



## Report

# Analysis on the Status of Beijing-Tianjin-Hebei Logistics Resource

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**Abstract:** The research mainly analyzes the status of transportation, warehousing, postal and express enterprises in Beijing, Tianjin and Hebei through a large sample survey using micro channel platform distributed questionnaires and business research methods, cooperation with China cold chain logistics alliance, China Logistics Information Center and China logistics and purchasing Federation assessment office. Finally a total of 54 valid questionnaires were collected, mainly from three aspects to elaborate logistics enterprise resource situation of Beijing-Tianjin-Hebei: equipment resources, human resources and information resources.

**Keywords:** Beijing-Tianjin-Hebei, Equipment Resources, Human Resources, Information Resources

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## 1. Introduction

The overall size of the Beijing- Tianjin- Hebei logistics company is relatively small; there are no 5A grade logistics enterprises and lack large leading enterprises. At present, Beijing- Tianjin- Hebei logistics enterprises mainly service in traditional industries, Commercial Circulation industry and manufacturing, which service object concentrated in consumer goods, food and industrial activities. Most of the logistics enterprises are still mainly in the provision of transportation, warehousing and other functional logistics services; enterprises often compete through price wars and increasing advertising input. For existing warehouse like cold storage, the automation stereoscopic warehouse, refrigerated vehicles, container and other special vehicles and battery forklift, transport vehicles, and other handling equipment, the logistics enterprises still less purchase considering the cost factors and utilization rate of the factors.

Most of the logistics company's information system software needs external procurement that lacks the ability of developing. The logistics technology and equipment of Beijing- Tianjin- Hebei are still in the stage of development, the equipment is single and information technology needs to be improved. There is less the operator and manager graduate

form Logistics related professional, the level of the majority of enterprises management personnel and cultural are not very high, there is few managers with background of logistics management professional in the investigated enterprise. In addition, Beijing- Tianjin- Hebei logistics enterprises in a state of their own development, with the information isolated and closed. Hebei Province is far behind in Beijing and Tianjin in enterprise scale and operating conditions, so the development of Beijing- Tianjin- Hebei logistics is not balance.

By referring to the previous literature, we can sum up as follows: In Beijing, Logistics enterprises are miniature, single function, resources dispersing, it's difficult to realize intensivism management, also it is rarity that provide the integrative service, Logistics resources integration is imperative. In Tianjing, it need to be improve the ability of coordination services, the overall ability of the problem. In Hebei, lack of the province's logistics development planning, Logistics infrastructure needs to be supported by government, the regional coordination needs to be improved, and the logistics personnel training needs to be further strengthened.

It is necessary to introduce modern logistics concepts and applying advanced technologies to develop modern logistics. Intelligent, standardization, informationization, intensive is the direction of development of international logistics service,

and accelerate the development of logistics enterprise must rely on the technical support. That is to say, the changes of the initial order processing, warehouse management, commodity logistics information need to rely on relevant technical support. Beijing- Tianjin- Hebei logistics enterprises need to seize the opportunity of economic integration to accelerate the transformation and upgrading of the enterprise itself. At present, in the development stage of logistics enterprises should do a good job of logistics information and standardization management, using modern logistics technology to improve efficiency and service quality of logistics. Such as some of Beijing-Tianjin-Hebei logistics enterprises have realized the application of information technology, but mainly concentrated in the system of WMS, TMS, other systems have lower the rate of utilization. Therefore, the logistics enterprises should use WMS, TMS and other logistics management technology to control and management whole process of warehousing and transportation while should expand the use of RFID and barcode, automatic sorting, GPS and other technology to accelerate the process of enterprise information and enhance the operational efficiency of enterprises.

2. The Application of Logistics Information in Beijing-Tianjin-Hebei Logistics Enterprises

Information is the adhesive between enterprises, close cooperation and collaborative work; it can save time and improve the accuracy of the enterprise exchange information, reduce human error in the complex and repeated work, thus reduce the time wasted and economic losses caused by mistakes, so as to improve the efficiency of logistics operation. Research on information technology mainly includes the types and sources of enterprise logistics information system.

The investigation focused on the logistics management system, order management system (OMS), supply chain

management system, transportation management system (TMS), warehouse management system (WMS), automatic identification system and enterprise resource management system (ERP). This statistic shows 84.3% of enterprises have related logistics information system, of which approximately 47% of logistics enterprises have logistics management system, about 58% of the logistics enterprises have transportation management system, 58% of logistics enterprises have a warehouse management system. According to the survey, logistics enterprises have information systems in the sample as shown in the figure 1.

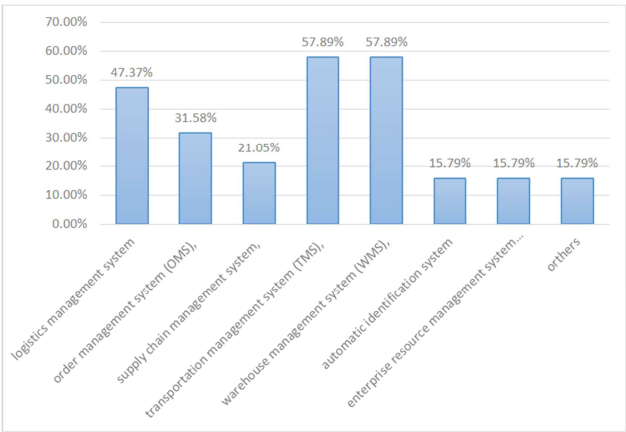


Figure 1. The application of logistics information system.

From the investigation, in addition to the management information system above proposed, about 16% companies have also applied the GPS, OEMS, SAP, field management system and other modern management to enhance the operational efficiency of enterprises. From the 2015 China Statistical Yearbook, transportation, warehousing, postal enterprise information and e-commerce situation of our country and Beijing-Tianjin-Hebei in the end of 2014, as shown in the following Table 1.

Table 1. The transportation, warehousing, postal enterprise information and e-commerce situation of our country and Beijing-Tianjin-Hebei in the end of 2014.

	Number of enterprises	Use of computers at the end of the year	Use the number of computers per hundred people	the number of enterprises have website	The number of enterprises with e-commerce transactions	the proportion of enterprise have electronic commerce transaction activity	E-commerce sales (billion yuan)
Country	905722	40876910	22	523741	64863	7.20%	79657.9
Beijing	34669	3595998	61	20632	4361	12.60%	9012.4
Tianjin	18049	866109	30	9708	1275	7.10%	1946.5
Hebei	28268	1020137	17	15709	1250	4.40%	1629.7
the transportation, warehousing, postal enterprise	35187	4856984	25	15908	1402	4%	2941.6

This table shows that in the end of 2014 accounting for 7.2% in China e-commerce transactions, accounting for 12.6% of Beijing higher than national, the proportion of Tianjin is 7.1%, and the proportion of enterprise e-business, Hebei electronic

commerce transactions is 4.4% lower than the whole country, of which the proportion of the industry, transportation, warehousing, postal industry e-commerce transactions is 4%. According to the survey and collect the questionnaire, there are

63% enterprises to purchase the logistics information software and lack the ability to develop the logistics information software. The situation of enterprise information system as shown in the figure 2.

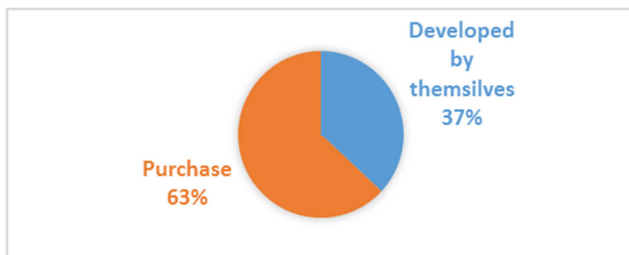


Figure 2. The situation of enterprise information system.

Survey showed that there are two reasons for the most of enterprises choose to buy logistics information system: one is that logistics enterprises are mostly small and medium sized enterprises, itself does not have the strength to develop logistics information system; the second is that it is necessary to develop their own exclusive software for many small businesses of transport or freight, because it is enough to buy logistics information software.

Due to the lack of a unified information system in Beijing-Tianjin-Hebei, although part of the logistics distribution place set up a website, due to the logistics industry have not establish logistics public information platform with production, sales and other areas, unused electronic and information means to change the operation mode of the traditional and backward. It has not formed a perfect layout of logistics network system in the application and resource integration of logistics information. If logistics information is separated and closed, and gradually form the information island, information cannot be shared and difficult to achieve efficient allocation of logistics information and effective docking and logistics resources, which in a certain extent influence the development of Beijing-Tianjin- Hebei logistics integration.

### 3. The Equipment Resources of Beijing-Tianjin-Hebei Logistics Enterprise

#### 3.1. Analysis on the Warehouse Capacity of Logistics Enterprise

According to the existing survey data showed that Beijing-Tianjin-Hebei logistics companies have their own warehouses ranging from 2000 square meters to 10000000 square meters. The majority of area in the following enterprises is more than 50000 square meters, of which more than 7.17%, accounting for 35.02%. In addition, about 62% of the logistics enterprises to use social warehouses, except for 24.32% of the logistics companies did not answer, more than 50000 square meters of logistics enterprises, accounting for 25% of the total number of data. The enterprise has its

own warehouse and the use of social warehouse, as shown in the figure 3.

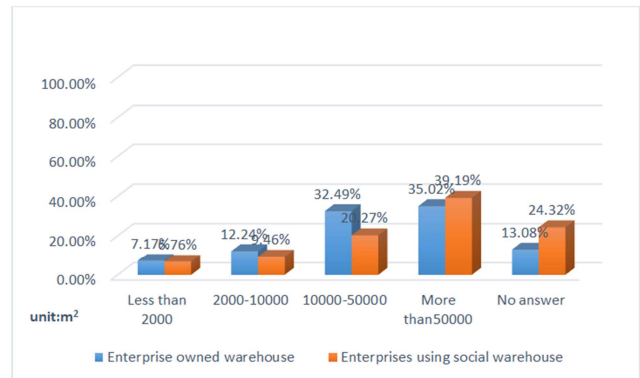


Figure 3. Enterprise's own warehouse and the use of social warehouse area.

From the statistical results, the majority of logistics enterprises in the area of 5000 square meters, 10000~50000 square meters occupied above 1/3. From the research point of view, storage area larger enterprises is mainly to warehousing services, the smaller area enterprises main business of transporting in some of the logistics.

The survey data show that 94% of the logistics enterprises have a common warehouse. There are relatively few of high tridimensional shelf warehouse. They mainly carry on lease a space for the small and medium-sized logistics, which has reduced the utilization rate of the warehouse to a great extent. Among them the average utilization rate of stereoscopic warehouse was the highest, which has reached 96%. The average utilization rate of warehouses is very high. Investigate the specific warehouse and the average utilization of the enterprise, as shown in the following figure 4.



Figure 4. The average utilization of the warehouse.

According to survey data from China's cold chain logistics alliance showed that the type of Beijing-Tianjin-Hebei logistics enterprise warehouse divided into high temperature storage, temperature warehouse, low-temperature storage, frozen warehouse, cryogenic warehouse, and adjustable gas warehouse.

The survey showed that low temperature warehouse is widely used in Beijing and Tianjin, the proportion of score was 40.51%, 62.02%, the percentage of medium temperature

warehouse was 29.45%. Hebei area is a high share of low temperature warehouse, followed by the temperature in the warehouse, and warehouse less gas cryogenic. From this we can know that most of enterprises use low temperature warehouse in Beijing-Tianjin-Hebei. The number and share of the warehouse, as shown in the figure 5.

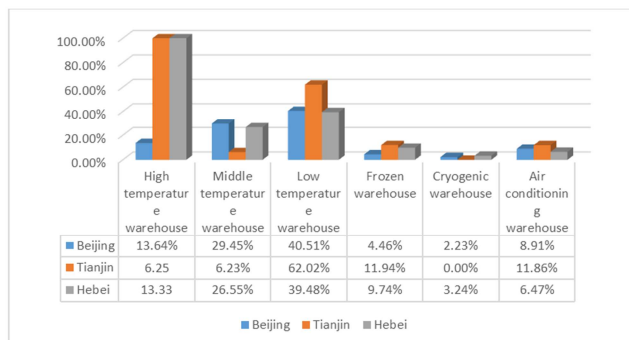


Figure 5. The proportion of different types of warehouses.

The data show that because of space limitations, Beijing-Tianjin-Hebei logistics enterprises generally face a problem that warehousing has become the biggest bottleneck process especially in Beijing and Tianjin. The survey showed that about 69% of the enterprise has a warehouse to meet customer demand. Whether the enterprise existing warehouse can meet the enterprise's demand, as shown in the figure 6.

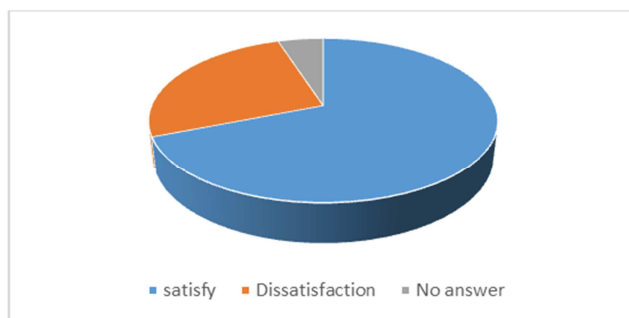


Figure 6. The condition of company's existing warehouses meet the needs of the enterprise.

There are a variety of factors that existing warehouse of logistics enterprises not able to meet business demand, which is mainly due to the insufficient number or area of warehouse, information management and service quality cannot meet the needs of customers, the type of warehouse does not meet the customer demand and so on. Also after analysis shows that the main problem is storage management high cost of the Beijing-Tianjin- Hebei logistics warehousing, the proportion of about 58%, followed by higher risk stock, and about 32% of the enterprises will appear this kind of problem. In addition to, lacking temperature control is also important factors resulting in poor storage management. The specific situation as shown in the figure 7.

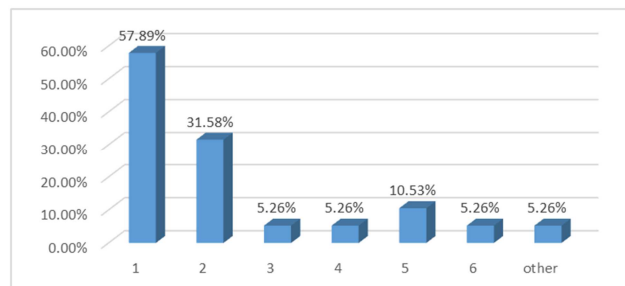


Figure 7. Main problems encountered in warehouse management.

1- Warehouse management high cost 2- High inventory risk  
3- Unreasonable setting of warehouse area 4- inventory work is not complete  
5- Warehouse management processes and specifications are not applicable, the system is missing 6- special goods not isolated management

### 3.2. Analysis on Transportation Capacity of Logistics Enterprises

According to the survey base from the Chinese cold chain logistics alliance, we can know that there are a total of 147 logistics enterprises in Beijing-Tianjin- Hebei, including 68 in Beijing, 30 in Tianjin, 49 in Hebei. From the effective data can be known, the sampling enterprise owned vehicles a total of 3601, the use of social vehicles a total of 3476. Hebei owned vehicles 1276, social vehicles less than its own vehicles 1/2. The result of the specific survey as shown in the figure 8.

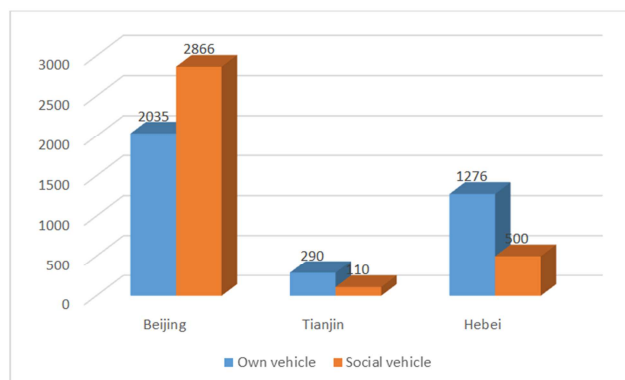


Figure 8. The condition of Own vehicle and Social vehicle.

From the questionnaire results showed that most of the logistics vehicles is ordinary trucks or vans and drag rows of semi-trailer, there is few refrigerated car, only a limited several, which also has a direct link with enterprise business demand. Most enterprises using social vehicles to meet the needs of business operations, the survey found that about 88% of the logistics companies choose to use social vehicles, which the large proportion of using social vehicles accounted for more than 100. The current vehicle and the social vehicles of logistics enterprises in Beijing-Tianjin- Hebei, as shown in the figure 9.

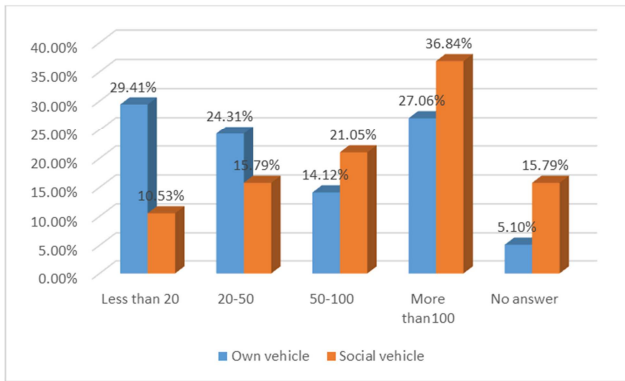


Figure 9. Annual utilization ratio of Own vehicle and Social vehicle.

According to analyze the type and quantity of logistics enterprises existing vehicle, there is more common that ordinary trucks, special vehicles, refrigerated trucks and container car, except for the logistics enterprises not answer, below 20 vehicles have special freight logistics companies was higher, accounting for 42.11%, followed by ordinary truck is more common. For refrigerated vehicles, below 20 vehicles of the following logistics enterprises was higher, may be due to the different nature of the operating characteristics of the logistics business. For the container of this special vehicle, considering the factors of cost and utilization is still below 20 vehicles of the following logistics enterprises accounted for relatively large. The vehicle type and quantity of the logistics as shown in the figure 10.

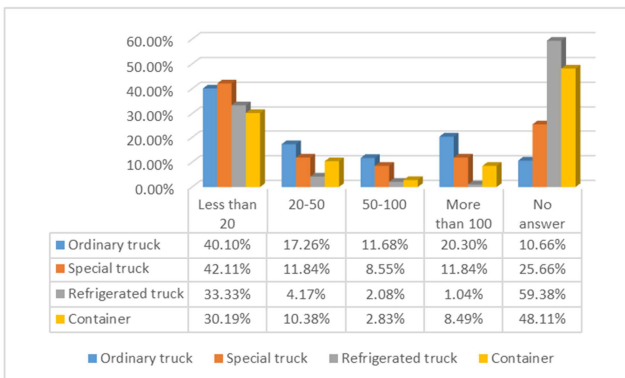


Figure 10. The vehicle type and quantity of the enterprises.

According to the statistical analysis of existing data, 63% of the logistics enterprises with van, 47% of the logistics enterprises with common truck, but there is little row semi-trailer and special tank car and refrigerator cars. In the company's existing vehicle, van utilization rate is higher, 53% of the logistics enterprises of the van utilization rate have reached 100%, and average utilization rate has reached 92%. Generally speaking, the vehicle utilization rate of logistics enterprises is very high. The vehicle average utilization situation of the logistics enterprise as shown in the figure 11.

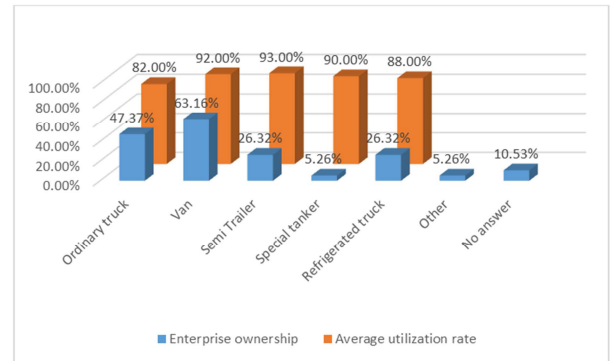


Figure 11. Enterprise ownership and Average utilization rate.

In the investigation of the existing vehicle whether can meet the demand of enterprise logistics or not, 58% of logistics now with the vehicle can meet the demand of customer, the enterprise existing transport vehicles can meet the demand of business, as shown in the figure 12.

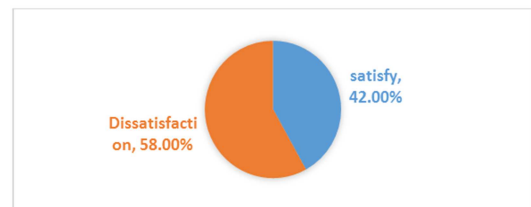


Figure 12. The condition of enterprise owned vehicles can meet customer demand.

The questionnaire data statistics show that the handling equipment of logistics enterprises in Beijing-Tianjin-Hebei up to 21725, the number below 20 is higher, accounting for 38.86%. Followed by 20 to 50 units of logistics enterprises accounted for 23.22%. The situation of loading and unloading equipment as shown in the figure 13.

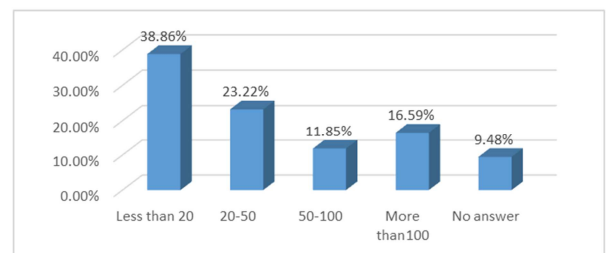


Figure 13. The Number of loading and unloading equipment in logistics enterprises.

According to the survey results show that logistics handling equipment of battery forklift truck is generally used, there is more than 85% of the total number of enterprises. However, there is relatively lack large equipment such as conveyor, lifting, only 25% of the total number of samples. Of course, the different nature of the business needs of the handling equipment is different. But on the whole, the logistics of handling equipment in Beijing-Tianjin-Hebei is still in the development stage, there is longer time to improve the logistics handling equipment, in order to improve the

efficiency of logistics operations. Handling equipment of logistics enterprises and the proportion of the situation, as shown in the figure 14.

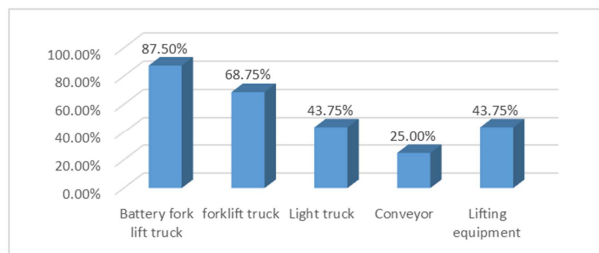


Figure 2. The proportion of Logistics enterprise handling equipment.

The survey also found that basic logistics equipment standards are not unified and standardized in Beijing-Tianjin-Hebei. Such as warehouse shelves, trucks, pallets, containers and other basic logistics equipment is still not a unified standard. At the same time, the standard of logistics packaging and logistics equipment is not uniform. The logistics standard is not uniform lead to the lack of effective convergence between logistics equipment in different regions, it is difficult to realize the integration development of logistics.

### 3.3. Analysis the Development Plan of Logistics Enterprises

Logistics resources scattered and logistics cost is high. The organization of logistics system is low, the level of social and professional is not high, the logistics service function is single, the level of information technology need to be improved in the Beijing-Tianjin-Hebei. Collaborative development strategy makes a new request for the regional logistics services. Faced with many challenges, it needs to make the appropriate adjustments to meet the needs of the development of Beijing-Tianjin-Hebei. In terms of the future development plan, logistics companies to carry out the proposed additions to the warehouse and transport vehicles in the investigation. In the next 3-5 years about 84% of the enterprises need to increase the warehouse to meet the requirements of the rapid development of enterprises, which need to increase the general warehouse logistics enterprises more accounted for 32%, followed by the automated warehouse, accounting for 18%. Enterprises need to increase the proportion of equipment and facilities, as shown in the figure 15.

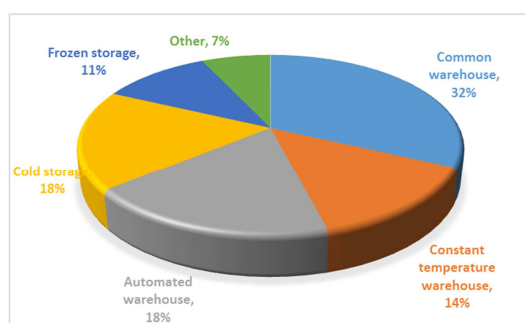


Figure 3. Enterprises need to increase the proportion of warehouse facilities.

In the next 3-5 years about 73% of the enterprises need to increase transport vehicles to meet the rapid development of enterprises, which need to increase the van and car thermostatic insulation logistics enterprises accounted for 25%, increase the container car logistics enterprises accounted for 20%. For example, from the port of Tianjin to south of Shijiazhuang first trip tube container trains, the container transport proportion of Tianjin port railway rose sharply. By the end of October 2015, the domestic containers increase of 206.8% reaches to 80944 TEUs. Tianjin freight center uses operation successful practices of container train to accelerate the development of the transition to modern logistics enterprises, the national "The Belt and Road, Beijing-Tianjin-Hebei integration development engine. The project conditions of companies need to add transport vehicles, as shown in the figure 16.

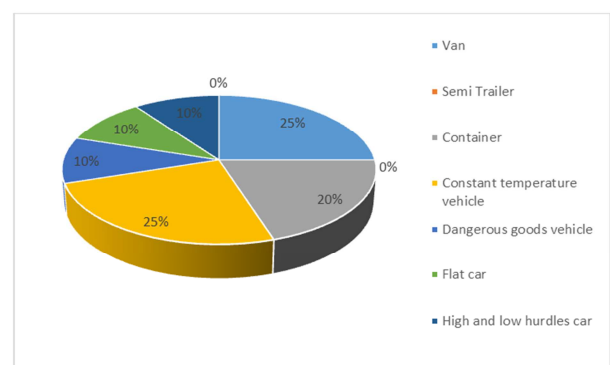


Figure 16. The company needs to increase the vehicle facilities in the next 3-5 years.

Data show that: in the next 3-5 years increase of vehicles in the following below to 20 vehicles accounted for 37.5%, 20 to 40 vehicles accounted for 43.75%, 40 to 60 vehicles accounted for 6.25%, 60 accounted for 6.25%. Increase the number of vehicles in 3-5 years, as shown in Figure 17.

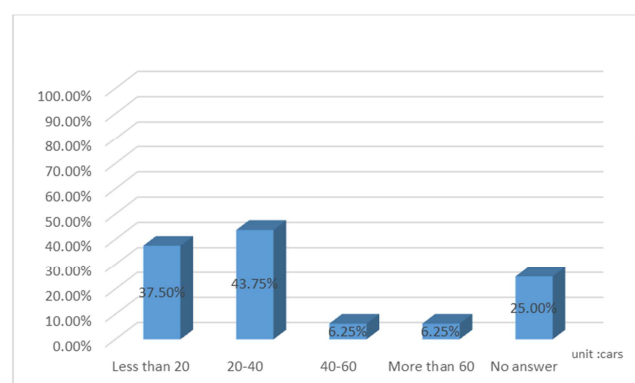
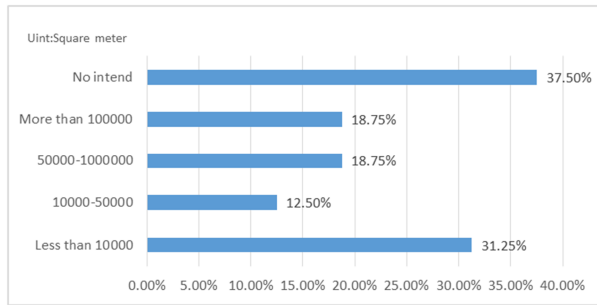


Figure 17. Need to increase the number of vehicles in the next 3-5 years.

Warehouse area increase the proportion is as follows, below the 1 million accounted for 31.25%, 1 million to 5 million square meters accounted for 12.5%, 50000 square meters to 10 million square meters accounted for 18.75%. The next 3-5 years to increase the proportion of the warehouse area as shown in the figure 18.



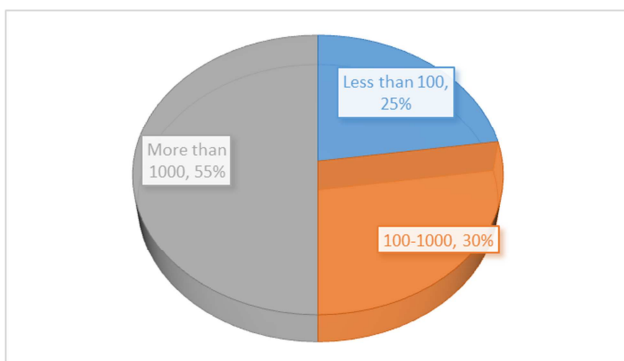
**Figure 18.** Enterprise need to increase the area of the warehouse in the next years 3-5.

In the next 3-5 years, in terms of equipment and facilities of Beijing-Tianjin-Hebei logistics, it should gradually increase the utilization rate of logistics facilities and improve professional level of logistics facilities and equipment, and actively develop standardization, van and specialization of freight vehicles, the phasing out of box type truck. Gradually strengthen the logistics core technology and equipment research and promote the industrialization of key technology and equipment, and encourage logistics enterprises to adopt advanced technologies and equipment.

#### 4. The Situation of Human Resources of Logistics Enterprises in Beijing-Tianjin-Hebei

Through the investigation of logistics enterprises human resources, it can reflect the size of logistics enterprises, the management level of themselves, market competitiveness and enterprise development potential. In the questionnaire design mainly through the number of employees, the proportion of managers, the number of business personnel and education, and the enterprise personnel training methods to design.

Research found that employed people below 100 accounted for 25% in the surveyed enterprises. 100 to 1000 people have 30, accounting for 55% of the total. More than 1000 people have 12, accounting for 20% of the total, as shown in the figure 19. The above situation shows that less than 20 enterprises also have a certain proportion, but the overall size is relatively small.



**Figure 19.** The staff number of logistics enterprise.

In terms of staff qualifications, the vast majority of the surveyed enterprises in the management undergraduate above graduation, but there are still 46% of management staff the education is not the undergraduate. With a master's degree or above accounted for only 19%. In the enterprise business personnel among 76% of the surveyed companies have more than 50% of employees in the undergraduate education, the employees of bachelor degree and master degree is minimal.

Some enterprises to give the answer in mode of personnel training, and some enterprises didn't give enough attention, the proportion of enterprise organize regular training is only 56%, accounted for only about half. Since the participation of enterprises in the survey may not be comprehensive sample data, but the Beijing-Tianjin-Hebei logistics enterprise personnel training is worth the attention of enterprises.

In summary, the staff qualifications level of Beijing-Tianjin-Hebei logistics enterprise is generally low; there is not a lot of the opportunity to get regular training companies. However, considering the characteristics of the logistics industry, logistics enterprises are not a gathering place for a large number of high-end talents. Basic operating positions require a large number of employees, in the choice of these employees, the demand of experience are greater than the degree. But standing in the strategic aspect of enterprise, can operate from a strategically advantageous position of the grasp of the direction of business development still need more highly educated talent. However, the same survey, the management level has a master's degree in the proportion of staff is still very small. The introduction of highly educated talent has yet to be strengthened.

#### 5. Conclusion

The new development trend to deal with the need of new logistics park and logistics enterprises in Beijing-Tianjin-Hebei, it should be have a high starting point positioning in the aspect of design planning, intelligent transportation, warehousing, distribution and information communication. Especially logistics enterprises in Beijing and Tianjin should become the forerunner of the modern logistics management, vigorously pursued and application of domestic and foreign advanced technology, equipment and management system, it should complete safe storage, accurate sorting, intelligent rationing, rapidly transit, and comprehensively improve the quality and efficiency of logistics services through the bar code technology, radio frequency identification, automatic sorting, intelligent warehouse management, logistics information tracking of advanced technology to lead the development of the industry. Its port facilities and ships should be according to the criteria of the international advanced technology for port logistics enterprise to improve the level of manufacturing port machinery and equipment and handling technology, bring into full play the advantages of three port transportation. For no operation business plate of large-scale logistics enterprises should be thinking of the Internet, the introduction of electric business mode to expand the supply flow through the development of

online and offline, drive sales to accelerate the flow of funds and reduce logistics costs. For some special products, such as fresh agricultural products, the cold chain logistics enterprises should strengthen the upgrade of cold chain logistics technology and the investment of cold chain logistics technology capital to maintain the need of customer products, through applicant modern enterprises technology to meet the requirements of the processing, storage, transportation, sales and the low temperature, and also to reduce the mass loss of the agricultural products logistics. For logistics enterprises with relatively backward equipment, such as backward logistics enterprises of storage facilities and equipment, processing equipment, packaging equipment and transport equipment, the result is the function not unitary, unable to realize mechanization and automation, it should increase investment in logistics facilities and equipment and update existing equipment to promote the development of logistics enterprises.

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