



## **360 Virtual Tour for Online Tourism Promotion: A Study of Visual Indonesian Virtual Tour of Surabaya**

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### **ABSTRACT**

The presence of increasingly advanced technology has affected positively the advertising industry. The presence of a virtual tour as an alternative to virtual tourism, for instance, has offered a new space for the travel experience as users can feel how it is to be in a certain place without having to go to that place directly. In addition, virtual tours are able to provide an initial description of how a tourist object is reviewed before traveling and be used as a virtual promotional medium. As used as a means of digital promotion, the visual depiction in the virtual tour should comply with the rules of the elements and design concepts of the virtual tour. Using content analysis through explanatory approach, the results of visual observations of virtual tour objects in Indonesian Virtual Tour are Surabaya virtual tourism objects which are described even though they have fulfilled several elements of the design concept but still need to take a more selling point of view to the visitors in the case of their visit to be used as a means of tourism promotion.

**Keywords:** *Virtual tour, Virtual reality, 360 tourism video, Online tourism*

### **1. INTRODUCTION**

The emergence of advanced technology has made life easier in several aspects. One of the technological advancements is virtual reality (VR), a form of technology that is able to make its users feel the digital world it presents in real terms. VR creates a simulation where the simulation is like in the real world, where users can see the atmosphere and walk in a place that has never been visited. VR technology provides the experience of seeing a screen and direct interaction with the world in three dimensions. VR technology simulates many senses, such as sight, hearing, touch, and smell, and therefore VR technology is used in various sectors.

This increasingly advanced technology also has a significant impact on various sectors, one of which is the tourism industry. On one side of the tourism industry, tourists are increasingly attracted to know the condition of a tourism spot before spending a certain amount of money to visit a particular tourist location. Virtual tour emerges as a visual tool that helps provide

tourists with a clear view of the various tourist attractions of interest even before their visits.

The Virtual tour consists of a series of panoramic images that are combined and arranged in such a way as to create a virtual experience at any location. It is expected that users are able to feel and experience how it is to be in a certain place without having to go to that place directly. Virtual tour is not only present in 2-dimensional form on the screen, but the presence of 360 virtual tour is the emerging technology that can send the users in the picture and allows them to increase situational awareness and significantly increase the ability to see, capture and analyze virtual data. Presence of 360 virtual tour displays a new virtual reality which is an alternative solution not only for people who want to visit virtually certain tourist objects but also as reference material before visiting and setting their itinerary [1].

Virtual tours that are increasingly being used are those using the panoramic 360 image method, namely several images combined to get a wider and more

detailed image. This research examines how the 360 virtual tours in the tourism sector use visual representations and what is being displayed. Although the 360 virtual tour displays more of the realistic side of the actual reality of a tourist object or attraction, the presence of the selected point of view and the level of visual detail displayed is an interesting issue to study so that the results can be used as a reference for research related to the virtual tour and audience eye tracking.

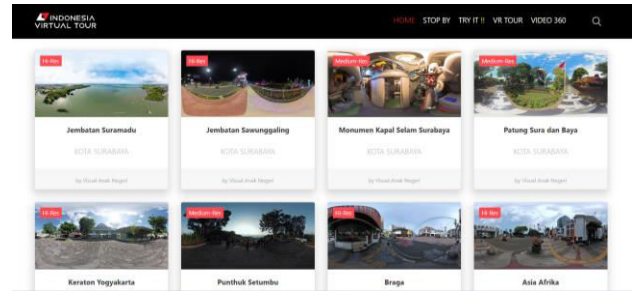
Virtual tours have offered several benefits for the tourism industry so that they are able to positively influence the tourist experience. In addition, the emerging virtual tours can also promote a touristic destination and assist users in their travel planning. In this research, visual observations made on virtual tour objects can help appreciate the beauty, complexity, and significance of the object or environment being explored[2].



**Figure 1.** Indonesian Virtual Tour

The virtual tour object to be researched is the Indonesia Virtual Tour available and accessible on the website: <https://www.indonesiavirtualtour.com>. As a pioneer in the virtual travel industry; Indonesia Virtual Tour provides several kinds of features that can be accessed by its users, including VR Tour, Video 360, Try It!, and Stop By. Each of these features provides options for visitors to explore virtually in various places in Indonesia.

The object to be observed in this research is the selected tourism objects located in City of Surabaya that are displayed on the site. Overall these objects describe how the actual situation of each place they represent.



**Figure 2.** Surabaya City Object Selection

The virtual tour concept was originally intended to be used as an alternative to traveling during the global pandemic, but now it has evolved and become a new medium that offers a new trend in the world of tourism [3]. Virtual tour is not only an option to enjoy long-distance tours, but also a means of entertainment. Users will still be able to feel on vacation without having to leave the house. Virtual tour innovations that are increasingly being developed aim to improve the economy in the tourism sector [4].

The virtual tour is also developed to include a virtual tour guide that explains in sufficient detail the objects being visited. The tourist destinations that are being developed are not limited to certain areas but also to foreign countries. Virtual tour is an emerging marketing tool to attract tourists to visit and observe tourist attraction because, based on data released by Autorin, virtual tour enthusiasts have increased and are exploring various tourist destinations, especially in Indonesia. This research intends to find out how the visual depiction of the selected tourist objects and to what extent they have met visual standards of the principles of virtual tour as a tourism promotion strategy.

## 2. METHODS

The study intends to observe to what extent the visual depiction of the selected tourist objects in the context of virtual tour aspects through content analysis using an exploratory approach. The intended content analysis is to describe in detail a message or a particular text. Furthermore, the visuals in the 360 virtual tour display are observed based on the level of visual display and the point of view chosen based on the concept of a tourism promotion strategy.

The virtual tour objects observed were selected tourism objects located in the City of Surabaya, namely the Suramadu Bridge, the Sawunggaling Bridge, the Submarine Monument, and the Sura and Baya Statue. The description of the four objects is based on popular tourist objects in Surabaya which are displayed on the virtual tour site. Furthermore, each visual display and object is generated in 360 visual depth.

In viewing the visual details of the 360 virtual tour display, special attention is needed to visual elements

involving objects, the environment, and other details such as composition, architectural details, visual guides, natural details, 360-degree views, and accompanying movements and activities.

### 3. RESULTS AND DISCUSSION

Conceptually, observation and analysis on the 360 virtual tour display is a process used to understand, analyze, and explore the information contained in the virtual tour, be it in the form of text, images, sound, or interactive elements. There are some steps taken to carry out the content analysis on virtual tour display. The first step that should be executed is to determine the purpose of the analysis. In this research the purpose of the analysis is to look at content and visuals as a basis for continuing research at the next stage.

In addition to that, the selection of virtual tours that accommodate the promotion of tourist destinations is needed to understand the context. The choice of visual objects for the city of Surabaya is based on the fact that the city is different when compared to other city tourism concepts in Indonesia. In Surabaya, traveling to visit iconic objects or places is more superior than natural tourism, because Surabaya does not have one. The next stage is identifying the data to be analyzed. In this case, the determination of the type of data taken from this research is text, images, audio, and video from research subjects. In this case, the observation is carried out by looking at the overall visual appearance of the visual assessment process on the display layer. Next is an interpretation based on the visual data that has been found.

In concept, virtual tours can be a very effective tool in promoting tourist destinations, especially for potential tourists who want to get an overview before deciding to visit physically [5]. It also allows people with reduced mobility to experience the beauty and magic of these destinations. As a conceptual foundation in observing visuals and conducting analysis, the important elements that can be viewed from a virtual tour show are as follows:

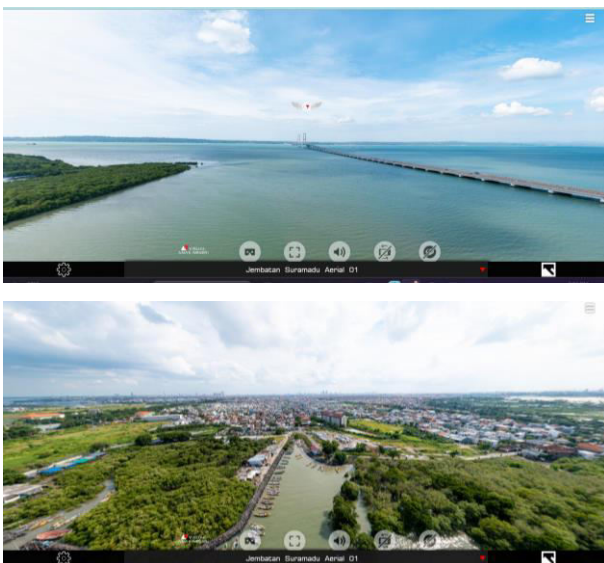
- a. 360-degree panoramas, i.e. 360-degree images that explore an entire environment are a major feature of a virtual tour, and they should be of high quality (resolution) and can be explored from a variety of visual angles [6]
- b. Intuitive navigation, in the sense that the visual display should allow users to navigate the surrounding environment easily. This includes icons or arrows indicating directions that can be explored and features for zoom-in zoom and zoom-out options [7]
- c. Interactive means it should include information popups when the user clicks on certain objects in the tour integrated with video or audio containing links to additional information. The more and detailed information allows users experience the visualization through narration of the tourist spots [8]
- d. 3D-view allows users to enter a space or environment with greater depth and wider perspectives.
- e. Customization that can be tailored to a particular brand or purpose. This strategy may include adding logos, colors, and other design elements that reflect the brand identity or theme of the tourist attraction.
- f. Maps and floor plans should cover various areas and assist users in navigating and understanding the structure of the environment [9]
- g. The use of appropriate light and color is expected to enhance the visual appearance and experience of the users. It is very important to describe the environment well and highlight relevant features [10]
- h. High-quality images and videos are expected to provide a realistic and engaging visual experience to the users, similar concept with the engagement through narration.
- i. Additional Content Apart from images and videos are also required such as ordinary photos, descriptive text and location maps which can be added to provide context and more in-depth information
- j. Easy access that can be done from various devices.
- k. The speed and performance of a virtual tour.

In this research object, the observed virtual tours are only limited from the Indonesia Virtual Tour directory. The site displays many tourist objects originating from many regions and cities in Indonesia. Overall, this directory summarizes several iconic places and well-known tourist attractions from each region in Indonesia.

The first object to be observed was the Suramadu Bridge Virtual Tour. This bridge has become very iconic as a link between the city of Surabaya and the island of Madura. As a tourist object, Suramadu Bridge is described explicitly in the visual appearance of the bridge building. On the Indonesia Virtual Tour website, the virtual tour of the Suramadu Bridge is described in a more aerial and macro-visual manner. Visitors can see

more broadly the object and stretch the appearance of the Suramadu bridge starting from the end of the Surabaya side to the end of the Madura Island side. The visualization allows users the dramatic experience of the object through the virtual tour.

In terms of visual objects, this display is of the selected objects only in the form of photos taken aerially from a certain height so that the visibility shown becomes wider. If the objects are captured from an important aspect (angle) through the virtual tour concept, the visualization of the objects, such as Suramadu Bridge, fulfills several elements of the object serving detailed information and dramatic experience [11]. In the 360-panoramic element, the visuals are fulfilling and appear more aesthetically pleasing because of the aerial viewpoint, which displays a wider visual surface. The navigation elements are able to be navigated even though on the dashboard the user is still a bit difficult to find the location of the 360 navigation button because the location and size are too small. This is also related to interactive elements, where visitors can also take action interactions easily in the virtual tour. Furthermore, in terms of 3D elements, customization, and floor plan maps, because the visuals are aerial and the objects are original shapes, they don't experience too many visual additions. Everything is displayed purely according to what is depicted by the original.



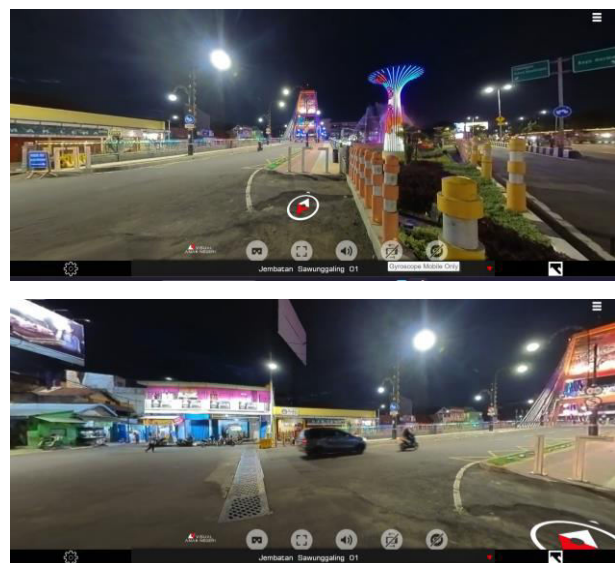
**Figure 3.** Suramadu Bridge Virtual Tour Object

Next is how to use light, the ease of access and the speed of the virtual tour work are also in the standard category. Even though it is displayed visually with high image quality and good lighting, interactive and information (in the form of narration) should be added so that visitors have a more visual and engaging experience, making narrative interactive promises to add a new richness to the experience [12].

The second object to be observed next is the Sawunggaling Bridge. In the city of Surabaya, the Sawunggaling Bridge is a relatively new bridge and is located in the Joyoboyo Terminal area. Visually, the Sawunggaling bridge is illustrated with a simple video taken from the middle of the location and visitors can rotate it in all directions so that they can see the situation around the Sawunggaling bridge.

As a video to provide a visual experience to the audience, the virtual tour presented is still too simple because the aesthetic elements in taking the camera's point of view should also be taken into account. However, because this 360-degree video wants to describe the actual situation of the Sawunggaling bridge, the result is too unattractive at the visualization level. If observed from the panoramic element, this object is visually fulfilling, although in depiction the angles that appear are less aesthetically pleasing. The process of taking pictures during recording seems to have not considered time and momentum so that the resulting images can be visually satisfying. From the navigation elements, there are already clear navigation buttons that make it easy for visitors to make visual movements. In interactive elements, all button functions in navigation can function properly, and this increases the level of visitor interaction quite well [13].

Furthermore, in the floorplan map element and because the video depiction was very short with a close angle from the object, it can be said that the floorplan and depiction of the detail object is not maximized. Especially with the visualization of the environment around the tourist object which has not been neatly arranged, so that if it is rotated 360-degree visualization, there are still many aesthetic deficiencies in certain angles.



**Figure 4.** Sawunggaling Bridge Virtual Tour Object

The next observed object is the Submarine Monument Virtual Tour. As an old tourist object in the city of Surabaya, the Submarine Monument has ample land area for tourists. The map arrangement has also been arranged neatly so that it attracts tourists to visit. If observed from the panoramic view, many monument tourism objects display a more dimensional inside space. So visitors do not just stop at one view, but can also enter a more dimensional view into a deeper room.

From the navigation and interactive elements, the Submarine Monument object is more interactive, and the navigation used is relatively more varied because there are many rooms that can be explored optimally. The only issue from the visualization lies just in the initial navigation after the home button, which actually displays a less representative visual appearance. In terms of maps and floor plans, due to the presence of more dimensional space, the existence of spatial space becomes very important to be explained in an informative manner. In addition, these objects also provide clear button instructions to make it easier for visitors who want to explore.

In terms of the elements of customization, the quality of the images and videos produced is slightly more interesting than the previous object of the Sawunggaling bridge; small adjustment is needed for aesthetic concept in taking the point of view, so that the mapping of the room becomes more attractive to visitors and provides a deeper experience of the object. For better experience, the presentation of floor mapping of an object through VR and augmented reality can be a powerful tool for museums [14]

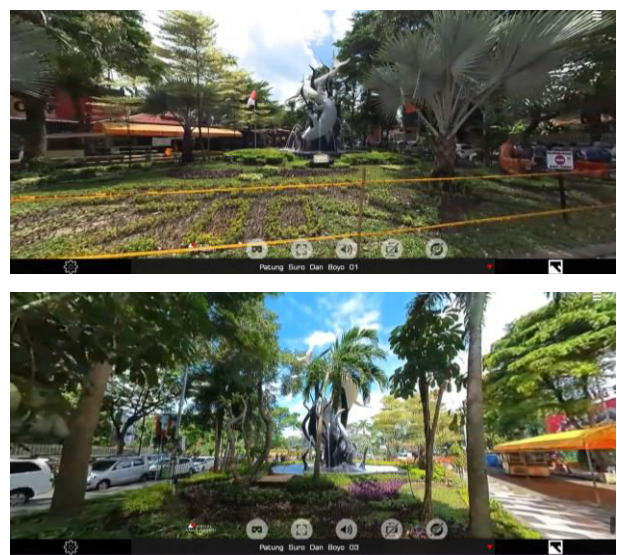


**Figure 5.** Submarine Monument Virtual Tour Object

The last object observed from this research is a virtual tour of the Sura and Baya statue. This tourist objects which is a welcome icon in the city of Surabaya

is located in a strategic location and has been around for a long time. As an icon of the City of Surabaya, it is often used as a destination and marker for tourists who are or have visited Surabaya. In the visual virtual tour, the depiction of Sura and Baya objects is not shown as a whole object. Apart from the fact that the place and location are not too large, it is also due to the limited environmental situation around it. So that the visual virtual tour only focuses on the statue object. When viewed from a panoramic viewpoint, there are many limitations in viewing angles, because the quality of the image recording is not too optimal in a narrow field.

In terms of navigation and interactivity, it is not much different from the previous objects. Display information related to how exploration can be done on these objects can be accessed easily, even though it is still in a limited space. From the elements of customization, the quality of the resulting images, of course it will be much more interesting if you try to maximize it conceptually. Understanding the concept of a tourist object is important as to deliver real and engaging by understanding the history behind the object; addressing the historical information affects the values of the tourist destination and broaden our understanding of the community's society through a continuous period of its tourism development [15].



**Figure 6 .** Sura Baya Statue Virtual Tour Object

#### 4. CONCLUSION

A virtual tour as an alternative tour that creates a travel experience without having to visit the place directly should be presented in more detail and pay more attention to its visual aesthetics. Although several virtual tourism objects in the city of Surabaya have fulfilled the conceptual elements of designing a virtual tour, a comprehensive concept still needs to be carried out regarding the technical shooting, technical information presentation, and technical details of each

object. So in the end the goal of providing an alternative tour is not just to do it sparingly, but in the future to be able to exist as a form of real imagination that is able to meet the expectations of virtual tour visitors.

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