

# High-Quality and Full Employment of Women in the Digital Economy Era: Challenges and Opportunities

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**Abstract:** With the rapid development of the digital economy, women are playing an increasingly significant role in the labor market, particularly in driving employment model transformation and fostering entrepreneurial innovation. While the digital economy offers women more flexible employment opportunities and platforms for self-employment, it also presents multiple challenges, including the gender digital divide, skill shortages, heavy family responsibilities, and the lack of rights protection in emerging forms of employment. To promote fuller and higher-quality employment for women, this paper begins by examining the concept of high-quality and full employment, and then explores the current opportunities and challenges women face through data analysis and policy evaluation. Based on the findings, it proposes comprehensive strategies aimed at eliminating gender bias, improving the employment environment, strengthening digital skills training for women, enhancing social security systems for flexible employment, and fostering a more equitable and inclusive digital economy.

**Keywords:** Digital Economy; High-Quality and Full Employment; Digital Divide; Women's Employment

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## 1. Introduction

### 1.1 Research Background and Importance

In recent years, the digital economy has become a key driver of global economic growth. The Chinese government places great importance on the development of the digital economy, actively promoting the deep integration of digital technologies with the real economy to facilitate the transformation and upgrading of traditional industries. As the digital economy continues to thrive, women's employment opportunities have significantly increased, and the concept of gender equality has been increasingly embedded in policy-making, organizational development, and social initiatives. These efforts aim to safeguard women's legitimate rights and interests, promote their equal participation in the digital economy, and ensure they equally benefit from its development<sup>[7]</sup>. This is of great significance for the new journey toward building a modern socialist country, as it highlights the roles and contributions of women as builders, advocates, and strivers in the digital economy, while also fostering the establishment of relevant institutions and mechanisms.

### 1.2 Definition and Measurement of High Quality and Full Employment

In the context of the new era, high-quality and full employment emphasizes both the breadth of employment opportunities and the depth of employment quality, reflecting a coordinated unity of quantity and quality in employment efforts.

#### 1.2.1 Macro Level: Overall Requirements of Fullness and High Quality

Fullness refers to ample employment opportunities and unobstructed channels for workers to find jobs. Specifically, it is

manifested by: maintaining the unemployment rate within a reasonable range; sustaining a steady rise in the labor-force participation rate; and achieving a basic balance between labor supply and demand, with both government and market working together to expand employment capacity.

High quality emphasizes workers' sense of gain and room for development. It requires creating a situation characterized by "a fair employment environment, an optimized employment structure, efficient person-post matching, and harmonious labor relations," namely: a rational employment structure in which the tertiary and other emerging sectors absorb an increasing share of high-end positions; stable labor relations supported by consultative mechanisms jointly managed by employers and employees; and full implementation of fairness, with significant reductions in discrimination based on gender, age, region, and other factors.

### **1.2.2 Micro Level: Workers' Subjective Satisfaction and Objective Security**

High-quality employment underscores the unity of workers' subjective satisfaction and objective security. Subjective satisfaction: The work itself must stimulate personal value and a sense of achievement; career development prospects must be clear, with accessible promotion channels.

Objective security includes: first a reasonable income level that matches both job requirements and market value; Second, Comprehensive coverage of social insurance and occupational safety; Third, Institutional safeguards for rights under new work arrangements such as flexible employment and remote work.

### **1.3 Measurement Dimensions: Quantity, Structure, and Quality**

High-quality and full employment can be distilled into three interrelated dimensions—employment quantity, employment structure, and employment quality—representing their organic unity<sup>[8]</sup>:

Employment Quantity: Provide ample job opportunities, maintain a low unemployment rate and a high labor-force participation rate, ensuring "jobs for all, work that matters, and good performance."

Employment Structure: Emphasize optimization of the employment structure by promoting industrial upgrading and increasing the share of high-end jobs. This not only meets workers' diverse employment needs but also drives high-quality economic development.

Employment Quality: Enhance job stability, income levels, social protection, and occupational safety. This includes improving the social-security system to safeguard rights in flexible and emerging forms of employment, and cultivating a fair employment environment by eliminating discrimination based on gender, age, and other factors.

## **2. Impact of Digital Economy**

In recent years, the digital economy has become a crucial engine of global economic growth. The Chinese government places great emphasis on its development, actively promoting the deep integration of digital technologies with the real economy to facilitate the transformation and upgrading of traditional industries. As the digital economy flourishes, women's employment opportunities have increased substantially, and the principle of gender equality has been progressively embedded in policymaking, organizational development, and social initiatives. These efforts safeguard women's lawful rights and interests, encourage their equal participation in the digital economy, and ensure they share equally in its benefits. This is of great significance for the new journey of building a modern socialist country, as it highlights women's roles, contributions, and influence as builders, advocates, and pioneers in the digital economy, while also fostering the establishment of relevant institutional mechanisms.

The high-quality development of the digital economy not only offers women more equitable, abundant, and high-quality opportunities for employment and entrepreneurship, but also provides new solutions for balancing family and work, and opens novel pathways to reduce imbalances and inadequacies in women's development across urban-rural, regional, and demographic lines. The following framework analyzes the mechanisms through which the digital economy influences women's employment and entrepreneurship.

### **2.1 Reduced women's disadvantages in the labor market**

The emergence of the digital economy has broken traditional constraints on women's employment, such as those related to time and space<sup>[4]</sup>. On one hand, it offers a wide range of jobs that can be completed from home. Women are now able to

balance caregiving responsibilities while engaging in online work, which not only increases their participation in the labor market and expands overall employment, but also provides opportunities for improving income levels. On the other hand, the digital economy has driven the rise of new employment forms organized by platforms, which allow women to enter or exit the workforce at will and arrange their schedules independently.

## **2.2 Enhanced women's value in the labor market**

In the digital economy era, women's advantages in certain soft skills can be more effectively utilized. For example, women often excel in detailed-oriented skills such as attentiveness and sensitivity, interpersonal abilities like empathy and understanding, and traits like responsibility and loyalty. These soft skills, combined with women's heightened sensitivity to consumer needs and market trends, enable them to access more opportunities in digital economy-related fields. Additionally, the digital economy has improved conditions for professions requiring "emotional labor," such as online teaching and cloud-based customer service<sup>[5]</sup>. With the support of platform-based organization, these professions have expanded in scale, improved in professional standards, and seen increased income levels.

## **2.3 New employment spaces and fields for practitioners**

In the digital economy era, platforms play a key role in motivating employment and entrepreneurship. On one hand, platforms enable efficient labor-market matching, allowing labor supply and demand to connect quickly, improving efficiency, and reducing transaction costs<sup>[3]</sup>. On the other hand, platforms provide services that help workers increase productivity and service quality—especially supporting entrepreneurs in enhancing their capabilities. Moreover, practitioners can repeatedly use core modules of the platform to benefit from economies of scale and mitigate risks associated with rapidly changing environments and systems<sup>[2]</sup>.

## **3.Challenges**

Although the digital economy has created various employment opportunities such as remote work and freelance jobs for women, the issues of job stability and social security remain fundamentally unresolved. Especially in regions dominated by traditional industries, women still face numerous challenges in adapting to and transitioning into the digital economy, including the need for skills enhancement, job matching, and balancing family responsibilities. Moreover, the emergence of new business formats and models in the digital economy is relatively recent, and their unregulated development has brought about new challenges.

### **3.1 Pronounced Gender Digital Divide**

Gender bias remains a major barrier to women's full participation in the digital economy. The gender digital divide is a specific manifestation of the broader digital divide between men and women, referring to gender-based disparities in effective access to information and communication technologies, levels of digital skills, and use of digital resources within and across countries, regions, departments, and socio-economic groups<sup>[6]</sup>.

The widening gender digital divide prevents women from fully accessing and benefiting from digital resources and utilizing this emerging path for personal development. Gender stereotypes and the traditional division of social roles subtly influence how men and women accept, use, and participate in digital technologies, resulting in gender segregation in digital occupations. In educational settings, women have low participation and graduation rates in STEM (Science, Technology, Engineering, and Mathematics) courses, with high dropout and transfer rates. Women tend to show less interest in STEM and are more likely to pursue non-STEM disciplines. A low female proportion in science and engineering limits their opportunities in digital technology-related careers.

Moreover, since digital technology practitioners are the ones who build the algorithms and rules of the digital economy, their gender composition may affect how women employees and entrepreneurs are treated within the digital economy. Employers increasingly use digital tools to screen candidates. These tools, based on big data and mainstream social trends, often make generalized judgments that may exclude women from high-tech, high-human-capital roles and exacerbate employment discrimination<sup>[3]</sup>.

### **3.2 Shortage of Digital Skills and Severe Job Displacement**

A primary challenge for women in the digital economy is the lack of adequate skills training. While the digital economy has

created numerous new job opportunities, these often require advanced IT and digital competencies. However, the overall digital skill level of women in Liaoning Province remains insufficient.

The digital economy may lead to job and income polarization. Repetitive, mechanical tasks are more likely to be replaced by AI and digital systems, leading to significant reductions in mid-level white-collar and blue-collar jobs. Those previously engaged in medium-skilled jobs are forced to move either downward to lower-skilled roles (less likely to be automated) or upward to high-skilled positions. This results in the hollowing out of middle-income jobs and a polarized labor market<sup>[4]</sup>. Due to relatively lower educational attainment and skills accumulation, women face greater difficulty moving into high-skilled jobs, making them more vulnerable to the effects of job polarization<sup>[2]</sup>.

The transformation in digital technologies and business models in the digital economy has raised the demand for human capital. However, the current education and training systems have not yet adapted to the skill requirements of the digital economy. Higher education and vocational training remain focused on traditional industries, failing to meet the skill needs of emerging digital employment. The coverage of vocational skills training programs remains inadequate. This mismatch may result in a lack of necessary skills among women. According to BOSS Zhipin Research Institute's 2021 Gender Pay Gap Report in the Chinese Workplace, women held only 17.9% of digital technology-related positions in 2020, indicating a serious gender imbalance<sup>[7]</sup>.

### **3.3 Conflict Between Work and Family Responsibilities**

Traditional views on gender roles place women under pressure to balance work and family. While the digital economy offers more flexible work options, it does not eliminate the expectation for women to take on family responsibilities. This phenomenon is especially prominent in Liaoning Province. The development of the digital economy has blurred the line between online work and offline life, making it harder for women to allocate time effectively between work and family. Currently, female labor participation in China is significantly lower than that of men. Increased work responsibilities in the digital economy may further challenge women's employment.

Household responsibilities require women to manage their time efficiently, raising the bar for personal time management. Despite engaging in employment and entrepreneurship in the digital economy, women continue to bear a significant portion of unpaid domestic labor. They must carefully navigate the conflict between family harmony and career development.

### **3.4 Inadequate Protection of Rights for Workers in New Employment Models**

Although the digital economy has generated a large number of flexible job opportunities, the quality of these jobs varies, and the social security system remains underdeveloped. Many women working in the digital economy—such as freelancers and temporary workers—lack basic labor protections and social security, compromising their job stability and long-term development prospects.

The digital economy has propelled the growth of flexible employment, especially through platform-based organizations, giving rise to new employment models. However, the protection of labor rights for flexible platform workers faces legal shortcomings. The definition of labor rights remains vague and unclear, making labor disputes difficult to resolve. Social insurance participation is also problematic for platform-based flexible workers. In many regions, only local household registrants (hukou holders) are eligible for flexible employment insurance coverage. High payment bases, limited insurance options, and complicated procedures contribute to low insurance participation rates among flexible workers. The absence of labor protections such as maternity leave and breastfeeding leave affects women more severely than men.

## **4. Proactive Strategies**

To achieve high-quality and sufficient employment among the female population, it is essential to both expand the overall employment scale and optimize the employment structure. Realizing this goal requires coordinated efforts and collaboration among governments, enterprises, markets, and various other stakeholders. At the same time, it is crucial to fully recognize the irreplaceable role of women in social development, as their high-quality and sufficient employment is vital for the sustainable development of both the economy and society. This paper explores the topic from two key dimensions: first, by proposing cross-sector integrated strategies to strengthen systematic collaboration; and second, by designing more targeted and effective customized support measures for key female groups.

## 4.1 Cross-Sector Integrated Strategies

### 4.1.1 Establish a Social Security Mechanism for Flexible Employment

With the continuous emergence of new business models and forms of employment in the digital economy—such as online education, home-based domestic services, e-commerce livestreaming, online customer service, and food delivery—these sectors have become important avenues for expanding employment and absorbing female labor. To protect the legitimate rights and interests of women in flexible employment, improvements should be made in the following areas:

**Improve the social security system for flexible workers:** Targeted labor protection policies should be established for flexible workers, especially women engaged in new forms of employment within the platform economy. Platform enterprises should be guided to negotiate with workers regarding labor remuneration, rest periods, and occupational safety measures. Timely and full payment of wages must be legally ensured to eliminate wage arrears and other illegal practices.

**Strengthen the rights protection mechanism for platform workers:** Although platform economies offer employment opportunities for a large number of women, labor rights protections remain underdeveloped. It is recommended that platform enterprises optimize systems for order allocation and commission rates, gather and respond to worker feedback, and adjust algorithmic rules to ensure job stability for women in flexible employment.

Examples include Guangdong Province's "Mom Jobs" policy, which offers basic social security support—such as health and pension insurance—for women in flexible employment. Similarly, in Hangzhou, non-local flexible workers who hold a residence permit in Yuhang District for over one year and are not enrolled in another city's health insurance scheme may enroll in the local employee medical insurance program.

### 4.1.2 Eliminate Gender Bias and Optimize the Employment Environment

To promote women's equal participation in the digital economy, efforts must be made both in cultural awareness and employment policies to foster a fairer employment environment:

**Strengthen gender equality awareness and fair hiring practices:** Widely promote gender equality principles and encourage companies to implement gender-equal recruitment and promotion policies, ensuring a steady increase in the representation of women in managerial and technical positions. Governments should work together with enterprises and platforms to advance the protection of women's employment rights in the digital economy. Fair employment regulations should be strictly enforced, and gender-based requirements in job recruitment should be prohibited. Relevant industries should develop scientific labor quotas and workload standards to ensure equal treatment of women in the workplace.

**Expand access to digital inclusive finance:** Increase financial support for women entrepreneurs, particularly in remote and impoverished areas, by integrating digital inclusive finance initiatives into government interest-subsidized entrepreneurship programs.

**Create a fair digital technology environment:** A gender perspective should be incorporated into access, usage, production, management, and data collection within digital information and education systems to ensure women equally benefit from the digital economy. Gender sensitivity should be introduced at all stages—planning, implementation, and evaluation—of digital platforms and algorithmic projects. Efforts should be made to design technologies and content that cater to women's needs and to eliminate gender bias during the digital transformation of traditional enterprises. Information and communication policies should include gender-sensitive elements or modules to better address gender bias in the digital age and to foster an inclusive, friendly, and diverse online environment for women<sup>[1]</sup>.

**Leverage incentive policies to enhance social recognition:** Establish awards for women in science and technology, and host innovation and entrepreneurship competitions for women to increase public recognition of their contributions to the digital economy. Provide more funding and support for women who achieve success in technological innovation, thereby encouraging their continued development in the digital sphere.

## 4.2 Young Women: Digital Literacy Training and Career Guidance

### 4.2.1 Establish an Interdisciplinary Talent Development Mechanism

The digital economy—especially the development of technologies such as Artificial Intelligence (AI)—has created a strong demand for highly skilled professionals, particularly in STEM and Information and Communication Technology (ICT) fields.

It is recommended to establish an interdisciplinary female talent development mechanism under the “AI+” model, enhancing education and training in related areas. The existing education system should be adjusted to prioritize the cultivation of women’s professional skills in fields such as AI and big data, in order to meet the challenges posed by future technological advancements. Governments can also collaborate with universities and enterprises to offer specialized courses tailored for women to develop career-relevant competencies.

#### **4.2.2 Promote Digital Skills Development Programs**

Encourage school-enterprise cooperation to jointly implement digital upskilling programs specifically for women. These may include online courses, professional seminars, and other formats to help young women master the latest digital technologies. Pilot programs for digital skills certification and evaluation systems can be established, along with talent training and assessment alliances, ensuring women receive systematic and scientific career development guidance.

#### **4.2.3 Advance Training for Emerging Occupations**

With the rapid integration of digital technologies across industries, the demand for digital professionals is rising. Training should be vigorously promoted for emerging roles such as digital management specialists, online education service providers, and multimedia operations professionals. These training programs should be fully included in the vocational skill subsidy system, with increased subsidy standards to encourage more women to enter these high-paying and promising fields<sup>[1]</sup>.

### **4.3 Women of Childbearing Age: Family-Friendly Workplaces and Parental Leave Policies**

Flexible employment and entrepreneurship opportunities in the digital economy enable women to manage their time more effectively, which supports childcare, reduces caregiving costs, and aligns with national fertility policies and long-term demographic balance.

#### **4.3.1 Enhance Tax Benefits for Childcare Costs**

It is recommended to include the costs of childcare and early education for children under the age of three as a special itemized deduction in individual income tax. A family childcare subsidy system should be developed for women who juggle caregiving and income generation, such as those engaged in flexible employment or entrepreneurship while caring for infants. Policies could also explore income tax reductions or exemptions for up to three years postpartum for such women.

#### **4.3.2 Expand Maternity Insurance Coverage**

Women in flexible employment should be included in the maternity insurance system, with explicit coverage for prenatal check-ups, hospital deliveries, and family planning procedures under the healthcare insurance umbrella. Platform enterprise data systems can be used to improve the convenience of social insurance enrollment for self-employed and flexibly employed women. For those unable to enroll independently, if their spouses are insured, maternity subsidies could be granted proportionally. Women whose maternity insurance contributions are interrupted but whose spouses are covered should also be eligible for partial maternity subsidies. It is further recommended to ensure paid paternity leave is implemented and extended to include flexibly employed women.

#### **4.3.3 Build an Inclusive Public Childcare Service System**

Public employment services and health departments should coordinate to promote the development of inclusive childcare services, helping women better balance work and family responsibilities. For instance, by promoting the use of “Women’s Homes” facilities that offer friendly working environments for mothers, workplace pressure can be alleviated.

### **4.4 Women with Disabilities: Accessible Technology and Supportive Employment**

#### **4.4.1 Strengthen Employment Capacity for Women with Disabilities**

Multiple efforts are needed to enhance the employability of women with disabilities:

First, improve their access to education. The legal framework for education for people with disabilities should be strengthened, including adequate funding mechanisms for special education. Public awareness must be raised through legislation to eliminate both disability-based and gender-based discrimination, thereby creating an inclusive educational environment that offers equal opportunities for women and girls with disabilities.

Second, enhance employment training. Successful cases and models of employment among different categories of people with disabilities should be summarized and promoted. Programs such as the “1,000 Enterprises Supporting 10,000 People

with Disabilities Employment Plan” and initiatives like “Creative Bases for the Disabled” and “Beautiful Workshops for Disabled Women” should be expanded as branded projects<sup>[9]</sup>.

#### 4.4.2 Improve Employment and Entrepreneurship Environment

Efforts should be made on several fronts to improve the overall ecosystem:

Strengthen publicity around employment and entrepreneurship policies so that every woman with a disability is informed and able to benefit from these policies.

Accelerate transformation of government functions and improve service delivery to create a better employment environment. Provide diverse, multi-level employment support platforms for women with disabilities. Facilitate flexible employment and entrepreneurship for this group by creating platforms that connect them directly with employers. Coordinate with departments such as industry and commerce, taxation, finance, and banking to develop inclusive services, including innovative loan products, and offer utilities discounts for women with disabilities running businesses to lower their entrepreneurial costs. Establish “Gig Markets for Persons with Disabilities,” offering integrated services such as job registration, employer matching, job recommendations, and policy consultation, thereby closing information gaps between job seekers and employers. Launch charity funding platforms for supporting people with disabilities, to further mobilize societal support and foster an inclusive environment that encourages the employment and entrepreneurship of women with disabilities<sup>[9]</sup>.

### 5. Conclusion

In the era of rapid development of the digital economy, women’s employment faces unprecedented opportunities as well as structural challenges. This article systematically reviews the connotation of high-quality employment, highlighting that it is not merely an increase in the number of jobs, but also the optimization of job structure, the protection of labor rights, and the sustainability of career development. While the digital economy brings about new forms of flexible employment and emerging occupations, women still face issues such as insufficient digital skills, gender bias, and limited career development opportunities. To address these challenges, the article proposes two strategies: first, by constructing a social security system for flexible employment, optimizing the employment environment, and promoting digital inclusive finance and gender-friendly technology development to enhance overall women’s employment quality; second, by focusing on key groups such as young women, women of childbearing age, and disabled women, and proposing tailored support measures including digital literacy training, family-friendly policies, and the creation of barrier-free employment environments. Ultimately, promoting high-quality employment for women should become an essential part of national development strategies, requiring coordinated efforts from the government, the market, and society to jointly create an inclusive, fair, and sustainable employment ecosystem, thus effectively unleashing women’s innovation and development potential in the digital economy era and providing strong support for achieving social progress and common prosperity.

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