

Determinants of Place of Delivery Among Migrant Working Mothers in China

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Background: In China, there were about 78.0 million migrant working women, who moved for employment or business purposes. They generally face two main options for childbirth: delivering in their host communities or returning to their hometowns for childbirth. However, the national ratio between these two groups of migrant working mothers and the determinants influencing their place of delivery remain unknown.

Methods: This study examined a sample of 16035 rural migrant working mothers from 31 province-level administrative units in China, using data from the China Migrant Dynamic Survey. These mothers all had at least one child under the age of 18 and had prior migration experience before becoming mothers. They were either employed or involved in business activities and had generated income for at least one month before the survey was conducted.

Results: The results indicated that 49.6% migrant working mothers opted to give birth in host communities, while 50.4% returned to their hometowns for childbirth. Those working in the Northeastern region and other northern provinces like Ningxia and Inner Mongolia are more likely to give birth in host communities. In contrast, mothers working in economically developed regions such as Guangdong, Jiangsu and Zhejiang tend to return to their hometowns for childbirth. Several factors positively influence these decisions, including self-employment, postsecondary education, higher household income, having more children and longer migration. Conversely, higher individual income, the child's age, inter-provincial migration and multiple migration experiences negatively impact the likelihood of giving birth in host communities.

Conclusion: This study deepens the understanding of the childbirth strategies adopted by migrant working mothers and the interaction of migration and childbirth. It strives to offer valuable insights that could shape future policy studies and contribute to the creation of evidence-based recommendations. These recommendations could be instrumental for policymakers in addressing issues related to internal migration, migrant women and the overall wellbeing of migrant families.

Keywords: internal migration, working mothers, migrant women, childbirth, place of delivery, spatial difference

Introduction

The decision regarding where to deliver a baby is a pivotal choice that can significantly impact both maternal and neonatal health outcomes. Existing research on the topic of place of delivery primarily focuses on the selection between home and hospital settings^{1,2} and the factors influencing the choice of a specific hospital.^{3,4} Since the 1960s, the widespread adoption of hospital births has significantly contributed to reducing stillbirths, neonatal deaths and preventing various child disabilities.⁵ In underdeveloped countries, limited access to professional obstetric care restricts women's choices, leading to a high percentage of home deliveries.^{4,6,7} On the other hand, in developed countries, there is a growing interest in alternative birthing settings such as home births and birthing centers.^{1,2} Studies have shown that for low-risk women without medical complications, planned home births can be as safe as planned hospital births in countries with well-functioning healthcare systems.^{8–10}

However, in China, the percentage of women opting for childbirth at healthcare facilities has significantly increased from 55% in 1996 to 90% in 2007.¹¹ During a similar timeframe, neonatal mortality in China saw a 62% reduction between 1996 and 2008.¹² By 2023, the proportion of facility-based deliveries had reached an impressive 99.95%, with

99.97% in urban areas and 99.91% in rural areas.¹³ This demonstrates that nearly all mothers in China now choose to give birth in healthcare facilities. Consequently, for migrant working mothers, the decision regarding place of delivery is no longer between a hospital and home but rather between their hometowns and host communities.

In this study, migrant working mothers were defined as migrant women who have at least one child under 18 years of age and have left the location of their hukou (whether agricultural or non-agricultural household registration) to pursue employment or start a business elsewhere. These mothers generally face two main options for childbirth: they can either choose to deliver in their host communities or return to their hometowns for birth. However, we never know the ratio between the two groups of migrant working mothers regarding the place of their delivery, specifically at the national scale.

In fact, giving birth in host communities presents several advantages for migrant working mothers in China. Migrant working mothers who choose to give birth in the host communities where better public services can help to improve the medical benefits of women during the pregnancy and postpartum period.¹⁴ The destinations of migrant working workers are usually the front-line megacities in coastal areas (eg, Beijing, Shanghai, Guangzhou and Shenzhen) or the capital cities of their home provinces.¹⁵ These urban centers generally offer better prenatal, delivery and postnatal care compared to migrant workers' hometowns. Specifically, hospitals in megacities are equipped with modern medical facilities and skilled healthcare professionals, which are crucial for managing childbirth complications effectively.¹⁶ This is particularly important for migrant women who may face higher risks during childbirth due to the stressors associated with migration and economic instability.¹⁷ Consequently, the assurance of receiving adequate medical care motivates many mothers to deliver in their new urban environments rather than returning to their rural homes. Moreover, the costs associated with returning home, combined with the potential loss of income during this period, make returning hometown expensive.¹⁷ When many migrant mothers face significant financial constraints, which can limit their ability to travel back to their hometowns for childbirth. Furthermore, urban areas may provide better employment opportunities for mothers post-delivery, which can influence their decision to remain in the city for childbirth.¹⁸

However, many migrant working mothers still choose to return to their hometowns to give birth. First, social support networks, which are often stronger in hometowns, significantly influence the likelihood of returning for childbirth.¹⁹ Returning to hometown for childbirth can enhance the quality of maternal care and allow mothers to receive emotional and practical support from family members, friends and relatives, which is often lacking in urban settings.²⁰ Migrant mothers also often prefer the familiar environment of their hometowns, where they can receive support from relatives and friends, which is crucial during pregnancy and childbirth.¹⁹ This support can mitigate the stress and mental health challenges that many migrant women face when separated from their support networks in urban environments.²¹

Moreover, the physical environment of hometowns, usually rural areas, often offers a more conducive setting for childbirth. Many rural homes provide larger living spaces and privacy, which are essential for new mothers.²⁰ This contrasts sharply with the often cramped and less accommodating living conditions in urban areas, where migrant workers may reside in substandard housing to save money and maximize remittance.^{22,23} Returning to their hometowns allows these mothers to benefit from a more supportive and comfortable environment during a critical period of their lives. Economic considerations contribute to this trend since childbirth in rural areas costs less because there is no additional housing cost.²³ Returns to hometowns can also be seen as a strategic move to ensure that the newborn baby can benefit from local healthcare services and family support, which are perceived to be more reliable than those available in host community settings.¹⁶

Another reason is the lack of access to adequate healthcare services in megacities where many migrants work. Migrants frequently face barriers such as the inability to use local medical insurance in their temporary residences, which compels them to return to their hometowns, where they can access the New Rural Cooperative Medical Scheme (NRCMS) and other local health services.^{24–26} This situation is exacerbated by the disparities in healthcare costs between urban and rural areas, making it financially burdensome for migrant mothers to give birth in cities.²⁴ This economic factor, combined with the lack of maternity leave and affordable childcare options in urban settings, further incentivizes migrant working mothers to return home for childbirth.^{20,27}

Therefore, both host communities and hometowns offer different advantages for the childbirth of migrant working mothers in China. However, the exact proportions of migrant working mothers choosing to return to their hometowns for

childbirth, compared to those opting to deliver in host communities, are unknown at the national level. Additionally, it is unclear which individuals prefer returning to their hometowns to give birth and who are more inclined to stay in host communities for child delivery.

Generally, this research aims to analyze the place of delivery among migrant working mothers, with a particular focus on the spatial differences at the provincial level in China. It also examines the influence of multiple factors on the place of delivery, including sociodemographic characteristics, child-related factors, migration-specific variables and regional characteristics. By exploring the place of delivery among migrant working mothers, the study seeks to provide a comprehensive picture of migrant working mothers' practice in the selection of place of delivery and offer vital insights for health policy planning in both origin and host communities. Moreover, it could support the development of tailored policies to enhance maternal and child health services.

Methods

Data

From 2009 to 2018, the National Health Commission of China conducted the China Migrants Dynamic Survey (CMDS) annually to study internal migrants. The CMDS data collected in 2016 (2016 CMDS data) was utilized in the study since it stood out for including the factors about migrants' childbirth, employment and migration experience. The 2016 CMDS data, which tracked trends in childbirth location preferences among internal migrant mothers, provided a valuable chance to explore this important topic using a large representative sample.

The 2016 CMDS was conducted in May 2016 by the local Health Commission office. The sample was selected using a stratified multi-stage random sampling method, utilizing a probability proportional to size (PPS) approach. Participants were individuals aged 15 years or older without a local hukou registration who had lived in the local communities for over a month. Prior to participating in the survey, consent was obtained from all participants.

The 2016 CMDS data sample utilized in this study encompassed migrant working mothers who fulfilled the following criteria: i) being mothers with at least one child under 18 years old; ii) having migration experience before giving birth (for examining the impact of migration experience on childbirth) and iii) being employed or engaged in business with income for at least one month prior to the survey (for examining the impact of employment and income on childbirth for working mothers). A total of 16035 participants met the criteria and became the dataset for the study of childcare strategies among migrant working mothers in China. These 16035 migrant working mothers originated from 31 different provinces in China ([Figure 1](#) and [Appendix I](#)). Approximately 45.4% (7283 of 16035) were intra-provincial migrants and 54.6% (8752 out of 16035) were inter-provincial migrants. More than eight-tenths hold agricultural hukou (82.8%, 13281 out of 16035), while 17.2% (or 2754 out of 16035) hold non-agricultural hukou.

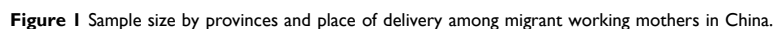
Measurement

(1) Dependent Variable: Place of Delivery

Place of delivery was divided into two categories: hometowns (numerically denoted as "0") and host communities (numerically denoted as "1"). If a migrant working mother had more than one child, the information of the youngest child was used to simply data analysis and modeling, which also adhered to the inclusion criteria.

(2) Independent Variables

- i) Sociodemographic factors: The list of individual sociodemographic factors studied included age, ethnicity (non-Han or Han), education (primary or below, junior secondary, senior secondary or postsecondary), type of job (employed or self-employed), individual and household income in the preceding month.
- ii) Characteristics of the child: The characteristics included gender (boy or girl), age and total number of older siblings ("0" meant the included case was the only kid in the family). In families with two or more children, the study selected the youngest child to identify the participants' childbirth strategy, which is consistent with the dependent variable.
- iii) Migration-specific variables: In this study, migrant working mothers were categorized as inter-provincial or intra-provincial migrants, depending on whether their migration involved crossing a provincial-level administrative



iv) Regional characteristics: Two variables were utilized to measure the regional characteristics of migrant working mothers: region and megacity cluster. The region variable comprised four categories: Eastern, Central, Western and Northeastern region. The Eastern region encompassed 10 provinces and municipalities: Beijing, Tianjin, Hebei, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong and Hainan. The Central region included six provinces: Shanxi, Anhui, Jiangxi, Henan, Hubei and Hunan. The Western region comprised 12 provinces, autonomous regions and municipalities: Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang. The Northeastern consisted of three provinces: Liaoning, Jilin, Heilongjiang. The megacity cluster variable covered the three most important megacity clusters when driving economic development in China: Jing-Jin-Ji Area, Yangtze River Delta (YRD), Pearl River Delta (PRD) and others. The Jing-Jin-Ji Area covered Beijing, Tianjin and Hebei. The YRD included Shanghai, Jiangsu, Zhejiang and Anhui. The PRD comprised nine cities within Guangdong province: Guangzhou, Shenzhen, Zhuhai, Foshan, Dongguan, Zhongshan, Huizhou, Jiangmen and Zhaoqing.

First, descriptive statistics were conducted to understand the sample of migrant working mother participants as well as visualize their places of delivery at the provincial level. Following this, comparison analyses of variations in socio-demographic factors, child characteristics, migration-specific aspects and regional characteristics between the two groups

of mothers (those who gave birth in their hometowns or current host communities) were conducted by using Chi-squared test or ANOVA test ($p < 0.05$ indicating significant differences between the two groups).

In the third phase, a multivariate logistic regression model was developed to investigate the influence of different variables on migrant working mothers' delivery in host communities. The following conceptual framework was adopted:

$$\text{Log}\left(\frac{P_{\text{Delivery in urban areas}}}{1 - P_{\text{Delivery in urban areas}}}\right) = \beta_0 + \beta_1 \times \text{var}_1 + \dots + \beta_n \times \text{var}_n$$

In this framework, the variables var_1 to var_n represent a) sociodemographic factors (including age, ethnicity, hukou type, education, job type, individual and household income); b) child characteristics (including gender, age and the total number of older siblings); c) migration-specific data (including intra-provincial or inter-provincial migration, duration of current migration and duration as a migrant); and d) regional characteristics (including region and megacity cluster).

For the logistic regression analyses, adjusted odds ratios (OR) with 95% confidence intervals (CI) were reported to examine the unique effect each factor had on place of delivery among migrant working mothers in China. In addition, the Nagelkerke R Square and Hosmer–Lemeshow test results were included in the model summary. Small values accompanied by large p -values in the Hosmer–Lemeshow test suggested a good model fit to the data. Conversely, large values with p -values below 0.05 indicated a poor fit. All analyses were executed using the SPSS software (version 29.0) with a two-tailed statistical significance set at $\alpha = 0.05$.

Findings

Place of Delivery Among Migrant Working Mothers in China

Among the 16035 rural migrant working mothers, 49.6% (or 7948 mothers) chose to give birth in their host communities. Conversely, 50.4% (or 8087 mothers) returned to their hometowns for their newborn delivery. Notably, migrant mothers working in different provinces (or the same level administrative unit) reported varying rates of delivery in their host communities (Figure 1 and Appendix I).

High rates of delivery in host communities: Migrant working mothers who were working in Heilongjiang (80.0%), Ningxia (72.4%), Inner Mongolia (72.3%), Jilin (70.1%), Liaoning (69.1%), Hainan (65.3%), Guangxi (65.1), Xinjiang (62.9%), Shanxi (62.3%), Beijing (62.0%) and Yunnan (61.1%) reported higher propensity for giving birth in their host communities, with rates exceeding 60%.

Medium rates of delivery in host communities: Migrant working mothers who were working in Gansu (60.0%), Hubei (59.6%), Tianjin (55.7%), Shandong (54.3%), Hebei (49.7%), Shanghai (47.8%), Shaanxi (47.6%), Sichuan (47.1%) and Anhui (46.2%) demonstrated a medium level of giving birth in host communities, ranging from 45% to 60%.

Low rates of delivery in host communities: Migrant working mothers who were working in Guangdong (43.9%), Henan (43.7%), Jiangsu (41.8%), Fujian (41.8%), Tibet (41.4%), Guizhou (41.2%), Jiangxi (34.9%), Zhejiang (34.6%), Qinghai (32.6%), Chongqing (32.4%) and Hunan (31.5%) exhibited a low level of delivery in host communities, with rates below 45%.

Comparative Analysis

The comparative analysis of birthplace choice among migrant working mothers reveals significant differences in socio-demographic factors, except age. Specifically, 92.5% of migrant working women were Han, while only 7.5% were non-Han (Table 1). However, more non-Han migrant working mothers gave birth in host communities than their Han counterparts (53.0% VS 49.3%, $\chi^2(1)=6.269$, $p<0.05$). More than 80% of migrant working mothers were holding agricultural hukou at the time of the survey. The participants who were holding non-agricultural hukou reported a higher percentage of delivery in host communities than rural migrant working mothers (55.8% VS 48.3%, $\chi^2(1)=51.845$, $p<0.001$). Moreover, less than half of migrant working mothers with a junior secondary education level or below opted for host communities for childbirth, while more than half of those with a senior secondary education level or above chose to give birth in host communities. Among the participants, 51.9% were employees, while the other 48.1% were involved in self-employed businesses for income. Fewer migrant working mothers with the status of employees opted for host communities for their childbirth than those who were self-employed (47.9% VS 51.4%, $\chi^2(1)=19.996$,

Table 1 Comparative Analysis of Place of Delivery (Hometowns VS Host Communities) Among Migrant Working Mothers in China (N=16035)

Name of Independent Variable		Total Sample No. (%)/ Mean (SD)	Hometown No. (%)/ Mean (SD)	Host Community No. (%)/ Mean (SD)	Chi-Squared Test / ANOVA Test [#]
Sociodemographic factors	Age (years)	32.82(6.24)	32.89(6.24)	32.75(6.24)	F(1)=1.787, p=0.181
	Ethnicity				
	Non-Han	1199(7.5%)	563(47.0%)	636(53.0%)	$\chi^2(1)=6.269, p<0.05$
	Han	14836(92.5%)	7524(50.7%)	7312(49.3%)	
	Hukou type				
	Agriculture	13281(82.8%)	6870(51.7%)	6411(48.3%)	$\chi^2(1)=51.845, p<0.001$
	Non-agriculture	2754(17.2%)	1217(44.2%)	1537(55.8%)	
	Education				
	Primary or below	1914(11.9%)	1053(55.0%)	861(45.0%)	$\chi^2(3)=165.754, p<0.001$
	Junior secondary	7656(47.7%)	3549(53.6%)	7656(46.4%)	
	Senior secondary	3524(22.0%)	1736(49.3%)	1788(50.7%)	
	Postsecondary	2941(18.3%)	1191(40.5%)	1750(59.5%)	
	Type of job				
	Employee	8315(51.9%)	4335(52.1%)	3980(47.9%)	$\chi^2(1)=19.996, p<0.001$
	Self-employed	7720(48.1%)	3752(48.6%)	3968(51.4%)	
	Individual income (RMB/month)	3963(3494)	3834(3245)	4093(3726)	F(1)=22.221, p<0.001
	Log ₁₀ (Individual income)	3.51(0.27)	3.50(0.26)	3.51(0.28)	F(1)=9.450, p<0.01
	Household income (RMB/month)	8435(7194)	8073(6016)	8802(8253)	F(1)=41.368, p<0.001
	Log ₁₀ (Household income)	3.85(0.23)	3.84(0.22)	3.86(0.26)	F(1)=29.458, p<0.001
Characteristics of the child	Gender				
	Boy	9512(59.3%)	4883(51.3%)	4629(48.7%)	$\chi^2(1)=7.606, p<0.01$
	Girl	6523(40.7%)	3204(49.1%)	3319(50.9%)	
	Age of the child (years)	5.42(4.05)	6.00(4.12)	4.83(3.89)	F(1)=343.378, p<0.001
	The number of elder siblings	0.51(0.61)	0.49(0.60)	0.52(0.62)	F(1)=5.776, p<0.05
Migration-specific variables	Type of migrant				
	Intra-provincial	7283(45.4%)	3473(47.7%)	3810(52.3%)	$\chi^2(1)=40.280, p<0.001$
	Inter-provincial	8752(54.6%)	4614(52.7%)	4138(47.3%)	
	Duration as a migrant worker (years)	10.03(5.74)	10.54(5.85)	9.51(5.59)	F(1)=129.259, p<0.001
	Migration experience				
	Single experience	10242(63.9%)	3692(36.0%)	6550(64.0%)	$\chi^2(1)=2346.981, p<0.001$
	Multiple experience	5793(36.1%)	4395(75.9%)	1398(24.1%)	

(Continued)

Table 1 (Continued).

Name of Independent Variable		Total Sample No. (%)/ Mean (SD)	Hometown No. (%)/ Mean (SD)	Host Community No. (%)/ Mean (SD)	Chi-Squared Test / ANOVA Test [#]
Regional characteristics	Region				
	Eastern region	8510(53.1%)	4507(53.0%)	4003(47.0%)	$\chi^2(3)=187.555, p<0.001$
	Central region	2757(17.2%)	1507(54.7%)	1250(45.3%)	
	Western region	4262(26.6%)	1931(45.3%)	2331(54.7%)	
	Northeastern region	506(3.2%)	142(28.1%)	364(71.9%)	
	Megacity cluster				
	Jing-Jin-Ji Area	1672(10.4%)	708(42.3%)	964(57.7%)	$\chi^2(3)=179.383, p<0.001$
	Yangtze River Delta	3318(20.7%)	1958(59.0%)	1360(41.0%)	
	Pearl River Delta	1416(8.8%)	791(55.9%)	625(44.1%)	
	Others	9629(60.0%)	4630(48.1%)	4999(51.9%)	

Notes: [#]Significant results in the Chi-squared test/ ANOVA test ($p<0.05$) indicated a statistical difference among the two studied sub-groups; Chi-square tests were conducted for the categorical variables, including ethnicity, hukou type, education, types of job, gender of the child, type of migrant, migration experience and both regional characteristics; ANOVA tests were conducted for the continues variables, including age, individual income, $\log_{10}(\text{individual income})$, household income, $\log_{10}(\text{household income})$, age of the child, number of elder siblings and duration as a migrant worker.

$p<0.001$). The group of migrant mothers deliver in host communities reported higher individual income (RMB 4093 VS RMB 3834, $F(1)=22.221, p<0.001$), common logarithm of individual income (3.51 VS 3.50, $F(1)=9.450, p<0.01$), household income (RMB 8802 VS RMB 8073, $F(1)=41.368, p<0.001$) and common logarithm of household income (3.86 VS 3.84, $F(1)=29.458, p<0.001$).

Child characteristics also differed. There were more girls who were born in host communities than boys (50.9% VS 48.7%, $\chi^2(1)=7.606, p<0.01$) by migrant working mothers. Children born in host communities were generally younger compared to those born in hometowns (4.86 years VS 6.00 years, mean=5.42, $F(1)=343.378, p<0.001$). They also had more siblings on average than those born in hometowns (0.52 siblings VS 0.49 siblings, mean=0.64, $F(1)=5.776, p<0.05$).

The comparative analysis of migration-specific variables revealed that intra-provincial migrant working mothers reported higher rates of deliveries in host communities than inter-provincial ones (52.3% VS 47.3%, $\chi^2(1)=40.280, p<0.001$). On average, the duration as a migrant worker was shorter for mothers who gave birth in host communities as opposed to those in hometowns (9.51 years VS 10.54 years, $F(1)=129.259, p<0.001$). The migrant working mothers who had only one migration experience demonstrated higher rates of giving birth in host communities than those with multiple migration experiences (64.0% VS 24.1%, $\chi^2(1)=2346.981, p<0.001$).

Regarding regional characteristics, the largest sample of participants was working and living in the Eastern region (53.1%) followed by the Western region (26.6%), the Central region (17.2%) and the Northeastern region (3.2%). However, migrant women who were working in the Northeastern region (71.9%) reported the highest rate of delivery in host communities, followed by those in the Western region (54.7%) and the Eastern region (47.0%, $\chi^2(3)=187.555, p<0.001$). Among the participants, 40% were working in the three megacity clusters: Yangtze River Delta (20.7%), Jing-Jin-Ji Area (10.4%) and Pearl River Delta (8.8%). The migrant working mothers in the Jing-Jin-Ji area (57.7%) reported the highest rate of delivery in host communities (57.7%), while those in the Yangtze River Delta reported the lowest rate of giving birth in host communities (41.0%, $\chi^2(3)=179.383, p<0.001$).

Multivariate Logistic Regression Modeling of Place of Delivery Among Migrant Working Mothers

Overall, the multivariate logistic regression model of migrant working mothers' place of delivery reported good model fit, indicated by the Hosmer–Lemeshow Test ($\chi^2(8)=11.717$, $p=0.164$). Approximately 25.0% of the variability in the dependent variable (migrant working mothers' delivery in host communities) could be explained by the predictors included in the multivariate logistic regression model (Nagelkerke R Square=0.250, Table 2).

Table 2 Logistic Regression Analysis of Place of Delivery Among Migrant Working Mothers in China (N=16035; 0=hometown, 50.4%; 1=host Community, 49.6%)

Name of Independent Variable		Logistic Regression Model
Sociodemographic factors	Age (years)	1.002, $p=0.659$, 95% CI [0.993, 1.011]
	Ethnicity (Han)	0.910, $p=0.179$, 95% CI [0.793, 1.044]
	Hukou type (non-agriculture)	0.977, $p=0.662$, 95% CI [0.882, 1.083]
	Education	
	Junior secondary	0.960, $p=0.501$, 95% CI [0.852, 1.083]
	Senior secondary	1.006, $p=0.932$, 95% CI [0.852, 1.081]
	Postsecondary	1.182, $p<0.05$, 95% CI [1.007, 1.388]
	Type of job (self-employed)	1.127, $p<0.01$, 95% CI [1.044, 1.216]
	$\text{Log}_{10}(\text{InIncome})$	0.754, $p<0.001$, 95% CI [0.639, 0.889]
	$\text{Log}_{10}(\text{HoIncome})$	1.734, $p<0.001$, 95% CI [1.422, 2.116]
Characteristics of the child	Gender (girl)	0.586, $p=0.981$, 95% CI [0.941, 1.052]
	Age of the child (years)	0.858, $p<0.001$, 95% CI [0.846, 0.871]
	The number of elder sibling(s)	1.108, $p<0.01$, 95% CI [1.033, 1.187]
Migration-specific variables	Type of migrant (inter-provincial)	0.858, $p<0.001$, 95% CI [0.792, 0.930]
	Duration as a migrant worker (years)	1.107, $p<0.001$, 95% CI [1.095, 1.118]
	Multiple migration experience	0.134, $p<0.001$, 95% CI [0.123, 0.147]
Regional characteristics	Region	
	Central region	0.755, $p<0.001$, 95% CI [0.664, 0.858]
	Western region	0.976, $p=0.685$, 95% CI [0.865, 1.100]
	Northeastern region	1.767, $p<0.001$, 95% CI [1.403, 2.224]
	Megacity cluster	
	Jing-Jin-Ji Area	0.823, $p<0.05$, 95% CI [0.708, 0.956]
	Yangtze River Delta	0.597, $p<0.001$, 95% CI [0.524, 0.680]
	Pearl River Delta	0.728, $p<0.001$, 95% CI [0.625, 0.848]
Model summary	Nagelkerke R Square	0.250
	Hosmer-Lemeshow Test	$\chi^2(8)=11.717$, $p=0.164$

Association with Sociodemographic Factors

Age (OR=1.002, 95% CI [0.993, 1.011]), ethnicity (OR=0.910, 95% CI [0.793, 1.044]) and hukou type (OR=0.977, 95% CI [0.882, 1.083]) did not have a significant association with the place of delivery among migrant working mothers.

However, higher education level, self-employment and higher household income showed a positive correlation with the likelihood of delivery in host communities. In particular, migrant working mothers with a postsecondary education degree were 18.2% more likely to give birth in host communities (OR=1.182, 95% CI [1.007, 1.388]). In addition, being self-employed increased the likelihood of delivery at destination by 12.7% (OR=1.127, 95% CI [1.044, 1.216]). Furthermore, for every unit increase in household income on a log10 scale, the likelihood of delivery in host communities rose by 73.4% (OR=1.734, 95% CI [1.422, 2.116]). Conversely, an increase of one unit in migrant working mothers' individual income on a log10 scale was associated with a 24.6% decrease in the likelihood of delivery in host communities (OR=0.754, 95% CI [0.639, 0.889]).

Association with the Characteristics of the Child

The child's gender did not significantly influence the place of delivery among migrant working women. However, the age of the child was negatively associated with the likelihood of giving birth in host communities. In particular, each additional year of the child's age corresponded to a 14.2% reduction in the likelihood of choosing host communities for childbirth (OR=0.858, 95% CI [0.846, 0.871]). Conversely, the presence of older siblings had a positive influence on the decision to deliver in host communities. Each additional older sibling increased the likelihood of giving birth in these areas by 10.7% (OR=1.107, 95% CI [1.095, 1.118]).

Association with Migration-Specific Variables

Each additional year of migration duration was associated with a 10.7% increase in the likelihood of choosing host communities for childbirth (OR=1.107, 95% CI [1.095, 1.118]). In contrast, inter-provincial migration and multiple migration experiences were negatively associated with delivering in host communities. Specifically, inter-provincial migrant mothers were 14.2% less likely to give birth in host communities (OR=0.858, 95% CI [0.792, 0.930]). Furthermore, migrant working mothers with multiple migration experiences—defined as having more than one destination in their past migration history—exhibited an 86.6% reduction in the likelihood of giving birth in host communities (OR=0.134, 95% CI [0.123, 0.147]).

Association with Regional Characteristics

In comparison to the Eastern region, migrant working mothers in the Central region were 24.5% less likely to give birth in their host communities (OR=0.755, 95% CI [0.664, 0.858]). Conversely, those in the Northeastern region exhibited a 76.7% higher likelihood of giving birth in host communities (OR=1.767, 95% CI [1.403, 2.224]). All three selected megacity clusters demonstrated a negative association with the likelihood of migrant working mothers delivering in host communities. Specifically, migrant working mothers in the Jing-Jin-Ji area were 17.7% less likely to give birth in these communities (OR=0.823, 95% CI [0.708, 0.956]). In the Yangtze River Delta, this likelihood decreased by 40.3% (OR=0.597, 95% CI [0.524, 0.680]), while in the Pearl River Delta, it was reduced by 27.2% (OR=0.728, $p<0.001$, 95% CI [0.625, 0.848]).

Discussion

Spatial Differences in Place of Delivery Among Migrant Working Mothers in China

This study included a total of 16035 rural migrant working mothers from 31 different province-level administrative units, providing a comprehensive picture of the place of delivery among internal migrant working mothers in China. Among these mothers, 49.6% opted to give birth in host communities, while 50.4% returned to their hometowns for their newborn delivery. However, there are significant differences in the places of delivery among migrant working mothers who are working in different provinces. Notably, among the provinces (eg, Heilongjiang, Ningxia, Inner Mongolia and Jilin) that demonstrated high rates of delivery in host communities, almost all of them are located in the North, including

the Northeast and Northwest parts of China. Meanwhile, many of these provinces share borders with China's neighboring countries, which include Heilongjiang (sharing border with Russia), Jilin (Russia and North Korea), Liaoning (North Korea), Inner Mongolia (Mongolia and Russia), Xinjiang (Mongolia, Russia, Kazakhstan, etc.), Yunnan (Vietnam, Laos and Myanmar) and Guangxi (Vietnam). With the exception of Beijing, the percentage of national GDP contributed by these provinces and regions is comparatively lower than that of others ([Appendix I](#)).²⁸ In addition, these areas exhibit high rates of out-migration and low birth rates, particularly in the three northeastern provinces of China (Heilongjiang, Jilin and Liaoning).²⁹ Rather than returning to their hometowns, migrant working mothers in the Northeastern region are 76.7% more likely to give birth in their host communities, as they may have access to healthcare facilities and affordable housing for their growing families, which tend to be less expensive than in the southeastern provinces.

Moreover, the study identified three types of areas among the provinces that reported low rates of delivery in host communities, which means more than 55% of the migrant working mothers return to their hometowns for childbirth. First, provinces with significant GDP contribution in China, such as Guangdong (its GDP ranks no.1 in China, 43.9% of migrant mothers give birth in host communities, [Appendix I](#)), Jiangsu (its GDP ranks no. 2 in China, 41.8% give birth in host communities), Fujian (its GDP ranks no.8 in China, 41.8% give birth in host communities) and Zhejiang (its GDP ranks no. 4, 34.6% of delivery in host community, [Appendix I](#)). In fact, working in the Yangtze River Delta reduces the likelihood of migrant working mothers delivering in host communities by 40.3%, while in the Pearl River Delta, this likelihood decreases by 27.2%. In these regions, the economic burden of childbirth for migrant mothers and their families in host communities is likely higher compared to other areas. Additionally, these regions are popular destinations for internal migrants,³⁰ leading to increased competition among migrant families for public services like health care and education services. Previous studies have shown that internal migrants in more developed Eastern regions utilize fewer public health services.³¹ Consequently, migrant working mothers, who are working in these economically developed regions with higher GDP, are more likely to return to their hometowns for childbirth than those in other areas.

Second, provinces in Central and Western regions with negative net migration (the number of immigrants is smaller than the one of emigrants) reported low rates of delivery in host communities, such as Hunan (negative net-migration, 31.5% give birth in host communities), Chongqing (negative net-migration, 32.4% give birth in host communities), Jiangxi (negative net-migration, 34.6% give birth in host communities), Guizhou (negative net-migration, 41.2% give birth in host communities) and Henan (negative net-migration, 43.7% give birth in host communities, [Appendix I](#)). Working in the Central region decreases the likelihood of migrant working mothers delivering in host communities by 24.5%. Improving transportation infrastructure and affordable transportation options may positively influence migrant working mothers' returning to their hometowns for childbirth. While improving, the Central regions often remain less developed compared to more economically prosperous areas in Eastern regions. Central regions serve as both a source of migrant labor and a destination for employment opportunities.³² As a result, migrant working mothers in these areas are particularly inclined to return to their hometowns for childbirth.

Third, Tibet (41.4% give birth in host communities) and Qinghai (32.6% give birth in host communities), both located on the Qinghai-Tibet Plateau, demonstrated significantly low rates of delivery in host communities. These regions attract a large number of immigrants because of the local economic development, particularly the rapid tourism expansion and improved transportation.³³ However, the high altitude of the Qinghai-Tibet Plateau may pose significant health risks during pregnancy and childbirth, especially for immigrants.³⁴ Moreover, cultural and health practices surrounding childbirth³⁵ and familial support had an important role in influencing migrant working mothers' decisions. Han migrant working mothers may find it challenging to integrate into the local culture and face difficulties in inviting their families to the Qinghai-Tibet Plateau to care for the newborns. Therefore, the geographic context may play a significant role in shaping the experiences and choices of migrant mothers in these areas.

The findings underscore the need for regionally tailored policies to address disparities in maternal healthcare access for migrant working mothers in China, including targeted healthcare subsidies and affordable housing in high-GDP regions (eg, Yangtze/Pearl River Deltas) to reduce economic barriers, improved social integration programs in culturally distinct areas (eg, Qinghai-Tibet Plateau), and enhanced transportation-linked healthcare coordination for Central/Western provinces with high return-migration rates. Additionally, Northern provinces with higher host-community delivery rates (eg, Heilongjiang) may benefit from replicable models of affordable care. At the same time, policies

should prioritize equitable access to prenatal services across all regions, particularly for migrants in economically dominant but service-competitive areas.

Determinants of Place of Delivery Among Migrant Working Mothers in China

In addition to the geographical location, the place of delivery among migrant working mothers was influenced by various factors, including women's sociodemographics, characteristics of the child, migration and regional characteristics. First, employment relevant factors have a significant influence on migrant working mothers' place of delivery. Many migrant mothers choose alternative employment structures (48.1% in this research), such as self-employment, which provides the flexibility needed to balance family responsibilities with work.³⁶ Small-scale businesses, such as street vendors or hawkers, have become popular self-employment choices for migrant workers, especially in urban China.³⁷ Mothers engaged in self-employment may face difficulties leaving their businesses unattended for extended periods. Opting to give birth in their host communities where they work enables them to sustain and manage their businesses more efficiently without prolonged interruptions.

Moreover, household and individual income have contradictory effects on the choice of delivery location for migrant working mothers. In particular, migrant working mothers with higher household incomes are more likely to choose host communities for childbirth, while migrant working mothers with higher individual incomes reported a lower likelihood of giving birth in host communities. On the one hand, higher household income makes it more feasible for the families of migrant workers to afford premium health services,³⁸ ensuring a safer and more comfortable childbirth experience for migrant mothers. A higher household income also typically allows migrants to secure better housing for migrants in host communities.³⁹ It is very difficult for migrant working mothers, who are reliant on employer-provided dormitories, to give birth in host communities. On the other hand, instead of giving birth in destination areas, migrant working mothers with higher individual incomes are more likely to return to their hometowns for childbirth. This is consistent with a study of rural migrant working mothers in China, in which the groups of mothers with higher individual income are more likely to leave their children behind in the countryside, while those with higher household income are more likely to move to urban areas with their children.⁴⁰ Therefore, it is crucial to consider both individual and household income, as they can impact behaviors and decisions differently when studying working mothers.

Furthermore, migrant working mothers, who have more children, reported higher rates of delivery in host communities. In particular, for each additional older sibling, the likelihood of giving birth in these areas increased by 10.7%. As migrant mothers have more children, they often become more integrated into their host communities. This integration can lead to increased social support networks and healthcare service utilization,¹⁹ which are crucial during pregnancy and childbirth. It is also possible to predict that an increasing number of migrant working mothers are opting to stay in host communities for childbirth in the future, as the children born in these communities tend to be younger compared to those born in their hometowns according to our data.

In addition, with an extended migration duration and increased familiarity with host communities, migrant working mothers are likely to develop stronger relationships with local healthcare providers and prefer giving birth in host communities rather than returning to their hometowns. Our data indicate that each additional year of migration duration increases the likelihood of delivery in host communities by 10.7%, while having more than one migration experience decreases this likelihood by 86.6%. When compared to inter-provincial counterparts, intra-provincial migrant working mothers may have access to existing social support networks within their province, such as family members, friends, or fellow migrants who can provide assistance and guidance during pregnancy and childbirth. Moving to a different province often means encountering different cultural norms and potentially different dialects,⁴¹ resulting in a 14.2% decrease in the rates of delivery in host communities.

This research shed light on the unique struggles and barriers these women face, including access to healthcare, social support and workplace policies. Understanding these challenges can help policymakers, healthcare providers and community organizations develop targeted interventions and support systems to improve the maternal health outcomes and overall well-being of migrant working mothers in China. Specifically, the findings highlight key policy implications, including the need to support self-employed migrant mothers through flexible maternity protections and childcare

assistance, and improve healthcare affordability and housing stability for low-income households in host communities. Additionally, programs fostering long-term social integration, such as prenatal support networks and culture-sensitive healthcare, could encourage more migrant mothers to utilize host community facilities, especially those inter-provincial migrants, while targeted subsidies and hukou reforms may help reduce disparities in maternal healthcare access between urban and rural areas.

Limitations and Future Research

This study aimed to enhance our comprehension of the childbirth location choices of migrant working mothers in China and their influencing factors. However, due to data availability constraints, the analysis only included information on the youngest child if a mother had two or more children, which was the case for nearly half of the migrant working mothers. Childbirth strategies may vary more for families with two or more children, as some older children might have been born in hometowns, while younger children were born in host communities. Moreover, this study focused solely on migrant working mothers engaged in income-generating activities, potentially skewing the findings toward the behaviors of income-earning migrant mothers. Those who had temporarily left the labor market were not represented in the sample. While some level of variance was expected when predicting complex human behaviors, the observed variation in the results underscores the need for further research into additional factors influencing the childbirth strategies of migrant working mothers. Unexplored factors could potentially impact the adoption of these strategies. Future research should incorporate qualitative methodologies and contextual analysis to gain a deeper understanding of the childbirth decisions made by migrant working mothers.

Conclusion

In conclusion, this study provides a general picture of the place of delivery among migrant working mothers in China at a national level and valuable insights of the interaction between migration and childbirth. Notably, significant spatial differences were found in the places of delivery of migrant working mothers. Several factors positively influence these decisions, including self-employment, postsecondary education, higher household income, having more children and longer migration duration. Conversely, higher individual income, the child's age, inter-provincial migration and multiple migration experience negatively impact the likelihood of giving birth in host communities. This research underscores the need for targeted interventions and support systems to address the unique challenges faced by migrant working mothers, including access to healthcare, social support and workplace policies. Future studies should incorporate qualitative methodologies and contextual analysis to deepen our understanding of these complex decisions, ultimately informing policies that address issues related to internal migration, migrant women and the overall wellbeing of migrant families.

Ethics Approval and Consent to Participate

The study was approved by the Secretary of Survey and Behavioural Research Ethics Committee at The Chinese University of Hong Kong in accordance with the Declaration of Helsinki (Ref.SBRE-22-0240, approved in December 2022). The data utilized in our research are secondary data sourced from the China Migrant Dynamic Survey, which has already received ethical approval. All procedures were conducted in accordance with the applicable guidelines and regulations.

Statement

During the preparation of this work, the author used Grammarly to improve the presentation and writing. After using this tool/service, the author reviewed and edited the content as needed and take full responsibility for the content of the published article.

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Disclosure

The author reports no potential conflicts of interest in this work.

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