



# Challenges and Opportunities of Air Cargo Sector in Vietnam

Huong Dieu Chu

Degree Thesis

International Business

2022

# **Degree Thesis**

Huong Chu

Challenges and Opportunities of Air Cargo sector in Vietnam.

Arcada University of Applied Sciences: International Business.

## **Identification number: 8815**

### **Abstract:**

This qualitative research aims at exploring the challenges and opportunities of the Air Cargo Market in Vietnam under the insight of the air freight forwarders. By comparing the available studies and knowledge with the data gathered from the five carefully selected respondents, this study helps to identify not only the chances and difficulties of Vietnamese air freight but also spots the similarities and differences between the current perspectives of the professionals and the viewpoints or research from the earlier reports. The author used a semi-structured interview approach to achieve rich and representative information from the five air freight forwarders with different experiences and working times from various main cargo hubs in Vietnam. The theories and backgrounds knowledge related to the field are explained in detail in the chapter of the theoretical framework including the history of Vietnamese air cargo, the current statistics, the three-flow model in logistics, the international rules, and regulations as well as some other factors that have significant impacts on the Air freight sector of Vietnam. These secondary data extracted from the scientific articles and reports are the foundation for this thesis.

By using a qualitative approach with a deliberate analysis of the gathered information, the findings of this research indicate that the challenges of Vietnamese air freight contain the limited cargo types and sizes for the material flow; the burden of paperwork during Covid time and the non-support of the government for the digitalization caused many problems in the information flow, and the negative influences of Russia embargo due to the war on the capital flow as well as the issues that air freight forwarders in Vietnam have to face when working in small freight forwarding firms. The results also suggested some opportunities in the Vietnamese air freight market such as the benefits of specialized cargo in the material flow of air freight; the ease and flexibility of aviation rules that facilitate the flow of data; the increasing investment of various enterprises and governments into air freight of Vietnam to foster the flow

of money and the positive impact of Covid-19 pandemic on Vietnamese air cargo market. Most of these findings align with the researcher's previous studies, but still accommodate many unexpected results that need further research.

**Keywords:**

Logistics, Vietnam, Air freight, Challenges, Opportunities, Three-flow model.

# Contents

<b>1</b>	<b>INTRODUCTION.....</b>	<b>6</b>
1.1	Problem statement.....	7
1.2	Aim of the study.....	7
1.3	Demarcation.....	8
<b>2</b>	<b>THEORY .....</b>	<b>8</b>
2.1	Vietnamese Air Cargo Market .....	9
2.1.1	History.....	9
2.1.2	Current overview and statistics.....	10
2.2	International rules and regulations .....	11
2.2.1	IATA .....	12
2.2.2	ICAO.....	13
2.3	Other global factors.....	13
2.3.1	Free trade agreement (FTA) .....	13
2.3.2	Covid-19 and Russia – Ukraine issue.....	14
2.3.3	Summary on other global factors.....	15
2.4	The Three-flow model in Logistics .....	16
2.4.1	The role of air freight forwarders .....	17
2.5	Traditional air freight consolidated model .....	18
2.5.1	Digitalization in the Air Cargo.....	20
<b>3</b>	<b>METHOD .....</b>	<b>21</b>
3.1	Choice of method.....	22
3.2	Respondents .....	23
3.3	Interview guide .....	24
3.4	Research approach .....	26
3.5	Analysis of the data.....	27
3.6	Validity and reliability .....	28
3.7	Ethical issues.....	29
<b>4</b>	<b>RESULTS .....</b>	<b>30</b>
4.1	Opportunities.....	30
4.1.1	Material flow.....	31
4.1.2	Information flow.....	32
4.1.3	Capital flow.....	33
4.2	Challenges.....	34
4.2.1	Material flow.....	36
4.2.2	Information flow.....	37
4.2.3	Capital flow.....	38
<b>5</b>	<b>DISCUSSION .....</b>	<b>39</b>
5.1	Discussion of results.....	40
5.1.1	Material Flow .....	40
5.1.2	Information flow.....	41
5.1.3	Capital flow .....	43
5.1.4	Summary of the results discussion .....	45
5.2	Discussion of method.....	46

<b>6</b>	<b>CONCLUSION.....</b>	<b>47</b>
6.1	Limitations of the study .....	48
6.2	Suggestions for further research.....	49
<b>7</b>	<b>REFERENCES.....</b>	<b>50</b>
<b>8</b>	<b>APPENDICES .....</b>	<b>55</b>

# 1 INTRODUCTION

Peter Lynch, the prominent investor of Flying Tiger Company, once said: “So while I was in college I did a little study on the freight industry, the air freight industry. And I looked at this company called Flying Tiger. And I actually put a thousand dollars in it, and I remember I thought this air cargo would be a thing of the future”.

For a long time, air freight has been considered the fastest and most reliable mode of transportation for various kinds of goods. Air transport is growing strongly globally, with the strongest growth in developing countries. Vietnam is in this segment and has the fastest growth in the region. According to the prediction of the International Air Transport Association (IATA), Vietnam will become the world's 5th fastest growing aviation market and aim to reach the ranks 3rd in the world in terms of air transport and air cargo growth rate. With all the factors affecting the development of the world air transport market including the foreign corporations' investment in building production plants to produce goods brought to consumers worldwide, Vietnam is obtaining a huge number of opportunities in terms of logistics in general and, to be specific, in air cargo. (Nguyen, 2019)

Even though Vietnam is expected to have a high growth rate of air shipments, these developments also bring along various possibilities for air freight forwarders, in both positive and negative aspects. The negative aspects, or challenges, can be considered as inevitable and require much time, money, and effort from logistics companies and freight forwarders to do research and work together to be able to anticipate and meet the demands of the industry. In the mean times, with the Covid-19 pandemic and the Russia – Ukraine issue, the air freight forwarding sector is facing more difficult tasks than ever. (Nguyen & Bui, 2022). However, the covenants of various free trade agreements will help Vietnam to become a part of the economic community in which goods will be transported freely and openly for global integration. (Hai, 2021)

This thesis focuses on answering the question: What are the opportunities and challenges that the air freight forwarders in Vietnam have to face when they work in the air cargo field? By using 5 semi-structured interviews with both freight forwarders and people whose work is related to this sector, this thesis will also analyze their answers in order to achieve an insight

into this problem and some possibilities in the future of air cargo. The background theory for this research is the “Logistics’ three-flow model” and the “International airfreight consolidation model” which support the idea that consolidation and other factors will directly affect the flow of logistics in terms of air freight forwarding. Additionally, the rules and regulations of various international aviation organizations will also be specified for screening and reference purposes for Vietnamese air carriers.

## **1.1 Problem statement**

From the perspective of an air freight forwarder, in the beginning, comes a question about the challenges that the Air Cargo Sector of Vietnam has to face. In the previous years, before the occurrence of the Covid-19 pandemic and the war between Russia – Ukraine, Vietnam is considered one of the most potent air freight markets with various logistics companies and a wide range of customer segments willing to purchase air freight service (ALS, 2019). However, the Covid lockdown, as well as the restriction on Russian aviation, have put a strike on Vietnam's recovering air transport industry. Even though it might be seen as more of a negative chance than a positive one, the freight forwarders' insight might provide a totally different point of view. With the appearance of various new technology along with the signing of different international trade agreements, the current air freight sector seems to also open many unexpected opportunities that, if used wisely, might be profitable for not only aviation logistics firms, but also for the whole Vietnam's air cargo market in general.

Nevertheless, deliberating the recent circumstances as pros or cons depends largely on the eyes of the air freight forwarder and on those who associate closely with these situations in their work. Hence, this thesis will, through analyzing the prism of related professional individuals, have an overall evaluation of the challenges and opportunities of the air cargo sector in Vietnam at the moment and in the near future.

## **1.2 Aim of the study**

This thesis aims at achieving the insight of Vietnamese air freight forwarders in terms of challenges and opportunities throughout the air cargo sector that they are working in. Before the occurrence of various global aviation issues such as the Covid-19 lockdown, Russia – the Ukraine intense situation, or various trade agreements, the statement of air freight conditions seems easier to clarify and can be anticipated with positive development. However, the current

situation put air cargo at more risk than ever – from the perspective of people who are not working directly in the industry; but from the viewpoint of air freight forwarders, the real state of work might be highly different.

The research questions of this thesis: “What are the challenges and what are the opportunities of Air Cargo sector in Vietnam?”

### **1.3 Demarcation**

Logistics is a broad term that covers various different aspects ranging from the supply chain, freight forwarding, warehousing, etc (Storhagen, 2011). The focus area of this thesis – air cargo – is not only limited to forwarding or customs clearance but also related to warehousing in the airport and transporting goods between different airlines for better purchasing and consolidation. Challenges and opportunities of air freight occur in both the export and import sector and are considered and evaluated in diverse ways from the prism of each air freight forwarder. Sea freight has long been taken into account as the main development of Vietnamese logistics and received high attention with countless reports about its difficulties and chances, hence, this research only concentrates on the air cargo area without any further analysis of other aspects of the sea shipments

There also are already numerous reports about the air cargo market before the appearance of the pandemic or the Russia issue, but the number of research that focuses on the difficulties and chances of Vietnam air freight in the current time, especially from the perception of work-related individuals, seems to be limited. Thus, this thesis will only pay attention to the challenges and opportunities of the Vietnamese air cargo market limited only to aviation but with a wide internal range including warehousing, transportation, purchasing, and consolidation.

## **2 THEORY**

This chapter covered the theoretical part of the thesis, starting with the history and current statistics of air cargo in Vietnam and followed by the “three-flow model” in Logistics and the Traditional Consolidated model to illustrate the impact of air cargo challenges and opportunities. Various factors affecting the Air freight market of Vietnam are also stated

including the international rules and regulations by two largest aviation organizations: IATA - International Air Transport Association and ICAO – International Civil Aviation Organization; the trade agreements' influences and most importantly, the impact of Covid-19 pandemic and currently is the war between Russia and Ukraine. All these factors have been considered as affecting the most on the situation and development of Vietnamese Air Cargo in the near future.

## **2.1 Vietnamese Air Cargo Market**

The Air Cargo Sector of Vietnam has a long history since the war of the previous centuries that helps to establish the current Air Cargo market. Nowadays, the Air Freight area witnessed a number of strong growth trends, reflected in industry overviews and statistics

### **2.1.1 History**

The predecessor organization of Vietnam's civil aviation industry was used to transport ammunition, medicine, weapons, and food for military and combat purposes (Pape Jr, Robert A, 1990). During wartime, the aviation of Vietnam suffered from countless difficulties due to the destructive war by air and navy by the hostile countries. In 1956, the Prime Minister established the Civil Aviation Department, laying the foundation for the birth, growth, and sustainable development of Vietnam's civil aviation. Born in a poor and backward economic situation, the Civil Aviation Department owns only 10 aircraft, including types: IL-14, Li-2, AN-2, Mi-4, Aero-45, and Trener to carry out 3,735 passenger and cargo flights in 3 years on domestic routes, practically contributing to the recovery of Vietnam's economy during the war. After wartime, the civil aviation industry started to be allowed to sell passenger tickets and freight charges, however, the objects to be purchased were very limited and the procedures were strict and complicated, hence, the quantity of goods transported in this period was limited with only 8,624 tons of goods, domestic parcels and 700 tons of international goods a year. (Chau, 2021)

Not until 1980 when Vietnam officially became a member of the International Civil Aviation Organization (ICAO) that the international bodies and the Vietnamese national government started to open more opportunities for the development of the air cargo market with the establishment of new aircraft, airlines, and numerous airports all over the country. The total passenger transport market in 2014 reached 33.15 million, with an average increase of

12%/year in 2010-2014, and freight reached 741 thousand tons with an average increase of 12.8%/year (Chau, 2021).

### 2.1.2 Current overview and statistics

In the modern time, even though sea freight still accounts for a large proportion of the total volume of goods transported, air cargo is serving 80% of the total value of import and export goods of the country. (ALS, 2021)

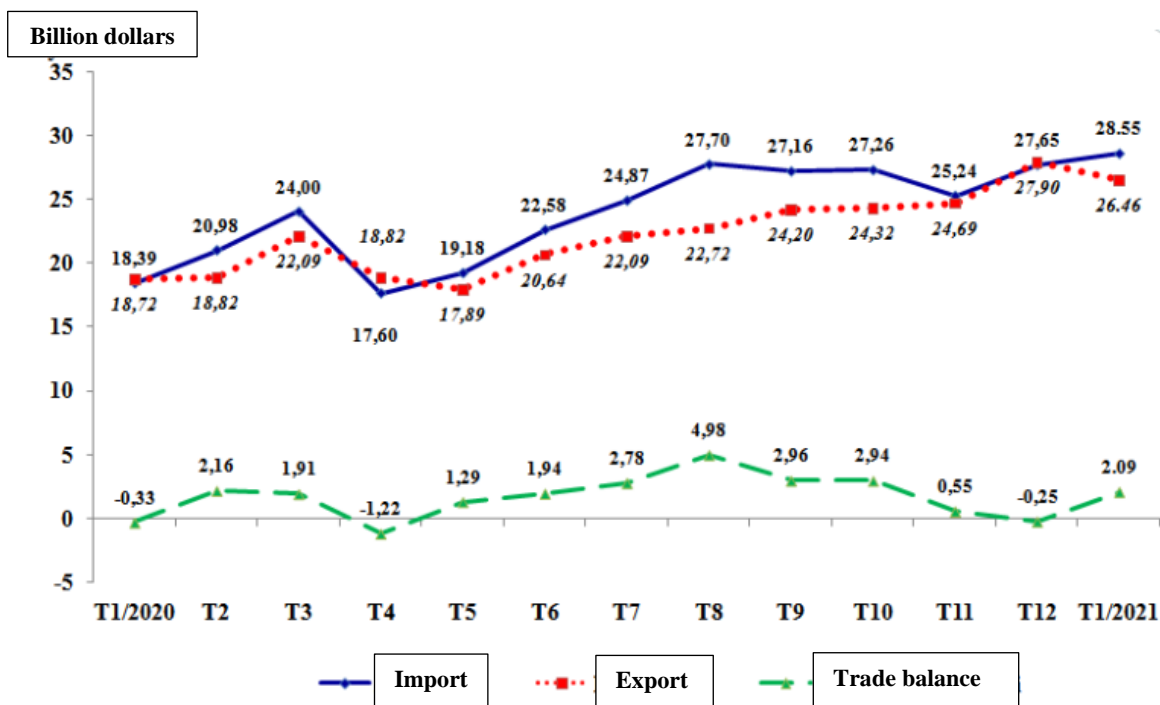


Figure 1: Import and export of Vietnam's air cargo in 2020 (ALS, 2021)

According to statistics of ALS (Aviation Logistics Corporation) – presented in figure 1, with the trend of transportation and shopping increasing dramatically, the volume of air freight will increase by more than 50% over the same period (when the Covid pandemic has not yet occurred), especially in Asia and the Pacific markets where e-commerce is growing rapidly. The data report by IATA in April 2021 about global air freight markets also cited that demand for air freight (Air Cargo) continued to be higher than the pre-Covid-19 level with an increase of 12% compared to April 2019. The demand, at the moment, is not only for transporting goods when the supply chain is broken, but also for the inevitable development of cross-border e-commerce.

In the previous years, more than 80% of goods imported and exported via air in Vietnam are

carried out by foreign airlines (around 47 airlines with regular cargo flights by specialized aircraft to Vietnam.). However, with the current situation and to follow the trend of the national and international market, Vietnamese airlines are gradually focusing more on the air cargo market due to its demand and benefits. Earlier this year, the Ministry of Transport has just approved to issue of a license for the first cargo airline in Vietnam, IPP Air Cargo, as a contribution to promoting the logistics strategy of the country for 2030. (ALS, 2021) This new airline specialized in air cargo is anticipated to “contribute to the growth of cargo transport of Vietnamese airlines by around 10-15 percent per year” (Hanh, 2022). Moreover, Vietnam’s national airline - Vietnam Airlines will soon establish a separate Cargo Airline, which is estimated that the revenue from the cargo segment of the National Airline has tripled (from 10% to 30%) and that even the cargo segment has surpassed the passenger transport segment. (Hanh, 2022)

The air cargo market in Vietnam is heating up day by day with the entry of many air service businesses, as a result, air logistics companies and freight forwarders are facing more challenges and opportunities than ever before. (Hanh, 2022)

In recent years, the air cargo market of Vietnam has developed enormously thanks to the Air transport liberalization policy of the Vietnamese government. These policies have promoted efficiency, ensuring market expansion for airlines, encouraging international airlines to fly into Vietnam, and making an important contribution to promoting the development of the air freight market. Vietnam turns into an international hub for global goods and consolidation along with the policy of socializing air transport has encouraged all economic sectors to participate. Currently, all four airlines of Vietnam (Vietnam Airlines, Jetstar Pacific Airlines, VASCO, VietJet Air) have been operating 56 international routes, and 46 domestic routes (Pham, 2020), providing hundreds of aircraft with transport large capacity suitable for both short and long-distance freight. Due to the aforementioned reasons, Vietnam is slowly becoming the center of air cargo in Southeast Asia.

## **2.2 International rules and regulations**

The working procedure of air cargo is controlled greatly by the rules and regulations of various international bodies, most notably IATA – The International Air Transport Association, and ICAO – the International Civil Aviation Organization. (Nguyen, 2019)

### **2.2.1 IATA**

The International Air Transport Association (IATA) is one of the biggest associations in the airline industry which provides the basic standards of technical terms and tariffs as well as other fundamental aviation terminology. In the air cargo sector, to be specific, all parties need to refer to the IATA manuals in terms of cargo, DG – dangerous goods, and other ground operations. These manuals cover a wide range of regulations and can act as guidance material for air freight forwarders to rely on whenever they have trouble in their operations. (IATA, 2021).

In Vietnam's air cargo sector, the IATA regulations and standards are used widely in every logistics firm. The DG Regulations are verified and updated every year such as the rules of Covid-19 Vaccine preservation in recent years, hence, the latest trend in the field and the current situation would be easier to compliance by related partners. In addition, the reference through IATA has helped airlines as well as air freight forwarding companies in Vietnam to have a basis for making labels and paperwork accurately, reducing the risk of damaged goods and increasing transportation speed. (IATA, 2021).

Moreover, fees and rates for air transport are specified in the unified tariff. IATA has stipulations on rules and regulations for calculating charges and for publication in the airline tariff, abbreviated as TACT (The Air Cargo Tariff), including 2 books: worldwide freight, excluding North America, and another one, that covers outgoing, incoming and domestic charges in the US and Canada. (IATA, 2021) Based on these TACT of IATA, Vietnamese air freight forwarding companies into various different cargo rates such as GCR (general cargo rate), minimum rate, SCR (special cargo rate), etc; and also due to the pallet weight and dimension (Nguyen, 2019).

IATA nowadays even provides numerous online portals including Timatic for examining the validity of aviation shipping documents or TACT online for checking the TACT rates in the most convenient and accurate way (IATA, 2021). By closely following IATA regulations and responding flexibly based on the actual circumstances of the shipment, air cargo Vietnam is considered an open market to attract domestic and international air shipping in the future. (Nguyen, 2019)

### **2.2.2 ICAO**

In addition to IATA, ICAO – the International Civil Aviation Organization is also a prestigious aviation organization by the United Nations that foster the planning of changes and development of principles of international aviation to ensure the safety of air transportation. The Vietnamese government also provides various legislations and regulations under the approval of the ICAO councils. The air tariff of Vietnam in recent years is also altered following the ICAO regime, from the “Double Approval” to the other simplified control principles including the “Single or Double Disapproval” or the “No normal filling requirements” specified for the cargo tariffs. (Nguyen, 2019).

Regarding air freight, Vietnam has reduced the number of compulsory and time-consuming air cargo laws compared to the passengers' traffic regulations. Under ICAO, Vietnam has adopted a separate provision for air cargo services and will continue to open the air transport market in the direction of liberalization in the upcoming years (Nguyen, 2019).

With the support and opening of trade and cooperation from ICAO, Vietnam air cargo is approaching closer to the world's air transport market and is becoming one of the leading cargo hubs of Southeast Asia in specific and Asia in general. Therefore, the air freight of Vietnam is facing more difficulties and chances than ever (Nguyen, 2019).

## **2.3 Other global factors**

The two global factors that can have certain impact on the Air Cargo Market of Vietnam is the appearance of many Free Trade Agreements and the consequences of Covid-19 pandemic as well as the war between Russia – Ukraine.

### **2.3.1 Free trade agreement (FTA)**

A Free Trade Agreement (FTA) is understood as an economic cooperation agreement signed between two or more members in order to remove barriers to most trade activities and promote exchange and trade between member countries. Trade barriers can be in the form of tariffs, import quotas, and other non-tariff barriers such as technical standards, sanitary and epidemiological standards, etc (Van, 2022). In recent years, Vietnam has signed various different FTAs with the purpose of, in addition to international economic integration, reducing

barriers to Vietnamese exports, protecting the interests of Vietnamese enterprises in competition with both domestic and foreign markets, and enhancing the rule of law in FTA partner countries or other countries. By taking advantage of commitments on trade facilitation and preferential tariffs of countries participating in new-generation trade agreements, not only production and business activities of enterprises thrive but also the export turnover and exports to member markets increased significantly, which play an important role in the development of Vietnam air cargo at the moment. (Van, 2022)

Recently, the two most crucial FTAs that were signed between Vietnam and other fundamental parties are the Vietnam – EU Free Trade Agreement (EVFTA) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) have made a positive contribution to supporting businesses to expand export markets as well as increase import supply. Various Vietnamese key products were promoted through customs quickly, such as telephones, computers, machinery, and electronic equipment, accounting for the largest proportion (43.3%); followed by textiles, leather and footwear (25%), wood and wood products (8%); agricultural and aquatic products (4%). Especially with fresh or perishable items such as seafood and items that need fast shipping such as electronic components and phones, the quick clearance has made many businesses choose air freight as a means of transportation to get high profits in a short time (Hai, 2021).

Besides, with the support of EVFTA, many of Vietnam's exports including: Eggs and egg yolks of poultry; garlic; sweet corn; milled rice meet the requirements of the right type; Tapioca; tuna, etc. to the EU will be eliminated after a short roadmap, which is especially meaningful when the EU is continuously one of Vietnamese two largest export markets today which has helped Vietnam once again affirm its strategic position on regional and global supply chains. With such favorable conditions, Vietnam has all the conditions to become an international Air Cargo hub, given the potential of the industry as well as opportunities from the market. (Hai, 2021).

### **2.3.2 Covid-19 and Russia – Ukraine issue**

Covid-19 epidemic has cut off the development momentum of Vietnam's aviation industry, sometimes making the normal operation of the industry almost completely stopped. According to the statistics of the Vietnam Aviation Administration, the number of flights decreased by

more than 85% in just 2 months after the outbreak (Vietnam Aviation Department, 2022). According to Dr Nguyen Van Phuc and Dr. Bui Doan Ne (2022), the pandemic generates new requirements, especially the hygiene demand that adversely affects the needs and psychology of customers, while giving rise to procedures, increasing the cost of time and budget of customers as well as aviation businesses. Besides, the industry's physical and technical bases are reduced or degraded. Not to mention many airlines have to sell aircraft to balance cash flow, stopping flights also requires maintenance and maintenance of aircraft and flying equipment. (Nguyen & Bui, 2022). With such few numbers of aircraft available, the air cargo rate increased significantly with many airplanes being only used for air freight rather than for transporting humans. Additionally, the number of customs officers and handling warehousing services is reduced remarkably to ensure the distance due to the Covid-19 situation, hence, the processing time for air freight is prolonged, or they are even backlogged at customs warehouses, causing damage, and delay in delivery time. However, it can be seen that at the time when the Covid-19 epidemic broke out the most, instead of transporting passengers, airlines turned to freight transport and received good signals. Thanks to this time, at present, when the Covid-19 epidemic has been controlled, the air cargo industry is opening up more opportunities than ever. (Nguyen & Bui, 2022).

In addition, the Russian - Ukraine conflict has had a profound, comprehensive, and negative effect on the economy, including the aviation industry. According to the latest report to the Ministry of Transport of Vietnam: “The Russia-Ukraine war occurred, resulting in the EU, US, UK, Canada closing the sky to Russia, including taking off / landing and flying over these countries' airspace, and Russia also took similar actions with many other countries”, which has a direct effect on Vietnamese air cargo because it increases the cost of flying even of airlines not participating in the embargo because the aircraft has to change its operating route, arising insurance, payment, and risk provisions (La, 2022). Not only were all transport planes going through Russian airspace affected, but other cargo planes were also greatly inflated due to energy shortages because of the war. In addition, the air embargo leads airlines to choose longer routes, increased costs, and increased pressure on both the global and Vietnamese logistics transport system and the price of goods. (Thanh, 2022)

### **2.3.3 Summary on other global factors**

The effects of the outbreak of the Covid-19 pandemic and the war between Russia and Ukraine

on the air freight industry in Vietnam are undeniable, however, practical experience from air freight forwarders is still required in order to assess the opportunities and challenges of the industry in the most accurate way.

## 2.4 The Three-flow model in Logistics

To understand Logistics better, the comprehension of three flows in logistics and supply chain is the core knowledge to analyze air cargo in Vietnam. The three flows include: Material Flow, Information Flow and Capital (Financial) Flow (see Figure 2).

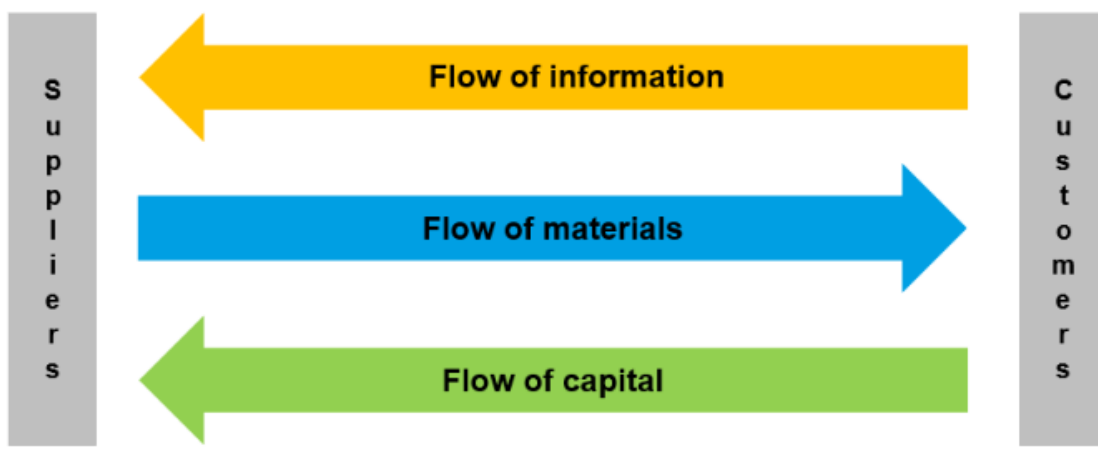


Figure 2: Three-flow model in Logistics (Storhagen,2011)

The Material flow: This is the flow of physical products and goods from the supplier toward the consumers. Normally, this flow only has one direction; but when the customers return the products for some certain reason, the physical flow can run backward to the suppliers. (Tolujevs & Zmanovska, 2011) A typical material flow begins when the product was created from the raw matters of the suppliers and then distributed through warehouses to reach consumers.

The Information flow: This can be considered as the core flow toward both directions of the supply chain, from suppliers to customers and vice versa. Throughout the freight forwarding process, the information contains quotations, purchasing orders, delivery status and orders, invoices, customers' complaints that were returned, etc. The flow of information needs to be kept constant among all parties in the logistics process in order to ensure the efficiency of the supply chain. (Tolujevs & Zmanovska, 2011)

The Financial flow: This flow contains the capital movement running from the customer’s side to the supplier’s side. When the consumers receive the products and agree on the quality of them, they pay the invoice in which the money will be transferred to the suppliers. If the money is in the form of debit, the capital flow can start from the supplier side to the consumers. (Tolujevs & Zmanovska, 2011).

In order to maintain the efficient supply chain, all three flows above should be managed and controlled appropriately. In both sea freight and air freight, the understanding of these three flows is fundamental in optimizing the freight forwarding process for all parties in the logistical process. (Rushton, Croucher, & Baker, 2022)

### 2.4.1 The role of air freight forwarders

Air cargo is a part of the logistics field; hence, the “three-flow model” can be applied throughout the working procedure of air freight forwarders. Figure 3 represented the role of a freight forwarder linked to the logistical “three-flow model”. (Relander, 2011)

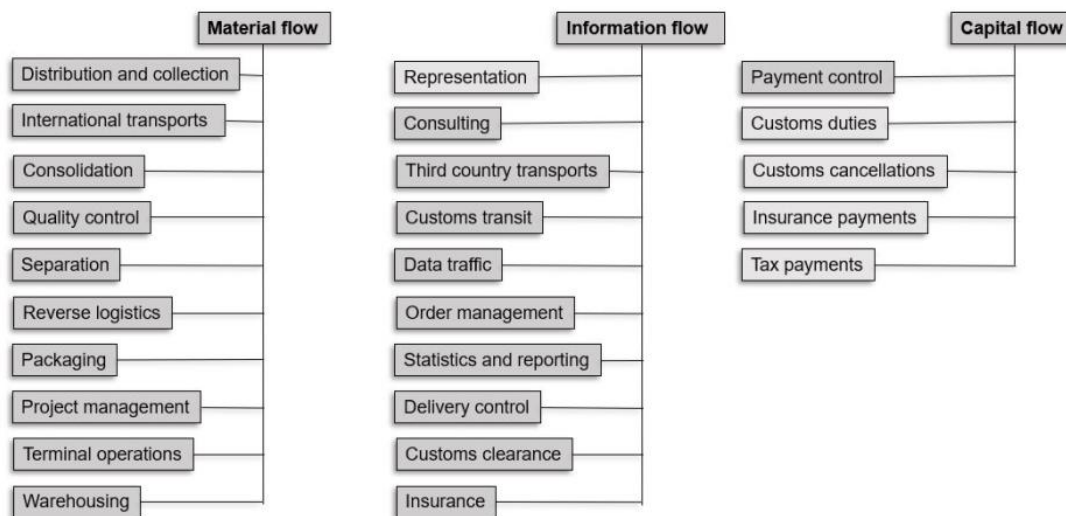


Figure 3: Roles of a freight forwarder connected to the flows of logistics (Relander, 2011)

Air freight forwarding can be seen as a “tool” to transfer the materials to manufacturers or the finished products from distributors to consumers. The fact that the products are gathered in the airport warehouses or terminals for easy and better distribution can play an important role in the physical flow. Air freight helps better transport materials and goods with fast delivery time and higher preservation and accuracy. When working in the air cargo area, the tasks of the freight forwarders related to the material flow include mostly the distribution and collection of

goods in the aviation warehouses and consolidation is the most crucial task of the forwarders to maintain this logistical flow. (Rushton, Croucher, & Baker, 2022)

In air cargo, the flow of information is especially essential in ensuring the circulation of goods, especially in countries with complicated customs procedures. In comparison with sea freight, air freight has a much higher number of aviation rules and regulations that require greater compliance from all the parties including the logistics firms, air freight forwarders, airline employees, etc. Moreover, the amount of paperwork that needs special attention, for instance, the MAWB and HAWB (master and house airway bill), can be considered as a prerequisite factor in ensuring the smooth and uniform flow of information in air transport (Smith, 2020). This is where air freight forwarders play their most important role, as once the information flow is interrupted, it can cause thousands needed of dollars to rearrange and fix it. This will, immediately, have a negative impact on the capital flow of each party in the supply chain. The air freight forwarders will take orders from the customers, arrange the data traffic and custom clearance, control the delivery and make statistics or reports afterward. (Rushton, Croucher & Baker, 2022)

When it comes to the money flow, the role of air freight forwarders is not as direct as the salesperson. In the air cargo, the freight forwarders only control the customs duties and terminal tax payments, the other payment needs to be pre-arranged between parties and the forwarders (can) collect fees on behalf of the sellers or buyers, not negotiating prices beforehand. (Wan, Cheung, Liu & Tong, 1998).

Therefore, information flow is paramount in maintaining the circulation and operation of air cargo; and the responsibility of the air freight forwarding specialists is to maintain the transparency and coherence of the information as well as to limit errors in the processing of documents so that it does not disrupt the supply chain and also lower the losses to the logistics business (Wan, Cheung, Liu & Tong, 1998).

## **2.5 Traditional air freight consolidated model**

For many years, the consolidation of air cargo usually takes place in aviation warehouses, where the air freight forwarders applied their knowledge and expertise to arrange the products of their customers in an optimal way (Tyan, Wang & Du, 2003). The preparation for air cargo

consolidation consumes a lot of time and effort in order to ensure the time limit – the main advantage of air freight in comparison with sea freight.

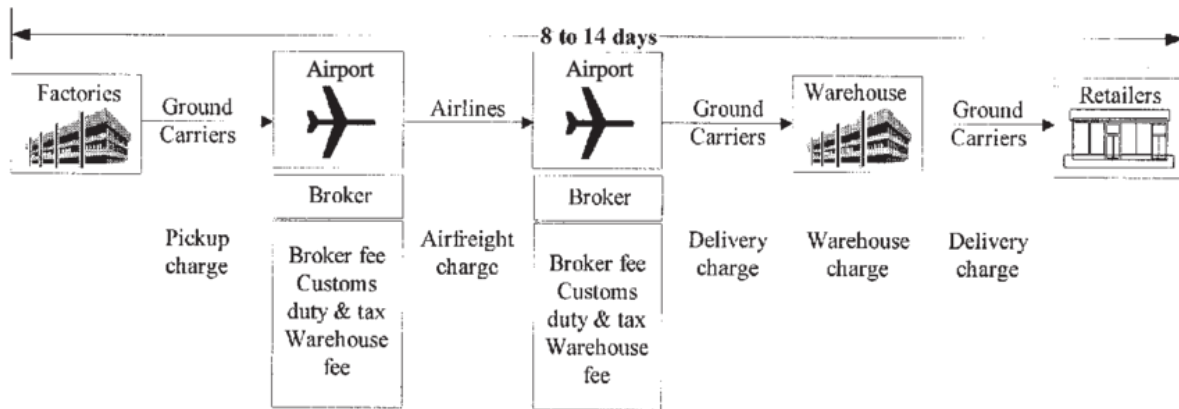


Figure 4: The traditional consolidated air freight model. (Tyan, Wang & Du, 2003).

According to figure 4, the process when the goods reach the aviation warehouse by the ground carriers, till being well-organized in the aircraft, then reach the terminal of the customers' country, ready to be dismantled for inspection and shipped to the buyer will take around 8 to 14 days, in which only the consolidation time takes 3 to 5 days depending on the type of products (Tyan, Wang & Du, 2003). This is, of course, for normal-time freight; the time required for express or urgent freight is much shorter, with only 2 to 3 days in total. Consolidation, therefore, will be under time pressure and needed to be delivered from the seller's warehouse to the airport warehouse in a day and arrange within a few hours (Tyan, Wang & Du, 2003).

In Vietnam, the time under the traditional air freight consolidated model might be a bit different, with usually shorter time than the others. For classic air freight, under the transit time of door-to-door, the delivery time is normally 6 days and under the express freight, the time is similar to the international standards of 2 – 3 days. (Hanh, 2020) This counting time is different for each country, for example, from China to Vietnam is normally around a day, and from America to Vietnam takes approximately a week for shipping by air. However, the consolidation in Vietnam requires many other factors for different types of goods, such as the temperature and humidity for DG (dangerous goods), hence, the air freight forwarders need to consider various local factors when arranging the goods to meet the customers' requirements. (Hanh, 2020)

### 2.5.1 Digitalization in the Air Cargo

During the digital revolution 4.0, changes happened in every sector of human’s daily life and air cargo is no exception. In the past, and even in some companies at the moment, most of the procedures in air freight are conducted by hand, and manpower is the only source to provide the ability to finish it. However, many logistics firms are now aiming to automate their operations and digitalize much of their working process, especially in the air freight area.

With the main feature related to various kinds of documents (orders, customs, etc), digital tools can be used as a way to improve communication and cooperation between parties in the value chain (Phuong & Thu, 2021). Many cargo airlines are now developing an online portal that allows customers and freight forwarders to make booking quotes and do the payment processes effectively. The freight forwarders can also support their clients instantly and ensure the constant as well as transparency of the information flow, along with many other useful functions for all relevant parties, such as the case of “my AirCargo” website by Lufthansa airlines on figure 5:

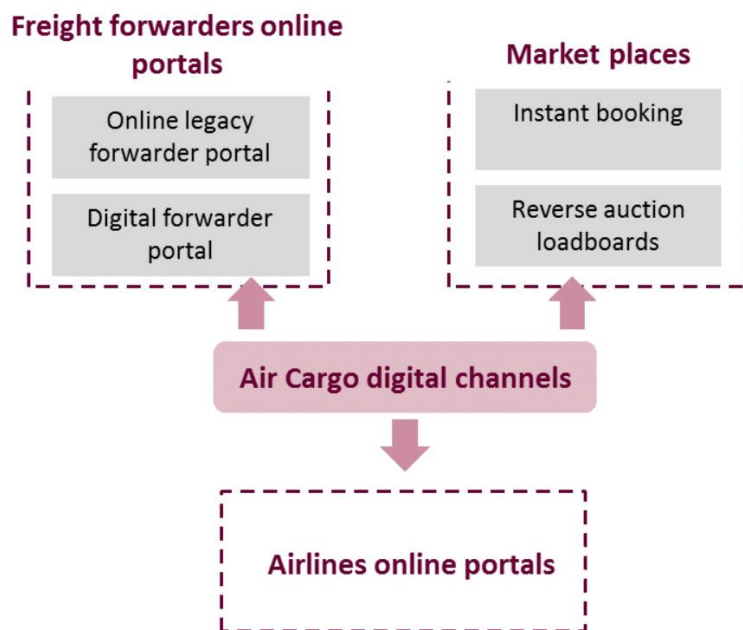
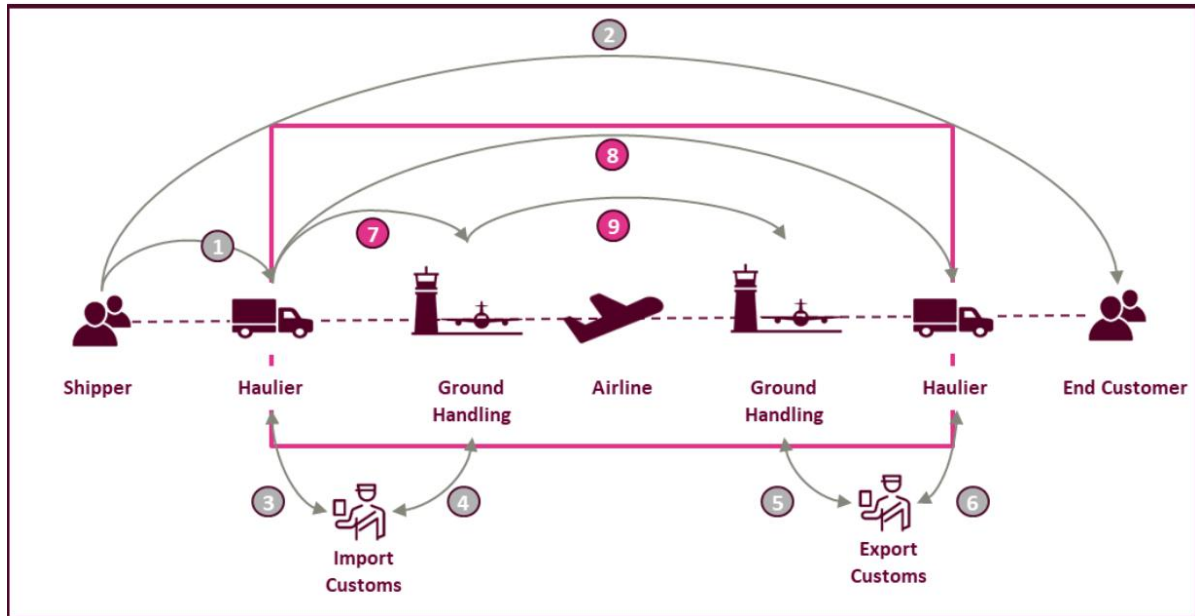


Figure 5: Example of an Air cargo portal (SIAPARTNERS, 2018).

In addition, the appearance of E-AWB initiated by IATA aims at standardizing airway bills in an electronic way. In the previous years, a large amount of paperwork from the airway bills creates a huge amount of misunderstanding and inaccuracies, thus, the appearance of E-AWB will play an important role in limiting the number of errors during the consolidation and

shipping process of the air cargo (SIAPARTNERS, 2018). Moreover, IATA also working on the e-Freight project which targets a procedure of end-to-end paperless by eliminating many in-paper customs, transport, and commercial documents. (Bäuml, M. & Hausmann, L, 2018)



**Figure Legend:**

→ Documents flow	▭ E-freight scope	▭ E-AWB scope
① Invoice, Packing List	④ Export Cargo Declaration , Custom Release Export	⑦ Air Waybill, House Manifest
② Invoice, Packing List	⑤ Import Cargo Decl / Customs Release Import	⑧ Invoice, Packing list, Air Waybill, House Manifest, House Waybill
③ Export Goods Declaration , Custom Release Export	⑥ Import Cargo Decl / Customs Release Import	⑨ Flight Manifest, Air Waybill, House Manifest

Figure 6: Paperless air cargo process (SIAPARTNERS, 2018).

According to figure 6, the procedure of paperwork would be much shorter with the appearance of E-freight and E-AWB. The information flow will still be maintained with less time, money, and effort, if needed, to fix or eliminate human errors. The consolidation of various types of goods will also be better organized as air freight forwarders have more control over the arrangement and can announce all the changes, if any, to the relevant parties without continuously changing or filling all the required paper documents by hand (SIAPARTNERS, 2018).

### 3 METHOD

The 3rd chapter of this thesis indicates the research approach and how the research question

of “What challenges and opportunities that air freight forwarders have to face when working in the Vietnam air cargo market” would be analyzed to reach the proper answer. Choosing the suitable method is crucial in determining the results and serving as a premise for the discussion chapter in order to lead to new research directions in the future (Flick, 2018). Beginning with the choice of method and then explaining the reason for choosing the respondents. The interview guide used in this thesis will also be analyzed in accordance with the theory chapter, followed by the research approach and the way that the collected data will be explored for the results chapter. The validity and the ethical issues of this method will also be stated clearly afterward.

### **3.1 Choice of method**

This thesis focuses on answering the research question:

“What challenges and opportunities that Vietnamese air freight forwarders have to face when working in the air cargo market?”

Aiming at analyzing a “What” question, various methods have been considered such as the quantitative method on a large sample scale or studying the secondary data from the sources in the library and the internet. However, if the quantitative method is chosen, the questionnaire would be too vague to reach the insight of the air freight forwarders. The number of forwarders in the air cargo sector willing to answer such questions cannot be ensured to be big enough to reach saturation, hence, it will affect the results of this study. In addition, the secondary data might not be enough for answering this research question because there is too little data on the internet about the viewpoints of global air freight forwarders, not to mention in Vietnam. Therefore, a qualitative method would be appropriate to capture the point of view of respondents in a subjective way, as well as have a possibility to talk and understand them with their opinions and reflections on their own experiences in detail (Flick, 2018). It will also give them private time to talk and share freely without any hesitation or feeling of boredom.

Another reason for choosing the qualitative interview is because it will allow the interviewer to achieve rich data while making interviews and interviewees and can even ask clarifying questions to comprehend the problem properly (Turner, D.W. & Hagstrom-Schmidt, 2022). These interviews will give the interviewer a chance to obtain the primary data. According to Bryman et al (2019), primary data are the data that has been collected and also analyzed by the

researchers themselves. Even though considered as “expensive and time-consuming” (Bryman et al, 2012), this primary data is the most valuable thing to answer the research question of this thesis as it can provide the correct insight of respondents that no other method can reach.

The qualitative method is characterized by three main components: inductive, interpretive, and constructionist. Under this method, the theory would be created out of the research – namely the inductive view, and through a contextual understanding of the social world by the participants’ view, the researchers can be "interpretivist" by focusing on the words rather than the numbers. Finally, constructionist means that the ontological position that suggests social properties are outcomes of social interaction and constructs. (Bryman & Bell, 2011)

### **3.2 Respondents**

The five respondents are chosen based on their working area and position: air freight forwarders. Their age, gender, or personal information is kept private due to the reason of anonymity, and also due to their requirements. The reason for choosing the air freight forwarders only is because they are the specialists who have the most experienced in the working process of air cargo as they work directly with these procedures in their daily work. Among five respondents, four of them are air freight forwarders that have experiences ranging from 1 to 11 years, one of them, most remarkably, is a former air freight forwarder for 5 years, but is working as a teacher in the air cargo field at the moment. Her contribution is considered both objective and subjective as she has the opportunity to broaden her viewpoint of the Vietnamese air freight market from various perspectives.

The decision of choosing the respondents is randomly picked through a post and then those who are interested will be carefully selected to ensure the diversity of the respondents. They come from different companies, have different working seniority, and different geographical locations, but most importantly, assure that they all work in the air cargo segment of Vietnam and have experienced difficulties, opportunities, and challenges when working with air freight. As three of the interviewees are from the North of Vietnam, who are working at the Noi Bai International airport – the main cargo hub in the North; and two of them are from the South, in Tan Son Nhat International airport – the main hub of the South, the working procedure and difficulties, although some parts will still be similar, still have a certain degree of diversity.

This will ensure that the information gathered through the interview can be rich enough to provide a more accurate view of the challenges and opportunities of the Vietnamese air cargo industry through the eyes of the insiders and also support answering the research question of this thesis.

### **3.3 Interview guide**

The interviews are conducted under a semi-structured process in which the questions are designed in an open-ended way that suggests a broader range of answers for respondents to discuss. (Newcomer, Hatry & Wholey, 2015). Starting with general questions about respondents' personal information and then followed by specific ones about the current situation of the air cargo industry in Vietnam. Pre-prepared questions can be given to candidates at their request so that they can prepare themselves in advance with ideas and answers for a more effective interview. Right before the interviews are conducted, the interviewees were explained about the nature of the interviews beforehand, so they can understand the reason for taking part in the interviews. The basis of this interview guide is based on the "three-flow model" theory and reality of Vietnam's air cargo industry through secondary data to ask questions that can be linked to these flows of logistics, and the number of questions will be divided to relate to each flow (see Table 1). However, the information flow will be the most important and the most focused in this interview guide.

Table 1: The interview questions connected to each logistical flow in air cargo

The material flow	The information flow	The capital flow
<p>- What kind of items are usually shipped by air? Why? (Impact of bulky cargo arrangements, special time requirements, etc.)</p> <p>- With the signing of many trade agreements such as CPTPP and EVFTA, do you think that air cargo is facing more challenges or opportunities?</p> <p>- Recently with many international changes (Covid, Russia Ukraine issue, FTA), how has air consolidation changed in recent years?</p>	<p>- The use of passenger aircraft for the purpose of carrying commercial cargo requires a lot of safety procedures (such as DG – dangerous goods according to IATA). How do you feel about follow these rules, guidelines? Explain</p> <p>- How do you feel about the time it takes to do the customs clearance and paperwork before and after the pandemic? (Fast, slow, etc)</p> <p>- Do you think these rules should be improved and simplified? Why?</p> <p>- Does the emergence of digital and big data have any impact on your work?</p> <p>- How do you see the appearance of EAWB, and other e-papers are having a positive or negative impact on your work? Explain</p>	<p>- With the signing of many trade agreements such as CPTPP and EVFTA, do you think that air cargo is facing more challenges or opportunities?</p>

In addition to the questions related to the “three-flow model”, the interview guide also includes some general questions in accordance with all the logistics flow, presented in Appendix 1.

### **3.4 Research approach**

In order to answer the aforementioned research question, the semi-structured interview under the qualitative method was chosen due to its suitable characteristics of making further discussion easier for interviewees (Adams, 2010). After the questions were drafted and the supervisors were consulted carefully, the candidates would be selected and scheduled appointments to suit the timetable of both parties. Because of the geographical distance (Finland - Vietnam), the interviews were arranged via online format on Zoom with a duration of 20-40 minutes per person, hence, it was appropriate for the time of the participants even if they are at work or at home. The interviewees were explained about the reason for conducting the interview beforehand and after the meeting, they could have a chance to discuss further any related topics they would like to share and also clarify anything that was unclear throughout the process.

The interviewees were all Vietnamese air freight forwarders with different experienced time. They were chosen based on their working background and their geological location – from both the North and South of Vietnam. This was to ensure the diversity of the data in order to reach the proper insights into the field. The interviews were carried out mostly on the weekend and in the evening in the Vietnamese time zone (Indochina time – GMT +7) in September 2022, which was even more suitable in the Finnish time zone. Participants were ensured about the confidentiality of the interviews in which their shared personal information including name, age, gender, company, working places, and other personal opinions would be kept secret, and one consent document (see Appendix 2) were sent to each party to be signed before the interview was taken place. (Bryman & Bell, 2011)

All the respondents were asked to open the camera during the meetings so that the researcher could also observe their attitudes and facial expression to adjust the questions and behaviors to be suitable for the meetings’ atmosphere. The air freight terminologies were asked and explained throughout the interviews so that no data was misinterpreted into a different meaning. The interviewer also asked for permission to record the Zoom meetings with the technical tool so as to use them as references for the thesis purpose.

After the meeting, all the recordings were transcript immediately in 24 – 48 hours to assure that the data was scripted properly and correctly. Even though this thesis is presented in English, the interviews were taken in the participants' mother tongue – Vietnamese as a way to give the interviewees the comfortability to share their insight with the most flexible use of any air cargo terminology to describe specific thoughts, actions, and situations in the industry. The later translation from Vietnamese to English was carried out by the author of this thesis. All the related documents, videos, and recordings are only accessible by the interviewer and only served the purpose of research for this thesis.

### **3.5 Analysis of the data**

The qualitative data are usually examined under two approaches: deductive or inductive (from general to particular and vice versa). This research was conducted mainly in an inductive way, in which the specific data would be collected and analyzed to achieve an overall understanding of the topics or themes that were linked directly to the research question. Even though according to Tuomi and Sarajärvi (2002), the inductive method can be considered too subjective, and they are based a lot on the research designs and pre-existing attitudes of both the author and the respondents, this still acted as the most appropriate way to form the proper interpretation of challenges and opportunities of air cargo sector in Vietnam from the viewpoints of the insiders.

Three categories in the qualitative method of research are empirical-based, theory-based, and theory-bound (Eskola & Suoranta, 1998). In this thesis, the logic of both empirical-based and theory-based were followed as the questions and general ideas were collected from the secondary data on the reality of the air cargo sector in Vietnam, as well as from the personal experience of the thesis writer; after the data from the questions was gathered through the interviews, they would then be analyzed and reflect to the theories and models.

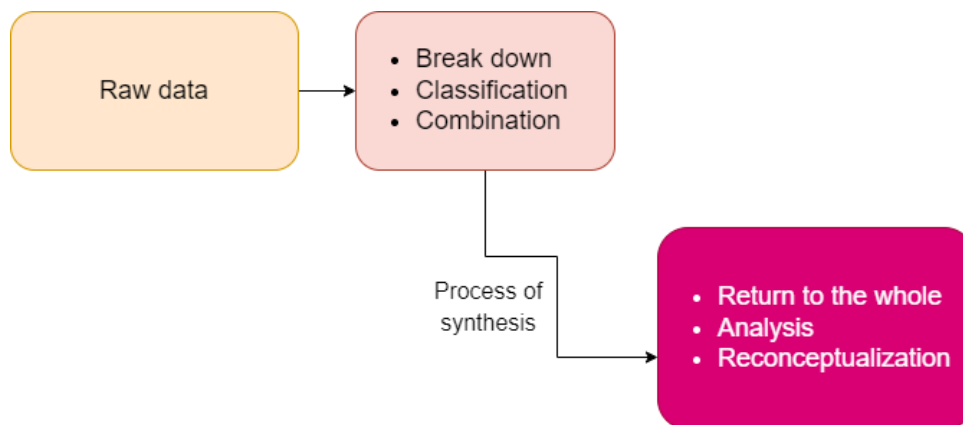


Figure 7: Process of data analysis (Hirsjärvi & Hurme, 2000)

Figure 7 illustrates the data analysis process under the theory of Hirsjärvi and Hurme (2000), which was also applied in this thesis. The raw data, after being gathered, would be broken down into groups and then put into each category. In order to get to the analyzing sector, the author was required to study all the answered sentences individually beforehand to reach the true meaning of each respondent during their interview. This helped to identify the central themes of the whole semi-structured interview. Following that, all classified information would be synthesized to understand the underlying theories of the whole and re-conceptualization whenever needed.

The primary data analyzed was highlighted in different colors to acknowledge the main themes and the relevant categories. (Appendix 3). In the results chapter, only the relevant citations of the transcript would be presented to secure the personal information of the interviewees due to the anonymous agreement of the consent form.

### 3.6 Validity and reliability

The qualitative method focuses on identifying the insight of thoughts and opinions of interviewees; hence, the author did not make any overall conclusions before the analysis of the opinions of the respondents. The author expected to understand the viewpoints of the interviewees under their backgrounds and expectations. According to Eriksson and Kovalainen, (2008), research is often assessed by the measures of quality, trustworthiness, and generalizability. Validity and reliability – two fundamental concepts of trustworthiness – are built by the concept of the way that the data was gathered (Eriksson & Kovalainen, 2008). The reliable quality of this thesis was determined by the selection of interviewees, data collection, and analysis of the conclusions. By posting information inquiries on the logistics groups on

Facebook and Twitter, the number of people interested in the interview was carefully selected based on personal information related to the air freight industry and working time. The number of chosen candidates in this study was only five air freight forwarders – who met the criteria of conducting a purposeful sample for the qualitative method of the research.

In addition, interview questions were also carefully designed with reference to supervisors, in order to avoid navigating respondents, to provide the most reliable information, and help directly solve the research question. Besides the content validity, the interviews conducted under this thesis-writing process were also reliable due to the inspection of personal expression from the participants. The respondents were encouraged to perform the interviews with their honest feelings and opinions as they were guaranteed that all the information that was given at that meeting would be kept confidential. Even though the questions were carefully designed in an open way to learn about the current state of the air cargo industry rather than being too personal, some participants were still afraid that their answers - if public declaration - will negatively affect their work. Thus, this might impact at some level on their answers.

During the interview, one respondent expressed reluctance when it came to questions regarding good or bad judgment. After the question was clarified, the respondent was more willing to answer but there was still hesitation in the answer. This did not happen to anyone else. Although avoiding showing any emotions or expressions throughout the interviews, the author still faced a risk of receiving answers that are, in some parts, not consistent over time or even incorrect with the real situation. This is inevitable in any kind of interview method and can have a certain impact on the trustworthiness of the study.

### **3.7 Ethical issues**

Every personal interview contains a problem of ethical issues to a certain degree as the conversation between researcher and interviewees was connected to human involvement in many stages of the meeting. (Jacobsen & Landau, 2003). Detailed ethical instruction to avoid unwanted situations is crucial in these cases. In addition to the signing of the consent form between parties of the interviews before conducting the meeting, the author also asked whether the respondents want their sharing and personal data to be published, even for the supervisors of this thesis. Although all of them gave permission that the information shared and answered in the interview are optionally used as research materials for the researcher's graduation thesis,

the author still kept the videos, images, and conversations confidential to protect both parties from possible ethical problems.

As mentioned above, the research design and ideas of researchers can have a potential impact on the respondents (Sanjari, 2014), but the participants were all informed beforehand of the nature and the reason for this study so they can decide on whether or not they should attend the interviews. The interviews were conducted in privacy between only the researchers and the respondents, where the researchers took notes and recorded them without the presence of a third party. After the transcript was finished, the participants can check if their opinions were misinterpreted before being used. The interview questions are also presented in the appendices for further examination.

## **4 RESULTS**

This chapter will present the findings of this empirical study with the structure following the linked theories and the categorized method in the aforementioned theoretical and methodology chapter of this thesis.

Throughout the interview, the participants all demonstrated a certain level of understanding, from basic to advanced, directly related to the interview questions. Based on the responses of the candidates, it is clear that the challenges and opportunities of Vietnam's air freight industry have appeared in certain repeated topics, but with different influences due to the experience and perception of each participant; these topics include: Cargo types, regulations, working procedure, pandemic and the war between Russia and Ukraine, FTA and the new technology. These themes are all represented by their positive and negative influences on the three main flows of logistics: Material flow, Information flow, and Capital flow. The effects of these categories are mixed in all three flows and are presented in the general statistical form in Tables 2 and 3 of chapter 4.1 and 4.2 before aggregated results are reported later.

### **4.1 Opportunities**

The opportunities of the Air cargo sector in Vietnam are gathered in three main flows of logistics: Material flow, Information flow, and Capital flow. (See Table 2).

Table 2: Opportunities of Air Cargo in Vietnam

Opportunities Interviewees	Material Flow	Information flow	Capital flow
1	<ul style="list-style-type: none"> <li>- Fast delivery</li> <li>- Suitable for:                             <ul style="list-style-type: none"> <li>+ Items needed quickly</li> <li>+ High-value goods that spoil quickly, or are difficult to maintain</li> <li>+ Transport urgent goods</li> <li>+ Small orders</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- For companies that have experience in exporting by air cargo, the procedure is fast</li> <li>- Customs clearance is easier with Covid</li> <li>- The current regulations are quite reasonable for businesses and for state management</li> <li>- Electronic documents have positive impacts because of increasing efficiency and work productivity</li> </ul>	<ul style="list-style-type: none"> <li>- FTA will have many advantages</li> <li>- Countries trade more goods with each other, higher capital</li> </ul>
2	<ul style="list-style-type: none"> <li>- Specialized in high value items</li> <li>- Go fast, arrive fast, high security</li> <li>- Urgently needed, rarely delayed</li> <li>- Suitable for live animals, perishable, easily damaged goods</li> </ul>	<ul style="list-style-type: none"> <li>- International regulatory standards should be followed</li> <li>- Many technologies that save, protect resources and the environment, and are efficient</li> </ul>	<ul style="list-style-type: none"> <li>- Attach great importance to development from the government</li> <li>- Rate increase</li> <li>- Many people seeing the potential development of Vietnam's aviation industry</li> </ul>
3	<ul style="list-style-type: none"> <li>- Short transit time</li> <li>- Store temperatures carefully at hubs</li> <li>- Suitable for high value, perishable items and items that will require arrival time</li> <li>- FTA helps to expand export market</li> </ul>	<ul style="list-style-type: none"> <li>- Regulations are necessary to protect human life and property.</li> <li>- Faster air cargo declaration</li> <li>- The procedures in Vietnam are quite flexible and quite fast</li> <li>- EAWB is quite saving time, cost and manpower</li> </ul>	<ul style="list-style-type: none"> <li>- Get better cargo rates by contacting directly</li> <li>- Covid brings super profit</li> </ul>
4	<ul style="list-style-type: none"> <li>- Suitable for goods that need preservation or storage methods or some difficult items such as DG goods, fresh goods</li> </ul>	<ul style="list-style-type: none"> <li>- Airline partners are also very supportive in dealing with documents</li> <li>- Paper procedures are better after Covid</li> <li>- EAWB saves a lot of time</li> </ul>	<ul style="list-style-type: none"> <li>- Sell more air freight due to FTA</li> <li>- In the next 1 year, there will be more support policies</li> </ul>
5	<ul style="list-style-type: none"> <li>- Suitable for goods in urgent need</li> </ul>	<ul style="list-style-type: none"> <li>- The regulations help to reduce unforeseen difficulties or costs</li> <li>- There are a number of websites, software to help making documents or look up information faster and more efficiently</li> </ul>	<ul style="list-style-type: none"> <li>- Optimal transportation, less affected by external factors</li> </ul>

#### 4.1.1 Material flow

The opportunities related to material flow cover various types of specialized products for air cargo. All the respondents mentioned the high-value, perishable goods that are hard to maintain. The benefits of air cargo are also the fast-shipping time and low possibility of delays which are suitable for urgent products:

“Air goods go quickly, arrive quickly, and safely so that high-value goods such as gold, silver, precious stones, goods with expensive equipment and machinery”

“The nature of the air freight is fast, and usually if the plan is to fly from day to day, it will usually go that way, rarely being delayed.”

“Goods that are perishable, easily damaged such as fruits and vegetables, must be kept cold, kept cool because of the short shelf life, so must use air freight because no one uses the sea freight for 1-2 months and then the goods will be damaged.”

Air cargo flow is particularly suitable for items with special requirements for storage, temperature, ventilation and other transport routes, which, in special cases, are also mentioned by some of the respondents are human remains or body parts. A special respondent also stated that the transfer of live animals is compulsory to be shipped by air freight:

“Especially live animals, cannot go by sea but only go by air, such as dogs and cats from Vietnam to the US, to settle down for example - then live animals must travel by air because 14 hours of flight is also quite exhausted for them, so no one use sea freight, because it is necessary to ensure fast time to keep the animals healthy.”

“Those goods need a short transit time, so it is imperative to take air cargo and keep the temperature carefully at the hubs at the transit points.”

“If it was more special, rarer and required to go by air, it would be human remains or corpses”

The emergence of free trade agreements was also mentioned by one participant with an important role in promoting an easier exports opportunity from Vietnam:

“In FTAs, it will often hit tax incentives, which will give Vietnam the opportunity to expand its export market, for example, in Europe, only Vietnam and Korea can get a wood pellet with a 0% export tax.”

#### **4.1.2 Information flow**

Many respondents notice the importance of information flow throughout the interview. The flow of data contains the working procedures, rules, and regulations as well as customs clearance. The rules and regulations are stated that they are created to help protect the safety and high security of humans. At the moment, all the interviewees mentioned the existence of customs-related administrative paperwork and work process in Vietnam are easy enough for creating more opportunities, hence, they should be followed, with no need to change or improve:

“From my perspective, customs procedures still need to follow the current steps. In fact, Vietnam's current regulations are quite reasonable for businesses and reasonable in terms of state management”

“The first is the international standards, that's what experts do, they also update it regularly, and I think what they offer is the best for airlines service, so we should follow, no comments. Secondly, about the regulations and rules of the state and the government, we must follow without a doubt”

“The procedures in Vietnam are quite flexible for shippers and quite fast.”

After the covid pandemic, the time to process customs procedures has been supported and withdrawn. Two of the participants mentioned receiving a lot of support from both the government and those working at airlines to process procedures more efficiently and maintain an efficient flow of information during and after the pandemic:

“Now, at least in Vietnam, customs clearance is easier because the government has many policies to prevent epidemics, such as vaccination, etc.”

“The airline partners are also very supportive, so there are not many difficulties during and after Covid”

Most importantly, the appearance of new technology plays a vital role in the information flow. Most smart technologies like EAWB or portals are acknowledged by all participants as bringing a lot of new opportunities in the air cargo industry, especially for the positive chances they created on the flow of data:

“Of course, the emergence of technologies, called electronic documents, will have a positive impact because we can increase work efficiency and productivity.”

“But in general, the birth of this EAWB will save time, cost and human resources for airlines, limit confusion compared to making AWB with paper, moreover, it will be quite convenient for transportation and storage”

### **4.1.3 Capital flow**

Most participants realize the opportunities of the capital flow are related to the air freight rate during and after the Covid-19 pandemic. The price rate of air cargo is extremely high throughout the pandemic time and brings huge benefits to all parties in the air logistics flow:

“But the last 2 years of covid have been 2 years of super profit for air freight forwarders, because the load is scarce, the price is increased by 5-10 times. Hence, covid acts as an opportunity for logistics development”

“During the Covid period, the shipping price increased 7 times, bringing huge profits”

In addition, many interviewees also mentioned that thanks to the investment interest of the Vietnamese government and thanks to international trade agreements, it has helped create many opportunities for the development of air cargo trade in the region in the near future with more and more stable capital flows:

“Currently there are many aviation developments such as the birth of Long Thanh airport and a whole new air cargo airline: IPP cargo to see that those with vision are investing in air freight. So, I think more and more people with money will see the potential development of Vietnam's aviation industry and will join hands with the government to develop air freight, it will take time, but many people will go faster, in just a few years will be different”

“For me, Vietnam joining international trade agreements will bring more advantages for the service industry, especially in the field of air cargo, because when trade barriers are reduced leading to countries will trade more goods with each other, which will lead to an increase in demand for freight services in general and air cargo in particular”

## **4.2 Challenges**

The challenges that air freight forwarders have to face are divided into three logistical flows of Physical (Material), Information, and Financial (Capital). (See Table 3).

*Table 3: Challenges of Air Cargo in Vietnam*

Challenges Interviewees	Material Flow	Information flow	Capital flow
1	<ul style="list-style-type: none"> <li>- Unable to transport too large and bulky goods</li> <li>- Cargo handling capacity of each carrier is different</li> <li>- Some flight route transits through many points</li> <li>- The delay in arrival time affects the quality of the goods</li> </ul>	<ul style="list-style-type: none"> <li>- Goods suppliers do not have much experience and takes time to obtain the DG certificates.</li> <li>- Customs clearance is slower during Covid</li> <li>- Managing electronic records faces a risk of documents being forged</li> <li>- New technology does not affect current work</li> <li>- There is no standard form to synchronize data online</li> <li>- The BOL still done manually</li> </ul>	<ul style="list-style-type: none"> <li>- Control the costs incurred</li> <li>- Fuel prices increase</li> <li>- High shipping fees</li> <li>- Freight rates increase</li> <li>- Difficult to maintain stable exports because of the war</li> <li>- International issues are only temporarily resolved by the government</li> </ul>
2	<ul style="list-style-type: none"> <li>- Only carry light goods, not too bulky, not too heavy</li> <li>- Tighter limits on passenger ships</li> <li>- DG goods are relatively complex and different</li> </ul>	<ul style="list-style-type: none"> <li>- Many international and local authorities' regulations</li> <li>- The longer you work, the more you need to know</li> <li>- Careful when making documents</li> <li>- Strict control of documents due to the epidemic</li> <li>- Internal rules are burdensome, more time consuming and easy to affect other regulatory layers</li> <li>- Digitizing, automating has not had any obvious impact</li> </ul>	<ul style="list-style-type: none"> <li>- Should be backup plans for cost reduction</li> <li>- Companies should invest in employees to learn more about industry regulations</li> </ul>
3	<ul style="list-style-type: none"> <li>- Do not provide enough loading capacity for customers</li> <li>- Meet the space requirements for the increased volume of goods due to the FTA</li> <li>- Loads of goods are scarce, need to be carefully arranged</li> <li>- Vietnamese exports were reduced due to the war</li> </ul>	<ul style="list-style-type: none"> <li>- Procedures have been slowed down during the epidemic</li> <li>- New technology currently does not affect the work</li> </ul>	<ul style="list-style-type: none"> <li>- Incurred many external expenses</li> <li>- AWB is easy to lose which costs a lot</li> <li>- Small companies that buy, and load goods face more difficulties</li> <li>- The airline company will give priority to acquaintances to have more loads</li> </ul>
4	<ul style="list-style-type: none"> <li>- Difficult to carry bulky goods</li> <li>- Difficult to use available knowledge when preparing DG goods</li> <li>- DG goods: 3-4 times longer than processing a regular order</li> <li>- Flight load is limited due to the epidemic</li> <li>- The war brought goods to a standstill and had to take detours</li> </ul>	<ul style="list-style-type: none"> <li>- A lot of complicated procedures when handling DG goods</li> <li>- Most airlines have not accepted EAWB yet</li> <li>- Procedural policy has many limitations</li> </ul>	<ul style="list-style-type: none"> <li>- Customers often compare it with shipping by sea and land</li> <li>- Higher preservation costs</li> <li>- Freight costs are quite expensive compared to the sea</li> <li>- Incurs a lot of costs if you type wrong AWB information</li> <li>- Fuel prices of airlines are very high</li> </ul>
5	<ul style="list-style-type: none"> <li>- Only suitable for cargo under 2 tons</li> <li>- FTA has not had much impact on items such as machinery and clothing</li> <li>- Restricting exports and imports due to war</li> </ul>	<ul style="list-style-type: none"> <li>- Requires a large variety of documents</li> <li>- Fill in the wrong documents due to urgent time</li> <li>- These rules are quite complicated but difficult to change</li> <li>- EAWB is hardly used</li> <li>- War changes the whole shipping plans</li> <li>- Courier documents can be lost</li> </ul>	<ul style="list-style-type: none"> <li>- Unforeseeable trouble related to flight schedules created high risk of warehousing costs</li> <li>- Incurred war surcharges or fuel surcharges</li> </ul>

### 4.2.1 Material flow

The challenges of the Air Cargo market in Vietnam are related mainly to the limitation on the types of items that air freight can carry. All the interviewees mentioned that Air Cargo cannot carry bulky or heavy goods, with an allowance of under 2 tons. Two of the participants with many years of experience even stated that many aircraft only accept a limited amount of goods with specific dimensions:

“It can only carry light cargo, not too bulky because the plane can only carry goods of moderate size, not oversized, too heavy, super long, super heavy.”

“When the goods are bulky, it is necessary but hard to choose the ones with large aircraft to be able to accept the size of the cargo.”

The challenges for material flow are also linked to the different handling capacities of each carry as the interviewees said that it was hard for them – as air freight forwarders to choose the right one for the customer’s order, as the loads on the planes are scarce also. Many of them are also concerned about the preparation of DG – dangerous goods as it takes a lot of time and effort to prepare for the preservation and shipping conditions both in the warehouses and on the planes:

“It’s still very time-consuming ~3-4 times compared to processing a normal order. A lot of procedures: when DG arrives, check DG, how to pack properly, whether to accept this item, etc. ... make me want to have a headache.”

“Some DG goods are not allowed to take passenger aircraft”

“Only DG goods are relatively complex and different”

In addition, external objective factors were also mentioned that greatly affect the flow of Vietnamese air cargo, including the FTAs, the Covid pandemic, and the war between Russia and Ukraine. The FTAs also created unexpected challenges in terms of loads, while the war, is fully aware by most of the participants that have caused airlines to find other, longer routes to transport cargo, which can lead to unexpected cargo damage and loss:

“When exports increase, the demand for air space increases, when it increases, it is a challenge in the industry to see if it can meet the space for the increased volume.”

“During the Russia-Ukraine war, a lot of airlines stopped flights to Russia, but our customers and goods came to Russia a lot, so they couldn’t be supported anymore”

“Taking a detour will return to the problem of storage, usually will fly for 24 hours, but if you run out of dry ice at the transit point, there will be huge problems.”

#### **4.2.2 Information flow**

The challenges of information flow contained working procedures, documents problems, rules and regulations of the Vietnamese government as well as the limited impact of new technology on the current information flow. The challenges that appear a lot in air cargo are mainly mentioned as the antiquity and backwardness in the paperwork so far in Vietnam. Customs, import, and export documents are still filled out by hand, so it is said by respondents that it can cause errors when filling out the information in times of urgency or less time allowed:

“Bills of lading are still done manually”

“The most obsession of people doing procedures and also the most common is the wrong custom clearance documents. Normally, when I do, the Sea cargo procedure can only be done slowly because the catch-up schedule is often set very far away from the booking, and for the air cargo, there are times when it needs to be very fast, it has to be resolved in 1-2 hours so as to be on time to fly and sometimes have to be deducted to prevent errors”

Besides, despite such a huge amount of paperwork, new technologies such as EAWB or portals, from the point of view of air freight forwarders participating in the interview, do not seem to have any significant impact on the flow of aviation information in Vietnam. They also mentioned that in Vietnam, there is not even a standard form to help synchronize documents with the help of technology:

“In fact, now, I see that new technologies, it has not affected my current work, because it is essential that now all import and export documents and documents to do procedures are it doesn't have any standard form, then the systems that read the data or analyze something, won't be able to synchronize the data”

In addition, in terms of state and internal management, the interviewees also mentioned that the authority and the airlines have not yet supported new technologies such as EAWB and they find that the air freight regulations are also very burdensome and especially strict during Covid times, challenge the information flow:

“The outbreak was a bit confusing; the procedures were slowed down and information was a bit difficult to exchange between the parties.”

“When going further into the government, into the domestic unit it is more difficult, more constrained and therefore produces more work, more burden, more time consuming”

“Most airlines that have not yet accepted EAWB, as far as I know, have ANA, etc. mostly big airlines. As for small carriers, we still have to wait”

### **4.2.3 Capital flow**

The challenges of Vietnamese Air Cargo in terms of Capital flow are aware by all the respondents related greatly to the international issues of the Covid-19 pandemic and the war between Russia and Ukraine because they incur a lot of costs besides the fuel surcharge. Some mentioned that they had more difficulty in maintaining a stable export volume with the sanctions coming from Russia, and others said that they face great challenges in controlling the arising storage costs of flight changes due to the above-mentioned international issues:

“I think with the war between Russia and Ukraine, from now until the war ends, the number of goods exported via air cargo will decrease, and it will have to wait until the war is over to consider whether to recover or not.”

“It changes a lot; it changes a shipper's plan too. Depending on the shipping company and airline, whether you go by sea or air or by express delivery, the cost of war insurance or other important issues is very important.”

“Usually when problems like war occur, their shipper usually restricts the export of goods, and the agent usually restricts the import of goods because it will have risks and insurance is very troublesome.”

However, one air freight forwarder believed that the policies of the government to tackle those international issues are only suitable for short terms, and need to be improved may even create other backup plans in the future for better maintaining the flow of capital in Air Cargo market:

“At that time, we should have backup plans like a petrol partner to buy gasoline at a cheaper price”

Besides, another forwarder also mentioned the challenges faced by small freight forwarding companies, including his own, is that they have a lower load of cargo as the main carriers usually prioritize the big forwarding enterprises – which have a higher reputation and may have the acquaintance of the airlines – to have more load, hence, the smaller firms would need to

purchase the consignment of goods from big companies at higher prices and directly affect their capital flow:

“Large forwarders in the industry, between airlines or agents that have direct contact with airlines, do not face difficulties, only small companies that buy back will face more difficulties.”

“Airlines will give priority to acquaintances, like giving them to have more loads, they even divide into A, B, and C forwarders’ ranks in the industry”

## 5 DISCUSSION

This chapter contains the discussion and analysis of the author when interpreting the empirical research results with the theories and background studies presented in the theoretical chapter along with the assessment from the author of the method used to gather data for the thesis. This chapter also stated again the research question of this thesis to figure out whether through the collected data, it is answered or not. The aim of this study, in addition to acknowledging the challenges and opportunities of the Air Cargo sector in Vietnam, is to get insight into the air freight area from the perspective of professionals working in the field – the air freight forwarders.

The research question is as follows:

- What are the challenges and opportunities that air freight forwarders in Vietnam have to face when working in their field?

Based on the semi-structured interviews, the author was able to identify both chances and difficulties in the field that have certain impacts on the present and future of the Vietnamese Air Freight market. The findings of this research were well-categorized into the flows of Material, Information, and Capital, which aligned with the Three-flow Model in Logistics (Storhagen, 2011). Each logistical flow would also be reflected with the previous theories and background research mentioned above in Chapter 2 to help build an overall factual understanding of the situation of the Air Cargo sector in Vietnam and could even make way for many future studies of the area in the near future.

The utilized method of qualitative approach under semi-structured interviews will also be discussed to understand whether it is suitable for this research in practice and the validity of it in the context of this study and in the meantime after collecting the data.

## **5.1 Discussion of results**

The main theory of this study is the Three – flow model in Logistics, which act as a foundation for creating interview questions and categorizing the answers of the respondents. In this part, each of the logistical flows will be compared and analyzed with the link to the previous research of the author in the Theoretical chapter to understand the similarities and differences between theories and reality. From the Material, Information, and Capital flow, the author expected to reach a better insight into the Air Cargo sector in Vietnam with its challenges and opportunities in the most precise way and may pave the way to other future development in this field in years to come.

### **5.1.1 Material Flow**

The types of products that Air Cargo can transport can be seen as both challenges and opportunities for air freight forwarders. Although some of them believe that the dimensions and weight of the goods are the limitations for the development possibility of the field, many of them – with more experience in the area – realized that specialized cargo that can only be shipped by air is a massive chance for Air Cargo to develop. They stated that the fast-shipping time and high accuracy is the main advantage of air freight in comparison with the others, which is in line with Rushton, Croucher, and Baker (2022) who believe that air freight helps better transport the cargo due to its shipping characteristics.

The appearance of FTAs in Vietnam also has many positive impacts on the export of Vietnam through air freight. One interviewee even stated that the FTAs play an important role in promoting the export market of some Vietnamese products including telephones, computers, machinery, and electronic equipment from Vietnam to, for example, Europe. This evidence is aligned with the statement of both Van Huy (2022) and Hai Yen (2022) on the influences of FTAs on the development of the current air cargo market. Nevertheless, there is one noticeable data gathered from the air freight forwarders that no previous studies have mentioned is that the FTAs – which are supposed to create opportunities – also bring about some challenges in

terms of loads as some of the respondents said that they face problems of providing enough air cargo load for increasing export demand.

However, the challenges related to the material flow are also connected to the specialized cargo that only air freight can handle. Many of the respondents stated that with such unique goods of human remains, live animals, etc – which are called DG – it takes them a lot of time and effort to deal with those goods, how to control the temperature, ventilation, and other preservation conditions during collecting and consolidating process in the aviation warehouses. With these urgent freights, as referred to by Hanh (2020), the consolidation time would be under time pressure with only a few hours to process. As this is their most crucial task – according to Rushton, Croucher, and Baker (2022) – air freight forwarders face many difficulties to handle those complex and different cargoes.

In addition, the war between Russia and Ukraine, according to previous studies, has had various prolonged impacts on the air cargo market of Vietnam as many airlines have had to change their route, which negatively impacted the type and quality of products shipped (La, 2022). This is consistent with the answers by some respondents that as the air freight market to Russia is the focus of many of their clients, the air freight forwarding firms not only lost many customers but also the current air cargo to or through Russia could not be supported in the current time. The increased pressure also is mentioned in terms of storage as participants said that when the carriers need to detour, it will create storage conditions issues for many specialized products that need special preservation, hence, this supports the conclusion of Thanh Binh (2022) about the impact of Russia air embargo on Vietnamese logistics.

### **5.1.2 Information flow**

The majority of respondents stated that they believed the international rules and regulations of air freight under IATA and ICAO are well-organized with references and work from professionals and highly prestigious people in the Aviation field to get all the latest updates and news. The DG manuals by IATA act as a helpful tool, in accordance with the IATA knowledge hub, for air freight forwarders to follow in order to reach the international air cargo market, hence, most of the interviewees find no need to alter or transform these IATA standards in a more simplified way. In addition, a claim put forward by Nguyen (2019) suggested that in terms of national management, the Vietnamese government has adapted quickly and

appropriately to the rules of IATA and ICAO, as well as simplified whenever capable, which makes the Air Cargo market of Vietnam become flexible for both freight forwarders and customers. This claim is supported by many of the participants who said that the national rules and procedures from freight forwarding firms, to carriers and customs clearance of Vietnam, are flexible and easy enough for all parties to adopt, and this will attract more international air shipping opportunities and become the main air cargo hub in Southeast Asia in the future (Nguyen, 2019).

However, very little information was found in the previous studies related to the information flow within freight forwarding companies. Even though the international and state regulations are considered by many respondents as pros for air freight to develop, the inner rules and paper procedures of their own firms act as cons in maintaining the flow of information. Several participants emphasized that the internal paperwork is really a challenge for them as they are sometimes too burdened and more complicated than they should be. This is a quite new insight that not much previous research has realized.

The challenges in the flow of data are widely acknowledged by all the interviewees as they mentioned that most of the paperwork nowadays in the Vietnamese Air Cargo sector is still done manually, thus, whenever they filled in with wrong information, the error can affect the whole information flow of that cargo and create uncontrolled consequences. Even though some of them have the opportunity to access the EAWB, and they do realize the effectiveness of this technology in eliminating the number of possible mistakes by human errors – which is in line with SIA PARTNERS (2018) – this innovation still has not received any significant support from the Vietnamese government and the airlines to be widely used. This is a difficulty that has not been studied before in the air freight market of Vietnam. Moreover, although many of the previous studies stated the opportunities of digitalization and new technologies in air cargo that help to optimize the consolidation process by improving the communication and cooperation in a supply chain (Phuong & Thu, 2021), in the Vietnamese market, this face more problems as a few of the air freight forwarders highlighted that there is still no standardize form and procedure for all freight forwarding companies to gather the data, hence, the appliance of digitalization would struggle to synchronize the information, creating more challenges for the air freight market if they want to be truly innovative.

Besides these subjective issues from the individuals and the state management system, the objective problem of the Covid-19 pandemic also brings about many challenges and opportunities under the eyes of the respondents. They divided into two main streams of opinion: one side found it quite easy to deal with documents during and after the epidemic because of the great support from airlines and the government, and the other side pointed out the difficulties in information and documents procedure due to Covid-19 restrictions - which is very similar to the information from Dr. Nguyen Van Phuc and Dr. Bui Doan Ne (2022) in previous studies. In their research, they affirm that the new requirements generated by the Covid-19 situation impact negatively on the number of procedures that can have a long-term impact on the flow of air cargo information even after recovering.

### **5.1.3 Capital flow**

According to previous studies, the Covid-19 problems created various problems that have negative issues on the development of air cargo in Vietnam, increasing the cost of insurance and storage, and affecting directly the capital flow of the air freight market (Nguyen & Bui, 2022). However, from the viewpoint of professionals working in the area, the impact of Covid-19 seems to have a surprisingly positive influence on the flow of money in air cargo. Many of the participants stated that the money flow during and after Covid got extreme benefits as the cargo rate increased tremendously at more than seven times the normal rate. These findings suggested that the Covid situation creates more opportunities than only challenges and difficulties, which is quite in contrast to the research by Dr. Nguyen Van Phuc and Dr. Bui Doan Ne.

Regarding the war between Russia and Ukraine, many interviewees mentioned that the decrease in export due to the war made the capital flow hard to control because most of the costs increased such as the incurred gasoline and other extra fees. The embargo of Russia and the detour of air carriers created a prolonged impact on the money alternate throughout the supply chain, especially with cargo from and to Russia – a primary focus of Vietnamese air freight. These statements are similar to the previous research by La Quang Tri (2022) and by Thanh Binh (2022) who cited that these inflations have contributed negatively to the flow of finances in the air logistics of Vietnam. Additionally, several participants stated that the government needed to have more supportive policies to reduce or limit the consequences of these external factors on the air freight market. They expected that in the near future, the

authority should have some backup plan to anticipate the situation better and prepare for a more effective solution for dealing with these uncertainties in the financial flow, which provide a different and unexpected insight that not many studies have reached before.

Nevertheless, two of the respondents claimed that thanks to the investment of the Vietnamese government and some other huge national enterprises, the air cargo sector of Vietnam is opening up more opportunities with the appearance of a specialized cargo airline, IPP, which show the potential of this market and the stable capital flow for further development. Several previous research supported the results of this study; most noticeable are the report by Hanh (2020) and ALS – Aviation Logistics Corporation (2021) claimed that this new air cargo carrier is a testament to the focus and development of the Vietnamese government on the air freight industry, which will bring in revenue and improve the flow of money that is even predicted to surpass the passenger transport segment in the near future.

Earlier studies have consistently presented the positive impacts of the FTAs including the EVFTA and CPTPP which succeed in eliminating the trade barriers from Vietnam to many developing countries and facilitating the export of diverse and favorable goods (Van, 2022). Hai Yen (2021) also cited many products of eggs and egg yolks of poultry; garlic; sweet corn; milled rice, etc. are receiving more tax reductions from the EU, hence, they will be exported with a more significant amount and bring a vast and stable capital flow to the air freight market in the long run. This is consistent with the discussion of several air freight forwarders who participated in the interviews in which they mentioned the benefits of FTAs in opening more import and export opportunities for the air freight industry.

In addition, there is one challenge that no earlier research mentioned: the financial difficulties of many small airfreight forwarding companies compared with the colossal freight forwarding enterprises. The respondents declared that smaller firms in the field find it more challenging to obtain cargo on aircraft with a similar price rate as the big ones. They struggled to maintain their own capital flow and the work task of the air freight forwarders is also to negotiate, if necessary, to achieve a better rate for their clients including insurance, tax as well as other customs payment. This is considered a significant challenge for Vietnamese air freight forwarders that have not received further study at the moment.

#### **5.1.4 Summary of the results discussion**

The finding of this research is the synthesis of different perspectives of five Vietnamese air freight forwarders along with the analysis and comparison with the previous studies in Chapter 2: Theory. In the past, there has not been much research on the challenges and opportunities of the air transport industry from the perspective of industry experts, most of which come from doctoral professors who do not directly work in that field. The results show that the opportunities for air cargo in Vietnam related to the three logistical flows include: the types of specialized cargo; the benefits of FTAs (Van, 2022); the ease of use in the rules and regulations from both international and national management (Nguyen, 2019); the emergence of new technologies (SIA PARTNERS, 2018) as well as the investment from the government and big enterprises into the Vietnamese air freight market (Hanh, 2020).

In terms of challenges, the Vietnamese air cargo sector faces various issues in all three flows. The difficulties are created by both internal and external factors, including certain types of products with characteristics that cannot be shipped by air freight, which create many challenges for the work tasks of the freight forwarders (Rushton, Croucher, and Baker, 2022); the war between Russia and Ukraine that has prolonged impact on both material and capital flow of goods through air cargo in Vietnam (Thanh, 2022) and the paperwork issue happen during Covid-19 restriction (Nguyen & Bui, 2022). All these challenges are stated and supported by the results of this thesis.

However, there are many insights that have not been studied before about both the challenges and opportunities that Vietnamese air freight forwarders have to face in their daily work. The challenges related to the burden of some working procedures within logistics firms, the issues that small freight forwarding companies have to deal with as well as the fact that even though leading-edge technologies have appeared, they have not received proper support to be better utilized. All these issues are the difficulties that the air freight industry has to face at the current time, which have certain impacts on the material, information, and capital flow of the Vietnamese logistics area. Besides, there are also some positive effects of a few unexpected issues, for example, the Covid-19 pandemic, which created several opportunities for Vietnamese air cargo, leading Vietnam to become a primary cargo hub in Southeast Asia. Hence, arising a need for further research into the air cargo market along with the pros and cons of various events into their influences on this field.

## 5.2 Discussion of method

This thesis was conducted under a qualitative methodology in which a semi-structured interview was chosen to gather the necessary data from the participants for the research purpose of this study. Aiming at getting insight of the air freight forwarders about the challenges and opportunities that they have to face in their daily working processes, the author carefully selected this qualitative approach due to its characteristics of obtaining primary information and helping the researcher to be “interpretivist” by focusing more on the words, the situation of the respondents rather than the numbers (Bryman & Bell, 2011).

As expected, this method helped the author gain considerable information from the interviewees' responses. This valuable information plays a decisive role in answering the research question "what are the challenges and opportunities that air freight forwarders have to face when working in their field?". Throughout the semi-structured interviews, most of the time, everything went as planned. Thanks to the deliberately designed questions with the consult from the supervisors, the questions were constructed in a well-organized way so as to reach the data with the highest accuracy for the research purpose.

During the interview procedures, most of the interviewees found it easy to understand the questions and to answer the focal point of the questions, helping the researcher to obtain useful data easily and without much effort to clarify or re-explain concepts. However, as a face-to-face interview, sometimes the respondents turned the interviews into a chat and shared some redundant information that is irrelevant or even out-of-track to the research, which prolonged the interview time unnecessarily. In such situations, it is crucial for the author to remain concentrated and be able to turn the interviews back to the focus area without interrupting or embarrassing the interviewees. That was a minor problem of this chosen method as the questions are designed to be open-ended, hence, it cannot be assured that the participants would focus only on the core factors the whole time.

In addition, by carefully choosing the participants in the interviews, the study's reliability and validity were quite well achieved. All five respondents were air freight forwarders with certain experience from 1 to 11 years, which would give the research a diverse viewpoint on the reality of the Vietnamese air cargo market. The participants meet the requirements of experience, and ability enough to form a purposeful sample based on their expertise in the field. Besides, after

the data is collected and transcript, they will be sent back to the respondents to check the accuracy and to avoid any misinterpretation of the information that they shared, thus increasing the reliability of the collected information serving for further analysis and conclusions. Nevertheless, there was one participant who expressed a sense of uncertainty in a question of good or bad judgment. Even though that was a minor reaction, and the participant was still willing to answer the question afterward, this situation may create a risk of receiving an incorrect answer – or in other term – not reliable. This issue can have certain impacts on the trustworthiness of this study, but it is considered inevitable in any kind of research method (Sanjari, 2014).

Although facing some problems during the process of conducting the interviews for this thesis, the qualitative method is still believed to be the most suitable approach to reach the required information to answer the research question: “What are the challenges and opportunities that Vietnamese air freight forwarders have to face when working in their field?”. The semi-structured interview was considered appropriate as it not only provides a suitable foundation for the responses of the participants but also facilitates an expansion of the issues discussed, helping the researcher to have unexpectedly valuable data in the process of analysis and conclusion-making.

## **6 CONCLUSION**

Logistics is a broad range of areas and air freight is considered an important and developing field of it. For many years, the Air Cargo sector in Vietnam has not received appropriate research and investment into the current situation and future developments. Hence, this thesis aims at studying the chances and difficulties that Vietnamese air freight forwarders have to face when working in this field. In addition, the following research question was intended to be answered: What are the challenges and opportunities of the Air Cargo sector in Vietnam? Besides exploring the key factors in both the negative and positive progress of Vietnamese air freight, this thesis also provided various unexpected and interesting findings with the qualitative approach that can be utilized for further empirical studies in the future.

The results of this study indicate that the challenges of air cargo in Vietnam include the limited types and dimensions of products for the material flow; the burden of paperwork during Covid time and the non-support of the government for the advanced technologies related to the

information flow; and the negative influences of Russia embargo due to the war on the capital flow. Furthermore, the challenges that air freight forwarders in Vietnam have to face when working in small freight forwarding firms is also significant factor that needs further consideration. The opportunities of the Vietnamese air freight market were also presented in the findings with the benefits of specialized cargo in the material flow of air freight; the ease and flexibility of international and national aviation rules and regulations that facilitate the information flow; the focusing investment of numerous enterprises and authorities into air freight in Vietnam to foster the flow of money and most surprisingly, the positive impact of Covid-19 pandemic on Vietnamese air cargo market. Most of these difficulties and chances are aligned well with the earlier research and theories of the subject presented in Chapter 2. However, some of the results are unforeseen in any prior studies and help to bring up further and deeper research opportunities in this subject in years to come. Therefore, the author claimed that the research question has been well answered and the objectives of this thesis have been achieved and even exceeded the author's expectations. The findings and analysis of this research can be used as a helpful foundation and contribution to the Vietnamese air freight market in particular and to the Vietnamese logistics market in general.

## **6.1 Limitations of the study**

This research, even though being analyzed in an objective methodology, still faces a certain risk of subjectivity as the answers of the respondents are the only source of information, without any peer reviews beforehand from the other professionals. Hence, some gathered data could be too intuitive from the viewpoint of the air freight forwarders, rather than covering a broad enough term for the research. Even though the participants are selected randomly and carefully, there is still a possibility that the participants might provide inaccurate answers or inconsistent responses over time – which is a certain and inevitable problem in the trustworthiness of this thesis. In addition, according to Sanjari (2014), the design and implementation of ideas by the researchers can have potential impacts on the respondents. During the interviews, the author might accidentally create some influence, or adopt attitudes or gestures that may be of a navigating nature, causing issues with validity and reliability.

Furthermore, air cargo in Vietnam is a complex field that requires long-term studies so as to fully comprehend the particular challenges and opportunities that stem from both internal and external factors. The results of this thesis only covered a part of the research area due to the

fact that it only contains information from five respondents. As an empirical study, these findings are only valuable at the current time and under certain circumstances and conditions, thus, it could be hard or even impossible to use these results to generalize the whole Vietnamese air freight market, as well as to anticipate a specific future development of the area. This limitation can be tackled by various longitudinal research further into the chances of difficulties in the Air cargo sector in Vietnam using a bigger sample and more support and analysis of the experts to obtain a better overview of this topic.

## **6.2 Suggestions for further research**

This thesis opened up various fields in terms of Vietnamese air cargo that can be further researched. One reasonable and possible development direction would be picking up a narrower scope from the wide aforementioned approach of this study and focusing only on one perspective of challenges or opportunities. The proposed idea could be, for instance, qualitative research on the challenges of the Vietnamese air cargo sector with a larger sample or a quantitative study on the level of assessment of opportunities and challenges of Vietnam's aviation industry with each separate factor on the Likert scale. Another potential research would be the concentration on the impact of new technologies on this area and suggest some possible applications that help increase the development of the Vietnamese air freight market in the long run.

## 7 REFERENCES

- Adams, E, (2010). *The joys and challenges of semi-structured interviewing. Community Practitioner.*
- ALS, (2021, November). *Thị trường hàng hóa hàng không tại Việt Nam.* Aviation logistics.  
<https://als.com.vn/thi-truong-hang-hoa-hang-khong-tai-viet-nam>
- Van Phuc Nguyen & Doan Ne Bui (2022, May) *Thách thức, cơ hội của ngành hàng không Việt Nam sau đại dịch Covid-19 và giải pháp thích ứng.* Vietnam Aviation Business Association.  
<http://vaba.com.vn/thach-thuc-co-hoi-cua-nganh-hang-khong-viet-nam-sau-dai-dich-covid-19-va-giai-phap-thich-ung.html>
- Bryman, A. (2012). *Social Research Methods*, 4th Edition-Oxford University Press
- Bryman, A. & Bell, E, (2011) *Business Research Methods* (3rd Edition). New York: Oxford University Press Inc.
- Chau, L. T. M, (2021). *Improving service quality in air cargo transport–The case of Nippon Express Vietnam.*
- Civil Aviation Authority of Vietnam, (2018, October). *Lịch sử phát triển ngành Hàng không dân dụng Việt Nam.*  
<https://caa.gov.vn/hanh-khach-can-biet/lich-su-phat-trien-nganh-hang-khong-dan-dung-viet-nam-20181004114819061.htm>
- Eva. K, (2019, January). *Air Cargo Logistics (Traditional v.s Cyber)*  
<https://studyflying.com/air-cargo-logistics-traditional-v-s-cyber/>
- FNM Shipping Vietnam, (2018). *Air Freight from and to Vietnam.*  
<https://fnm-vietnam.com/air-freight-vietnam/#2> Air freight from Vietnam to worldwide - Estimated transit time

Flick, U, (2018). *An introduction to qualitative research*. Sage.

GLE LOGISTICS (VIETNAM), (2021, February). *Freight and logistics stocks on the rise despite pandemic*

<https://www.glevn.com/news/2/freight-and-logistics-stocks-on-the-rise-despite-pandemic.html>

Hanh, V.T.K. (2020) *Study on Goods and Passenger Loading Performance Index of air Transportation Logistics: Vietnam Case*.

Hai Yen. (2021, November). *EVFTA là hiệp định thương mại tự do được tận dụng tốt nhất trong năm đầu thực thi*. Đầu tư online.

<https://baodautu.vn/evfta-la-hiep-dinh-thuong-mai-tu-do-duoc-tan-dung-tot-nhat-trong-nam-dau-thuc-thi-d154938.html>

Hoai Huan Pham. (2020, September). *Development of a competitive Air Transport market in Vietnam: Issues and Experience for countries in transition*, Vietnamese Journal of Legal Sciences.

[https://www.researchgate.net/publication/346738310\\_Development\\_of\\_a\\_Competitive\\_AirTransport\\_Market\\_in\\_Vietnam\\_Issues\\_and\\_Experience\\_for\\_Countries\\_in\\_Transition](https://www.researchgate.net/publication/346738310_Development_of_a_Competitive_AirTransport_Market_in_Vietnam_Issues_and_Experience_for_Countries_in_Transition)

IATA. (2021). *Air Cargo Tariffs and Rules: What You Need to Know*, IATA Knowledge Hub

<https://www.iata.org/en/publications/newsletters/iata-knowledge-hub/air-cargo-tariffs-and-rules-what-you-need-to-know/>

International trade administration. (2019, September). *Vietnam - Country Commercial Guide: Customs, Regulations & Standards*. Official Website of the International Trade Administration.

<https://www.trade.gov/country-commercial-guides/vietnam-tradebarriers?navcard=5227>

- Jacobsen, K. and Landau, L.B. (2003). *The dual imperative in refugee research: some methodological and ethical considerations in social science research on forced migration*. Disasters.
- J. C. Tyan, F. K. Wang and T. Du. (2003, June). *Applying collaborative transportation management models in global third-party logistics*. COMPUTER INTEGRATED MANUFACTURING.  
[https://www.researchgate.net/publication/220381707\\_Applying\\_Collaborative\\_Transportation\\_Management\\_Models\\_in\\_Global\\_Third-Party\\_Logistics](https://www.researchgate.net/publication/220381707_Applying_Collaborative_Transportation_Management_Models_in_Global_Third-Party_Logistics)
- Lan Nhi. (2022, March). *Bảy rủi ro lớn do chiến tranh Nga- Ukraine đề nghị lên các hãng hàng không*. Kinh tế Sài Gòn Online.  
<https://thesaigontimes.vn/bay-rui-ro-lon-do-chien-tranh-nga-ukraine-de-nang-len-cachanghangkhong/#:~:text=S%E1%BB%B1%20thi%E1%BA%BFu%20h%E1%B%AF%20ngu%E1%BB%93n%20cung,v%C3%A0%20gi%C3%A1%20c%E1%BA%A3%20h%C3%A0ng%20h%C3%B3a>.
- La Quang Trí (2022, March). *Cuộc chiến Nga - Ukraine tác động ra sao đến vận tải biển quốc tế và Việt Nam? Nhịp cầu đầu tư*.  
<https://nhipcaudautu.vn/kinh-doanh/cuoc-chien-nga--ukraine-tac-dong-ra-sao-den-van-tai-bien-quoc-te-va-viet-nam-3344570/>
- Logistiikan Maaailma, (2022), *HUOLINTAYRITYSTEN TARJOAMAT PALVELUT*. Translated  
<https://www.logistiikanmaailma.fi/logistiikan-toimijat/huolinta/huolintayritysten-tarjoamat-palvelut/>
- Bäumel, M. & Hausmann, L. (2018, February). *Air-freight forwarders move forward into a digital future*.  
<https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/air-freight-forwarders-move-forward-into-a-digital-future>
- Nahid Golafshani. (2003, January). *Understanding Reliability and Validity in Qualitative Research*. The Qualitative Report.  
<http://www.nova.edu/ssss/QR/QR8-4/golafshani.pdf>

Storhagen Nils G, (2011), *Logistik – grunder och möjligheter*

Newcomer, K.E., Hatry, H.P. and Wholey, J.S. (2015). *Conducting semi-structured interviews. Handbook of practical program evaluation.*

Nguyen, T.M.L. (2019). *AIR TRAFFIC CONTROL ENGLISH PROFICIENCY ASSESSMENT IN VIETNAM*. In ICERI2019 Proceedings

Hanh, D.N. (2022, September). *IPP Air Cargo và "mơ ước bầu trời" của "vua hàng hiệu" Johnathan Hạnh Nguyễn*. Vietnam Logistics Review.  
<https://vlr.vn/ipp-air-cargo-va-mo-uoc-bau-troi-cua-vua-hang-hieu-johnathan-hanh-nguyen-8131.html>

Pape Jr, Robert A. *Coercive air power in the Vietnam War*. International Security 15.2 (1990)

Phuong, T.D.N. and Thu, N.T.M. (2021) *Evaluating the impacts of the Covid-19 Pandemic on the Logistics industry in Vietnam on Management and Business 2021*.

Rushton, A., Croucher, P. & Baker, P., (2022). *The handbook of logistics and distribution management: Understanding the supply chain*. Kogan Page Publishers.

Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M., & Cheraghi, M. A. (2014). *Ethical challenges of researchers in qualitative studies: The necessity to develop a specific guideline*. Journal of medical ethics and history of medicine, 7.

SIAPARTNERS. (2018). *Can digital transform the air cargo industry?*  
<https://www.sia-partners.com/en/news-and-publications/from-our-experts/can-digital-transform-air-cargo-industry>

Smith, M.S. (2020). *Closing the gap between information and payment flows in a digital transformation*. Doctoral dissertation, Massachusetts Institute of Technology.

- Tolujevs, J. & Zmanovska, T. (2011), *Numerical Modelling of Processes in Logistics Flow Systems*. In Proceedings of the 11th International Conference “Reliability and Statistics in Transportation and Communication. RelStat’11.
- Thu Nguyen. (2022, March). *Vietnam’s Airport Infrastructure: Growing Demand Fuels Overhaul*, Vietnam Briefing.  
<https://www.vietnam-briefing.com/news/vietnams-airport-infrastructure-growing-demand-fuels-overhaul.html/>
- Thanh Binh. (2022, March). *Ảnh hưởng xung đột Nga - Ukraine, hàng không Việt phát sinh chi phí khổng lồ*. Báo giao thông.  
<https://www.baogiaothong.vn/anh-huong-xung-dot-nga-ukraine-hang-khong-viet-phat-sinh-chi-phi-khung-d546995.html>
- Vietnam Aviation Department. (2022). *Tổng hợp số liệu khai thác các chuyến bay đúng giờ, chậm, hủy chuyến của các hãng hàng không Việt Nam hàng tháng trong giai đoạn 2019 –2022*.
- Van Huy. (2022, January). *Hiệp định thương mại lớn nhất thế giới thực thi: Lợi thế cho doanh nghiệp Việt*. Tuổi trẻ thủ đô.  
<https://tuoitrethudo.com.vn/hiiep-dinh-thuong-mai-lon-nhat-the-gioi-thuc-thi-loi-the-cho-doanh-nghiep-viet-187120.html>
- Wan, Y.W., Cheung, R.K., Liu, J. & Tong, J.H., (1998). *Warehouse location problems for air freight forwarders: a challenge created by the airport relocation*. Journal of Air Transport Management.
- WikiVietnam. (2021, May). *Lịch sử phát triển ngành Hàng không dân dụng Việt Nam*.  
<https://wikivietnam.online/2021/05/03/lich-su-phat-trien-ngang-hang-khong-dan-dung-viet-nam/>

## **8 APPENDICES**

### **APPENDIX 1**

#### **Interview guide**

Approximately 30-45mins

##### **The thesis**

This thesis aims at answering the questions of what the challenges and opportunities of the Air Cargo sector in Vietnam are, through the insight of the professionals working in the area. The method used to gather data is a qualitative approach, with the utilization of semi-structured interviews. After collection, the information would be carefully categorized and analyzed with the reflection on previous studies and theories to achieve an overall and accurate perspective of the current situation of Vietnamese air freight.

##### **The respondents**

The respondents are selected due to their background and geological characteristic: air freight forwarders with different years of experience and from various working locations in Vietnam. All the respondents are treated equally with the same interview questions, and they are sent a consent form beforehand to ensure that their personal data are kept confidential. During and after the interviews, the interviewees have the right to ask and clarify any information that is uncertain for them and after the interviews' data has been transferred, they would be sent to the interviewees in advance to ensure nothing is misunderstood, as well as avoid any possible ethical issues.

##### **The interview**

Place and date of the interview:

Company:

Name of the respondent:

Position of the respondent:

##### **The questions**

- Background questions:

+ Name, age, gender, working in which part of air cargo, which company and which city in Vietnam

- Topic introduction:

• Purpose of interview: to get insight from industry specialists about the current situation as well as opportunities and difficulties of Vietnam's air freight market.

• Make sure the interviewees are willing to participate in the interview and provide information.

- Main questions:

• **Material flow and Capital flow**

1. What kind of items are usually shipped by air? Why? (Impact of bulky cargo arrangements, special time requirements, etc.)
2. With the signing of many trade agreements such as CPTPP and EVFTA, do you think that air cargo is facing more challenges or opportunities?
3. Recently with many international changes (Covid, Russia Ukraine issue, FTA), how has air consolidation changed in recent years?

• **Information flow**

4. The use of passenger aircraft for the purpose of carrying commercial cargo requires a lot of safety procedures (such as DG – dangerous goods according to IATA). How do you feel about follow these rules, guidelines? Explain
5. How do you feel about the time it takes to do customs clearance and paperwork before and after the pandemic? (Fast, slow, etc)
6. Do you think these rules should be improved and simplified? Why?
7. Does the emergence of digital and big data have any impact on your work?
8. How do you see the appearance of EAWB, and other e-papers are having a positive or negative impact on your work? Explain

• **General questions**

9. What kind of difficulties do you usually face in your daily work in air freight?
10. How do you feel about how your company, in particular, and Vietnam's air cargo industry, in general, in facing with these international issues? Can you explain it more clearly?

11. In recent years, Vietnam air cargo has faced too many difficulties due to the lock down during the pandemic and the problem of Russia - Ukraine, do you think VN air freight needs time to resurgent? If so, how long do you think it will be?
12. Do you have any information you would like to share, supplement or discuss further?

**The ending**

This interview is over. I thank you for participating.

## APPENDIX 2

### **Consent for Participation in Interview Research**

I volunteer to participate in a research project conducted by Huong Dieu Chu from Arcada University of Applied Sciences. I understand that the project is designed to gather information about academic work for the conduction of a thesis project.

1. My participation in this research project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty. If I decline to participate or withdraw from the study, there will be no consequences.
2. I understand that if I feel uncomfortable in any way during the interview time, I have the right to decline to answer any question in the discussion or to end the interview immediately.
3. Participation involves being interviewed by Huong Dieu Chu from Arcada University of Applied Sciences. The interview will last approximately 30-60 minutes. Notes will be written during the interview. A record of the interview and subsequent dialogue will be made. If I do not want to be recorded, I will not be able to participate in the study.
4. I understand that the researcher will not identify me by name in any reports using information obtained from this interview, and that my confidentiality as a participant in this research will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.
5. Faculty and administrators from Arcada University of Applied sciences will not be present at the interview but will have access to raw notes or transcripts if needed. This precaution will prevent my individual comments from having any negative repercussions.
6. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.
7. I have been given a copy of this consent form.

---

My signature

---

Date

---

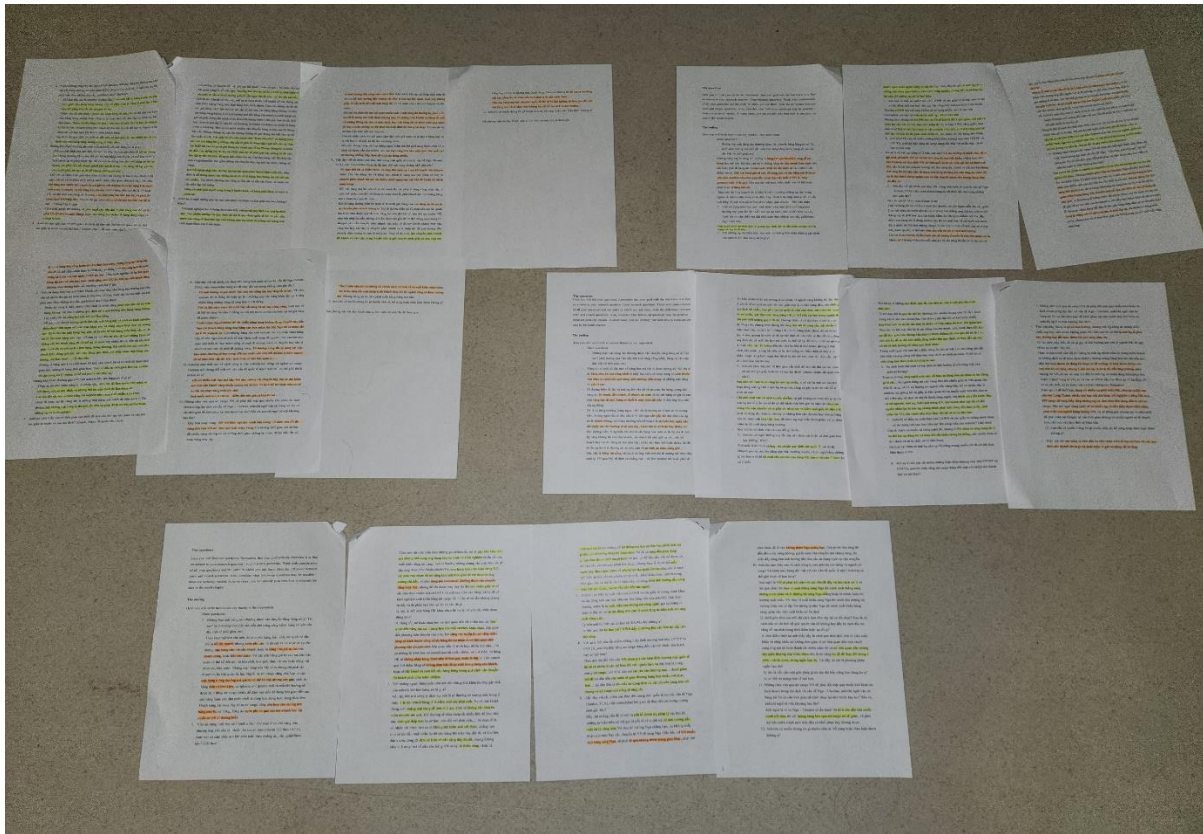
My printed name

---

Signature of the investigator

For further information, please contact [chudieuh@arcada.fi](mailto:chudieuh@arcada.fi)

# APPENDIX 3



Appendix 3: Color-coded themes for the interviews