The development of the labour force in China's E-commerce industry since the 1980s: the case of China's Yangtze River Delta

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Abstract: This dissertation studies the development of the labour force in China's e-commerce industry since 1980s and takes the Yangtze River Delta as the research object. This study is based on relevant literature and research that focus on the development of the global labour force, the development of China's labour force, the change of China's industrial structure, and the development of China's e-commerce industry since the 1980s. Post 1980, with the implementation of China's reform and opening up policy, China has rapidly grown into a group that cannot be ignored in its effect on economic development. China's e-commerce industry also occupies a large position in the global economic market. The development of labour force is accompanied by the development of industry. Studying the development of labour force in China's e-commerce industry is beneficial to the study of labour force changes and the development trend of labour force in emerging industries in the future. Yangtze River Delta is the earliest and best area for e-commerce development in China. This paper selects three mature e-commerce companies in the Yangtze River Delta, Alibaba, Pinduoduo and Suning, as case studies. This is a desk-based project, which use the case study approach. The data was mainly obtained from professional databases, official government data, third-party statistical data and the official website of the case company. Through the research, it is found that the development of e-commerce industry in China has a certain impact on the employment situation, providing many employment opportunities and adding many new types of jobs. At the same time, it is found that the shortage of skilled workforce and the shortage of low-skilled workforce in the labour market are more serious. In order to attract more high-quality employees, e-commerce companies attach great importance to campus recruitment for universities, cultivation of new employees and office environment. However, the working hours of e-commerce industry are generally long and the work tasks are excessive, which also has a certain impact on the physical and mental health of employees. The findings in this dissertation will contribute the study of labour market development, e-commerce and other new industries' recruitment. In addition, it can also provide some references for the study of corporate ethics and labour pressure.

1. Introduction

The research topic of this dissertation is the development and characteristics of the labour force in China's Electronic Commerce (e-commerce) industry after China's reform and opening-up in the 1980s. In this case, the Yangtze River Delta will be examined. In order to study e-commerce, we must first be aware of the parameters of this industry. The World Trade Organisation (2013) defines e-commerce as the sale or purchase of goods or services that place and receive orders through computer networks in a specially designed manner. E-commerce consists of two business options, which are business-to-consumer (B2C) and business-to-business (B2B). Thus, companies in the field of e-commerce can provide products and services to customers or other companies (Meier, A.& Stormer, H, 2009).

At present, the Chinese e-commerce economy has evolved from commodity trading, capital transmission, business activities and supply chain system construction to commercial development, industrial chain system and industrial cluster formation. With rapid development in recent years, the

e-commerce economy has created globalisation, cost reduction advantages and improved efficiency. It has widely infiltrated into areas such as production, circulation, consumption and people's livelihoods. In cultivating new formats, creating new demand and expanding new markets, it has promoted transformation and upgrading of traditional industries and promoted public service innovations.

The e-commerce industry in China has become a significant sector of the national economy. The E-commerce industry cannot be ignored in China's current economic development. It is greatly significant to study this relevant topic. Since the reform and opening--up in the 1980s, China has gradually established enterprises as the main body of the labour market and labour as the main body of employment. Under the guidance of national laws, regulations and policies, employers have realised independent employment, and workers have independent job selection, employment and entrepreneurship. According to the People's Daily Online (2019), by the end of 2018, China had 35,700 human resource service agencies of various types, serving 228 million people, and the total number of jobs has been growing steadily. As a country with a large labour force, the development and change of labour requirements in different industries are related to the development of China's national economy.

This study will link the development of China's labour force and e-commerce industry. It will contribute to the study of future trends within China's job market, the development of its emerging industries and the future developments within e-commerce.

2. Research method

The literature review above summarises the past research and studies on the labour force and the e-commerce industry. There is a research gap between Chinese labour force development and Chinese E-commerce industry. This dissertation will focus on the development of the Chinese labour force in the E-commerce industry, taking the Yangtze River Delta region as a case study.

These are the research question and sub-questions for this research.

Research Question: After the 1980s, what are the development status and characteristics of the labour force in China's e-commerce industry?

Sub-questions:

(1) What are the effects of the development of China's e-commerce industry on the employment situation?

(2) As the e-commerce industry develops, what are the changes for China's labour market?

(3) What are the characteristics of working conditions and management for the labour force in the e-commerce industry in China after 1980s?

There are some limitations with the research methodology used in this dissertation. Firstly, as interview and observation group methods were not allowed to be conducted, there was almost no primary data, and all data was secondary data. This required all data to come from official, authoritative websites, and professional databases. However, in the research process, real data was difficult to obtain, for example, the actual working time of employees in the e-commerce companies researched, the actual salary and job rewards, as well as the gender ratio of the researched company's employees, the proportion of women in the e-commerce industry, etc.

Secondly, due to the time limit of the research, only three of the case companies have been researched, which are all located in the Yangtze River Delta and have excellent performance in the field of e-commerce in China. Whilst there are also hundreds of small and medium-sized e-commerce companies that were worth studying, this research lacked data sources for these. Small and medium-sized companies are less invested in training and management. They are still interested in the quality of the labour force though.

3. Findings

3.1 Data relating to the e-commerce industry and labour market in the Yangtze River Delta region

According to the report "20 Years of E-commerce Development in China" released in 2018 by China E-commerce Research Centre, China's e-commerce transaction volume has been growing rapidly, with online retail sales ranking first in the world for six consecutive years. As can be seen from Figure 1, from 2013 to 2017, the transaction volume increased from 10.40 trillion yuan to 29.16 trillion yuan, with an annual compound growth rate of 29.4%. In 2018, it still maintained a rapid growth trend. The volume of e-commerce transactions exceeded 30 trillion yuan in 2019 and is expected to reach more than 38 trillion yuan in 2020.

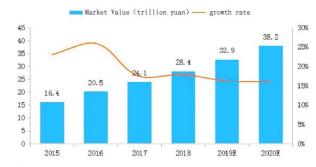


Figure 1 China's E-commerce market size and forecast 2015-2020

Source: National Bureau of Statistics, China Business Industry Research Institution

The Yangtze River Delta region is relatively developed and the leading area in the development of the e-commerce industry. This region includes Shanghai City, Zhejiang, Jiangsu, and Anhui provinces. According to the "E-commerce Report 2019" released by China's Ministry of Commerce, Zhejiang, Shanghai, Jiangsu and Anhui provinces ranked the second, third, fifth and ninth respectively in terms of e-commerce turnover in China, which can be seen in Figure 2 below. The number of individuals employed in the e-commerce industry reached 51,256,500 in 2019(MOFCOM.GOV.CN, 2020).

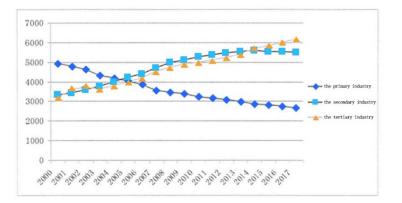


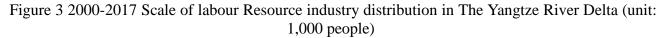
Figure 2 Ranking of the online retail sales of provinces & cities accounting for the proportion of the national online retail sales (China,2019)

Source: China's Ministry of Commerce

The current e-commerce labour force situation in the Yangtze River Delta region.

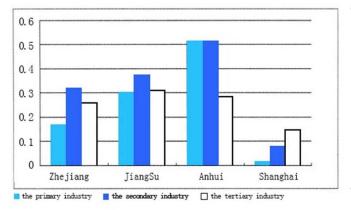
In terms of labour force, according to relevant data from The National Bureau of Statistics of China, the total labour force in the region increased from 11.42349 million in 2000 to 14.0435 million in 2017, with an annual growth rate of 1.33 percent, much higher than the national annual growth rate of 0.44 percent. As can be seen in Figure 3, the labour force resources of the secondary and tertiary industries in the region have been increasing in recent years. The labour force resources of the tertiary industry increased from 3,176,570 in 2000 to 6,165,700 in 2017, with an average annual growth rate of 3.98%.





Source: Statistical yearbook and economic census data of three provinces and one city in the Yangtze River Delta

The proportion of industrial distribution in the three provinces and one city in the YRD region is also different. It is noticeable in Figure 4 (X,Ma, 2019). The main labour force in the primary industry is mainly concentrated in Anhui province, accounting for 51.39% of the region, followed by Jiangsu and Zhejiang. The secondary labour force is mainly distributed in Jiangsu and Zhejiang provinces. The total labour force of Shanghai is lower than other three provinces, and the labour force is mainly concentrated in the tertiary industry, followed by the secondary industry. Primary industry accounts for a very small proportion.





Source: Statistical yearbook and economic census data of three provinces and one city in the Yangtze River Delta

Based on relative information from China's ministry of Commerce (gov.cn), the labour in Chinese e-commerce enterprises is mainly divided into technology, business, general management and enterprise management. Technical labour roles include Internet platform development, data program maintenance, and page design, which e-commerce relies on. The main roles of business labour are platform business operation, cross-border trade, website information management and customer management. The general management employees are required to have a deep understanding of computers, networks, and social ability, as well as project management skills. The workers employed in enterprise management is mainly engaged in the overall planning, construction, operation and management of the enterprise.

3.2 Three researched e-commerce companies

This dissertation research selected three e-commerce companies established in the Yangtze River Delta as research cases. The operation mode of most e-commerce companies is B2B (business to business), B2C (business to customer) and C2B (customer to business). Relative Data was collected from the number, type of work, educational background and working environment of the employees in the three companies to study the labour force development in the industry in the Yangtze River Delta region. The three companies selected are Alibaba, Pinduoduo and Suning. In the 2019 Ranking of Chinese e-commerce companies (Table1), Alibaba ranked first, Pinduoduo ranked third, and Suning Ranked fourth. The geographical location, business scope and operation scale of these three companies are suitable to be used as the case study of labour force development in China's e-commerce industry.

Rank	Company	mode	GMV	Growth
1	Alibaba	B2C	60,000	25%
2	Jindong	B2C	17,000	31.70%
3	Pinduoduo	C2B	4716	234%
4	Suning	B2C	2083.54	64.45%
5	Weipinhui	B2C	1310	21%

Table 1 The 2019 Ranking of Chinese e-commerce companies (GMV unit:100million yuan)

Source: TMO Group

3.2.1 Alibaba

The following data was obtained from Alibaba's official website (www.alibabagroup.com), government data, professional surveys and third-party professional data statistics platforms. According to the official introduction on Alibaba's website, the company has grown from a start-up e-commerce company founded by 18 people and in an apartment in Hangzhou to one of the world's most innovative technology leaders. It now operates more than thirty business divisions and employs more than 100,000 people worldwide (Alibaba, 2019. From an official news article released by Alibaba in 2019, the group has aimed to build the business infrastructure of the future, with the vision to let customers meet, work and live in Alibaba. It has evolved into a unique, dynamic and innovative digital economy as it has expanded from commerce into cloud computing, digital media, entertainment and many other areas. Alibaba has set an overall strategic goal for the next five years: to serve global consumers, amongst whom there are more than 1 billion Chinese consumers, and to create a consumption scale of more than 10 trillion yuan. Alibaba aims to have served 2 billion consumers worldwide and to have created 100 million jobs by 2036. According to the survey by the China E-commerce Research Centre in 2018, Alibaba had approximately 80,000 employees in 2018, of which 51% are technical staff, and 46% have a Master's degree or above, which demonstrates Alibaba's skilled labour force and its place as an elite technology company. The average age of Alibaba's employees in 2018 was 31 years old. Amongst 36 partners, there were 12 women and two "80s generation" or people born in the 1980's. The "80s generation" accounted for 14% of the core managers above senior director level. Amongst the management cadres and technical operatives. the "80s generation" have accounted for 80%, and "90s generation", who are people born in the 1990s, has exceeded 1400, accounting for 5% of the total number of managers.

Alibaba recruitment works on four principles. First, Alibaba attaches great importance to campus recruitment, and this is where more than 30% of its employees are recruited. Alibaba offers new graduates the same salary and working environment as regular employees. According to the information released by the official website over the years, campus recruitment covers many universities, including Chinese universities and excellent overseas universities. Degree requirements for campus recruitment are focused on both undergraduate and postgraduate students. Alibaba has a wide range of campus recruitment in China.

According to the company's official statement, the employees' working hours are "996", which means it starts work starts at 9 am and ends at 9 PM, six days a week. According to the provisions of article 36 of The Labour Law of China, "the state implements a working hour system in which

the working hours of labourers shall not exceed eight hours per day and the average working hours per week shall not exceed 44 hours". In practice, most Chinese enterprises work eight hours a day, five days a week, sometimes extending the working hours depending on the situation. However, although the "996" work system is not common in Chinese enterprises, it is the default normal in Internet enterprises and e-commerce companies. Company headquarters are located in the Hangzhou corporate park, with a planned area of 290,000 square metres including employees' main office area, canteen, gym, lecture hall, film and television projection hall and other daily office and leisure infrastructures. In addition to modern working places and office equipment, Employees are also provided with high-quality internal canteens, gym, rest area. Alibaba is committed to providing employees with a comfortable working environment. Employees, especially highly skilled ones, such as technology developers, are offered very generous salaries, well above the wages offered in other graduate level employment.

3.2.2 Pinduoduo

Pinduoduo (NASDAQ:PDD; https://m.pinduoduo.com) is an e-commerce company founded by the Shanghai Dream Information Technology Co., Ltd. in September 2015. Its headquarters are in Shanghai, China and operates mainly through APP client. Pinduoduo integrates the concepts of entertainment and sharing into the e-commerce operation. After successful combination with others is initiated by users, they can buy most commodities at a lower price than usual. At the same time, Pinduoduo understands consumers through the combination of what they search for and makes accurate recommendations through machine algorithms.

As reported by the China Agricultural University "the Development of Rural E-commerce Talents in China in 2020", Pinduoduo officially negotiated a strategic cooperation with this University. Over the next five years, the two sides would share resources and complement each other, jointly assisting 10,000 new rural labourers to become businessmen, and exploring an innovative model with farmers as the core interest of the industrial chain. This will effectively help targeted poverty alleviation and bring about rural revitalisation (China Agricultural University,2020). According to the same report while cultivating a large number of new e-commerce labour forces, in practice, Pinduoduo has systematically promoted a training program for rural e-commerce professionals through cooperation with government departments and teachers from colleges and universities, with Duoduo University as the carrier. More than 70% of the active merchants on the platform have received systematic training through Duoduo University.

According to the recruitment page of the official website, the main positions at Pinduoduo mainly include technology, product, network design, marketing, platform management, investment attraction and operation, customer management, and comprehensive general management. Among them, the most popular job postings are technology development and comprehensive general management. Pinduoduo's recruitment includes campus recruitment and social recruitment. In terms of campus recruitment, Pinduoduo requires recent college graduates, with a bachelor's degree or above and professional discipline skills. In terms of social recruitment, Pinduoduo not only requires a bachelor's degree or above, but also puts forward specific year requirements for relevant work experience.

3.2.3 Suning

Suning (http://www.suning.cn) is a new-generation B2C (business to customer) e-commerce platform under Suning Group Co., LTD., a leading O2O (online to online) smart retailer in China, headquarters in Nanjing, Jiangsu Province. Suning has covered traditional home appliances, 3C appliances, daily articles and other categories. The official Suning website mentions that the corporate values are that the interests of society, the enterprise and the employees are equally important and should be shared. Suning has approximately 250,000 employees, including IT, procurement, operations, service and other professional and management personnel, as well as e-commerce logistics and service personnel, which is advantageous for the development of the domestic e-commerce industry and employment. 68,000 employees were recruited in 2018 and approximately 50,000 new recruits have been added to the labour force since 2019 (people.cn,

2019). Based on the "Suning Fiscal annual report (2019)", the retail e-commerce technology construction continued to accelerate, investment in the construction of IT was sustained, and the business focused on user needs. The whole process of the user experience was optimised and supply chain operation efficiency was improved. the efficiency of the internal organisation was also promoted.

As of December 2019, Suning has invested 83.78 million yuan into e-commerce technology development workforce accounting for 7.12 percent of its total workforce, according to the report. For a company that owns both e-commerce and real economy, this investment in e-commerce technology human resources development occupies a very important part of the company's development. Besides, this investment also reflects Suning's determination and long-term strategy in developing talents labour in the e-commerce industry. According to the official release of Suning, "1200" project is a brand project of Suning high quality labour cultivation. In 2002, initiated by Mr. Zhang Jindong, chairman of the board of directors, the first phase was to recruit and introduce 1200 graduate of 2003 undergraduate programs nationwide, hence the name "1200". Suning "1200" project is the talent project with the largest number of people, the longest history and the longest influence in Suning. So far, the 1200 project has been carried out for 17 consecutive phases. The first 16 phases of the "1200 Project "have introduced and trained nearly 50,000 outstanding university graduates in Suning. Among them, 1200 cadres at the President level account for 26%, general manager and director level 36%, and manager level 33%. The "1200 project" is a special talent project with the largest scale, the most standardized management, and the largest introduction and training of talents in Suning. Suning for the recruitment project investment development goal is through a comprehensive, system, professional training, to make the university graduates in $2 \sim 3$ years, grow to group the core backbone of middle management team, become the mainstay of Suning's future development.

4. Discussion

The above data reflects the impact of China's current e-commerce labour force on the overall labour market employment trend. In China, the e-commerce industry belongs to the tertiary industry. According to the relevant data found, tertiary industry in China is developing rapidly and its proportion of the GDP is also becoming greater. At the same time, the number of workers in the tertiary industry is also increasing and is expected to continue to increase in the future. Relevant data from the National Bureau of Statistics has shown that the market share of E-commerce in China has been increasing year on year. Especially in some Chinese cities and regions, the annual output value created by e-commerce cannot be ignored. As described in previous studies in the literature review, changes in China's labour market are closely related to changes in the industrial structure. In urban areas with developed e-commerce in China, the development of e-commerce industry has significant impacts on the employment situation in the labour market, which can be seen from the above data analysis.

Firstly, the development of China's e-commerce industry provides more employment opportunities, especially for skilled graduates and white-collar workers, which is a positive development for the employment situation. The report by the China E-commerce Research Centre (2019) shows that most of China's e-commerce companies are short of labour. Due to the rapid development of China's e-commerce industry both within and across the border, most e-commerce companies are in the process of continuous expansion and need a large amount of labour to fill the vacancy. The demand of these enterprises provides thousands of job opportunities to the job market every year and plays a significant role in the employment of China's labour market. Secondly, the increasing demand for labour in the e-commerce industry makes the current problems in China's labour market more prominent.

Some existing studies on China's labour market have found that there are two major problems existing in China's labour market at present or in the future, which are the surplus of low-skilled labour and the shortage of high-skilled labour. According to the above data, it can be found that China's e-commerce enterprises have a huge demand for labour, but they have different

requirements for their personal abilities. The positions provided by e-commerce enterprises require certain educational and cultural backgrounds, professional skills, later development potential and learning ability. However, this kind of high-skilled labour force in China, given that it has such a large population, is not readily available.

The development of the e-commerce industry has brought more new job opportunities to the labour market, but also has highlighted the existing problems in China's job market, the surplus of low-skilled labour and the shortage of high-skilled labour. In addition to the impact on the labour market, the development of E-commerce in China has also brought many changes to the labour market within this industry. These changes can be discussed, through research and analysis of the three case companies, Alibaba, Pinduoduo, and Suning, as well as some third-party data.

The development of the e-commerce industry has brought many new types of jobs to the labour market. In the existing literature, e-commerce is defined as a new industry providing services for online trading. The mode is mainly B2B (business to business) or B2C (business to customer). In both cases, the purchase and transaction behaviours are all online or electronic. Therefore, the E-commerce industry requires more labour than traditional trade sales. According to the survey data, what Chinese e-commerce companies need most are new skilled employees to run new media, website content and online stores. In addition, these companies need a labour force that is familiar with traditional e-commerce transactions, customer relationship maintenance, after-sales service professionals, as well as website data development and maintenance of professional technology development. There are many e-commerce companies in China, and the competition is fierce. E-commerce firms are competing with each other to recruit graduate personnel. To gain the greatest market share, every aspect of the business needs to do well enough to attract consumers. As a result, e-commerce companies have created many new jobs, and at the same time, there are more different types of jobs in the labour market, which enriches the diversity of the labour market.

These findings indicate that the development of e-commerce makes the channels for companies to find highly skilled labour in the labour market more diversified. These e-commerce companies conduct lots of campus recruitment, in order to catch up the source of highly skilled people before they enter the labour market. However, in the recruitment process, e-commerce enterprises have their own focus. Obviously, e-commerce companies attach great importance and are eager to recruit highly educated skilled labour (bachelor's degree and above).

5. Conclusion

In this dissertation, we have presented the development status and characteristics of the labour force in China's e-commerce industry after China's reform and opening up in the 1980s, and have taken the Yangtze River Delta region, where China's e-commerce is relatively developed, as the object of study. This research is a desk-based project and uses the case study approach. It takes the labour force development of Alibaba, Pinduoduo and Suning, three representative e-commerce companies in the Yangtze River Delta, as the case study. The data in this study is mainly from official statistics and related reports by the Chinese government, official news reports, third-party data, and official company websites and official releases. It relies mainly on secondary data. The purpose of this dissertation was to fill the academic gap in the development of the labour force in China's e-commerce industry. Based on the summary and research of the existing relevant literature, three research questions were proposed. Some answers to these research questions have been obtained by analysing and discussing the findings.

Firstly, the results of this study indicate that the development of China's e-commerce industry has had an impact on employment. On the one hand, the development of e-commerce has increased the number of job opportunities; on the other hand, the contradiction between China's current surplus of low-skilled labour force and the shortage of high-skilled labour force has become more prominent. As for the second question, our research has highlighted some changes in China's labour market caused by the development of the e-commerce industry. According to the research findings of the three companies, campus recruitment plays an important role in the e-commerce labour market. E-commerce companies put the university campus recruitment into an essential position. The target

of campus recruitment is mainly graduate and postgraduates. A strong point is that in order to attract more college students, e-commerce enterprises carry out campus recruitment in different ways, such as expanding the university scope of recruitment, cooperating with colleges and universities to carry out projects, and specialised projects for recent graduates.

In addition to the emphasis on and the rise of campus recruitment, another change is the increasing variety of jobs in the labour market as a result of China's e-commerce industry. According to data from official platforms and third parties, with the rapid development of the e-commerce industry in China, there are many emerging positions in the labour market, such as new media, social media, website content, website design, platform management and professional data openings. This undoubtedly increases the employment diversity of the labour market and is of positive significance to the development of China's labour market. The last point of research, the development of e-commerce in China has also made the working conditions and management of the labour force characteristic of the industry. The results of the case study show that most of the e-commerce enterprises are located in the major cities of China, with modern working environments and many supporting facilities for employees within the company. However, in this industry, the working hours are long and overtime working is frequent and expected. The average age of workers in the e-commerce industry is relatively low, and there are some problems such as employment difficulties for older workers. In terms of management, e-commerce companies have their own corporate culture and employee management incentive system, but their concern for employees' interests in the implementation process is inconsistent with reality.

In general, the research results of this paper provide some answers to the research questions, but they are not comprehensive. This dissertation mainly found that the development of e-commerce industry makes employment opportunities and employment types increase, but also makes the existing problems in employment more serious. At the same time, one of the most important findings of the study is that Chinese e-commerce companies attach great importance to campus recruitment, the introduction of highly educated young employees and the development of high-quality employees in the future. Chinese e-commerce companies pay attention to the comfort and convenience of the working environment of the labour force but fail to pay attention to the work tasks and working hours of the labour force, which causes great work pressure and future health risks to the employees in the industry. Working long hours appears to violate the company's commitment to a healthy corporate culture. At the same time, e-commerce companies pay much attention to the construction of corporate culture, staff training and incentive system, but the actual implementation is not ideal for the workforce.

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