

Research about ways to improve air freight logistic process through analyzing air freight logistics cost

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Abstract. To improve air logistics process this paper describes about a research that provides necessity to air logistics, and in order to follow institutional measures and information integration between main agents. Also, this paper suggests that improvement in logistics process through logistics standard and necessity to improve professional air logistics through professional manpower incubating program.

Keywords: air logistics, logistics process, logistics cost

1 Introduction

As company management and economy environment are becoming globalization logistics cost in companies and countries are increasing day by day in terms of cost of production and international economy structure. Also, compared with other countries these logistics cost turned out to be very high. And this will lay a burden on companies and countries and finally result lack of competitiveness.

In order to solve these problems, necessity of efficient logistics process is emphasized and efficient logistics process requires timely information offering. Today the government is providing information about air logistics but the contents are too recapitulative to provide practical support.

Especially, in case of air logistics although it has competitive power in field of IT infrastructure and ability of electronic government still has insufficient side in air logistics processes which were developed with geographical location conditions and other excellent environmental factors. Kim In Soo(2006) pointed out that there are some problems in air freight which are delay in security search, lack of space in freight terminal, and long stand by time. So, in order to improve logistics process, we need to follow what Ohashi has suggested. He suggested that rather than analyzing transshipment route between airports he mentioned that there's a necessity to provide delivery time and cost to shipper at timely.

This study offers ways to improve logistics process through analyzing cost of export and import of air logistics so that it can be contributed to more efficient air logistics operation.

2 Research Methodology

In order to understand structure of expense in air logistics, this study offers solutions about process through investigating logistics cost regarding main agents in air logistics and expense system through air logistics area by comparing and analyzing certificate of completion of report and bonded warehouse storage fees.

In this study, logistics cost of air freight is defined as the costs during process for movement of goods across country or across the globe by air travel. More specifically air transportation cost, air freight terminal cost, additional air transportation cost, and so on.

The basic data retained from survey of two air terminal and bonded warehouse and in regarding of air transportation cost there's IATA Tariff but in a rate table there's no legal binding force but more like guideline. So in order to check precisely about shipping charge investigated based on certificate of report. Object of investigation is based on three major trading partners US, Japan, and Chin. Also, compared and analyzed storage fee for import and export freight transport based on bonded warehouse storage fee provided by the office of customs administration.

3 Ways to improve logistics process through analyzing logistics cost shipped by air

1.1 Analysis of air freight transport cost

In case of air freight transportation cost investigated and analyzed in three major trade partners. International freight transportation cost to USA was highest and for Japan and China both of countries' shipping service distance was similar. As shown below between China and Japan in case of less than 10kg Japan is two time higher than China but as measure of quantity of export increases shipping cost goes down.

Thus, distinction of average shipping cost occurs because of imbalance in amount of import and export. USA's quantity of goods transported is a lot. As shown below, as quantity of goods transportation increases import freight decreases comparatively. China and Japan both countries' import freight is high so that air import freight is generally high. After all, shipping cost occurs due to imbalance in demand and supply.

1.2 Air terminal cost analysis

In the case of Air Terminal, most of the import and export storage period is short because it is more often used for the purpose of short-term storage. The storage cost that occurs when Free Time is over at the Air Terminal is calculated by adding

surcharges for the number of extra days to the basic cost. In addition, as the storage period becomes longer, the basic cost and surcharge both increases. On the otherhand, in addition to the storage cost according to the length of storage period, THO is applied.

Thus, it is essential for an improvement in process for quick freight rotation at the Air Terminal.

Table 2. Air terminal export freight storage period (unit: %)

Percentage according to export freight storage period	Within 72 hours	1~4 days	5~9 days	More than 10 days	Total
	85	10	3	2	100.0
Percentage according to import freight storage period	Within 24 hours	1~4 days	5~9 days	More than 10 days	Total
	77	12	9	2	100.0

1.3 Analysis on extra air freight costs

Investigation showed that 89.7% of expenses involved in logistics consignment owned logistics professionals. Big consignors showed to own 93.6%, 8.1% more than small and middle consignors' 85.4%. Consignors who entered export and import freight with directly employed customs broker turned out to be 1.3%, which shows that customs work is generally entrusted to external sources.

Meanwhile, with regard to export and import management, consignors who fully entrust to a forwarder showed up to be 82.9%. In the case of small and middle consignors, the percentage was higher than big consignors.

4 Implications and improvement plan for air logistics process

Studies showed that international air freight charge took up the most in air freight logistics costs. A difference in export and import air freight charge can be seen according to export and import freight flows of international air freight charge. The difference is believed to have resulted from freight charges decided by competition between airlines. In order to improve such difference, freight charge management that complies with IATA's charge rate is necessary and users' convenience and information usage needs to be increased by substantially providing information on such freight charges.

In addition, Lee(2012)'s study showed that time consumed for customs clearance and quarantine at international air freight transportation was very high. In other words, in order to produce a more accurate export and import logistics costs information, there is need for a reliable method other than international freight charge which can verify detailed air logistics costs at national level.

On the other hand, 82.9% of export and import companies showed up to handle export and import business by entrusting fully to a forwarder. It is deemed that many small and middle consignors handle export and import business through forwarders or international logistics broker because of lack of expert personnel who can handle air freight processes. Accordingly, it is urgent for experts training who can perform air logistics services. The current circumstance reveals high demand for logistics related experts while there is shortage in provision. Hence, a policy that can train air logistics experts needs to be proposed.

Consequently, the government also needs to devise various policy support measures for improvement in air logistics process and needs to be able to carry out supervision of management in terms of expenses.

Accordingly, the following improvement plan for logistics process is proposed. As the analysis result shows, there is difficulty in executing effective logistics process due to insufficiency in a timely and accurate provision of information in the field of air logistics. In order to improve such difficulty, first, there is need for process improvement through standardization of logistics in the field of air logistics. In such case that standard information and management is provided through logistics standardization, a coherent process can be carried out with regard to air freight transportation such as inland transport and terminal entering, freight loading, aircraft loading etc. and an improvement in cost can also be expected.

Secondly, as the research results show, there are differences in expense system and structure among concerned parties due to lack of accurate provision of real-time information. In order to resolve this difference, smaller logistics-related businesses such as air freight agencies needs to be supported for timely information provision and management through information.

Thirdly, taking into consideration of the fact that most air freight handling process is conducted through international logistics agencies, specialization of logistics-related work personnel and institutional strategy to avoid using excessive service is necessary

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