

SUSTAINABLE TOURISM FROM ARCHITECTURAL PERSPECTIVE: A LITERATURE REVIEW

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Abstract

This article discusses the main concept of sustainable tourism to comprehend the terminology on definition, aspects, and main concept. Furthermore, the discussion continues on how architecture plays an important part in achieving the sustainability of tourist attraction areas, and the practical ways that have been done from an architectural perspective. The discussion in the architecture subject is divided into 2 parts: the heritage building and new building, and how the architectural decision in those areas plays part in supporting sustainable tourism. In heritage building tourism, it is important to maintain the building is in good condition physically and also functional. Adaptive re-use is mainly being used to revitalize heritage buildings. In new buildings, there are several ways that can be done to support sustainability in tourism and its usually by designing an environmentally low negative impact building's design. If these strategies applied in buildings design, it is possible to develop a tourism area that emphasizes the concept of sustainability.

Keyword: Sustainable Tourism, Sustainable Architecture, Energy-Efficient Building

Introduction

The idea of sustainability started in 1972 at the UN's Stockholm Conference, where the desire to make modern cities "sustainable" emerged. Basiago (1995) stated that 'sustainability' links to the condition in the future and to achieve the sustainability level, it is necessary to plan a preventative foundation to avoid possible ecological damage. Sustainable development was named the most significant 21st-century policy during The Earth Summit in 1992. Sustainable development is intended to achieve sustainability in development (Redclift, 2005).

In 2015, the United Nations launched Sustainable Development Goals consisting of 17 points to achieve whereas three (3) of the Sustainable Development Goals (SDGs) specifically reference tourism, including SDG 8 on growth and decent work, SDG 12 on sustainable consumption and production, and SDG 14 on sustainable oceans. Before the United Nations publicize the concept of sustainable tourism, this term has been commonly used in academic circles since the 90s and comes with debates from those who agree or oppose the concept.

As the word was being discussed in conferences and international meetings alongside sustainable development, it drew the world's attention. Although it started with

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a debate about the importance of sustainable tourism, recently the tourism sector started to pay more and more attention to the ideas of sustainable tourism (Bâc, 2014). This article discusses the main concept of sustainable tourism to comprehend the terminology on definition, aspects, and main concept. Furthermore, the discussion continues on how architecture plays an important part in achieving the sustainability of tourist attraction areas, and the practical ways that have been done from an architectural perspective.

Results and Discussion

Sustainable Tourism Concept

(Muhanna, 2006) defines sustainable tourism as tourism that is managed and developed in a sustainable manner and ensures that natural and cultural resources are maintained while also preserving their economic, social, and environmental integrity. As part of sustainable development, the concept of sustainable tourism involves almost the same aspect as sustainable development, which are social, cultural, and economic aspects, and at the same time pays attention to its impact on the environment. (Budeanu, 2005)

However, in recent years, these aspects are mainly broken into 3 parts: sociocultural, economic, and environmental (Mensah, 2019; Musayeva & Usmanov, 2022). All these aspects must be performed collectively and integrated at different levels of action because if performed separately will be an obstacle to achieving sustainability (Mensah, 2019). In order to achieve this sustainable concept where the 3 aspects - sociocultural, economic, and environmental- are integrated perfectly into a built environment, a city planner should make comprehensive planning. This plan is basically made to preserve the built environment and maintain its sustainability (Langston, 2008)

When applied thoroughly, sustainable tourism gives positive impacts on tourist attraction areas. Economically, tourism can provide new job opportunities, generating income and reducing poverty (Ennew, 2003). In many cases, when an area is visited by tourists, there are some improvements in the environmental aspect especially in landscape and infrastructure provided by the authorities to give a good impression and facilities for the tourists (Fatimah, 2015). In the socio-cultural aspects, it is challenging to quantify the effects of tourism because they are sometimes indirect (Zhong et al., 2011). However, Ramkisson (2020) found the involvement of residents around tourist attraction areas can contribute to the local's happiness and well-being.

Although tourism has many good impacts on a country, it also has negative consequences on the nearby towns, affecting inhabitants' quality of life (Kim et al., 2013) (Bâc, 2014; Mensah, 2019; Zhuang et al., 2019). Many studies have been conducted to see the negative impact of tourism on the surrounding environment. Socially, there was racial discrimination (Tucker & Deale, 2018; Zhuang et al., 2019), changes in local's lifestyles, and also traditional beliefs (Zhuang et al., 2019). (Djebbour & Biara, 2020) claimed that the aspect most adversely impacted by tourism was the ecology in the tourism region. Generally, the main object of tourism is the natural environment, and the high number of tourists and visits can lead to the over-exploitation of existing resources, which will ultimately have a negative impact on the environment. In developing

countries, a large number of tourists can cause damage to infrastructure because the original design maybe did not consider the additional people that using it.

One of the man-made aspects of the built environment is architecture. Architecture has always been part of tourism. Objects that attract tourists to visit are natural scenery such as lakes, mountains, beaches, and waterfalls; man-made buildings such as religious and heritage sites, and also intangible aspects such as local culture ,

When architecture is linked to the term sustainable, it could mean the sustainability of the heritage buildings acted as the tourist attraction in the area, or it also could mean the sustainability of a building in terms of environmental friendly and safety of a building in terms of energy saving (Bouhdanowicz). As part of the built environment, architecture plays an important role in succeeding the sustainable tourism agenda. Appropriate land use and physical design support the sustainability of the environment; therefore, it is important to establish proper physical planning (including architecture) in a tourism area to preserve ecology and biodiversity.

Sustainable Tourism in heritage buildings

Heritage buildings as part of cultural heritage considered to be one of the most significant attractions for tourists. Heritage sites are popular tourist destinations because of the scenery, architecture, and diversity of cultures. However, overuse or bad management of tourism may harm cultural sites' significance, inherent value, and integrity. But if it was done properly, the preservation can be a cultural mediator and gives an impact for the community's well-being.(Djebbour & Biara, 2020)

Planning a sustainable tourism concept in an area required prior analysis and research to determine the direction of the development. In areas that use heritage buildings as tourist attractions, historical analysis is also important. In making functional changes to heritage buildings, it is important to make changes as minimal as possible, to maintain the safety of the building, and also to preserve the memories of the old buildings' function.(Ragheb, 2021)

Therefore, an adaptive reuse concept is mainly being used to revitalize heritage buildings. In heritage buildings, to achieve successful preservation, it is important to plan a new function for old buildings to last for years(Ragheb, 2021). This new function of the heritage buildings that are different from its old function, to aim for the buildings' sustainability is known for the terminology adaptive reuse. To find a suitable new function, there are several methodologies that have been done by researchers.

Ragheb's (2021) research in Cordahi Complex in Alexandria, Egypt, used the multi-criteria process called A'WOT to get a multi-criteria decision about the best adaptive reuse that can be applied to the object. In Tlemcen City, Algeria, Dejbbour & Biara (2020) are using The Evaluation Grid method to identify the project's advantages and disadvantages with regard to sustainable development standards.

Several additional methods are also being used to do an analytical approach for heritage building such as the use of integrated hierarchical Structural Equation Modeling (SEM) and Analytic Hierarchy Concepts (AHP) as a tool to do a prior evaluation of some

parameters being used in the process of adaptive reuse in heritage buildings. These methods are varied but the main goal is to find the most suitable and sustainable adaptive reuse for the heritage building.

The A'WOT method used in Cordahi Complex, Alexandria, Egypt, shows that the most suitable new function is Cultural Art Center, followed by a mixed-use, office building, and hotel as the last option. The result shows that Cultural Art Center is the best option because it doesn't need much intervention or changes in the old building, so the safety and stability of the building are well maintained. The second and third method is used to analyze several indicators related to sustainable development aspects. Analysis in determining the new function in heritage building is a critical phase prior to determining the new function to guarantee the sustainability of the building both physically and the activities.

Heritage buildings have immense potential to be the main tourism object in an area but come supported facilities need to be available. These facilities are hotels, restaurants, public toilets, and rest areas as well as good infrastructure as stated in the study. These facilities act as support for heritage tourism activities, but their existence also influences the sustainability aspects of an area. Therefore the sustainability concept should also be applied to these facilities.

Sustainable tourism in new buildings

The approach to sustainable tourism is different in every built environment. Najdeska & Rakicevik (2012) stated that a soft sustainable tourism approach could be implemented for functions such as hotels and theme parks. There are some considerations to note that these buildings are under governmental authority in the tourism sector. In a built environment that is still intact and natural both physically and culturally, the application of sustainable tourism will be different and probably take the opposite approach, where an increase in tourism activities and tourist visits can cause social and cultural damage to the environment.

In this case, the concept of sustainable tourism that is implemented must be based on the principles of caution and prevention, which in extreme cases can lead to a solution to banning tourism activities in that place. One aspect of quality tourism is how the place benefits the local community and the environment. Therefore, in the planning and development of tourism objects, the local community should be involved considering that the community is the person who will be directly involved in the tourism activity.

Therefore, the design of tourism support facilities, if carried out following the principles of sustainable architecture, will support the tourism area in terms of function, but will also be 'friendly' to the environment, and as a result, the tourist area will be categorized as 'sustainable'. To aim for sustainable architecture, designers have quite many options from different points of view. Using sustainable materials in the new building is one of the options.

It is known that when material whose shape is closer to its original shape, has the least negative impact on the environment and also has minimum disposal on its

production. Architects and designers usually interpret this by using the most natural materials such as wood or bamboo. However, Shoubi, et, al (2013) studied whether the use of plastic bottle materials can be considered sustainable. The result shows that architects and designers can reuse plastic bottles for certain parts of the building (walls, roof, etc) and although it is applied in only some parts of the building, it is quite influential in reducing CO2 emissions.

To determine the most suitable material to enhance the sustainability of the building, architects usually use the analytical hierarchy process (AHP), however fuzzy extended analytical hierarchy process (FEAHP) can be an alternative tool to be used because the latter offer benefits from being able to quantitatively represent uncertainty and ambiguity and offers defined techniques for addressing the imprecision inherent in many problems.

Hotels and accommodations as supporting facilities are one of the highest energy users in the tourism industry. The use of electricity in the accommodation and restaurant industries in Australia covered as much as 53% (UNWTO). Furthermore, hotels and accommodations also produce significant waste products in their environment. In order to aim for sustainability in buildings, most of the research that has been published focuses on ways to save energy, and water, and make buildings more ecologically friendly by, for example, lowering carbon emissions.

These goals can be reached by practicing energy-efficient building design. Some studies show passive design in buildings, such as creating a proper building envelope, double façade buildings, or adding sun shading, affects the amount of solar radiation through buildings and therefore influences energy usage in heating and cooling systems in the building.

Energy efficiency in buildings can also be achieved through the use of energy-efficient mechanical and electrical systems in the building. For example, using a heat pump with an average COP of 2.0 for a hotel's pool is saving more energy, and also produces lower greenhouse and noxious emissions than using a conventional electric boiler. In reducing water usage, water aerators or 'economy' water flush systems can be installed in toilets' faucets. Installation of solar panels for producing energy for lighting in hotels is also possible, whereas some hotels using this system have proven to be very cost-effective and also environmentally friendly.

Conclusion

Sustainability tourism related to architecture can be implemented in several approaches. In heritage building tourism, determining the most suitable new function for an old building is the most crucial decision. Choosing the new function can be done in several analysis techniques such as A'WOT, SEM, or AHP.

In the new building, the concept of sustainability can be achieved from different points of view which are: 1) choosing the least negative impact materials to the environment, 2) designing buildings that support the principles of energy saving and minimal negative impact on the environment, and 3) choosing the most energy-efficient

mechanical, electrical and utility systems in the building. All of the strategies mentioned previously can be used simultaneously.

Practicing all strategies will guarantee the success of implementing the concept of sustainable tourism. However, in some conditions, when designers, planners, and architects have limited resources to apply many strategies, it is possible to choose several techniques which is the most suitable or possible approach to be done.

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