Analysis of Development Potential of Heritage Tourist Attraction in Surabaya with Analytical Hierarchy Process (AHP) Approach

1st Sri Murtini
Departement of Geography Education
Faculty of Social Sciences and Law,
Surabaya State University
Surabaya, Indonesia
srimurtini@unesa.ac.id

2nd Agus Sutedjo
Departement of Geography Education
Faculty of Social Sciences and Law,
Surabaya State University
Surabaya, Indonesia
agussutedjo@unesa.ac.id

3rd Rindawati
Departement of Geography Education
Faculty of Social Sciences and Law,
Surabaya State University
Surabaya, Indonesia
rindawati@unesa.ac.id

Abstract— **Twenty-one heritage tourist attractions in Surabaya need to be developed so that the number of visitors is increasing. The purpose of this study was to analyze the development potential of heritage tourist attraction by using Analysis Hierarchy Process (AHP) approach. This study used quantitative approach with mathematical operation. The study was conducted in the tourist attraction of House of Sampoerna, Kapal Selam monument and Cheng Hoo Mosque. Data obtained from the interview with expert choice who mastered in their respective fields. The variables used were the attractiveness, the number of visitors, the accessibility, the use value and infrastructure. The result showed the tourist attraction of House of Sampoerna has the highest potential from the criteria of attractiveness, number of visitors, accessibility, use value and infrastructure. The second sequence is a tourist attraction Kapal Selam monument and the third is a tourist attraction Cheng Hoo Mosque. The government is expected to prioritize the development of heritage attractions that generally tend to be few visitors.**

Keywords—: AHP approach, development potential, heritage attraction

I. Introduction

Surabaya is a city that has various types of tourist attractions, such as natural attractions, cultural and artificial. Type of cultural attractions (heritage) recorded a number of 21 heritage attractions, 3 naturals and 9 artificials tourism [1]. The number of heritage tourist attractions found in Surabaya more than natural and artificial tourism. But on the contrary, the number of visitors in the heritage attractions is not as much as the number of visitors to natural attractions and artificial tourism. Data showed the average number of visitors to the tourist heritage is fewer, ie 169.482 visitors while in the natural attractions of 339.943 visitors, and 181.517 visitors in the artificials tourism [1].

The number of heritage tours in the city of Surabaya is much more than the natural and artificial tours. On the contrary, the number of visitors on the heritage tour is not as much as the number of visitors to nature tourism and artificial tourism. When compared, the average number of visitors to the tourist heritage is fewer, ie 169,482 visitors while in the natural attractions of 339,943 visitors, and

artificial tourism number of 181,517 visitors (Tourism Office of Surabaya, 2015).

The fact of the number of visitors who are the least in the heritage attraction is very ironic. Meanwhile, Surabaya as a historical city holds many stories and historical values precisely the government is not able to revitalize heritage tourism. The other factors, the community is less interested in the existence of heritage attraction or government less able to do much so that people are more interested in visiting natural and artificial attractions. Syaifudin's research result [2] indicated that many people did not know the existence of heritage attraction in Surabaya due to lack of promotion by the government. Sedarmayanti [3] stated heritage attraction is a form of tourism that can enrich the appreciation of the relics of the past which are closely related to the socio-cultural values of the community. In addition, it is a form of special interest tourism which until now its development in Indonesia still get less attention, whereas many regions in Indonesia have historical and cultural relics. Examples of heritage attractions are historic monuments, places of worship and ancient buildings that are priceless and high potential to be developed.

The development of heritage attraction is very important, not only to give economic benefits but also expected to raise awareness of cultural values and can appreciate the services of the heroes. Rasoolimanesh *et al* [4] stated that motivation has the greatest positive effect on the low level of community participation. One of the efforts to overcome these problems is a research about the analysis of development potential of heritage attraction by using Analysis Hierarchy Process (AHP) approach in Surabaya. The purpose of this study was to analyze the development potential of heritage attraction in Surabaya by using criteria, attractiveness, visitor number, accessibility, use value, and infrastructure.

II. Method

The approach used in this study is quantitative by using mathematical operations. There are 21 heritage attractions in Surabaya, three places selected in this study, they are House of Sampoerna, Monkasel monument, and Cheng Hoo Mosque. Data obtained from the interview with an expert

choice who mastered in their respective fields. The expert choice is the informants that come from Surabaya tourism department, Surabaya planning and development board, heritage attraction manager, urban planning expert, and tourism observer of Surabaya. Data were analyzed using Analytical Hierarchy Proces (AHP) approach and with the Expert Choice program. AHP is one of the decision-making techniques which arithmetic operations on. With the help of Expert Choice software, AHP has many advantages in explaining the decision-making process because it can be depicted graphically make it is more easily comprehended by all parties involved in decision making. With AHP, complex decision processes can be broken down into smaller decisions that can be handled easily [5]. The following principles of AHP work:
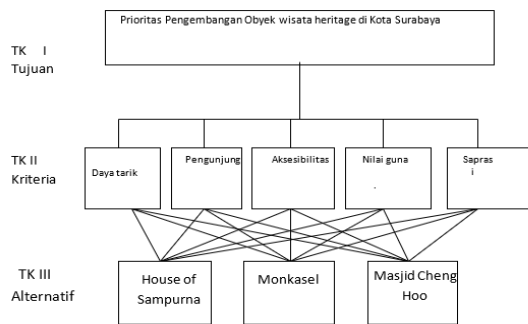
1. Preparation of Hierarchy

Diagram 1. Priority Decision Making of Heritage Tourism Development in the Surabaya

2. Criteria and Alternative Assessment

Table 1. The Value of Converting Discrete Data to Numerics

Numerical Priority Scale	Definition (Verbal)	Explanation
1	Both elements are equally important	Two elements have a weight that is worth the value
3	A weak element of the value of its importance to the other	Experience and judgment rather like an element than others
5	An essential or more important element to the other	Experiences and judgments are stronger in favor of an element than others
7	Demonstrating an element is very much more important than the other	A stronger element is favored and its dominance is apparent in its true state
9	Absolutely an element is more important than others	The fact that an element is preferred over the other is at the highest possible in

		a known sequence
2,6,4,8	An intermediate value between two adjacent judgments	A compromise is required between two judgments
Contrary (1/3, 1/5, 1/7, etc.)	A compromise is required between two judgments	

Sources: saaty [6]

Logical Consistency

The consistency index (CI) is obtained from the following formula: CI = λmx n

n - 1

Where :

λmx = Eigen Value

Maximum n = Value of Consistency Ratio (CR) is obtained from: CR = CI / RI

where RI = Random Index (can be seen in table 1)

Table 2. Random Index Value

N	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49

Sources: Permadi [7]

From this operation the overall hierarchical random index is represented by M ', thereby obtaining an overall consistency ratio by dividing the overall consistency index (M) with the overall random index (M'), which can be briefly written: CRH = M / M '(3.6)

Where:

M = CI level two + (second level priority weights)

(CI level three)

M '= RI level three + (second priority level weights)

(CI level three)

RI = Random Index

After an interview using the instrument, the score from expert choice then compared (pair-wise comparison) based on criteria and alternatives. By using two expert choice on each number averaged to be one then compared between the number one criterion (attraction) compared to infrastructure then summed and averaged from the two expert choice, and the same step for the other next criteria. To see the potential of the House of Sampoerna, Kapal Selam monument and Cheng Ho mosque, are included in each of the criteria and compared. The inserted number is the average result of two expert choice as well as the comparison in the criteria.

III. RESULT AND DISCUSSION

The result of the comparison between attractiveness with the number of visitors got a score of 7, attractiveness with

accessibility obtained a score of 8, attractiveness with the use value obtained a score of 8, attractiveness with infrastructure obtained a score of 7. Comparison of the number of visitors with accessibility obtained a score of 8, the number of visitors with use value obtained a score of 7, the number of visitors with infrastructure obtained a score of 8. Comparison of accessibility with the use value obtained a score of 7, accessibility with infrastructure obtained a score of 7, use value with infrastructure obtained a score of 8. The data processed was presented in Table 1.

Table 1. The development potential of heritage attraction in Surabaya

GOAL (1.000)				
Attractiveness (0.576)	Number of visitors (0.233)	Accessibility (0.114)	Use value (0.053)	Sarana prasarana (0.024)
House of Sampoerna	House of Sampoerna	House of Sampoerna	House of Sampoerna	House of Sampoerna
Kapal Selam monument	Kapal Selam monument	Kapal Selam monument	Kapal Selam monument	Kapal Selam monument
Cheng Ho mosque	Cheng Ho mosque	Cheng Ho mosque	Cheng Ho mosque	Cheng Ho mosque

Source: Data research, 2017

From the result of potential analysis by using pair-wise comparison on the criteria, it is obtained that the attractiveness had the highest percentage that was 57.6%, the number of visitor 23.3%, accessibility 11.4%, use value 5.3% and infrastructure 2.4%. Graph of the potential development of heritage attractions based on attractiveness, the number of visitors, accessibility, use value, and infrastructure criteria, showed that House of Sampoerna had the highest potential with a value of 75.3%. The second sequence was Kapal Selam monument with a value of 19.5% and the third was Cheng Ho mosque with a value of 5.2%. Graph 1 is showing the potential of each attraction.
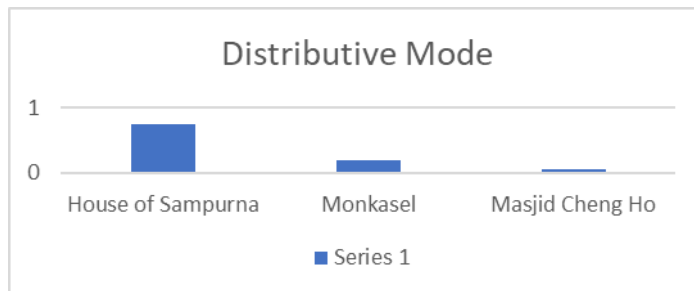
Graph 1. The development potential of heritage tourist attraction in Surabaya

Potential development of heritage tourist attractions in Surabaya, based on the number of heritage attractions that have the ability to be developed into a tourist attraction that is superior to other heritage attractions. This election is important because of the limited funds owned by the government. House of Sampoerna was originally an orphanage which was later turned into a production house of Dji Sam Soe cigarettes, part of which was used as a museum. As a heritage tourist attraction, House of Sampoerna is visited by 200-300 visitors per day. House of Sampoerna has the highest potential to be developed into a tourist attraction due to its attraction. The attractions are Surabaya heritage track, a bus provided free of charge to visitors to use go around Surabaya. The front room there is a painting of Sampoerna founder with family, grocery store replica used to build cigarette factory, furnace replica to dry the tobacco to be made cigarettes, family photos that play the role of this cigarette company, collection of paintings, collection of matches, an old camera collection, and collection of ancient printing machines used as cigarette packs. In addition, the museum is equipped with art gallery exhibition halls, cafes, public bathrooms, mosques, dustbin and information boards. With so much attraction makes this tourist attraction worth to be developed. In addition, this museum is located in the middle of residents' settlements and close to the ancient building Kali Sosok. It also high accessibility because it is located in the middle of town from various direction easily to be visited. The use value provided to visitors is quite large because it can add the knowledge of local cultural value as an ancestral heritage.

Cheng Hoo mosque is one of the mosques whose building resembles a temple with dominant colors of red, green and yellow. The mosque was built by Admiral Cheng Hoo, who was interested in Islam. This uniqueness gives the attraction for visitors who come 50 per day. Other attractions are Cheng Hoo café and restaurant, marriage hall, reception hall, seminar room, Cheng Hoo toddler's castle, Cheng Hoo integrated Islamic elementary school, Cheng Hoo painting gallery, Cheng Hoo holistic clinic, Cheng Hoo mart retail and sports facilities. Cheng Hoo Mosque is equipped with supporting facilities such as toilets, rest areas, bins, parking lots, restaurants that make visitors more interested to come. Easy access by using various types of vehicles with a relatively short time. The city is located in the city center, making it easier for visitors to reach. The mosque is safe because having most of security personnel.

Kapal Selam monument is located in Embong Kaliasin, Genteng. Strategic location and easy access to with various types of vehicles. As a result, it will affect the number of visitors each day between 300-500 people, and on the weekend will rise to 1000 visitors. Kapal Selam monument's facilities include jogging tracks, live music, children's pools, water games such as canoeing, swing, seesaw, and stage. In addition, this tourist attraction is equipped with cafeteria stand, souvenir shop, dustbin, bathroom, seating for rest, photos with cartoon characters. And also equipped with security and hygiene officers who always keep these attractions comfortable. Kapal Selam monument has a video rama attraction, video rama used as a tool to increase public knowledge. This video tells about the

struggle of the Indonesian nation by using a submarine, fight in the Aru sea to capture Irian Jaya from the enemy.

Tourist attraction development can give many benefits. Pendit (2012) stated that tourism activities could generate economic growth because it can provide jobs, stimulate various sectors of production and contribute directly to progress in the business of making and repairing ports, roads, transportation, and encourage the implementation of cleanliness and health programs, culture, environmental preservation and others that can provide benefits and enjoyment for both local and foreign tourists.

Advantages of heritage tourist attraction development presented by Lussetyowati [8] *the potential of cultural heritage tourism in Palembang and shows the role of tourism in urban heritage preservation and conservation. Cultural tourism creates jobs and new business opportunities and strengthens the local economy. Cultural heritage tourism helps also to protect cultural heritage and to improve the quality of life of residents and visitors.*

A GulnaIsmagilovra, et.al. [9] *the historical and cultural heritage plays a huge role in the development of internal tourism. Objects of historical and cultural heritage, being an important asset of the cities, make a profit and significantly influence their economic development. Leveling seasonal fluctuations and providing additional job openings–the historical and cultural heritage plays a huge role in the social sphere. Reviving local cultural values, developing national creativity, and traditions - the historical and cultural heritage promotes cultural lifting of the local population.*

Some opinions state many advantages derived from the development of heritage attraction. Therefore, the government should give more attention to develop all the potential of heritage attractions. Development includes everything that aims to increase the number of visitors, such as attractiveness, accessibility, infrastructure, promotions and other.

IV. CONCLUSION

House of Sampoerna is a heritage attraction that has the potential to be developed compared to Kapal Selam monument and Cheng Ho mosque. The high potency possessed by House of Sampoerna is caused by supporting aspects such as attractiveness, accessibility, number of visitors, use value and infrastructure. The government is expected to prioritize the development of heritage attractions because of most of the visitor less interested in historical relics.

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