

Strategy for Developing Cold Chain Logistics in Zhengzhou Air Harbor Comprehensive Economic Experimentation Zone Based on PEST Analysis

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Abstract. Regional economic cooperation has become a common economic phenomenon in various parts of the world under the background of economic globalization. Logistics, information flow, capital flow and other circulation problems continually emerged. Logistics activities is becoming more important as a sign of economic development. There are less researchers in regional cold chain logistics in China, which is incompatible with the development of cold chain logistics proposed in 12th five-year plan. If the theoretical research lacked, it will restrict the development of cold chain logistics. In this paper, the research is based on the actual situation of Zhengzhou, and it uses the PEST process to analyze the environment and politics. It accordingly proposed the corresponding strategy and suggestions.

Keywords. Zhengzhou air harbour, cold chain logistics, PEST analysis, development strategy.

1 Introduction

With the popularity of the Internet and the increasing of people's living standard, their needs have transformed the traditional single spot trading into the fast variety type of trading now. Aviation logistics started late but developed fast in China, the technology is not mature, and the formation of system is not standard [1]. To compare with developed countries, there is an obvious gap. Cold-chain logistics has high demand which need low temperature environment to keep the supply chain system in technology in logistics industry. As a big agricultural province of Henan, the circulation of flour, rice, vegetables, fruits and other agricultural products all require technical support of cold chain logistics. At present, cold-chain logistics industry has been developing well, but there are fewer researches for a particular region. Therefore, it is necessary to carry out research for this article.

2 Development status of Zhengzhou air harbor comprehensive economic experimentation zone

"Fast" has become a major feature of the current market competition, and there is rapid and sustained development that air transport has advantages with fast, comfortable safe and so on. In recent years, as an inland province with large population, if Henan can seize the opportunities for the development of aviation, they are looking forward to aviation accelerate the development of airport industry. Zhengzhou air harbor comprehensive economic

experimentation zone is the first domestic airport economic experimentation area which was approved by the State Council. It situated in the hinterland of the Central Plains, and it developed with Xinzheng International Airport as the center in Zhengzhou city. Besides, Zhengzhou has multiple cross traffic lines combined with North, South, East and West. In 2015, Zhengzhou air harbor has opened the whole cargo shipping international lines as many as 30, covered the trip to Europe, America and Southeast Asia and other regions [2]. In addition, the government steady increased the investment to Zhengzhou air harbor comprehensive economic experimentation zone logistics industry with the national strategy to boost the development of the central region, and it attracted the domestic and foreign well-known logistics company entered air harbor Logistics Park, such as USP, FedEx, Damco, SF, etc. There is fast development pattern in logistics industry in Zhengzhou. Therefore, it is necessary to make a scientific research in the development of cold chain logistics in Zhengzhou air harbor, to construct its theoretical basis, to guide for a scientific development of the cold chain logistics industry. And it is also the urgent problem to be solved in the current development of cold chain logistics in Zhengzhou air harbor comprehensive economic experimentation zone.

3 PEST analysis of cold chain logistics nodes in Zhengzhou air harbor comprehensive economic experimentation zone

3.1 Politics

At the beginning of the national government approved the construction of the airport in 2013, the government issued 81 policies included the financial, port construction, finance, industry development, personnel protection and other aspects, it gave full support and protection in developing logistics. In order to carry out the ideology which construct a large hub, cultivate large industry and shaping the metropolis, six provinces in Central China has opened 14 international cargo routes, and 13 of which are in Zhengzhou at present [3]. In addition, there are comprehensive bonded zone, aviation logistics area and land and air transportation collection center in Zhengzhou air harbor, and focusing on the development of the aviation logistics, bonded processing, exhibition trade and other industries.

It actively create logistics environment well in the process of becoming international logistics hub, formed Zhengzhou as the center of the Central Plains logistics city group. Then this group will radiate to the national logistics system, and become a mutual accommodation logistics hub from western region to eastern. The government put forward building strongly competitiveness of international air cargo hub in Development plan of Zhengzhou air harbor comprehensive economic experimentation zone. It point out three aspects to strengthen the construction of the logistics system. First, to promote Zhengzhou airport freight transportation system function, second, to improve the function of land transportation, third, to develop multimodal transport. At the same time, Zhengzhou air harbor have cooperation with relevant logistics industry to promote the construction of logistics infrastructure, transportation, information services, technology research and other functions to enhance the service level in logistics, and promote faster and better development.

Henan province has a good foundation of agriculture and food processing industry. Agricultural development ranked third in China, the domestic well-known food companies Sinian, Sanquan Pangge, Yunhe and other brands of frozen food became one of the ten major elements of the city of Zhengzhou. The government has made a lot of planning for the logistics development of cold chain products on the basis of these good development foundation. In December 2015, Zhengzhou Yongzhixing air cold chain logistics base project officially started construction in exhibition logistics area of Zhengzhou air harbor comprehensive economic experimentation zone after Zhengzhou Xianmeilai project in 2014. The project is a important project which is planning 8 million yuan invested in our province, it covers an area of 257 acres and a totally more than 23 square meters construction area. The project as one of the integrated project included air cargo transport, land transport, inter city regional distribution, import and export goods, food storage, bonded logistics, customs supervision, container transportation. It will provide

world-class standards for the central region if the project was completed. And it can allocate resources optimally, further accelerate the construction of international freight distribution center, accelerate the formation of the aviation logistics industry cluster, greatly enhance the core competitiveness of the regional aviation logistics industry.

Conclusions as a result, Zhengzhou air harbor has good environment and policy support to develop cold chain logistics. On the one hand, the promoted freight hub and extensive geographical location provide good environment for the development of cold chain logistics; on the other hand, the government gave financial support and fully industrial development policy for the construction of cold chain logistics, they provide a good opportunity to develop cold chain logistics.

3.2 Economy

The economic development situation often reflects a social level in a region, the logistics industry as an important part of the third industry services, which have a significant impact on the development of society and economy. The author chose three aspects of the economic level of Zhengzhou city: Per capita GDP of Zhengzhou, GDP of there industry of Zhengzhou and import and export value of Zhengzhou.

3.2.1 Per capita GDP and GDP of there industry of Zhengzhou

Table 1 can be seen that per capita GDP reached 77217 yuan in Zhengzhou city in 2015, increase 7.9 percent. According to statistical results of Zhengzhou communique, the primary industrial added value is 15 billion and 100 million yuan, increase 3 percent; the second industrial added value is 362 billion and 550 million yuan, increase 9.4 percent; the third industrial added value is 353 billion and 870 million yuan, up 11.4 percent. GDP increased more stable, and the third industry developed faster than the first and second industry, it provided a good opportunity to develop cold chain logistics.

Table 1. Per capita GDP and Rate of Zhengzhou: 2011-2015.

(100 million yuan)		
Year	Per capita GDP	Rate (%)
2011	56086	9.7
2012	62046	9.9
2013	68070	7.9
2014	73056	7.5
2015	77217	7.9

3.2.2 Import and export value of Zhengzhou

Table 2 shows that changing situation of imports and exports have an increasing trend year by year in Zhengzhou city in recent years. Frozen industry, food processing industry and electronic technology have well developed with the international routes decreasingly opened in recent years, and they can find a good breakthrough for the development of cold chain logistics.

Table 2. Import and export value and rate of Zhengzhou: 2011-2015.
 (100 million dollars)

Year	Import and export value	Rate (%)	Export value	Rate (%)
2011	160	210.1	94.1	182.9
2012	358.3	124	202.6	110.3
2013	427.5	19.3	250.66	23.6
2014	464.3	8.6	266.57	6.4
2015	570.3	22.9	312.5	17.2

3.3 Society

The factors of social environment are mainly composed of population scale, cultural background, personal values, consumption and income levels and social mobility.

The development direction for the Zhengzhou air harbor is positioned as international logistics hub, and the logistics park is the main carrier of international logistics function, so its development analysis mainly conclude the population, income and expenditure, social mobility and other aspects:

The first aspect: Statistically, as the core of the Central city, there is 9.03 million resident population in Zhengzhou City by the end of 2012, population movement reached 3 million 230 thousand people, floating population density ranks second after Guangzhou in China, which provides adequate labor for Zhengzhou. Accompanied by the rapid development of Internet development of China, this environment can provide the rapid expansion of the logistics industry, and give an opportunity to the development and operation to cold chain logistics.

The second aspect: members of society income and spending level directly respond the regional economic development level and the living conditions, and there is the interaction of payments and economic development, only making a balance investment of living level and spending level, can it have a good return in income; only satisfying consumers demands, can it have a better residents economic construction [4]. This section measures the social level by the analysis of residents income and expenditure data of Zhengzhou city in nearly five years.

Table 3. Income and expenditure data and rate of Zhengzhou residents: 2011-2015.

(Yuan)

Year	Per capita disposable income	Rate (%)	Consumer expenditure	Rate (%)
2011	21612	14.4	14500	13.4
2012	24246	12.2	16610	14.6
2013	26615	9.8	18672	12.4
2014	29095	9.3	20122	7.8
2015	31099	8.7	21692	7.8

From statistical data of table 3 in recent five years, it can see that residents per capita disposable income and expenditure increased year by year in Zhengzhou city, and put two digit incremental trend, which indicates that the living standards of residents is increasing year by year. It can predict the next few years, payments situation in Zhengzhou city will continue to show growth trend, and it will promote market economy as a well condition, at the same time, it will promote the development of Logistics Park of Zhengzhou air harbor comprehensive economic experimentation zone.

3.4 Technology

The government issued the latest policy named The construction system mechanism innovation demonstration zone overall program Zhengzhou air harbor economic comprehensive experimentation zone of Henan Provincial People's Government Office of CPC Henan Provincial Committee General Office, which involves four innovative aspects: financing, trade, logistics and regulation. In terms of logistics, it put forward the logistics facilitation with global vision to implement logistics strategic layout, and to make the construction of connecting the world's logistics network, innovation of operation management mode and the safeguard mechanism, to establish and improve the modern logistics service system, to improve the supply chain management and logistics service level.

It is necessary to have technical support to operate cold chain logistics, but to obtain information is also the key. Earlier, in March 2014, Zhengzhou has become one of the pilot cities, which is the first batch of 10 smart city cloud computing platform construction. It will provide technical support for the development of cold chain logistics in air harbor once the project has been completed.

4 Development strategy of Zhengzhou air harbor comprehensive economic experimentation zone

4.1 Change the industrial structure and promote technological innovation

The main service object of cold chain logistics is agriculture, fisheries, animal husbandry and frozen industry, so to develop cold chain logistics, firstly, the managers need to change the traditional agriculture mode and the introduction of new technologies to improve the first industrial output; secondly, to accelerate the research on mechanical equipment of frozen products with high technology, and introducing base construction, packaging technology, advanced equipment and sustainable green development. Besides, there are always food safety problems in the cold chain logistics industry, so how to implement the whole process with closure and low temperature operation. It is the most important work at present.

4.2 Improve the regional logistics network and actively develop multimodal transport

Zhengzhou air harbor has a good environment to develop transportation, so the managers should tighten up on supporting the land transportation and logistics network, and build an integrated transport network system among with Zhengzhou air harbor, logistics park node and land transportation. The managers should have the positive attitude to develop multimodal transport to achieve efficient activities; At the same time, they should broaden the transportation routes, and cooperate on cold chain logistics with the main cities in Yangtze River Delta and Bohai. Hope expanding incidence of Zhengzhou air harbor comprehensive economic experimentation zone.

4.3 Stimulate cold chain logistics demands by sophisticated industry

Henan province is the birthplace and leader of frozen food. It has become the largest frozen food production and processing base of China since 1992. Now there are more than 300 different sizes of frozen enterprises. Zhengzhou Sanquan Foods Co. Ltd., Zhengzhou Sinian Food Co. Ltd., Henan Sijipangge Co. Ltd. ranked in the top ten in 2014 of China frozen food company. Therefore, the managers should vigorously promote the retail industry and frozen wholesalers, sophisticated enterprises lead small and medium-sized enterprises. Then it can accelerate the integration between the industries and exert clustering effect to enhance the comprehensive competitiveness of cold chain logistics.

4.4 Regulate the system, rationally create a healthy environment

Cold chain logistics development can not be separated from the laws and regulations, which is the inevitable requirement of the healthy development of the cold chain logistics [5]. First of all, the managers should set a set of

operation standard for Zhengzhou air harbor comprehensive economic experimentation zone. This rules should contain strict control and supervision from producing to selling, and satisfying development needs of the cold chain logistics. Secondly, reasonably construct equipment of cold chain logistics. The target is that we can achieve the development model with an optimization system in the cold chain logistics. Finally, draw lessons from foreign in cold chain logistics operation mode. The managers should take more international practice to realize the status which is the continuous operation and mutual connection of cold chain logistics system.

4.5 Strengthen information platform construction, train logistics professionals

It often appears chain rupture phenomenon in china, it is not only the uncompleted facilities and premature technology, but also blocked information and lack professionals. Therefore, the manager can establish cold chain quality information and responsibility system by using Zhengzhou smart city temporal information cloud. Besides, the managers should train professionals in charge of all aspects of supervision, included producing, transporting, distributing and selling. And they can ensure that all aspects of the whole system have clear division of labor and clear duties.

5 Conclusions

Logistics activities support the regional economy development, effective logistics activities can originate from the industry development and the government support. The research can make the conclusion from the PEST strategy analysis method: firstly, Zhengzhou city has good policy support at present to develop cold chain logistics, the government regards constructing Zhengzhou air harbor comprehensive economic experimentation zone as the primary goal at present, especially since the State Council approved the Zhengzhou air harbor comprehensive economic experimentation zone development plan. Secondly, the economic development of Zhengzhou city is relatively stable through the relationship between the city of Zhengzhou the per capita GDP and economy and logistic analysis, but the managers need to pay attention to technology reform and innovation in first industry to develop logistics industry. Furthermore, people's consumption level is steadily rising trend through the analysis of the social environment. Finally, it still need improve and innovate technology of cold chain logistics in Zhengzhou city.

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