

Gender Inequalities in Employment and Wage-earning among Internal Labour Migrants in Chinese Cities*

Min Qin¹, James J. Brown², Sabu S. Padmadas³, Bohua Li⁴, Jianan Qi⁵ and Jane Falkingham⁶

¹*China Population and Development Research Centre (Beijing) and China Research Centre, University of Southampton (mq1e12@soton.ac.uk)*

²*School of Mathematical Sciences, University of Technology Sydney (James.Brown@uts.edu.au)*

³*Centre for Global Health, Population, Poverty & Policy, China Research Centre and Department of Social Statistics and Demography, University of Southampton (S.Padmadas@soton.ac.uk)*

⁴*China Population and Development Research Centre (Beijing) (bohuali@sohu.com)*

⁵*China Population and Development Research Centre (Beijing) (jianan_qi@126.com)*

⁶*ESRC Centre for Population Change and China Research Centre, University of Southampton (J.C.Falkingham@soton.ac.uk)*

Correspondence

Sabu S. Padmadas, PhD
Professor of Demography and Global Health
Department of Social Statistics & Demography
Faculty of Social and Human Sciences, University of Southampton
Highfield, Southampton SO17 1BJ, United Kingdom
Tel: +44.23.8059.4382
Fax: +44.23.8059.3858
Email: S.Padmadas@soton.ac.uk

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Abstract

BACKGROUND

Recent trends show an unprecedented feminisation of migration in China, triggered by the increasing demand for cheap labour in big cities and the availability of women in the labour market. These trends corroborate the evidence that non-agricultural work and remittance from urban labour migrants have become the major sources of rural household income.

OBJECTIVE

This paper investigates the extent of gender inequalities in job-participation and wage-earning among internal labour migrants in China. We hypothesize that female migrants in cities are economically more disadvantaged than male migrants in the job market.

METHODS

We use data from the 2010 National Migrant Survey conducted in 106 cities representing all 31 provinces and geographic regions. The study applies the standard Heckman two-step Probit-OLS method to model job participation and wage-earning, separately for 59,225 males and 41,546 females aged 16-59 years, adjusting for demographic and social characteristics and potential selection effects.

RESULTS

Female migrants have much lower job-participation and wage-earning potential than male migrants. Male migrants earn 26% more hourly wage than their female counterparts. Decomposition analysis confirms potential gender discrimination suggesting that 88% of the gender difference in wages (or 12% of female migrant wage) is attributed to differential

treatment of female migrants in the Chinese job market. Migrants with *rural Hukou* status have less chance of participation in the job market and they earn less wages than those with *urban Hukou*, regardless of the education advantage.

CONCLUSIONS

There is evidence of significant female disadvantage among internal labour migrants in the job market in Chinese cities. Household registration by urban and rural areas, as controlled by the *Hukou* status, partly explains the differential job-participation and wage-earnings among female labour migrants in urban China.

KEY WORDS

Inequalities • Gender • Internal labour migrants • Labour Market • Wage-earning • Cities • China • Cross-sectional Survey

1. Introduction

Economic migration in China, particularly since the beginning of this century has been unprecedented in scale and composition. The 2010 census data show that China has over 220 million people who have migrated from rural to urban areas, of which the share in big cities is as high as 30–40% (NBS 2011). The official estimates show that, in 2011, motivated by the large earnings gap between rural and urban, approximately 159 million internal labour migrants were from rural areas, accounting for about 12% of China's total population (NBS 2012).

The migration trends observed over the last two decades also reveal an emerging pattern of feminisation in China (Fan 2008; Liang and Chen 2004). At the national level, the sex ratio of migrants was around 125 males per 100 females in 1990, which dropped to 107 and 100 in 2000 and 2005 respectively (Duan, Zhang and Lu 2010). Overall, females represent over 50% of internal labour migrants in the last decade (NBS 2012). This change has been prompted by the availability of cheap labour and increasing demand for female workforce in service sectors, manufacturing in non-state owned industries and household service jobs in big cities (Lu and Wang, 2013). There has also been a shift in the female migration patterns from intra-provincial to inter-provincial, increasingly longer times at destinations, as well as high levels of circulatory migration due to restrictions in big cities (Davin 2005; Liang and Chen 2004; Fan 2004; Fan 2000). Economic motives explain much of the recent increase in female migration from rural to urban areas and cities, rather than family or social factors (Taylor 2011). Young Chinese women increasingly aspire for better education opportunities,

autonomy, urban experience, modernity and better life in cities (Yilin, Hannum and Kao 2013, Liang and Chen 2004, Eklund 2000).

This paper aims to investigate the extent of gender inequalities in job-participation and wage-earning among internal labour migrants in China. Within the context of increasing feminisation of internal migration, this research addresses a policy-oriented question: are migrant women vulnerable to discrimination in job-participation and wage-earning in Chinese cities? We hypothesize that female migrants in cities are economically more disadvantaged than male migrants in the job market. This research applies the widely used Heckman two-step model to cross-sectional data from a large nationally representative Migration Survey conducted in 2010 across 106 Chinese cities, covering all 31 provinces and geographical regions. The 2010 Migration Survey is the first of its kind in China in terms of study design, sample size and comprehensive coverage of migrant population at the national level. It should be noted that using standard OLS regression to estimate factors associated with the distribution of wages might not be appropriate due to potential selection bias. This is because the wages of migrants who are either unemployed or those seeking jobs at the time of survey are unobserved. The proposed Heckman two-step solution is therefore appropriate to overcoming the selection bias problem.

2. Background and study context

Rural-urban migration in China was initially restricted until the late 1970s through the *hukou* registration system. Subsequently, the introduction of market-oriented economic reforms, including the establishment of special economic zones and open coastal cities in pursuit of

attracting foreign investments generated steady growth in economic opportunities and industrial productivity across China. Most economic activities were concentrated in big cities and in adjacent urban areas thus creating demand for both skilled and unskilled labour migrants from the countryside (Cai, Lin and Cao 2009). Since the mid-1990s, there has been a structural transformation in the Chinese economy towards liberalization and privatization of the state-owned companies, which not only sparked the expansion of private sectors, but also created new economic opportunities for the surplus rural workforce (Knight, Deng and Li 2010; Cai, Lin and Cao 2009).

Although rural migrants have contributed significantly to China's economic growth, they have low social status in urban cities. For instance, they tend to work mostly in informal sectors and have usually limited access to social benefits relating to unemployment, health and pension insurance, which are available to their urban counterparts. Efforts by the central government to eliminate discrimination of migrants, through introducing new laws and regulations to protect migrants' basic rights and increase their access to urban services and social benefits, have had limited success (Smart and Smart 2001). Migrants are generally willing to work for low wages in cities and urban areas, and they usually surrender to unequal treatment and discriminatory practices for their jobs and earnings. Of particular interest to this study, with increasing feminisation of migration, the gender gap in wages has widened considerably across big cities and urban areas of China (Sutherland and Yao 2011).

According to the Global Wage Report 2014/15, women's average wages range from 4% to 36% less than men's wages across countries; however, the gap widens in absolute terms for higher-earning women (ILO 2015). Evidence from meta-analysis found that from the 1960s

to the 1990s, in spite of a significant gender wage inequality, there was a moderate equalization between the men and women over time – the ratio of male to female wages declined by 0.8% per year during this period (Weichselbaumer and Winter-Ebmer 2005, Jarrell and Stanley 2004, Stanley and Jarrell 1998). The gender wage gap is diverse across countries during the transition from planned to market economies (Brainerd 2000). For instance, there were increasing gender wage gap in Russia and Ukraine, but decreasing for Central and Eastern European countries. In East Asia, however, the gender gap in wages is highly pronounced: females earn much lower wages (50% or lesser) than their male counterparts in Japan, Malaysia, Korea and Singapore; about 66% lesser in Hong Kong, the Philippines, Thailand, China and Viet Nam. In addition, while the gender gap in wages has been slowly narrowing in recent decades in this region, the opposite is the case for China (including Hong Kong) and Japan (ILO 2008).

Researchers often define wage discrimination by comparing wages for equally productive workers. The most standard approach in the literature to estimate the gap is the Blinder-Oaxaca decomposition method (Oaxaca 1973). The crude wage gap is decomposed into the portion explained by differences in human capital endowments, and an unexplained part, which is the difference in the human capital prices. It is the unexplained portion of the wage differential that is often interpreted as an estimate of discrimination. For example, the gender discrimination in wages was estimated at 6% in the United States in 2003 (Jarrell and Stanley 2004). In East Asia, discrimination contributed to between 20% and 80% of the gender gap in wages (ILO 2008).

In China, the 1994 Labour Law states that *'women and men shall enjoy equal rights with respect to employment; women may not be refused employment because of their sex'* and *furthermore, 'equal pay shall be given for equal work'*. However, the enforcement of gender equality legislation has been weak. With rapid economic growth, substantial and varying gender inequalities of employment and pay have emerged (Sutherland and Yao 2011, Lin et al. 2008, Shen and Yao 2008). Studies of unemployment among the general population reported evidence of female disadvantages (Cai 2004, Knight and Li 2001). These studies showed that women's re-employment decisions were likely to be influenced by life-cycle characteristics of the household. Another study conducted between 1988 and 1995 in 10 provinces of urban China reported a moderate increase in gender wage gap as the economic planning shifted from central to local areas (Gustafsson and Li 2000). During this period, females earned between 16% and 18% less than males which thereafter increased to between 23% and 30% from 1990 to 2000 (ACWF 2006, Gustafsson and Li 2000). The decomposition results showed an intensification of discrimination from 52% to 63% during 1988-1995 to 78% in 2007 (Gustafsson and Li 2000, Li and Song 2012). However, these results represent generally urban Hukou residents and not specifically the internal labour migrants.

The gender difference in wage can be explained by individual, employee, wage-related and productivity-related characteristics, for example age, education, years spent in employment, hours worked and type of sector (Weichselbaumer & Winter-Ebmer, 2005, Kunze, 2008; Kunze 2005; Garcia, Hernández and Lopez-Nicolas 2001, Stanley & Jarrell, 1998). Small-scale and regional surveys demonstrate evidence of gender inequalities in the Chinese labour market dominated by internal migrants (Zhang and Dong 2008; Bishop, Luo

and Wang 2005; Liang and Chen 2004). Female migrants generally earn lower wages than their male counterparts, even after controlling for other socio-demographic and family variables (Duan, Zhang and Lu 2010, Wang, 2010). However, the gender wage gap was not uniform across migrants' wage distribution (Wang 2010, Magnani and Zhu, 2012). Human capital and migrant characteristics have positive influence on the wage-earnings (Wang and Cai 2008). Young, unmarried, well-educated and urban household registered migrants generally have better earning potential than their rural, less educated, older counterparts. Inter-province migration, longer residence in urban areas and employment-driven migration are also significantly associated with higher income (Duan, Zhang and Lu 2010). A study by Ge, Li and Yin (2010) in Jiangsu province reported that city was the most significant factor influencing the job opportunity and wages of female migrants. The jobs in cities required specific skills for which education and work experience were less relevant, which enabled wider opportunities for migrant workers. The government even introduced welfare packages and minimum wage standards for migrant workers especially in coastal cities (Cai 2011, Knight, Deng and Li 2010, Du and Pan 2009). Yet, the wage differences continued to rise disadvantaging female labour migrants living in urban areas (Gustafsson and Li 2000).

Existing studies focus mostly on urban *Hukou* employees and there is generally lack of national level surveys and database to understand the gender gap in employment and wages for migrants in urban areas. The present research addresses this gap using the National Migration Survey, which covers 106 cities representing all 31 provinces and geographical regions with a focus on labour migrants from rural areas of China.

3. Data

Data for this study were obtained from the 2010 National Migrant Survey, funded by the then National Population and Family Planning Commission, coordinated by the China Population and Development Research Centre. The survey was conducted in 106 destination cities representing all 31 provinces and geographical regions. The survey interviewed 122,670 male and female internal labour migrants. The individuals eligible in the survey were migrants aged between 16 and 59 years, who had moved across a county (*Xiàn*) boundary from their registered household and had stayed in the current destination for more than one month. In addition, the eligibility criteria included the reasons for moving, which was to seek a paid job. The spouses of migrants were not included in the eligibility criteria. The 106 cities were chosen purposively ensuring a representation of different administrative levels (province, prefecture, and county) and special economic zones. Within each city, a three stage (township, community, individual) sampling was adopted using PPS sampling at the first two stages. Although the 106 cities were purposively chosen, within each city the sample was drawn randomly from the migrant populations resulting in high coverage of the migrant population across China.

Of the 122,670 migrant respondents, only 84.6% reported to be economically active at the time of survey (Figure 1). Economically active refers to those individuals who are either employed or actively seeking employment at the time of survey, including both employed and unemployed. Employed refers to migrants who are currently working in a paid job. Among economically active migrants, 97.9% were employed. There was a higher representation of females in the inactive and unemployed categories, while female migrants constituted about

41% of all employed individuals. Only employed migrants were asked questions about their monthly wage and working hours. Among employed, 475 males and 333 females did not report either monthly wage or working hours. The difference in characteristics among employed by wage reporting status was not statistically significant. We excluded these 808 cases from the analysis. The final sample for the wage analysis constituted 100,771 employed (59,225 males and 41,546 females) internal labour migrants aged 16-59.

— Figure 1 about here —

4. Methodology

The Heckman two-step Probit-OLS model was used to estimate a job participation equation and a wage-earning equation adjusting for relevant characteristics, separately for males and females. The dependent variable for the wage equation was *logarithmic hourly wage*, calculated as monthly wage divided by number of monthly hours based on reported hours worked per week (weekly hour \times 52/12). The conventional Mincerian earnings equation was deemed appropriate for empirical analysis of data from both high and middle income countries including the Chinese context (Wang 2010, Magnani and Zhu 2012). The wage equation is given by:

$$\ln(w_j) = \alpha + x_j' \beta + \varepsilon_j \quad (1)$$

where subscript j denotes the individual, variable w_j stands for hourly wages of individual j , x_j is a column vector of explanatory variables for individual j , which includes education, training, experience, experience squared, gender and other geographic and occupation characteristics (Mincer 1974), and β is the corresponding vector of model parameters.

Building on the concept of a Mincerian wage equation, a set of contextually relevant variables likely to be associated with job participation and wage earning of migrants were identified based on evidence reported in previous studies (Duan, Zhang and Lu 2010, Wang 2010, Magnani and Zhu, 2012). The individual characteristics in the equation included: human capital measured in terms of the highest grade of education; work experience measured in terms of the months spent in the current job, type of occupation, ownership of a company; age, marital status, ethnicity, rural/urban household registration of migrants; type of migration (inter-province and within province), duration of stay in the current destination, type of accommodation, number of migrants in the household; region, city, number of migrants in the city, proportion of migrants in the city (number of migrants out of total usual residents), and whether the destination city is at the provincial, prefecture or county level. The identifying variable in the selection equation was age of the youngest child, which does not appear in the wage equation. This is justified by the fact that the presence of children can only impact wages through selection into employment (Heckman 1974, 1979, Mulligan and Rubinstein 2008).

Robust regression techniques were used, adjusting for clustering effects from the sample design while the inclusion of design variables, for example, the number of migrants in the city, proportion of migrants and administrative level of the city were adjusted for the dis-proportionate sampling.

After testing and correcting for sample selection bias, the Blinder-Oaxaca decomposition of the male-female wage differential was applied to identify the reasons for male-female difference in mean wages. This technique divides the wage gap into a part that is explained

by difference in predictors and a part that cannot be explained by group differences. Based on Jann (2008 p.454), the wage difference can be written as $R = \bar{w}_m - \bar{w}_f$, where \bar{w}_m is the mean of the predicted log hourly wages of male migrants and \bar{w}_f is the corresponding mean for female migrants. Then based on equation (1) applied separately for males and females, R can be expressed as:

$$\begin{aligned} R &= \bar{w}_m - \bar{w}_f = \bar{x}_m' \beta_m - \bar{x}_f' \beta_f \\ &= [\bar{x}_m - \bar{x}_f]' \beta_f + \bar{x}_f' (\beta_m - \beta_f) + [\bar{x}_m - \bar{x}_f]' (\beta_m - \beta_f) \end{aligned}$$

The first component $[\bar{x}_m - \bar{x}_f]' \beta_f$ is the ‘endowments effect’, the differential due to group differences in the mean of the predictors given by \bar{x}_m and \bar{x}_f . The second component $\bar{x}_f' (\beta_m - \beta_f)$ measures the contribution of differences in the coefficients (including intercept). The third component $[\bar{x}_m - \bar{x}_f]' (\beta_m - \beta_f)$ is an interaction term accounting for the fact that differences in endowments and coefficients exist simultaneously between the two groups. The substantial part $\bar{x}_f' (\beta_m - \beta_f)$ is commonly attributed to gender discrimination, although it might reflect the omission of important variables from X (Su and Heshmati 2011).

5. Results

5.1 Descriptive

The demographic and social characteristics of male and female internal labour migrants are presented in Table 1. About 77% of the respondents are married, and more than 85% have rural household registration at their place of origin. More than 80% of internal labour migrants have completed middle school, but only just over 30% completed high school or above. Female migrants have slightly lower levels of education compared to male migrants. Inter-province migrants account for more than 70% of the study sample. The average age of

migrants is 32 years, which did not differ between males and females, with a standard deviation of about 9 years (results not shown separately).

— Table 1 about here —

For the internal labour migrants, 97.2% males and 77.4% females are employed in paid work. Figure 2 shows that job participation for male internal labour migrants is stable and high across all ages, while for females it starts with the highest proportion in the youngest age-group, then drops down around ages 25-34, followed by a recovery by ages 35-49, and then declines dramatically after age 50. Generally, females exit jobs at peak reproductive ages, have children and then usually return to their jobs as their children get older. Most migrants live in the eastern region (86.8%). About 82% live in neighbourhood community households and the rest live in factory dormitories. One in four migrants have been living in their destination for over 7 years and about one in five lives in cities where more than 50% of the population are migrants. About 20% of migrants have young children below 6 years and about 69% live in households with two or more internal labour migrants.

— Figure 2 about here —

The occupational characteristics of migrants are shown in Table 2. About 37% of male and female migrants work in the manufacturing sectors. However, male migrants are twice as likely as females to be in professional jobs such as managers or professional technicians.

About 74% of male and female migrants are employed in private companies; for females (15.3%) there is greater proportion in foreign investment companies than males (10%). Overall, about 24% of migrants are self-employed, less than 4% are employers and the rest work as employees. The average years spent in their current employment is higher for males (44.3 months) than females (37.6). The average income is higher among males (2840 RMB) than females (2229 RMB) and females earn on average 2 RMB less per hour than their male counterparts. Figure 1A (see Appendix A) shows the histogram illustrating the normal distribution of log hourly wage for both male and female migrants. Once we control for the level of education, female earnings remain slightly less than male; while as the level of education increases, the hourly wage increases for both male and female migrants (Figure 3).

— Table 2 and Figure 3 about here —

5.2 *Probit regression analysis*

Table 3 presents the estimates from the probit selection model for labour force participation. The results are informative in understanding the characteristics of male and female migrants engaged in wage employment. We report both the coefficient and the average marginal effect of the independent variables. The marginal effect is the expected change in the average probability of the outcome $p(Y=1)$, if the independent variable changes by one unit, holding all the other variables constant.

The results show that age of the youngest child, a key variable in determining the probability of a person being employed as well as the identification of the two-step regression,

has a contradicting effect on job participation for male and female migrant models. Having the youngest child aged 0-5 or aged 6-17 increases the probability of a male migrant being employed compared to those with the youngest child older than 18 or those with no children. For female migrants, the effect of this variable is opposite. Having the youngest child aged 0-5 or 6-17 reduces the probability of a woman being in employment.

— Table 3 about here —

Education is another key variable in male-female employment participation differences. For male migrants, compared to those with primary school education, the probability of being employed increases for those with middle school education. Interestingly, high school and above education has no significant effect on the employment of males relative to their counterparts with primary education. Whereas for female migrants, compared to the primary school education, the probability of being employed increases for middle school and high school and above education. This suggests that the more educated female migrants are likely to seek or have better employment opportunities than their lower educated counterparts, but for male migrants education plays a less important role.

After controlling for city effects, number of migrants in the city and proportion of migrants in the city have no significant effect on job participation for both male and female. The opportunities for a paid job for female migrants are less in the prefecture and county level cities when compared to those in the provincial level.

The share of migrants in the city has a differential effect for male and female migrants. The higher the proportion of migrants in the city, the lower the probability of being employed for male migrants. However, female migrants have better chances of being employed in those cities. These results indicate high competition with respect to job participation for male migrants in the urban market.

5.3 Evidence of sample selection effects

Table 4 presents the estimates of the wage equation, before and after correcting for sample selection. The coefficient of Λ ¹ is significant and negative for male migrants (-0,131) while for female migrants it is positive but not significant. This indicates the presence of sample selection bias and the need for correction for the male migrant models. *Lambda* can be interpreted as the covariance between the error terms in the job participation and wage functions and its sign implies the mechanism of the selection into waged employment that is working (Nicaise, 2001). The negative λ means the characteristics that increase an individual's salary are those that decrease the probability of being employed. While the positive λ indicates the characteristics either increase or decrease both the wages and probability of being employed.

— Table 4 about here —

¹ Λ is the inverse of Mill's ratio (Jann 2008) – the probability density function over the cumulative function of a distribution. The inverse Mills ratio in Heckman's two-stage model is used to adjust the second stage of the wage regression for the first selection stage, as if the sample is randomly selected.

5.4 OLS results after the adjustment of sample selection

After the adjustment for sample selection bias, the OLS results indicate that the individual's wage determination process is influenced by all the human capital variables for both male and female migrants. Training and experience effects are in the expected direction. Individuals with skilled training and more experience seem rewarded with higher wages. Although both the squared term and linear term for experience are positive suggesting increasing rewards for increasing experience, the size of the coefficients is small. We found that rural Hukou status has negative effect on wage earning for both male and female migrants. In order to examine whether increase in education would change the disadvantage of rural *Hukou* status, we have included an interaction term of education and *Hukou* status in the model.

The results show (Table 4) that the interaction term of high school and rural *Hukou* for male migrants and interaction term of middle school and rural *Hukou* for female migrants have significant effect on wage. The coefficient -0.114 for the interaction between high school and rural *Hukou* indicates that while high school has a generally positive effect on wage; the effect is much smaller for rural *Hukou* male migrants than for urban *Hukou*. The coefficient 0.099 indicates that while middle education has no significant effect for urban *Hukou* female migrants; there is a positive difference for rural *Hukou* female migrants. Therefore, it appears that education does not reduce the rural *Hukou* migrant disadvantage for both males and females. Further explanations are provided in Appendix B. The results from Table 4 also show that occupation, ownership of a company, and employment status are all determinants of migrant wages.

5.5 *Decomposition results*

Table 5 reports the results from decomposition with and without sample selection correction for male and female migrants. The results show that the difference in coefficient effect increases from 0.235 to 0.244 after correcting for sample selection bias. Considering the decomposition analysis, the endowments account for 4.6% (0.011/0.244) and the coefficients account for 88.1% (0.215/0.244). The interaction accounts for the residual 7.2% (0.018/0.244). Therefore, the average wage for female migrants in the population would increase by 4.6% if they had the same characteristics as males. However, the change in the average wage for female migrants would be 11.8% (0.215/1.828) if the males' coefficients are applied to the females' characteristics. This is strongly indicative of discrimination in the labour market against female migrants, although it may also suggest other unobserved effects are present (addressed in the next section).

— Table 5 about here —

6. Discussion

The foregoing analysis based on a national survey demonstrates significant inequality for female migrants compared to their male counterparts in the job market in Chinese cities. The results highlight the differences in the way in which female migrants have adjusted to the migration process compared to male migrants. Female migrants have much lower job participation and lower wage earning than male migrants. Female migrants in cities are often subject to dual pressure to leave employment and resume the role of full-time homemaker or

mother, and then they subsequently return to employment due to economic pressure in households. This suggests that those with young children are less likely to be active in employment. The present findings at the national level are consistent with the evidence from other qualitative research and small-scale surveys in specific cities (Ye, Ge and Ye 2005, Fan 2004, Fan 2003). Results from a poll conducted in *Jiansu* province showed that 80% of female respondents felt they had experienced discrimination in recruitment and that employers had been explicit in stating their preferences for men, even with bold phrases in their advertisements such as ‘male graduates only’ (Chao, 2003). These discriminatory practices apply not only in private companies but also in government departments, state-owned enterprises and foreign invested companies. Often the recruited women were issued with (illegal) contracts stating ‘no birth for five years’ (Chao, 2003). We found that migrants with rural *Hukou* status face disadvantages in the job participation and wage earnings in urban cities, regardless of any education difference. Household registration system remains a barrier for migrants in the labour market.

The decomposition results of the wage difference between males and females confirm evidence of potential gender discrimination suggesting that 88% of the gender gap in wages (or 12% of female migrant wage) is attributed to differential treatment of female migrants in the Chinese job market. As observed elsewhere in other East Asian countries, widespread discrimination of women at work exists in Chinese cities for reasons related to their reproductive and childcare responsibilities. Another reason is the stereotyped gender-biased attitudes among labour market actors in terms of the types of jobs differentiated by gender and preferences for either young women or men in specific sectors. The discriminatory

attitudes and practices in the job recruitment and employment sectors have left women with little choices but to take up jobs in lower levels of different sectors not protected by labour legislation (ILO 2008).

In recent decades, the large influx of migrant labourers has been crucial to the urban economic growth, especially for the construction and service sectors, and foreign invested factories. The remittances sent back to the countryside and return migrants bringing back their savings, new skills and social networks have been important for rural families and rural development (Tuñón 2006). However, labour migrants draw on and reinforce various overlapping socio-economic segregations such as rural and urban, male and female, educated and uneducated; through the exclusion of rural people from urban health, education, housing and social security systems. Even the welfare system linked to employment status, introduced in the 1950s, by its design had institutionalised inequalities. In 2003, the central government endorsed actions to remove unfair restrictions on labour migrants and that they should be given equal treatment and rights as urban residents when applying for work. However, these efforts seem to have had little or no effect.

The major divide or discrimination is between rural and urban *Hukou* residence, with the rural being consistently underprivileged over the urban. Even within urban China, the welfare system is fragmented, as those in government sectors and state-owned enterprises enjoy benefits and support that are not available to those working in other sectors of the economy, especially in the informal sector mostly represented by migrant labours. Urban biased social economic policy particularly around the social welfare system, affects the flexibility of the labour market. The consequence is that internal migrants generally take the jobs that urban

residents would not consider.

The evidence of gender inequality in employment and wages among internal labour migrants reported in this study is just one aspect of the social inequities in contemporary China. Without changes in the government's long-standing development policies, for instance detaching social services and welfare benefits from *Hukou* status and integrating the fragmented welfare systems, it is unlikely that such inequalities can be effectively eliminated.

The findings reported in this study address the recently introduced Target 8.8 of the United Nations Sustainable Development Goals, which stress the importance of protecting labour rights especially for migrant women (United Nations 2015). The results of our analysis are useful for formulating gender equitable public policies for addressing urban unemployment among male and female migrants. The economic policies and social interventions should aim to close the gender divide in labour participation by setting minimum wage standards to ensure equity and allowing flexibility for females to balance between work and family life. Given the large flows of both skilled and unskilled migration from rural areas to big cities, the Chinese government has multiple challenges in creating employment opportunities and welfare measures for migrants and their families. The critical challenge is to address the social and economic implications of feminisation of migration in China and the competing needs of female internal labour migrants in terms of child care and social services for better work-life balance.

The present study contributes to unravelling the gender inequalities and heterogeneity in job participation and wage earning focusing on a nationally representative sample of migrants living in Chinese cities. However, it does not address the issue of discrimination of migrants

over non-migrants or indeed changes across time at the individual level. Future research should consider using panel data comparing migrants and non-migrants to examine such influences.

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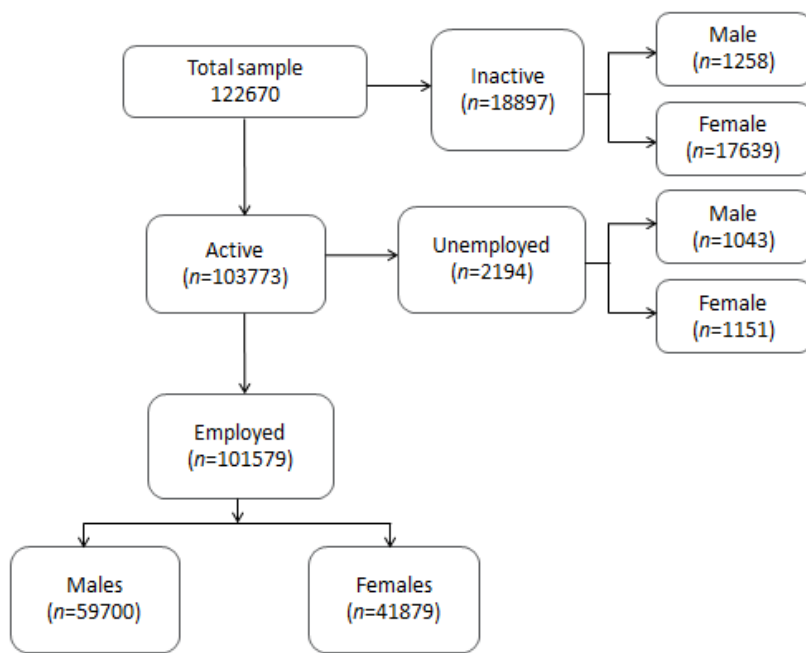


Figure 1 Flow chart showing the selection of study sample
 Data source: 2010 National Migrant Survey

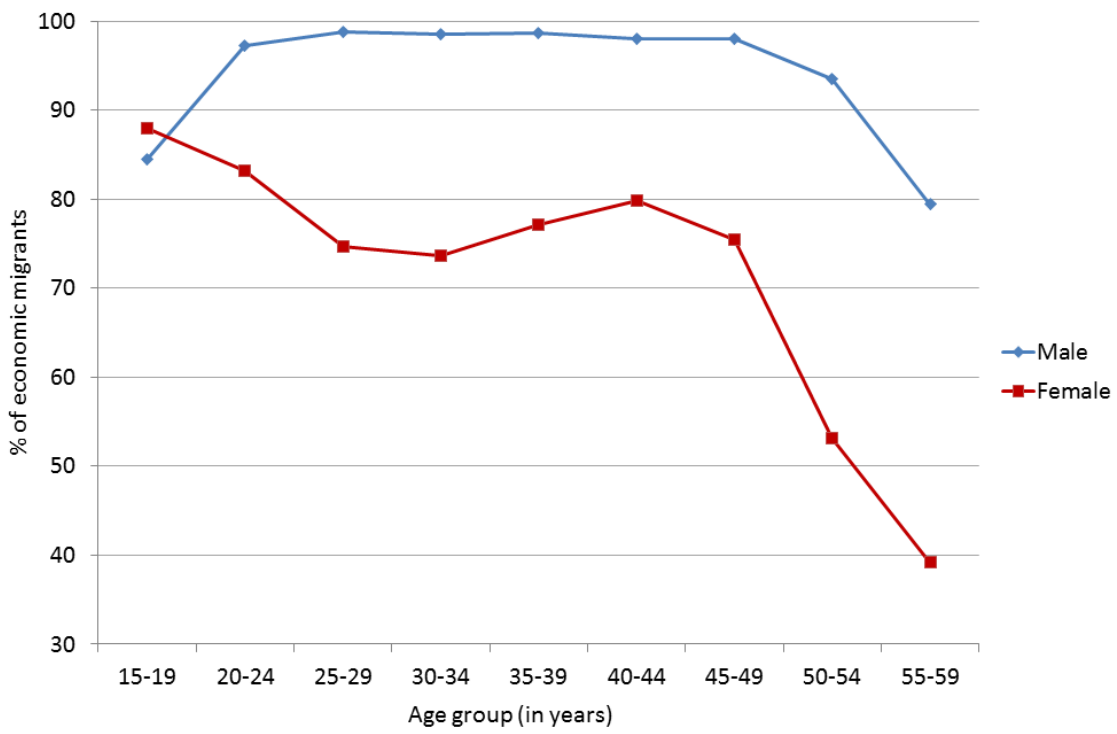


Figure 2 Job-participation by gender and age group among internal labour migrants in Chinese cities

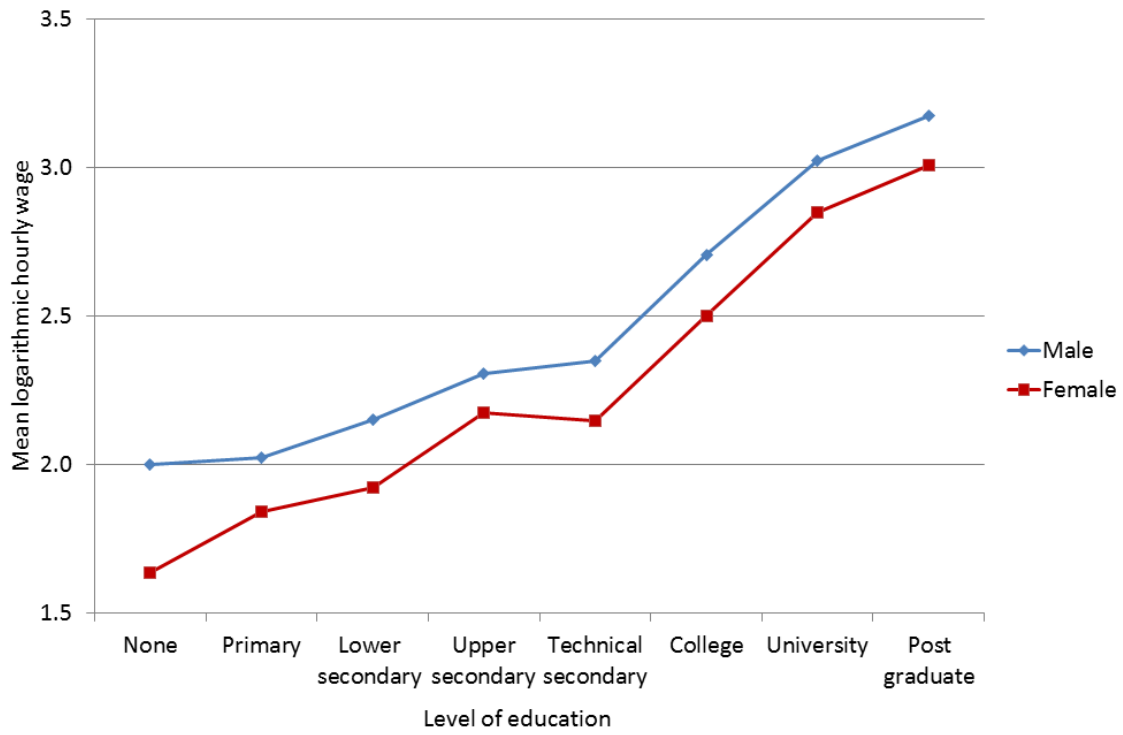


Figure 3 Mean logarithmic hourly wage among employed migrants by gender and education

Table 1 Percentage distribution of male and female internal labour migrants by demographic and social characteristics (n=121,862)

Variable	Male	Female	Total
<i>Marital status</i>			
Married	75.9	77.8	76.9
Unmarried	24.1	22.2	23.1
<i>Household registration (Hukou status)</i>			
Rural	86.4	86.5	86.4
Urban	13.6	13.5	13.6
<i>Ethnicity</i>			
Han	95.2	95.4	95.3
Non-han	4.8	4.6	4.7
<i>Education</i>			
Primary	12.0	19.7	16.0
Middle	55.3	52.6	53.9
High school and above	32.6	27.7	30.1
<i>Job participation</i>			
Yes	97.2	77.4	87.0
No	2.8	22.6	13.0
<i>Migration type</i>			
Inter-province	72.5	71.5	72.0
Within province	27.5	28.5	28.5
<i>Region of destination</i>			
East	86.3	87.3	86.8
Central	4.6	4.7	4.7
West	9.1	8.0	8.5
<i>Type of accommodation</i>			
Community	83.3	82.1	82.7
Factory dormitory	16.7	17.9	17.3
<i>Duration lived in the destination</i>			
0-12months	21.8	22.7	22.2
13-36months	25.4	27.8	26.6
37-84months	26.6	27.3	26.9
>84months	26.2	22.3	24.2
<i>% share of migrants in the city</i>			
<25	34.0	30.7	32.3
25-49.99	47.9	49.8	48.9
50 or more	18.0	48.9	18.8
<i>Age of youngest child (in years)</i>			
0-5	19.1	21.0	20.1
6-17	15.2	16.2	15.7
18 and above or no children	65.7	62.8	64.2
<i>No. of internal labour migrants in the household</i>			
1	33.7	28.9	31.2
2 or more	66.3	71.1	68.8

Note: the percentages shown are based on weighted data

Table 2 Occupational characteristics of male and female internal labour migrants (n=100,771)

Variable	Male	Female	Total
<i>Occupation</i>			
Professional	16.6	8.2	12.7
Clerical	3.8	5.4	4.5
Small business	14.2	14.9	14.5
Social service providers	22.7	29.4	25.8
Manufacturing workers	36.6	37.6	37.1
Agriculture workers	1.1	1.1	1.1
No fixed job	5.0	3.3	4.2
<i>Ownership of the company</i>			
State-owned	5.4	3.7	4.6
Collective	2.4	2.0	2.2
Private	74.0	73.7	73.9
Foreign investment	10.0	15.3	12.5
Others	8.2	5.3	6.9
<i>Employment status</i>			
Employee	68.7	75.3	71.7
Self-employed	27.0	21.6	24.5
Employer	4.2	3.1	3.7
<i>Training attention</i>			
Yes	18.2	17.4	17.8
No	81.8	82.6	82.2
<hr/>			
<i>Months spent in current job</i>	44.3	37.6	41.2
<i>Monthly wage</i>			
<i>(in Chinese Renminbi RMB)</i>	2840	2229	2560
<i>Hourly wage (RMB)</i>	9	7	8

Note: the percentages shown are based on weighted data

Table 3 Estimates of the job participation equation from robust probit regression

Variables	Male		Female	
	Marginal effect	Coefficient	Marginal effect	Coefficient
Age	-0.0004(0.000)**	-0.0065**	-0.0023(0.000)***	-0.0080***
Han ethnicity (ref: non-han)	-0.0009(0.003)	-0.0133	0.0144(0.010)	0.0513
Married (ref: unmarried)	0.0665(0.004)***	1.0124***	0.0023(0.011)	0.0081
Rural household registration (ref: urban)	0.0197(0.002)***	0.3001***	-0.0014(0.007)	-0.0049
Middle school (ref: primary)	0.0164(0.003)***	0.2500***	0.0431(0.005)***	0.1533***
High school (ref: primary)	0.0036(0.003)	0.0551	0.0633(0.007)***	0.2251***
Inter-province migration (ref: within province)	0.0134(0.002)***	0.2043***	0.0333(0.005)***	0.1182***
Duration lived in the destination 13-36 months (ref: 0-12 months)	-0.0002(0.003)	-0.0033	0.0202(0.006)***	0.0716***
Duration lived in the destination 37-84 months (ref: 0-12 months)	0.0014(0.003)	0.0217	0.0485(0.007)***	0.1722***
Duration lived in the destination >84 months (ref: 0-12 months)	-0.0068(0.003)*	-0.1036*	0.0597(0.008)***	0.2120***
Age of youngest child 0-5 (ref: >18 or no children)	0.0190(0.003)***	0.2884***	-0.2047(0.006)***	-0.7272***
Age of youngest child 6-17 (ref: >18 or no children)	0.0230(0.002)***	0.3498***	-0.0201(0.006)***	-0.0715***
2 economic migrants in the household (ref: 1 migrant)	-0.0463(0.004)***	-0.7046***	-0.2749(0.010)***	-0.9768***
>2 economic migrants in the household (ref: 1 migrant)	-0.0778(0.003)***	-1.1834***	-0.3187(0.010)***	-1.1324***
Living in community household (ref: factory dormitory)	-0.0013(0.004)	-0.0197	-0.0107(0.010)	-0.0382
East region (ref: West)	0.0302(0.040)	0.4590	0.1777(0.215)	0.6314
Central region (ref: West)	0.0403(0.017)*	0.6125*	0.2882(0.110)**	1.0239**
Number of migrants in the city (per 100,000)	-0.0022(0.006)	-0.0330	-0.0260(0.030)	-0.0925
Proportion of migrants in the city	0.0001(0.001)	0.0013	0.0016(0.008)	0.0056
Prefecture level city (ref: provincial level)	-0.0164(0.010)	-0.2499	-0.1389(0.043)***	-0.4936***
County level city (ref: provincial level)	-0.0524(0.035)	-0.7978	-0.2553(0.058)***	-0.9070***
Constant		1.3162***		1.4392***

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. City dummies are controlled for in the regression (effects not shown separately).

Table 4 Coefficient estimates of the wage equation with log wage as the dependent variable, without correction (OLS) and with correction (Heckman)

Variables	OLS		Heckman	
	Male	Female	Male	Female
Age (in years)	0.037(0.002)***	0.023(0.003) ***	0.037(0.002) ***	0.023(0.003) ***
Age (in years, squared)	-0.001(0.000)***	0.000(0.000) ***	-0.001(0.000) ***	0.000(0.000) ***
Han ethnicity (ref: non-Han)	0.076(0.015)***	0.042(0.017) *	0.076(0.015) ***	0.042(0.017) *
Married (ref: unmarried)	0.160(0.011)***	0.029(0.013) *	0.142(0.014) ***	0.028(0.013) *
Rural household registration (ref: urban)	-0.022(0.054)	-0.168(0.041) ***	-0.031(0.054)	-0.168(0.041) ***
Middle school (ref: primary)	0.092 (0.055)	-0.012(0.041)	0.085(0.055)	-0.009(0.041)
High school (ref: primary)	0.260 (0.055)***	0.159(0.041) ***	0.258(0.055) ***	0.162(0.041) ***
Inter-province migration (ref: within province)	0.055 (0.008)***	0.078(0.009) ***	0.052(0.008) ***	0.079(0.009) ***
Duration lived in the destination 13-36 months (ref: 0-12 months)	0.017 (0.009)	-0.007(0.009)	0.018(0.009)	-0.007(0.009)
Duration lived in the destination 37-84 months (ref: 0-12 months)	-0.003 (0.011)	-0.037(0.011) ***	-0.002(0.011)	-0.036(0.011) **
Duration lived in the destination >84 months (ref: 0-12 months)	-0.036 (0.013)**	-0.100(0.015) ***	-0.033(0.013)**	-0.098(0.015) ***
2 economic migrants in the household (ref: 1 migrant)	-0.020 (0.011)	-0.033(0.011) **	-0.012(0.011)	-0.043(0.015) **
>2 economic migrants in the household (1 migrant)	-0.012 (0.012)	-0.045(0.014) **	0.009(0.016)	-0.057(0.018) ***
Living in the community household (ref: factory dormitory)	0.013 (0.015)	0.009(0.015)	0.015(0.015)	0.009(0.015)
Months spent in the current job	0.001(0.000)***	0.003(0.000) ***	0.001(0.000) ***	0.002(0.000) ***
Months spent in the current job (squared)	0.000(0.000)***	0.000(0.000) ***	0.000(0.000) ***	0.000(0.000) ***
Attended work training (ref: not attended)	0.074 (0.011)***	0.075(0.010) ***	0.073(0.011) ***	0.075(0.010) ***
Self-employed (ref: employee)	0.188 (0.014)***	0.298(0.015) ***	0.187(0.014) ***	0.297(0.016) ***
Employer (ref: employee)	0.514 (0.022)***	0.577(0.030) ***	0.514(0.022) ***	0.578(0.030) ***
Clerical (ref: professional)	-0.002 (0.016)	0.001(0.025)	-0.002(0.016)	-0.001(0.025)
Business (ref: professional)	-0.109 (0.016)***	-0.085(0.019) ***	-0.108(0.016) ***	-0.087(0.019) ***
Service provider (ref: professional)	-0.211 (0.011)***	-0.192(0.016) ***	-0.211(0.011) ***	-0.194(0.016) ***
Agriculture (ref: professional)	-0.284 (0.043)***	-0.249(0.048) ***	-0.284(0.043) ***	-0.250(0.048) ***
Manufacturing (ref: professional)	-0.128 (0.011)***	-0.140(0.017) ***	-0.128(0.011) ***	-0.141(0.017) ***
No fixed job (ref: professional)	-0.246 (0.016)***	-0.245(0.024) ***	-0.246(0.016) ***	-0.247(0.025) ***

Contd.

Table 4 Coefficient estimates of the wage equation with log wage as the dependent variable, without correction (OLS) and with correction (Heckman)

Variables	OLS		Heckman	
	Male	Female	Male	Female
Collective (ref: state-owned)	-0.079 (0.028)**	-0.021(0.027)	-0.080(0.028) **	-0.020(0.027)
Private (ref: state-owned)	-0.077 (0.021)***	-0.047(0.019)*	-0.078(0.021) ***	-0.046(0.019)*
Foreign (ref: state-owned)	-0.060 (0.025)*	0.030(0.023)	-0.060(0.025) *	0.031(0.023)
Other (ref: state-owned)	-0.162 (0.026)***	-0.169(0.028) ***	-0.163(0.026) ***	-0.169(0.028) ***
Working hours	-0.015 (0.000)***	-0.013(0.000) ***	-0.015(0.000) ***	-0.013(0.000) ***
East region (ref: West)	0.040 (0.213)	-0.293(0.044) ***	0.018(0.213)	-0.282(0.046) ***
Central region (ref: West)	-0.021 (0.133)	-0.381(0.123) **	0.045(0.200)	-0.391(0.124) **
No. of migrants in the city (per 100,000)	0.001 (0.002)	0.005(0.001) ***	0.001(0.002)	0.004(0.001) ***
Proportion of migrants in the city	0.003 (0.004)	0.003(0.001) *	0.003(0.004)	0.003(0.001) **
Prefecture level city (ref: Provincial level)	0.065 (0.165)	0.259(0.106) *	0.012(0.210)	0.237(0.108) *
County level city (Provincial level ref.)	-0.096 (0.141)	0.306(0.049) ***	-0.072(0.141)	0.278(0.056) ***
Rural household registration*Middle school	-0.009(0.055)	0.100(0.043) *	-0.004(0.055)	0.099(0.043) *
Rural household registration*High school	-0.116(0.055)*	0.032(0.043)	-0.114(0.055)*	0.032(0.043)
Constant	2.114(0.089)***	2.154(0.086)***	2.145(0.090)***	2.147(0.086)***
No. of observations	59225	41546	58907	41480
R ²	0.224	0.213	0.223	0.213
F	69.88	48.68	70.04	49.26
Lambda			-0.131(0.054)*	0.027(0.026)

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. City dummies are controlled for in the regression (effects not shown separately).

Table 5 Results from the Blinder-Oaxaca decomposition

Log (wage)	Uncorrected coefficient	Corrected coefficient
<i>Differential effect</i>		
Prediction for male	2.064(0.003)***	2.064(0.003)***
Prediction for female	1.828(0.003)***	1.828(0.011)***
Difference	0.235(0.005)***	0.235(0.005)***
Adjusted		0.244(0.011)***
<i>Decomposition effect</i>		
Endowments	0.011(0.003)***	0.011(0.003)***
Coefficients	0.206(0.004)***	0.215(0.006)***
Interaction	0.018(0.003)***	0.018(0.003)***

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Appendix A

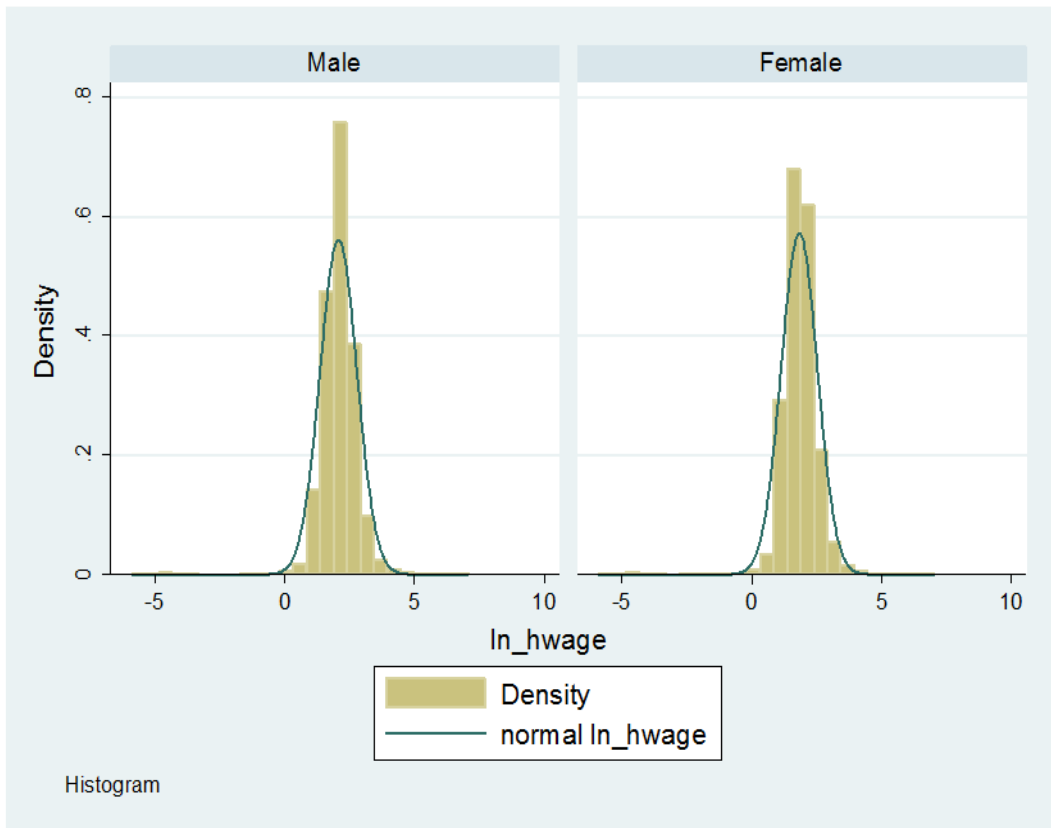


Figure 1A. Histogram of logarithmic hourly wage (ln_hwage) by gender.

Appendix B

Based on Table 4, with the interaction term in the wage equation of male migrants with correction (Heckman), the effect of education on wage is represented by:

$$-0.031 \times \text{Rural} + 0.085 \times \text{Middle} + 0.258 \times \text{High} - 0.004 \times \text{Rural} \times \text{Middle} - 0.114 \times \text{Rural} \times \text{High}$$

Therefore, the effect of high-education on wage is $0.258 - 0.145 \times \text{Rural}$. For male migrants with an urban *Hukou* ($\text{rural}=0$), the effect of high-education is 0.258. So, for a male migrant with an urban *Hukou* and high education has an effect of 0.258 higher than a male migrant with primary education. For those with rural *Hukou* ($\text{rural}=1$), the effect of high education is $0.258 - 0.145 = 0.113$. This indicates that for a male migrant with a rural *Hukou* and high-education, the effect would be only 0.113 higher than a male migrant with primary education.

For the wage equation of female migrants with correction (Heckman), the effect of education on wage looks like:

$$-0.168 \times \text{Rural} - 0.009 \times \text{Middle} + 0.162 \times \text{High} + 0.099 \times \text{Rural} \times \text{Middle} + 0.032 \times \text{Rural} \times \text{High}$$

The effect of middle-school on wage is $-0.009 - 0.069 \times \text{Rural}$. For female migrants with urban *Hukou* ($\text{rural}=0$), the effect of middle school education is -0.009 but this is not significant. So, for a female migrant with urban *Hukou* and middle school education, there is no significant effect compared to a female migrant with primary education. For those with rural *Hukou* ($\text{rural}=1$), the effect of middle school education is -0.069, the significant interaction term. This indicates that for a female migrant with rural *Hukou* and middle school education, the effect would be 0.069 lower than a female migrant with primary education.

For male migrants, high school has positive effect on wage; but the difference is much smaller for rural *Hukou* male migrants than for urban *Hukou*. For female migrants, middle education has no significant effect on wage for urban *Hukou*; but there is a significant and substantial difference for rural *Hukou* female migrants. This suggests that education does not reduce the rural-*Hukou* migrant disadvantage for both male and female.