# Analysis of regional airline route development in Republic of Korea

한국 지역항공 향상을 위한 지역항공사 노선 정책에 대한 비교 분석

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# I. Introduction

Recently the air transportation market in Korea has been being weak due to another mass transportation's development such as Express Train called KTX and the expansion of an express way but the air transportation market in Korea is vital with the Regional airline business that effects existing the air transportation market in Korea. Currently, Jeju and Jean Air, Air Busan, Easter Airline are being operated as a domestic and International regional airline and they try to be competitive with price discrimination on some airways among existing airlines.

Jeju Air and Air Busan are now being operated at the major airway and they are about to be on the route which requirement is high for not only customer but also manufacturer to transport among Japan, China and Korea. It would bring big impact on existing Air transportation network if they start those kind of close range of international airway. Also The airlines being about to operate is speeding their business up for the needs of the regional economy development and the air-transportation In the previous study, I referenced two papers that Y. C. Lee, and Y. J. You(2001), An Empirical Study on the Relationship between the Order of Entry and the Performance in Airline Routes and Dresner. M., and R. Windle(1999), Competitive Responses to low cost carrier entry, Transportation Research.

It is early to evaluate the success of their plan to be on the close range of international airway of those of the domestic regional airlines but it is important to analyze the network operation of the region which is under changed circumstances such as the KTX and reduce the airway of the existing airlines. Also, Depending on their success which is from the airway like Korea-Japan-China, it is possible to build the 3<sup>rd</sup> or 4<sup>th</sup> of mega carrier.

It is the trend which is showing from the abroad low-cost carrier. It is said

that Ryan Air, the Largest Europe low-cost carrier, is going to connect between America and Europe by Air route service. It will effect and threaten the existing air transportation structure of an airway with their aggressive plan routing between Europe and America. This study is analysis of the regional airline's routing in close international market and the way of market access with the structure of the regional airline in domestic air transportation market which is at the early stage. Especially, it was performed to get the result of how to route the airways effectively for regional airlines from air travelers and travel agency, airlines which is supplier by making up a question.

# II. A literary background

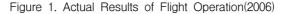
# 1. The status of the regional airline's market access

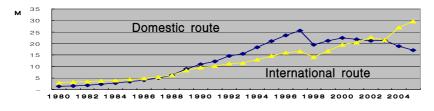
Airlines in Korea has widebody or midium aircrafts that make a loss in domestic regional air route for the international airway which is a high profitable and they are also in difficulty due to the KTX. Finally, Airlines are trying to reduce the service and operating the regional airport making loss and those are become uncomfortable for passengers. But the low cost carrier, Hansung and Jeju, has recently been being on the route which is difficult for the existing airlines and they expanding their airways. Based on Chung–Ju, Hansung Airline which was the first low cost carrier in Korea has started flight from AUG, 2005 with buying ATR72–200, 72 seats, which started to operate from AUG, 2005 from the airway between Jeju and Chung–Ju. Jeju and Hansung, regional airlines, are trying to invest the additional aircraft and airways.<sup>1)</sup>

| Classification         | Jeju Air   | Hansung Airline  |
|------------------------|--|--|
| Issuance of<br>License | 2005.8   | 2005.5   |
| Business launch        | 2006. 6  | 2005.8   |
| Base                   | Jeju   | Cheongju   |
| License                | Scheduled Airline  | Non-Scheduled Airline                                      |
| Aircraft               | Q400 (No. 5)   | ATR72-200(No. 2)   |
| Route                  | Gimpo-Jeju(17flight a day)<br>Jeju-Gimhae(4flight a day)<br>Gimpo-Yangyang(2 flight a day) | Jeju-Chungju(3 flight a day)<br>Jeju-Gimpo(4 flight a day) |
| Air fare               | 70% level of mega carrier  | 60-70% level of mega carrier                               |
| Capital                | Aekyung Group 15 billion won<br>+ Jeju Island<br>5 billion won                             | Private capital 5.5 billion                                |

Table 1. The Status of Domestic Airlines in Korea

Domestic air transportation has rapidly developed through the travel liberalization and Seoul Olympic, 1998 and especially, with opening of the Incheon International Airport, the international air transportation is remarkably advanced but domestic air transportation effected by KTX and expanding express way.





1) Air transportation statistics 2007 - Domestic version, KADA, 2007.

Source : Aviation Status, Korea Aviation Development Association

Regional airlines is not given much weigh in the air transportation market due to just operating at a few certain route and the first year's achievement is not normal because of the early operating stage problem but they keep the rate of board 75% which is higher than existing airlines.

| Classification |      | Passenger  | Passenger<br>Kilometer | Supplied Seat<br>Kilometer | Load Factor(%) |
|----------------|------|------------|------------------------|----------------------------|----------------|
|                | 2003 | 13,747,521 | 5,053,123,986          | 7,098,127,333              | 71.2           |
| KAL            | 2004 | 13,989,173 | 5,216,501,654          | 7,473,373,943              | 69.8           |
| KAL            | 2005 | 12,351,699 | 4,709,969,056          | 6,872,651,880              | 68.5           |
|                | 2006 | 11,168,930 | 4,345,401,024          | 5,865,983,520              | 74.1           |
|                | 2003 | 7,390,351  | 2,721,206,865          | 4,189,102,296              | 65.0           |
| AAR            | 2004 | 6,540,953  | 2,441,176,155          | 3,597,695,652              | 67.9           |
| AAn            | 2005 | 5,732,372  | 2,184,504,176          | 3,157,500,105              | 69.2           |
|                | 2006 | 5,639,414  | 2,153,741,443          | 2,885,748,699              | 74.6           |
| HANSUNG        | 2005 | 21,259     | 7,079,247              | 9,076,914                  | 78.0           |
|                | 2006 | 122,318    | 44,018,606             | 56,131,500                 | 78.4           |
| Jeju Air       | 2006 | 250,423    | 107,824,574            | 146,171,912                | 73.8           |

Table 2. Actual Results of Domestic Regional Airlines

Source : Aviation Status, Korea Aviation Development Association

Although it is an early stage of introduction, penetration of Hansung airlines & Jeju air makes the market situation from parts change. Actual result from particular route of each regional airline such as Cheongju–Jeju and Gimpo–Jeju routes which are main lines of Hansung airlines and Jeju air, their air transportation demand is actually on the increase compared with legacy airline in 2004. It is not easy to find out the main reason, by a natural growth of air transportation demand or by the increasing supplies in the advent of regional airline. Even though those two routes have a relatively high demand, a principal cause of the increase will be the advent of regional airline. (Increasing by 2.9 % in 2005 and 11.6% in  $2006)^{(2)}$ 

| Classi | fication | Flight<br>availability | Supplied seats | Passengers | Passenger-<br>Kilometers | Supplied<br>seats-<br>Kilometers | Boarding<br>Ratio |
|--------|----------|------------------------|----------------|------------|--------------------------|----------------------------------|-------------------|
|        | AAR      | 2,912                  | 478,575        | 317,038    | 105,573,654              | 159,365,475                      | 66.2              |
| 2004   | KAR      | 2,748                  | 639,577        | 412,008    | 137,198,664              | 212,979,141                      | 64.4              |
|        | TOTAL    | 5,660                  | 1,118,152      | 729,046    | 242,772,318              | 372,344,616                      | 65.2              |
|        | AAR      | 2,801                  | 427,079        | 316,165    | 105,282,945              | 142,217,307                      | 74.0              |
| 2005   | KAR      | 2,865                  | 539,040        | 408,064    | 135,885,312              | 179,500,320                      | 75.7              |
| 2005   | HAN      | 418                    | 27,258         | 21,259     | 7,079,247                | 9,076,914                        | 78.0              |
|        | TOTAL    | 6,084                  | 993,377        | 745,488    | 248,247,504              | 330,794,541                      | 75.0              |
|        | AAR      | 2,736                  | 427,563        | 336,306    | 111,989,898              | 142,378,479                      | 78.7              |
| 2006   | KAR      | 2,813                  | 531,676        | 419,157    | 139,579,281              | 177,048,108                      | 79.4              |
| 2000   | HAN      | 1,808                  | 120,480        | 98,151     | 32,684,283               | 40,119,840                       | 81.5              |
|        | TOTAL    | 7,357                  | 1,079,719      | 853,614    | 284,253,462              | 359,546,427                      | 79.1              |

Table 3. Actual results of each airline for Cheongju-Jeju route.

Source : Aviation Status, Korea Aviation Development Association

According to market access of regional airlines, both market shares of AAR and KAR for Gimpo–Jeju route decrease. Hansung airlines and Jeju Air hold 10 % market shares. Actual result of KAR went down from 5.2% in 2005 to 1.7% in 2006. And in AAR's case it went down from 0.8% in 2005 to -0.4% in 2006.

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<sup>2)</sup> Air transportation statistics 2007 - Domestic version, KADA, 2007.

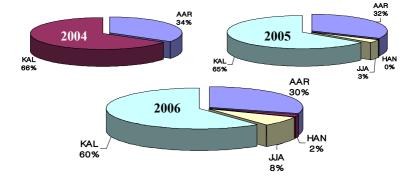


Figure 2. Actual results of each airline for Cheongju-Jeju route.

The initial regional airlines had some routes where demand is higher than supply. The above statistics is not enough to show their success or failure. Specially there are many problems related service interruption and a restriction in their unstable management. The problems possibly lead the routes to be liquidated, set up legacy airline subsidiary or routes reduction in a pessimistic view.

Also they have difficulties in an excessive competition and a cost reduction in same routes with the existing airlines. We have two measures to penetrate the market. One is being in service for some higher profit routes. The other is creation of new routes. In a domestic air service they chose the way which was advancement into the existing routes with legacy airlines to date. (Gimpo–Jeju route) Therefore two different ways, creation of new routes and the existing routes without competition with legacy airlines are suggested to coming regional airlines.

### 2. Network configuration of regional airlines

There are four kinds of route management programs for regional airlines in Korean airports. In domestic air service the networks mentioned figure 1 is operated for the present.

The networks not mentioned will be taken by coming regional airlines.

**Type 1** / An inter-zonal feeder service route of which starting point is Gimpo or Incheon in Hub & Spoke system, Legacy airlines already took a domestic spoke leg in hub-to-hub leg that is managed by existing mega carriers. Based on this system, regional airlines can provide a feeder line service on the assuming that they secure the service cooperation of legacy airlines.

The existing airlines do not need to maintain domestic air service because of loss from the services with a large size aircraft. Accordingly, it is the one of the service that is provided by regional airlines.

**Type 2** / Route management system with an internal stronghold airport as a starting point.

Regional airlines continue to compete with legacy airlines on the routes. Accordingly, Legacy airlines close uneconomical the routes that start from airports in other districts except Gimpo (Gimhae, Cheongju & Jeju), regional airlines take them.

**Type 3**/ Route management system which is connected to a destination airport from a stronghold airport as a starting point via a local airport as a transfer point.

By way of illustration the route heads to Jeju from Gimpo via Busan or Jinju. The route what is most pertinent to regional airlines will be a necessary system on an international short haul line.

Type 4 / Route management system between two uncreated local airports.

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It is a representative type for successful management of regional airlines under sufficient demands.

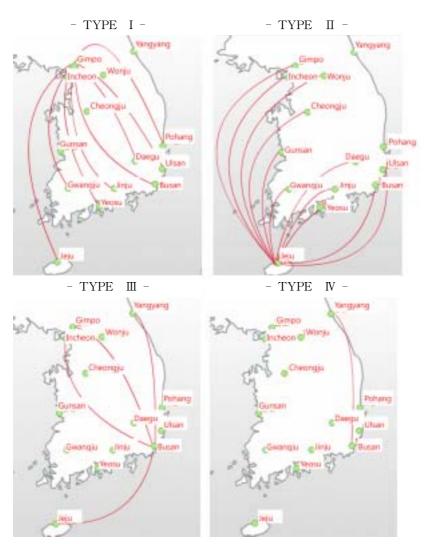


Figure 3. Management type of domestic air service

# III. Research design and Methology

### 1. The method of researches

Seizing demands of related routes is fundamental for build up the line of regional airlines. Analysis of the demands in passengers is a subject to study. But most of researches focus on facilities more than economy or creation of new routes. Creation of routes is the very important issue for success or failure according to a small scale capital composition of regional airlines. So researches should focus on not only passengers also supplier, airlines. We take an examination in to route requirements by regional groups with data from passenger, airline & travel agency surveys in 2006 in this study. The survey states that even though this is not about the survey which brings into effect on regional airlines directly, the data can be used for the study.

# 2. The constitution and contents of the Survey

This data is furnished by the survey of domestic regional airports user, 2,899 persons in 2006. Especially it shows two kinds items, international and domestic routes. And also second surveys conducted by experts on suppliers, airlines and travel agency were carried out.

#### (1) Survey of Passengers

We questioned passengers, using the domestic or international flights at the local airports, about demand. The actual condition of using domestic flights is investigated at the thirteen local airports and using the international flights is investigated at Cheongju, Daegu and Busan among the thirteen local airports. We can survey actual demand at these airports where currently local airlines are planning to put on route or already operating flight.

#### (2) Survey of experts

This survey is made up by ninety-three experts relating to airline or travel agency on the phone or mail. Following the first survey of passenger traffic, the second survey of experts, who are selected person in relation to opening or managing route, is conducted. In survey of experts, the rankings from first to fifth rank are based on responses to the required route. And the survey is measured to respond to the questions with priority because repeated routes in responses are anticipated.

#### (3) Outline of survey

The survey is the actual condition of passengers using local airports and conducted by experts about developing the airports. And the survey is conducted concerning the actual condition, demand and route at the thirteen local airports. One hundred passengers participate in the survey, and in particular six-hundred passengers participate in the survey on Gimpo which is the international airport. Except Gimpo airport, almost airports have few passengers of domestic flights as well as international flights. So the subject of survey is limited to Gimhae, Daegu and Cheougju.

| Classification       | Survey of demand<br>(survey of passenger)      | Survey of provider<br>(survey of expert)                  |
|----------------------|--|---|
| Outline of<br>survey | Survey of passengers at domestic local airport | Survey of persons in charge of line operation and opening |

Table 4. Outline of survey

| Number of  | - Gimpo : domestic(668 persons)    | airline: 33 persons                |
|------------|------------------------------------|------------------------------------|
| respondent | - Gimhae : domestic(136persons),   | travel agency : 60 persons         |
|            | international(92 persons)          |                                    |
|            | - Daegu : domestic(94persons),     |                                    |
|            | international(107 persons)         |                                    |
|            | - Cheongju : domestic(142persons), |                                    |
|            | international(66 persons)          |                                    |
|            |                                    |                                    |
| Item of    | 1. demand of domestic route        | 1. route of increasing route       |
| survey     | 2. demand of international route   | 2. requirement line to increase    |
|            |                                    | 3. new opening line                |
|            |                                    | 4. increase line after reduce fare |

In survey on user of domestic line, we want to know direct demand through questions about required domestic or international routes to the passenger traffic. We directly questioned participants to survey preference of the respondents.

On the other hand, we questioned the experts on related routes to analyze international routes at the local airports. When the survey is conducted concerning limited local airports and unorganized international line, experts said that the first ranking response may be the highest demand of the route. In other words, because we questioned respondents on which route is highly demanded, except the highest rate of answers, other answers are relatively less important. There are occasions that respondents don't reply second ranking answer so it is considered that the first ranking answer is more important.

# IV. Survey Finding

1. The survey result of user

Demand of domestic and international line is measured by passenger

traffic or users of the local airports. The result is the actual demand because the survey is conducted by actual users of air transport.

In the result of survey at Gimhae, the line of Jeju is the first ranking with 33%, next Metropolitan line is the second with 21% followed by Gangwon and Jeonnam line. The result of survey at the Gimhae airport shows that the flights of Jeju line is fewer than demand, so passengers hope to increase flights. In particular Metropolitan line is responded by users of Incheon airport, which is considered that the connecting flights are required.

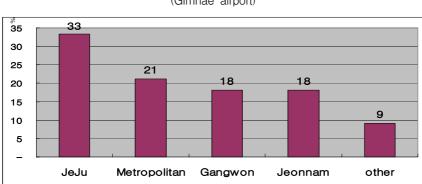


Figure 4. The result of survey on demand of domestic route (Gimhae airport)

In the result of survey at Daegu airport, the survey show that Gangwon line is the first (66%) and Metropolitan line is second (16%), but the demand of other lines are relatively fewer. That indicates that the necessity, flights between cities, is less than other airports because Daegu airport is located in center of Korea and highway is developed there, to access city. But the reason of high demand for Gangwon line is considered that the access to tourism areas by load relatively falls behind between Gangwon and Gwangju

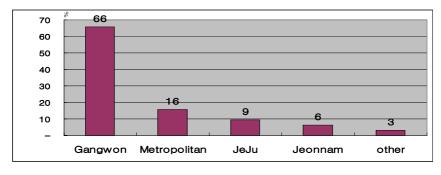
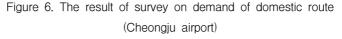
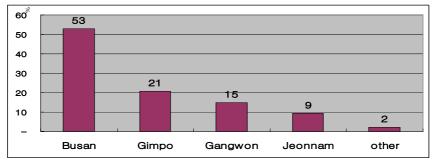


Figure 5. The result of survey on demand of domestic route (Daegu airport)

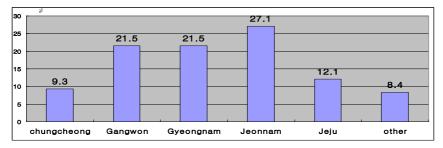
In the result of survey at Cheoungju airport, the Busan line is the highest ranking with 53% and Gimpo is the second with 21% followed by Gangwon with 15%. The passengers using Cheongju airport, which is located on near Metropolitan, live in the vicinity of Metropolitan. There is special thing in survey that despite 2 hours distance between Cheongju and Gimpo, some passengers demand Gimpo line, which is considered that to access other local airports by air, they have to go Gimpo airport by load because Cheongju airport doesn't operate some of line which passengers want to operate.





In the result of survey at Gimpo airport, Jeonnam line is the highest ranking with 27%, and next Gyeongnam and Gangwon line are second with 21%. The survey is conducted by passengers who use the local flights at Gimpo airport, which is the main airport in domestic route. So we think that Jeonnam and Gangwon line are highly responded because these lines are less than other lines at the other airports

Figure 7. The result of survey on demand of domestic route (Gimpo airport)



The survey of international routes at the local airports shows that demand of route is connecting with cities of Japan and China but long distance lines, which connect Europe or Australia, are demanded at Busan airport. It is considered that Busan airport, where already short distant lines are operated, is required to operate international line in the future.

| Airport(City) | 1               | 2                | 3                   | 4                  | 5                 |
|---------------|-----------------|------------------|---------------------|--------------------|-------------------|
| Busan         | Japan<br>(22.2) | Europe<br>(22.2) | Australia<br>(20.0) | America<br>(13.3)  | South-east (13.3) |
| Daegu         | China<br>(34.4) | Japan<br>(26.2)  | Europe<br>(13.1)    | Australia<br>(9.8) | South-east (9.8)  |
| Cheoungju     | Japan<br>(38.1) | China<br>(23.8)  | America<br>(14.3)   | South-east (14.3)  | Europe<br>(4.8)   |

Table 5. Result of survey on demand of international route

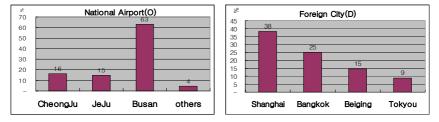
### 2. Result of survey on providers

The survey of airline and travel agency experts, who are the provider in the air transport, is made by questions about short distant international line at the local airports. These demanded lines are response to the provider's view and it is considered that those of lines can be realized.

(1) Increase of passenger traffic

The china, Japan and Southeast Asia route, which are expected to increase demand with ranking at provincial city having international airport except Seoul. The result of survey is that the first ranking is Cheongju airport with 54% followed by Busan and Daegu. The highest demand of short distant international route is Shanghai (38%) and Bangkok (18%). The demanded line is Busan-Shanghai line (thirteen response), and Busan-Bangkok (nine response) followed by Jeju-Shanghai/Cheongju-Shanghai.

Figure 8. Result of survey on increase of demand of passenger traffic (first ranking)



In case response of survey is made in the order, almost responses are the Busan from first ranking to fifth ranking, which is considered that there are some demanded lines starting from Busan. And other cities of starting point are Daegu and Jeju. After all, Busan is the highest frequency with 50% when the response is ordered without ranking. And other cities is responded approximately 10%; Shanghai line is first, followed by Beijing (14%) and Tokyo/Bangkok (11%).

|           | First | Second | Third | Fourth | Fifth |
|-----------|-------|--------|-------|--------|-------|
| Cheoungju | 16    | 7      | 7     | 11     | 16    |
| Daegu     | 3     | 12     | 18    | 24     | 14    |
| Busan     | 64    | 58     | 49    | 27     | 34    |
| Gwangju   | 15    | 10     | 10    | 11     | 19    |
| Jeju      | _     | 12     | 15    | 27     | 9     |

Table 6 Result on survey of a route of increased demand  $({\rm Ranking\ list\ ,\ \%})$ 

#### (2) Requirement line to increase flight

This survey is which route is required to increase flights at the local airports, except Seoul. In the result of survey, Busan airport is the highest to be required to increase flights, and next is Cheongju and Daegu. The regions, which are required to increase international flights with domestic local airports, are Bangkok (25%), Shanghai (22%), Tokyo, Beijing orderly. The route(O-D Pair) for Busan to Bangkok is 13 people, for Busan to Shanghai is 8 people, and the last route is Cheongju to Shanghai.

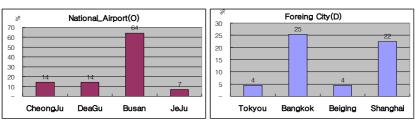


Figure 9. The question result of additional flight route

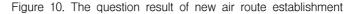
The result of the survey shows that additional new flight in Busan is the most demanded, and the last of the city is Cheongju, Daegu. Furthermore, the flight's frequency is the largest in Busan that is 34%, Daegu is 16%, Cheongju and Jeju is 12%, also, Shanghai route is 18%, Bangkok is 12%, Beijing is 10%.

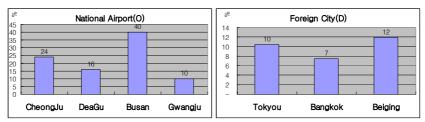
|          | First | Second | Third | Fourth | Fifth |
|----------|-------|--------|-------|--------|-------|
| Cheongju | 14    | 10     | 23    | 49     | 10    |
| Daegu    | 14    | 16     | 25    | 28     | 18    |
| Busan    | 62    | 54     | 30    | 19     | 26    |
| Gwangju  | 3     | 8      | 7     | 2      | 20    |
| Jeju     | 7     | 11     | 16    | -      | 22    |

Table 7 The question result of additional flight demand

#### (3) Establishment of new route

This research is about the establishment of new route, which is not operating air service, in the regional airport except Seoul. For this research, the demand of Busan airport's new route's establishment is 40%, and the last of demanded airport is Cheongju, Daegu. Also, with these cities and short distance's international flights are demanded for additional flight in Beijing(12%), Tokyo(10%), Bangkok(7%), and the various route is required than establishing specific route.





According to this research, Busan is the most demanded for the new additional flight, and the last of the city is Cheongju, Daegu. Furthermore, the flight's frequency is the largest in Busan that is 28%, Cheongju is 21%, Gwangju is 19%, also, Bangkok route is 10.4%, Tokyo is 10.1%, Beijing is 6.9%.

|          | First | Second | Third | Fourth | Fifth |
|----------|-------|--------|-------|--------|-------|
| Cheongju | 24    | 14     | 27    | 24     | 19    |
| Daegu    | 16    | 14     | 21    | 11     | 19    |
| Busan    | 40    | 41     | 19    | 30     | 9     |
| Gwangju  | 10    | 12     | 19    | 28     | 30    |
| Jeju     | 8     | 16     | 10    | 7      | 21    |
| Yangyang | 2     | 2      | 4     | -      | 2     |

Table 8. The question result of new route establishment

#### (4) Increased demand route after rate's reduction

This research is about the new additional flight route, which is operating international air service, in the regional airport except Seoul. For this research, the demand of Busan airport's additional flight route is 85%, so that it is expecting increased demand after rate's reduction. Also, with this city and short range international flight is demanded for additional flight in Beijing(12%), Tokyo(10%), Bangkok(7%), also, Busan to Bangkok route is 15 people, Busan to Tokyo is 10 people, and the last route is Busan to Shanghai.

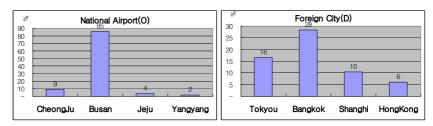


Figure 11. The question result of increased demand route after rate's reduction

According to this research, Busan is expecting the largest increased demand after rate's reduction. Furthermore, the most flight's frequency is in Busan that is 52%, Cheongju is 14%, Daegu is 13%, also, Bangkok route is 15.8%, Shanghai is 15.5%, Tokyo is 6.9%.

Table 9. The question result about route that is expected increased demand after rate's reduction

|          | First | Second | Third | Fourth | Fifth |
|----------|-------|--------|-------|--------|-------|
| Cheongju | 9     | 9      | 17    | 24     | 13    |
| Daegu    | -     | 20     | 15    | 16     | 18    |
| Busan    | 85    | 62     | 40    | 38     | 36    |
| Gwangju  | -     | 2      | 11    | 6      | 16    |
| Jeju     | 4     | 5      | 13    | 16     | 11    |
| Yangyang | 2     | 2      | 4     | -      | 7     |

# 3. The question result regarding a Route Demand

For using the restricted question investigation data, the route demand investigation of the consumers and suppliers is considerably similar with the consumers and suppliers' question result. That is, the route, which is necessary from consumer and supplier, agrees considerably.

The domestic air service route could be able to grasp the demand with the question investigation data from the each regional airport. This investigation data is a response of the necessity that is not opened actual route in the city. The land traffic's development in the interior brings the reduced result of the air transportation demand, so that domestic route is diminished or closed. By the result of the question, the consumers want to have the non-established route or the route of the area for the land approach is difficult rather than additional flight or re-enter airline service. After all, new route is demanded from unconstructed areas more than reduced or diminished routes due to the demand's decrease. Like this question result, air transportation demand of the area for the transportation market is sufficiently exists. As new regional airlines, the air service route for the areas on low market competition would become the effective market penetration.

Answered for the supplier and consumer question, it shows that similar result from the international air service route. There is a demand regarding the short-range route of China and Japan from the both consumer and supplier side, but like this route, the existing airlines are operating the route already. Therefore, market penetration of the regional airlines would not be easy. However, there is a demand for the substantial route's establishment, stand it means the market penetration of the route would be necessary. The existing airlines are doing already on the profitable demand route, such as Korea-China-Japan routes, so new regional airlines enter is difficult. However, when it sees the successful instance of those low cost airlines of the foreign nation, the market penetration is possible. Namely, if the route is identical for the destination, using the each outside airport which falls with the corresponding area in small quantity would be possible being sufficient for the route demand and avoiding the market competition.

# V. Conclusion and recommendation

Currently, domestic regional airports' expansion or established opening is delayed and not operating due to the prospective view of the demand would be insufficient. Like this infra environment to route development of the regional airline is profitable. However, the regional airlines are trying to see the route where the demand exists already rather than use above regional airlines and it would be the serious competition is expected. The regional airlines must enter in the market based on strategy establishment of analysis for the route, prime cost curtailment effort, travel goods and various connection routes etc. Also, the international air transportation's increased demand from the domestic regional airport is raising the sailing possibility of that low cost airline from the short distance international line would be able to develop in the future.

It saw from the research, initially regional airlines' route development was based on the area and it was distinguished, gradually the growth of the regional airlines and expanded market and it became relationship of competition rather than complementary relationship.

The question analysis result and analysis of successful low cost airlines of the foreign country, the domestic regional airlines are required the following market penetration and route development.

First, developing newer penetration of the current market is necessary than penetration of the current market due to a price from the existing route. Currently, the domestic regional airlines entered to the current market due to a price in the existing route; with competition of the existing airlines are undergoing difficulties with market. For the stable market insurance in the future and must reclaim the area for undeveloped route, which is a new market. Second, establish the route which is operating by non-congested second airport in the area for the low cost structure. In order to do, there must be able to use uncongested airports in main cities. The domestic route is difficult but with the result which appears in case question, Shanghai, Beijing, Tokyo etc., use second and third airports for the route consumer want if existing airlines do not enter.

Third, develop the complement route with the existing airlines. Recently, the airline companies prepare the low price airline, development of the route which competes with existing airlines which takes charge of the feeder transportation of different mega carrier.

The research analyzed through the transportation market and question investigation presented the route structure which is necessary to the newly enter regional airline. Specially, question investigates performed for the consumer and the supplier with against the route which is necessary, the actual demand exists and the specialist side. Investigation result the most consumer and the supplier all answered back on the routes where the air transportation demand which is considerable exists, but some area of domestic currently the routes which are not operated. The market demand is in existence to enter for regional airlines and should be developed the route within above routes in the future.

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# Abstract

In the Republic of Korea, Regional Airlines from Jeju Air and Hansung Airlines have recently entered the domestic market to compete with the existing Legacy Airlines. In addition many of newly established regional low cost carriers like Air Busan, JeanAir, Easter Airline, are preparing to enter the jungle market. These circumstantial changes have come about as transportation competitiveness are getting weak in the market due to simultaneous expansion of surface modes such as a new opening of high–speed rail and extension of highways. The jumbled market entry by regional low cost carriers makes an enormous influence not only in managing transport network of existing carriers but also for the domestic policy of aviation authorities. It is too early to judge whether they would succeed or not. It is necessary to analyze the network operation of these regional carriers launching domestic routes and preparing to launch short distance international routes under the rapid changing market circumstances such as introduction of KTX or decrease in domestic routes by Legacy Airlines.

Many regional airlines are to launch the routes connecting Korea-China-Japan, if they could ensure long-haul international routes successfully, it would follow that the difference between Legacy Airlines and Regional Airlines would decrease more and more, which would result in appearance of the 3<sup>rd</sup> or 4<sup>th</sup> Legacy Airlines

The purpose of this study is to analyze the introduction of low cost carriers by regions and economic regional carrier network for non-scheduled air transportation market by taking a look at the regional airlines transportation network in the early stage of the domestic air transport market. For this purpose, cost and profit structure and management effect of transportation cost will be analyzed by comparing the presently operated routes of regional airlines with those of Legacy Airlines. And also demonstrative analysis demanded by the actual market will be achieved through surveys from experts, the actual airlines and travel agencies to build up transportation network.

Key Words : Low cost carriers, Airline competition, Air transport policy, regulation and liberalization, Airline strategy, management and operation

초 록

한국 지역항공 향상을 위한 지역항공사 노선 정책에 대한 비교 분석

이 강 석\*

국내 저비용항공사인 제주항공과 한성항공은 국내 지역항공사로 운영 중 에 있으며, 일부 노선에 있어서는 기존 항공사들과 동일한 노선에서 가격 차별화를 통하여 사업을 전개해 가고 있다. 제주항공과 한성항공의 노선은 현재 국내선 주요 노선에 한정하여 운영되고 있으며, 최근 근거리 국제선에 취항하기 위해 준비 중에 있다. 특히 운송비중이 높은 한중일 노선에 취항 하기 위해 국제선 근거리 노선 취항을 희망하고 있어, 만일 지역항공사들의 국제선 취항이 가능해 질 경우 기존 항공사들의 운송네트워크에 큰 영향을 줄 것으로 예상된다.

또한 취항을 준비하고 있는 항공사들은 지역의 경제발전과 항공운송의 필요성에 따라 서둘러 지역의 항공사를 준비하고 있다. 이와 같이 국내 지 역항공사들의 국내선 취항과 근거리 국제선 운항 및 취항준비의 성공 여부 는 아직 판단하기 이르지만, KTX 도입과 기존 항공사의 국내선 축소 등 변 화된 환경 하에서 지역항공사들의 네트워크 운영을 분석할 필요가 있다. 또 한 많은 지역항공사들이 한중일의 국제선 취항을 앞두고 있고 이러한 성공 여부에 따라 필요한 장거리 노선도 점유하게 된다면, 기존 항공사와 지역항 공사간의 차별화는 더욱 줄어들 것이며, 제3의 또는 제4의 거대 민항을 등 장시키는 결과가 될 것이다. 본 연구는 이제 도입단계에 있는 국내 항공운 송시장에서의 지역 항공사의 노선 구조 및 시장 진입을 분석하여 지역의 저 비용항공사 도입과 근거리 국제선 시장에서의 지역항공사 노선개발에 대하

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여 분석하였다. 특히 지역항공사들의 노선 개설을 위한 항공여행자들을 대 상으로 한 수요자설문조사와 항공운송 서비스를 제공하는 공급자인 항공사 와 여행사를 대상으로 한 전문가 조사를 수행하였다.

**주제어**: 저비용항공사, 항공사경쟁, 항공운송정책, 규제와 자유화, 항공사 전략