



# Research and Analysis of Female Labor Supply

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**Abstract.** With the changes in China's population structure and the decrease in the female labor force participation rate, the issue of female labor supply has become a key topic in alleviating labor shortage and promoting gender equality. This paper systematically summarizes relevant literature, and studies it from two aspects: influencing factors and multi-dimensional value. On influencing factors, the accumulation of human capital, the decision-making of fertility behavior and the sharing of family responsibility at the individual and family level; The interaction of fertility policies, the lack of supportive policies and gender discrimination in the labor market at the policy and social level; As well as the transformation of employment form brought by the digital economy, have jointly shaped the complex pattern of female labor supply. In terms of multi-dimensional value, female labor supply not only achieves labor market expansion by filling the labor gap and promoting industrial transformation but also promotes gender equality by enhancing economic independence and breaking occupational gender segregation and realizes the cyclic gain of human capital through the intergenerational transmission of the return on education investment. Research indicates that longterm effect assessment, policy coordination mechanism and localization theory innovation should be strengthened in the future, to provide theoretical support for the optimization of female employment environment.

**Keywords:** Female Labor Supply, Human Capital, Gender Equality, Fertility Policy, Digital Economy.

## 1 Introduction

In today's society, more and more women are in a dilemma: on the one hand, child-rearing cost are rising, social support system of relative lag, making family a burden; On the other hand, a large amount of evidence shows that compared with fathers and childless women, mothers face challenges such as poor career continuity and greater difficulty in promotion in their career development, which leads to their suffering from salary and career punishment, and even invisible discrimination in the workplace due to the traditional concept like "family responsibility first" and "Male outside, female inside"[1]. In recent years, the participation rate of Chinese women in the labor force has declined significantly, and the effective labor supply has continued to decrease. Given the expected positive impact of investing in the employment of women, especially mothers, at the individual and social level, particularly in promoting gender

equality and safeguarding the financial sustainability of welfare systems, initiatives should be at the top of mission for policymakers [1].

Supporting women's employment and stabilizing their labor force participation can increase effective labor supply, and improve human resource development and utilization, productivity and economic output [2]. In a society with a declining fertility rate and increasing aging population, female labor supply helps to make up for the labor gap, relieve population pressure and maintain economic vitality. As an important body of China's labor market, female groups account for more than 40% and the scale of informal employment is expanding due to the traditional gender division of labor, so it needs to highly focused on achieving high-quality full employment [2]. Therefore, female labor supply is crucial to modern economic and social development, and it is imperative to improve the quality of female employment.

Based on this, this paper integrated multidisciplinary research results, based on the theory of human capital theory and gender roles, from the two dimensions of influencing factors and value, systematically discusses the problem of female labor supply. The purpose of this paper is to help scholars understand the research on female labor supply more systematically and comprehensively by sorting out the existing research, and to clarify the direction of future research.

## 2 Influencing Factors of Female Labor Supply

### 2.1 Individual and Family Factors

**Accumulation of Human Capital.** Educational and training have always been regarded as the core path of human capital accumulation, and such investments can not only bring economic returns, but also achieve long-term returns by increasing lifetime earnings [3]. The policy of expanding enrollment in higher education has led to a continuous increase in the proportion of young women receiving education, and the proportion of women with higher education in the newly entered marriage and childbearing age group has surpassed that of men [4]. This change has directly driven the gradual increase in the proportion of women in the labor market. In terms of skills training, systematic mechanisms of promoting skills to help women alleviate occupational segregation phenomenon (i.e., different social groups show significant differences in occupational distribution of structural issues) are caused by technological changes. In the process of technological progress driving industrial iteration and upgrading, weakening the gender advantage of men in traditional employment fields through skill transitions [5,6]. To sum up, the accumulation of human capital directly enhances women's career competitiveness and broadens their scope of employment opportunity selection.

**Fertility Behavior Decision-Making.** Women with high human capital have significant advantages in the labor market and can often obtain better job opportunities and higher salaries [6]. However, childbearing behavior requires women to bear more time

and energy, causing their work input to be squeezed, increasing the risk of unemployment and reducing market labor time [6]. According to data from the American Sociological Association, women who give birth have a 20%-30% lower probability of promotion than those who do not. The “motherhood Penalty” causes women’s skills to lag behind technological progress, leading to the depreciation of human capital and a decline in the quality of employment. At the same time, employers may reduce their willingness to recruit and promote women of childbearing age due to the expectation of women leaving their jobs or decreasing their work engagement after childbirth, resulting in “employment discrimination”. This further leads to fluctuations in female turnover rates and a decrease in employment willingness.

**Family Responsibility Sharing.** Since the market transformation, with the rapid development of China’s economy and the significant improvement of women’s education level, the female labor force participation rate has shown a downward trend instead of increasing, and even the phenomenon of “women going home” and “housewifization” has emerged [7]. This suggests that there’s still an uneven distribution of responsibilities within the family, and the social norm of “mother’s primary responsibility” exacerbates the unequal distribution of labor within the family. The absence of male parenting increases the burden on female families, making it difficult for them to balance work and family, ultimately leading to a decrease in female labor supply [8].

## 2.2 Policy Intervention and Social Environment

**Iteration of Fertility Policy.** In order to cope with the challenges of low fertility rates and an aging population, China optimized and adjusted its fertility policy in June 2021 and began to implement the policy that each couple can have three children. The policy shift from “controlling the number of populations” to “optimizing the population structure” not only highlights the seriousness and urgency of China’s population development situation but also demonstrates the dynamic adaptation of the country to changes in social needs. However, the relaxation of the number of children has intensified the conflict between reproductive rights and stable employment, which makes the employment security of women with re-births face more severe challenges [8].

**Related Support Policy Evolution.** Since the implementation of the “universal three-child policy”, a series of fertility support measures have been introduced in various regions to form policy synergy to promote the implementation of the policy and help build a birth-friendly society [9].

First, the government should improve the maternity and parental leave system, so as to balance the cost of male and female childcare, reduce the concerns of enterprises in hiring women, reduce the employment discrimination related to childbirth, promote employment equality and convey the positive message of equal sharing of parenting responsibilities between men and women [10]. Second, the government should raise the standards for maternity and childcare subsidies. Under the “three-child policy”, the number of elderly women has increased, and the cost of childbirth and childcare has

increased. Therefore, it is necessary to increase the maternity medical subsidies for elderly women to ease the family burden and promote the recovery of women and increase the childcare subsidies to cope with the cost of multi-childcare [10]. Third, the government should increase financial and tax support. The government, enterprises and individuals will share the cost of childbearing by raising the proportion of maternity insurance contributions and reducing or exempting taxes. Fourth, the government need to establish and improve the public child-care service system to realize the concept of “early childhood education”. Strengthen support for infant care services for 0-3 years old, provide better career development opportunities and space for women, eliminate the adverse impact of childbearing on female employment, and protect women’s equal employment rights [11].

However, China still needs to improve the provision of employment-related benefits for women. There are still some problems in fertility support policy, such as fragmentation, lack of systematic coordination and large regional differences, and a complete multi-level fertility support policy system has not been formed [9].

**Gender Discrimination in the Labor Market.** Under the guidance of national policies and laws, the awareness of gender equality has been widely recognized, but in the labor market, the problem of employment inequality has always existed, and in recent years, under the influence of multiple factors, this problem has shown a trend of further aggravation.

First, gender stereotypes at the social level often have a deep impact on women’s career development choices and promotion opportunities. The inherent cognitive bias of “men are good at rationality, while women are good at sensibility” limits individual career possibilities and reflects structural social inequality. Second, in the recruitment process, enterprises generally have a “male preference”, especially in high-intensity and physically demanding jobs, women are often invisibly excluded. Third, employers pursue profits maximization, but hire female labor are easily affected by factors such as pregnancy, childbirth and lactation (hereinafter referred to as the “three periods”), resulting in higher additional costs, including providing more comprehensive labor protection, ensuring certain benefits for female employees during the “three periods”, and using the cost of using re-recruitment to fill job vacancies exacerbates the employment disadvantage for women [12].

### 2.3 Digital Economy and Female Employment Pattern

As a new economic form, the digital economy has profoundly changed the scale, structure and quality of women’s labor supply. In the industrialization stage, women have long been at a disadvantage in the workplace due to gender differences. In the 21st century, information technology has promoted the development of modern service industry, digital transformation has affected and changed the nature of careers and created new opportunities for women’s career development [13].

The flexibility of the digital economy (such as remote working and platform economy) has broken the time and space restrictions of traditional employment, allowing

women to have children while balancing family responsibilities and career development; The flexible characteristics of the employment patterns in the gig economy is more closely matched with the employment demands of married women, which in turns drives the growth of the informal employment sector.

The research shows that the digital economy has a stronger promoting effect on high-skilled employment for women than for men, which promotes the growth of its scale; The female labor force has shown a significant shift from the primary and secondary industries to the tertiary industry, reshaping the career pattern. Foreign studies have confirmed that the accumulation of female human capital has a positive effect on the development of modern service industries and emerging strategic industries, which reduces the degree of industrial gender segregation [13,14].

Some scholars pointed out that the digital economy under the background of gig economy has significantly reduced the number of “self-employed” and “survival” startups, platforms and sharing economy by reducing employment friction, enhancing labor mobility to lower people’s willingness to engage in risky entrepreneurial activities [15,16].

To sum up, the digital economy has brought historic opportunities for female labor supply, released the potential of “her power” in the digital economy, and achieved more inclusive and sustainable employment growth.

### **3 The Multi-Dimensional Value of Female Labor Supply**

#### **3.1 Digital Economy and Female Employment Pattern**

The labor market expansion effect of female labor supply refers to the multi-dimensional promotion effect of female labor market participation on the overall economic scale, structural optimization and sustainable development.

Firstly, female labor supply can directly expand the labor market. In the context of an aging population and low fertility rate, female labor force participation effectively fills the gap of labor force, and its high employment proportion in service, education, medical care and technology promotes the transformation of industrial structure to knowledge-intensive and service industry. Secondly, female labor supply can indirectly expand the labor market. Female employment increases household disposable income and stimulates the development of related industries through a virtuous cycle of “employment - income - consumption”, creates new job opportunities, and forms a secondary expansion effect of the labor market.

#### **3.2 Gender Equality Promotion Function**

The gender equality promotion function of female labor supply is reflected in breaking the traditional gender division of labor through economic participation, reshaping the social power structure, and promoting systemic changes at the institutional and cultural levels. This function is not only related to the realization of women’s rights and interests, but also an important cornerstone of social equality and sustainable development.

First, employment provides women with labor income and job security, narrowing the income gap with men and enhancing economic independence, thereby improving their family and social status, and forcing men to take on more family responsibilities. In contrast to the unpaid housework whose economic value is not fully recognized by the family and society, women entering the paid labor market can clarify their own economic value through the income, security and recognition provided by the market, thereby changing the distribution pattern of male and female resources within the family, reversing their long-term disadvantaged and subordinate position in the family, and effectively releasing their right to expression [17]. Second, female employment promotes the redistribution of career opportunities. Some scholars have found that despite decades of struggle for gender equality, the high gender segregation of occupations still leads to insufficient attention to the value of women's occupations, and it is still difficult for women to break through the "glass ceiling effect" [3]. At present, women are gradually entering traditionally male-dominated fields such as technology and engineering, and the gender-based occupational segregation situation is expected to be improved.

### **3.3 Maximize the Return on Investment in Education**

Maximizing the return on investment in education of female labor supply emphasizes the release of economic potential by improving female education level and forming a circular gain mechanism of "human capital accumulation - labor value creation - sustainable development" at the level of individual, family and society. The return on education investment is not only reflected in the increase of women's individual income but also realizes multi-dimensional value amplification through intergenerational transmission, industrial upgrading and social inclusive development. Some scholars have found that compulsory education reform and the policy of expanding enrollment in universities have significantly improved the educational level of female labor force, and education expansion and human capital accumulation have also significantly improved the return on female overall education and return on university education [18].

First, the entry of women into corporate management has a positive impact on the development of enterprises. Studies have shown that the high-risk aversion of female executives can reduce the risk of corporate environment violations and have a positive impact on corporate development [4,19]. Second, women entering the labor market will bring intergenerational effects on offspring development. The study found that highly educated, high-income parents' family education expenditure absolute value and a higher proportion of total household consumption, lead to continue education differences [3]. First of all, higher educational attainment leads to higher family income, which helps to alleviate the constraint of education expenditure per child. Secondly, parents with higher education levels are more likely to accept new ideas brought about by economic development and social evolution and accelerate the transformation of traditional gender ideas. Finally, more educated parents are better at teaching their children according to their abilities to enhance their children's own value [4,20].

## 4 Conclusion

This paper adopts the method of literature review to analyze the issue of female labor supply, systematically explaining its complexity and multi-dimensional value. The study has shown that women's labor supply is influenced by multiple factors. At the individual and family level, human capital accumulation improves women's career competitiveness, but the "motherhood penalty" caused by fertility behavior and the uneven sharing of family responsibilities still significantly inhibit their labor participation; At the policy and social environment level, the iteration of fertility policy and the lack of support measures form dual challenges, gender discrimination and occupational segregation in the labor market further aggravate women's employment difficulties; Digital economy has created new opportunities for women through flexible employment patterns, and promoted the optimization of occupational structure and the alleviation of gender segregation. The multi-dimensional value of female labor supply is reflected in three aspects: first, expanding the labor market by filling the labor gap and promoting industrial transformation; Second, promoting gender equality by enhancing economic independence and reshaping family power structures; Third, the sustainable development can be achieved through the intergenerational transmission of education investment and the circular gain of human capital.

This study constructs a review framework of "influencing factors - multi-dimensional value", emphasizing the need to give consideration to fertility support and employment security in policy formulation, promoting the inclusive development of digital economy, and advocating the transformation of social and cultural concepts. Only through multi-dimensional and systematic reforms can fully release the potential of female labor supply, help optimize population structure and promote high-quality economic development.

Future research can be carried out in the following aspects. Strengthen dynamic tracking and long-term effect assessment; Pay attention to policy synergy and research on regional differences; The interaction between gender concept and institutional culture; Pay attention to international comparison and local theory innovation.

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