Internet Emerging Occupations and Structure of Labor Market

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Abstract. Digital technology has led to new internet-based occupations with the rapid progress of internet technology, reshaping the spatial, temporal and skill structure of the labor market. Starting from the labor market structure theory and with the Chinese government's employment promotion policy for the 14th Five-Year Plan period as backgrounds, this paper systematically explains the evolving process of the market structure of emerging occupations, analysis of the driving mechanism, problem and prospect. This paper reveals that advances in technology and globalization may boost occupational diversification, shape human capital premium effect, and confront low-educated workers' squeezed job. In addition, at present flexible employment patterns and platform economy broaden employment elasticity of labor market but result in lagged social security and talent supply-demand mismatch in terms of talent, which remain to be expedited face up. The proposal of this paper, such as reasonable optimization of the vocational education system and improving the flexible employment security mechanism can offer references for government policies formulation and companies' employment strategy.

Keywords: Internet, Labor Market, Employment Position, Structural Upgrade.

1 Introduction

Employment is the most significant aspect of people's livelihood and the fundamental support for economic development [1]. As a strategic choice in the new round of technological revolution and industrial transformation, the digital economy is emerging as a pivotal force in reconfiguring global resources, reshaping the global economic structure, and altering the global competitive landscape [2]. Driven by the rapid advancement of digital technology and the dual impetus of the "14th Five-Year". In particular, there is the employment promotion policies, the bottom design of China labor market has undergone profound changes [1]. Since the mid-1990s, portal website began to gradually infiltrate China, the penetration of internet with the economic and social field continued acceleration, it was transformed from the early stage of the portal website information interconnection, and then mobile internet was formed on the basis of platform economy, and the fully integrated Infiltration in the fields of artificial intelligence technology, big data. The Internet has been transformed from a tool to a major force to reform production relations. In this process, the rapid generation of a large number of

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new occupations, such as live-streaming sales hosts, industrial internet technicians, and online couriers, not only deconstructed the original form of employment in the labor market, but more importantly, a transition of the labor market from "physical competition" to "capability competition". Government also supports the development of industrial internet and to push the pace of using cloud computing, artificial intelligence, 5G technology, big data and internet of things in traditional industries and transformation of small and micro enterprises. Entrepreneurship to seek a job, and many new employment modalities and flexible working modes have become important sources of income [3]. The key to its reform is to comprehensively upgrade and iterate the structure of the labor market. "Cloud aggregation" of all kinds of urban and rural residents has been realized through virtual space, and it has become the "new normal" for the enterprises to sell things with the virtual space. Virtual space has gone beyond geographical, which has brought about the integration between cities and countryside commodity markets [4]. The mature technology of remote offices gradually realized the concept of a "global office", making second-tier cities and third-tier cities attract high-end companies in technology based on lower costs; the "gig economy" and flexible work mechanism have broken the mode of traditional 9-to-5 time working, freeing workers from the restrictions on time, enterprises through it could reduce production costs and profits. Conventional physical labor jobs are largely replaced by automation technology, but data analysis, internet programming and other computer skills have become a critical threshold for the competition in the labor market. Yet, behind the technological productivity improvement, the labor market faces huge problems. High-level workers taking a technology advantage control a huge part of the upper industrial chain, while the low-education ones with lower income can merely occupy the middle and lower industrial chain, generating growing income gaps across the spectrum. Meanwhile, the generation's choice of flexible employment mode still falls short of hedging against risks from lacking social security. Although enterprises can reduce variable labor costs through platform mode, the labor relations remain fuzzy, and enterprises face management risks. Now, the "14th Five-Year Plan" directly states that "increase employment opportunities through preferential tax policies for income from flexibly employed labor in the new development paradigm which balance development and security. Taking more comprehensive and higher quality employment as the top priority. e new development paradigm vigorously implements the development priority employment strategy, establishes mechanisms that promote higher quality and full employment, improves policies, provides more comprehensive training services and emphasizes the protection of employment rights to the utmost. E-employment capacity is fully enhanced, and the quality of employment is improved. In this context, it is necessary to research the mutual interaction effect of the new emerging internet occupations and labor market. Theoretically speaking, researchers normally focus on the technological change impacts of employment for each member by analyzing individual data from economic behavioral data. This paper firstly collects data from the Labor Market Information release, analyzing the recent changes in employment rate. From a conceptual angle, it studies about the rise of emerging internet occupations of effect to the labor market. Moreover, given the above general consideration, the central question would be whether there is interaction effect on new occupations from both the industry's and profession's standpoint.

These studies fail, however, to conduct an integrated survey of the force field within space, time and skill dimensions of the industry. The following paper seeks to escape from the "classical theoretical framework of labor market" and illustrate the road map to explain how digital revolution catalyzes the transformation of the market structure from "centralized" to "distributed" by transforming occupational types, work modes and skill demands.

2 Evolution of Labor Market Structure Caused by Emerging Internet-based Occupations

Internet's rapid growth has totally reshaped the pattern of the labor market. From the perspective of labor structure, the digital economy has accelerated the high-skilled sectors shift, which has driven the reshaping and upgrade of China's labor force greatly [2]. This transformation manifests in the following three aspects: location, timing and skill. Geographically, in conventional labor markets, those who sought jobs were usually bound to look for employment in a specific region, city, etc. Now, with industries like the internet, big data, cloud computing, intelligent technologies that are thriving fast in the recent years, such regions experience improved information systems, high-grade equipment utilization, and new working production mechanisms [5]. Such development has created various new types of job, especially with large-scale remote work and the online job recruiting platform being widespread applied, hence to cross the geographical limitations. Nowadays people from both big and small cities and remote regions have the chance to work at appropriate job positions through the internet. For example, occupations such as programming and design can be completed in a relatively strong digital economy. Talent resources are highly mobile, and enterprises can have excellent talent from around the world. In a high proportion of areas in terms of the level of digital economic development, such shifts have brought more demands on the human capital structure of areas. In terms of time, the working time for most traditional labor force markets was often set: the working 9:00–18:00, Saturday and Sunday. Nevertheless, due to internet era, flexible work model has changed these dated time constraints, freelancers can earn project that fits into their schedule, online delivery men can choose its working time, gig economy workers can find out short-term job tasks from platforms at any time, it provides workers with more freedom in this flex job model and let enterprises manage human resources more flexibly. Nevertheless, some workers suffer the problems of income insecurity, and the absence of social insurance, and they have emerged as important labor market problems in the era of the network. At the skill level, internet technology has deeply changed laborers' skill demands. As manual labor and low complexity repetitive work continues to be supplanted by machines and technology, learning new skills including digital literacy, data science, programming, and creative thinking becomes even more significant. For instance, with the flourishing of live-streaming e-commerce, the new job of "live-streaming salesman" is emerging, and needs profound practical skills in digital technology, including selling goods to fans online. Driven by the technological progress of artificial intelligent technologies, data analysts are an emerging need which popular and financial staff have to

adopt the new data analysis tool in order to improve its competitive strength, thus demand makes workers cannot rest, must keep updating their knowledge and adapt to the new skills. It makes lifelong education popular. To sum up, the space-time-skill three-dimensional space in the internet era has evolved the industry and labor force market. And such an evolution, which has expanded employment space, extended employment time and deepened the division of employment skills, has also offered more job and flexibility to employed people while raising more requirements on the comprehensive ability of workers.

3 Underlying Causes, Challenges and New Opportunities

According to the rapid development of internet technology and the speed up of the globalization process, significant changes have taken place in the labor market, which not only lies in the employment forms innovation and work models upgrading but reflects the inherent logic and institutional evolution of economic development and social progress in a profound way. This section tries to discuss the specific reasons for changes and clarify the most important difficulties and opportunities in the evolutionary process.

3.1 Causes

The upgrading of the labor market along with the progress of internet development is an irresistible result of advancement of science and technology. The extensive application of new technologies like the Internet, AI and big data has changed traditional modes of production and organization greatly. Popularization of telecommuting has broken through the territorial limitation, allowing firms to hire personnel outside certain areas to improve the flexibility of hiring. The application of automation technology reduces the number of low-skilled labor through the displacement of assembly line-based automated mass production, nurturing the high-skilled job positions. Economic globalization and industrial evolution are also two major impact factors of labor markets change. With the division labor evolution in global industrial chain becoming refined, many manufacturing occupations have been offshored to less developed countries and regions with cheaper labor costs. At the same time, the growth demand of high-end services, high-tech industry, which is changing the supply and demand structure of the labor market and promoting the need to rationally adapt to the new conditions of the labor market. The social factors are also quite important. The differentiation pursuit of employment flexibility, individual value realization, and individual career variety of the young people drives the advent of internet-+ emerging occupations. Meanwhile, educational system reform and social attitude change have made lifelong learning, upgrading professional skills, and so on indispensable skills for workers to meet the market.

3.2 Challenges

While the shift of labor market would greatly boost productivity, a set of daunting challenges also emerges accordingly.

Unequal distribution of employment. Technology-driven productivity allows high skilled labor to surf with the wave of progress, while employment prospects and income

of low skilled labor are becoming more and more constrained. In addition, the freelancer's success rate is particularly high and requires strong professional competence, well-developed skills in communication, as well as wide channels of contacts [6]. Thus, this "technology gap" contributes to social wealth inequality and may even stimulate disapproval of technological innovation in certain individuals. Government should cooperate with enterprises to launch "Digital Skills Inclusion Programs" to provide cost-free or subsidized professional training programs to low skilled labor and encourage the technology industries to relocate to central and western areas by tax subsidy to avoid industrial structure disorder and create more high-end employment.

The Social Security system needs improvement. Legal protection is still far from realizing in society, since there is no whole-body protection policy for new professions. Most of the new professions are facing the problem that they have no protection on ordinary life because of flexible employment and a gig economy. Most freelancers don't have medical and pension insurance, which brings greater risks to their lives. In addition to strengthening the basic digital industry employment support policies, it is necessary to provide incentive policies (e.g., subsidy) to Internet platform companies that hire low-skilled laborers from urban and rural residents. In this way, more high-quality job positions can be opened up for the low-skilled work forces and thus resolve the crowding effect of the employment market [7].

Talent demand-supply mismatch is a hot spot. From the one side, some enterprises strongly demand high-quality talents; from the other side, as far as "Internet+" applications are concerned, at present, university employment guidance services only focus on formulating employment courses, collecting recruitment information and giving standardized guidance, and are basically not able to realize comprehensive construction of networked employment guidance information, and thus fail to accurately satisfy social talent needs [8]. Thus, higher education should strengthen the cultivation of humanities and art creativity to enhance students' ability of innovation and solving problems [9]. To solve this, an "industry-university-vocational school" joint can be set up, to set courses in response to market needs, set interdisciplinary courses such as "Artificial Intelligence + Industry Application", to make enterprises provide internship and scholarship support. It would be an example of a national unified certificate of skill level, which will weaken the difficult migration of workers and accelerate job matching.

It is clear that the contradiction between the autonomy of workers and the management of capital is clear. Under the circumstances of the Internet, with the help of flexibility and virtualization of work mode, workers' efficiency has been increased, but it is also a major challenge for management. While some companies face cultural clashes and technical challenges with adopting new employment forms, online jobs may cause their corporate culture weakened and limited contact with co-workers. Enterprises can use the AI collaboration platform to measure the effectiveness of remote working, instead of watching people's working hours. They can adopt hybrid labor rules on "core working hours + flexible hours" to meet work efficiency and flexibility at once. Further, regular team-building meetups and metaverse conventions can enhance team bonding.

3.3 New Opportunities

Although there have been many difficulties, this change of the labor market has also brought new development space to individuals, enterprises and society. On the one hand, new opportunities for career and skill upgrading are emerging. With the evolution of market demand, some new industries, like artificial intelligence engineers and big data analysis, emerge. Workers benefit from these career upgrading opportunities through continued learning and updating skills. Second, the innovation of the Internet not only gives workers abundant career opportunities and labor information, but also facilitates the spatial and bodily labor mobility, and new employment forms such as freelance and remote jobs rise to the fore, providing more options [10]. Especially during and after the epidemic, the popularization of the "side hustle economy" and "slash youth" has become the biggest trend of multi-source income and enriched real life experience. Three, "smart companies" have set forth creative employment models, under which a company's human resources can be utilized more flexibly, the fixed cost can be reduced, and employees can be managed more effectively technologically. And it brings more choices to entrepreneurs. Fourth, the platform economy has brought about a new phase of work. Individuals can better highlight his or her abilities on internet platforms, for example, the increasing of online educators and content producers indicate unlimited possibility of the digital platform. Social development is a two-sided coin, in this case individual, enterprise or society may encounter both problems and development opportunities. Owing to the change of market demand, career change and career improvement have become choices available to everyone and different jobs, like AI engineer and data analyst have emerged. Self-study becomes possible, especially because of the free access to digital learning materials, and thus seizing these job upgrading opportunities. Such a tendency also promotes the rise of many internet platforms and expansion of the employment model of workplace outside of office, when more people choose freelance or work from home after the pandemic, accompanied by the spread of side hustle economy and slash youth trend in people's society, which drives us to boost the income and improve life experience. Second, a new company can have more freedom nowadays because part of their activities could be divided modularly and rented to external human resources, freelancers in some sense, for instance in less core tasks in order to lower costs and to have more flexible human resources.

4 Conclusion

Increased digitalization has spurred emergent labor patterns, transforming the spatial distribution, temporal malleability, and necessary skill composition of jobs. Based on labor market structure theoretical framework, combined with China's 14th Five-Year employment priority strategy policy context, this paper carries out multifaceted analysis of the operating logic, driving factors and influences caused by market structure changes of the newly emerged occupations. The results show that the combined effect of technology change and global Value Chain reconfiguration has driven occupation structure polarization, resulting in a simultaneous high-skilled premium and the de-

pressed low-skill ones. Though the development of the gig economy and flexible employment mode has promoted employment elasticity, structural problems such as the backward social security system, as well as the incompatibility of the demand in vocational training and the market, make it demand institutional innovation. As a result, this paper suggests planning and building a social network of vocational education, reforming social insurance systems for unconventional employment models to provide policy references for the decision on optimization and further improvement of employment management mechanism and corporate manpower institutional layout.

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