Research Article

Received: 18 May 2022 / Accepted: 18 August 2022 / Published: 2 September 2022

Strategies for Improving Air Connectivity in Indonesia through the Indonesian, Malaysia and Thailand Growth Triangle Cooperation

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DOI: https://doi.org/10.36941/ajis-2022-0125

Abstract

Indonesia, Malaysia, Thailand Growth Triangle (IMT-GT) is a sub-regional collaboration formed to accelerate economic transformation in less developed regions. The Growth Triangle is the basis of an economic concept driven by a strong political commitment. Through one of the sectors within the IMT-GT framework, the sub-regional cooperation in air transportation, Indonesia supports and plays an active role in implementing IMT-GT activities. In terms of implementation, it proposes flight points between the IMT-GT regions to improve air connectivity between these countries. The purpose of this study is to formulate the best strategy formulation for Indonesian government policymakers, in this case, the Directorate General of Civil Aviation, Ministry of Transportation, to deal with IMT-GT cooperation. This research uses a qualitative approach with a SWOT analysis method and a grand strategy matrix. The research locus was carried out at the Directorate General of Civil Aviation of the Ministry of Transportation of the Republic of Indonesia in 2019 with 6 key informants who have competencies and strategic positions at the Directorate General of Civil Aviation.

Keywords: *Strategic Management, Air Connectivity, IMT-GT Cooperation*

1. Introduction

Cooperation between countries is very much needed in the era of economic globalization (Endri et al., 2021). It is happening now, especially in developing countries, because they can accelerate the development process by working together. After all, no country can stand alone without cooperation with other countries. As a developing country, Indonesia faces many problems and challenges in increasing economic competitiveness at the sub-regional, regional and global levels. The cooperation of three countries in ASEAN (Association of Southeast Asian Nations) agreed to form Indonesia, Malaysia, and Thailand Growth Triangle (IMT-GT) which aims to encourage economic transformation in less developed areas. The Growth Triangle is the basis of an economic concept driven by a strong political commitment. The economic growth triangle connects areas close to each other with each country involved (Smith, 1997).

To increase the rate of economic growth, especially to create better accessibility and movement of people and goods between regions, attract foreign investors and spur trade and tourism between regions (Hailuddin et al., 2022), Indonesia is going through one of the sectors within the framework of the IMT-GT cooperation, namely the sub-regional cooperation sector. Air transportation supports and plays an active role in implementing IMT-GT activities and implementation, namely proposing flight points between the IMT-GT regions to improve air connectivity between these countries (Ricardianto et al., 2022). However, not all regions have become flight points from Indonesia to areas in Malaysia and Thailand and vice versa.

During the implementation of the IMT-GT collaboration in 1995, Four flight points were generated for Indonesia, namely Medan, Padang, Banda Aceh, and Nias. There are two points, namely Nias and Padang, where flights have never been carried out between the IMT-GT interstate flight points. The Nias Point was finally revoked as one of the flight points in Indonesia based on the agreement of the three Ministers of Transportation IMT-GT member countries on 9 November 2018 in Bangkok, Thailand as well as entering a new point as a substitute for Nias, namely Siborong-Borong and Tanjung Pandan through the Protocol to Amend the Memorandum of Understanding between Governments of Indonesia, Malaysia, and Thailand regarding the Expansion of Air Linkages. This is due to the low market demand for aviation services at these two points to and from Malaysia and Thailand.

Table 1: Position of IMT-GT Flight Implementation in Indonesia

No.	Airline	Route	Description
1	Sriwijaya Air	Medan (KNO)-Penang (PEN)	vv
2	Lion Air	Medan (KNO)-Penang (PEN)	vv
3	Indonesia Air Asia	Medan (KNO)-Penang (PEN)	vv
4	Air Asia Berhad	Penang (PEN)- Medan (KNO)	vv
5	FireFly	Penang (PEN)-Banda Aceh (BTJ)	vv
6	Malindo	Penang (PEN)-Banda Aceh (BTJ)	vv

Source: Processed Data, 2022

Table 2: Positions of Flights that are No Longer Operating in the Region BMI-GT Indonesia

No.	Airline	Route	Description
1	Wings Abadi	Medan (KNO)-Melaka (MKZ)	vv (last operating October 2018)
2	Malindo	Ipoh (IPH)-Medan (KNO)	vv (last operating December 2018)
3	Malindo	Subang (SZB)-Silangit (DTB)	vv (last operating December 2018)

Source: Processed Data, 2022

Table 3: Implementation of IMT-GT by Indonesia, Malaysia, and Thailand Air Carriers

Indonesia	**Airline**	**Route**	**A/C Type**	**seats**	**Freq/Week**	**Units/Week**	**Availability**	**Usage**	**Remark**
	IAA	KNO-PEN	A320	180	28		UNLIMITED		
	Lion Air	KNO-PEN	B739	215	7				
	Sriwijaya Air	KNO-PEN	B739	220	7				
Malaysia	Airline	Route	A/C Type	seats	Freq/Week	Units/Week	Availability	Usage	Remark
	AirAsia Berhad	PEN-KNO pp	A320	180	7		UNLIMITED		
	Malindo Air	PEN-BTJ pp	ATR72-600	72	7				
	Firefly	PEN-BTJ pp	ATR72	72	4				
Thailand	Airline	Route	A/C Type	seats	Freq/Week	Units/Week	Availability	Usage	Remark
	None						UNLIMITED		

Source: Kementerian Perhubungan Direktorat Jenderal Perhubungan Udara Republik Indonesia (2019)

Based on the background of the problem above, the focus of the research is as follows:

1. Indonesia's readiness to face competitive threats and opportunities in air connectivity with Malaysia and Thailand.
2. Indonesia's readiness to add flight points within the IMT-GT area.
3. Government readiness through regulatory instruments to support the implementation of policies that have been agreed upon between IMT-GT countries.

Based on the research focus above, several research questions can be formulated as follows:

1. What can be identified as the principal strength and weakness factors, both internal and external factors that Indonesia has in the framework of the IMT-GT cooperation on air connectivity in Indonesia?
2. How is the strategy formulation that can be applied based on the existing alternative strategies to face competition in implementing the IMT-GT cooperation?

2. Literature Review

The theoretical basis of this research refers to the theory of strategic management in which there is a strategy formulation. Strategic management is defined as a process of evaluation, planning, and implementation designed to maintain or enhance competitive advantage (Mujahidin et al., 2021). The evaluation process deals with the external and internal environment, planning involves the development of business models, corporate direction, competitive tactics, international strategies, acquisitions, and collaborative actions and the implementation phase requires leadership to build appropriate organizational structures, develop management culture, control process strategies, and direct the organization through corporate governance (Hakim et al., 2022; Sammut-Bonnici, 2015). Mišanková and Kočišová (2014) state that strategic planning is aimed at preparing the right strategy for the company and implementing the developed strategy into a strategy with detailed plans that can be used within an organization.

Measuring performance is one of the strategic assessment activities (Saluy et al., 2021). According to Wheelen et al. (2018), strategic management is a series of managerial decisions and actions that help determine an organization's long-term performance. Anderson (2000) found a positive relationship between strategic planning and organizational performance. Afonina (2015) also revealed a strong positive correlation between the use of strategic management accounting tools and organizational performance. Andrews et al. (2009) stated that the absence of a strategy has a negative impact on performance, whereas maintaining a strategy tends to result in a higher level of organizational performance. Goll et al. (2008) found that management characteristics in business strategy have a positive impact on performance in the aviation industry.

The following theoretical basis is air transportation management which discusses accessibility and air connectivity. Accessibility is the most important issue of the transportation system by integrating the geographic land use management system with the transportation network (Saif et al., 2019). Accessibility is a measure of the convenience of how land use locations interact with one another and how easy and difficult it is to reach these locations through the transportation network system. Geurs and ven Wee (2004) provide a view of accessibility that focuses on the evaluation of a typical transportation strategy that requires feedback mechanisms between land use, transportation systems, temporal and individual component. Accessibility factors play an essential role in regional development efforts because without the support of an adequate transportation system, facilities, and transportation infrastructure, the development of an area/region will be challenging to develop (Rodrigue, 2016).

Regarding air connectivity, the International Air Transport Association (IATA) (2019) has developed connectivity indicators to measure the degree of integration with global air transport networks. The indicator shows the number of destinations, the frequency of flights for each destination, and the number of further connections available. The increase in the number of destinations, the frequency of service increases, and the number of connecting connections served by the destination airport further enhances connectivity. In the context of strategic management, the choice of route structure is one element of the airline's business model (Cook & Goodwin, 2008).

Air connectivity is a network that includes access between one country and another through an integrated transportation system and inter-connection through each country's flight network (IATA, 2019). Meanwhile, according to ACI Europe (NetScan), air connectivity is formulated as follows: "Air connectivity is a composite measure reflecting the number of destinations, the frequency of service, and the quality of the connections at a given airport. The NetScan connectivity measure (used by ACI Europe) reports airport connectivity using direct, indirect, total, and hub connectivity". Furthermore, according to the World Bank, air connectivity is: Air connectivity indicates the readiness of a country to effectively connect to other nodes in the transportation network system. Transport connectivity is seen as the degree of interconnection of urban nodes by various types of transport networks between countries (Liu et al., 2017). Cross-border air connectivity makes it easy to move people or goods between points of two countries through air transportation (Burghouwt & Redondi, 2013). The above formulation shows how important and urgent the problem of air connectivity is in connecting a city, country, or region so that harmonious interactions between countries can be established to improve the economy and welfare.

The study of Dai et al. (2018) investigates major topological and spatial changes through changes in the structure of the Southeast Asian air transport network over the period 1979-2012. Dimitriou and Sartzetaki (2018) found the positive impact of air transport connectivity on various economic activities. Antunes et al. (2020) examine the determinants of air connectivity in the European region and concludes that low-cost transport improves air connectivity. The study of Zhang et al. (2022) compared Beijing's international air connectivity with other major international exchange hubs and gateway airports around the world. The results found that although Beijing has direct flights to a comparable number of foreign destinations, the city still lags far behind other major peers in international air connectivity.

3. Research Methods

The research approach was carried out qualitatively with descriptive methods using SWOT analysis and the Grand Strategy Matrix. Sources of data or informants in this study were officials related to the IMT-GT collaboration who had competence and strategic positions at the Directorate General of Transportation of the Ministry of Transportation of the Republic of Indonesia as many as 6 people. The analysis is carried out by assessing or calculating weights and scores on all influencing factors. These factors include the internal and external environment and are then analyzed using SWOT analysis to determine the strengths, weaknesses, opportunities, and threats. To strengthen the

analysis to map the company's position against the conditions of the competitive environment, it is carried out through the Grand Strategy Matrix.

4. Results and Discussion

Based on the literature review, documents, news published in the media, and preliminary interviews both within the Directorate General of Civil Aviation and within the aviation stakeholder environment, the following elements were obtained from the respondents' assessment of internal and external factors as presented in table 4. and 5 below.

Table 4: Results of Informants' Assessment of Internal Factors

No	Internal factors	Average	Criteria
1	Diplomacy and negotiation skill standard	3.00	W
2	Quantity and quality of human resources (HR)	3.33	S
3	Budget	3.17	W
4	Full government support	3.5	S
5	Use of information technology to support office operations	3.33	S

Source: Processed Data, 2022

Table 5: Results of Informants' Assessment of External Factors

No	External Factors	Average	Criteria
1	Air transport healthy competition	3.17	O
2	*Demand*tourist	2.17	T
3	Tariff competition	2.50	T
4	Slot time/airport capacity	3.33	O
5	Airport infrastructure readiness	3.50	O

Source: Processed Data, 2022

The initial activity is to group internal strengths and weaknesses and external factors into opportunities and threats, after carry-out IFAS – EFAS weighting with the results as presented in tables 6 and 7 below:

Table 6: IFAS Weight Assessment Results - EFAS SWOT

	Number	Average	Relative Weight	Urgency (Rating)	Score (Weight X Rating)
Strength	2	3.33	0.20	3	0.6
	4	3.50	0.30	4	1.2
	5	3.33	0.20	3	0.6
	Total S (Xsi)	**10.16**	**0.70**		**2.4**
Weakness	**Number**	**Average**	**Relative Weight**	**Urgency (Rating)**	**Score (Weight X Rating)**
	1	3.00	0.15	1	0.15
	3	3.17	0.15	2	0.3
	Total W (Xwi)	**6.17**	**0.30**		**0.45**
	Total (Xsi+Xwi)	**16.33**	**1.00**		

Source: Processed Data, 2022

Table 7: Results of IFAS Weight Assessment - EFAS SWOT

	Number	Average	Relative Weight	Urgency (Rating)	Score (Weight X Rating)
Strength	2	3.33	0.20	3	0.6
	4	3.50	0.30	4	1.2
	5	3.33	0.20	3	0.6
	Total S (Xsi)	**10.16**	**0.70**		**2.4**
	Number	**Average**	**Relative Weight**	**Urgency (Rating)**	**Score (Weight X Rating)**
Weakness	1	3.00	0.15	1	0.15
	3	3.17	0.15	2	0.3
	Total W (Xwi)	**6.17**	**0.30**		**0.45**
	Total (Xsi+Xwi)	**16.33**	**1.00**		

Source: Processed Data, 2022

Based on the weighting of the assessment of the influencing factors above, a combination of internal-external strategy interactions is carried out to determine the priorities and interrelationships between strategies based on their SWOT weighting. The formulation of these strategies is compiled based on internal factors and external factors into the IFAS – EFAS SWOT Interaction Matrix as in table 8, the ranking of the largest to the smallest weights provides a choice of alternative strategies that can be used as decisions.

Table 8: IFAS – EFAS SWOT Interaction Matrix

IFAS / **EFAS**	**Strength (S)** 1.Quantity and quality of Human Resources (HR) 2.Full government support 3.Use of information technology to support office operations **Weight = 2.4**	**Weaknesses (W)** 1.Ability standard diplomacy and negotiation 2.Budget **Weight = 0.45**
Opportunity (O) 1.Air transport healthy competition 2.Slot time/airport capacity 3.Airport infrastructure readiness **Weight = 2.2**	With the power possessed by the Directorate General of Civil Aviation such as the quantity and quality of Human Resources (HR) that have been tested so far support the implementation of the IMT-GT collaboration, the government's full support in every policy produced by the IMT-GT as well as the use of information technology to support office operations, is used to face the increasingly tight and open-air transportation competition in the ASEAN region, especially the sub-region. **Weight = 4.6**	1.Increase Ability standard diplomacy and negotiation owned by all employees on duty at the Secretariat General of Civil Aviation and related technical directorates. They know procedures for diplomacy, public speaking, and negotiations in preparing and fighting for Indonesia's national interests with partners from abroad in bilateral and multilateral forums. 2.Improving budget conditions through operational cost efficiency efforts and maximizing the skills of each related employee **Weight = 2.65**
Threats (T) *1.Demand*tourist 2.Tariff Competition **Weight = 0.60**	1.Intensify coordination with the Ministry of Tourism to increase tourism promotion so that the demand for the aviation market can be maximized 2.Indonesia does not regulate the rate of international air transportation, so it only applies to filing tariffs to control and prevent discriminatory and anti-competitive practices. Fares competition is unavoidable with the increasing number of new flights, especially LCC, fare competition is something that needs attention and the best solution for all airlines; according to IATA, the average price of flight fares has fallen by 90% compared to the average price. Occurred in 1990. The increasing burden of operational costs makes airlines continuously make efficient and look for effective forms of marketing. **Weight = 3**	1.Increase ability diplomacy and negotiation owned by all employees so that when the market demand has grown, the assigned delegates can carry the nation's mission in international events 2.Maximizing coordination with relevant aviation stakeholders such as IATA for international flight fare determination policies. **Weight = 1.05**

Source: Processed Data, 2022

The alternative strategy with the highest weight from Strength – Opportunity (SO) is the interaction of IFAS -- EFAS, which is interpreted as a strategy to use strengths to take advantage of existing opportunities. This condition is favorable for the Directorate General of Civil Aviation because it has more significant strengths than weaknesses in terms of internal factors. In contrast, the current opportunities are far greater than the threats in terms of external factors. Strategy formulation is obtained by combining S, W, O, and T elements, resulting in several strategy combinations, as shown in Table 9 below.

Table 9: Priority Strategies: Strength – Opportunity (SO) Strategy

Strength	**Opportunity**
1.Quantity and quality of Human Resources (HR) 2.Full government support 3.Use of information technology to support office operations.	1.Air transport healthy competition 2.Slot time/airport capacity 3.Airport infrastructure readiness
Strategy Strength – Opportunity (SO)	
With the power possessed by the Directorate General of Civil Aviation, the quantity and quality of Human Resources (HR) that have been tested so far in supporting the implementation of the IMT-GT cooperation, the government's full support in every policy produced by the IMT-GT as well as the use of information technology to support office operations, is used to face the increasingly tight and open-air transportation competition in the ASEAN region, especially the sub-region.	

Source: Processed Data, 2022

A grand strategy matrix was carried out to sharpen further analysis and determine the position of the Directorate General of Civil Aviation amid the implementation of the IMT-GT collaboration, as shown in Table 10 below.

Table 10: Grand Strategy Matrix

Internal Strategy Factor Position	**Rating**	**Position External Strategy Factors**	**Rating**
Strength		**Threat**	
1.Quantity and quality of Human Resources (HR)	3.33	*1.Demand*tourist	- 2.17
2.Full government support	3.50	2.Tariff Competition	- 2.50
3.Use of information technology to support office operations	3.33		
	10.16		**-4.67**
Weakness		**Opportunity**	
1.Diplomacy and negotiation skill standard	- 3.00	1.Air transport healthy competition	3.17
2.Budget	- 3.17	2.Slot time/airport capacity	3.33
		3.Airport infrastructure readiness	3.50
	- 6.17		**10**
Strength = 10.16/3 = 3.39 Weakness = -6.17/2 = -3.08		Threat = -4.67/2 = -2.35 Probability = 10/3 = 3.33	

Source: Processed Data, 2022

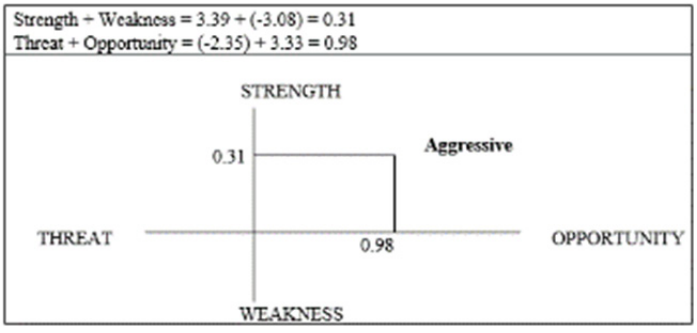

Figure 1: Grand Strategy Matrix Processing Results

Based on the grand strategy matrix processing the influencing factors, the Directorate General of Civil Aviation is in the power-opportunity quadrant position (0.31, 0.98). This quadrant position shows an aggressive strategy because it has a competitive advantage, using internal strengths to take advantage of external opportunities. The author notes several essential things that can become the strategy of the Directorate General of Civil Aviation, namely:

1. Make flight offers to national/foreign airlines for new or unserved airports;
2. Encourage charter flights;
3. Encouraging incentives (e.g., landing fees, parking fees) that support air transportation services in sub-regional cooperation;
4. Encouraging the establishment of joint meetings/convergence meetings with other related sectors (tourism/transport including airlines and travel agents); and
5. Develop airport infrastructure.

The strategy obtained from the results of the processing of the grand strategy matrix is by the realization of the President's Vision (the realization of a sovereign, independent, and personality-based Indonesia based on cooperation) in the transportation sector, namely by "realizing reliable, competitive and providing added value national connectivity." This is the goal of the Ministry of Transportation as well as the vision and mission of the Directorate General of Civil Aviation, where connectivity is the primary key to economic growth and regional development.

The implication of this research is that to deal with changes and increasing competition in the aviation industry, a good strategy is needed, as described above. With good strategic readiness, the Directorate General of Civil Aviation is faster in implementing and maximizing sub-regional market opportunities. However, on the contrary, if still use the pattern that has been running so far, it will fail in this cooperation scheme as expected at the initial goal of the IMT-GT cooperation being formed, namely to accelerate economic transformation in less developed areas. Therefore, the Directorate General of Civil Aviation should carry out the planning, monitoring, and evaluation stages on an ongoing basis to see the development and climate change of the air transport market.

5. Conclusion

Based on the results of research on the assessment of the SWOT questionnaire by key informants who are considered competent, it can be concluded that internal and external factors can be formulated as follows:

5.1 Strength Factor

The main Strength Factors possessed by the Directorate General of Civil Aviation are quantity and quality of human resources (HR), full government support, and information technology to support office operations. With the power possessed by the Directorate General of Civil Aviation, such as the quantity and quality of human resources (HR) that have been tested so far support the implementation of the IMT-GT collaboration, the government's full support in every policy produced by the IMT-GT as well as the use of information technology to support office operations, is used to face the increasingly tight and open-air transportation competition in the ASEAN region, especially the sub-region.

5.2 Weakness Factor

The main Weakness Factors possessed by the Directorate General of Civil Aviation are diplomacy, negotiation, and budgetary skills standards. With this weakness factor, the Directorate General of Civil Aviation can improve the ability standard diplomacy and negotiation owned by all employees both on duty at the Secretariat General of Civil Aviation and related technical directorates so that they know procedures for diplomacy, public speaking, and negotiations in preparing and fighting for

Indonesia's national interests with partners from abroad in bilateral and multilateral forums. Besides that, the Directorate General of Civil Aviation is also expected to improve budget conditions through operational cost efficiency efforts and maximize each related employee's expertise.

5.3 Opportunity Factor

The main Opportunity factor for the Directorate General of Civil Aviation is healthy competition for air transportation, so that lot of time/airport capacity and Kairport infrastructure preparation. As for the opportunities that the Directorate General of Civil Aviation can take advantage of, there is currently no air transportation competition in the IMT-GT area, but this can be circumvented by promoting tourism in the area, and conducting student exchanges, or promoting campuses/schools in the area. By way of the local government providing subsidies to airlines interested in flying these points. Time slots for the IMT-GT region are still available due to the low number of flights. This is an opportunity for Indonesia to earn foreign exchange through the IMT-GT area if the demand has increased. The readiness of airport infrastructure in Indonesia is perfect, but because the demand is low, several airports at the IMT-GT points are not optimal.

5.4 Threat Factor

The main threat factors for the Directorate General of Civil Aviation are tourism and tariff competition. The Directorate General of Civil Aviation should further intensify coordination with the Ministry of Tourism to increase tourism promotion to maximize the demand for the aviation market. Regarding tariff competition, Indonesia does not regulate the rate of international air transportation, so it only applies tariff filing to control and prevent discriminatory and anti-competitive practices. Fares competition is unavoidable with the increasing number of new flights, especially LCC; fare competition needs attention and the best solution for all airlines; according to IATA, the average flight fare price has fallen by 90% compared to the average price, which happened in 1990.

6. Recommendations

Using the results of the weighting of the SWOT questionnaire and position analysis on the grand strategy matrix, the proposed recommendations that can be recommended are the Strength-Opportunity (SO) Strategy, which is a strategy that uses strength to take advantage of opportunities with the following alternative strategies:

1. They are maximizing internal strengths to take advantage of current opportunities. These strengths are utilized for the short term and must also be maintained and even developed in line with market dynamics and government needs. Strength factors that need to be maintained such as quantity and quality of human resources (HR), full government support, and use of information technology to support office operations;
2. Increase diplomacy and negotiation skill mark owned by all employees both on duty at the Secretariat of the Directorate General (Setditjen) of Civil Aviation and in the relevant technical directorates so that they know procedures for diplomacy, public speaking, and negotiations in preparing and fighting for Indonesia's national interests with partners from abroad in bilateral and multilateral forums;
3. We are improving budget conditions through operational cost efficiency efforts and maximizing the expertise of each relevant employee to take advantage of the increasingly open cooperation market potential amid competition between ASEAN airlines, especially sub-regions.

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