

Research on High Quality and Full Employment in Zhaoqing City in the Digital Economy Era

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Abstract: Under the trend of rapid development of the digital economy, how can Zhaoqing City realize the livelihood issue of high-quality full employment? By analyzing the impact of the digital economy on employment in Zhaoqing, this study finds that the development of the digital economy has brought new employment opportunities to Zhaoqing, but it also faces many challenges. This study puts forward policy recommendations such as strengthening and expanding the digital economy, enhancing the training of digital talents, establishing a sound digital employment service platform, and improving the social security system. Zhaoqing's exploration and practice in developing the digital economy and employment work is not only conducive to enhancing people's well-being but also has important lessons for other regions.

1. Introduction

The report of the twentieth CPC National Congress points out the need to build a digital China and accelerate the development of the digital economy, and clearly states that employment is the most basic livelihood. It is necessary to implement a strategy that prioritizes employment, achieves high-quality and full employment, and supports and regulates new forms of employment. With the development of digital technology, the digital economy is affecting social production and employment in China. Characterized by high efficiency, intelligence, and flexibility, the digital economy promotes industrial transformation upgrading, and economic development. However, the digital economy has subverted the traditional employment model, especially in traditional industries, where the work process is constantly automated and almost no manpower is needed. At the same time, the development of the digital economy has brought about new employment opportunities and methods.

The development of the digital economy is an important driving force in promoting the optimization and upgrading of Zhaoqing's industrial structure. As a member of the Guangdong-Hong Kong-Macao Greater Bay Area, Zhaoqing has a unique development orientation and resources, and studying its employment problem in the process of digital economy development can provide a new perspective for the theoretical study of the relationship between digital economy and employment. Zhaoqing attaches great importance to the development of the digital economy and stable employment, and discussing this issue can help Zhaoqing to attract and retain talent, and will

further promote the high-quality development of Zhaoqing's digital economy. In particular, Zhaoqing's experience can be a useful reference for regions with relatively low levels of economic development and industrial structures undergoing restructuring.

2. Impact of the digital economy on employment

Digitalization, also known as the Fourth Industrial Revolution, has been integrated into all aspects of our lives, leading to qualitative and quantitative changes in the employment of the labor force.

2.1. Total employment

The impact of the digital economy on the size of employment is twofold, with both creation and substitution effects, and varies across groups, industries, regions, and time periods. The impact of the digital economy on overall employment is uncertain, and the combined effect depends on how the substitution, compensation, and creation effects play out in a dynamic equilibrium.

Ford (2015) and Acemoglu & Restrepo (2020) argued that artificial intelligence may lead to machines replacing workers, resulting in laborers losing their jobs ^[1-2]. On the other hand, digitization may also create new jobs related to new technologies (Degryse, 2016) ^[3]. Mönnig et al. (2019) report that in the short term, digital technologies will replace a higher proportion of manufacturing employment than create employment in services ^[4]. Reljic et al. (2019) examined 42 manufacturing and service industries in six major European countries (Germany, France, Spain, Italy, the Netherlands, and the United Kingdom) over the period 2009-2014 to study the diffusion of digital technologies and their impact on employment and skills. The results show that, in terms of total employment, the job creation effect across industries is supported by high digital consumption, but reduced by high digital investment ^[5].

2.2. Employment structure

The deepening development of digital industrialization and digitization of industries increases and drives the market-based mobility of social labor between different industries, which has a direct impact on the employment structure. Eder (2021) found that in the next 10 years, the transfer of jobs caused by Economy 4.0 may be greater than the creation of jobs, and the structure of employment in various economic sectors will change, with the employment rate of the tertiary sector rising ^[6].

Li et al. (2021) suggested that both structural and frictional unemployment are inevitable in the short term ^[7]. Zhang et al. (2022) collected data from 30 provinces in China over six years and concluded that technological innovation has disrupted the structural imbalance in the digital economy's labor market, resulting in employment polarization ^[8]. Wang et al. (2022) used a dynamic spatial Durbin model to study the digital economy index of 30 provinces in China and found that the accelerated development of digital technology will optimize the employment structure and significantly promote the development of green economy ^[9].

2.3. Employment quality

Scholars generally agree that the digital economy has a positive effect on the improvement of employment quality. Du et al. (2022) believe that the accelerated development of digital technology has extended employee mobility and created new segments of high-quality jobs ^[10].

However, digital platform workers seem to face temporary and unstable employment and

working conditions. While digital platform workers have some autonomy in determining the number of working hours and may have access to the technology needed to carry out their work (e.g., cars), most temporary workers face precarious employment conditions (e.g., temporary contracts, lack of benefits including health insurance, and vulnerability to wage garnishments), which may negatively affect the health of workers (Munntaner, 2018) ^[11].

Existing research in the field of the digital economy has achieved relatively rich results, but combined with the current situation of the specific region and industry, tailored to the needs of the local situation of the analysis of research is still lacking.

3. The impact of digital economy development on employment in Zhaoqing

3.1. Positive influence

3.1.1. Creation of a large number of jobs

The digital economy may generate new positions such as software and information technology services, e-commerce operations, and big data analysis. Taking local characteristic industries combined with digital technology as an example, the transformation of traditional manufacturing in Zhaoqing to smart manufacturing may give rise to positions such as smart manufacturing engineers and industrial internet technicians.

The development of the digital economy will not only create jobs in this industry but will also drive employment in related upstream and downstream industries. For example, the development of digital agriculture will lead to agricultural e-commerce operations, logistics and distribution, agricultural big data analysis, and other related positions.

3.1.2. Improve the quality of employment

Some digital economy jobs have higher salaries, such as the average salary of digital economy jobs in listed companies is RMB 12,399.9 per month, and the average monthly salary in the field of digital industrialization is RMB 9,211.9 per month, and higher remuneration is given to highly educated and highly skilled talents, thus improving the income level of practitioners.

With the development of the telecommuting model, some jobs have become more flexible in terms of workplace and time, allowing employees to better balance work and life, and to some extent improve the satisfaction and quality of employment.

3.1.3. Optimize the industrial structure

With the development of the digital economy, Zhaoqing's employment structure may shift towards areas such as services and high-end manufacturing. For example, local traditional agriculture and manufacturing industries may reduce their reliance on labor through digital transformation, and the released labor may flow into digital economy-related service industries, such as e-commerce customer service, digital marketing, and software research and development, promoting the optimization and upgrading of the industrial structure.

3.2. Negative impacts and challenges

3.2.1. Regional talent drain

Compared with developed regions, Zhaoqing may face pressure in attracting digital economy talent. If the digital economy industry in neighboring large cities or developed regions develops

faster and offers better salary packages and career development opportunities, this may lead to a loss of digital economy talent in Zhaoqing, affecting the development of the local digital economy and the quality of jobs.

In the past three years, the employment of Zhaoqing University graduates has been highly concentrated in the Pearl River Delta region, especially in Guangzhou, Zhaoqing, Shenzhen, and other cities, and the proportion of those who stayed in Zhaoqing is relatively low, at 17.59%, 15.72% and 17.17% respectively (See figure 1).

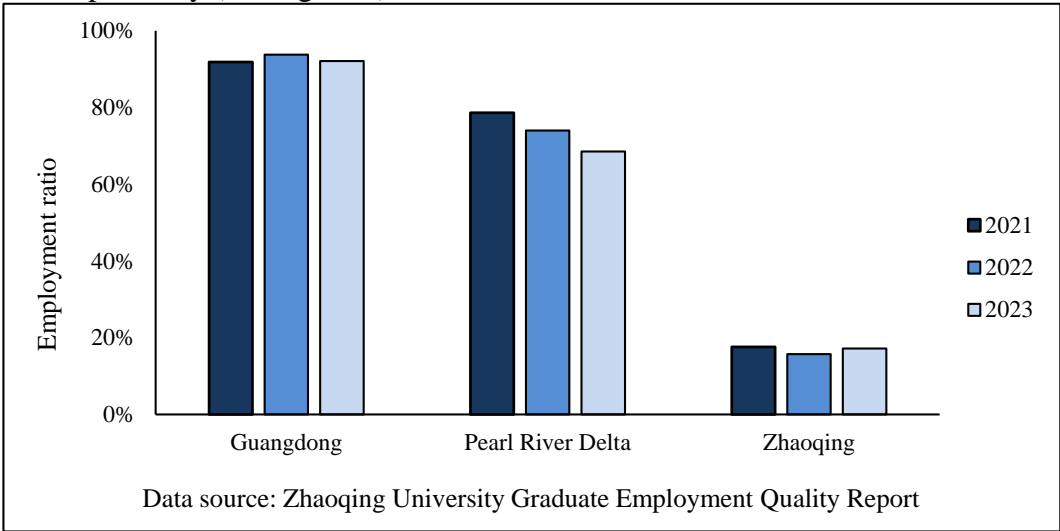


Figure 1: Zhaoqing University students' regional employment distribution

3.2.2. Insufficient supply of talent

Zhaoqing may face a shortage of composite talents who understand both digital technology and local traditional industries. Local educational institutions and enterprises may need to increase their efforts to train such talents to meet the demand for talent for the development of the digital economy. High-quality employment requires workers to have high digital skills and innovation capabilities, but Zhaoqing's education system and skills training mechanisms have not yet fully caught up with the development of the digital economy, and workers lack the necessary skills to adapt to the digital economy, resulting in a situation where 'difficult to employ' and 'difficult to recruit' coexist.

3.2.3. Impact on low-skilled jobs

Increased automation and intelligence have reduced demand for some low-skilled jobs, especially labor-intensive jobs in manufacturing and services, and workers are at risk of skills mismatches and reduced employment opportunities. Workers will face unemployment if they do not actively participate in digital skills training to improve their digital employability.

3.2.4. Inadequate employment services

Vocational skills training for employment in the digital economy may be inadequate, and training content may not match the real needs of firms and the market. For example, training programs may lack an introduction to the latest digital technologies and application scenarios, resulting in trained personnel being unable to adapt immediately to the workplace. Zhaoqing's public employment service system may have shortcomings in providing employment services for

the digital economy, such as untimely and inaccurate release of employment information and insufficient policy support for emerging forms of employment, affecting effective matchmaking between job seekers and enterprises.

3.2.5. Inadequate legal protection

Under the new employment pattern of the digital economy, groups such as online car drivers and takeaway delivery workers in Zhaoqing may also face unclear labor relations, leading to difficulties in protecting their labor rights and interests, such as the inability to enjoy social insurance and difficulties in handling labor disputes. Due to the flexibility and diversity of employment in the digital economy, it may be difficult for labor regulators to effectively supervise the enterprises and workers concerned, making them prone to labor disputes and irregularities, and affecting the stability and healthy development of the labor market.

4. Measures to achieve quality and full employment

4.1. Strengthen and optimize the digital economy

In order to strengthen and optimize the digital economy, a series of measures can be taken, including strengthening the research and development of digital core technologies, promoting industrial upgrading, increasing the digital penetration rate and creating more employment opportunities. Examples include accelerating the application of cloud computing, artificial intelligence, big data, and other technologies in manufacturing, developing smart agriculture and smart manufacturing, and supporting the digital transformation of small and medium-sized enterprises.

Zhaoqing can increase its investment in and application of relevant digital technologies according to its own industrial characteristics, and strengthen cooperation with neighboring regions to share resources and experience in the development of the digital economy while using its own advantages to attract digital economy-related enterprises and projects, and improve the development level of the local digital economy and its ability to absorb jobs.

4.2. Strengthening the construction of a digital talent training system

Focusing on both higher education and vocational education, it has adjusted relevant curriculum standards, teaching content, and the structure of disciplines and professions, strengthened digital education and teaching, innovated talent cultivation modes, increased investment in funds and teachers, developed digital skill-based teaching materials, and strengthened the cultivation of highly qualified personnel in cutting-edge fields. It has strengthened skills training for workers, built a network platform to provide rich learning and teaching resources, promoted educational equity, and promoted cross-regional sharing and co-construction of education and training resources.

Zhaoqing can provide online learning and training opportunities for workers, especially for rural areas and groups with employment difficulties, and provide free digital skills training to help them become more competitive in the workplace.

4.3. Establishment of an improved digital employment service platform

It is necessary to strengthen the construction of digital employment service platforms, integrate employment and entrepreneurship information resources, build comprehensive employment information exchange platforms, and achieve rapid docking between workers and employers.

Zhaoqing can set up a local digital employment service platform to collect and disseminate

enterprise recruitment information and labor-seeking information, provide intelligent matching and push services, and improve the matching efficiency of employment supply and demand. It is to promote the intelligentization of public services for employment, improve the mode of service delivery and provide a ‘one-stop’ employment service experience.

4.4. Improve the social security system

Attention should be paid to the substitution effect of the digital economy on employment, and an unemployment insurance fund and relief system should be established to provide basic livelihood protection and employment assistance to the unemployed. It is essential to establish a reasonable system to protect the labor rights and interests of flexibly employed persons, to make up for the shortcomings in the law, to clarify the criteria for the identification of labor relations, to establish a mechanism to protect against accidents at work, and to strengthen the supervision of platform enterprises.

Zhaoqing can formulate relevant policies and regulations to regulate the order of the flexible labor market and safeguard the legitimate rights and interests of flexible workers while strengthening the supervision of local platform enterprises and urging them to fulfill their social responsibilities and safeguard the rights and interests of workers.

5. Conclusion

Focusing on the specific region of Zhaoqing, this study explores in depth the mechanism and path of achieving high-quality full employment in the era of the digital economy. It contributes to enriching and improving research on the impact of the digital economy on employment in different regions and fills the shortcomings of existing studies in analyzing regional differences.

This study thoroughly analyses the positive impacts, negative impacts, and challenges of the digital economy on employment in Zhaoqing, and on this basis proposes targeted countermeasures to help Zhaoqing cope with the impact of the digital economy on the labor market. Compared with developed cities, Zhaoqing, as a small and medium-sized city, is more affected by the negative impact of the digital economy, and should actively respond to the challenges, seize the opportunities, achieve high-quality and full employment, and promote sustainable and healthy development of the economy and society through various initiatives such as policy guidance, talent cultivation, platform construction, and social security.

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