

## STRATEGIC DECISION IN AIRPORT RELOCATION: A CASE STUDY FROM KUALANAMU, INDONESIA

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### ABSTRACT

*Kualanamu is famous airport in Indonesia, it replacing Polonia as international airport in Medan, North Sumatra. Strategical decision is important for create the replacement of airport due it not simple. Found the replacement is to create as professional and should got the accurate data for declare of increase prediction of airport and it related with the passengers, cargo flight and post services. Increasing the economic activities year on year is significant with comparing before and after replace the airport, find difference of flight up to 548.49 and difference of passenger up to 112,478 person, it making author interested for descript on this paper by paired analysis this research is as science analysis and no judgment on the decision.*

**Keywords:** strategic, airport relocation, flight and economic increase

### INTRUODOCTION

Replace an airport that has existed to different location is not simple, it's not about physically moved airport only but all economic activities be carried over, wider scope of movement the activities of social activity inside it. The civil aviation system is a whole which gets together to perform the civil aviation operations and is comprised of the sub-systems interacting with each other (Savaş, 2013). It is one of the aims of this study to estimate the extent to which, the sector's direct impact has been suppressed by the continued subsidy of local carriers by comparing states that have not been subjected to this financial burden to the organization that have (David, 2011). Many airports are already subject to operational constraints linked to their environmental impacts, while others fail to gain planning approval for future infrastructure growth, either as a result of the environmental consequences of the development itself or the additional traffic that would arise from it. Just like airport investor, those making a longer-term investment look beyond the current difficulties being faced and will focus more on the underlying inherent (Arnaud Feist, 2015)

Base on above, author interested for evaluate some of case for regarding with the economic development at Kualanamu due airport relocation from Polonia, Medan-Indonesia.

### LITERATURE REVIEW

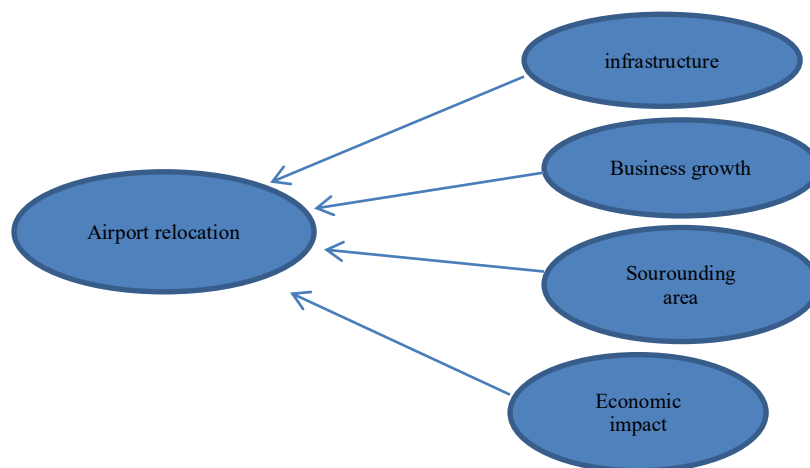
The direct economic effect of air transport can be measured by all transaction within the aero-facility when performing the operation. This can be seen as the purchase of fuel, services, landing fee, salary of the personal, air navigation services, and carrier services on site and surrounding area. Offsite direct effect can be the exception of the airplane industries or other production used by airline and airport (Vorayut Boonchim, 2009). Direct impact day to day at airport the activities by the airport operator, the airlines, airport air traffic control, general aviation, ground handler, airport security, immigration and custom, aircraft maintenance, and others airport related activities (Intervistas, 2015).

A typology of direct, indirect and induced effects is used in most of the economic impact studies on airports. The economic effect draws attention to the wide range of assessment of airports concentrating on economic growth and employment. (Denis Zak & Michael Getzner ,2014). Aviation is also the catalyst for personal benefits. Without aviation, personal travel more beyond about 300 km would become more difficult. People would travel less, and part of the time away would be wasted on long periods in cars or buses. This would reduce the personal “connectivity” with friends and relatives’ personal events such as reunions, weddings, and funerals and reduce the opportunity for holiday, cultural and sport trips (Yuan chou et.al ,2011).

Airports provide air transport services through a complex interaction of resources and processes. Like other major industries, airport exert a significant economic impact on their surrounding area, supporting employments, generating prosperity, and providing economic stability (Cristiana chistureanu & Ana Bobirca, 2007). Cities with good airport facilities also profit from tourist and convention business. This can represent substantial revenues for hotels, restaurants, retail stores, sports and night clubs, sightseeing, rental cars, and local transportation, among others (Alexander at.al,2000). The impact of TXL on public transport network is thus locally confined. The comparison with the projected change of BVG reveal a close match with the minibus models solution. (Andreas Neumann ,2015). One of the most important planning and operational parameters of a given airport is its demand. In particular, the airports usually endeavor to learn about the medium- to the long-term demand in terms of the number of atm (air transport movements), passengers, and freight shipments (Milan Janic, 2013).

## PROPOSED OF MODEL

The strategically increase (prediction create the global of movement) flight after move to another place (from Polonia to Kualanamu) due to below wide of plan.



**Diagram 1. Model to Construct**

## DISCUSSION AND FINDING

Air transport has traditionally experienced higher growth than most other industries. Demand for air transport is closely linked with economic development; at the same time air transport is a driver in an economy. The contribution of air transport and related civil aviation industries to local, regional or national economies includes the output and jobs directly

attributable to civil aviation as well as the multiplier or ripple effect upon other industries throughout the economy. (ICAO).

Kualanamu is an international airport serving the city of Medan and surrounding areas. The airport is located 39 km from the city of Medan. The airport is the second largest airport in Indonesia after Soekarno-Hatta International Airport. The airport location is a former plantation area of PT Perkebunan Nusantara II Tanjung Morawa located in Beringin, Deli Serdang, North Sumatra, this airport developed for replacing Polonia International Airport that has been aged more than 85 years. Kualanamu services is expected to become an international airport transit base for Sumatra and the surrounding region.

The most important difference between the air passenger and air freight businesses concerns the nature of the competition that airlines face in these different markets. On the passenger side, airlines are very fortunate that, on long-haul routes, almost all passengers who travel do so using air transport. With air freight, the situation is totally different. Air transport faces intense competition from surface shipping on all routes (Stephen Shaw, 2011).

The transfer of the airport to Kualanamu has been planned since 1992. In a working visit to Medan by the Ministry of Transportation at the time, that for the safety of flights, the airport should be moved out of the city.

Preparatory construction begins on August 1, 1997, due the financial crisis that began in the same year forced the development plan was postponed. Since that time the news about this airport is rarely heard from again, until the Mandala Airlines plane crash occurred on September 5, 2005. This led to the re-emergence the forced of developing new airport. This airport was 70% complete and is scheduled for completion 100% at year end 2012, which included non-toll roads, railways and toll roads to be built later.

In early 2013, development has reached 95%. On January 10, 2013, the airport was conducting experiments and technical navigation system. The airport was opened on July 25, 2013 and it began the surround airport increasing the economic activities.

On phase I of the airport can accommodate 8.1 million passengers and 10,000 aircraft movements per year, while after completion of phase II, the airport was planned to accommodate 25 million passengers per year. And following the facilities calculate from start up:

**Table 1. Airport capacities on phase 1**

No	Phase 1	Capacity
1	Passenger terminal	6.5 ha
2	Commercial area	3.5 ha
3	Cargo facilities	1.3 ha
4	Runway	3.75 km
5	Garbarata	8 units

Source: PT.Angkasa Pura II, 2013

As above facilities, the airport was able to accommodate the Airbus A380 passenger aircraft. This service also is the fourth airport in Indonesia that can accommodate the Airbus A380 in addition to Surabaya and Jakarta, and starting the movement capacity of passenger there than the economic activities starting up.

The airport has become vital to the growth of business and industry in a community by providing air access for companies that must meet the demands of supply, competition, and expanding marketing areas. Communities without airports place limitations on their capacity for economic growth (Alexander T. Wells et al., 2000).

And following airline takes some of services/ route of flight

**Table 2. Airline and the Route**

<b>Air line's</b>	<b>Destinations</b>
Air Macau	<b>Charter:</b> Makau
AirAsia	Kuala Lumpur, Penang
Batik Air	Banda Aceh, Jakarta—Halim Perdanakusuma, Jakarta—Soekarno—Hatta
Citilink	Banda Aceh, Bandung, Batam, Jakarta—Halim, Perdanakusuma, Pekanbaru
Eastindo	<b>Charter:</b> Pangkalan Kerinci, Pekanbaru
Firefly	Kuala Lumpur—Subang
Garuda Indonesia	Jakarta—Soekarno—Hatta, Jeddah, Singapura: <b>haj session only:</b> Madinah
Explore & Explore Jet	Banda Aceh, Bandar Lampung, Batam, Denpasar/Bali, Gunung Sitoli, Lhokseumawe, Meulaboh, Palembang, Sabang, Sibolga, Silangit
Indonesia AirAsia	Bangkok—Don Mueang, Kuala Lumpur, Palembang, Penang, Yogyakarta
Jetstar Asia Airways	Singapura
Lion Air	Banda Aceh, Bandung, Batam, Denpasar/Bali, Jakarta—Soekarno—Hatta, Padang, Pekanbaru, Penang, Pontianak, Surabaya
Malaysia Airlines	Kuala Lumpur
Malindo Air	Kuala Lumpur
NAM Air	Batam, Pekanbaru
Saudia	Haj session only: Jeddah, Madinah, Riyadh
SilkAir	Singapura
SriLankan Airlines	Kolombo
Sriwijaya Air	Jakarta—Soekarno—Hatta, Padang, Penang
Susi Air	Blangpidie, Kutacane, Meulaboh, Padang Sidempuan, Sibolga, Silangit, Simeulue, Singkil, Takengon, Tapaktuan
Wings Air	Dumai, Gunung Sitoli, Lhokseumawe, Meulaboh, Padang Sidempuan, Sibolga, Silangit, Simeulue, Takengon

Source: PT.Angkasa Pura II, 2013

The airport also supported by air cargo, and bellows the list of aif cargo operators. Air freight gives opportunities for firms to do things which they simply cannot do if they employ slower surface transport. This is the most obvious in the case of perishable goods, which, if surface modes are used, can only be sold in local markets. Even for non-perishable goods, air freight may give firms the chance to open new markets. (Stephen Shaw, 2011)

**Table 3. Operator Air Cargo**

Operator	Destination
Cardig Air	Jakarta—Soekarno—Hatta
Garuda Indonesia Cargo	Batam, Singapura

Source: PT.Angkasa Pura II, 2013

Construction of Phase I accompanied by the construction of the railway line from the station below Araskabu's station data

**Table 4. Train Info**

No	Item	Remarks
01`	Araskabu-airport distance	450 meters
02	Araskabu – filed station ditsnce	22.96 km
03	Kualanamu -Medan	Around 40 minutes
04	Ticket price	Idr 80,000.00

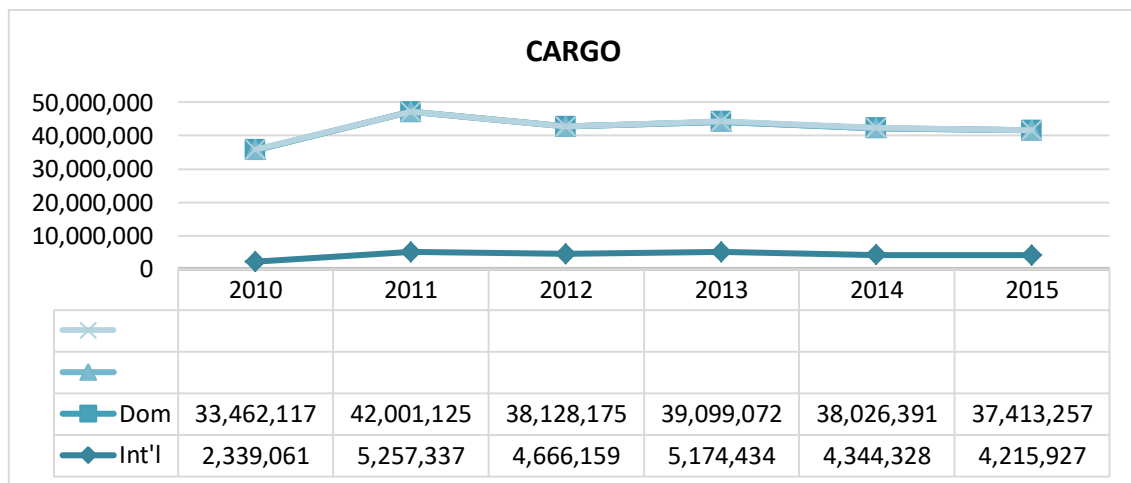
Source: PT.Angkasa Pura II, 2013

These airports also connected by bus from Medan to destination like Binjai, Pematang siantar, Kabanjahe, dan gunung sitoli, bellow the table.

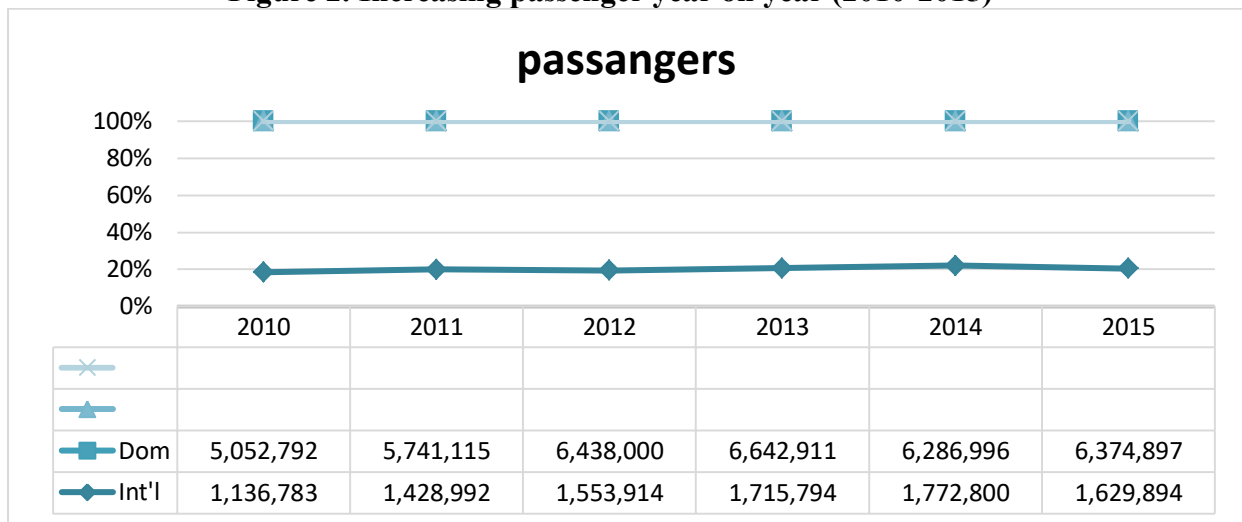
**Table 5. Bus Operator and Route**

Operator	Route	Location
Damri	Terminal Amplas	Medan
Damri	Plaza Medan Fair	Medan
Almasar	Jalan Cemara	Medan
ALS	Jalan Ring Road	Medan
ALS	Binjai Super Mall	Binjai
Paradep	Jalan Sutomo	Pematang Siantar
Almasar	Kabanjahe	Kabanjahe
Trans Medan	Jalan Pisang Raya	Gunung Sitoli

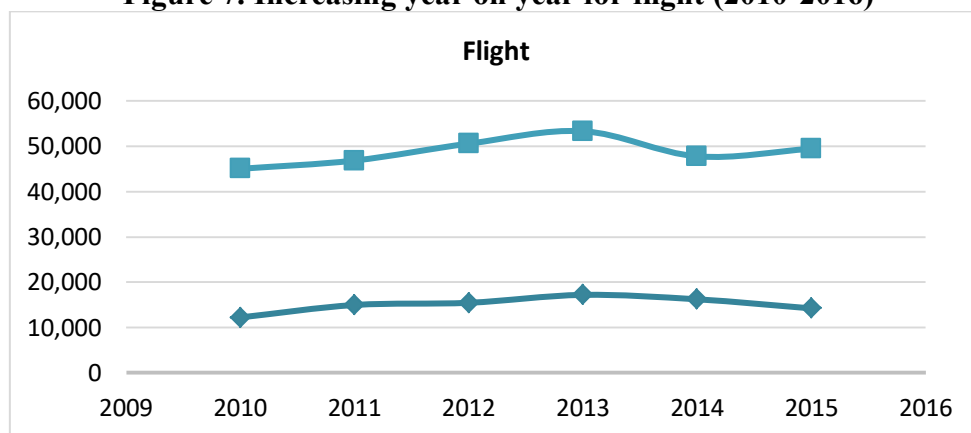
Source: PT.Angkasa Pura II,2013

**Figure 1. Increasing cargo year on year (2010 – 2015)**

Source: Research Data 2016

**Figure 2. Increasing passenger year on year (2010-2015)**

Source: Research Data 2016

**Figure 7. Increasing year on year for flight (2010-2016)**

Source: Source: Research Data 2016

Aviation is a key element in the transportation network, but this fact is not publicized as well. The airlines do a fairly good job of letting the public know the importance of scheduled service at primary airports, but public is usually unaware of the benefits derived from the general aviation industry (Alexander T. Wells et.al, 2000).

As above data, can to find about the statistic of increasing significantly per year on year.

**Figure 8. Summaries of Paired Test**

Variable	Code	N	Mean	Mean Difference	t value	Sig	Summaries
flight	Polonia	30	5,034.40				Find difference of flight
	Kualanamu	54	5,582.89	-548.49	-5.743	.000	(Polonia vs Kualanamu)
Passanger	Polonia	30	572,830.73				find difference Passanger
	Kualanamu	54	695,309.07	-122,478.34	-8.349	.000	(Polonia vs Kualanamu)
cargo	Polonia	30	3,468,712.37				No have significan
	Kualanamu	54	3,588,083.93	-119,371.56	-.943	.351	change of cargo (Polonia vs Kualanamu)
post	Polonia	30	91,176.83				No have significant for
	Kualanamu	54	61,515.04	29,661.80	1.031	.307	courier post Polonia vs Kualanamu)

Source: Research Data , 2016

## CONCLUSION

Base on above discussion, have finding summaries below:

1. Total Flight at Kualanamu has significant comparing with total flight at Polonia with average volume 548.49 flight. It mean with the relocation of airport to Kualanamu have positive impact for increase of total Flight.
2. Total Passenger at Kualanamu have significant of increase total Passenger at Polonia with average upcoming 112,478 passenger. It mean, relocation of Polonia to Kualanamu have significant effect positive for increasing of Passenger.
3. No change significant for total cargo at Kualanamu versus Polonia. Even the increasing of cargo is 119,271 Kg at Polonia to Kualanamu, but as statistic is not significant (sig 0.351 > 0.05). it mean, with the relocation from Polonia to Kualanamu have positive effect, but not significant for increasing total cargo.
4. No have difference of significances for total courage of Post services at Kualanamu versus Polonia. Anothers case have drop of courage of Post services from (average) 91,176 Kg at Polonia become 61,515 Kg at Kualanamu. It have indicate relocation to Kualanamu have negative impact for total Post services case.

## RECOMMENDATIONS

Relocation airport must be evaluate with detail for clear of the plan, especially with 4 factors like airport infrastructure, business growth, airport surrounding area and impact on economic.



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