

## **Tourism 4.0, digital-based tourism to improve the welfare of people in East Java: Trend Analysis**

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### **Abstract**

A new virus shook the world from China that spread to various countries globally at the end of 2019. The widespread of a virus called Covid-19 has now become a pandemic. The tourism sector is also one of the industries that are directly affected. According to the World Tourism Organization (UNWTO), the Covid-19 virus pandemic has caused restrictions on travel/tourism activities, which impact the disruption of global tourism. Sustainable Tourism Research, Tourism 4.0, digital-based tourism to improve the welfare of people in East Java, is part of the Global Sustainable Cities, Sustainable Development Goals (SDGs) master plan, the Sustainable Development Goals, which are the global development agenda of countries in the world. Goal 11: Sustainable Cities and Settlements, Green cities as cities that are designed to consider environmental impacts, are inhabited by people who have an awareness of conserving energy, water and food use and minimizing waste disposal, water pollution and air pollution. Sustainable Tourism, not only the concept of conventional tourism, but tourism that considers environmental impacts, inhabited by the community has an awareness of conserving energy, water and food use and minimizing waste disposal, water pollution and air pollution. In 2030, more than 60% of Indonesia's population are residents who live in urban areas, so Sustainable Tourism is a very important need to implement. The aim of the research is to create a sustainable tourism design and model, not only the concept of conventional tourism, but tourism that considers environmental impacts, inhabited by people who have an awareness of conserving energy, water and food use and minimizing waste disposal, water pollution and air pollution, based on digital technology. Research methods, secondary data collection, data analysis, continued with the preparation of digital data and the preparation of geographic information technology 4.0 in the form of web GIS and mobile GIS (Android or iOS). A Geographic Information System (GIS) is a special information

system that manages data that has spatial (spatial reference) information. Or in a narrower sense, is a computer system that has the ability to build, store, manage and display geographically efficient information

## **Keywords**

Sustainable Tourism Research, Digital-based tourism, conventional tourism

## **1. Introduction**

BPS (2020) mention, until now, tourism is still the Government's priority sector. It is considered capable of being the locomotive of the nation's economic movement. The tourism sector has become one of the third-largest contributors to national foreign exchange after exports of palm oil (CPO) and coal. The management of the tourism sector continues to be developed by the Government. Various policies have been carried out by the Government to make Indonesian tourism more advanced and known in the world's eyes. A well-managed tourism sector can become country branding and increase foreign exchange earnings and attract other sectors' movements. Several indicators show the tourism sector's development, namely foreign exchange earnings and the number of tourist arrivals coming to Indonesia. Both offer an increasing trend. In 2015, 10.23 million foreign tourists came to Indonesia, and in 2019 the number increased to 16.11 million. The Indonesian tourism sector in 2018 was recorded as the 9th highest growth sector in the world, ranked 3rd in Asia, and number 1 in the Southeast Asia region, according to The World Travel & Tourism Council (WTTC). Also, based on The Travel & Tourism Competitiveness Report, at the World Economic Forum, the ranking of Indonesia's tourism competitiveness index in the world increased from 42 in 2017 to 40 in 2019 from 140 countries. The Ministry of Tourism's decision to launch various programs to improve Indonesia's tourism sector's progress shows the increasing government awareness of the potential of tourism.

BPS (2020) also told, a new virus shook the world from China that spread to various countries globally at the end of 2019. The widespread of a virus called Covid-19 has now become a pandemic. The tourism sector is also one of the industries that are directly affected. According to the World Tourism Organization (UNWTO), the Covid-19 virus pandemic has caused restrictions on travel/tourism activities, which impact the disruption of global tourism. At the beginning of 2020, almost all international destinations have imposed travel restrictions. In Africa, Asia-Pacific, and the Middle East, for example, full restrictions on tourist destinations have been implemented to prevent the virus's spread from spreading. UNWTO also explained that in April 2020, it is estimated that 96 percent of 209 tourist destinations worldwide have implemented restrictions, where 90 destinations are partially/wholly closed, and 44 other destinations are closed only to tourists from specific countries (Covid-19 Related Travel Restriction UNWTO, 2020). The Covid-19 pandemic also caused the Indonesian tourism industry to experience a crisis. Since the beginning of 2020, the number of foreign tourists visiting Indonesia has continued to decline. The decrease in the number of foreign tourist arrivals in February even reached 30.42 percent compared to the previous month. Apart from having an impact on foreign exchange earnings, the pandemic will also affect other sectors. Other tourism support sectors were also affected, such as the closure of 1,266 hotels in 31 provinces in early April. The pandemic has also resulted in the loss of livelihoods for residents around tourist attractions to layoffs, which resulted in increased unemployment.

BPS (2020) also briefly, the impact of travel restrictions became even more pronounced when the Chinese Government officially announced a policy to ban its citizens from traveling abroad at the end of January. It has dramatically reduced the number of tourists visiting Indonesia, considering that tourists from China are among the three countries with the highest number of visits. It has been recorded that more than 10,000 trips from China to Indonesia have been canceled. The majority of the trip cancellations came from Wuhan, where the Covid-19 virus cases were first discovered. To maintain the Indonesian tourism sector's performance amid the outbreak, the Government is trying to keep the number of tourists visiting from domestic tourists. It is done to stabilize the contribution of tourism to the economy because the tourism sector has contributed to the Indonesian economy. To attract domestic tourists, the Government has prepared incentives by providing discounted flight tickets to 10 tourist destinations to attract foreign tourists. The Government also provides subsidies to local governments for hotel and restaurant tax exemptions for business actors to reduce the Covid-19 pandemic impact on the tourism industry.

## **2. Literature Review**

Sudapet et al (2020) Tourism, Accommodations, Food Services, and Regional GDP, explained One of the Government's strategies is to develop prime tourist destinations named 10 New Bali Destinations. It was done to introduce further the tourism potential of other than Bali to the world. The determination of these ten priority destinations is a mandate of the President, through the Cabinet Secretariat letter Number B-652 / Seskab / Maritime /

2015 dated November 6, 2015, regarding Directives from the President of the Republic of Indonesia regarding Tourism and Presidential Directives at the Early Years Cabinet Meeting on January 4, 2016. Of these, four others are categorized as Super Priority Destinations, and President Joko Widodo added one destination to 5 Super Priority Destinations in 2019. In the second term of President Joko Widodo's administration (2019-2024), the development program of 10 Priority Destinations and 5 Super Priority Destinations remains the Government's focus. The Government also carries out improvement and infrastructure development to support connectivity to support the tourism sector's growth and attract foreign tourists.

Sudapet et al (2019) Influence of Supply Chain Integration, IT Practices, and Visibility on Modular Design and Supply Chain Agility, Supported Maritime and Tourism Business in Indonesia, and also Sudapet et al (2019) Exploring Mediating Role of Supply Chain Management between Logistic Management, Supplier Selection, and Planning of Supply Chain and Sustainability, Supported Tourism Business in Indonesia, explained The availability of adequate supporting facilities must support an advanced tourism sector. The tourism supporting facilities include the availability of hotels, restaurants, and accommodation. Conceptually, the accommodation business is a building business or a part of a specially provided building, and everyone can stay, eat, and get services and other facilities with payment. One type of tourism support accommodation is hotels/inns

Sudapet et al (2019) Indonesia's research in tourism and digital tourism and also Sudapet et al (2019) Tourism, maritime research in the world and its impact in Indonesia, explained Sustainable Tourism Research, Tourism 4.0, digital-based tourism to improve the welfare of people in East Java, is part of the Global Sustainable Cities, Sustainable Development Goals (SDGs) master plan, the Sustainable Development Goals (TPB), which are the global development agenda of countries in the world. Goal 11: Sustainable Cities and Settlements, Green cities as cities that are designed to consider environmental impacts, are inhabited by people who have an awareness of conserving energy, water and food use and minimizing waste disposal, water pollution and air pollution. Sustainable Tourism, not only the concept of conventional tourism, but tourism that considers environmental impacts, inhabited by the community has an awareness of conserving energy, water and food use and minimizing waste disposal, water pollution and air pollution.

According to Media Indonesia (2020), some factors show Indonesia's financial strength. The first factor is optimism for the consumer confidence index and economic condition index throughout 2019. The second is fiscal policies and budget allocations in the 2020 State Budget, which can mitigate the global economic slowdown. The increase in activities of infrastructure development in so many regions causes the economy stronger. The fourth factor is the synergy between the private sector and BUMN and the cooperative and micro-small business sectors' strong performance. The last one is the delivery of five priority development programs from the Government. The five programs include human resource development, infrastructure development, simplification of all regulation and licensing forms, economic transformation, and simplification of the bureaucracy (Media Indonesia, 2020). The Coordinating Minister for the Economy said that the Government would carry out three different strategies. First, the Government carried out a structural transformation policy to increase economic growth by increasing domestic demand and improving international trade performance. Second, the Government maintains the stability of domestic prices and exchange rates for the sake of macroeconomic stability. Third, the Government will continue to increase inclusiveness and a sustainable economy. Meanwhile, several groups suggested steps that need to be taken in facing economic conditions throughout 2020. First, accelerating the realization of government spending, such as social assistance. Second, accelerating the development of national tourist destination centers, especially in Lake Toba, Borobudur, Likupang, Labuan Bajo, and Mandalika. Stimulus assistance for the tourism sector also needs to be increased through fiscal and non-fiscal policies. Third, accelerate government spending, especially those that are labor-intensive in the context of absorbing labor, especially in infrastructure development at the central and regional levels. Fourth, optimizing the role of the APBN while observing safe and controlled boundaries to respond to the economic situation. Fifth, accelerate and expand the People's Business Credit program. The projection of economic growth in 2020 will initially increase compared to the realization of economic growth in 2019. Bank Indonesia (2020), in December 2019, issued an estimated value of Indonesia's economic growth of between 5.1-5.5 percent. It is supported by most people's optimism regarding the recovery in the world economy and improvement in the prices of essential commodities, which will boost export and investment performance.

### **3. Methods**

In 2030, more than 60% of Indonesia's population are residents who live in urban areas, so Sustainable Tourism is a very important need to implement. The aim of the research is to create a sustainable tourism design and model, not

only the concept of conventional tourism, but tourism that considers environmental impacts, inhabited by people who have an awareness of conserving energy, water and food use and minimizing waste disposal, water pollution and air pollution, based on digital technology. Research methods, secondary data collection, data analysis, continued with the preparation of digital data and the preparation of geographic information technology 4.0 in the form of web GIS and mobile GIS (Android / iOS). A Geographic Information System (GIS) is a special information system that manages data that has spatial (spatial reference) information. Or in a narrower sense, is a computer system that has the ability to build, store, manage and display geographically efficient information, for example data identified by location, in a database. In general, the notion of a Geographical Information System is a component consisting of hardware, software, geographic data and human resources that work together effectively to enter, store, repair, update, manage, manipulate, integrate, analyze and display data in information. geographically based

#### **4. Results and Discussion**

The trend of foreign tourist visits to Indonesia decreased from 1,272,083 people in January 2020, 863,960 people in February 2020, and 470,898 people in March 2020. Amid the global economic recovery, the Indonesian economy is estimated to have a relatively good level of resilience in the face of world economic turmoil.

The outbreak of the Covid-19 case in China prompted Bank Indonesia to revise its economic growth forecast to be around 5.0-5.5% in 2020. Indonesia's economy was affected because the Chinese economy showed a weakening due to the impact of Covid-19. As a result, economic activities related to the Chinese economy are increasingly influencing the decline in the tourism, export, and investment sectors' performance. Besides, the revised projection was also a result of the spillover effect on other countries, the global economic slowdown, and uncertainty on world financial markets. Covid-19, which is increasingly widespread in the country, has caused the economy to be increasingly depressed by limiting community activities' mobility, including production activities and economic activities.

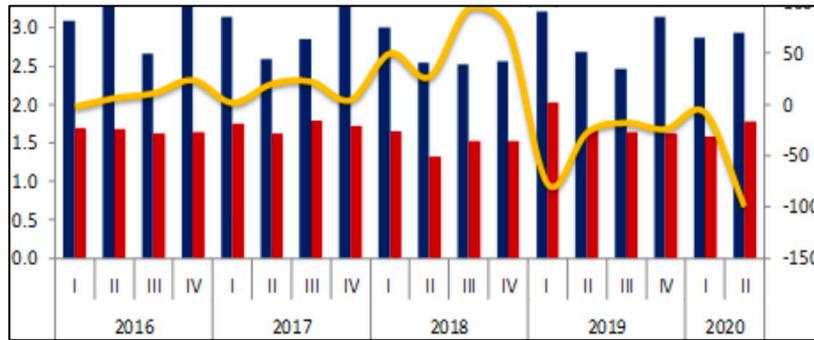
In 2019, Bali Province had a growth rate of 4.01 percent. When viewed based on its contribution to the national economy, Bali Province contributed 1.57 percent. The sectors related to tourism, such as providing accommodation and food and drink, the transportation and warehousing sector, the wholesale and retail trade sector, and the repair of cars and motorbikes, have a significant contribution to the economy Bali Province. In the 2020-2024 RPJMN program, maritime economic development supports Indonesia's vision as the Center for World Maritime Civilization. Improving marine and marine management is one of marine, and marine economic growth focuses, as stated in the 2020-2024 RPJMN. Furthermore, the programs that will be carried out include building Indonesia's maritime culture, protecting the sea and marine resources, focusing on building seafood sovereignty through the development of the fishery industry and the welfare of fishers. Also, it continues to develop and develop maritime infrastructure and connectivity by creating a sea highway and marine tourism. Coordination between Bank Indonesia and the Government and related authorities is continuously strengthened to maintain economic stability, boost domestic demand, and increase exports, tourism, and foreign capital inflows, including foreign investment (PMA). Sulawesi Island experienced an increase in investment value compared to the previous year, reaching the US \$ 3.50 billion in 2019. The increase in the value of the foreign investment in Sulawesi Island is massive, up to 50.49 percent compared to 2018. One of the factors that have led to the high increase in the value of foreign investment is the opening of various direct flights from China to Manado so that it has an impact not only on the tourism sector but also on the number of foreign investors. From this route, many trading activities have been opened, bringing in more investors to Sulawesi. Infrastructure development in coordination between several Ministries continues to be encouraged and bears sweet fruit. Indonesia is easy to reach, with thousands of destinations, both already popular and those that are still in development. Tourism has become a new mainstay for the Government in providing state revenue. The tourism sector's foreign exchange source is currently in the fourth position, which is predicted to beat the plantation and mining sectors.

The world of tourism has experienced a decline in performance since the beginning of 2020. Many countries have begun to limit and even close off tourist travel activities. The phenomenon has made the tourism sector decline, including in Indonesia. The spread of the pandemic has caused foreign tourist arrivals to continue to decline until March. In January, foreign tourists' visits through the 26 main entrances were recorded at 1.27 million visitors or a decrease of 7.62 percent compared to December 2019

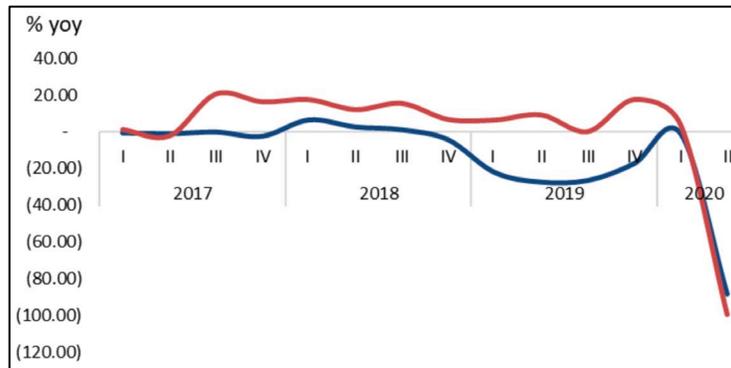
Meanwhile, in February, foreign tourist arrivals decreased by 32.08 percent to 863.96 thousand foreign tourists. The condition continued until March, when foreign tourist visits reached 470.90 thousand or reduced by 45.50 percent from the previous month. Until March 2020, Soekarno-Hatta Airport is still one of the main entrances with the number

of foreign tourist arrivals reaching 357 thousand. Even though it is still the main entrance, the number of foreign tourist arrivals in March 2020 decreased by 75.42 percent compared to the same month in 2019 (year on year). The same thing happened at all the main entrances for foreign tourists, such as Ngurah Rai Airport (decreased 64.72 percent year on year), Juanda Airport (fell 71.83 percent YoY), and Hang Nadim in Batam (dropped 74.74 percent YoY).

International tourists arrived via 20 main entry ports in July 2020 were 5,770 people. This total increased from the total entering during the previous month, which was 3,200 people. The increase in international tourists who entered in that month compared with the previous month occurred at 5 main ports of entry. While, compared with the total entering international tourists. in July 2020 compare with July 2019, these total tourists decreased by 89.12 percent. The Room Occupancy Rate (ROR) of star-classified hotels in all provinces in July 2020 increased in 30 provinces compared by the previous month. The ROR in that month ranged between 2.57-41.03 percent, the highest ROR was in DKI Jakarta. In the same month, the average length of stay by foreign guests in star-classified hotels ranged between 1.00-5.26 days with the longest length of stay in Jambi. Figure 1 shows growth in tourists and length of stay in East Java, Indonesia, and Figure 2 shows growth in the number of air passengers in East Java, Indonesia



**Figure 1. growth in tourists and length of stay in East Java, Indonesia (BI, 2020)**



**Figure 2. growth in the number of air passengers in East Java, Indonesia (BI, 2020)**

The Covid-19 pandemic has had an impact on various fields and sectors. The existence of the Covid-19 pandemic has also had an impact on changing people's lifestyles, thus requiring people to be able to adapt to new habits. The community must be able to adapt to carry out normal activities while still implementing the principle of physical distancing and complying with health protocols recommended by the government. With increasingly sophisticated information technology, these changes and impacts can be monitored and obtained easily and almost in real time.

The rapid development of information and communication technology has an impact on changes in various fields, such as social, economic, political, and cultural, as well as an impact on changes in lifestyle, including consumption patterns and the way people sell and shop. In this era, people make use of information and communication technology to buy or sell goods or services via the internet. This phenomenon is known as e-commerce. The e-commerce phenomenon provides a choice of ways to shop for people without the need to come directly to the store.

In the last five years, the use of Information and Communication Technology (ICT) by households in Indonesia has shown a rapid development. The percentage of the population using cellular phones continues to increase, until in

2018 it reached 62.41 percent. The growth in cellular phone use was also followed by growth in computer ownership and internet access in households, which reached 20.05 percent for computer ownership and 66.22 percent for household internet access. Internet use has also increased during the period 2014-2018, as indicated by the increase in the percentage of the population accessing the internet in 2014 around 17.14 percent to 39.90 percent in 2018. In contrast, ownership of fixed wireline in households has decreased from the year to year, in 2014 the percentage of households owning or controlling landline telephones was around 5.54 percent, decreasing to 2.61 percent in 2018. In 2014, the percentage of the population aged 5 years and over had accessed the internet in the last three months around 17.14 percent and increased to 39.90 percent in 2018.

## **6. Conclusion**

In the last five years, the use of Information and Communication Technology (ICT) by households in Indonesia has shown a rapid development. The preparation of digital data and the preparation of geographic information technology 4.0 in the form of web GIS and mobile GIS (Android or iOS), a Geographic Information System (GIS) is a special information system that manages data that has spatial (spatial reference) information, or in a narrower sense, is a computer system that has the ability to build, store, manage and display geographically efficient information, has a very wide open opportunity in Indonesia. In the last five years, the use of Information and Communication Technology (ICT) by households in Indonesia has shown a rapid development. The Covid-19 pandemic has had an impact on various fields and sectors. The existence of the Covid-19 pandemic has also had an impact on changing people's lifestyles, thus requiring people to be able to adapt to new habits. The community must be able to adapt to carry out normal activities while still implementing the principle of physical distancing and complying with health protocols recommended by the government. With increasingly sophisticated information technology, these changes and impacts can be monitored and obtained easily and almost in real time

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