

Sustainability of Design Architectural Tourism Area (Case Study Pangandaran Tourist Market)

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Abstract

Indonesia is an archipelagic country that has a lot of natural resources, with this condition Indonesia has become one of the tourism destinations in Asia. Indonesia is an archipelagic country with many areas surrounded by coastlines, including the Pangandaran beach. The Pangandaran area has several tourist areas, including the Pangandaran tourist market. However, there are problems with the Pangandaran tourist market; the tourist market is not following its function, the design of the tourist market looks generally does not represent the theme of Pangandaran tourism, an art stage that is no longer functioning. This study aims to design the sustainability of design tourism area, with limitations on the Pangandaran tourist market. The method in this study was carried out qualitatively, with direct data collection in the field. Field data is studied and analyzed using architectural theory and the sustainability theory (3BL - Three Bottom Line), then visualized into a 3D model. The results of this study are recommendations for the design Pangandaran tourist market in the form of 3D visualization so that it can also be applied or developed in other tourism areas.

Keywords

Architectural, Design, Market, Sustainability, Tourism.

1. Introduction

Indonesia is an archipelagic country that has a lot of natural resources. Indonesia is known as a maritime country with the largest archipelago in the world with a sea area of 6.4 million km², and the number of islands is 16,056 islands. This makes Indonesia have a long coastline, so it becomes an attraction for tourists (Kemenkomaritim 2019). The tourism sector is one of the most important sectors of the Indonesian economy. This is evidenced by the significant increase in income every year, this is also influenced by the transactions of goods and services in this sector. Revenue was 10% in 2005, experienced a 17 percent increase in 2012. As a result, GDP in 2018 which was valued at 4.5% rose to 4.8% in 2019 (Kemenparekraf 2020). One of the factors for this increase is the arrival of tourists both from abroad and within the country, as well as the support of investors for this tourism sector.

One way to increase tourism in an area is to create and build tourist attractions in the area (Utami and Kafabih 2021). The following are potentials that need to be considered to increase Indonesian tourism; firstly the natural resources and diversity of national tourism resources, secondly the potential for tourism marketing development – in the form of foreign or domestic tourism markets (Kemenparekraf 2020).

One of the well-known tourism sectors is Pangandaran Beach. This district has a geographical condition that is surrounded by beaches with a length of 91 km and is one of the marine tourism destinations in West Java. That's why Pangandaran is one of the tourist areas that supports the economy of the Pangandaran region itself, as well as being a source of income for the country (Kurniasih et al. 2020). Learning about the potential design by the government, it is necessary to build new tourist attractions by exploring the natural resources from Pangandaran, as well as covering places for marketing tourism in the Pangandaran area.

Tourist destinations in Indonesia that already have an attraction for foreign and domestic tourists, are located in Denpasar. According to statistics on visitor satisfaction when transacting more than 50% respond very well, and want to revisit Denpasar. The success of tourism in Denpasar is influenced by several characteristics, including: 34.0% culture, 30.0% nature, 12.0% resident friendliness, 11.0% price, 6.0% facilities and 4.0% various tourist attractions

(Wiranatha et al. 2018). Through several characteristics of the success of Indonesian tourism and the government's design for tourism progress, the authors take the limitation of the study on the development of the Pangandaran tourism market design. With the aim of creating an attractive tourist spot for tourists as well as being a place for transactions to increase the economy. National economic growth is one of the pillars that supports state revenues, located in the market. A market is a place where many people make buying and selling transactions, resulting in economic growth in this location (Iriani and Sanaji 2019).

The market design needs to understand the attitudes and behavior of consumers, ranging from buyers' emotions, psychological, STP, cognitive, or building trust with brands Due to limitations, this paper is limited to the visual image of the Pangandaran market, and also the atmosphere that can be given to buyers when transacting. The visual image and atmosphere that you want to display on the Pangandaran tourist market have a thematic that is in accordance with the geography of Pangandaran tourism, which shows the feeling of the beach and the sea. And local culture can be displayed in this market which is a special attraction in the Pangandaran tourist market (Firmansyah 2018).

The following are problems in the Pangandaran tourist market, this market does not function optimally as an attraction and a place for tourists to transact. These issues and problems were taken up by the author in 2015. The problems that exist in the Pangandaran tourism market can be described as follows: First, the Pangandaran tourist market is not in accordance with its original function as a center for buying and selling transactions, Pangandaran's local cultural wisdom. The front of the tourist market still functions as a place for buying and selling, while the middle and back parts have changed functions to become nightclubs and residential areas.(Figure 1)



Figure 1. The front of Pangandaran Tourist Market

Second, the design of the Pangandaran tourist market area does not attract visitors. It looks untidy because it is used as a residence for residents, and does not display a typical thematic design in accordance with Pangandaran beach tourism. (Figure 2)



Figure 2. Inside Area Pangandaran Tourist Market

Third, rest areas and tourist market stages do not function properly. This place should be the center area for the performance of local cultural wisdom such as music, traditional dances, and even a place for tourists to enjoy traditional Pangandaran food.



Figure 3. Stage Show (Left), Court (Right).

One of the sustainability values is maintaining the local wisdom of the Pangandaran area, by utilizing local wisdom in community economic activities (Sukmawati 2017). Therefore, the research question that can be asked for this research is, how to make a sustainable design for the Pangandaran tourist market. The research objective is to produce recommendations for the sustainability design of the Pangandaran tourist market.

2. Sustainability Design

Sustainable design is a concept that targets the efficiency of resources. This is shown in the space-forming materials, furniture, lighting, airflow, and atmosphere of the building environment. It can be described that sustainable design has a relationship to exploiting natural resources so that these resources can be sustainable. The cycle is used by taking the original material in nature or that already exists and then processing it, reusing it so that it can be used again (Febriany et al. 2013).

This sustainability design is one that is often used in current designs because there are many issues that are relevant to environmental conditions. Associated with global warming, resource depletion, ozone layer, and others. This is done with the aim of preserving existing resources so that they can be used by the next generation. Sustainability has three dimensions that become pillars in its design: (Figure 4) Economic, social, and environmental, or commonly known as the triple bottom line or 3BL (Gupta et al. 2015).

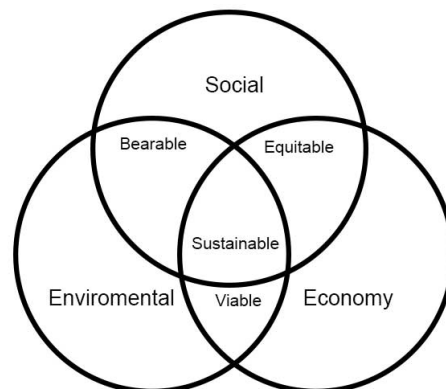


Figure 4. Dimensions of sustainability: Triple Bottom Line

In discussing the three pillars of sustainability, the author will limit the discussion to the following perspectives. In economic terms, it is an increase in the flow of income in the Pangandaran tourism market area, through the increased economic activity that is generated. As well as architectural development with recycled materials (Krstic et al. 2018). In social terms, it is the development of local culture, so that it becomes a sustainable resource strength in the Pangandaran tourism market (Ketschau 2017). In terms of environment, the maximum utilization of natural resources such as water, air, light, and even electrical energy is contained in the Pangandaran area (Bibri 2020). The intended use can be in many aspects ranging from environmental conditions to the theme in the design of the tourist market. There are several other design sustainability concepts that may be adapted in this study, due to the limitations of the author and also the issues that can be discussed. So in this study only use the theory of the triple bottom line concept in sustainability design.

3. Research Method

The method Figure 5 used is qualitative, with direct data collection in the field in the form of photos from the Pangandaran tourist market. Then through the photo, an analysis is carried out based on architectural theory and the triple bottom line sustainability design (Elkington 2002), so that it returns to the function of the Pangandaran tourist market. Data analysis was carried out ethnographically on the condition of the Pengandaran community based on an understanding of basic architectural theory and triple bottom line sustainability design: In the architectural aspect, the theory consists of three layers, namely function, aesthetics, and consumer psychology. In the aspect of sustainability, the design is analyzed in three dimensions, namely economic, social and environmental. After the redesign process was carried out based on the results of the initial data analysis, by generating new visual data from the Pangandaran tourism market in the form of 3D visualization. With the aim of producing a new design that can be recommended for the development of the Pangandaran tourist market design. The following is a schematic drawing of this research method(Figure 5)

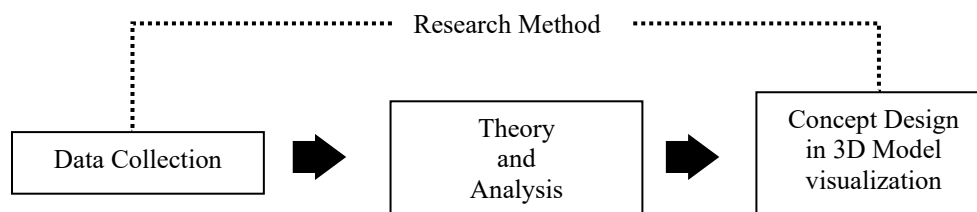


Figure 5. Research Method Schema

4. Results and Discussion

According to Vitruvius in his book *De Architectura* (which is the oldest written source that still exists today) (Vitruvius et al. 2015), a good building must have Beauty / Aesthetics (*Venustas*), Strength (*Firmitas*), and Uses / Functions (*Utility*); architecture can be said to be a balance and coordination between the three elements, and no one element exceeds the other elements. In the modern definition, architecture must include functional, aesthetic, and psychological considerations. However, it can also be said that the function element itself includes both aesthetic and psychological elements. Through the theory above, we can see that there are 3 important things that we must consider in building/designing the design of the Pangandaran tourism market, namely as follows:

4.1 Three Element Architecture

Tourist market function

- Become a recreation center - buying and selling transactions for the community and visitors to the results of the local cultural wisdom of Pangandaran.

- Become a community for sellers to be able to increase the results of local cultural wisdom in the form of quality and quantity
- Become a resting place for Pangandaran tourist market visitors

Pangandaran tourist market aesthetic

- Thematic – based on the geographical area of the Pangandaran tourist market in the coastal area, the approach used is a maritime theme
- The center of the Pangandaran beach tourism area festivals and events
- Visually using sustainable designs designed according to maritime themes combined with local Javanese culture.

Consumer Psychology of the Pangandaran tourist market

- Provides a memorable shopping atmosphere
- There is adequate parking space
- Cleanliness and tidiness of the tourist market area
- Availability of public facilities - rest room

Through the above understanding, a design concept for the Pangandaran market can be made as follows (Figure 6)

Building Convenience	Cleanliness - availability of trash can - cleaning service Experience - maritime impression and local culture Safety - Security 24 hour	Parking Area - adequate and comfortable - clear circulation Hygienic - public facilities	Festival Area - event venue available Visual Aesthetic - Sustainability design with local culture Thematic - Maritime	Unique Design
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Figure 6. Design Criteria Pangandaran Tourist Market

4.2 Three Dimensions Sustainability Design

Sustainability design in three dimensions; economic, social, and environmental is a design that provides a full dimension for the sustainability of current and future generations. Through the triple bottom line chart gives three dimensions (Lozano 2008). The following is a Table 1 design for the sustainability process in its 3 dimensions in the Pangandaran tourism market:

Table 1. Sustainability three bottom line Pangandaran Tourist Market

Economic Indicators	Social Indicators	Enviromental Indicators
Income for Local Community	Cultural preservation	Use of natural resources
Increasing the quality of life local community	Cultural introduction to tourists	Reuse building materials
Indonesian Tourism Revenue	Tourist interaction with Local culture	Buildings with thematic designs

From the overall description above, it is related to the architecture and design sustainabilityPangandaran tourist market. The following is an illustration design in 3D visualizing the sustainability design of the Pangandaran tourist market.



Figure 7. Pangandaran Tourist Market Design Plan

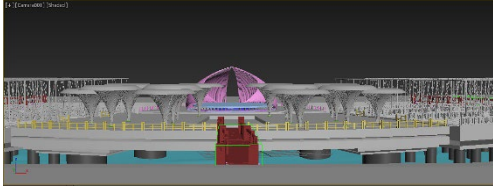

In the plan in Figure.7 each section is arranged according to the characteristics of the sale of goods and services in the Pangandaran tourism market. Around the tourist market, there is an artificial lake, to provide a maritime atmosphere, the existing water can be reused, of course with good filtration. There is also a green area to provide fresh air, although in the beach area there can still be a lush and cool atmosphere. At the center of this design, there is also a stage, aimed at exhibitions and performances of traditional arts from Pangandaran and West Java. The next discussion is the visual 3D design of the Pangandaran tourism market. This 3D visual is made based on a unique theme of how to attract tourists to travel in the market area. The design of this floor plan considers the dimensions of the environment.

4.3 Design Process

In this point, we will discuss how the new design process of the Pangandaran tourism market uses 3D media. The design is carried out based on the architectural element approach and dimensions in sustainability design. The following is a design process in three architectural elements based on function, aesthetics, and consumer psychology: (Table 2)

Table 2. Process Design in Architectural Elements

Three Element Architecture	Description	Image
Tourist market function	In this section, the most important thing is to restore the function of the Pangandaran tourism market. Become a center for buying and selling local community products. Therefore, it is necessary to have an Area Classification of merchandise, culinary, and traditional art. The design solution that is done by dividing the area and rebranding the form has a unique and attractive visual for tourists.	

<p>Pangandaran tourist market aesthetic</p>	<p>At this point, it aims to improve the aesthetics of the Pangandaran tourism market, the design is carried out by giving a maritime theme to the appearance of the tourist market. By building the waters around the market area so that it looks like the market is floating.</p>	
<p>Consumer Psychology of the Pangandaran tourist market</p>	<p>In this case, it gives a positive impression on the individual experience when shopping at the Pangandaran tourist market. This impression can be built by maximizing the cultural potential and uniqueness of the Pangandaran area as a tourist spot. The design made changes the shape of the object design that interacts with tourists.</p>	

In the discussion of sustainability design, there are three dimensions of the three bottom lines that need to be applied to the design of the Pangandaran tourism market, the three dimensions consist of economic indicators, social indicators, and environmental indicators. The following is a discussion of the three dimensions in the design of the Pangandaran tourism market.



Figure 8. Front view of Pangandaran Tourist Market

Figure.8 shows the condition of the front view of the Pangandaran tourist market, in this picture also shows that there is a lake that connects the road section with the Pangandaran tourist market area. It looks like a market that floats on water, providing a new atmosphere for carrying out activities in the market area. The floor material uses wood and the dominance of the bamboo roof which is curved in design, this produces a shady and comfortable atmosphere. The use of sustainable materials is the focus of the environmental dimension.

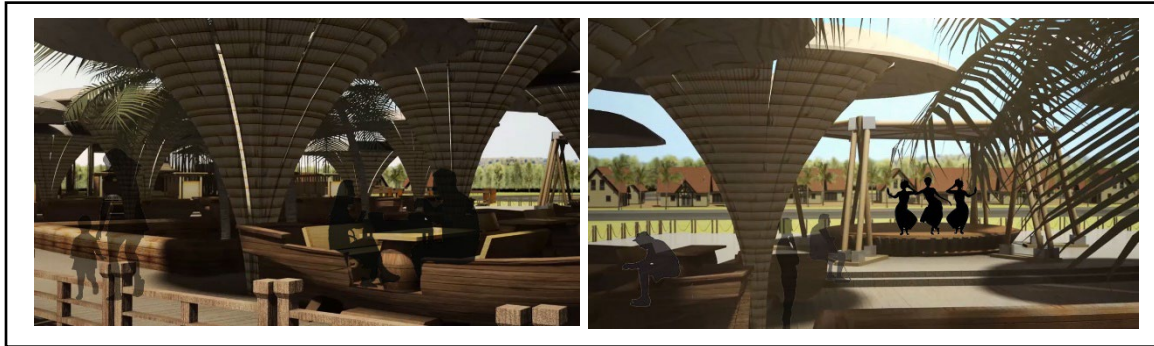


Figure 9. Food court Area and Art Stage

Figure 9. shows a visual of the foodcourt area and the stage for performing arts. This is a resting place with a focus on displaying the cultural richness of Pangandaran and West Java. The food court can also sell snacks and traditional foods. Visitors' seats are also designed with existing materials. Like fishing boats that are not used, then repaired and reused. The design in this central part focuses on the social dimension.



Figure 10. Shop Area with Unique Design

In figure 10. The shop area is designed with a unique design, neatly arranged, and returns to its function, namely selling various traditional handicrafts from the people of Pangandaran and West Java. So that visitors can enjoy traditional objects that are only found in the Pangandaran tourist market. The purpose of all these store area designs is that the rate of economic growth can run well, and it can even increase state income. The design in this section provides an economic dimension.

5. Conclusion

The characteristics of sustainability design have three dimensions, namely economic, social, and environmental. In this research, in designing the Pangandaran tourist market, the research question has been answered, how to make the design sustainable of the Pangandaran tourist market. The method used is through designing based on the existing three dimensions, so that the Pangandaran tourist market can have sustainability for future generations. This design is not completely perfect, due to limitations in research time, especially in terms of material and culture. Such a concept may continue to be developed so that it can be developed in many tourism areas in Indonesia. Further research that can be done for this research is on the development of details on architecture and culture, it may need collaboration with expert academic colleagues to discuss this in future research.

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