

Study of Child Care-Based Public Child Care and Female Labor Participation

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Abstract: Based on the exogenous policy impact of the divestiture of social functions by state-owned enterprises in China, we select five rounds of CFPS survey data and 104 city characteristic data to study the long-term impact of reduced access to public childcare services on labor participation behavior of women aged 16-55. The results show that decreased access to public childcare services will have a significant adverse impact on women's long-term labor participation behavior and personal income levels, and will impact on women's job promotion opportunities and overall job satisfaction.

Keywords: Female labor participation, Child care, Institutional care, Women's human capital

1. Introduction

The lower average market wage level of women compared to men has led to a lower labor participation rate among women compared to men[1]. In addition, assuming responsibility for childbirth and child care can also hinder women's entry into the labor market or reduce the wage level of employed women, known as the phenomenon of "parental punishment" [2-3]. In recent years, China has successively implemented a series of birth policies such as single two children, comprehensive two children, and three children. At the same time, in order to effectively reduce the social dependency ratio, China will gradually delay the legal retirement age, which means that elderly parents will have fewer opportunities to provide early childhood care for their children in the future. The conflicts between female labor participation, child care, and the provision of alternative care by grandparents have gradually become prominent, and the demand for improving the accessibility of public childcare services in society has increased. Therefore, studying the role of public childcare services in promoting women's labor participation and pursuing career development can help to better understand women's family work decision-making.

2. Empirical strategies and data sources

2.1 Research method

Referring to past research[4], we use the cohort DID model to study the long-term impact of reduced access to institutional care on women's labor participation behavior. In 1999, a series of regulations were issued requiring state-owned enterprises to separate all their schools, hospitals, and other social service institutions, and transfer them to the local government for overall management. Subsequently, various local governments formulated separate policies for state-owned enterprises, requiring state-owned enterprises to divest welfare institutions such as kindergartens. A wave of restructuring of public kindergartens was set off in various regions. However, due to the lack of preferential policy support from the central government, a large number of public kindergartens in China were closed and disbanded. Between 2000 and 2001, the number of kindergartens in China experienced a precipitous decline, with a total decrease of 64130 kindergartens in one year. The trend of change in the number of kindergartens in most provinces is consistent with that of the country, as shown in Figure 1. From the municipal level, the number of childcare institutions in various cities has also shown a decreasing trend, but there are significant differences in the decline rate between 2000 and 2001, which provides conditions for the use of the cohort DID model. Therefore, we will construct a cohort DID model based on the proportion of reductions in the number of childcare institutions at the municipal level in China from 2000 to 2001 to study the long-term impact of reduced access to institutional care

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on women's labor participation behavior, in order to overcome potential endogenous problems.

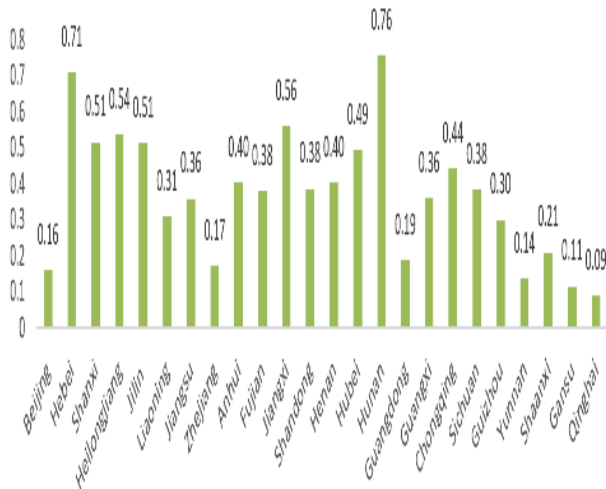


Figure 1. The decline rate of the number of childcare institutions in various provinces in 2001

The regression equation used is as follows. *Working* is a virtual variable. If it is 1, it indicates that individual *i* has work in year *t*, otherwise it is 0. $\Phi[\cdot]$ represents the probit model. *Totalincome* is a continuous variable that is added to the model in logarithmic form to measure the total personal income of women. We use the OLS model to estimate equation (2). *Cohort* is a processing group variable. We define *cohort*=1 as the child's birth year between 1995 and 2003, otherwise, *cohort*=0. *Extent* is a variable indicating the extent of the decrease in public childcare institutions in region *d* from 2000 to 2001. Coefficients β_3 is the main concern of this article. In addition, we also added the female personal characteristic variable *X*, the family characteristic variable *F*, and the city characteristic variable *Z*. θ is a time fixed effect, ε is the error term.

$$Working_{idet} = \Phi[\beta_0 + \beta_1 cohort_{ic} + \beta_2 extent_d + \beta_3 cohort_{ic} * extent_d +$$

$$\beta_4 X_{idet} + \beta_5 F_{idet} + \beta_6 Z_d + \theta_t + \varepsilon_{idet}] \quad (1)$$

$$\log (Totalincome_{idet}) = \beta_0 + \beta_1 cohort_{ic} + \beta_2 extent_d + \beta_3 cohort_{ic} *$$

$$extent_d + \beta_4 X_{idet} + \beta_5 F_{idet} + \beta_6 Z_d + \theta_t + \varepsilon_{idet} \quad (2)$$

2.2 Data sources

Using five rounds of survey data from the China Family Tracking Survey (CFPS) from 2010 to 2018, we matched the child information in the children's questionnaire with the mother's information in the personal questionnaire, as well as family information in the family questionnaire and the family economic questionnaire, and obtained a sample of 16-55 year old women with children aged 0-15. In addition, data on the number of childcare institutions, economic development, and employment indicators in 104 prefectures, cities, and municipalities were collected through browsing the statistical yearbooks and local chronicles of various provinces and cities. The data were matched with the cities where the female sample was located through the CFPS district/county sequence code.

3. Results

3.1 The impact on female labor participation

According to the regression results reported in Table 1, with no change in other control variables, declining access to public childcare services will have a significant adverse impact on women's long-term labor participation and personal income levels. Taking columns (2) and (4) as examples to explain the economic implications of the regression coefficient: firstly, on average, the decrease in the number of public childcare institutions (19.5%) has resulted in a 4.4% decrease in the probability of working for mothers of children born between 1995 and 2003 compared to other mothers of children during the survey; secondly, the decline in access to public childcare institutions has also led to a 32.3% lower personal income level for mothers of children born between 1995 and 2003 compared to other mothers of children at the time of the survey. The results were significant at a significance level of 1%.

Table.1. The impact on female labor participation

	Working		Totalincome	
	(1)	(2)	(3)	(4)
	-			
cohort	0.049** * (0.009)	0.017* (0.009)	0.033 (0.095)	0.374** * (0.096)
extent	0.014** * (0.004)	0.007 (0.004)	0.017 (0.056)	0.045 (0.051)
cohort × extent	- 0.044** * (0.009)	- 0.044** * (0.009)	- 0.305** * (0.094)	- 0.323** * (0.086)
N	19,141	19,141	14,771	14,771
R-squared			0.203	0.292
Year fixed effect		YES		YES
Other control variables	YES	YES	YES	YES

3.2 Impact on the quality of women's employment

The reduced availability of public childcare resources has put the burden of childcare back on women, increasing the probability and duration of reproductive career interruptions, which may have a long-term impact on the quality of women's employment. We use the survey data on job satisfaction in the CFPS adult questionnaire to generate dummy variables, and use Equation (1) to estimate them. We estimate job income satisfaction, job environment satisfaction, job promotion satisfaction, and overall job satisfaction as explained variables.

Table.2. The impact on the quality of women's employment

	Incom e	Environme nt	Promotio n	Overall
	(1)	(2)	(4)	(5)
cohort	-0.016 (0.017)	-0.026** (0.013)	0.012 (0.018)	0.018 (0.012)
extent	0.003 (0.007)	-0.006 (0.006)	0.000 (0.007)	-0.002 (0.005)
cohort × extent	-0.016 (0.019)	0.002 (0.013)	-0.069** (0.027)	- 0.066** * (0.023)
N	6,819	6,822	5,555	9,935
Year fixed effect	YES	YES	YES	YES
Other control variables	YES	YES	YES	YES

As can be seen in Table 2, on average, the decrease in the number of public childcare institutions (19.5%) resulted in a 6.9% decrease in the probability of mothers of children born between 1995 and 2003 being satisfied with job promotion opportunities compared to other mothers of children during the survey, and was significant at the 1% significance level; the probability of overall job satisfaction among mothers of other children decreased by 6.6%, which was significant at the 5% significance level. It can be seen that the impact of declining access to public childcare services on the long-term employment quality of women is mainly concentrated in two aspects: job promotion and overall job satisfaction.

4. Conclusion

First, declining access to public childcare services can have a significant negative impact on women's long-term labor participation behavior and personal income levels. On average, the decrease in the number of public childcare institutions (19.5%) has resulted in a 4.4% decrease in the probability of mothers of children born between 1995 and 2003 working compared to other mothers of children during the survey; the total personal income level of mothers of children born between 1995 and 2003 was 32.3% lower than that of other mothers of children at the time of the survey. The results were significant at a significance level of 1%. Secondly, the decline in access to public childcare services has a certain impact on the long-term employment quality of women, and it is mainly concentrated in two aspects: job promotion and overall job satisfaction. On average, the decrease in the number of public childcare institutions (19.5%) resulted in a 6.9% decrease in the probability of

mothers of children born between 1995 and 2003 being satisfied with job promotion opportunities compared to other mothers of children during the survey, with a significant level of 1%. The probability of overall job satisfaction among mothers of other children decreased by 6.6%, which was significant at the 5% significance level.

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