A Research on Development and Influence Factors of Airport Economic Zone Construction in Zhuhai City

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Abstract. It is clear that the construction of airport economic zone in Zhuhai city plays an important role in rapid development of Hengqin FTA and upgrading industries on the western part of Guangdong province. The advantages and the natural location in Zhuhai city can be combined with the policy called “The Belt and Road Initiative” in China by cooperating with Guangdong province, Hong Kong and Macao. With the joining of international competition, undertaking international division of labor and making a close connection, the region can push its globalization and boost local economy significantly.

1. Introduction

The report of National Economic and Social Development Plan in 2017 illustrates that the NDRC (National Development and Reform Commission) will make a plan to Guangdong, Hong Kong and Macao Bay Area more quickly. As an essential city to western side of the Zhujiang River, Zhuhai has been developed rapidly since in 2016 that GDP reached 22.2636 billion RMB. Compared to last year, it increased by 8.5% where the average of salary was 22,000 dollars per year for each citizen [1]. Based on the situation, we are able to see that Zhuhai has already been admitted into developed city with high income form all over the world. Another good new is that the city currently makes big progress for its transportation. For example, the local government is trying to compete the bridge connected both Hong Kong and Macao. It can make sure the city is associated with the high-speed rail transportation. Besides, the first-stage project of special rail line at Gaolan port has been completed. Supported by manufacturing industries with advanced equipments in the western side of Pearl River and local transportations, the city is integrated well in the western side of Zhujiang Delta, Hong Kong and Macao by setting up zones.

Nowadays, the industries such as manufacturing, business service and tourism are developed well, especially in the new industries like aviation manufacture. Basically, it not only meets the logistics requirement effectively, but also higher the quality of its services. As for new transportation systems, the government has been almost competed the construction of relevant ports and airport. Regarding the current situation, we mainly make a research on the influence factors for constructing airport economic zone in Zhuhai. When we focus on developing aviation logistics in advance assuming the airport become a city center, others zones will be melted to develop together [2]. With those factors, the range will be expanded and the area will develop into a new economic zone finally where boosts the economic growth and make a good impact on its industry upgrade.

2. The Analysis of Influence Elements

2.1 Location

Zhuhai, located in the north of Guangdong province, near to Macao, Zhongshan city and Jiangmen city, it stays a certain distance of 36 sea miles with Hong Kong while 138 miles with Guangzhou. Moreover, Zhuhai is also in the best place in the Zhujiang Delta where it is the best place in Guangdong province.
2.2 Facilities

With the development in recent years, Zhuhai has gradually standardized its external transportation including sea port, air port, high-speed rail and Hengqin port. In Zhuhai, there are six comprehensive transportation hubs to push its services to affect more cities in the western side of Pearl River, which contains Xiangzhou to Hengqin line, Gaolan line, Sanzao line and Doumen to Jinwan line, Tangjia line and Foshan line. The government claims that the highway will cover approximately 774 miles while railway milestone will reach to 217 miles by 2030. The gross loaded and unloaded at Zhuhai port will reach to 24 million tons while the Jinwan airport will be admitted into 4E. There is no doubt that the excellent internal transportation system plays a vital role in developing logistics. In the future, Zhuhai will build up more passageways and transportsations.

(1) Portrait passageway

Connected with Zhongshan city, this passageway one is not only one of the important ways to reach Guangzhou and Foshan city from the eastern side, but also is the important channel to reach city from Macao and center in Zhuhai. It crosses Tangjia Town, from Xiangzhou district to Hengqin district.

Begun at Zhuhai airport, across the districts of Jinwan and Doumen, near to north Jiangmen city and Zhongshan city, this passageway two is not only the vital channel for the Zhuhai airport, but also is the channel influenced from western center or Zhuhai airport to Jiangmen and Zhongshan, even to the whole western areas in Guangdong province.

This passageway three is the most important channel for Gaolan port. It starts from Zhuhai port then it across Foshan Industries Park, near to the channel of Jiangmen and Zhongshan. It can make the influence on Xijiang watershed, which is also a fundamental channel to serve the industries park.

(2) Transverse passageway

Near to the east of Shenzhen and Dongguan, across the main area of Xiangzhou district and Jiangmen city, this passageway one makes an impact on the western side of Guangdong province. Generally speaking, it serves both high and new tech development zone and Xinping industrial park, where strengthens link of the main channel between center in Zhuhai and western center. Besides, it is also a big passageway to associate with the transportation at Zhujiang River, Hengqin district and Shenzhen.

This passageway two is near to the east of Macao, Hong Kong, across Hengqin district, Zhuhai airport and Zhuhai port, and it provides services to many places such as Fushan industrial park, Gaolan port economic zone, aviation industrial park, Sanzao industrial park and bonded area. This area is influenced by Hong Kong and Macao linked to two ports. It is not only a effective channel to do the businesses of changing industries in eastern side, but also is a good way to improve the influence to western area in Guangdong province and promote the economy in the west of Zhujiang River.

2.3 Regional connection

Generally, the cities in Zhujiang Delta make close connection with each other. With the quicker integration in Zhujiang Delta, especially to the construction of Hengqin district and the bridge linked to Hong Kong and Zhuhai, the economic connection will be boosted in the future. The Pearl River Delta Reform and Development Plan (PRDRDP) from 2008 to 2020 shows that government in Guangdong province, in order to link closer to some aspects like facilities, environmental protection, town and country construction, public services and industrial location etc, has made 5 decisions to promote the integration in Zhujiang Delta. In addition, with developing, Hengqin District is regarded as the model of exploring new cooperation both Hong Kong and Macao under the policy of one country two systems. It will become the advanced zone to be technologically innovative and open up deeply. Moreover, it will become a new stage to push all industries in the western side of Zhujiang River to upgrade. The development of Hengqin district ensures the Delta to be an economic zone that is the best place to open up. With the link to Hong Kong, Zhuhai and Macao, across entrance of the sea in Zhujiang Delta, the bridge will make direct connection with
Hong Kong and Macao. It is clear that this construction will be more convenient for areas to enjoy international exchange according Hong Kong and Macao. Apparently, these advantages can provide more opportunities to construct domestic regional logistics center in Zhuhai city.

### 2.4 Market Demand

Nowadays, Guangdong, Hong Kong and Macao Bay Area have the population of about 100 million people and 56000 square kilometers. As for GDP, it has already reached to 130 million dollars which is similar to 900 million RMB. The total amount of international business exceeds 180 million dollars than San Francisco Bay and its amount is similar to that of Russian and Spanish. Nowadays, the area has the largest sea port and airport. According to civil aviation airport production statistics bulletin in 2016 (Table 1), it illustrated that the passenger throughput at Baiyun airport (CAN) reached 59.732 million people, which increased by 8.2% compared with last year. As for Baoan airport, we can see that there are reaching to 41.975 million people of its passenger throughput in the year of 2016, increased by 5.7%. Other airport like Jinwan airport in Zhuhai city had the passenger throughput of 6130 thousand people in 2016 that increased by 30.2% [3].

<table>
<thead>
<tr>
<th>Airport</th>
<th>Passenger Throughput (People)</th>
<th>Cargo throughput (Tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2016s</td>
<td>2015s</td>
</tr>
<tr>
<td>Guangzhou</td>
<td>59,732,147</td>
<td>55,201,915</td>
</tr>
<tr>
<td>Shenzhen</td>
<td>41,975,090</td>
<td>39,721,619</td>
</tr>
<tr>
<td>Zhuhai</td>
<td>6,130,384</td>
<td>4,708,706</td>
</tr>
</tbody>
</table>

Note: The data comes from Civil Aviation Administration in China

From the illustration, it is clear that the aviation transportation in Zhuhai has a rapid developing trend in recent years. The passenger throughput reached by 6.1 millions people in the year of 2016 while it just had the number of 4.7 million, which increased by 30.2%. As for its cargo throughput, we can see there were increased by 22% compared with last year. There were 25.8 thousands tons of its cargo throughput in 2015 while it increased to 31.5% next year. The airlines also increased to 55, which could fly to 42 cities in China. Besides, there are approximately 1200 flights for each week. But it still remains a huge gap compared with other airport located in Hong Kong, Shenzhen and Guangzhou, especially in its field of cargo throughput. Hong Kong airport had the passenger throughput of 4520 thousands tons in 2016. Similarly, Baiyun airport had 1652 tons while Baoan airport had 1126 thousands tons in the year of 2016.

As a central city in the west of Zhujiang River, Zhuhai remains a giant potential demand in the filed of logistics. On one hand, the local manufacture and service is mature even though it just needs small logistics demand currently. But building up the logistics system and bettering condition must force the development of manufacture and commerce. On the other hand, being a main area influencing others, the cities of Zhuhai, Foshan, Zhongshan and Jiangmen requires huge logistics demands in reality. In the year of 2010, the freight of these four cities reached to 41.469 millions tons which took up 20.23% in Guangdong province. After construction, it is very likely for Zhuhai to create more logistics demand that provides more opportunities to develop its logistics.

### 3. Suggestions

First, the government should rely heavily on Hong Kong airport to improve aviation logistics capacity. Hong Kong airport, regarded as one of the busiest airport around the world, it handled 70.5 millions people in 2016 while its shipment quantity reached to 4520 thousands tons. It connects with about 190 airports from all over the world involved 42 cities in China. There are more than 100 aviation firms running businesses in Hong Kong airport, which approximately provides 1100 flights. In order to meet its increasing demands, the administration decided to extent its airport with three runways in 2016. By the year of 2030, it can deal with data of transportation
predicted by IATA Consulting. That is to say, it will handle 102 millions people and 8.9 millions tons of cargo every year, with 607 thousands take-off and landing.

Stabilizing the relationship with Hong Kong airport, Zhuhai airport can make use of cooperation to make transportation more convenient. It is suggested that the airport should make equipment share come true such as passageways, port, customs and traffic hub etc. Using artificial intelligent technology to improve its existing equipments’ capacity is also recommended. They need to focus on developing aviation logistics and catch positive chances like opening up aviation power and place expansion, so as to strength radiation effect. Last but not least, they should construct the base. With the help of that, it can attract more aviation firms and make a long-term business relationship to increase the volume of shipments and number of people by increasing planes and flights.

Second, in order to build up aviation industrial zone, the local government should develop industries related to aviation. With the better standardization of function at the zone, to make greater logistics close to airport, these following industries should be respected.

As for aviation manufacturing, it involves aircraft assembly, airframe manufacturing, engine manufacturing, aircraft parts manufacturing, aircraft systems and their airborne equipment manufacturing, aircraft interior trim manufacturing and professional aviation CNC machining.

As for the air transportation, it should develop its trunk transport, regional transport, air cargo transport and general aviation.

From the field of aviation maintenance, repair and overhaul, the airframe maintenance, engine maintenance, component maintenance, aircraft modification, engine modification, component modification and aircraft daily maintenance should be contained.

As for its aviation Logistics, it should cover the business of logistics services, warehousing, bonded, express, sorting distribution, loading and unloading packaging.

From aviation research and development, personnel training, discipline based flight training, it consists of aircraft engine research and development, aircraft components development, aviation materials research and development, the air traffic control system software development, pilot training, Engineer training, senior training, technician training and engineer training.

The businesses of Aviation exhibition and service should involve aviation exhibition, airport service, air traffic control and financial leasing.

Finally, the development of service should be based on airport. After optimizing the aviation industrial zone, Zhuhai airport needs to take it advantage of its connection between air and ground, so as to improve resource efficiency. In order to build up the first distribution center, it has to develop its logistics activities like commodity inspection, distribution, export declaration, cargo distribution and circulation processing. With the cooperation of foreign logistics companies and integration, it will attract them to set up regional headquarters and transit center by constructing service stage [4].

With the changing of airport scale, shipment volume, network and passenger volume, it will make an impact on the usage near to airport. Moreover, it will eventually cause some changes of close industries and lead to a change of economic and industrial structure by adjusting to relevant resources. This can ensure an interrelationship between airport and near regions. To sum up, according to construction of airport economic zone and its airport economic, it will process the rural-urban integration and promote the development of modern service industry [5].

References