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Factors Influencing Air Cargo Business: Business Plan and Strategy, Professional Human Resources, and Airlines' Performance

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Abstract: The air cargo business has facilitated international trade and the global economy. It plays an important role due to its characteristics, such as long-distance capability, short transport times, low network density, and comparatively low transport capacities. This article then tried to explain and analyze some prominent factors that are influencing the air cargo business. During the research process, the author used a qualitative method by focusing on the literature review design. The result of this article showed that three prominent factors have a significant influence on the air cargo business. First, business plan and strategy by creating an integrated and consolidated plan to achieve competitive advantage. Second, professional human resources or actors who have a crucial role in air cargo operations, such as the shipper, freight forwarder of integrator, customs agent, and ground handling agent. Third, airlines' performance can be found in product and service quality improvement. Furthermore, other factors also have an influence, namely airport management, economic factors, government policies, the air cargo market, technology advancement, and environmental issues.

Keywords: Air Cargo, Economic Growth, Business Plan and Strategy, Human Resources, Airlines' Performance

INTRODUCTION

Air transport is mainly used to deliver time-critical goods (such as important replacement components or perishable goods) and/or valuable goods (particularly goods with high value-to-density ratios). This is because air cargo has several characteristics, namely long-distance capability, short transport times, low network density, and comparatively low transport capacities (Gupta & Walton, 2017; Noss & Wenzel, 2015). Despite only 1% of the total volume of world trade being transported via air, the orientation towards high-value products is reached almost 35% of international trade value. It even represented 7.4% of the world GDP in 2018 with a trade value exceeding USD 6.2 trillion in 2018 (Bombelli et al., 2020). In the air cargo service chain, there is a partnership between carriers (airlines) and

freight forwarders. Carriers own airplanes and operate the flight, meanwhile forwarders purchase bulk cargo capacity by contracting with airlines (Amaruchkul et al., 2011).

Through its role in the supply chain, the air cargo business facilitates the global economy and international trade. The growth of the air cargo business has then encouraged by the emergence of globally integrated just-in-time production management which was considered to be a better customer service (Hajjar & Kaitouni, 2018). With enhanced production speed and flexibility characterizing the new economy, and with time-definite international transactions in an increasingly globalized and complex supply chain, air cargo will continue to have a crucial role as a business enabler in the global economy. In the last decades, the air cargo business grew approximately 5% per annum, which is higher than most other types of mature industries (Dewulf et al., 2021).

Besides its capability to increase economic growth and development, air cargo also has an essential role in facilitating the operation of the local economy, especially at the firm level (Tan & Tsui, 2016). As the prospect of the global market becomes more important, the demand for air cargo movements will continue to increase as part of an expanding logistics system that will emphasize greater efficiency, higher processing speeds, time-definite delivery, reduced costs, and more specialized customer services. Therefore, this article tried to analyze several factors which are influencing the air cargo business development.

Based on the research background above, this article has three important research questions as follows:

1. Does business plan and strategies affect the air cargo business?
2. Does professional human resources affect the air cargo business?
3. Does airlines' performance affect the air cargo business?

LITERATURE REVIEW

After conducting a literature review on several related materials, the authors have found some important findings as described in the table 1 below.

Table 1. Literature Review Findings

No	Author (year)	Research's result	The similarity with this article	The difference with this article
1.	Chao & Li (2015)	Professional human resources, airlines' performance, and government policies have a positive and significant influence on the air cargo business	Professional human resources and airlines' performance have a positive and significant influence on the air cargo business	Government policies have a positive and significant influence on the air cargo business
2.	Dewulf et al. (2019)	Business plan and strategy and professional human resources have a positive and significant influence on the air cargo business	Business plan and strategy and professional human resources have a positive and significant influence on the air cargo business	-
3.	Feng et al. (2015)	Professionals human resources, airlines performance, and airport management have a positive and significant influence on the air cargo business	Professionals human resources and airlines performance have a positive and significant influence on the air cargo business	Airport management has a positive and significant influence on the air cargo business

4.	Gupta & Walton (2017)	Airlines' performance and economic factors have a positive and significant influence on the air cargo business	Airlines' performance has a positive and significant influence on the air cargo business	Economic factors has a positive and significant influence on the air cargo business
5.	Hajjar & Kaitouni (2018)	Airlines' performance, airport management, and government policies have a positive and significant influence on the air cargo business	Airlines' performance has a positive and significant influence on the air cargo business	Airport management and government policies have a positive and significant influence on the air cargo business
6.	Merkert (2017)	Professional human resources and air cargo market have a positive and significant influence on the air cargo business	Professional human resources has a positive and significant influence on the air cargo business	Air cargo market has a positive and significant influence on the air cargo business
7.	Sahoo et al. (2021)	Airlines' performance and technology advancement have a positive and significant influence on the air cargo business	Airlines' performance has a positive and significant influence on the air cargo business	Technology advancement has a positive and significant influence on the air cargo business
8.	Sales (2016)	Business plan and strategy, professional human resources, and environmental issues have a positive and significant influence on the air cargo business	Business plan and strategy and professional human resources have a positive and significant influence on the air cargo business	Environmental issues has a positive and significant influence on the air cargo business

Source: Data of Research

RESEARCH

In this article, the authors used the qualitative method to describe and analyze various factors which effect the air cargo business. We then used a literature review design by examining the published material concerning air cargo. Therefore, this article more focused on secondary data by searching relevant material sources, such as scientific journals, government and organizational reports, and conference articles.

RESULT AND DISCUSSION

The Influence of Business Plan and Strategy on the Air Cargo Business

As the main operators of air cargo transport, airline companies are responsible to create an effective business plan and strategy which focus on service process design and management that transcend organizational boundaries. This is because air cargo transportation contains a complex logistic chain for two reasons, namely (1) the air cargo industry has international interfaces that can influence the global air cargo transportation system; and (2) the air cargo industry involves many upstream and downstream interfaces (Chen et al., 2008). Besides, air cargo planning should be integrated and consolidated multiple activities, such as warehousing, packaging, tracking, and air transport. This plan can minimize the shipping cost, CO₂ emission, and delivery lead time as well as maximize the freshness of goods (Sahoo et al., 2021).

Moreover, the plan and strategy also should include customer demand forecasting as a key driver to increase the effectiveness of supply chain management. The need for accurate air cargo demand forecasting can reduce the current negative economic factors (Magaña et al., 2016). Competitive advantage then will be achieved if the business plan and strategy is focusing on three important elements concerning the markets, namely value proposition, value chain, and stock of assets.

The argument that business plan and strategy have a significant influence on the air cargo business is in line with the argument from Chen et al. (2008), Chao & Li (2015), Magaña et al. (2016), Reis & Silva (2016), Dewulf et al. (2021), and Sahoo et al. (2021).

The Influence of Professional Human Resources on the Air Cargo Business

The air cargo business has also been influenced by human resources or actors. Indeed, there are several actors besides the airport operator who are actively involved in air cargo operations at the airport. Moreover, some professional human resources in air cargo operations also include the shipper, freight forwarder of integrator, customs agent, and ground handling agent (Larrode et al., 2018). The freight forwarders have an important role because they act as the middlemen between the shippers and the airlines. They arrange the pick-up of packages from producers, then followed by consolidation by bulk into containers and transport to destinations by air (Zhu et al., 2022).

The managers are also continuously searching for innovative ways to align the threats and opportunities of the environment with the weakness and strengths of the company. The professional human resources then can be improved through internal and external collaboration as well as alliances between the air cargo industry. For instance, freight forwarders often collaborate to create integrated and consolidated shipments, so that they can achieve high customer satisfaction, target delivery time, and less inventory holding (Sahoo et al., 2021).

The statement that professional human resources has a significant influence on the air cargo business is similar to the research results conducted by Van Vliet (2010), Magaña et al. (2016), Sales (2016), Merkert et al. (2017), Larrodé et al. (2018), Asch et al. (2019), Dewulf et al. (2021), Rodbundith & Sopadang (2021), Sahoo et al. (2021), and Zhu et al. (2022).

The Influence of Airlines' Performance on the Air Cargo Business

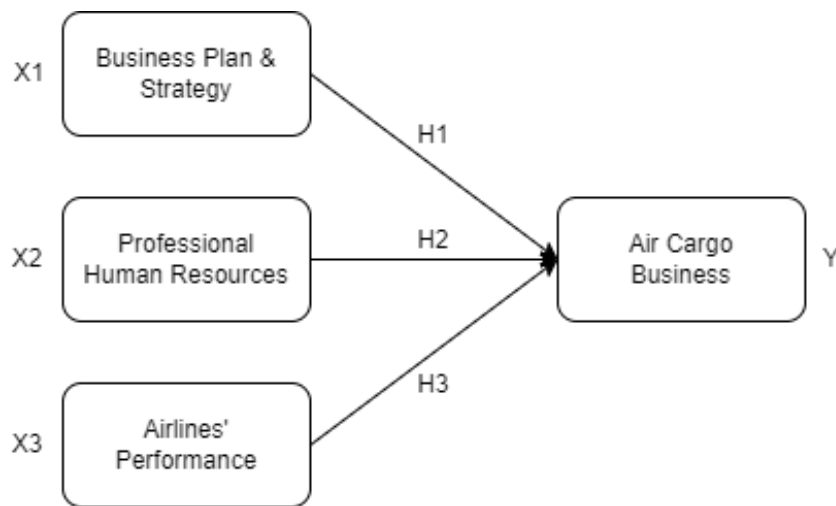
Airlines or carriers can influence the air cargo business because it provides shippers and freight forwarders with various services, such as capacity booking, consultation, receiving, pickup, sorting, packaging, sorting, dispatching, transportation, and cargo tracing and tracking. The quality improvement of the products and services, the creation of a customer satisfaction system, and the amelioration of corporate reputation can be used to achieve long-term growth and development in the volatile and complicated business environment. At least, four service attributes need to be understood, namely service accountability, supply capability, management capabilities, and competitiveness of service fees (Hong & Jun, 2015).

Nowadays, with the introduction of a new generation of wide-bodied passenger aircraft, a certain amount of cargo can be loaded on almost every flight, even with a full passenger load. Skilled loading and handling then will increase the amounts flown in bellies (Sales, 2016). Accepting balanced quantities of light and heavy cargo should be considered because it can ensure greater chargeable weights and increases revenue. This is because an aircraft loaded with excessively light cargo results in wasted weight capacity and an aircraft loaded with too much heavy cargo lead to unused space (Chao & Li, 2015).

The argument that airlines performance has a significant influence on the air cargo business is in line with the argument from Hong & Jun (2015), Chao & Li (2015), Noss & Wenzel (2015), Feng et al. (2015), Sales (2016), and Bakhitiyorjon & Lee (2017).

Conceptual Framework

Based on the research background, literature review, and discussion, the authors have obtained a conceptual framework as follows.



Source: Data of Research

Picture 1. Conceptual Framework

From the conceptual framework above, it can be said that business plan and strategy, professional human resources, and airlines’ performances have a significant influence on the air cargo business. Besides these three factors, there are also other factors which have an influence, namely:

1. Airport management: Feng et al. (2015) and Hajjar & Kaitouni (2018);
2. Economic factors: Ying et al. (2008), Gupta & Walton (2017), and Zhou et al. (2022);
3. Government policies: Chao & Li (2015) and Hajjar & Kaitouni (2018);
4. Air cargo market: Merkert et al. (2017);
5. Technology advancement: Sales (2016), IATA (2019), and Sahoo et al. (2021);
6. Environmental issues: Sales (2016).

CONCLUSION

Based on the literature review, discussion, and conceptual framework, this article has succeeded in building three hypotheses that can be used in the next research concerning the air cargo business. The hypotheses are as follows:

1. Business plan and strategy have a significant influence on the air cargo business;
2. Professional human resources have a significant influence on the air cargo business;
3. Airlines’ performance has a significant influence on the air cargo business.

REFERENCES

Amaruchkul, K., Cooper, W. L., & Gupta, D. (2011). A Note on Air-Cargo Capacity Contracts. *Production and Operations Management*, 20(1), 152–162. <https://doi.org/10.1111/J.1937-5956.2010.01158.x>

Asch, T. Van, Dewulf, W., Kupfer, F., Meersman, H., Onghena, E., & Van de Voorde, E. (2019). Air cargo and airport competitiveness. *Journal of Air Transport Studies*, 10(2), 1–27. <https://doi.org/10.38008/jats.v10i2.142>

Bakhitiyorjon, A., & Lee, H. (2017). A Study on the Factors Affecting the Flexibility of cargo airlines to switch the airport. *International Commerce and Information Review*, 19(2), 237–258.

Bombelli, A., Santos, B. F., & Lóránt, T. (2020). Analysis of the air cargo transport network using a complex network theory perspective. *Transportation Research Part E*, 138, 1–21. <https://doi.org/10.1016/j.tre.2020.101959>

Chao, C., & Li, R. (2015). Effects of cargo types and load efficiency on airline cargo revenues. *Journal of Air Transport Management*, 30(2015), 1–8.

- <https://doi.org/10.1016/j.jairtraman.2015.11.006>
- Chen, C., Chang, Y., & Chou, S. (2008). Enhancing the design of air cargo transportation services via an integrated fuzzy approach. *Total Quality Management & Business Excellence*, 19(6), 661–680. <https://doi.org/10.1080/14783360802024218>
- Dewulf, W., Meersman, H., & Van de Voorde, E. (2021). *The Strategy of Air Cargo Operators About Carpet Sellers and Cargo Stars*. February. <https://doi.org/10.1108/S2212-160920190000008008>
- Feng, B., Li, Y., & Shen, Z.-J. M. (2015). Air cargo operations : Literature review and comparison with practices. *Transportation Research Part C*, 56(2015), 263–280. <https://doi.org/10.1016/j.trc.2015.03.028>
- Gupta, A., & Walton, R. O. (2017). Assessment of air cargo airlines: An interpretive structural modeling approach. *Procedia Manufacturing*, 11(2017), 1908–1915. <https://doi.org/10.1016/j.promfg.2017.07.333>
- Hajjar, B., & Kaitouni, O. D. (2018). Success Factors for developing Air cargo in African Markets. *Proceedings of the International Conference on Industrial Engineering and Operations Management*, 2450–2461.
- Hong, S., & Jun, I.-S. (2015). An evaluation of the service quality priorities of air cargo service providers and customers. *World Review of Intermodal Transportation Research*, 1(1), 55–68. <https://doi.org/10.1504/WRITR.2006.011151>
- IATA. (2019). *Air cargo and e-commerce enabling global trade*.
- Larrode, E., Muerza, V., & Villagrasa, V. (2018). Analysis model to quantify potential factors in the growth of air. *Transportation Research Procedia*, 33(2018), 339–346. <https://doi.org/10.1016/j.trpro.2018.10.111>
- Magaña, U., Mansouri, S. A., & Spiegler, V. L. M. (2016). Improving demand forecasting in the air cargo handling industry: a case study. *International Journal of Logistics Research and Applications*, 1–22. <https://doi.org/10.1080/13675567.2016.1263610>
- Merkert, R., Van de Voorde, E., & de Wit, J. (2017). Making or breaking - Key success factors in the air cargo market. *Journal of Air Transport Management*, 30(2017), 1–5. <https://doi.org/10.1016/j.jairtraman.2017.02.001>
- Noss, M., & Wenzel, D. (2015). *Air cargo market – assessments and forecasts* (Issue July).
- Reis, V., & Silva, J. (2016). Assessing the air cargo business models of combination airlines. *Journal of Air Transport Management*, 57(2016), 250–259. <https://doi.org/10.1016/j.jairtraman.2016.08.011>
- Rodbundith, T. S., & Sopadang, A. (2021). Evaluation of factors affecting air cargo terminal operation performance during COVID-19. *Proceedings of the 11th Annual International Conference on Industrial Engineering and Operation Management*, 6687–6696.
- Sahoo, R., Bhowmick, B., & Tiwari, M. K. (2021). Developing a model to optimise the cost of consolidated air freight considering the varying scenarios. *International Journal of Logistics Research and Applications*, 1–25. <https://doi.org/10.1080/13675567.2021.2010682>
- Sales, M. (2016). *Aviation Logistics: The Dynamic Partnership of Air Freight and Supply Chain*. Kogan Page Ltd.
- Tan, D., & Tsui, K. (2016). Investigating causality in international air freight and business travel: The case of Australia. *Urban Studies*, 1–16. <https://doi.org/10.1177/0042098015620520>
- Van Vliet, N. S. C. (2010). *Air cargo alliances: Walking on a Thin Line -- A study on the impact of air cargo alliances* (Issue May). Open University of the Netherlands.
- Ying, Y.-H., Chang, C.-P., & Hsieh, M.-C. (2008). Air Cargo as an Impetus for Economic Growth through the Channel of Openness: The Case of OECD Countries. *International Journal of Transport Economics*, 35(1), 31–44.

- Zhou, J., Leng, L., & Shi, X. (2022). The Impact of Air Cargo on Regional Economic Development: Evidence from Chinese Cities. *Sus*, *14*, 1–16.
- Zhu, L., Wu, Y., Smith, H., & Luo, J. (2022). Optimisation of containerised air cargo forwarding plans considering a hub consolidation process with cargo loading. *Journal of the Operational Research Society*, 1–20.
<https://doi.org/10.1080/01605682.2022.2096493>