

Empirical Study of Multimodal Transport Route Choice Model in Freight Transport between Korea and Mongolia

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Abstract : *According to globalization of world economy on distribution and sales, logistics and transportation parts are play important role. Especially, it important to know and study how to choose right transport route and which is the key factor of route choice model in multimodal transport system. Thus this study aims to consider 4 main factors: cost, delivery time, freight, and logistics service factors additionally dividing into 13 sub factors and object is forwarders between Mongolia and Korean freight transport. The survey is based on AHP through interview with company officials. The paper provides empirical insights about current status of Mongolian forwarders and difference of the important factors between transportation modes. Result shows that time factor is role factor to choose transport route and then cost factors. Additionally, this study shows 2 different route choose factors between air transport and shipping transport forwarders.*

Key words : *transport route choice model, freight transport, Analytical Hierarchy Process(AHP)*

1. Introduction

In recent years, the multimodal transportation has been used for freight transportation in global cooperation, worldwide trade, distribution and sales. That's why the logistics service providers and forwarders need to increase their competitiveness with the increasing multimodal transportation. There is important relationship between consignees and consignors in multimodal transportation and the most important thing is there is a need to concern in transport route and mode selection.....(Skip).....

2. Literature Reviews of Mongolian logistics

2.1 Literature reviews

There is few researches that has studied about Mongolian logistics. Those researchers had to determined current status of Mongolian logistics and identify.....(Skip).....

2.2 Current status of Korean and Mongolian freight flows

The territory of Mongolia is located in the Northeast part of Asia, neighboring with Russia and with China, comprises 1.564.100 of territory landlocked country.

Mongolia is divided administratively into 21 aimags(provinces) and capital city Ulaanbaatar.....(Skip).....

3. Research Methodology

3.1 Transport route choice model

The most of the shipping channel research activities related to the selection of the carrier and the ship owners have been studied with respect to the designation of the port. Those research has attempted to identify and explain the various factors in shippers' port choice using various methodologies. Such study includes Murphy et al.(1991, 1992), Gibson et al.(1993), Murphy and Daley(1994), Mangan et al.(2002), Tiwari et al.(2003), and Ugboma et al. (2006). Certain researchers focused freight forwarders side and exporters Slack(1985), Bird and Bland(1988), De Langen(2007).....(Skip).....

3.2 Survey and variables

Moreover, previous studies have focused shippers and consignees but this study was focused on transport route choice model of freight forwarders.....(Skip).....

4. Analysis Results

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The interview respondents include total 21 general managers of Mongolian forwarder companies located in Seoul and Incheon area of Korea. 5 respondents answer excluded for their C.I and C.R value over 0.1, so this study used 16 respondents to analyze.....(Skip).....

4.1 Analysis for main factors

The Fig. 3 shows result of the main factors for the decision hierarchy. The most important factor affecting forwarder's route choice decisions are: Time(0.434) and Cost(0.288), the C.I value was 0.06 and C.R value was 0.07.

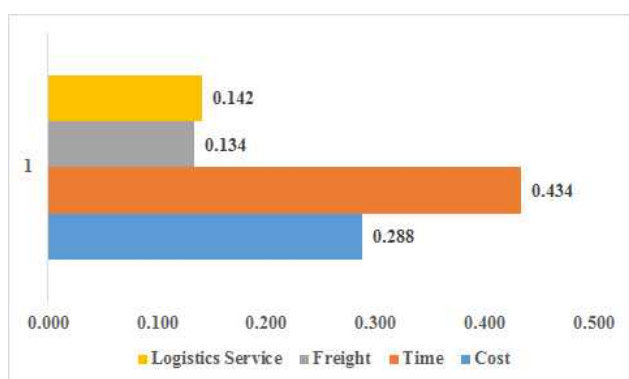


Fig. 2 Importance level for main factors

.....(Skip).....

Table 3 shows comparison of forwarders mass airway transportation versus mass shipping transportation. The result shows 2 different ranking of each sector.

Table. 1 Comparison of air and shipping transportation

Air transportation			Shipping transportation		
	Average	Rank		Average	Rank
Cost	0.234	2	Cost	0.377	1
Time	0.499	1	Time	0.325	2
Freight	0.125	4	Freight	0.153	3
Logistics service	0.142	3	Logistics service	0.145	4
C.I	0.062		C.I	0.067	
C.R	0.070		C.R	0.075	

.....(Skip).....

4.2 Analysis for sub factors

The next step was comparison of the sub factors analysis. Result was summarized in Table 5. First we divided cost factor to transportation cost, transfer fee and bordering cost. Result of the pairwise comparison was that

transportation cost(0.464) was the 1st place and bordering cost(0.269) was 2nd place in main cost factor.....(Skip).....

Table. 2 Importance level and ranking in each sub factors

Main factor		Sub factor		Rank
Cost factor	0.288	Transportation cost	0.464	1
		Transfer fee	0.268	3
		Bordering fee	0.269	2
Time factor	0.434	Transit time	0.204	2
		Transfer time	0.111	5
		Custom time	0.195	3
		Bordering time	0.129	4
		Set time	0.361	1
Freight factor	0.134	Heavy freight	0.490	2
		Specific freight	0.510	1
Logistics service factor	0.142	Safety	0.488	1
		Agility	0.329	2
		Flexibility	0.183	3

.....(Skip).....

4.3 Discussion

The sum of this result shows that time factor was the most important factor to choose route in transportation between Korea and Mongolia. Especially in air transport forwarders and large scaly companies' time factor was much bigger than others factors. On the other hand, shipping transport forwarders have most important factor was cost, but this case very small difference between cost and time factors. It means in shipping transport as regard both of those factors were important.....(Skip).....

5. Conclusion

This empirical study focused on identify which factor is the most important factor to choose transport route for general managers of forwarders between Korea and Mongolia.....(Skip).....

References

[1] Bilguun, H.(2012), "A Study on the Revitalization of Logistics in Mongolia", Graduate School of Paichai University
.....(Skip).....