

## Conference Paper

# Carrying Capacity of a Tourist Destination: Case Study of Saung Angklung Udjo as Cultural Heritage Tourism Destination in Indonesia

**Annisa Pratiwi**

Lecturer at Tourism Vocational Program at Universitas Indonesia, Depok, Indonesia

### Abstract

The research on the 'The Carrying Capacity of a Tourist Destination: Case Study of Saung Angklung Udjo as Cultural Heritage Tourism Destination in Indonesia' was conducted between May and August 2013. This study aims to understand the general preservation undertakings conducted by Saung Angklung Udjo as a tourist destination. In particular, the purpose of this study was (1) to determine the implementation of sustainable tourism to Saung Angklung Udjo, (2) to assess the implementation of the physical carrying-capacity calculations at Saung Angklung Udjo, and (3) to determine the preservation of angklung as intangible cultural heritage. This study used a qualitative research technique of data collection through direct observation in the area, conducted interviews, questionnaire, and examination of documents. Informants in this study consist of General Manager and Facilities of Saung Angklung Udjo, while respondents for this study were 16 tourists comprising 11 domestic tourists and 5 foreign tourists. The results showed that: (1) Saung Angklung Udjo implement constructive measures for new installations and means of monitoring facilities in service to preserve and promote the tourist attractions. By connecting the cultural heritage preservation improvement and optimization of existing infrastructure by local professional actors, (2) to promote long-term economic prosperity and improve the present generation without compromising the ability of nature, society and the economy to raise the welfare of future generations, and (3) cultural identity as a cultural heritage that can be developed into economic capital and assets in order to make a significant contribution to the welfare of society in development while maintaining cultural values and local wisdom as its hallmark.

**Keywords:** carrying capacity, cultural heritage, local community, sustainability, Saung Angklung Udjo

Corresponding Author:

Annisa Pratiwi

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## 1. Introduction

The concept of cultural heritage can involve a variety of cultural expressions [6, 7]. It is divided into material and immaterial cultural heritage. The material heritage involves cultural monuments, such as stone-age settlements, castles, museums or collections of artefacts from particular cultures or periods. While immaterial heritage including history, traditions, customs, legends, music, myths and other expressions and results of human life and relationships.

Saung Angklung Udjo (SAU) is recognized as a cultural tourism destination in Indonesia. It was opened to preserve and develop the legacy of angklung which is a bamboo traditional musical instrument in West Java, Indonesia. Since 1966, SAU has been a place for community to protect and develop Angklung as a cultural heritage. In 2010, Angklung is listed as an Intangible Cultural Heritage of Humanity by United Nations Educational, Scientific and Cultural Organization (UNESCO). According to the data earned in 2012, the world tourist flows rapidly grew after the announcement of Angklung that listed in UNESCO World Heritage. In 2011, domestic tourist arrival reached 150,000 tourists with a growth of about 37.55% since 2004. Saung Angklung Udjo is located in a dense population of Bandung district named Desa Padasuka.

Tourist destination can be fragile environments. If undertaken responsibly, tourism can be a driver for preservation and conservation of cultural and natural heritage and a vehicle for sustainable development. If a tourist destination is not properly managed, tourism can be socially, culturally and economically disorderly, and have a damaging effect on vulnerable environments. In other words, the growth of tourist activities and the intensive land exploitation can cause a prompt deterioration and depletion of the environmental, cultural and social resources. Moreover, those negative effects can result in declining of tourist destination. Regarding to this matter, the process of planning, development and management of tourist activities must be identified in a sustainable way. Thus, tourism carrying capacity (TCC) approach has been developed and has become a real obstacle for both planners and managers. Tourism carrying capacity represents a problems of allocation of deficient resources, for example, protected natural or historical areas, to recreational opportunities that are density dependent [9].

The purpose of this case study is to oversee the application of tourism carrying capacity assessment to Saung Angklung Udjo as a cultural heritage tourism destination. Tourism carrying capacity should be applied on this area considering this tourist destination should maintain all assets and resources. The contribution of the research can

be divided into two areas. In theoretical contribution area, this research could enrich the literature of cultural tourism destination as a tourist destination through carrying capacity concept. Whereas in practical contribution area, in Destination Management, the output of this research can give a valuable insight implement a more sustainable tourism strategy.

## 2. Theoretical Framework

### 2.1. Cultural tourism

Cultural tourism is simply defined as a subject of interest to tourist destinations with cultural amenities, heritage sites, arts centers, historical museums and natural resources, if these destinations could combine culture and leisure in the tourist product. In conceptual definition, it means that the movement of persons to cultural attractions away from their normal place of residence, with the intention to gather new information and experiences to satisfy their cultural needs. While Michalko & Ratz (2011) mentioned that cultural tourism is such a tourism product in which the motivation of the tourist (providing supply side) is getting acquainted with new cultures, participate in cultural events and visiting cultural attractions and the demand side's core element is the peculiar, unique culture of the visited destination. Regarding to the classification of attraction, Aubert and Csapó (2002) mentioned that cultural tourism can be classified into three groups:

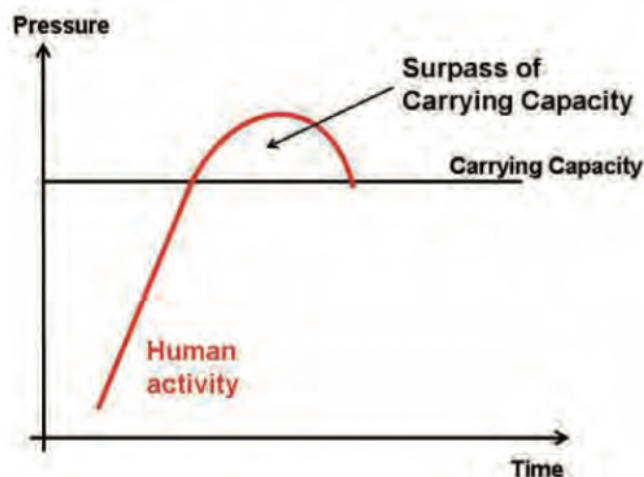
1. Built and material values (buildings, material values of different art forums)
2. The cultural values connected to everyday life (free time, leisure, lifestyle, habits, gastronomy)
3. Events and festivals.

In the context of tourism industry, culture can be defined as the whole complex of distinctive spiritual, material, intellectual and emotional features that characterize a society or social group [14]. In addition, major cultural and heritage attractions (e.g., handicrafts, cultural amenities) also play a pivotal role in tourism destination and as a prominent resource in any of the society especially for local community [5].

## 2.2. Carrying capacity

Carrying capacity can be expressed in several ways. According Jovicic and Dragin (2008), the assessment of carrying capacity is used as a sign of tourism impact on space and the environment. It represents an important component of planning spatial development in tourism. Carrying capacity can be defined as a maximum number of tourists that visit the specific area and use its contents in a way that does not make an unacceptable and irreversible change in the environmental, social, cultural and economic structure of the destination or decrease its quality of tourist experience. Coccosis (2008) states that carrying capacity can be expressed in term of limiting factors expressing obstacles, threats or risks in physical, social or economic terms, such as natural resources, infrastructure or built-structure limits, crowding or critical local socio-cultural attitudes, costs of living or maintenance, etc.

Middleton and Hawkins (1998) define carrying capacity as a "...measure of the tolerance a site or building are open to tourist activity and the limit beyond which an area may suffer from the adverse impacts of tourism." Clark (1997) states that the actual carrying capacity limit in terms of numbers of visitors or any other quota or parameter is usually a judgment call based upon the level of change that can be accepted, regarding sustainability of resources, satisfaction of resource users, and socio-economic impact. McIntyre (1993) defines carrying capacity as "the maximum use of any site without causing negative effects on the resources, reducing visitor satisfaction, or exerting adverse impact upon the society, economy or culture of the area."



**Figure 1:** Carrying capacity versus human activity. Source: Cherplan Regulatory Framework – CTI.

Figure 1 presents the correlation between human activities in an area and its Carrying Capacity. If the Human Activity passes the Carrying Capacity, it turns out that the environment and the local resources would be dangerous and permanently endure in many cases.

In particular, tourism carrying capacity compose three basic dimension according O'Reilly (1986). Mathieson and Wall (1982) and Simon et al. (2004) elaborate the three dimensions which composed:

1. the physical carrying capacity: 'the maximum number of people who can use a site without an unacceptable alteration in the physical environment and without an unacceptable decline in the quality of experience gained by visitors',
2. the social carrying capacity; the level of tolerance of the host population for the presence and behavior of tourists in the destination area,
3. the economic carrying capacity: the ability to absorb tourist functions without exploiting the attractiveness of local activities and avoiding the decline of the tourist destination caused by the disruption of the local attractions.

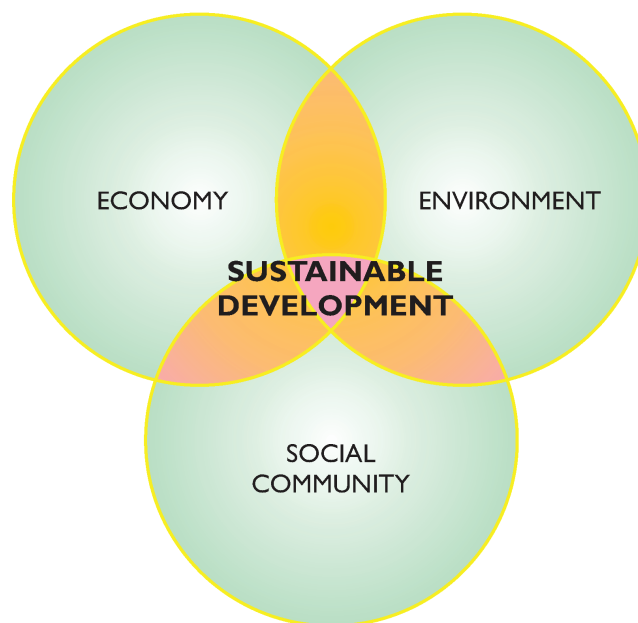
Tourism carrying capacity is developed largely in response to the acknowledgement that tourism cannot make fast progress without causing permanent damage. Not only focusing on how many people can make several effects on the area, otherwise the conditions of social and biophysical should be maintain in an appropriate way to support the tourism activities.

### 2.3. Sustainable tourism development

According to the World Tourism Organization, sustainable tourism leads to the management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems. People who are living around historical centers have the same needs and demands as people who living in 'non-historical' location. UNWTO has further defined sustainable tourism as follows:

*Sustainable tourism development meets the needs of present and host regions while protecting and enhancing opportunities for the future. It is envisaged as leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, and biological diversity and life support systems.*

The definition takes a further step forward by recognizing the importance of aesthetic needs, ecological processes and life support systems for Sustainable Tourism development. Since tourism incorporates a large number of people including local population, stakeholders and tourists, UNWTO assesses participation a key process for achieving sustainable development. Sustainability in tourism development is a continuous process and it requires the constant monitoring of impacts. In this context, sustainable development should focus on a tourism compatible with the natural, social and cultural environment, incorporating the whole tourism business and infrastructure as well as the tourist behavior.



**Figure 2:** Visualization of sustainable development definition. Source: Hall, 1993.

### 3. Research Methodology

An analytic approach through distribution of questionnaire will be conducted. The population of the study consists of 16 tourists. The study was conducted between May and August 2013. Data were collected by questionnaire, direct observation in the area, interviews, and examination of documents. A qualitative content analysis was chosen to analyze many words of texts, which are transcribed from interview and focus group discussions. Content analysis is a technique for compressing large amounts of data from the interviews, field notes, and various types of sources into systematic and fewer categories of text which is based on specific rules of coding (Steve, 2001). Many previous studies have shown that content analysis can be a useful method for allowing

researcher to discover and describe the focus of individual, group, institutional, or social attention (Weber, 1990). In this study, the crucial process in content analysis is categorizing some key words from the given texts into certain themes.

## 4. Result and Discussion

As stated before, the main purpose of this article is to apply tourism carrying capacity process to an empirical case in order to analyze the sustainability of the tourist development of Saung Angklung Udjo (SAU) and to determine a variety of interactive processes and the factors involved in an in-depth study of a destination. The term 'Carrying Capacity' refers to the number of individuals a given area can support within natural, social, cultural and economic environment for present and future generations. As the environment is threatened and the various natural or cultural resources are in risks, Carrying Capacity actually get smaller, making the environment no longer able to support the level of activity of the people of the area. The application of a carrying capacity to this type of destination makes the need to consider tourist density, tourist infrastructure, congestion of facilities and transport infrastructure, waste production, etc. This chapter shortly presents one case study of the practical application of carrying capacity with and a significance on simplicity of the relation of the concept of carrying capacity.

From the social carrying capacity, the levels of tolerance of the host population, as well as of the experience of visitors to the area. Levels of capacity for the components may be expressed in terms of number of tourists and tourist/recreation activity types which can be absorbed without affecting the sense of identity, life style and social patterns and activities of host communities. Indicators to take into account the capacity in order to control the flow of tourists in Saung Angklung Udjo based on the analysis to measure the number of tourists who can be accepted at Saung Angklung Udjo for one day which is expressed in the following formulas: (1) limit the number of visits and (2) tourism capacity.

Limit Number of Visitors = area of capacity for tourism activities x number of visits/total hour visit.

Based on this formula, the physical carrying capacity can be calculated Saung Angklung Udjo as follows:

(a) Number of visits

1. The area used for tourism activities such as:

Saung Angklung Udjo, there are three main places used by the tourists: a. spacious hall performances: 1000 m<sup>2</sup>

b. gift shop area: 155 m<sup>2</sup>

c. area restaurants, toilet, parking: 500 m<sup>2</sup>

The total area available is 1655 m<sup>2</sup>

2. Saung Angklung Udjo opened to the public for 9 hours per day (from 09.00 hingga 18:00 pm)

3. Whenever the visit takes 3 hours (1.5 hours and 1.5 hours for the show to see the souvenir shop and how to make angklung) and the area opened for 9 hours per day, every visitor can visit a maximum of 3 visits per day.

Then:

AU: 2455 m<sup>2</sup>

CR: 3 visits per day

DV: 9 hours per day open area

SVQ = Force x CR/DV

SVQ = 1655 m<sup>2</sup> x 3 visits/9 hours per day open area SVQ = 551.666 tourist arrivals per day.

So that the number of tourist capacity is 551.666 tourist arrivals that can be accommodated per day physically by Saung Angklung Udjo based on the physical condition of the environment.

(b) The tourism capacity

Tourism capacity (TC) = limit the number of visitors who have been computed (LNV) x humidity (HA) x rainfall (RF)

The calculations are made based on the following data: SVQ: 551.666 tourist arrivals per day HA:  $\frac{100-15}{100}$

RF:  $\frac{100-9.8}{100}$

TC:  $551.666 \times \frac{100-15}{100} \times \frac{100-9.8}{100}$

CC:  $551.666 \times 0.85 \times 0.902 = 422.962$  tourist arrivals per day.

So the number of tourists is 422.962 tourist arrivals per day can be accommodated ecologically and environmentally.

Visitors are asked to leave the room to fulfill the needs to maximize their satisfaction. Average number of visits per day standards: the maximum number of visits/day total was 422.962 tourists visit. Then the average number of visits per day standard is 422 visitors.



According to local governments, economic development from tourism activity gives serious effect to the environmental condition. That is why economic improvement from tourism should be followed by environmental protection, and they are trying to manage this. Along with the economic development, community's social lives can automatically increase because job opportunities also increase. There is no need special manage from government for this. There is also no negative social impact caused by rapid development.

## 5. Conclusion

Since 1966, Udjo Ngalagena, founder of Saung Angklung Udjo, with a great spirit has been formed as a laboratory angklung arts center, a cultural center and education and other Sundanese culture as a cultural attraction in West Java are supported by the local community. Saung Angklung Udjo also dedicated to the conservation and preservation of natural environment. Saung Angklung Udjo gradually restructured to improve the quality of this cultural heritage. To maintain and preserve the culture of angklung, Saung Angklung Udjo has managed to maintain its existence among the public, the world, and eternal maintenance of the environment. Saung Angklung Udjo implement constructive measures for new installations and means of monitoring facilities in service to preserve and promote the tourist attractions. By connecting the cultural heritage preservation, enhancement and optimization of the existing infrastructure performed by local professional actors. Local communities that contribute to the work such as making crafts and have the opportunity to learn, to acquire knowledge and experience of the impact of the economic social and cultural aspects in Saung Angklung Udjo. Through the development of tourism, cultural development of society is also a community identity of each of the different ethnic groups. The results showed that: (1) Saung Angklung Udjo implement constructive measures for new installations and means of monitoring facilities in service to preserve and promote the tourist attractions. By connecting the cultural heritage preservation improvement and optimization of existing infrastructure by local professional actors, (2) to promote long-term economic prosperity and improve the present generation without compromising the ability of nature, society and the economy to raise the welfare of future generations (3) cultural identity as a cultural heritage that can be developed into economic capital and assets in order to make a significant contribution to the welfare of society in development while maintaining cultural values and local wisdom as its hallmark.

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