Research article

Children and female labor market outcomes in Vietnam

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A B S T R A C T

This paper examines the effect of fertility on the participation of women in the labor market and other labor market outcomes in Vietnam, using Vietnam Labor Force Survey data. To address the endogeneity issue in fertility, we use an instrumental variable estimation method based on parental preference for the mixed-sex composition of the first two children. Our findings indicate that number of children has a negative impact on maternal participation in the labor market and on working hours but has no effect on earnings. We find that the effect on participation in the market is important for younger women aged 21–35 years but insignificant for older women aged 36–50 years. The older group responds by reducing their working hours rather than leaving the labor force. Our results support the position that the rise in female participation in the labor force in Vietnam can be partially attributed to the overall decline in fertility during the last three decades and helps validate the Vietnamese government's planning policy.

1. Introduction

An important change in the labor market during the past century has been the significant increase in female participation in the labor force. During the last three decades, however, female participation in the global labor force has not increased but has remained at around 38–39% of the total (World Bank, 2020). Meanwhile, there has been a dramatic decline in fertility in both developed and developing countries. Understanding the relationship between fertility and the female labor supply is essential for both theoretical and practical reasons. First, it contributes to the validation of models linking the family to the labor market (Angrist and Evans, 1998). Second, it may explain the surge in the level of women's participation in the labor force.

Among developing countries, Vietnam is a remarkable case that has experienced both sustainable economic growth and an exceptionally high female labor participation rate. No longer a poor country, Vietnam has developed into a middle-income nation with a steady average growth rate of 6% over the last two decades. In 2019, around 79% of women aged between 15 and 64 in Vietnam participated in the labor market, compared to 85% of men. This figure is higher than for all OECD members, except Iceland, Sweden, and Switzerland (The Economist, 2019). In addition, the average number of children per woman declined steadily from 5.1 in 1980 to 3.6 in 1990 before stabilizing at around 2.0 in the

2000–2020 period, according to the World Bank's World Development Indicator database. Since the growing participation of women in the labor force is important for economic growth and women's empowerment, understanding the relationship between female employment and fertility should be of interest for both academic and practical purposes.

In this paper, we investigate the relationship between fertility and women's participation in the labor market in Vietnam. Our paper makes several contributions to the literature. First, we contribute to the currently limited evidence of the effect of childbearing on maternal participation in the labor force in developing countries. There is little evidence in developing countries where women are highly underrepresented in the formal labor market but overrepresented in the informal sector (Cáceres-Delpiano, 2012.) Second, in addition to the labor participation outcome examined in most previous studies, this paper examines other outcome variables, including job types, earnings, and occupation types. Finally, our study is the first to investigate the effect of childbearing on labor market outcomes in Vietnam, a country with a high female labor participation rate rigorously, sustained economic growth, and declining female fertility. Thus, this study's findings help explain Vietnam's success in increasing female participation in the labor market and promoting economic development.

Our main finding confirms that Vietnamese parents prefer gender mix in their children, implying that families with the first two children of the

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same sex are more likely to have a third child. Using this result as an instrument for the number of children, we find that family size has a negative impact on maternal participation in the labor market and working hours but has no effect on earnings. In addition, we find heterogeneous impacts: the impact on the participation in the labor market is stronger for younger women aged 21–35 years but insignificant for older women aged 36–50 years. The effect for older women is to reduce their working hours rather than choose not to participate in the labor market.

This paper consists of five sections. The following section presents the literature review, followed by a section on the data and econometric methods. Then, we discussed the results and offer conclusions.

2. Literature review

The relationship between fertility and female participation in the labor force has long been of interest to researchers. While the negative relationship between fertility and participation in the labor force is well documented, interpretation is complicated due to the endogeneity of fertility. Indeed, the number of children in a family can be affected by the mother's labor market status. Besides, there are likely overlooked factors that influence both the number of children and women's participation in the labor force. For example, women with higher career motivation or better education may opt to have fewer children and be more willing to work outside the home. Such factors complicate the observed negative relationship between fertility and labor participation.

Several studies have employed instrumental variables to overcome the endogeneity issue in the relationship between fertility and the female labor supply. The ideal instrument would be exogenous variations in the number of children within a family, uncorrelated with the female labor supply. While we cannot perform such an experiment, the occurrence of twins provides a valid instrument for the number of children, as argued by Rosenzweig and Wolpin (1980) and applied later in many studies, such as those of Angrist and Evans (1998), Bronars and Grogger (1994), Jacobsen et al. (1999), Cáceres-Delpiano (2006), Cáceres-Delpiano (2012), Aaronson et al. (2017), Oliveira (2016), and Daouli et al. (2009). Another approach uses the gender composition of the first two children, as in Angrist and Evans (1998), Cruces and Galiani (2007), Cools et al. (2017), and Aaronson et al. (2017). Alternative instruments that have been used include self-reported infertility. Agüero and Marks (2008) applied this variable for six Latin American countries, then for 26 developing countries (Agüero and Marks, 2011). Similar studies employed the variable of childless mothers undergoing infertility treatments in the U.S. and Denmark (Cristia, 2008; Lundborg et al., 2014). Other instruments included natural experiments, such as changes in abortion laws (Bloom et al., 2009), the introduction of birth control pills (Bailey, 2013), time-to-conception of the first child (Hupkau and Leturcq, 2017). Most of these studies indicated either a much-reduced or non-existent effect of fertility on the female labor supply than the OLS method that did not consider the endogeneity issue. A review of earlier research on the topic by Clarke (2018) found that the existing estimates of fertility on labor market outcomes, including labor market participation and working hours, mostly point towards significant negative impacts, though not universally so.

The effects of fertility on the female labor supply in Asian countries have received less attention, except for some studies such as Griffen et al. (2015) for Japan, Ebenstein (2007) for Taiwan, Nguyen (2019) for Indonesia, He and Zhu (2016) for China, and Ngo (2020) for Vietnam. Ebenstein (2007) indicated that in Taiwan, for mothers between 34 and 36 years of age, a third child has a causal effect of -10% on the probability of a mother working. Using an econometric identification strategy similar to that of Angrist and Evans (1998), Nguyen (2019) used parental preference for a mixed sibling sex composition as an instrumental variable and finds that a third child reduces women's labor participation in Indonesia. She also found that the effect is more substantial for women aged 21–25 years but insignificant for those aged 36–49. Using twin births as an instrumental variable, He and Zhu (2016) found minimal adverse effects from fertility on female labor force participation in 1990 and an insignificant impact in 2000. By contrast, using the interaction term between the year of birth and ethnic majority as an instrumental variable with population census data, Ngo (2020) suggested that having an additional child decreases maternal employment by a substantial 15 percentage points. In contrast, in the context of a country with a low fertility rate and low female labor participation, Griffen et al. (2015) demonstrated a long-term positive impact of fertility on maternal labor force participation in Japan.

3. Data and estimation strategy

3.1. Data

The primary data source in our analysis is the 2018 Labor Force Survey. This survey was a nationally representative survey conducted by the General Statistics Office of Vietnam in 2018 to collect basic information on Vietnam's labor market. The data were collected using two-stage stratified sampling, with a sampling frame of 15% of the 2009 Population and Housing Census enumeration areas. The sample size of the survey is 57,420 households per quarter, equivalent to 19,140 households per month. The sampling units are households, and all eligible individuals in sampled households comprise the sample for the survey.

3.2. Estimation strategy

The basic regression model that we use to estimate is as follows:

$$Y_i = \alpha + \beta C_i + X_i \gamma + \varepsilon_i \tag{1}$$

In this model, i indexes individual observation; Y_i is a vector of labor market outcomes. C_i is the number of children; X_i is a vector of control variables and ε_{ij} are unobserved variables. For the control variables, we include those that may affect female labor market outcomes, including the mother's age, education and marital status, the age, and sex of the first-born child, status of the household head, geographic variables for urban and regional dummies. The labor market outcomes include key variables, such as labor participation, earnings, weekly working hours, occupation, types of job, and sectors.

OLS estimates of β are likely to be biased due to endogeneity. Following Angrist and Evans (1998), we use parental preferences for a

Table 1. Descriptive statistics for fertility and sex composition of children.

	Pool sample		Younger group		Older group	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Number of children	2.32	0.64	2.29	0.58	2.34	0.67
More than 2 children	0.25	0.43	0.24	0.43	0.26	0.44
Same sex sibling	0.49	0.50	0.49	0.50	0.49	0.50
First two, boys	0.28	0.45	0.25	0.44	0.29	0.45
First two, girls	0.21	0.41	0.23	0.42	0.20	0.40

Note: S.D.- standard deviation.

Table 2. Family size and sex composition.

	Number of children		% with >2 children	
	Mean	SD	Mean	SD
Pooled sample				
First two children of same sex	2.39	0.69	0.30	0.46
First two children are boys	2.29	0.64	0.22	0.41
First two children are girls	2.52	0.74	0.41	0.49
First two children of both sexes	2.25	0.58	0.20	0.40
Younger group				
First two children same sex	2.34	0.62	0.28	0.45
First two children are boys	2.23	0.53	0.18	0.39
First two children are girls	2.47	0.68	0.38	0.49
First two children of both sexes	2.24	0.54	2.24	0.54
Older group				
First two children of same sex	2.42	0.73	0.31	0.46
First two children are boys	2.32	0.69	0.23	0.42
First two children are girls	2.55	0.77	0.42	0.49
First two children of both sex	2.26	0.60	0.20	0.40

Note: SD: standard deviation.

Table 3. Women's characteristics and labor market outcomes.

	Pooled sample		Younger group		Older group	
	Mean	SD	Mean	SD	Mean	SD
Characteristics						
Age	38.03	6.47	31.21	3.28	41.98	4.17
Age of the first child	14.79	6.16	9.65	3.76	17.77	5.25
First child is a boy	0.53	0.50	0.50	0.50	0.55	0.50
Primary school or less	0.42	0.49	0.36	0.48	0.45	0.50
Lower secondary school	0.28	0.45	0.29	0.46	0.28	0.45
Upper secondary	0.12	0.33	0.15	0.36	0.11	0.31
Tertiary education	0.17	0.38	0.19	0.39	0.16	0.37
Married	0.95	0.21	0.98	0.15	0.94	0.24
Female head	0.17	0.37	0.13	0.34	0.19	0.39
Urban	0.39	0.49	0.32	0.47	0.42	0.49
Northern Mountains	0.23	0.42	0.29	0.45	0.19	0.40
Red River Delta	0.19	0.39	0.19	0.39	0.19	0.39
North Coastal Central	0.22	0.41	0.19	0.39	0.23	0.42
Central Highlands	0.11	0.32	0.12	0.33	0.11	0.31
South East	0.12	0.32	0.10	0.30	0.13	0.33
Mekong River Delta	0.14	0.34	0.11	0.31	0.15	0.36
Labor market outcomes						
Working	0.89	0.31	0.88	0.32	0.90	0.30
Earnings (thousand VND/month)	4,084	4,178	3,627	3,503	4,347	4,500
Working hours per week	43.89	12.76	43.71	12.65	44.00	12.82
State sector	0.13	0.34	0.13	0.33	0.13	0.34
Foreign sector	0.05	0.22	0.07	0.26	0.04	0.19
Private sector	0.73	0.45	0.71	0.46	0.74	0.44
Self-employed	0.37	0.48	0.31	0.46	0.40	0.49
Wage-earning job	0.34	0.47	0.37	0.48	0.32	0.47
Work in the home	0.20	0.40	0.22	0.41	0.19	0.39
Administrator or professional	0.13	0.34	0.13	0.34	0.14	0.34
Skilled worker	0.42	0.49	0.40	0.49	0.43	0.50
Unskilled worker	0.35	0.48	0.37	0.48	0.34	0.47
Agriculture	0.36	0.48	0.39	0.49	0.34	0.47
Manufacture	0.18	0.39	0.20	0.40	0.17	0.38
Services	0.48	0.50	0.43	0.49	0.51	0.50
Total	35,531		13,033		22,498	

Note: SD: standard deviation.

Table 4. First stage estimates of the effect of same-sex children on fertility.

	Pooled sample	Younger group	Older group
Same sex children	0.134***	0.100***	0.154***
	(0.006)	(0.009)	(0.008)
First child a boy	-0.123***	-0.116***	-0.125***
	(0.006)	(0.009)	(0.009)
Married	0.081***	0.101***	0.079***
	(0.017)	(0.034)	(0.021)
Age	0.052***	0.047*	0.031
	(0.005)	(0.024)	(0.023)
Age squared	-0.001***	-0.001**	-0.001**
	(0.000)	(0.000)	(0.000)
Age of the first child	0.024***	0.041***	0.020***
	(0.001)	(0.002)	(0.001)
Lower secondary	-0.183***	-0.140***	-0.196***
	(0.008)	(0.012)	(0.011)
High school	-0.220***	-0.163***	-0.240***
	(0.011)	(0.016)	(0.015)
Tertiary education	-0.273***	-0.193***	-0.292***
	(0.011)	(0.017)	(0.014)
Female head	-0.012	-0.015	-0.008
	(0.010)	(0.015)	(0.013)
Urban	-0.068***	-0.044***	-0.080***
	(0.007)	(0.011)	(0.009)
Red River Delta	0.037***	0.062***	0.031**
	(0.010)	(0.014)	(0.014)
North Central and Central Coastal	0.102***	0.055***	0.136***
	(0.010)	(0.014)	(0.013)
Central Highlands	0.235***	0.124***	0.313***
	(0.012)	(0.016)	(0.016)
South East	0.007	-0.022	0.033**
	(0.012)	(0.018)	(0.015)
Mekong River Delta	-0.153***	-0.162***	-0.138***
	(0.011)	(0.017)	(0.015)
Constant	1.322***	1.354***	1.712***
	(0.099)	(0.356)	(0.480)
Observations	35,150	12,797	22,353
R-squared	0.112	0.129	0.112
Weak identification test (Cragg-Donald Wald F statistic):	435.751	113.026	329.454
Under-identification test (Anderson LM statistic)	430.621	112.184	324.912

Standard errors in parentheses.
***p < 0.01, **p < 0.05, *p < 0.1.

mixed sibling-sex composition (*same-sex children)* as the instrumental variable (IV) for the number of children. This variable is equal to one if the first two children are of the same sex and zero otherwise. Because of the nature of this variable, the sample must be limited to women with at least two children. To satisfy the requirements of a good instrument, the first is that it should be correlated with the endogenous variable, i.e., the number of children in our case (Angrist and Krueger, 2001). We expect that the likelihood of having a third child is higher for families whose first two children are of the same sex than those whose first two children are of different sex. This assumption can also be empirically tested using a weak instrument test (Stock and Yogo, 2002). The second requirement indicates that the instrumental variable must not be uncorrelated with the error terms. Although this criterion cannot be tested empirically, it can be satisfied if the sex composition of siblings is random. In particular, this variable is randomly distributed with respect to most household characteristics related to female labor participation. At the same time, we can control for variables that could be correlated with the instrument variable, such as the mother's age at first birth (Angrist and Evans 1998).

In the first stage, we estimate the effect on fertility of children of the same sex as in the following specification.

$$C_i = Z_i\theta + X_i\delta + e_i \qquad (2)$$

Where Z_i is the instrumental variable that is being measured by "same-sex children?"

In the second stage, we regress Eq. (1) on the predicted values from the first stage. Since Z_i is a binary variable, the IV estimate of β from Eq. (1) is.

$$\beta_{IV} = \frac{E(Y_i|Z_i = 1) - E(Y_i|Z_i = 0)}{E(C_i|Z_i = 1) - E(C_i|Z_i = 0)} \qquad (3)$$

The IV estimate β_{IV} indicates the average effect of fertility on the labor outcome measures for all women whose fertility has been affected by the sex composition of their first two children.

Since we use same-sex siblings as an instrumental variable, we limit our analysis to mothers aged 20 to 50 with two or more children. The

Table 5. Second stage regression, pooled sample.

	OLS		IV, same-sex	
Participation in the labor market	-0.019***	(0.003)	-0.042*	(0.024)
Earnings (in log)	-0.064***	(0.008)	-0.020	(0.076)
Weekly hours	-0.294**	(0.115)	-1.950*	(1.066)
State sector	-0.019***	(0.002)	0.001	(0.019)
Foreign sector	-0.007***	(0.002)	0.011	(0.017)
Private sector	0.008**	(0.003)	-0.059*	(0.031)
Self-employed	-0.013***	(0.004)	-0.049	(0.037)
Wage-earning job	-0.044***	(0.004)	-0.016	(0.033)
Work in the home	0.040***	(0.003)	0.018	(0.029)
Professional	-0.007***	(0.002)	-0.000	(0.014)
Skilled worker	-0.034***	(0.004)	-0.034	(0.036)
Unskilled worker	0.024***	(0.004)	-0.013	(0.033)
Agriculture	0.035***	(0.003)	-0.024	(0.031)
Manufacturing	-0.028***	(0.003)	-0.016	(0.029)
Services	-0.011***	(0.004)	0.053	(0.034)
Observations	35,150		35,150	

Standard errors in parentheses; ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 6. Second stage regression, younger and older groups.

Explanatory variables	Younger group				Older group			
	OLS		IV		OLS		IV	
Participation in the labor market	-0.047***	(0.005)	-0.102*	(0.057)	-0.009***	(0.003)	-0.022	(0.026)
Earnings (in log)	-0.080***	(0.015)	-0.011	(0.180)	-0.061***	(0.009)	-0.015	(0.082)
Weekly hours	-0.453**	(0.217)	-1.787	(2.431)	-0.293**	(0.137)	-1.776*	(1.003)
State sector	-0.024***	(0.004)	0.002	(0.046)	-0.016***	(0.002)	-0.003	(0.019)
Foreign sector	-0.015***	(0.004)	-0.019	(0.045)	-0.005***	(0.002)	0.024	(0.016)
Private sector	-0.003	(0.007)	-0.094	(0.075)	0.012***	(0.004)	-0.047	(0.032)
Self-employed	-0.009	(0.007)	-0.080	(0.082)	-0.015***	(0.005)	-0.033	(0.040)
Wage-earning job	-0.070***	(0.007)	0.063	(0.080)	-0.035***	(0.004)	-0.046	(0.034)
Work in the home	0.037***	(0.006)	-0.094	(0.070)	0.041***	(0.004)	0.053*	(0.032)
Professional	-0.012***	(0.003)	0.019	(0.038)	-0.005***	(0.002)	-0.009	(0.014)
Skilled worker	-0.051***	(0.007)	-0.153*	(0.083)	-0.031***	(0.005)	0.013	(0.040)
Unskilled worker	0.021***	(0.007)	0.023	(0.074)	0.027***	(0.004)	-0.031	(0.036)
Agriculture	0.020***	(0.006)	-0.087	(0.071)	0.042***	(0.004)	-0.008	(0.034)
Manufacturing	-0.047***	(0.006)	-0.068	(0.068)	-0.022***	(0.004)	0.007	(0.031)
Services	0.025***	(0.007)	0.179**	(0.077)	-0.024***	(0.005)	0.010	(0.038)
Observation	12,797		12,797		22,353		22,353	

Standard errors in parentheses; ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

sample includes 35,531 women. We further divide the sample into the younger group, with 13,033 women aged 21 to 35 and the older group of 22,498 women aged 36 to 50. There are several reasons for comparing the different effects for the two age groups. First, fertility may differ according to age. Typically, women's fertility begins to decline in the late 20s and early 30s.

Meanwhile, labor market outcomes may be different for women of different ages due to their commitments at different life stages. For example, younger women are more likely to pursue their education rather than join the labor market. At the same time, older women may have more family obligations, such as housework and raising the children, affecting their participation in the labor market.

4. Empirical results and discussion

4.1. Descriptive statistics

Table 1 presents the descriptive statistics for fertility and the instruments employed. On average, a woman in our sample has 2.3

children. The number of children for the younger and the older groups are similar. We also observe similar statistics on sibling sex composition for the pooled sample and the younger and older groups. For example, in 49% of the families in the pooled sample, both the younger and the older group have the first two children of the same sex. This result indicates that sex composition is a random event, ensuring the instrument's validity.

Table 2 describes the relationship between sibling sex composition and fertility. The statistics indicate that women whose first two children are of the same sex are more likely to have more children than those with two children, one of each sex. For the whole sample, the average number of children for a family with children of both sexes is 2.25, slightly lower than those with same-sex children (2.39). The fraction for families of at least three children is higher for those whose first two children are of the same sex (30%) than it is for the both-sex counterpart (20%). Considering families with two girls and two boys separately, the pattern clearly shows a preference for sons in Vietnam. The likelihood of having at least a third child is 41% for women with two girls born first, compared to 22% for women with two boys born first, and 20% for women with two children,

one of each sex. This result is in line with Guilmoto (2012) and Ngo (2020) on the significant preference for sons over daughters in Vietnam.

Table 3 provides the descriptive statistics for the labor market outcome and the mother's characteristics. In the pooled sample, the average age of a mother is 38 years, and the first child's average age is 14.8. About 53% of the first children are boys. About 42% of the mothers have primary school education or less. Comparing the younger with the older group, Table 3 reveals that the younger women have better education and are more likely to be married than the older group. About 19% of women in the older group are household heads, compared to 13% in the younger group.

Table 3 also indicates labor market outcomes for women in the three samples. At 89%, female labor participation is very high. The participation rate is slightly higher for older (90%) than younger women (88%). Older women also earn more than younger women. However, the weekly hours for both groups are similar, at 44 h per week. Focusing on the pooled sample, a large majority of women work in the private sector (73%), followed by the state (13%) and foreign sectors (5%). About 37% of women reported that they were self-employed, while 34% received wages and 20% were family workers. Disaggregated by skill level, about 13% work as administrators or professionals, while 42% are skilled workers and 35% are unskilled or manual workers. Nearly half the women work in the service sector, about 36% in agriculture, and 18% in the manufacturing sector. Older women are more likely to work in the service sector and at more skilled jobs than younger ones. Also, young women are more likely to work in the home, implying that they may need to spend more time bearing and rearing children than older women.

4.2. Econometric results

Table 4 reports the results from the first stage regression. To check for weak instruments and under-identification, we use the *ivreg2* program in Stata and use a rule of thumb for F- statistics in Stock and Yogo (2002). Table 4 indicates that the weak instrument is not an issue since the first-stage F statistics on the excluded instruments are much higher than 10. Furthermore, the under-identification null hypothesis is rejected as well. The estimated coefficient for "same-sex children" in Table 4 indicates the presence of parental preference for children of both sexes as women with same-sex children are more likely to have additional children. The coefficients are consistently significant in all samples, but the effect is stronger for the older group. On average, a woman whose first two children are of the same sex is about 13 percentage points more likely to have additional children than a woman with two children, one of each sex.

Table 5 indicates the results of second-stage regression on labor market outcomes for the pooled sample. Both OLS and IV estimates show the negative impact of fertility on labor market outcomes. For example, OLS estimates indicate that having an additional child reduces the mother's participation in the labor market by 1.9 percentage points, reduces her earnings by 6.4 percentage points, and her weekly working hours by 29.4 percentage points. Mothers with many children are more likely to work in the private sector than in the state or foreign sectors. They are also more likely to work in the home rather than in wage-earning jobs or self-employment. They are more likely to be unskilled workers than professionals or skilled workers and have a higher probability of working in agriculture than in the service or manufacturing sectors.

Nevertheless, while the OLS coefficients are all statistically significant, the IV estimates are only significant in some labor market outcomes. The IV results indicate that the likelihood of working outside the home drops by 4.2 percentage points with an additional child. Having an additional child also decreases working hours by 1.95 h and reduces the possibility of working in the private sector.

Table 6 charts the effects of fertility for the younger and older groups separately. The OLS estimates show an impact similar to that of the pooled sample. However, when considering the endogeneity of fertility decisions, the IV estimates are less significant. For the younger group, an

additional child reduces the mother's participation in the labor market by 10.2 percentage points. Childbearing does not have any significant effect on the weekly hours or earnings of the younger group. However, it significantly reduces the likelihood of earning as a skilled worker by 15.3 percentage points and increases the likelihood of working in the service sector by 17.9 percentage points.

As for the older group, childbearing does not affect participation in the labor market but reduces the mother's weekly work time by 1.8 h. Childbearing also increases the mother's likelihood of working in the home by 5.3 percentage points. In general, we find that the younger group's labor market outcomes are more influenced by fertility, whereas fertility matters less for older women. This result suggests that older mothers may have older children to care for the younger ones and may not need to sacrifice their earning ability by staying out of the labor market as younger mothers do. However, they are still affected by the necessity of reducing their working hours to take care of children. These results are similar to those of Nguyen (2019), who found that fertility has a more negligible effect on the older than the younger mothers in Indonesia.

5. Conclusion

During the last three decades, Vietnam has significantly reduced its fertility rate while consistently outperformed most developing and developed countries with its female labor participation rate. This paper studied the causal relationship between fertility and female labor participation, working hours, and several labor market outcomes, using data from the recent 2018 Vietnam Labor Force Survey. By employing parental preference for children of both sexes as the source of exogenous variation in fertility as proposed by Angrist and Evans (1998), we find evidence of parents' preference for mixed-sex in their children. Our IV estimates confirm the OLS estimates showing that family size has a negative impact on maternal participation in the labor market, although the OLS estimates appear to exaggerate the causal effect of family size. We also find that the number of children reduces the mother's working hours but has no significant impact on the mother's earnings. In addition, we find that the effect on participation in the labor market is stronger for younger women aged 21–35 years but insignificant for older women aged 36–50 years. This result is not surprising since younger women with small children must spend more time taking care of their children than older women. Nevertheless, the effect for older women is to reduce their working hours rather than to force them out of the labor market. Our results support the conclusion that the rise in female participation in the labor force in Vietnam can be partially attributed to the decline in fertility over the last three decades, a conclusion that helps validate the merits of the family planning policy implemented in Vietnam.

Declarations

Author contribution statement

Linh Hoang Vu: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Wrote the paper.

Tuyen Quang Tran: Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Tung Duc Phung: Conceived and designed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Data availability statement

Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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