TOURISM FOR ECONOMIC RECOVERY IN CENTRAL KALIMANTAN : SIMULATION USING INPUT-OUTPUT TABLE

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Abstract

The Covid-19 pandemic has had a negative impact on Central Kalimantan's economic growth with a contraction of 1.40 percent in 2020. Central Kalimantan's economic is still highly dependent on natural resource-based sectors, and it will be very vulnerable because the movement of the economy will be greatly influenced by global price volatility and its uncertainty. The tourism sector, therefore, is an important sector that is expected to be an alternative driver sector of economic recovery. This study aims to measure and analyze the relationship between the tourism sector and other sectors, as well as to simulate investment policies in Central Kalimantan. Limited studies that focus on the tourism sector as planning for economic recovery after the pandemic, especially in Central Kalimantan, can make this research as a reference for policy makers in economic planning. The Input Output table released in May 2021 becomes secondary data used in research with forward and backward linkage analysis and investment simulations in the tourism sector. The results showed that the tourism sector is the sector that has the highest forward linkage in Central Kalimantan. Furthermore, if investment is given to the sector of accommodation and food service activities, it will provide the greatest boost to the total economy compared to other tourism sectors. However, the transportation sector which is the infrastructure in tourism also has an important role as a leading sector with more than one forward and backward linkage index.

Keywords: Pandemic, Tourism Sector, Economic Recovery, Input Output Table

Abstrak

Pandemi covid-19 memberikan dampak negatif terhadap pertumbuhan ekonomi Kalimantan Tengah dengan kontraksi sebesar 1,40 persen di tahun 2020. Pertumbuhan ekonomi Kalimantan Tengah ini masih sangat bergantung pada sektor berbasis sumber daya alam. Hal ini cukup mengkhawatirkan karena pergerakan ekonominya akan sangat dipengaruhi volatilitas harga global dengan ketidakpastiannya. Oleh karena itu, sektor pariwisata menjadi salah satu alternatif sektor penting yang diharapkan dapat menjadi sektor pendorong pemulihan ekonomi. Penelitian ini bertujuan untuk mengukur dan menganalisis keterkaitan sektor pariwisata dengan sektor lain, serta melakukan simulasi kebijakan investasi di Kalimantan Tengah. Terbatas kajian yang memfokuskan sektor pariwisata sebagai perencanaan dalam pemulihan ekonomi pasca terjadi pandemi, terutama di Kaliamntan Tengah, dapat menjadikan penelitian ini sebagai salah satu acuan pembuat kebijakan dalam perencanaan ekonomi. Tabel Input Output yang dirilis bulan Mei 2021 menjadi data sekunder yang digunakan dalam penelitian dengan analisis keterkaitan ke depan dan ke belakang serta simulasi investasi di sektor pariwisata. Hasil penelitian menunjukkan bahwa sektor pariwisata menjadi sektor yang memiliki keterkaitan ke depan yang paling tinggi di Kalimantan Tengah. Selanjutnya, jika investasi diberikan pada sektor penyediaan akomodasi dan makan minum, maka akan memberikan dorongan paling besar terhadap total perekonomian dibanding sektor pariwisata lainnya. Namun, sektor transportasi yang menjadi infrastruktur dalam pariwisata juga memiliki peran penting sebagai sektor unggulan dengan indeks keterkaitan ke depan dan ke belakang lebih dari satu.

Kata Kunci: Pandemi, Sektor Pariwisata, Pemulihan Ekonomi, Tabel Input Output

I. INTRODUCTION

The COVID-19 pandemic impacts public health conditions and causes a high level of uncertainty in world economic conditions (International Monetary Fund, 2021). This economic uncertainty is also proven in Altig et al. (2020) research that there is disagreement among professionals in estimating future economic growth. Baker et al. (2020) are also in line with this statement. Even in their research, the economic uncertainty's shock of this pandemic will be equivalent to the conditions during the Great Depression of 1929-1933.

Globally, International Monetary Fund (2021) has revised its 2020 growth estimate with a decline of more than 6 percent compared to its initial estimate in 2020. It caused global growth to contract 3 percent in

2020. However, the IMF stated that this condition would be much worse if there is no extraordinary policy support; it is estimated that the impact will be three times greater. Indonesia also experienced economic contraction, with a decline in the economic growth of 2.07 percent (BPS-Statistics Indonesia, 2021).

The province of Central Kalimantan, which has an area of 153 km2 or the second largest in Indonesia, has not been spared the impact of the Covid-19 transmission. The province, which has the advantage of being in the demographic bonus zone with a population composition of 15-64 years old, which reaches 71.4 percent of the total population, makes Central Kalimantan a focus of attention for economic recovery. As a province that accounts for 0.96 percent of the Indonesian economy, Central Kalimantan's total economy throughout 2020 experienced a contraction of 1.40 percent compared to the previous year (BPS Central Kalimantan Province, 2021). History records that at least this decline occurred for the first time in 2020 in the last 10 years.

Based on the economic distribution in 2020 and the years before the COVID-19 pandemic, it shows that the province of Central Kalimantan is rich in natural resources which are export commodities. Crude Palm Oil (CPO) are the two commodities that dominate Central Kalimantan's exports to date. Around 70 percent of Central Kalimantan's exports are exports of these two commodities. The impact is that the movement of coal and CPO commodity prices in the global market is very vulnerable to coloring the economy of Central Kalimantan. In 2020, coal and CPO commodity prices in the global market fell sharply. The effect on the economy of Central Kalimantan in the coal mining sub-sector experienced a decline in growth or contraction of 13.34 percent. As for the annual plantation sub-sector and the food and beverage industry, although the growth was still positive, it was very small, at 0.81 percent and 0.38 percent, respectively.

Central Kalimantan's economic recovery will be very vulnerable if it is only based on natural resource-based sectors. In addition to the sector being highly dependent on the global economic situation, environmental issues are also increasingly being echoed as an effect of excessive exploitation of natural resources. Valuable lessons can be learned from the floods in neighboring provinces, namely South Kalimantan and East Kalimantan. It shows that if natural resources are continuously exploited, there will be consequences for adverse environmental impacts. Based on this, Central Kalimantan needs to examine other sectors that can support regional economic recovery.

The tourism sector is a sector that is of concern to both the central government and local governments at this time. It is because the sector plays an essential role in the economy, both as a source of foreign exchange earnings and job creation (Lumaksono et al., 2012). In addition, tourism also has a reasonably significant growth opportunity with liberalization supported by more accessible access to transportation between countries. Moreover, (Jucan & Jucan, 2013) research proves that the tourism sector can be a mainstay sector for economic recovery after a recession. One reason is that the tourism sector has strong links with other industries in the economy where it provides significant indirect benefits. At the same time, the tourism sector can increase trade opportunities, investment in private and public infrastructure, local development, etc.

Seeing the importance of the role of tourism, the government can consider it as an alternative sector for regional economic development by implementing various policies related to tourism. Tourism policy itself is part of economic policy by taking into account the structure and economic growth in tourism planning. Policy support from the government for tourism development plays a key role in the successful implementation of this alternative sector. In addition to the government, the private sector and the community are also required to be involved in planning and supporting constructive tourism policies.

For this reason, it is necessary to conduct a study on how ready the Central Kalimantan is to restore its economy based on tourism. This study aims to: (1) measure and analyze the linkages of the tourism sector to other sectors in Central Kalimantan; (2) conduct a more detailed simulation of investment policies in the tourism sector to find out the leading sectors in improving the economy of Central Kalimantan. By knowing these leading sectors, policymakers can make more targeted planning strategies to create an effective and efficient economic recovery.

There are still limited studies that focus on the tourism sector as planning for economic recovery after the pandemic. In addition, no research has been found that focuses on the tourism sector of Central Kalimantan Province during the pandemic. Furthermore, this study uses the latest data, namely the Input-Output table, which was just released by the Central Statistics Agency in May 2021. Several studies that have been conducted on tourism-based economic recovery using descriptive analysis are Bhinadi et al. (2021), Herdiana et al. (2020), Simatupang & Sukmadi (2021), and Rodríguez-Antón & Alonso-Almeida (2020). Research using input-output tables has been conducted by Handayani (2017) and Malba & Taher (2016). Several other studies on the economy of the tourism sector were conducted in Central Kalimantan, such as Novalisa et al. (2017) and Rangin (2016).

The 2016 Central Kalimantan Province input-output table is used to answer the research objectives: Domestic Transactions Based on Producer Prices with a classification of 15 sectors sourced from the Central Kalimantan Provincial Statistics Agency. Then, the tourism sector is further broken down into four sub-sectors, namely Transportation; Trading; Provision of Accommodation and Food and Drink; and Recreational Services. The resulting analysis is a linkage analysis consisting of backward linkages and forward linkages.

II. LITERATUR REVIEW

A. Tourism

Tourism is a dynamic activity that involves various other sectors. There are three main elements that enable tourism to be developed, namely the origin of tourists, transit areas, and tourist destinations (Priyanto & Pirastyo, 2019). The offer of goods and services in the tourism sector, directly and indirectly, impacts the economic activities of other sectors of society. Tourism is closely related to this other sector, which is a combination of phenomena with reciprocal relationships, namely interactions with tourists, business people, governments, tourist destinations, and communities around tourist areas (Anggarini, 2021). Tourism can also be an engine of economic growth, so it is important to create partnerships between the public and private sectors to stimulate investment in this sector (Surugui et al., 2009).

Central Kalimantan, whose capital is Palangkaraya, is the largest province on the island of Borneo, with an area of 153,564.50 km2 (BPS, 2021). With this area, Central Kalimantan Province has excellent potential to develop its nature-based tourism, especially in its area, which is fed by the longest river in Kalimantan, namely the Kahayan River (Asmarani et al., 2020). The river has an area of 81,648 km2, a length of 600 km, a width of 500 m and a depth of up to 7 m. As the gateway to Central Kalimantan Province, Palangka Raya City has a variety of tourist attractions. The beauty of nature, the uniqueness of flora and fauna is some of the tourist attractions. The distinctive and unique arts and culture of the Dayak tribe add to the selling value of tourism in the city of Palangka Raya (Arianti, 2017).

B. Tourism in Times of the Covid-19 Pandemic

Concerns about the impact of Covid-19 caused a drastic decline in foreign and domestic tourist arrivals. According to Sugihamretha (2020), the decrease in the tourism business impacts MSME businesses and disrupts employment opportunities. The employment impact on the tourism sector will have a significant effect because the sector is a labor-intensive sector (Sanaubar et al., 2017). In addition, the decline will not only have an impact on the sector but also on its derivative sectors, which creates a multiplier effect. Ongoing mass job losses also magnify the long-standing vulnerabilities, and injustices tourism workers face in the form of low wages, lack of benefits and 'timely' employment practices (Benjamin et al., 2020). According to Asmoro et al. (2021), tourism actors can do several things at tourist attractions to provide a sense of security during this pandemic. The things such as increasing sanitation standards, increasing security standards, making staycations which are an option for tourists who do not want to interact with other tourists, avoiding large groups in travel, and making an individual travel service.

Research conducted by Qiu et al. (2020) aims to describe residents' perceptions of the risks posed by tourism activities and estimate their willingness to pay more to the tourism sector to reduce public health risks. The study results indicate that most respondents are willing to pay more for risk reduction and actions in response to the pandemic crisis.

Another research related to tourism during the pandemic is the research conducted by Yang et al. (2020). The study aims to understand the impact of infectious disease outbreaks on tourism and represents a pioneering research effort in evaluating the effects of the coronavirus on tourism. From this research, information was obtained that the impact of household welfare due to the coronavirus outbreak hampered tourism consumption and health status. In addition, the results obtained are that comprehensive policies increase tourism consumption and rebuild health, although at the expense of regular consumption.

Riadil (2020) researched the impact of tourism in Indonesia. The study results highlight the negative impact of the tourism sector and the Indonesian hospitality industry as a consequence of a significant disease pandemic spreading throughout the world. It said this was an unprecedented tourism crisis, and the impact had been an economic disaster. Rehabilitation should be carried out in stages along with the recovery of other sectors.

III. METHOD

This study processes secondary data types from the 2016 Central Kalimantan Province Input-Output Table: Domestic Transactions based on Producer Prices with a classification of 52 sectors sourced from the Central Statistics Agency of Central Kalimantan Province. Of the 52 sectors, aggregation of the sector was carried out into 15 sectors, which included the tourism sector. The tourism sector is also broken down into 4 sub-sectors: Wholesale and Retail Trade, Accommodation and Food Service Activities, Transportation, and Recreation Services.

The analytical method used is the Input-Output analysis method. The Input-Output method analyses the economy of a region that aims to see the interrelationships between economic sectors in a region overall. In an open and static input-output model, transactions used in the preparation of I-O tables must meet three basic assumptions, namely (Cahyono & Sumargo, 2015):

1. The homogeneity assumption requires that each sector produces a single output with a single input structure and that there is no automatic substitution between the various sectors;
2. The assumption of proportionality requires that in the production process, the relationship between inputs and outputs is a linear function, namely that each type of output absorbed by a particular sector increases or decreases in proportion to the increase or decrease in the output of that sector;
3. Additive assumption, which is an assumption which states that the total effect of the

implementation of production in various sectors is produced by each sector separately. It means that outside the input-output system, all external influences are ignored.

The Input-Output table helps examine the level of mutual interrelationships among various sectors in an economy. In addition, the Input-Output table can also see an overview of the contribution of an economic sector to the economy as a whole or the growth potential of a particular sector economy.

The analysis is divided into linkage analysis and multiplier analysis. Linkage analysis consists of backward linkage and forward linkage. The backward linkage is to calculate the increase in the output of specific sectors, encouraging an increase in the output of other sectors. This backward linkage is obtained from the sum of all rows of a Leontief Inverse Matrix $((I-A^d)^{-1})$ in a column. The forward linkage is to calculate the total output created by increasing the output of an industrial sector through the output distribution mechanism in the economy. This forward linkage is obtained from the sum of all the columns of a Leontief Inverse Matrix $((I-A^d)^{-1})$ matrix in a row.

From this linkage analysis, an index can also be formed by making an average for all sectors, namely the dispersion index and the degree of sensitivity index. If the dispersive power index (α_j) is more than 1, then the influence of product demand in sector j on the growth of other sectors is high. On the other hand, if j < 1, then the influence of product demand in sector j on the growth of other sectors is low. If the degree of sensitivity index is more than 1, then the demand for other sector products is very influential on the growth of sector i, and vice versa.

The impact analysis calculated in this paper is the analysis of the output impact and Gross Value Added. Output impact analysis is used to calculate the portion of output formed due to each component of final demand and estimate the output created as a result of the projected final demand impact. The formula calculates the output in the input-output model: $XFD = (I–A^d)^{-1} F^d$. This formula reflects that the formation of output (X) is influenced by final demand (F^d). Analysis of the impact of NTB is obtained from the formula: $V = V X$. where V is the matrix of NTB; V is the diagonal matrix of the coefficients of NTB; $X = (I – A^d)^{-1} F^d$.

IV. RESULT AND DISCUSSION

A. Analysis of the Impact of Tourism on the Economy of Central Kalimantan

Central Kalimantan Province is the largest province on the island of Kalimantan. The province passed by the Equator has a variety of fascinating and unique tourist attractions. The characteristics of the area, which is drained by many rivers, make it a province with local characteristics different from other provinces in Indonesia. There are 11 major rivers, including the Barito River and 33 other smaller rivers that pass through the province. The existence of the largest orangutan conservation in the world in

Tanjung Puting National Park is also a magnet for foreign and domestic tourists.

When viewed based on the number of tourists visiting Central Kalimantan shown in Table 1, it can be seen that every year from 2017 to 2019, there was an increase in the number of tourists both from abroad and the archipelago. Even in 2019, tourist growth reached more than 50 percent, with a total of 1.5 million tourists. It shows that the tourist attraction of Central Kalimantan has increased every year in the eyes of tourists. However, the pandemic impact on tourism in 2020 is visible where the decline in the number of tourists is quite drastic to only 785,000 people or a decrease of almost 50 percent compared to 2019. It is in accordance with the statement of the World Tourism Organization (UNWTO) in March 2020, which stated that The impact of the Covid-19 outbreak would be felt in the tourism sector where around 80% of small and medium businesses from the tourism sector with millions of livelihoods around the world are affected by Covid-19 (Sugihamretha, 2020).

Table 1. Number of Tourists Visiting in Central Kalimantan Province Year 2017-2020 (People)

Year	2017	2018	2019	2020
International	26.159	38.610	61.479	2.365
Domestic	839.915	952.389	1.495.009	783.100
Jumlah	866.074	990.999	1.556.488	785.465

Source: BPS Central Kalimantan Province (2021)

Furthermore, it is necessary to determine the magnitude of the influence and linkage of the tourism sector to the economy of Central Kalimantan. It is to direct more appropriate policies for the recovery of the sector. The analysis used is the analysis in the Input-Output table. The results of the study will provide an overview of the linkages of the tourism sector to other sectors, both backward linkages power) and forward linkages.

Table 2. Index of Backward and Forward Linkage of Central Kalimantan Province

No	Sector	Forward Linkage	Backward Linkage
1	Tourism	1,8490	0,9939
2	Gas and Electricity	1,5556	1,4853
3	Manufacturing	1,3822	1,2270
4	Agriculture	1,3464	0,8793
5	Information and Communication	0,9458	0,9199
6	Construction	0,8685	1,0527
7	Business Activities	0,8601	0,9309
8	Real Estate	0,8268	0,8937
9	Financial Services and Insurance Activities	0,8007	0,8198
10	Public administration	0,7989	0,9973
11	Mining and Quarrying	0,7929	0,9850
12	Water supply, Sewerage, Waste Management &Remediation Activities	0,7548	0,9694
13	Wholesale and Retail Trade and repair of Motor Vehicles and Motorcycles	0,7514	0,9105

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No	Sector	Forward Linkage	Backward Linkage
14	Education	0,7346	0,8870
15	Human Health and Social Work Activities	0,7324	1,0483

Table 2 shows the magnitude of the relationship inter the economic sectors in Central Kalimantan Province, which is forward and backward linkage. Forward linkage analysis shows the relationship between downstream sector growth due to increased inputs provided by the upstream sector (Indriani & Mukhyi, 2013). The tourism sector has the highest forward linkage compared to other economic sectors in Central Kalimantan with which the index above 1. It means that the tourism sector will be affected the most if there is a change in the total economy. This high degree of sensitivity index also means that the economic conditions in Central Kalimantan, which experienced a contraction in the pandemic year, had a significant impact on the decline in the tourism sector's performance.

The next linkage analysis is backward linkage index. This index shows the impact caused by changes in a sector to changes in the sector's output as a whole. In Table 2, it can be seen that the tourism sector dispersion index is 0.9939, which means that the sector is still below the average dispersion index of other sectors. The spread index value, which is less than one, also shows that the tourism sector is still unable to become a strong driver of the economy of Central Kalimantan as a whole.

Table 3. Index of Backward and Forward Linkage of the Tourism Sector Central Kalimantan Province

No	Sector	Forward Linkage	Backward Linkage
1	Transportation	1,5119	1,0081
2	Wholesale & Retail Trade	1,1526	0,8733
3	Accomodation & Food Service Activities	0,8460	1,2596
4	Recreation Activities	0,7645	0,9344

If we look in more detail at the tourism sector, it can be seen that transportation is the sector that has the highest forward linkage with an index value of 1.5119. Unlike the case with backward linkages, accommodation and food service activities have the highest index value. Furthermore, from this linkage analysis, it can be seen which sectors are the leading sectors in tourism. A sector can be considered a leading sector if the index value of the degree of sensitivity and the index of spreading power is more than one (Indriani & Mukhyi, 2013). Of the four tourism sectors, transportation and warehousing are the leading sectors, with the value of both sector indexes being above one.

B. Tourism Sector Investment Injection Simulation

Based on the impact analysis derived from the Input-Output Table, simulations can be carried out to see how much impact a final demand in a particular sector has on the economy in general. For example, suppose an investment (one of the components of final demand) is injected with a certain amount in a sector. In that case, it can be seen that the additional output and gross added value formed as a result of the investment. In this study, the simulation facility will determine which tourism sector has the most significant impact on the economy. There are four scenarios in this study, namely:

Scenario 1. Investment of 1 billion rupiah to the wholesale & retail sector, other tourism sectors are zero.
Scenario 2. Investment of 1 billion rupiah into the transportation sector, other tourism sectors are zero.
Scenario 3. Investment of 1 billion rupiah into the accommodation & food service sector, other tourism sectors are zero.
Scenario 4. Investment of 1 billion rupiah into the recreation service sector, other tourism sectors are zero.

The following is the result of the simulation that has been carried out based on this scenario.

Table 4. Tourism Sector Investment Injection Simulation Results

Simulation	Output Impact (Rp)	Gross Value Added Impact (Rp)
Scenario 1	1,253 Billion	814 million
Scenario 2	1,446 Billion	690 million
Scenario 3	1,807 Billion	878 million
Scenario 4	1,340 Billion	821 million

The simulation results show that the injection of investment into the accommodation sector can significantly impact output and gross added value compared to injections in other tourism sectors with the same amount of injection. If the accommodation sector is injected with 1 billion rupiah, the economic output will increase by 1.8 billion rupiah, and the gross value added formed in total is 878 million rupiah.

Figure 1. Development of TPK for Star and Non-Star Hotels in Central Kalimantan Province
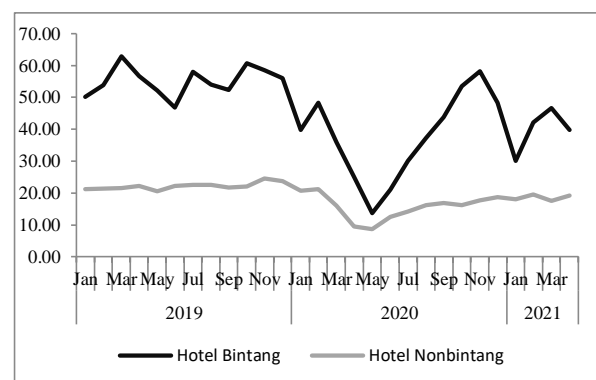
Source: BPS Central Kalimantan Province (2021) (processed)

The development of the accommodation service activities in Central Kalimantan is currently still not showing significant stretching during the pandemic. In Figure 1, it can be seen that until entering the second quarter of 2021, the Room Occupancy Rate (TPK) for star hotels is still at the level of 39.86 percent and non-star hotels at the level of 19.22 percent. When conditions before the pandemic hit, Central Kalimantan reached TPK in the range of almost 60 percent for star hotels and nearly 25 percent for non-star hotels. Itshows that the accommodation sector needs to be boosted to return to its pre-pandemic pattern.

Figure 1. Number of Passengers Coming to Air Transport in Central Kalimantan Province
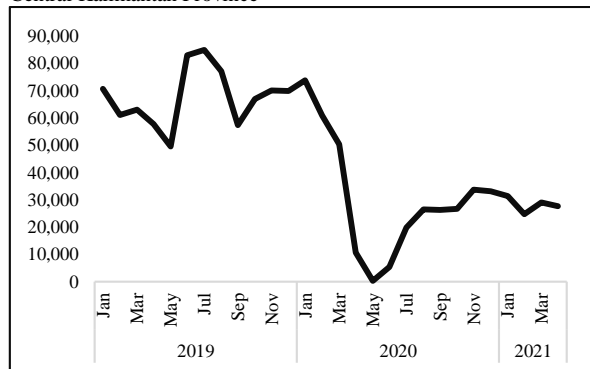
Source: BPS Central Kalimantan Province (2021) (processed)

Although the results of this simulation conclude that the most significant investment impact on the economy is an investment in the accommodation sector, this sector cannot stand alone without other infrastructure, namely the transportation sector. A reasonable accommodation sector but not supported by adequate transportation facilities will not attract Central Kalimantan tourism. In the previous discussion, it has been mentioned that the transportation sector is the sector with the most significant forward linkages. The backward linkage index is also above one, so transportation can also be the leading sector in Central Kalimantan tourism. It can provide information that both can be priority sectors in selecting investment for the tourism sector in Central Kalimantan. If you look at the transportation conditions in Central Kalimantan Province during the pandemic in Figure 2, there was a drastic decrease in the number of air transport passengers arriving. Even though there will be improvements in early 2021, like the accommodation business, the transportation sector still has the opportunity to lead to pre-pandemic conditions if stimulated by investment.

V. CONCLUSION

Based on the discussion above, it can be concluded that Central Kalimantan Province should no longer depend on the economy in extractive sectors, such as coal mining. The tourism sector can be an alternative as a driver of economic growth in Central Kalimantan, which is experiencing contraction during the pandemic. It is evidenced by the sensitivity index of the tourism sector of 1.8490 in Central Kalimantan, which is the highest compared to other sectors. When viewed from the simulation results, the most suitable investment to stimulate the tourism sector so that the optimal economic output is formed is in the accommodation and food and drink sector. However, the accommodation and eating and drinking sectors that are built must also be supported by transportation facilities. Moreover, the transportation sector is the leading sector of tourism, seen from the index of the degree of sensitivity and the index of spreading power which is more than one.

From the results of this study, recommendations can be given to policymakers that the tourism sector can accelerate economic growth in Central Kalimantan. The strengthening of the tourism sector can be done by stimulating investment in the sector of accommodation and food service activities; and transportation. More specifically, transportation's stimulating investment is an investment in road infrastructure. It is because some of the road conditions in Central Kalimantan Province are still damaged or heavily damaged. Of the 1,272.08 km of provincial roads, there is 246.09 km which are in damaged condition and 22.80 km which are heavily damaged. It is hoped that this infrastructure improvement can attract domestic and foreign tourists, which will restore the economy of Central Kalimantan Province.

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