

Factor Analysis of the Impact Affecting to Ecotourism Development in the Point of Views of the Host Community at Nong Han Lake, Thailand

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Abstract:- Nong Han is the lake covers an area of 125.2 km² and is the largest natural lake in northeast Thailand. The main river feeding the lake is the Nam Pung, which originates in the Phu Phan Mountains south of the lake. The outflow of the lake is the Huai Nam Khan to the southeast, which mouths into the Mekong. This place is an ecotourism attraction with high potential, which has a tendency to develop as a tourism asset of high quality conform to an eco-tourism attraction standard of the bureau of Tourism Development, Thailand. The factor analysis that are contribute to the strategic planning and blueprint of tourism destination development and enhance the value of holistic community economics. It is necessary to study in depth in order to know the essence of the indicators of eco-tourism development. The main research objective is shown using exploratory factor analysis (EFA) based on critical variables and collected qualitative data from local residents by purposive sampling technique.

The findings reported that a data analyst has a messy set of 21 variables, which run a factor analysis to see the variables can be reduced to a smaller set of variables which have eigenvalues more than 1, that have 6 retained factors of impact affecting on eco-tourism development at Nong Han Lake - that is, Factor 1: Training and Knowledge transfer, Factor 2: Economics management, Factor 3: Environment and Conservative Resources, Factor 4: Community Participation, Factor 5: Impact Assessment, and Factor 6: Mentoring and Coaching.

Keywords:- Eco-Tourism, Sustainable Tourism, Factor Analysis, Tourism Development, Impact Of Tourism, Host Community.

I. INTRODUCTION

Nong Han is the largest natural freshwater lake in the northeast of Thailand and the second largest in Thailand. A resource should be conserved by the Cabinet on November 7, 1989 (B.E.2532), all the territory of Nong Han Lake covers an area of 77,014 acres or 123 square kilometers. Nong Han is located in Sakon Nakhon province.[1] With a characteristic geologic feature as a collapsed plain and became a swamp that supports the amount of water from 16 streams, making Nong Han an important wetland ecological system, which has outstanding characteristics of natural resources both physical and biological, moreover; which is very important to the way of life and economy of the communities around Nong Han Who have lived in this pond for consumption throughout the ritual local traditions to promote tourism and various Thai traditional games.

Nong Han development arose from changing the way of thinking. Especially the way of thinking about natural resource management that humans can control by knowledge and technology According to the popular utility model that creates phenomena for two aspects related natural resources, namely

- The view that natural resources are the only production factor that has been developed in the country Without regard to the ecosystem in which everything is related, from soil, forest, trees, air, insects, animals, humans and supernatural things according to the beliefs of the community.
- The management of natural resources of the state is based on the top down approach, lack of participation of people who live in the local area, and take advantage of natural resources. Try to use the tool is policies and laws are important.[2]

At present, the problem of natural resource degradation in Nong Han is becoming more severe due to lack of proper conservation and natural resource management, while Nong Han is an eco-tourism attraction that has the highest potential level to support tourists. As

well as the need to visit natural resources linked to the way of life of local residents has increased during the past 5-6 years, the development of Nong Han Lake most of them focus on developing and solving physical and biological problems. But the issue of the study of Nong Han development in the eco-tourism dimension by allowing local residents in the community around Nong Han to participate in the management is still very narrow and almost no concrete study.

On the other hand, although tourism is a tool to improve the quality of life of people living around Nong Han But the introduction of eco-tourism, which is a form of sustainable tourism used as an important guide in tourism management at Nong Han Lake, Sakon Nakhon to preserve the ecosystem and the environment by focusing on the prevention and reduction of environmental impacts caused by tourism causing the learning process about the ecology and environment of tourist attractions and coordinating economic benefits for the local residents. As well as allowing the community to participate in tourism management that will affect sustainable tourism management in the near future, but the development of Nong Han Lake in the eco-tourism dimension, it is important to know what factors actually affect the development of the Nong Han Lake. The main component of the acquisition of eco-tourism development that the first basis must come from the opinions of local residents in the community that take advantage of Nong Harn Lake directly in various dimensions. In addition, local residents in the community are important mechanisms to drive conservation and expansion of eco-tourism.

Therefore, to find factors that will affect the development of Nong Han Lake in the view of the local residents in the community in planning the development of Nong Han Lake and used to determine strategies in the development of Nong Han Lake in the near future. The main research objective is shown using exploratory factor analysis (EFA) analyst has a messy set of variables, which run a factor analysis to see the variables can be reduced to a smaller set of variables to determine factors affecting the development of Nong Han Lake under the context of the fundamental truths.

II. METHOD

Data were collected from purposive local residents which have gained residents surrounding the Nong Han Lake. The questions in the questionnaire were designed, which based upon the fundamental truths of the Nong Han Lake with synthesis the items from In-depth semi-structured interview from local residents. The questionnaire was revised to ensure construct validity and content validity by professors. Pilot study and reliability assessment were taken away from Cronbach α -coefficients that values of reliability coefficients for this research were all above 0.70 levels, which appeared in Table 1. Discriminant Power used Item-total Technique $0.05 r_{38} = 0.20$ [3], values within the range of 0.450- 0.603. The questionnaire consisted of a data

regarding the factor of eco-tourism development has a messy set of 21 variables, see in Table 1. All of the items were measured by a five point Likert scale (1 = strongly disagree to 5 = strongly agree), which factor analysis of the impact affecting to eco-tourism development at Nong Han Lake, Thailand by Principal Component Analysis (PCA).

III. DATA ANALYSIS AND RESEARCH OUTCOMES

The result of research was a factor analysis of items that impact affects to eco-tourism development using analysis of factor analysis technique: Principal Component Analysis (PCA) presented a subset of $p=21$ items appears in Table 1. The method of Factor analysis can be separated into 3 parts as follows.

Code	Item	Cronbach Alpha
A1	Community participation in resource conservation Nong Han Lake.	0.855
A2	The community is managed in partnership with government agencies and private organizations.	0.850
A3	Sitting as a corporate consultant in conservation and tourism resources at Nong Han Lake.	0.848
A4	The creation of community trails. By focusing on resource conservation at Nong Han Lake.	0.855
A5	The promotion of the local people and tourists understand Nong Han Lake Conservation for Sustainable Tourism.	0.852
A6	The local people are involved in the direction and decided to develop the tour to the Nong Han Lake.	0.858
A7	The local people are involved in monitoring the development of Nong Han Lake of eco-tourism.	0.852
A8	Local people are involved with government agencies to regulate activities that affect Nong Han Lake.	0.854
A9	Locals are involved in conservation and environmental impact review at the Nong Han Lake for eco-tourism.	0.856
A10	Local people in the creation of a network of tourism cooperation with government agencies and communities.	0.855
A11	Government understanding Encourage local people in conservation tourism at Nong Han Lake.	0.848
A12	A group of community The conference provided a platform to exchange knowledge. Nong Han Lake to develop eco-tourism.	0.857
A13	PR Nong Han Lake is eco-tourism. Forms, brochures, website, various publications.	0.847
A14	Government to train and educate people in the community. Nong Han Lake to develop sustainable tourism.	0.854
A15	The idea is to convey the culture and lifestyle practices. The young people in the local area surrounding Lake Nong Han.	0.854
A16	Government and higher education institutions involved in educating and discussions. Tourism development	0.855
A17	Management knowledgeable about protecting the community for tourism.	0.850
A18	People in the community have earned more from Nong Han Lake travel destinations.	0.848
A19	People in the community take advantage of the attractions at the Nong Han Lake to generate jobs and income.	0.855
A20	The local distribution of benefits that range from eco-tourism at Nong Han Lake.	0.852
A21	The promotion of the profession to the community, revenue from tourism.	0.858

Table 1:- Measure components and reliability assessment

A. The First Part

Examined the relationship of variables by KMO statistic which found that Kaiser-Meyer-Olkin has 0.755 which more than 0.5 and into 1 that conclude data is appropriate to use the factor analysis technique appears in table 2

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.755
Bartlett's Test of Sphericity Approx. Chi-Square	708.906
	df
	210
	Sig.
	.000

Table 2:- KMO and Bartlett's Test

B. The Second Part

The extraction factor by Principal Component Analysis (PCA). The result revealed that there should be 6 factors because only the first 6 factors have Eigenvalue more than 1. The first factor is the most important factor due to explain the variance or push variance the data have a maximum of 26.824% and in another the factors 2-6 are significantly lower. Moreover; the 6 variables are independent, so have a 6 components that the variance of each variable equal 1 and more than 1 appear in table 3, and considering the Scree Plot shows Eigenvalue of each factor listed in order from most to least that were found 6 factors to be due to the Eigenvalue of the sixth factor decrease from the fifth factor no more; likewise, it has Eigenvalue >1 see in fig 1.

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	5.633	26.824	26.824
2	2.013	9.587	36.411
3	1.813	8.634	45.046
4	1.374	6.545	51.590
5	1.192	5.674	57.264
6	1.104	5.257	62.521
7	.993	4.731	67.252
8	.843	4.012	71.264
9	.799	3.806	75.070
10	.727	3.462	78.532
11	.668	3.180	81.712
12	.637	3.034	84.747
13	.550	2.619	87.366
14	.509	2.423	89.789
15	.405	1.931	91.719
16	.395	1.883	93.603
17	.365	1.739	95.341
18	.323	1.538	96.879
19	.239	1.136	98.015
20	.223	1.064	99.079
21	.193	.921	100.00

Extraction Method: Principal Component Analysis

Table 3:- Total Variance Explained

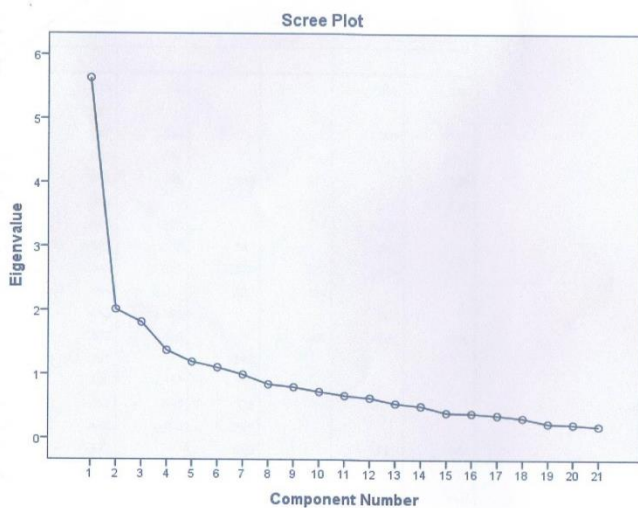


Fig 1:- Scree Plot of Principal Component Analysis

C. The Third Part

The factor loading is the relationship of variables with 6 components without no rotation factors; therefore, using Principal component analysis, which makes factor perpendicular to each other or independently, which makes the factor loading is the correlation coefficient of variable and factor. The result found that the value of the factor loading in others factor cannot make a clear difference. It is not to have a new variable to the factor which must be rotated the factor axis of Varimax rotation is the most popular an orthogonal rotation technique. In this technique there are rotated for maximum the sum of the variance of the squared loading which each column of the loading matrix. Maximize according to this criterion the loading to

be either large or small, the hope is that by rotating the factors, that will obtain new aspect that are each highly correlated with only a few of the original variable see in table 4.

	Component					
	1	2	3	4	5	6
a15	.815					
a17	.788					
a16	.771					
a14	.519	.223			.222	-.228
a11	.423		.207	.318	.219	.232
a20		.801	.215			
a19		.755		.232		
a21		.707				.317
a18		.504				
a1			.840			
a2			.692		.203	
a5			.603			.490
a7		.300		.784		
a12	.307			.588		.227
a8				.560	.419	
a6		.229	.380	.473		
a13	.433		.384	.463		.252
a9					.873	
a10					.859	
a4						.864
a3		.444	.269			.459

Table 5:- Rotated Component Matrix^a

Table 4. rotated component matrix showed a data analyst has a messy set of 21 variables, which run a factor analysis to see the variables can be reduced to a smaller set of variables that have 6 retained factors or indicators on eco-tourism development at Nong Han Lake - that is, Factor 1: Training and Knowledge transfer, Factor 2: Economics management, Factor 3: Environment and Conservative Resources, Factor 4: Community Participation, Factor 5: Impact Assessment, and Factor 6: Mentoring and Coaching see in fig 2.

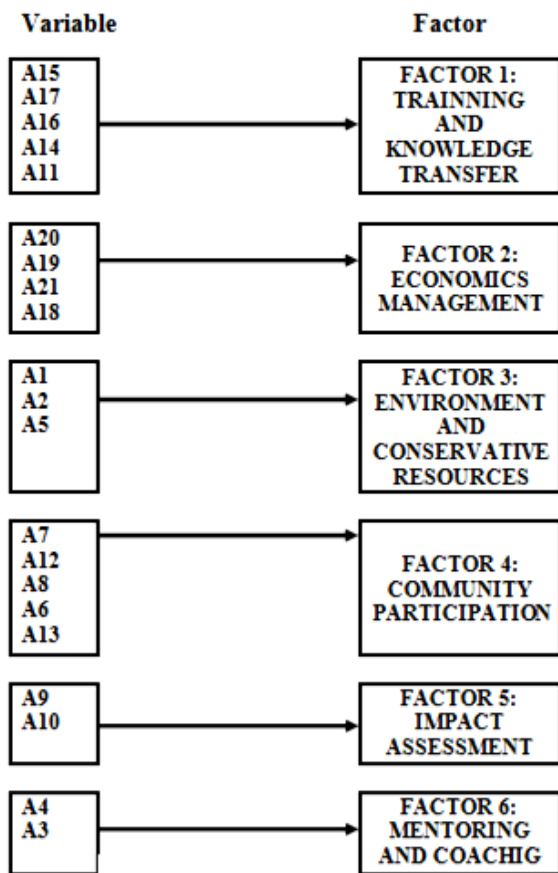


Fig 2:- The 6 retained factors on ecotourism development at Nong Han Lake

IV. DISCUSSION AND CONCLUSION

The finding of this research has 6 factors of impact affecting on eco-tourism development at Nong Han Lake that is, Factor 1: Training and Knowledge transfer, Factor 2: Economics management, Factor 3: Environment and Conservative Resources, Factor 4: Community Participation, Factor 5: Impact Assessment, and Factor 6: Mentoring and Coaching. Which support the concept from McKercher (1993) [4] identified the impact of tourism must be significant regarding fundamental truths that can be considered as major influences on tourism impacts. Furthermore, the finding supported the concept of Quality Standard of eco-tourism by Department of tourism, the Ministry of Tourism and Sports, Thailand [5] 3 indicators from 4 indicators such as (a) management of utilization of the area to achieve sustainability, (b) knowledge management and create a conscience, and (c) the participation of the community in tourist activities.

Although the analysis of the above factors will contribute to the concept of supervisory tourism, but there are some factors that indicate the depth of information that local residents in the community are involved in the development of the specific area of the Nong Han Lake, and indicates the readiness and alertness of the community around Nong Han in being an important part of the eco-tourism development mechanism surrounding Nong Han Lake to achieve sustainability in the near future.

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