



## Virtual Tour Implementation Scenario As Sustainable Tourism To Restore Regional Economy

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### ABSTRACT

This research discusses the design of scenarios for the implementation of virtual tours for sustainable tourism as an effort to recover the economic sector in Banyuwangi. This research aims to provide new innovations that can be used to promote and develop the tourism sector in Banyuwangi. The study used a qualitative descriptive approach with data collection derived from secondary data and primary data. This research method is carried out inductively by conducting an analysis based on the data obtained and developed according to the topic studied. The results of this study show that virtual tours can help the development of the tourism sector and Sustainable Tourism in Banyuwangi through the application of technology and digital media. The scenario planning in this study is quite promising, as evidenced by the results of a comparative analysis of its application with tourism in general and the calculation of NPV that has been calculated.

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## 1. Introduction

The Covid-19 pandemic has changed many things in life, including the tourism sector. The rapid development of technology has given rise to many new innovations in the development of the tourism industry in Indonesia, especially in terms of tourism promotion to local and foreign communities. Promotional activities play an important role in the development of the tourism industry. The change in tourism promotion trends used today is to apply virtual tours in delivering information related to the location of a tourist spot to increase the attractiveness of local and foreign tourists (Istita & Suroyo, 2021). Virtual tour technology is an alternative media of practical choice in conveying information or promotion to the public, especially in the pandemic era post-Covid-19 (El-Said & Aziz, 2022).

Virtual tour is an application that helps carry out visits to a place virtually. This application will guide visitors to explore a place and convey the history or information of a tourist spot by providing new experiences for tourists (Akhsani et al., 2023). According to Gama (2022), the virtual tour application as a promotional medium for tourist attractions can help marketing and promotion of innovative and communicative tourism with a broad scope. Virtual tours can reduce psychological stress during the COVID-19 pandemic as well as being an interesting entertainment for people without the need to travel directly to tourist attractions (Yang et al., 2021). Virtual tours can be developed through web technology that can make

it easier for people to find out various information up to date, so that tourists can get to know the desired tourist attractions (Gama & Kurniawan, 2022).

Virtual tour can be an alternative that can be used in generating tourism in Banyuwangi. Banyuwangi has diverse tourism potential, both cultural tourism and new natural tourism that has not been visited by many tourists (Cynthia & Kristanto, 2017). New tourism in Banyuwangi includes Basing Underwater, Benculuk Office, Ijen Crater, Sukamade Beach, and Osing Kemiren Tourism Village (González Cortés & Husain-Talero, 2020). The five tourist destinations are still new and have the potential to bring in foreign tourists. In addition, the Banyuwangi area is also supported by the existence of a green airport that will attract tourists, so tourism in the Banyuwangi area needs to be developed (Rini et al., 2020). Virtual Tour can be used as a collaborative application between digital media technology and tourism that shows 360° photos and interactive videos related to Banyuwangi tourism destinations. This application will show tourist destinations in a unique and interesting way accompanied by a tour guide who will provide explanations related to the culture in the area around tourist attractions to provide information as well as introduce Indonesian culture to application users.

Virtual Tour can also be a service platform to support the realization of Sustainable Tourism in Indonesia by being oriented towards the 3Ps (People, Planet, Prosperity) that pay attention to environmental, social, cultural, local economic impacts, and caring capacity or environmental carrying capacity (Suharti et al., 2023). Virtual Tour is planned to be a digital platform where service providers can participate in developing the tourism business to revive the Indonesian economy by applying fees in this application in exchange for entrance fees to tourist destinations visited. Based on this, the implementation of virtual tours can revive the tourism sector and encourage the creation of Sustainable Tourism in Banyuwangi. The purpose of this study is to analyze and create scenarios for the application of virtual tours to Sustainable Tourism as an effort to restore tourism in Banyuwangi.

## **2. Literature Review**

### **2.1. Virtual Tour**

Virtual tour is a series of 360° photos equipped with sound, animation, or text that become a unity so that information can be presented clearly and attractively (Istita & Suroyo, 2021). Virtual tours can also use several other multimedia elements, for example such as sound effects, music, narration, and text, and use sophisticated information technology so that users who see it as if they are in the desired place (Setio Ardianto et al., 2022). The virtual tour can be accessed through desktop computers, information or other electronic media. The benefits of virtual tours are as an online promotional media or interactive media virtual tour that can convince prospective location visitors to expose location facilities in detail as 360° location documentation, become an inspiration in the process of building a business / business, the creation of a product and service concept that can help meet information needs and promotions following increasingly rapid technological advances.

### **2.2. Sustainable Tourism**

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Second, tourism should be introduced as a positive activity that provides mutual benefits to society, the environment, and tourists themselves; Third, the relationship between tourism and the environment must be made in such a way that the environment is sustainable for the long term. Tourism must not damage natural resources so that they can still be enjoyed by future generations.

Fourth, tourism and development activities must care about the scale / size of nature and the character of the places where these activities are carried out; Fifth, in other locations, harmony must be built between the needs of tourists, the place/environment, and the community; Sixth, a world that tends to be dynamic and

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full of change can always benefit. Adaptation to change, however, should not go outside of these principles. Seventh, the tourism industry, local governments, and environmentalist non-governmental organizations (NGOs) all have a duty to care about the above principles and work together to realize them. If these principles can be fulfilled, sustainable tourism development in Indonesia will be realized. Regarding this, a good and integrated strategy and planning are needed by all parties to realize these goals.

### 3. Research Methods

The research uses a qualitative descriptive approach to get an in-depth picture of the experiences of individuals in the development of Sustainable Tourism-based tourism by applying virtual tour applications to the community. Data collection in this activity consists of secondary data and primary data. Secondary data in the form of documents related to tourism development policies and programs implemented by the Banyuwangi Regency Government. While the primary data is directed to explore information directly in the field related to the development of Sustainable Tourism-based tourism by implementing a virtual tour application, which is carried out by using information collection from various sources and through in-depth interviews and conducting Focused Group Discussions. There are 5 research informants who are considered to have knowledge and information about tourism development in the Banyuwangi Area. The method or study used in the analysis is by inductive analysis by conducting an analysis based on the data obtained and then developed in accordance with the topic studied.

## 4. Result and Discussion

### 4.1. Result

#### 4.1.1. Virtual Tour Application Design System Analysis

To produce a virtual tour application for tourist attractions in Banyuwangi as a solution to the problems raised, there are several stages that must be done, namely, analysis of the ongoing system, analysis of the system to be designed, and analysis of system needs.

##### a. Running System

Based on the results of observations on the object of research conducted by the author, there are several ways carried out by tourists who want to visit Banyuwangi in the midst of a pandemic, one of which is tourists looking for information from social media such as Facebook, Twitter, or information from the internet. The information obtained by prospective tourists is still standard such as photos and videos of famous tourist attractions in Banyuwangi and some photos of other interesting places that have not been explored completely. This condition is not going well because to get information about real attractions has not been provided by the manager of the tourist attraction and in this case tourists must come directly first to the tourist site.

##### b. System to be Designed

Based on the lack of information obtained by tourists and the lack of promotion from the manager, both conventional promotions and the availability of official websites of tourist attractions in Banyuwangi, the system to be built in this study is an application-based virtual tour that can be accessed using laptop or mobile devices, where with this virtual tour made information media to find out the places or spots contained in tourist attractions in Banyuwangi. Virtual tours are made in the form of audio and your visual with 360° Virtual Reality techniques and VRP techniques which are presented in the form of 360° video and panoramic photos interactively with user friendly and equipped with a tour guide who will provide information related to the selected tourist destination. The virtual tour provides five choices of cool tourist destinations in Banyuwangi that are less exposed by the wider community, namely Basing Underwater, Jawatan Benculuk, Ijen Crater, Sukamade Beach, and Osing Kemiren Tourism Village. With this virtual tour, tourists can find out cool attractions in Banyuwangi and can directly access the application to get information on attractions and beautiful spots in the tourist attractions provided.

##### c. System Requirements

Analysis of the needs of the virtual tour application system is shown in a use case diagram that illustrates the scope of the system to be built and is a means of communication with the end user to get

a better understanding of the system to be created. The system needs include concept, design, material collecting, assembly, testing, and distribution.

#### 4.1.2. Virtual Tour Diagram Use Case Scenario

The use case scenario diagram below is the use made by the user when opening the virtual tour website, as shown in the following table.

**Table 1.** Virtual Tour Diagram Use Case Table

Identification	
No Use Case	1
Use Case Name	Opening a Virtual Tour
Description	This Use Case is used to open a virtual tour
Actor	Tourist
Scenario	
Initial Conditions	Opening the main page
Action Actors	System response
1. Open the virtual tour page	2. Display the virtual tour page and present information via voice
See the panorama of the tour in the virtual tour with a 360° sensation	
Alternative Scenarios	
Return to the start page if an error occurs	
Final Conditions	Panorama displayed successfully

#### 4.1.3. Virtual Tour Application Analysis

The estimated initial investment cost needed in implementing the virtual tour is estimated at IDR 2,870,000,000 with an analysis of the need for Virtual Tour development costs broadly presented in the following table.

**Table 2.** Virtual Tour Cost Estimation Table

No.	Information	Cost (IDR)
1.	Application Development and Research	IDR 750.000.000
2.	Improvement of Tourist Destinations	IDR 1.000.000.000
3.	App Development	IDR 850.000.000
4.	Promotional Fees	IDR 120.000.000
5.	Admin and Tour Guide	IDR 150.000.000
<b>Amount of Fees</b>		<b>IDR 2.870.000.000</b>

The estimated income to be received from the implementation of the virtual tour application in one year is estimated to reach IDR 5,985,000,000 with the following details.

**Table 3.** Virtual Tour Deployment Revenue Estimation Table

Total Tourist Destinations	5 Destination (IDR)
Destination Ticket Prices	IDR 35.000,-
Target Visit for Each Destination	50 Tourist
Total Income Destination / Day	IDR 3.325.000,-
Total Income Destination / Month	IDR 16.625.000,-
Total Income Destination / Year	IDR 5.985.000.000

So if a calculation analysis is carried out using Net Present Value using an estimated investment interest rate of 10% with an initial investment from the Banyuwangi government of IDR 3.000.000.000, then the following values will be obtained.

$$NPV = [(Income - Development Cost) / Investment Interest]$$

$$NPV = [IDR 3.115.000.000 / 0,9] - IDR 3.000.000.000$$

$$NPV = IDR 3.461.111.111 - IDR 3.000.000.000$$

$$NPV = IDR 461.111.111$$

Based on the calculations that have been carried out, the NPV results obtained are 461111111. This can be concluded that the implementation of this virtual tour is declared feasible because the NPV results are positive.

#### 4.2. Discussion

The change in tourism using virtual tours makes tourist destinations prepared by prioritizing the principle of Sustainable Tourism. Sustainable Tourism is a tourism concept that has 3 basic principles, namely ecological sustainability, economic survival, and socio-cultural sustainability where development is able to meet the needs of the present without reducing the ability of future generations to their needs (Suharti et al., 2023). Virtual tours can create environmentally friendly tourism. The use of this virtual tour allows users to stay at home in enjoying the beauty of tourist destinations in Banyuwangi. This has a positive impact on reducing waste in Banyuwangi due to tourists visiting Banyuwangi. The waste problem is caused by the large number of tourists in Banyuwangi who do not care about the environment. Regarding this, the implementation of virtual tours can reduce waste and environmental pollution while creating an environmentally friendly tourism system.

Virtual tours can be a profitable business opportunity to revive the Indonesian economy in new normal conditions (Yuliana & Lisdianto, 2017). This is because the tourism sector is one of the factors that plays an important role in Indonesia's economic growth and has the second largest foreign exchange contribution in Indonesia after foreign exchange from palm oil exports (Putriani & Prasetyo, 2021). Regarding this, the implementation of virtual tours will revive the Indonesian tourism sector and improve economic conditions, especially for increasing gross profit in the Banyuwangi area with the application of ticket fees in using the application in exchange for the entrance fee for selected tourist destinations.

Virtual tour provides cultural tourism destinations in Banyuwangi, such as Osing Kenerin Village which is not widely known by the public so that this application can be a medium of information and promotion as well as a medium for preserving local Indonesian culture. Based on the application of these principles, virtual tours are believed to be able to realize Sustainable Tourism in Indonesia. This application will display a free trial that contains a glimpse of the tourist destination chosen by the user. Furthermore, to enjoy a more complete virtual tour, users are required to buy a tour ticket to get a username and password to be able to access the virtual tour on the application. So that with this virtual tour, people can travel at home with new tourist experiences.

The implementation of virtual tours in the new normal era is a very appropriate strategy in an effort to revive the tourism sector in Banyuwangi. When compared to conventional tourism, the virtual tour has better prospects for the progress and recovery of Indonesian tourism. Based on the results of a survey conducted by Google Consumer Surveys in April and May 2020, 44% of respondents choose to travel abroad more than one year from now and only 17% of respondents want to travel in the next three months. Moreover, the call for physical distancing makes people reluctant to travel far and choose to take care of themselves by staying at home. Based on the results of the literature review that has been obtained, virtual tours have several advantages and disadvantages of tourism in general which will be explained in the following table.

**Table 4.** Comparison Table of Virtual Tourism and Conventional Tourism Application

Advantages of Virtual Tour Tourism	Advantages of Conventional Tourism
1. Not hindered by place and time in enjoying the tour.	1. Visitors get a real travel experience.
2. Save cost and time.	2. Can use tourist facilities directly.
3. Eco-friendly.	3. Get more satisfaction.

<b>Disadvantages of Virtual Tour Tourism</b>	<b>Disadvantages of Conventional Tourism</b>
1. Not getting real travel experience.	1. Visitors must come to the tourist site.
2. Depends on signal and internet quota.	2. Sacrifice more cost and time.
3. takes quite a long time to make the application.	3. Less environmentally friendly (waste problem).

Financial analysis using Net Present Value that has been carried out using an estimated investment interest rate of 10% shows positive results so that the implementation of the virtual tour application that implements Sustainable Tourism can be one of the efforts to restore the tourism sector in the new normal era in Banyuwangi.

## 5. Closing

### 5.1. Conclusion

Virtual tours are believed to be able to help the development of the tourism sector in Banyuwangi through the application of technology and digital media. This application will show interactive images and videos related to famous beach and cultural tourist destinations in Banyuwangi to provide a new experience in traveling for its users.

This application is made by applying ecological, economic, and socio-cultural sustainability principles that can realize the creation of Sustainable Tourism in Banyuwangi. Based on the results of the author's literature and education in the field of Economics, this scenario is quite promising, seeing a comparative analysis of its application with tourism in general and supported by the calculation of NPV that the author has done. Research and development related to virtual tours to be carried out further so that it can be applied well to the tourism sector in Indonesia. Overall, the central and local governments must prepare themselves to design and develop virtual tours to revive the tourism sector to realize Sustainable Tourism in Indonesia.

### 5.2. Research Limitations

The suggestion for the next research is to develop by conducting in-depth studies and research in order to create even better tourism promotion applications with new features that can facilitate and attract tourists.

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