *decreasing the use of local language* with the level of impact only 2.31

Based on the result of analysis showed that the socio-cultural impacts of ecotourism are perceived most favorably by local people, especially improvement in infrastructure, better services and facilities. Moreover, it is great opportunity to learn other people culture, ecotourism plays an important role facilitating culture exchange.

5 Conclusion and recommendations

In this case we study about impacts of ecotourism on 3 aspects including ecological impacts, economic impacts, and socio-cultural impacts in Nalan village, Namtha district, Luangnamtha province Laos located in Namtha national protected area. Which this study has used questionnaire survey to interview local people who perceived impacts of ecotourism directly and indirectly. Respondents have opined on the issue of impacts based on their knowledge and experience, opinions of respondents have sorted in the level of impacts varies from “1” which is equal to the “Strongly disagree” to “5” which is equal to the “Strongly agree”. From that data can be used for analysis showed at the conclusion follows.

There are positive and negative impacts on other forms of cultural heritage that are arising from tourism, but again, because of the low number of visitors to Nalan, these impacts have been limited.

Ecological impacts of ecotourism in Nalan from the analysis of 14 variables found that can divided into 2 components, first component included 11 variables, and the second component included 5 impacts. These two factors are including positive and negative impact, but we can found clearly that positive impacts of ecotourism have relatively high level, such as Increase in conservation awareness among local communities, authorities, and other concerned stakeholders with the highest level is 4.06; but almost of negative impacts are effects on neutral to the lowest level, for example Traffic jam in the densely populated tourism places with the 1.14 and this is the lowest level of ecological impacts.

Economic impacts of ecotourism in Nalan in this study has two dimensions like positive and negative economic impacts of ecotourism. Which 10 economic impacts can also divided into 2 components. The result has showed that the amount of positive economic impacts of ecotourism has more, found from levels of positive impacts are different from lowest to the highest level, the highest positive impact level is 4.83 due the Foreign revenue for the local and regional development, but for the negative impacts that the level is neutral to lowest.

Socio-cultural impacts of ecotourism in Nalan, from analysis of 17 variables by questionnaire survey found that can divided into 2 components. The first component has number of impacts is 15 variables, the highest impact level is 4.03, that's Knowledge and experience sharing about cultures among local people and between local communities and tourists, but the lowest impact

level is decreasing the use of local language with a level is 2.31. In the second factors, with only 2 positive impacts and there are high level of ecotourism impact. However, if we observe from results that found the local people can perceived positive socio-cultural impacts more than negative impacts.

According to results of this study, residents' perceived impacts of ecotourism in Nalan, which is not big community. For future studies, if some people interested and would like to study about impacts of ecotourism are recommended that should be larger study site for more certainly data, and if it's possible is recommended to compare impacts of ecotourism in the area nearby or other area to see more clearly impacts.

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APPENDIX

INTERVIEW QUESTIONNAIRE

ID number: _____ Date _____ Location _____

Sex: Male/Female Age: _____ Married: Yes/No

How long have you lived here? _____

Your occupation: _____

Please give us your opinions about impacts of ecotourism by select the scaling items in the table below.

- | | |
|-----------------------|--------------|
| 1 = strongly disagree | 2 = disagree |
| 3 = neutral | 4 = agree |
| 5 = strongly agree | |

Perceived Ecological Impacts of Ecotourism	Scaling Items				
	1	2	3	4	5
Increase in conservation awareness among local communities, authorities, and other concerned stakeholders					
Conservation is important in Namha National Protected Area					
Increased conservation and preservation of natural and cultural resources and natural and built landscape in the areas					
Improved landscape characteristics and quality, both from an environmental and from cultural points of view					
Well-preserved water resources, water bodies, and natural habitats					
Increase in the aesthetics of the areas					
Increase in abundance and diversity of flora and fauna					
Change in fauna behavior					
Increase waste in area after developed tourism					
Decrease in water and air quality					
Destruction of natural habitats (i.e. fish and aquatic, reptile, mammal, amphibious and wildlife habitats, etc.)					
Noise pollution					
Soil erosion and landslide					
Loss of nutrient quantity and quality					

Deterioration of archaeological sites, cultural monuments and heritages due to low carrying capacity of the sites					
Traffic jam in the densely populated tourism places					
Perceived Economic Impacts of Ecotourism	Scaling Items				
	1	2	3	4	5
Change in employment opportunities (i.e. increase in job availability which draws on expertise of local people)					
Foreign revenue for the local and regional development					
Increase in money in the local economy (i.e. increase in wealth in the local communities)					
Increased markets for local products and services					
Increase in money for local development					
Increase in economic benefits for the livelihood improvement of local households					
Increase in the cost of living (i.e. increased prices of local products and imported necessities)					
Seasonality of income or employment causing unstable local economy					
Expansion in Handicraft products					
High income in out-migration of local people					
Perceived Socio-Cultural Impacts of Ecotourism	Scaling Items				
	1	2	3	4	5
Improvement in infrastructure, both in terms of facilities and services					
Better services (increase in diversification of local services)					
Cultural and natural appreciation (i.e. encourage host communities and ecotourists to value cultural and natural assets)					
Improved environmental education (i.e. a more environmentally informed communities)					
Established ecotourism interest in the areas					
Prevention of people's out-migration					
Reduction in domestic violence through equal participation in household earning and development between men and women					
Knowledge and experience sharing about cultures among local people and between local communities and tourists					

Change from a slow to a fast pace of life					
Lack of sufficient infrastructure					
Commodification and commoditization of local culture and loss of traditional knowledge					
Disturbance of local cultural significant sites					
Decrease in local cohesion of local communities					
Rising up the materialism attitude among local people					
Local people and local guides tend to tell distorted information or to miss interpret the local cultural and natural resources					
Decreasing the use of local language					
Decrease in traditional leisure activities					