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IMPLEMENTATION OF A MULTI-AIRPORT SYSTEM FOR AIRPORTS IN THE NEW CAPITAL CITY OF INDONESIA

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ABSTRACT

The development plan for the Capital City of Indonesia on Kalimantan Island requires support from various aspects, such as the economy, government, and transportation. Recognizing the potential for economic and trade development accompanied by the heavy traffic in the IKN area, it needs to be in line with adequate accessibility. The existing airports on Kalimantan Island, especially in East Kalimantan, have the potential to meet the demands of the community in the future. This paper aims to analyze the possibility of existing airports around the new Capital City of Indonesia (IKN) area to be used as a Multi-Airports System to support the successful transfer of Capital City of Indonesia.

KEYWORDS Multi-airport systems; Airports; National Capital City; Capital City of Indonesia

INTRODUCTION

Jakarta as the State Capital of Indonesia was ranked as the 9th most populous city in the world in 2017 (According to data from the *World Economic Forum* , 2017). The high population is followed by very high urbanization growth which results in high congestion and unhealthy air quality, therefore, Jakarta is the city with the worst air quality in the world (Kezebou et al., 2019). In addition, according to the 2015-2045 population projection data (Results of the Inter-Census Population Survey), about 57% of Indonesia's population or around 150.18 million people are concentrated on the island of Java. Supported by data

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from the Central Statistics Agency (BPS) in 2020, the economic contribution of Java Island is 59% of the National GDP, which means that economic and regional growth has not been evenly distributed in Indonesia.

Responding to these problems, in an effort to reduce the level of population density and encourage equitable regional growth, in the Attachment to the Presidential Regulation of the Republic of Indonesia Number 18 of 2020 concerning the 2020-2024 National Medium-Term Development Plan, it is stated that the State Capital City (IKN) will be relocated to the island. Kalimantan, whose development will be carried out in stages, supported by the development of new metropolitan areas and cities outside Java. Socio-economic considerations are an important consideration in the plan to relocate the National Capital City (IKN), especially to reduce regional inequality in the country (Handayani & Rukmana, 2020).

The location of the new National Capital City (IKN) is located in North Penajam Paser Regency and Kutai Kartanegara Regency, East Kalimantan. The selection of the location of the new State Capital (IKN) is based on 8 (eight) principles of the State Capital, as has been stated in the Pocket Book on the Transfer of the State Capital compiled by Bappenas, including Designing according to Natural Conditions, Unity in Diversity, Connected, Active and Accessible, Circular and Resilient, Convenient and Efficient through Technology, Safe and Affordable, Low Carbon Emissions and Economic Opportunity for all. One of the reasons for the selection of East Kalimantan as the new State Capital (IKN) is because the location is safe and the threat of disaster is minimal. In addition, the location has high location accessibility, being near two major cities, namely Balikpapan and Samarinda.

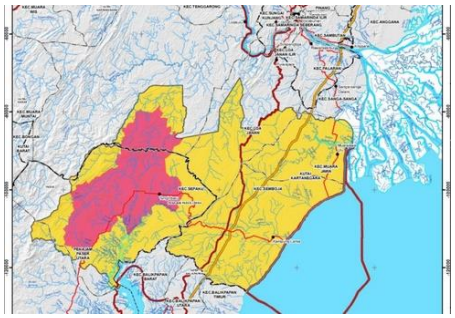


Figure 1.1 New IKN Location Map, East Kalimantan

The relocation of the National Capital City (IKN) from Java Island to Kalimantan Island is expected to help encourage economic diversification and increase output non-traditional economic sectors such as services, government, trade and transportation. In terms of transportation , one of the development strategies for the Kalimantan Region will prioritize strengthening connectivity, where basic service infrastructure in metropolitan, city and urban areas is carried out through the development and strengthening of integrated connectivity between sea, river, land and air modes. Expectations for strengthening connectivity to support increased output economic sector , one of which is by developing connectivity in the air also supported by other research (Fasone , 2014) where the airport, as a place to take off and land air transportation, can increase economic and social value from two sides, namely as a business activity and as a infrastructure for regional economic development.

Market share for passengers arriving and departing from and to the island of Kalimantan about 8% (calculated from the total passengers at 5 (five) doors of major airports on the island of Borneo namely Sultan Aji Muhammad Sulaiman Sepinggan International Airport, Supadio International Airport , Syamsudin Noor International

Airport, International Airport Aji Pangeran Tumenggung Pranoto and Tjilik Airport Riwut) of the total Indonesian air passengers in 2020 and will continue to increase if the IKN has been established.

The explosive growth that will occur certainly needs to be accommodated . There needs to be readiness in terms of airport infrastructure, one of which is in terms of airport capacity around the State Capital area (Cidell, 2015). Expansion of existing infrastructure is the most common alternative to accommodate increased *demand* will happen. However, a focus on the activity of a single airport within a region often provides a limited perspective on the geography of air transport, and its impact on the metropolitan area and its wider surroundings. This is because the air transportation market is shaped by interactions between consumers, local mobility, airline operations decisions, new airports (in some cities) and (in other cities) which have long been secondary airports, where supply and demand are realized at more than one airport at a time. market area" (Dupont-Rouzeyrol et al., 2016). Therefore, multi-airport implementation The system can be a solution for airports in the National Capital Region (IKN) by optimizing the services of other airports around it .

Multi-Airports System defined as System airport where there is more from one competing airports in the same metropolitan area for serve then cross airline flight commercial (De Neufville et al., 2013). From definition the could concluded that the Multi-Airports System focuses on service flight commercial for areas or metropolitan areas that have characteristics passenger common originating and / or aim local with growth highest compared with the surrounding area .

The development of the Multi-Airports System pays great attention to market dynamics , where customers and users of the system who play a role important in the process . Market dynamics provide explanation base on level and distribution traffic between airport in a multi-airports system (De Neufville et al., 2013), where influence airline operating flights _ both at *the primary airport* (primary airport) and *secondary airport* (airport secondary) (Jiménez et al., 2017). For that , on both or more airport ok _ airport main (*primary airport*) and airport alternative (*secondary airport*), important for share role for each airport .

In general , multi-airport systems have airport main with one or more airport secondary which has more *traffic* a little than airport major (Mota , 2019), between 10% and with 50% airport *traffic* major (De Neufville et al., 2013). However, no close possibility that airport secondary have same *level* _ with airport , as happened in the implementation of the multi -airports system in Paris, Paris Charles de Gaulle International Airport as airport secondary grow and chase growth airport main , namely the International Airport Orly , Paris. because of that , the *market* is very holding role important in implementation of multi -airpots system. *Markets* can influence with various how and when alone (Collins et al., 2013).

In the multi- airport systems market, airport operators hold role important for influence market development. Most often experienced by airport operators who have implementing a multi-airports system is in development airport main and airport secondary , when will conducted development infrastructure for airport main or when for add or develop one and/ or airport secondary other . Metropolitan area with amount less *traffic* from threshold limit , will maintain second the airport When available another reason that makes airport the permanent *exists* , for example reason technical . Could our see example implementation of the multi-airports system in Taiwan, When the airport major in the metropolitan area namely Taoyuan International Airport is not could serve flight cross the ocean , so the passengers must use airport alternative (Tian et al., 2018). Second airport the

no once reach capacity maximum airport , however because reason technical the airport alternative no could closed so is _ airport main that is close with the metropolitan area.

Similar with Thing the above , *demand/capacity* also becomes things airport operators consider _ in development of a multi-airport system. As has been alluded to , with existence explosive growth _ on the construction of a new State Capital (IKN) in the Kalimantan region is possible existence enhancement *demand* for airport flights _ around whereas infrastructure airport *existing* moment this have Where *are the limitations/constraints* there is limitations environmental / technical / geographical for expand airport To use support operation airport . For that , needed airport alternative to " accommodate " the *demand*

Basically , _ in the management of the airport system must balance two main objectives. The first thing is from a business point of view, it has to do with the corporate features of the various companies operating at the airport, and it refers to the economic consequences that will ensure the sustainability of their financial condition in the long term. The second is referring from a planning point of view, to airport development in terms of infrastructure – both from the air side and the land side – investment and maintenance to shape travel demand and airline policies (C. Fasone, 2014).

Success implementation of a multi-airports system can seen implementation in the City of London, where there are 5 (five) airports that implement The multi-airport system concept includes Heathrow Airport (LHR), Gatwick Airport (LGW), Stansted Airport (STN), Luton Airport (LTN) and London City Airport (LCY). In 1954 , Heathrow Airport (LHR) became the primary airport in the City of London and in the same year, Gatwick Airport (LGW) was expanded to become an alternative primary airport serving smaller airlines and aircraft. *charter* . Following in the 1950s, Luton Airport (LTN) was developed as a military base and as a dominant manufacturing site served by *charter aircraft* . Similar to Luton Airport (LTN), Stansted . Airport (STN) was also developed as a military base mostly served by *charter aircraft* , and was proposed by the government in the 1967 *White Paper to be developed as a " third airport of London* ". In 1987, London City Airport (LCY) opened for service after going through several developments. Due to the location of the airport being very close to central London, London City airport only serves short-haul destinations. - specifically for the European business market and serving European Hubs such as Schiphol , Frankfurt and Barajas .

Growth passengers at Heathrow Airport (LHR) showing stable growth _ from 1950 to _ with 2004 , and started show point saturated . Meanwhile, Gatwick Airport (LGW) consistent growth more slow from Heathrow Airport (LHR) at the end 1960 's though not yet show point saturated in 2006. Stansted Airport (STN) and Luton Airport (LTN) started show growth in the 1990s. After 1991 and 1995 respectively , second airport the show significant growth – more _ fast than Heathrow Airport (LHR) or Gatwick Airport (LGW), so increase their market share in a multi- airport system .

This growth is almost entirely due to *demand growth* from the European community and domestic services offered by *Low Cost Carrier* (LCC). Air traffic at Luton Airport (LTN) and Stansted Airport (STN) serve short and medium-haul routes, so that when there was a terrorist attack in 2001 it was less affected than traffic at Heathrow Airport (LHR) and Gatwick Airport (LGW) serving intercontinental and on certain US-European routes. However, in 2007, Stansted Airport (STN) started direct intercontinental services to New York , suggesting a possible shift from a secondary airport dominated by low-cost carriers, to a primary airport serving all markets. Relatively, it can be seen that, Heathrow Airport (LHR) dominates the system but its market share is consistently declining. Gatwick Airport (LGW) has consistently maintained its position as the second alternative primary airport, with an increasing market share through the late 1980s, and was a major contributor to the

reduced market share at Heathrow Airport (LHR). In the 1990s the market share at Stansted Airport (STN) in particular, and Luton Airport (LTN) increased, with corresponding reductions in the share of Heathrow Airport (LHR) and Gatwick Airport (LGW). In 2006 Stansted Airport (STN) had a clear position as the third airport, fourth Luton Airport (LTN), and fifth London City Airport (LCY) by contributing a market share of 35% of total aircraft movements in London in 2006 – right below Heathrow Airport (LHR) by 42% .

RESEARCH METHOD

Method used _ in study this is method studies literature . Method studies literature that is series related activities _ with method collection of library data , reading and taking notes , and manage ingredient research (Nursalam, 2016). Method study this conducted with compare an existing data with the data obtained from study for give put in related with implementation of the Multi-Airport System in the new National Capital Region (IKN) .

Studies literature got from various source good journals , books , documentation , internet and libraries (Fuad et al., 2020). Study previously meant _ in study this is related research _ with *Multi-Airport System* .

Object research which is airports around the area of the National Capital City (IKN), especially in the area of Kalimantan Island , including Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) is located in Balikpapan City, East Kalimantan; International Airport Syamsudin Noor (BDJ) located in Banjarmasin City, South Kalimantan; Supadio Airport (PNK) is located in Pontianak City, West Kalimantan; Tjilik . Airport Riwut (PKY) in Palangkaraya City , Central Kalimantan; Aji Prince International Airport Tumenggung Pranoto (AAP) which is located in Samarinda City ; Muara Badak Airport (BXT) located in Kutai Kartanegara ; Melalan Airport Melak (MLK), West Kutai and Tanjung Bara Airport (TJC).

The analysis carried out in this study is based on the *market share* , Airport Management, distances between airports, airport routes and Analysis of the role, function, hierarchy, use and classification of airports. *Market share* This study was conducted to find out how big the contribution of these airports to airports in Indonesia, by looking at the number of passengers in 2020 at the airport compared to the number of passengers in Indonesia. Analysis of airport management is carried out by comparing data from research in the world with conditions in Indonesia to find out the appropriate criteria in multi-airports. system (Manatu, 2014). As for the analysis of airport distances using a literature study that refers to Ministerial Regulation (PM) Number 39 of 2019 to find out the criteria in multi-airports system . In addition to the distance between airports, PM Number 39 of 2019 also regulates the airport service radius or airport *catchment area* . The Ministerial Regulation states that the service radius on the island of Kalimantan is 60 km (the straight distance between airports is 120 km) or the travel time for transportation modes is at least 4 (four) hours. Radius calculation using google my maps , while for calculating the straight distance between airports using google earth . To find out the route services available at these airports, an analysis of airport route services is carried out to be used as a reference in multi-airports system . For flight routes, Sultan Aji Muhammad Sulaiman Sepinggan International Airport (BPN) and Aji Prince Tumenggung Pranoto International Airport (AAP) use 2021 data. Analysis of the role, function, hierarchy, use and classification of airports in multi-airports The system is reviewed based on the Decree of the Minister of Transportation of the Republic of Indonesia Number KM 166 of 2019 and analysis of the new State Capital Development (IKN) study.

RESULTS AND DISCUSSION

A. Kalimantan Profile

Issue strategic main development territory is still existence inequality marked region _ with height number poverty and level unemployment in the Eastern Region of Indonesia (KTI). In 2019, the island of Borneo had 974.2 thousand soul or about 5.93% figure poverty from whole amount number poverty in Indonesia. Temporary level unemployment in Kalimantan Island in the same year that is about 5%.

In effort push even distribution growth interregional that , in Term Development Plan The National Medium Term (RPJMN) 2020-2024 states that relocation of the National Capital City (IKN) to Borneo Island will conducted by gradually supported with development of metropolitan areas and cities new outside _ Island Java . Kalimantan Island which has large as big as (area the island of Borneo) is known as a barn of energy national and the lungs of the world, then besides conducted development of the metropolitan area, development of the island of Kalimantan in five years coming directed for maintain Kalimantan's function as the lungs of the world (*Heart of Borneo*).

With large land of 743.33 km, Kalimantan Island as *Heart of Borneo* , has a number of airport for support activity people good interregional Borneo Island and cross Island . Like is known that plan the development of the State Capital (IKN) on the island of Kalimantan, more precisely in East Kalimantan. For that , in study this more focusing on airports in the East Kalimantan region. Based on the Decree of the Minister of Transportation (KM) of the Republic of Indonesia Number 166 of 2019 concerning Order National Airports , airports included in the East Kalimantan region, among others:

1. Sultan Aji Muhammad Sulaiman International Airport
2. Kotabangun Airport
3. Kalimarau Airport
4. Datah Airport string
5. Melaka Airport
6. Muara Wahau Airport
7. Tanjung Bara Airport
8. Prince Aji Airport Tumenggung Pranoto
9. Maratua Airport

B. Airport Profile

Airport can Becomes tool effective for local marketing of a region and its ability to increase the attractiveness of the region (V. Fasone et al., 2014). Known island of Borneo as the lungs of the world or *Heart of Borneo* , has 31 (three twenty one) operating airport _ based on BPS data in 2020. Among 31 (three twenty one) airport that , there is a number of frequent airport _ Becomes the place then cross passenger air , including International Airport Syamsudin Noor (BDJ) which is located in Banjarmasin City, South Kalimantan and Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) is located in Balikpapan City, East Kalimantan.

Other airports located in Kalimantan include Supadio Airport (PNK) located in Pontianak City, West Kalimantan and Tjilik Airport. Riwut (PKY) in Palangkaraya City , Central Kalimantan. Whereas airports that have distance not enough than 100 km from Balikpapan Airport (as the airport with the most IKN area) namely Aji Pangeran International Airport Tumenggung Pranoto (AAP) which is located in Samarinda City .

In KM 166 Years 2019 includes role , function , use , hierarchy and classification airport so that could see each role airports in the East Kalimantan region in the table below this .

Table 1.1 Role, Function , Use , Hierarchy and Airport Classification

Kode Bandara (IATA)		BPN	AAP	MLK	TJC	BXT
Peran	Simpul	√	√	√	√	
	Gerbang Ekonomi	√	√	√	√	
	Alih Moda Transportasi	√	√	√	√	
	Pariwisata	√	√	√		
	Daerah Terisolir			√	√	
	Rawan Bencana					
	Daerah Perbatasan					
	Wawasan Nusantara	√	√	√	√	
Fungsi	Pemerintahan	√	√	√	√	
	Pengusahaan					√
Penggu-naan	Internasional	√				
	Domestik	√	√	√	√	√
Hierarki		P	S			
Klasifikasi		4E	4C	3C	2C	

In the table above show that from fifth airport , which has hierarchy as the primary airport is Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN), while those who play a role as airport secondary is Aji Pangeran . Airport Tumenggung Pranoto (AAP). For use airports , 5 (five) airports the on used as airports that serve domestic flights , except for Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN), no only serve domestic flights but also serve flight international .

Muara Badak LNG Airport (BXT) is a airports that serve flight special , because airport the owned by company Natural Gas processing The largest liquid LNG in Indonesia is PT Badak Bontang , which is located in Bontang City , East Kalimantan, so that only serve flight for needs company that . Temporary fourth airport other , have function government managed by each airport operator .

The role of the airport mentioned in KM 166 of 2019 , among others, play a role in as knot , gate economy , transfer fashion transportation , tourism , area isolated , vulnerable disaster , area borders , and insights archipelago . Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) and Aji Pangeran . Airport Tumenggung Pranoto (AAP) plays a role as knot , gate economy , transfer fashion transportation , tourism and insight archipelago . Similar with second airport , the role of Melak Airport (MLK) as a knot , gate economy , transfer fashion transportation , tourism and insight archipelago as well as added as role airport for area isolated . Meanwhile , Tanjung Bara Airport (TJC) does not play a role as airport tourism , but for area isolated.

C. Analysis results

1. Analysis *Market Share*

Bolgeri et al., (2008) in their article analyzing implementation of the multi-airports system in the City of London, see passenger market share for each available airport _ in a multi- airport system . From calculation passenger *market share* that , can seen role respective airports as well as could see how much big his contribution to amount passengers in London .

For see The largest airport market share on the island of Kalimantan, can be seen on the graph under this .

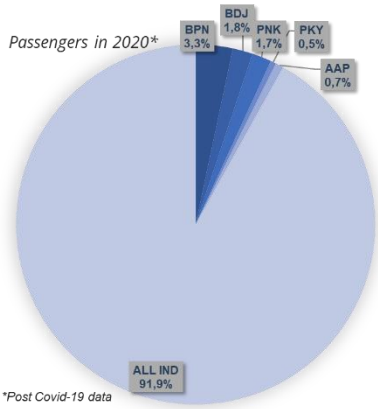
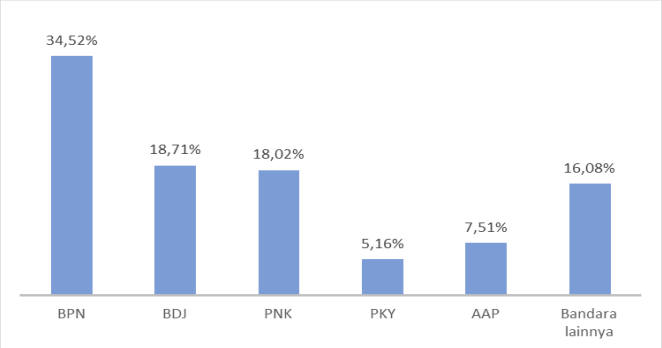


Chart 1.1 *Market Share* – Indonesia

Of the 5 (five) airports , Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) have largest market share between other airports with 3.3% percentage of the total number of passengers in Indonesia is 75 million passenger based on statistical data year 2020. Followed by International Airport Syamsudin Noor (BDJ) of 1.8%. After International Airport Syamsudin Noor (BDJ), there is an International Airport Supadio , Pontianak (PNK) which has *market share* of 0.1% different from International Airport Syamsudin Noor (BDJ) is 1.7%. Whereas for airport others , Aji Pangeran. Airport Tumenggung Pranoto (AAP) and Tjilik. Airport Riwut Palangkaraya (PKY) each has market share of 0.7% and 0.5%. By overall , for fifth airport which is located on the island of Borneo holding market share of 8.1% of amount passengers in Indonesia in 2020.

If passenger market share whole airports located on the island of Borneo against amount passengers in Indonesia in the same year , namely by 10.5% with amount passenger whole airports on the island of Borneo as many as 7.9 million passenger . Meanwhile , the fifth market share airport the to whole airports located on the island of Borneo can seen on the graph stem under this .



Graph 1.2 *Market share* – Kalimantan Island

As seen in the chart above , between fifth airport , the airport that holds highest market share that is Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) with percentage by 34.5% followed with International Airport Syamsudin Noor (BDJ) by 18.71% then International Airport Supadio , Pontianak (PNK) by 18%. Whereas for passenger market share for two Other airports are Prince Aji Airport Tumenggung Pranoto (AAP) and Tjilik . Airport Riwut Palangkaraya (PKY) at 7.5% and 5.1%, respectively. For airports others located in Kalimantan have market share of 16% of amount passengers in Kalimantan in 2020 .

2. Analysis Management Airport Manager

Application mulit -airports system in the City of London involves no only one Airport Manager except from different managers . _ The fact that one organization, the British Airports Authority (BAA Limited) , owns and operates these airports reinforce the idea that they are part of a system . However , unity of ownership or one unity no control determine the system for planning and managing the multi-airports system – Luton Airport (LTN) is owned independently however _ is part in the concept of a multi-airports system in the City of London (Rose et al., 2019).

Airport managers in a multi-airport system are faced with the importance of choose a strategy for influence market development in multi-airport systems (de Neufville et al., 2013). So that , in development of multi-airports system is important for knowing who manager the airport located in such a system . In book reports compiled by *The Airport Council International* (ACI), ACI only include one manager airport from a lot manager airports located _ in one multi-airport system, such as the implemented Multi-Airport System airports in Paris, listed only the *Aeroports de Paris* as manager airports that .

Management manager for airports around the National Capital City (IKN) area can be seen in the following table.

Table 1.2 Management Airport Manager

Manajemen Pengelola	Bandara
PT Angkasa Pura I	Bandara Internasional Sultan Aji Muhammad Sulaiman Sepinggan (BPN)
	Bandara Internasional Syamsudin Noor (BDJ)
PT Angkasa Pura II	Bandara Internasional Supadio, Pontianak (PNK)
	Bandara Tjilik Riwut Palangkaraya (PKY)
UPBU	Bandara Aji Pangeran Tumenggung Pranoto (AAP)
	Bandara Melalan Melak, Kutai Barat (MLK)
	Bandara Tanjung Bara (TJC)
Lainnya	Bandara LNG Muara Badak (BXT)

Based on the table above , it can be is known that Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) as holder The largest market share on the island of Kalimantan is managed by PT Angkasa Pura I Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN), PT Angkasa Pura I also manages International Syamsudin Noor (BDJ) which is located in Banjarmasin.

Whereas manager other airports , PT Angkasa Pura II manages the International Airport Supadio , Pontianak (PNK) and Tjilik . Airport Riwut , Palangkaraya (PKY). Prince Aji Airport Tumenggung Pranoto (AAP), Melalan . Airport Melak , West Kutai (MLK) and Tanjung Bara Airport (TJC) are managed by the Airport Management Unit (UPBU). Meanwhile, Muara Badak LNG Airport (BXT) is owned by the company Natural Gas processing The largest liquid LNG in Indonesia is PT Badak Bontang , which is located in the city of Bontang , East Kalimantan management by the company it and used only for interest company .

3. Analysis of Distance Between Airports

According to PM Number 39 of 2019 regarding Order National Airport , the service radius on the island of Kalimantan is 60 KM (distance straight between 2 (two) airports by 120 KM) or time go fashion minimum transportation duration 4 (four) hours . Distance analysis between airport conducted to Prince Aji Airport Tumenggung Pranoto (AAP) and International Airport Syamsudin Noor (BDJ), with Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) as point center (*center point*).

Calculation distance between airport conducted via google maps with method count distance from Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) to Aji Pangeran . Airport Tumenggung Pranoto (AAP), and Sultan Aji Muhammad Sulaiman . International Airport Sepinggan (BPN) to International Airport Syamsudin Noor (BDJ). From calculation that , got results as following .

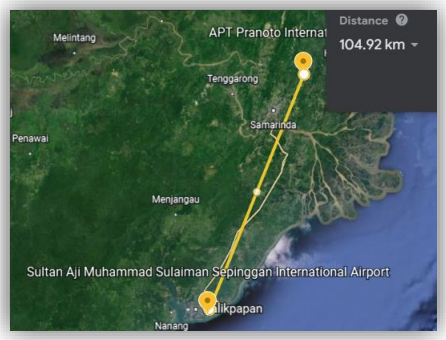


Figure 1.2 Distance Between BPN-AAP Airports

straight distance between Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) to Aji Pangeran . Airport Tumenggung Pranoto (AAP) is about 104.92 km where Fulfill listed criteria _ in PM 39 of 2019 which is 120 km. Whereas distance straight Among Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) to International Airport Syamsudin Noor (BDJ) yet Fulfill criteria the where could seen in the picture under this , that is about 340.38 km.

Figure 1.3 Distance between BPN-BDJ Airports

From both calculation distance straight between airport the could concluded that distance between airports that meet PM 39 of 2019 criteria include Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) to Aji Pangeran . Airport Tumenggung Pranoto (AAP) is about 104.92 km.

4. Analysis Airport Route

Aji Muhammad Sulaiman International Airport Sepinggan (BPN) serves various domestic and route international . On domestic routes , this airport located in East Kalimantan serve more of 40 routes flight based on departure data passengers in 2020. Meanwhile _ for Aji Prince Airport Tumenggung Pranoto (AAP), only serve route less domestic flights more only 15 routes flights in 2020 .

Whereas for route flight Prince Aji Airport Tumenggung Pranoto (AAP), among others , serves route Banjarmasin, Berau , Datah Dawai , Denpasar, Jakarta (CGK), Jakarta (HLP), Long Apung , Makassar, Melak , Surabaya, Tanjung Selor , Yogyakarta (JOG), and Yogyakarta (YIA). Overview of route Aji Pangeran . Airport flights Tumenggung Pranoto (AAP) can seen in the picture following .

Figure 1.4 Route AAP . flights

Based on table 1.3 Routes Flight Domestic International Airport Sultan Aji Muhammad Sulaiman Sepinggan (BPN) and in Figure 1.4 Route Aji Pangeran . Airport Flights Tumenggung Pranoto (AAP), there are 9 routes the same flight served by both _ airport that . because of Therefore , the implementation of a multi-airports system is required for share market share . Distribution airport role _ could realized if have service the same flight , for example one airport _ special serve low cost carriers. (Ganar et al., 2021).

5. Analysis of Airport Roles, Functions , Uses , Hierarchies and Classifications

If seen from Table 1.1 Role, Function , Use , Hierarchy , and Airport Classification , Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) and Aji Pangeran . Airport Tumenggung Pranoto (AAP) has the same role . Second airport the play a role as knot , gate economy , transfer fashion transportation , insight archipelago as well as Becomes airport tourism . Likewise with _ side function , both airport the working as airport government and business .

Difference Among Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) and Aji Pangeran . Airport Tumenggung Pranoto (AAP) lies in the use , hierarchy and classification airport that . For usage , Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) is used for serve route domestic and international flights international . Whereas for Aji Prince Airport Tumenggung Pranoto (AAP) is used only for serve route domestic flights . Besides that , hierarchy Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) is as primary airport and Aji Pangeran . Airport Tumenggung Pranoto (AAP) as airport secondary .

Uses and hierarchies that have been determined at KM 166 of 2019 for Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) and Aji Pangeran . Airport Tumenggung Pranoto (AAP) has Fulfill concept of multi-airports system definition , where there is distribution role for service route domestic flights or international and primary airports or secondary that is in one metropolitan area.

CONCLUSION

Based on results study above, can concluded that suitable airport _ with characteristics Multi-Airports System concept with no rule out regulation government as listed _ in PM 39 of 2019 and KM 166 of 2019, including Sultan Aji Muhammad Sulaiman International Airport Where is Sepinggan (BPN) is closest airport _ with the location of the new State Capital (IKN) in Penajam Paser , East Kalimantan, and Aji Pangeran . Airport Tumenggung Pranoto (AAP).

Illustration the implementation of the multi-airports system in the East Kalimantan region can illustrated through picture under this .

Figure 1.5 Illustration of MAS

Based on hierarchy , Sultan Aji Muhammad Sulaiman International Airport Sepinggan (BPN) hierarchy as primary airport (*primary airport*) used for serve route domestic and international flights international airport , while Aji Pangeran . Airport Tumenggung Pranoto (AAP) hierarchy as airport secondary (*secondary airport*) where only serve route domestic flights . That is , second airport the has have each role good from side use nor hierarchy so that in distribution market share will more easy To use reduce accumulation in one airport.

REFERENCES

Cidell, J. (2015). The role of major infrastructure in subregional economic development: an empirical study of airports and cities. *Journal of Economic Geography*, *15*(6), 1125–1144.

Collins, R. D., de Neufville, R., Claro, J., Oliveira, T., & Pacheco, A. P. (2013). Forest fire management to avoid unintended consequences: A case study of Portugal using system dynamics. *Journal of Environmental Management*, *130*, 1–9.

De Neufville, R., Odoni, A. R., Belobaba, P. P., & Reynolds, T. G. (2013). *Airport systems: Planning, design, and management*. McGraw-Hill Education.

Dupont-Rouzeyrol, M., Biron, A., O'Connor, O., Huguon, E., & Descloux, E. (2016). Infectious Zika viral particles in breastmilk. *The Lancet*, *387*(10023), 1051.

Fasone, C. (2014). E uropean Economic Governance and Parliamentary Representation. What Place for the E uropean Parliament? *European Law Journal*, *20*(2), 164–185.

Fasone, V., Maggiore, P., & Scuderi, R. (2014). Airport ownership and financial performance: Evidence from Italy. *Journal of Air Transport Management*, *40*, 163–168.

Fuad, M., Ariyani, F., Suyanto, E., & Shidiq, A. S. (2020). Exploring teachers' tpck: Are indonesian language teachers ready for online learning during the covid-19 outbreak? *Universal Journal of Educational Research*, *8*(11B), 6091–6102.

Ganar, Y. B., Sahroni, S., Zulfitra, Z., Apriansyah, M., & Susanto, S. (2021). Manajemen Strategi Pengembangan Wisata Goa Gudawang. *Abdi Laksana: Jurnal Pengabdian Kepada Masyarakat*, *2*(1), 83–87.

Handayani, S. L., & Rukmana, D. (2020). Peningkatan kemampuan menulis karya ilmiah guru melalui pelatihan penelitian tindakan kelas bagi guru SD. *Publikasi Pendidikan*, *10*(1), 8–13.

Jiménez, G., Ongena, S., Peydró, J.-L., & Saurina, J. (2017). Macroprudential policy, countercyclical bank capital buffers, and credit supply: Evidence from the Spanish dynamic provisioning experiments. *Journal of Political Economy*, *125*(6), 2126–2177.

Kezebou, L., Oludare, V., Panetta, K., & Agaian, S. S. (2019). Underwater object tracking benchmark and dataset. *2019 IEEE International Symposium on Technologies for Homeland Security (HST)*, 1–6.

Manatu, N. (2014). *African American women and sexuality in the cinema*. McFarland.
Nursalam, N. (2016). *Metodologi Penelitian Ilmu Keperawatan*. Salimba Medika.
Rose, A., Pérez-Arriaga, I., Stoner, R., & de Neufville, R. (2019). 5 Harnessing Africa's Energy Resources through Regional Infrastructure Projects. *Duality by Design: The Global Race to Build Africa's Infrastructure*, 130.
Tian, X., Galelli, S., & de Neufville, R. (2018). Impact of operating rules on planning capacity expansion of urban water supply systems. *Urban Water Journal*, *15*(7), 654–661.