Competitive analysis of Hong Kong aviation and air cargo business in Belt and Road Era: A practitioner perspective

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ABSTRACT

Hong Kong, which is known as a major air hub in Asia-Pacific, has undoubtedly handled over 5.1 million tonnes of cargo and 74.7 million passengers in 2018. With closer collaboration among different economic entities under the Belt and Road Initiative (BRI), the forthcoming developments will improve the connectivity and accessibility of Hong Kong aviation and air cargo business. The study conducted a comprehensive literature review to acquire the latest academic and professional knowledge of competitive analysis in aviation and air cargo business. It develops assessment criteria for cluster competitiveness based on Porter’s diamond model; evaluates and discusses different cluster competitiveness in Hong Kong and the region with BRI.

Key words: Aviation, air cargo, Belt and Road, Hong Kong.

INTRODUCTION

Air transportation is playing a vital role in global trade as now about 35% value of global trade were carried out by air but it only accounts for less than 1% of the volume (Ministry of Civil Aviation, 2019). With the rapid development of cross border e-commerce, air transportation is mostly used by people and businesses who ship perishable goods, fashion items, high-value products from overseas due to its efficiency and high-level of safety provided. The continuation will boost the air cargo demand. According to reports, the air cargo market is expected to keep growing at a CAGR of 4.1% during the forecast period 2019 – 2027 (Research and Markets, 2019).

Meanwhile, an agreement on the development of the Greater Bay Area was signed on 1 July 2017 by Chinese government. The Greater Bay Area is the Chinese government’s grand plan to integrate Hong Kong, Macau and nine southern mainland cities (Guangzhou, Shenzhen, Zhuhai, Foshan, Zhongshan, Dongguan, Huizhou, Jiangmen and Zhaoqing) into one world-class bay area – the largest the world has seen – in order to become a leading hub for innovation and economic growth (Global Industry Connects Consultancy, 2019). The Greater Bay Area Plan definitely means greater opportunities for air logistics industry players.

There is no doubt that Hong Kong has been entitled as a major air hub in Asia-Pacific. It has handled over 5.1 million tons of cargo and 74.7 million passengers in 2018. Hong Kong International Airport (HKIA) is the world’s third busiest international passenger airport and has one of the most active air cargo operations worldwide (AAHK, 2016; HKTDC, 2017). However, the increasing number of air cargo volume shipped directly from mainland airports especially Beijing, Shanghai and Guangzhou Airport; improving infrastructure development and aviation standard are major challenges for our leading position.

There are six airports in the Bay Area, the other five being Guangzhou Baiyun International Airport, Shenzhen International Airport, Zhuhai Airport, Foshan Shadi Airport in Guangdong, and Macao International Airport.

The expansion of air routes and development of air transport becomes one of the development focus of the “One Belt, One Road” (OBOR) initiative, China’s air transportation, aviation infrastructure and aircraft manufacturing are expected to accelerate, the forthcoming developments improve the connectivity and accessibility of Hong Kong aviation and air cargo business.
In the study, comprehensive literature review will be conducted to acquire the latest academic, professional knowledge and expertise of competitive analysis in aviation and air cargo business. Moreover, it will develop assessment criteria for cluster competitiveness in aviation and air cargo business based on Porter’s Diamond model; and will evaluate and discuss different cluster competitiveness in Hong Kong and Pearl River Delta (PRD) region with OBOR initiative.

The purposes of the study are to:

a) Review and identify the role of Hong Kong, act as gateway to link up and lead aviation and air cargo business among OBOR countries;
b) Explore opportunities and challenges for Hong Kong’s aviation and air cargo industry, with the OBOR, particularly in Middle Asian and ASEAN countries;
c) Draw insights and provide sustainable policy / recommendations in aviation and air cargo business for the government and
d) To enrich the body of knowledge regarding the extend of best practices of aviation and air cargo industry with the OBOR.

LITERATURE REVIEW

Aviation and Air Cargo business in Asia Pacific including Mainland China

Asia Pacific now holds a significant position in the air cargo market. There are different players in this region dominating the market such as Cathay Pacific Cargo, Singapore Airlines Cargo and China Airlines Cargo. According to IATA, the value of goods carried by airlines is expected to exceed $6.2 trillion in 2018, representing 7.4% of world GDP (IATA, 2018). Especially in East Asia which is the large market where over half of all air cargoes move from or to. In China area, government keep expanding its capacity for carrying more passengers and cargoes (Global Industry Connects Consultancy, 2019). “One Belt, One Road” (OBOR) initiative is one of the significant developments which provides more opportunities in China and its neighbor countries.

From South-east Asia to Eastern Europe and Africa, Belt and Road includes 71 countries that accounts for half the world’s population and a quarter of global GDP (Silk Road Briefing, 2018). In fact, the BRI encompasses an array of land and maritime trade routes that collectively bind together the economies of Europe, Asia and Africa. “the One Belt, One Road Initiative (BRI), is not only present in maritime and land transport, but also in air transport” (Belt and Road News, 2019). The China government invests a large amount on infrastructure construction and facilities to equip as a better hub to cope with the increasing air transportation demand.

Accelerating aviation business in Mainland and Hong Kong with Belt and Road (BRI) initiative

One Belt One Road initiative or BRI refers to the Silk Road Economic Belt and 21st Century Maritime Silk Road, unveiled by China’s President, Xi Jinping in 2013. The purpose of the belt and road initiative is to leverage China’s growing economic power and influence along its periphery in order to strengthen and expand cooperative interactions for creating an integrated web of mutually beneficial economic, social and political ties, and ultimately lower distrust and enhance a sense of common security (Swaine, 2015).

The Belt and Road Initiative aims to connect Asia, Europe and Africa along five routes, strengthening collaboration in policy co-ordination, facilities connectivity, unimpeded trade, financial integration, and people-to-people bonds with other countries.

Benefiting from the decline of crude oil prices and the rapid development of tourism, China’s aviation industry has started to recover after a few years of downturn. The expansion of air routes and the development of air transport are one of the priority areas of the “One Belt, One Road” initiative (Civil Aviation Administration of China, 2016).

The aviation industry sees an unprecedented growth in demand and the industry’s internationalization is expected to speed up. According to the 2015 large and medium-sized aviation projects list released by Civil Aviation Administration of China (CAAC), there were 51 strategic projects directly serving the “One Belt, One Road” initiative, with total investment amounting to nearly RMB 200 billion (Xinhua New Agency, 2016).

Under the impetus of the “One Belt, One Road” initiative, the international expansion of Chinese aviation enterprise is accelerating, and leading to more strategic cooperation and M&A, and a reshaping of the global aviation industry. As such, it definitely benefits and strengthens our competitiveness among Hong Kong International Airport (HKIA), aviation and air cargo business in Hong Kong and PRD region.

Research framework: competitive analysis of aviation and air cargo business with BRI

Competitive analysis was conducted in order to identify and evaluate both opportunities and challenges of the aviation and air cargo in HK & PRD region. Based on the literature, competitiveness refer to the national to create, produce, distribute, service and/ or products in international trade (Scott and Lodge, 1985). Evaluation and analysis on national competitiveness becomes a main concern among major economic cities and countries (Porter, 1990; WEF, 2015; The World Bank, 2015).

Porter’s diamond model is one of the most popular
According to the Porter’s Diamond model, the characteristics of the home country play a central role in explaining the international competitiveness of the firm. Thus, it asserts that the quality of the home country environment influences how successful the company can become in other markets.

Diamond model

The diamond model was developed by Michael Porter in 1990, to compare the competitive advantages among industrialized nations (Porter, 1990). Porter (1990) identified that the competitive advantage will be created and sustained through the highly localized process. The diamond model consists of four major elements including factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry (Porter, M.E., 1990). Porter (1990) proposed that these four major elements are mutually affected by each other. Bakan and Doğan (2012) identified that the interaction of diamond model will cause the positive or negative effect. The variable factor consists of the government and chance, which will affect the competitiveness indirectly but is also important (Porter, 1990). Diamond model is used for determining the rules of competition in a sector and making it important to have a role to play based on the opinion of achieving long-term competitiveness (Sun et al., 2010).

Also, a lot of research have used the diamond model to investigate the competitive advantages and barriers (Aghdaie et al., 2012; Al-Mamun et al., 2013; Chen and Ning, 2002; Chaabna and Wang, 2015; Jin and Moon, 2006). Porter’s Diamond model is one of the well-known approaches suitable to analyze the international competitiveness. Diamond model’s systemic nature emphasis on nature of the business environment. It highlights both importance of horizontal and vertical interconnections between companies and also within industries.

Chen and Ning (2002) suggested a revised diamond framework to evaluate the national competitive advantage in e-commerce development of developing countries. Al-Mamun et al. (2013) carried out a research on assessing national sustainable energy competitiveness by using the revised Porter’s diamond model. It provides a comprehensive framework to have an in-depth investigation on competitiveness assessment. Aghdaie et al. (2012) evaluated that the barriers to Iran’s saffron exports to the international market and the competitive advantage of Iran as the world’s biggest producer and exporter of saffron. Chen and Ning (2002) also used the Porter’s Diamond model to proceed its study on Logistics Cluster competitiveness among Asia main countries.

Factor conditions

Factor conditions are values of the firm’s skill to supply those factors of research production that allows a unit to compete (Curran, 2001). It indicated that factor condition is one of the main determining factors from Porter’s Diamond model that influences the logistics cluster competitiveness. The elements are necessary for the involvement in the production and infrastructure which is called factor conditions (Barragan, 2005). Porter (1990) proposed that the factor conditions are separated into two groups, including home-grown resources and highly specialized resources. For the home-grown resources which are easy to create, such as raw materials, energy, and unprofessional human resources. The highly specialized resources are more decisive, such as knowledge resources, technology, and professional manpower, so as to offer sustainability for the competitive advantage.

Also, the factor conditions can be separated in three distinctions (Bakan and Doğan, 2012). First, dividing the factors into basic or advanced. Second, dividing the generalized and specialized factors. Third, dividing the factors are inherited (for example, location or natural resources) or provided by the nation. Porter (1990) and Nilsson and Peterson (2002) also proposed that the specialized and created factors are necessary to form the competitive advantage, which is more sustainable than the basic, generalized, and inherited factors. Bakan and Doğan (2012) mentioned that the competitive advantage depends on how efficiently and effectively the factors are used and the condition of these factors, such as the quality, quantity, significance, and so on.

Demand conditions

Porter (1990) and Kuah and Day (2005) also mentioned in their study that the demand conditions is the second broad determinant of the national competitive advantage. In the demand conditions, the domestic demand for a product and/or an industry has a great effect on competitiveness (Riasi, 2015). The significant growth of domestic demand would drive the industry and/or manufacturer to develop their technologies to increase the effectiveness and efficiency (Porter, 1990). Barragan (2005) proposed that the demand condition is under pressure with the buyer requirement, such as quality, price, service, and so on.

Also, the demand condition will be affected by the factor
condition, such as the direction of product development (Naserbakht et al., 2008). It claimed that high standards can be meet by strong demand with pressure which can help to make improvement, innovation as well as tough challenges. Competitive advantage can also be gained when there are clear feedback and or earlier picture of customer need could be provided from home demand.

Tasevska (2006) identified that the demand condition can be defined as three main characteristics that are important to gaining national competitive advantage, including the home demand conditions, demand size and pattern of growth, and internationalization of domestic demand.

**Home demand conditions:** There are three elements for the home demand conditions, including segmented structure of demand, sophisticated and demanding buyers and anticipatory buyer needs (Bakan and Doğan, 2012). Porter (1990) claimed that the sophistication of demand is much more important than the size of demand. For example, if the domestic market is sophisticated and aimed at high quality, the industry or company is compelled to innovate and improve their products and services (Kuah and Day, 2005).

**Demand size and pattern of growth:** Bakan and Doğan (2012) proposed that the demand size and pattern of growth means the size of home demand, number of buyers, and growth rate of home demand. The market size would be an advantage to stimulate the investment and reinvestment or dynamism (Tasevska, 2006). Nilsson and Peterson (2002) identified that the rate of investment depends on how quickly the home market is developing.

**Internationalization of domestic demand:** The internationalization of domestic demand means the mobile and transnational local buyers and influences of foreign need (Bakan and Doğan, 2012). If the products or services are provided by the mobile or transnational firms, the company can gain a competitive advantage as a home buyer and foreign buyer (Tuna, 2008).

**Related and supporting industries**

Related and supporting industries include raw materials suppliers, equipment and tools, distributors and retailers, and so on (Porter, 1990). Porter (1990) proposed that the related and supporting industries is an important factor to affect the competitive advantage. The comparative advantage will be created by the supplier industries through producing inputs, providing new methodologies and opportunities to utilize new technology and create innovations (Tasevska, 2006). Kuah and Day (2005) proposed that the firm can gain the competitive advantage in the related and supporting industries through low costs strategy or differentiation, in order to increase its uniqueness.

The related and supporting industries can be defined in vertical (buyer/supplier) and horizontal sector (technology, channels, etc.) (Barragan, 2005). The supplier industries gives the potential competitive advantage to firms, such as cost-effective inputs, quick response to market trends and changes, and the stable and close working relations (Porter, 1990; Nilsson and Peterson, 2002; Kuah and Day, 2005; Bakan and Doğan, 2012). It has stated that sharing of logistics infrastructure could help to gain the operational advantages for co-located companies. Besides the sharing of tangible assets, intangible assets such as the knowledge and information, efficiency of transport could also affect the competitive advantages.

**Firm strategy, structure, and rivalry**

Riasi (2015) mentioned that the firm strategy, structure, and rivalry is the source of competitive advantage. The convergence of favorable management and organizational models specifically to the government will help to create competitiveness (Porter, 1990). The management strategy, organizational structure, and origin of a firm also had the direct influence on its performance and competitiveness (Aghdaie et al., 2012). Barragan (2005) proposed that the firm strategy, structure, and rivalry will affect the competitiveness domestically, so as to rise in productivity required to compete internationally.

Porter (1990) and Naserbakht et al. (2008) also stated that the domestic competition and the ambition of achieving competitive advantage will help supply organizations with bases for succeeding different advantages on the global scale. Tasevska (2006) claimed that the pattern of rivalry will affect the innovation process and the plan of international achievement. Bakan and Doğan (2012) mentioned that the government is one of the factors that will influence the management and innovation plan of the industry or a firm. An originated, systemized and managed firm strategy, structure and rivalry can support a nation to achieve a sustained competitive advantage (Nilsson and Peterson, 2002; Kuah and Day, 2005; Tuna, 2008). Culture is also plays an important role in the firm strategy, structure, and rivalry (Bakan and Doğan, 2012). For example, the family-based business is controlled and managed by its family, which acts differently with the professionally managed business (Naserbakht et al., 2008).

**Government**

Barragan (2005) proposed that all government policies and
regulations can benefit or adversely affect the competency of an industry. Therefore, the action of the government will cause an improvement or damage on the national competitive advantage and its competitiveness (Nilsson and Peterson, 2002). Tuna (2006) stated that the government is the significant part to complete the diamond model. For example, taxes, antitrust laws, education policies, capital market regulations, and so on (Hosein Rezazadeh and Pakneiat, 2008).

The government is an important role in influencing the demand and factor conditions so as to affect the related and supported industries and the firms' strategies, structure and rivalry (Tasevska, 2006). Under the diamond model, the government should prevent any direct treatment in the market system, seek to develop competitive environment, and encourage corporate to innovate (Hosein Rezazadeh Mehrizi and Pakneiat, 2008).

**Chance**

The government actions will become the driven force of chance (Porter, 1990). Chance usually is the outside control improvement of the company (Nilsson and Peterson, 2002). Porter (1990) proposed that chance will indirectly cause the competitive advantage positively or negatively. Chance is not well foreseen and predicts, such as the foreign government political decisions, war, changes in financial markets (Tasevska, 2006; Hosein Rezazadeh Mehrizi and Pakneiat, 2008; Tuna, 2008).

As mentioned above, the six critical determining factors of diamond model will be adopted to measure and evaluate the competitiveness of Hong Kong aviation and air cargo business with developing Belt and Road Initiative (BRI) as shown in Figure 1.

**RESEARCH METHOD**

The study carried out semi-structured interviews to collect data from the respondents. The use of interviews for business research has the following advantages. First, interview is a practical and efficient way of collecting data which cannot be found in the published format, such as journal articles, books, magazines, newspapers, etc. In addition, reasons like study on people's experience from their points of view, using interview as the method could gather specific and additional points which are insightful (Cooper and Schindler, 2003; Eriksson and Kovalainen, 2016; Miles and Huberman, 1994; Myers, 2013; Naslund, 2002).

A total of seven practitioners were invited to share their views on the competitiveness (that is, opportunities and challenges) of Hong Kong aviation and air cargo business with developing Belt and Road Initiative (BRI) as well as the Greater Bay Area (GBA) in the region. Among the interviewees, five of were middle to senior management of the worldwide or regional companies in air forwarding; air transport logistics and courier industry. While two of them were experienced practitioners from professional association in cargo logistics industry and expert in policy think tank.

The duration of each interview was about one and a half hour in average. Note taking and audio recording were carried out to collect the views from the interviewees.

**FINDINGS AND ANALYSIS**

Production factor includes human resources, natural resources, knowledge, capital resources and infrastructure. Most of the interviewees also think that capital resources and infrastructure is one of the most important factors which increases competitiveness of logistics industry in the development of OBOR initiatives. Some interviewees indicated that more investment on the modern communications, information and transportation infrastructure such as airport, more positive effect could be bringing to the industry and accelerate the development of OBOR. More resources have now been focused on the ASEAN where it will be more favorable for the business activities and facilitate development of logistics industry.

Interviewees indicated that Hong Kong now lacks land for logistics use.

Demand conditions are mainly concerned about the domestic market demand. Interviewees agreed that domestic demand for an industry has a great effect on competitiveness. Strong and large scale of local customer need could increase the competitiveness of aviation and air cargo industry. The local demand of the air services will be increased during the development of OBOR because the domestic and international trading will be increased and stimulated by the market. More countries equip to increase its ability for business, logistics and the shipping industry will expand at the same time increase its competitiveness.

Performance of related industries and supporting industries, from the views expressed by interviewees, it is also one of the most important factors which increases competitiveness of the industry. When different companies in the industries proactively produce with new technology and make great contribution on the service aspects, it could increase the competitive advantage. Air cargo logistics and shipping industry will also gain advantage with this. Regarding the related supportive industries such as electronics and information, they could provide better information flow and build up smart city to increase the competitiveness.

Firm strategy, structure, and rivalry, from the views expressed from interviewees, are one of the elements that could affect the competitive advantages certainly. Different strategies of the companies lead to different mode of competition which stimulate the firms and the industry to
be more organized and managed to achieve a sustained competitive advantage.

**Government:** The interviewees emphasized that it is important for the government to implement and plan regarding policy and rules which could be favorable to the firms and industry. Interviewees also expressed that if the firms and industry could benefit and gain competitive advantage, government has its power to affect it. Government could set industrial policy and formulate competition rules to facilitate the air transport and logistics development. Support from government with favorable policy to the participants such as factory and shipping companies in the logistics industry could positively increase the competitiveness. The Interviewee further stated that government could support R&D and technology development in ways such as RFID and IOT application so that there can be increase in technical competence levels for the industry. More information opened and shared could stimulate the innovation and logistics development.

**Chances:** From the views expressed by the interviewees, chances could affect the competitiveness and competition environment. Interviewee stated that some of the region may restrict by unstable political issue and its government policies which may provide less opportunities and weaken the competitiveness. Some countries such as Singapore where the government provides opportunities with policy support which increases the competitiveness for the industry.

In short, there are three factors that the interviewee agreed are the most important factors toward the air logistics industry in OBOR Initiative. First one is the production factors which include human resources, natural resources, capital resources and infrastructure. Infrastructure was pointed out by professionals that it could help to increase the competitiveness while the development of BRI. Second is the government. Government is playing a vital role in this large-scale development and she has authority to plan and support different parties to facilitate the whole project. Government has its ability and power to support the development of the industry and formulating rules to favor the development as well as facilitate the competition. The third one is the performance of related industries and supporting industries. It includes the upstream industry, downstream industry and also the related support industries. When the production and distribution could perform well, it could facilitate the development of the industry and increase the competitiveness on aviation and air cargo logistics development.

**RECOMMENDATIONS AND CONCLUSION**

The government could provide different support or subsidy to this foreign enterprise, aviation and air logistics services company to set up their branch office in Hong Kong. Government could also set up some policies which can favor those logistics services enterprises in overseas in order to attract their business to Hong Kong. More logistics
service companies providing more route and value-added services in Hong Kong could facilitate the development of the industry and increase the level of service quality in the whole operation of terminal. The efficiency and effectiveness of the air cargo service could also level up when more air logistics companies set up their business with comprehensive service in Hong Kong. For example, more budget airline set up in Hong Kong will provide more services so that more passengers could enjoy the services and increase the competitiveness in the logistics industry.

Apart from the government support, industry could also be a vital role. The associations in the industry could communicate and cooperate with the government to provide more effective measurements to facilitate the development and plan of shipping and logistics area. Associations, Universities and Think Tank could reflect the current issue and problems to the government so that government departments could react with some solutions for a more efficient and effective operation.

In summary, the six factors of the diamond model proved that they could help to analyze the BRI development. Among those six factors, there are 3 factors (production factor, government and industry support) are pointed out as the more critical factors. It helps the business to analyze whether they are being competitiveness enough.

The findings would be helpful for filling the literature gap and provides a foundation for further studies of competitiveness analysis in other sectors / industries. The limitation of this research is that it only focuses on qualitative research (that is, personal interview and case study). Future research should be applied with quantitative approach using a large sample of companies in order to generalize results.

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