



# Analyzing the Needed Skill of Logistics Personnel During Their Education in the Context of Dual Circulation

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**Abstract.** Based on the comprehensive results of literature review, visiting logistics companies and questionnaire survey, this paper analyzes the demand for China's logistics personnel in the context of dual circulation, i.e. the domestic and international circulation. It is found that the influence comes from comprehensive way including upgrading of technology in logistics industry, rapid development of international logistics, the booming expansion of international E-commerce, and the growing importance of cold chain logistics. Due to the above influence, this research recommends that skill of management, technical knowledge, thinking in an international perspective, and the capability of apply new technologies should be strengthened in the cultivation and development of logistics personnel during their education in the universities and colleges.

**Keywords:** Skill demand of logistics personnel · Domestic and international circulation · Curriculum for logistics education

## 1 Background

At the seventh Meeting of the Financial and Economic Commission of the CPC Central Committee on April 10, 2020, General Secretary Xi Jinping stressed the need to build a new development paradigm with the domestic circulation as the main body and the dual circulation, i.e. domestic and international circulations reinforcing each other. On May 14, 2020, the Committee of the Political Bureau of the CPC Central Committee proposed the same thing. In March 2021, the Outline of the 14th Five-Year Plan of the People's Republic of China for National Economic and Social Development and the Outline of the Vision for 2035 (draft) also proposed this.

The key to finish the above task is to turn China's advantages in market size and production system into the advantages for participating in international cooperation and competition. This requires the use of advantages of the super-large market, speeding up the reform of the income distribution system, tapping the potential of domestic market demand, and speeding up the construction of a complete domestic demand system. We have to utilize the advantages of large quantities of production elements, to deepen reform of market-based allocation of factors of production, to smoothen the flow along production, distribution, circulation and consumption, and to raise the efficiency of major

domestic cycles. We should leverage our strengths as a major foreign trading country, to develop a high-level open economy, to promote closer linkage between domestic and oversea markets and rules, and to create a supply chain ecosystem in which domestic and international circulations reinforce each other. All in all, the new development paradigm will help upgrade China's demand structure and improve its supply capacity, spur dynamic balance between supply and demand at a higher level, and strengthen the internal driving force for high-quality development.

In the background of domestic and international dual circulation, this paper analyzes the circulation in the production process. It first analyzes the opportunities and challenges faced by the logistics industry via the development characteristics and situation of the logistics industry. Then it summarizes the demand of characteristics of the logistics industry practitioners to optimize the training system of logistics personnel in universities. The conclusions of this paper can timely optimize the direction, emphasis and focus of logistics talent training in colleges and universities. The findings also help the students majoring in logistics management strengthen their ability when facing the dynamic development of the industry, with a target to meet the requirements of all aspects of future employment.

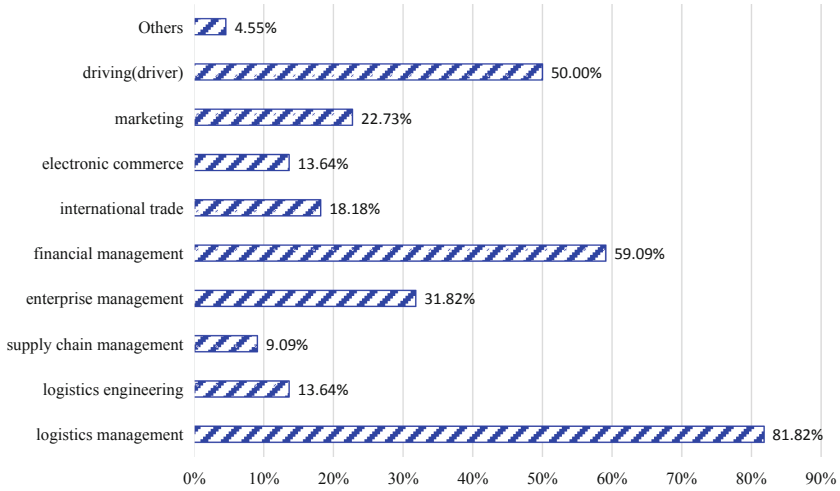
## 2 Enterprise Visits and Questionnaire Survey Results

In order to understand the specific demand of employees of logistics and supply chain enterprises in a combined context of the dual circulation and COVID-19, this study visited the local logistics and supply chain enterprises in Shenzhen. Information including current personnel composition, employment demand characteristics and other related issues was investigated.

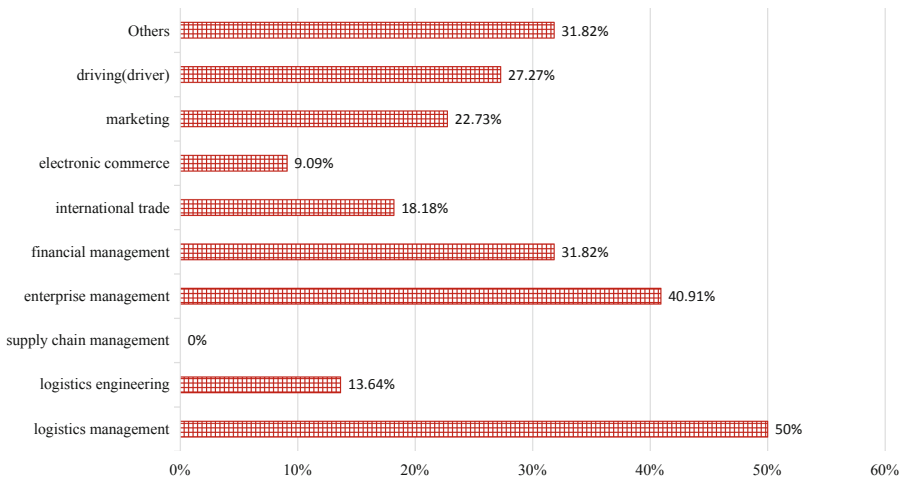
After checking the keywords in the names of surveyed companies, it is found that the company names mainly include logistics, transportation, freight, etc., while only few companies have their names contains supply chain. Regarding the main businesses of these surveyed companies, it is found that nearly all undertake freight transport and a small part of the companies are also engaged in importing and exporting goods for trade, custom clearance and supply chain related businesses.

Education background of the personnel currently working in the companies, i.e. the major that they studied in the technical colleges (without bachelor degrees) or universities (with bachelor degrees), was also investigated, with results demonstrated in Fig. 1 and Fig. 2 respectively. In terms of personnel without a bachelor degree, most of them studied logistics management (or logistics engineering), with financial management, driving, enterprise management and marketing following behind. Regarding personnel with a bachelor degree, same as those without bachelor degree, most of them studied logistics management (or logistics engineering), with enterprise management, financial management, driving, marketing and international trade following behind. Personnel with a bachelor degree currently working in the surveyed companies tends to have an education background of management, compared with those without bachelor degrees.

As far as the general demand of new staff is concerned, the surveyed results finds that although the requirements for education are mentioned by enterprises, they prefer experience and ability to degrees (as shown in Fig. 3). This reflects that enterprises in



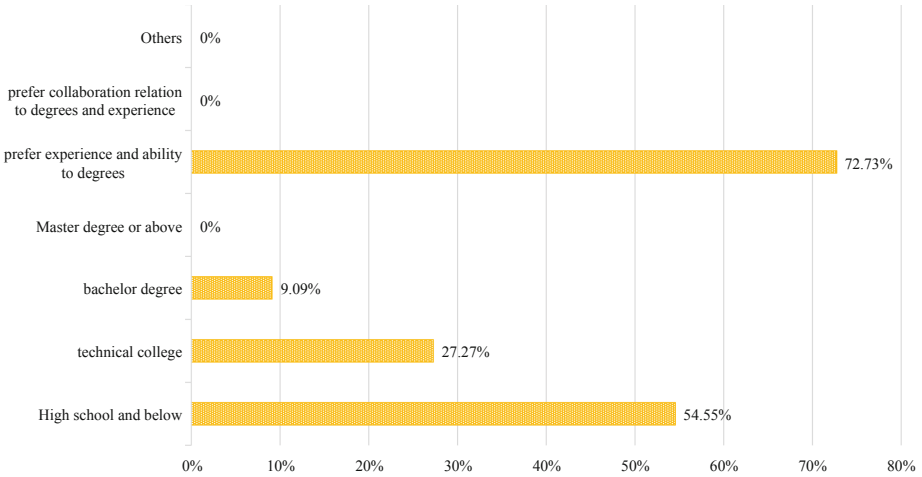
**Fig. 1.** Majors of current working personnel graduated from technical college without bachelor degree (drawn by the authors according to the questionnaire)



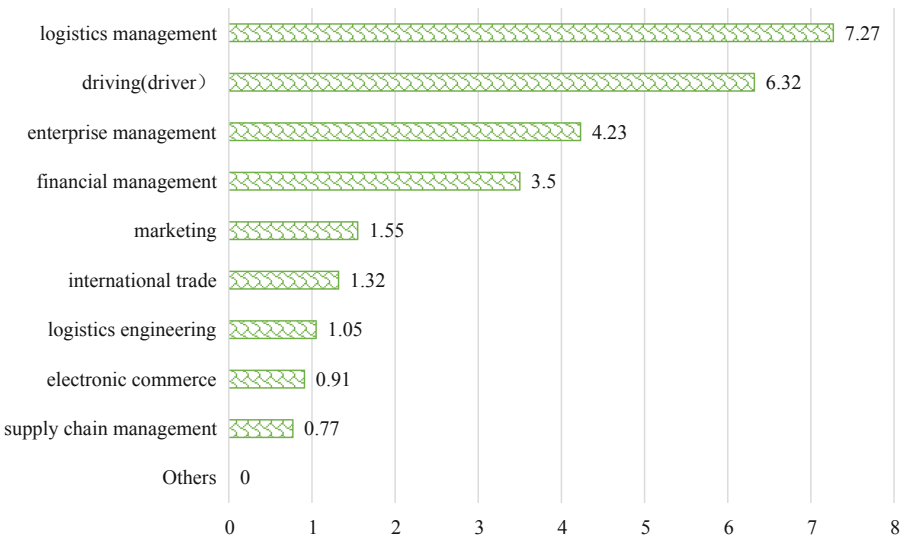
**Fig. 2.** Majors of current working personnel graduated from technical college with bachelor degree or above (drawn by the authors according to the questionnaire)

the logistics industry evaluate personnel more depending on experience. It means that perennial accumulation of experience is very important in this field.

As for the demand of specific major of recruitment (Fig. 4), staff majoring in logistics management ranks on the top. This is probably because the curriculum of logistics management in the university or technical college covers the courses of enterprise management, finance, marketing, international trade, e-commerce, supply chain and so on, resulting in a comprehensive pattern of cultivation.

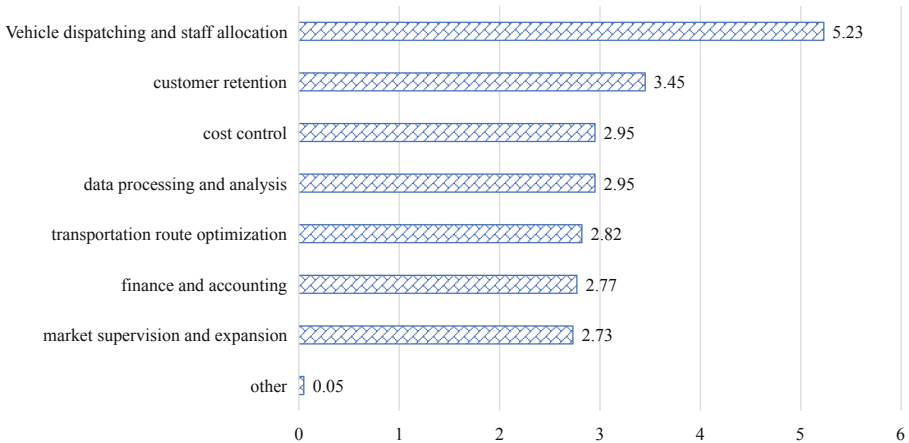


**Fig. 3.** Demand of education and degrees of recruitment according to the surveyed enterprises (drawn by the authors according to the questionnaire)



**Fig. 4.** Demand of specific major of recruitment according to the surveyed enterprises (drawn by the authors according to the questionnaire)

Regarding the demand of expecting ability of recruitment as shown in Fig. 5, the surveyed results show that vehicle dispatching and personnel allocation is the most urgent ability according to the surveyed enterprises. Among other ability related to profession, abilities for cost control, data processing, route optimization, financial accounting, and customer retention demonstrate almost equal to each other.



**Fig. 5.** Demand of expecting ability of recruitment according to the surveyed enterprises (drawn by the authors according to the questionnaire)

According to the results of the 22 surveyed local logistics enterprises in Shenzhen, requirements to personnel majoring in logistics management from enterprise is ability and experience. Although education background related to degree is somehow required, ability and experience are ranked as more important factors. Regarding the specific ability, abilities of vehicle dispatching and staff allocation are the most needed by the enterprise.

### 3 Analysis of the Impact of Dual Circulation on Logistics Industry and Personnel

This part first analyzes the impact by the policy of domestic and international circulation policies on the whole logistics industry. Then the change of demand on personnel in the field of logistics management is proposed according to this impact. Furthermore, the improvement of the curriculum that needs to be done in order to satisfy the change is discussed.

#### 3.1 The Impact of Dual Circulation on Logistics Industry

The formulation and proposal of policy regarding the domestic and international circulations was advanced in the context of COVID-19 combined with transformation of China's logistics industry. The traditional logistics industry is in urgent need of reform and renewal with the help of emerging technology including artificial intelligence and big data analysis, with intention of overcoming its disadvantages such as slow transportation, goods loss in large amount, poor service and unsatisfied customized transportation.

Logistics industry and freight transport have been experienced the following five stages so far, i.e. national team as main part (from 1978 to 1984), individual driver experiencing bonus period (from 1984 to 1992), initial period of private fleet (from

1992 to 2005), fast developing period of private fleet (from 2005 to 2013), and reforming period forwarding digital freight (from 2013 to now) [1]. The 5th stage features logistics plus internet, IoT (Internet of Things) data helping develop digitation level of freight enterprise and e-commercial platform for servicing individual drivers and so on.

International marine transport during the COVID -19 period sees the price increase sharply and lack of containers [2]. It uncovers two main problems of international marine transport and logistics. One is the lack of robustness and redundancy of the whole supply chain. Another problem is the lack of organization of immediate demand response. Besides these two problems, another change of international logistics is the digitalization in this field, which focus on all-life service, integration of goods and trade, and paperless synchronization during the trade [3].

International e-commerce got its sharp increase in the response of “one belt one road” policy. This sharp increase is mainly due to the strong network and infrastructure of international logistics [4]. International e-commerce includes the product such as international small package, international express, international special line, overseas warehouse and other related service products [5]. International e-commerce generally have to satisfy the customized demand from the customers.

According to “*14th five year plan*” for the development of cold chain logistics (hereinafter referred to as the “plan”) issued by the general office of the State Council in December 2021, the country will complete a cold chain logistics network connecting the production and sales of regions, covering urban and rural areas and connecting domestic and international regions [6].

### 3.2 Needed Skills of Logistics Personnel Due to Dual Circulation

In order to respond the above mentioned impact of dual circulation on logistics industry, personnel in logistics needs to strengthen the following skills.

**Management Ability.** Besides professional knowledge needed in the industry, the biggest difference of personnel between logistics field and others is that, logistics personnel also need to have the ability to integrate various resources from upstream, midstream and downstream enterprises. The resources needed to be integrated may also come from various departments in the enterprise or different stages during the whole process. The goals of this integration are to minimize costs, to increase profits, to optimize the whole process of logistics with maximum benefits, and to satisfy customer in terms of time limit, price and service.

**Technical Knowledge.** Logistics personnel are required to have professional knowledge covering in a various way of transportation of goods, supply chain, finance, economy, planning and design of logistics networks, allocation of personnel and equipment, route choice and optimization, laws and regulations, etc. With the division of labor based on specialization, specialists need profound knowledge and skill in a specific direction, e.g., cold chain logistics, international logistics, e-commerce, large cargo logistics and so on. Although logistics personnel in specific direction need different technical knowledge, every direction have the requirements for the management ability.

**International Perspective.** At present, any country is part of the globalization due to its economy and development involved in it. As an important participant in the global economy and international supply chain, logistics personnel should strengthen their foreign language communication ability and perspective on analyzing problems and events.

**Capability to Apply New Technologies.** New technologies such as artificial intelligence, big data and blockchain have brought about the opportunities of optimizing and upgrading the logistics industry. The integration of new technology and traditional business will provide more personalized and convenient logistics services.

## 4 Conclusion

With a combined way of literature review, enterprise interview and questionnaire, this paper analyzes the main skill demand for logistics personnel in China in the background of domestic and international circulation. From the perspective of logistics enterprises, they need personnel with professional background in logistics management and they prefer ability and experience to education and degree. Furthermore, ability to coordinate and manage various resources is considered the most important. From the perspective of the industry, as the industry is comprehensively influenced by the new technology which upgrades the industry, fast changing international logistics, booming development of international e-commerce and increasing attention paid to cold chain logistics due to national policy, education in the university and technical college should focus on strengthening management ability, technical knowledge, thinking from international perspective and capability to apply new technologies in the students' cultivation.

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