

DETERMINANTS OF SCHOOL ATTENDANCE AMONG MIGRANT CHILDREN: SURVEY EVIDENCE FROM CHINA'S JIANGSU PROVINCE

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Abstract

Across the developing world education is seen as a means of raising levels of everyday well-being and is being linked to improved measures of productivity and economic growth. The paper employs a household production function framework to examine the determinants of school attendance among migrant children using a unique data set collected in China's Jiangsu province. The study finds that the main predictors of school attendance among migrant children in the sample were household income, mother's education, the length of residence of the child's mother in the city and whether both parents were working in the same city. The results will assist policy-makers to obtain a better understanding of school attendance patterns among the children of China's internal migrants at a time when the Chinese government is grappling with its obligations under the United Nations Convention on the Rights of the Child (UNCRC), which require it to promote the educational rights of all children regardless of parental status.

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INTRODUCTION

Since the introduction of market reforms in the late 1970s China has undergone major economic and social change that has been underpinned by rapid economic growth. For the two decades up to the Asian financial crisis in 1997-1999 economic growth in China was 9.5 per cent per annum and after the Asian financial crisis it was some 7 per cent per annum. There is a large literature attesting to the importance of schooling and growth in developing countries. This association has been linked, *inter alia*, to better health and nutrition, higher earnings, improved productivity and greater economic equality (Binder, 1998). Thus, it is not surprising that, as part of its development drive, the Chinese government has sought to promote levels of access to, and quality of, schooling (Wang & Yao, 2003). Commensurate with the fast rate of economic growth, accumulation of basic human capital in China, measured in terms of primary and secondary school enrolments, has been rapid. The enrolment ratio in primary schools was estimated to be 25 per cent in 1949, increasing to 84.3 per cent in 1980 and 100 per cent in 1996, although big gaps exist in teacher quality between rich and poor counties (World Bank, 1999).

One feature of the rapid economic and social change occurring in China has been large scale rural to urban migration. It is estimated that 120-150 million peasant workers have relocated to China's cities over the last two decades (Pan, 2002), with this number expected to increase to around 300 million by 2010 (Lague, 2003). These migrants have been a source of cheap labour which has fuelled China's manufacturing growth and changed the human complexion of China's cities. In recent times migrants have increasingly been bringing their families to the cities, including children of school age. The Beijing Migrant Census of 1997 found that 32 per cent of migrants in Beijing had relocated with their families and this figure has since increased (China Daily, 2003a). At present China has approximately 20 million migrant school age children who have accompanied their parents in relocating to China's cities (Xinhua News Agency, 2005).

One of the legacies of China's previous planned economy is that school enrolment has been mainly based on the place of household registration or *hukou*. However, internal migration has meant millions of children have no household registration where they are now living and this generates problems of educational provision (Guo, 2002). School attendance and retention rates have long been seen as determinants of school success and European research has indicated that certain populations are more at risk of poor educational outcomes (Connolly, 2004); new migrant groups being amongst those most at risk. According to a study by China's Department of Basic Education undertaken in 1996 the enrolment ratio of migrant children in China was 96.2 percent (UNESCO, 2000). A more recent joint report issued by the National Working Committee for Children and Women (NWCCW) under China's State Council and the United Nation's Children Fund (UNICEF) in the middle of 2004 found that 6.9 percent of migrant children have never attended school and that 2.4 per cent dropped out before completing the mandated school years (Xinhua News Agency, 2004b). These figures are broadly consistent with the Beijing migrant census conducted in 1997 which found that 88 percent of migrant children in Beijing were attending school (Guo, 2002). However, other estimates suggest that enrolment rates among migrant children are not as high as these studies suggest.

One estimate is that 1.8 million migrant children in the age group for which education is mandated (between six and 14 years of age) are not receiving any education at all (Human Rights of China, 2002). Solinger (1999) calculated that in the mid-1990s only 40 per cent of migrant children aged between five and 12 attended school in Beijing, compared to almost 100 per cent of local children. According to local media reports, this situation is mirrored in other large coastal cities such as Shanghai and Shenzhen. For instance, in Shanghai one estimate calculated that in the late 1990s only 20 to 30 per cent of migrant children attended school (UNESCO, 2000). A related problem identified by the joint NWCCW and UNICEF study is that those migrant children who do attend

school are mostly over-aged. The joint study found that 47 per cent of six-year-old migrant children had not started school and that some 11 to 14 year olds were still in their first and second years, far exceeding the required six year old age, which is specified in China's Compulsory Education Law (Xinhua News Agency, 2004b).

Widespread media exposure within China resulted in changes in the education laws and from the late 1990s legislation was designed to improve school attendance among migrant children. One grassroots response from the migrant communities themselves was the establishment of unlicensed 'migrant children schools'. These establishments often operated without official approval and without financial support from local education authorities. In 1998 the Chinese government decreed that unlicensed schools could exist and that it was unlawful for large cities to deny entrance to local schools to migrant children aged between six and 14 who had lived in the area for six months or more. The implementation of this regulation was left to the discretion of local authorities and met with mixed success partly due to resistance at the municipal level (UNESCO, 2000).

The issue of education for children of internal migrants in China is complicated by lack of reliable information and comprehensive research. There are a number of news reports on school attendance of migrant children in China, but the topic has received little scholarly attention. The only extant study which examines the factors determining school attendance among migrant children in China is Guo (2002), who used data from the 1997 Beijing Migrant Census to examine patterns of school attendance among children of migrants in Beijing. The current paper complements the study by Guo (2002) by using a more recent survey of the migrant population which was administered in Jiangsu province in December 2003 to examine the patterns of school attendance among migrant children and to explore the factors affecting their attendance. Foreshadowing the main results, the paper finds that the determinants of school attendance among migrant children in the sample were household income, mother's education, the length of residence of the child's mother in the city and whether both parents were working in the same city.

The remainder of the paper is set out as follows. The next section provides specific contextual information that gives an overview of the issues surrounding schooling of children of migrants in China. Section 3 outlines the household production function approach, which is the theoretical framework in which the study is situated. It then describes the data, presents the empirical methodology and discusses the results. Section 4 outlines the limitations of the research and discusses future possible research directions.

THE SCHOOLING OF CHILDREN OF MIGRANTS IN CHINA

In Chinese cities, migrants who do not have an urban registration (*hukou*) do not have the same privileges as urban residents in terms of access to education, employment and social security. Migrants have to pay extra fees if they want to have their children educated in public schools. When the Chinese central government made it unlawful for cities to refuse to accept migrant children at public schools, municipal governments responded by introducing "temporary school fees" such as selection and sponsorship fees which are payable by migrants, but not local urban residents. If the migrants are unable to afford the extra fees, their children have to either go to schools run by other migrants (migrant children schools) or gain no schooling at all. In Beijing, migrant children schools charge about 300 RMB (\$US 36) per term. If migrant children go to public schools their parents have to pay 500 RMB (\$US 60) in fees per term, plus various other charges including 1000 RMB (\$US 120) for selection of the school and between 1000 RMB and 30,000 RMB (\$US 3615) as sponsorship. To put this in context, a 2002 survey found that the monthly income of migrant households in Beijing averages around 1000 RMB with 20 per cent of migrant households earning less than 500 RMB per month and 43 per cent of households earning between 500 RMB and 1000 RMB per month (People's Daily, 2004).

To open up Beijing's school system for the children of migrant workers, towards the end of 2004 the Beijing municipal government introduced regulations to eliminate temporary school fees for migrant children. The Beijing Education Commission has specified that the children of migrants should pay the same fees as urban children (China Daily, 2004a). However, most observers are sceptical about how successful the new regulations will be. A common view is that instead of calling them "temporary school fees", school administrators will invent other names for charges on admissions because public schools do not want to admit the children of migrants. The reason schools do not want to enrol these children stems from the fact that even if migrant children graduate from public schools in cities where their parents work, the child will have to return to their hometown to finish high school if they intend to go to college. Children of migrants are barred from taking college entrance examinations outside the district where they have household registration and this has two effects. The city schools do not want large numbers of children not registered in their area as this means they will have lower rates of graduates enrolling in higher education and this harms the reputation of the school (China Daily, 2004a). The fact that children who wish to go to college have to return to their place of registration to complete their education is a matter of concern for the child as well as the school. The child returning to a home town to finish high school and take the college entrance examination will often experience educational disruption because of differences with curriculum content, teaching practices and changes in standards.

Given the often prohibitive cost of accessing public schools, migrant children schools have had an important role in meeting the educational needs of migrant children. The Beijing Migrant Census in 1997 found that just 14 per cent of migrant workers sent their children to public schools in Beijing and that 76 per cent either sent their children to migrant children schools or to schools in their hometown (China Daily, 2004a). According to official statistics there were 123 schools set up by migrants accommodating approximately 17,000 migrant children in Beijing in 2002 (People's Daily, 2002). More recent media reports have stated that by the end of 2003 there were more than 200 migrant children schools in Beijing enrolling 40,000 migrant children (Xinhua News Agency, 2003) and that the number of migrant children schools in Beijing had increased to 300 by 2004 (Xinhua News Agency, 2004a). This is similar to other cities. About 40 per cent of the 320,000 migrant children in Shanghai are admitted to public schools with the remainder educated in migrant children schools or sent to their parents' hometown for schooling (Xinhua News Agency, 2004a). In 1999 in the Pudong New Area, in Shanghai, there were 50 migrant children schools with 12,000 enrolments and the figures in the suburbs of Shanghai were much higher (Xu, 2001). In 2001 there were 519 migrant children schools in Shanghai with 120,000 enrolled students (Liu, 2002).

However, because of inadequate government support and monitoring, many migrant children schools often are unable to meet the minimum standards set by local education authorities. Most classrooms are abandoned storehouses or residential houses. One school in Jiuting Town, of Songjiang District in Shanghai, was formerly a pigsty (Xu, 2001). To this point, only a few cities such as Beijing, Guiyang and Wuhan have granted legal status to migrant schools (UNESCO, 2000). Of the 300 migrant children schools in Beijing in 2004, less than 30 had a legal license (CCTV, 2004). Official news reports have referred to the 'hazardous facilities', 'overcrowded classes', 'underqualified teachers' and 'lack of teaching materials' confronting migrant children schools (Human Rights in China, 2002). These concerns have focused attention on the poor quality of education provided by migrant children schools, although equally some reports contend that the quality is better than rural public schools and is on a par with urban public schools for basic education at least at the lower levels (Liu, 2002).

Some local district governments have responded to concerns about quality by attempting to eliminate migrant children schools. Local governments have the power to close the schools down if their buildings are needed for other purposes (Liu, 2002). This happened, for example, in 2003 when the Beijing Fengtai District closed 57 migrant children schools that had not been authorized by the Beijing education bureau (Wu, 2003). The problem is that when local authorities close migrant children schools, they do not provide alternative schooling for the children affected (Liu, 2002). This has created tensions between local governments and human rights activists and philanthropic groups such as the "Da Gong Mei Zhi Jia" (Home for Migrant Women) (Guo, 2002).

PREDICTORS OF SCHOOL ATTENDANCE AMONG MIGRANT CHILDREN IN JIANGSU

Conceptual Framework

Education can be viewed as both a consumption and investment good. From a consumption good perspective, parents educate their offspring to enable their children and grandchildren to have better life and work opportunities and because they enjoy having better educated and literate children. From an investment good perspective, parents educate their children so that their children are better placed to support them in later life (Behrman & Wolfe, 1987; Al-Samarrai & Peasgood, 1998). In practice, household schooling decisions are determined by an interaction of cultural, economic and social factors working through power relations within the household (Al-Samarrai & Peasgood, 1998: 396). A household production function approach has been extensively used in the literature to capture these disparate factors on household schooling decisions (see e.g. Behrman & Wolfe, 1987; Al-Samarrai & Peasgood, 1998; Binder 1998; Wolfe & Behrman, 1985). The household production function approach implies that there is an optimal investment in education for each child which equates the net present value of expected benefits and costs to the household of educating their children.

Household characteristics enter the model inasmuch as they affect the prices and wages which the household faces and to the extent that they influence household preferences for expenditure on education vis-à-vis other items (Binder, 1998). Household income is important because higher household income implies more resources are available for household consumption including expenditure on children's education without reference to external borrowing. In poor households parents face both direct and indirect costs of financing their children's schooling. A poor household cannot afford to send the children to school if the price of schooling is too high or household income is too low. The indirect costs of schooling are the forgone income of the child while attending school. In the case of internal migrants in China, it is expected that lower income migrants might need their children to work to supplement household income (Jensen & Skyt-Nielsen 1997). As Solinger noted: "Small [migrant] children brought into [Beijing] were sometimes enlisted to help their parents by begging, or by serving as their apprentices, especially among the poorest transients" (Solinger 1999: 269).

The effects of parental education on their children's schooling can enter the production function in various ways. One means is through the effect of education on parents' preferences for educating their children as opposed to spending household income on other activities. Better schooled parents acquire a 'taste' for education, making them more likely to desire increased schooling for their children (Binder 1998). Another possibility is that parental education improves information flows about the potential returns to education. As Cox-Edwards and Ureta described it: "More educated parents may be better informed about the employment opportunities and wages available to those with given schooling levels, or may themselves enjoy the rewards the labor market offers workers with above average education" (Cox-Edwards & Ureta, 2003: 439).

The education and income of parents can also enter the production function with important gender differences. The household production function approach initially assumed that a combined household utility function is maximized and that all resource allocation decisions are made through the "benevolent dictatorship" of the household head (Becker, 1981). More recent bargaining approaches to decision-making, however, assume that resource allocation decisions are made through a process of bargaining between husband and wife (Sen, 1990) and the decision to send a child to school may be made by either parent or both depending on their relative bargaining power in the household (Al-Samarrai & Peasgood, 1998). The relative bargaining power of the father and mother will depend on their respective education and income. The mother's educational attainment may increase her market wage, reduce information costs and hence the price of schooling and influence her tastes for educating her children (Binder, 1998: 57). Thus, in households with better educated and higher income mothers, the mother is likely to have more bargaining power within the household and her preference for educated children will have a larger role in the decision to send her children to school.

In examining school attendance by migrant school children, in addition to parents' education and wealth, various other factors influence the cost to the household of sending their children to school. The length of time the migrant has resided in the city in which they now live affects the cost of schooling in two ways. First, the longer the period of time in which a migrant has been in a city, the lower the search costs of finding a school for their children as the parents develop networks in the city. Second, in the Chinese context, if the migrant has only been in the city a short period this implies that he/she may regularly return to their hometown in the off season or in times of low labor demand in the city. If this is the case, the net benefits to migrants of enrolling their children in school for short durations of time will be lower compared to the scenario where they remained in the city for long periods. Similarly, if only one of the parents is living in the city with the other parent living and working in another city or in their hometown the opportunity cost of sending the child to school will be higher. If the child is living with the parent in the city, it is more likely he or she will be needed to beg or work to supplement household income or stay at home to assist with domestic chores.

Data and Implementation

To examine the determinants of school attendance among migrant children we analyzed a survey of migrants administered in Jiangsu in December 2003. Questions examined in our analysis were influenced by the earlier analysis of Guo (2002) so changes from 1997 to 2003 could be determined. The survey was distributed to 862 migrants working in nineteen enterprises across five cities. We received 780 completed questionnaires, which is a response rate close to 90 per cent. The enterprises that we surveyed had a mixture of ownership types including state-owned enterprises (SOEs), private-owned enterprises, SOE-turned shareholding firms, foreign joint ventures and wholly foreign-owned firms. The details of where the survey was administered are provided in Table 1. Jiangsu is a good province in which to conduct such a study because given its status as one of China's economic powerhouse provinces it has attracted large numbers of migrants from the central and western provinces. Moreover, in addition to migrants from other provinces, there is considerable intra-provincial population movement between the lesser developed northern part and developed southern part of Jiangsu. While it is impossible to be precise, a conservative estimate is that there are at least six million peasant migrants working in the cities of Jiangsu province, which has a population of seventy-four million, and that there are 2.5 million residents without a Jiangsu *hukou* working in the province, of whom at least 70 per cent are peasants (Bureau of Jiangsu Rural Economy Survey, 2004).

Table 1 about here

To examine the determinants of school attendance among the children of migrants in the sample, we used a logit model where, in response to the question: "Do your school age children attend school?" the dependent variable was defined as 0 (no) or 1 (yes). Overall 93 per cent of respondents reported that their children of school age (aged six to 14) were attending school while 7 per cent of respondents said that their school age children were not attending school. Of the children who were living with their parent(s) who had migrated, 66.2 per cent of respondents reported that their children were attending a public school in the city to which they had moved and 33.7 per cent of respondents reported that their children were attending a migrant children school. The seemingly high rate of school attendance among migrant children in the sample requires comment. In the 1997 Beijing Migrant Census analyzed by Guo (2002) 88 per cent of migrant children were attending school. Commenting on the high rate of school attendance in that survey, Guo speculated "many people, particularly those from the countryside, who were unable to enroll their children in local schools would choose to send their children back to their home villages. Therefore, the problem of dropping-out from school in the cities seems 'invisible' or not serious" (Guo, 2002: 365). This is consistent with press reports that migrants send their children back to their hometown if they cannot afford to send the child to school in the city in which they have

relocated (Xinhua News Agency, 2004a). There is also the question of quality and support for schools in poverty stricken country areas. For example one media report in the government sanctioned *China Daily* (2004b) reported on a thirteen year old girl studying at primary school and caring for ten children, from preschool to grades one to three and who are boarding at the school as their parents have become migrant workers. The headmaster was cited as being deeply concerned that most of these children would not go beyond grade three in the junior middle school due to family economic problems and lack of educational facilities in the country.

Of the respondents whose children were not attending school, 38.41 per cent said the main reason was that school fees were too high; 22.89 per cent said the main reason was that no school was available; 5.49 per cent said that there was no reason for their children to attend school and 33.23 per cent gave other reasons. These findings are broadly similar to those of Guo (2002) from the 1997 Beijing Migrant Census. Of those who provided answers to the question on “problems for not attending school” in the Beijing Migrant Census 55 per cent complained of excessive school fees; 15 per cent felt there was no need to send their children to school; 10 per cent claimed there was no school in which to enroll their children and around 20 per cent gave other reasons (Guo, 2002). In both our study and the 1997 Beijing Migrant Census it is clear that cost was the most important factor which prevented migrants from sending their children to school. This finding has also emerged in other surveys (China Mainland Marketing, 2002). This conclusion is reinforced by the fact that Guo (2002) suggested that for the 1997 survey it is possible that at least some of those who answered that there was no school in which to enroll their children might have been having problems with high school fees.

Tables 2 & 3 about here

The definitions of each of the independent variables used to explain school attendance and descriptive statistics for each of these variables are provided in Tables 2 and 3. Before turning to the results we first consider the expected signs on each of the coefficients. Beginning with parental education we examine the effect of both the father’s and mother’s education on migrant children school attendance through interacting gender with the highest educational qualification of the respondent in separate specifications, treating three year higher education or above as the excluded category. We expect that children who have better educated parents will be more likely to attend school. Guo (2000) found that among the migrant population in Beijing, an increase in one generation’s level of education increased opportunities to receive education. Studies for other developing countries have also found that parental education is an important determinant of school attendance and/or school attainment and that mother’s education is more important than father’s education (Behman & Wolfe, 1984; Binder, 1998; Chernichovsky, 1985; Glewwe & Jacoby, 1994; Jamison & Lockheed, 1987). The greater importance of mother’s schooling is attributed to her bigger role in household production, particularly her responsibilities regarding child-rearing (Binder, 1998: 56).

To examine the effect of wealth on school enrolment we use household income and father’s and mother’s income through interacting gender with past income in separate specifications. We expect both household income and the income of the mother and father to have a positive effect on school attendance. Guo (2002) did not examine the effect of parental income on enrolment rates in her study of school attendance among children of migrants in Beijing. However, previous studies of determinants of school attendance in other developing countries have found that measures of income have positive and significant effects on school enrolment (Glewwe & Jacoby, 1994).

We examine the effects of length of residence of the child’s mother and father in the city through interacting gender with time in the city. Guo (2002) found that an important factor that increases a migrant child’s likelihood of attending school in Beijing is the parent’s length of residence in the city. We expect that the children of migrants who have been living in the city for a longer period of

time have a greater chance of attending school compared with children of new arrivals. We use the variables 'wife's work location' and 'husband's work location' to examine whether having both parents working in the same city effects school attendance. Guo (2002) found that migrant children with both parents in Beijing had a significantly higher likelihood of attending school compared to the situation where only the father or mother was resident in Beijing. We interact the age and gender of the respondent to examine the effect of the mother's and father's age on school attendance. Guo (2002) found that migrant children of older fathers are less likely to attend school in Beijing compared with those whose fathers are younger. Guo suggested: "This may simply suggest that fathers' age affects their perception of their children's education. Younger fathers may be more likely to consider their children's education important compared to their older counterparts" (Guo, 2002: 368).

Our final explanatory variable is registration status, which is a binary variable set equal to 1 if the respondent's *hukou* is from outside Jiangsu and set equal to zero if the respondent has a Jiangsu agricultural *hukou*. Those with a *hukou* from outside Jiangsu are migrants from other provinces while those with a Jiangsu agricultural *hukou* are primarily migrants from the less-developed northern part of Jiangsu who have moved to the south in search of job opportunities. We expect the sign on the coefficient for registration status to be negative, suggesting those with a Jiangsu agricultural *hukou* will have better educational opportunities for their children than those from other provinces. Our interviews with migrants in Jiangsu at the time we collected the data suggested discrimination against migrants from outside the province relative to those with a Jiangsu *hukou*. Supporting this conjecture, in previous research employing the same data as used here, Nielsen *et al* (2005a) found that migrants from outside Jiangsu were statistically less likely than those with a Jiangsu agricultural *hukou* to receive social insurance benefits, while Nielsen *et. al.* (2005b) found that unemployment rates were lower among migrants with a Jiangsu agricultural *hukou* relative to those with a *hukou* from outside Jiangsu.

Empirical Results

Table 4 presents the results of a logistic regression predicting the odds of migrant children attending school based on characteristics of the father. A test of the full model against a constant-only model was statistically significant ($\chi^2 = 23.55$, $p < .01$), indicating that the model reliably distinguished between those whose children do, and those whose children do not, attend school. Nagelkerke's R^2 was 0.12. The model was able to correctly classify 93.7 per cent of cases. Household income and the wife's work location were statistically significant at the 5 per cent and 1 per cent levels respectively. Of the statistically significant variables, a one unit increase in household income increased the odds of migrant children attending school by a multiplicative factor of 1.227. The odds ratio indicated that children of parents who worked in different cities were about one-quarter (0.237) as likely to attend school as those whose parents worked in the same city.

Tables 4 & 5 about here

Table 5 presents the results of a logistic regression predicting the odds of migrant children attending school based on characteristics of the mother. A test of the full model against a constant-only model was statistically significant ($\chi^2 = 30.18$, $p < .001$), indicating that the model reliably distinguished between those whose children do attend school and those whose children do not attend school. Nagelkerke's R^2 was 0.16. The model was able to correctly classify 93.5 per cent of cases. Household income, the mother's length of residence in the city and the father's work location were statistically significant at the 5 per cent level. Of the education variables, mother's level of education with respect to primary school, junior middle school and senior middle school were each significant at the 5 per cent level using three-year higher education as the reference category. Mother's polytechnic education was not statistically significant.

Of the statistically significant variables in Table 5, a one unit increase in household income increased the odds of migrant children attending school by a multiplicative factor of 1.254 and the odds ratio indicated that children of parents who worked in different cities were about 35 per cent (0.340) as likely to attend school as those whose parents worked in the same city. A one unit increase in the length of time a child's mother had spent in the city increased the odds of that child attending school by a multiplicative factor of 1.441. While the odds ratios for each of the mother's education variables indicated little practical effect of education, the 95 per cent confidence intervals of these effects indicated that they fell between .000 and .339, .000 and .881, and .000 and .251 respectively. Assuming the upper bound limits, children whose mothers had a primary education were about 40 per cent (.339) as likely to attend school, those whose mothers had a junior middle school education were nearly 90 per cent (.881) as likely to attend, while those whose mothers had a senior middle school education were about one-quarter (.251) as likely to attend school. These latter results indicate that the likelihood of school attendance does not increase linearly across increasing levels of mother's education, which could be a focus of further research. Comparing the results for father's education in Table 4 with those for mother's education in Table 5, mother's education is more important in predicting school attendance consistent with the extant literature.

CONCLUSION

This study has found that 93 per cent of migrant children whose parents were surveyed in Jiangsu in December 2003 were attending school, which is similar to the figure of 88 per cent reported in the Beijing Migrant Census analysed by Guo (2002). Both this study and that of Guo (2002) imply that migrants are taking responsibility for ensuring their children enrol in school, although many are faced with the economic burdens of discriminatory policies which charge them high fees to enrol their children in school. The main determinants of school attendance among migrant children in the sample were household income, mother's education, the length of residence of the child's mother in the city and whether both parents were working in the same city. Guo (2002) found that the education of the child's parents and length of residence in the city were significant predictors of school attendance among migrant children in Beijing. Guo (2002) also found that residential registration, defined in that study in terms of whether the migrant had a non-agricultural *hukou*, was a statistically significant predictor of school attendance. We were unable to examine whether migrants with an urban *hukou* had better access to schools for their children because none of the respondents in our sample had an urban *hukou*. However, we were able to test for discrimination against migrants from outside Jiangsu relative to intra-provincial migrants, predominantly from the less developed northern part of the province and found no evidence of discrimination.

Limitations of this study are that we do not have data on the characteristics of the child in the survey such as his or her age and gender. With this information it would be possible to examine whether there is any evidence of gender discrimination such as, for example, whether migrants are more likely to enrol sons rather than daughters. In this respect, Guo (2002) found evidence of gender discrimination in her study of school attendance among migrant children in Beijing. If information were available on the age of the child it would also be possible to examine the claim in the joint NWCCW and UNICEF study discussed earlier that those migrant children who do attend school are mostly over-aged.

At a broader level, another interesting issue is why some migrants bring their children with them and others leave their children to be educated in their hometown. It may be that the decision to bring children to the city is simply based on the costs of a city education. Alternatively, other factors such as familial and social support structures may also have a role to play. Solinger noted that in the mid-1990s her interviews with migrants who had either left their children in their hometown or sent them home for schooling suggested "their lack of a *hukou* and of an on-site community option, not costs, disposed them to educate their children in the villages" (Solinger, 1999: 269). Whether this is still the case with the advent of migrant children schools could be examined using surveys or more in-depth case study methods. There is value in using Guo's

(2002) material and further exploring the patterns of disadvantage she was able to identify as these findings may provide clarification of the points of intervention where educational reforms can be targeted. All of these issues could fruitfully be the subject of further research. At this stage, research into the schooling of migrant children in China is in its relative infancy. However, given that there are an estimated 20 million migrant school age children in China and that this number can be expected to grow in the coming years as the scale of rural-urban migration in China increases, issues surrounding the best methods to improve the welfare of migrant children in China deserve to be an important research priority.

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Table 1: Details on the Survey Administered to Migrant Workers, Jiangsu, December 2003

Survey Location	Number and Type of Enterprise	Number of Surveys Distributed	Number of Surveys Collected
Nanjing (ten enterprises)	three SOEs, three JVs, two SHFs, one POE, one WFOE	411	365
Yizheng (four enterprises)	one SOE, one JV, one SHF, one POE	200	167
Suzhou (one enterprise)	One SOE	50	50
Chuzhou (three enterprises)	Three POEs	50	49
Changzhou (one enterprise)	One SHF	151	149
Total (19 enterprises)	Five SOEs, five POEs, four JVs, four SHFs, one WFOE	862	780

Notes: SOE=state-owned enterprise; JV=joint venture; SHF=shareholding firms; POE=privately-owned enterprise; WFOE = wholly foreign-owned enterprise.

Table 2: Definitions of the Explanatory Variables Used to Predict School Attendance (Jiangsu Survey, December 2003)

Variable ¹	Definition
Wife's (husband's) work location	A binary variable set equal to 1 if the respondent's wife (husband) works in a different city; set equal to zero otherwise.
Father's (mother's) length of time in city	A variable measuring the period of time that the father (mother) has been in the city; 1= 'less than 3 months', 2= '3-6 months', 3= '6-12 months', 4= '1-2 years', 5= '2-3 years'; 6= '3-4 years'; 7= '4-5 years'; 8= 'more than 5 years'.
Registration	A binary variable set equal to 1 if the father's (mother's) agricultural residential registration is from outside Jiangsu; set equal to zero if the father's (mother's) agricultural registration is from within Jiangsu.
Household income	A variable measuring the net annual income of the father's (mother's) household in 2002; 1= 'less than 500 RMB', 2= '500-999 RMB', 3= '1000-1999 RMB', 4= '2000-2999 RMB', 5= '3000-4999 RMB'; 6= '5000-7999 RMB'; 7= '8000-9999 RMB'; 8= '10000-19999 RMB'; 9= 20000 RMB or above.
Father's (mother's) income	A variable measuring the net annual income of the father (mother) in the three years prior to the survey ; 1= '3000 RMB or less', 2= '3001-5000 RMB', 3= '5001-6000 RMB', 4= '6001-7000 RMB', 5= '7001-8000 RMB'; 6= '8001-9000 RMB'; 7= '9001-10000 RMB'; 8= '10001-15000 RMB'; 9= More than 15,000 RMB.
Father's (mother's) level of education	A five-level ordinal variable measuring the highest educational qualification of the father (mother), broken into primary school or less; junior middle school; senior middle school; polytechnic school and three year higher education or above.
Father's (mother's) age	Father's (mother's) age in years.

¹ Descriptions in parentheses relate to variables in the mothers model.

Table 3: Descriptive Statistics for Explanatory Variables Used to Predict School Attendance (Jiangsu Survey, December 2003)

Spouse location	Fathers	Mothers
Works in the same city	40.0%	64.3%
Works in a different city	60.0%	35.7%
Time in city		
Less than 3 months	2.5%	3.4%
3-6 months	5.7%	7.2%
7-12 months	11.2%	10.1%
1-2 years	14.7%	10.6%
2-3 years	11.5%	9.7%
3-4 years	8.4%	7.7%
4-5 years	5.5%	7.7%
More than 5 years	40.5%	43.5%
Registration		
Jiangsu registration	49.1%	49.2%
Registration outside Jiangsu	50.9%	50.8%
Household income	Median = 6 (8001-9000 RMB)	Median = 6 (8001-9000 RMB)
Past income	Median = 4 (2000-2999 RMB)	Median = 4 (2000-2999 RMB)
Gender	70.6%	29.4%
Education level		
Primary school or less	4.5%	3.3%
Junior middle school	56.5%	57.7%
Senior middle school	29.2%	25.8%
Polytechnic education	7.0%	8.5%
Three year higher degree or more	2.7%	4.7%
Age	Mean = 33.19 years (SD = 8.37 years) Min.=15; Max=57	Mean = 28.87 years (SD = 6.51 years) Min.=18; Max=55

Table 4: Predicting school attendance of migrant children based on characteristics of the father

	B	Wald	Odds ratio
Residential registration	.218	.277	1.243
Household income	.205	3.886**	1.227
Father's age	.016	.357	1.016
Father's income	-.095	.693	.909
Father's length of time in city	.099	.810	1.105
Wife's work location	-1.439	9.514*	.237
Father's level of education ¹ :			
Primary school	-.620	.199	.538
Junior middle school	.334	.094	1.396
Senior middle school	-.254	.058	.776
Polytechnic	-1.674	2.117	.188
Constant	3.165	7.331*	

¹ The education reference category is 'three year higher education, or higher'

Table 5: Predicting school attendance of migrant children based on characteristics of the mother

	B	Wald	Odds ratio
Residential registration	.318	.571	1.375
Household income	.226	5.223**	1.254
Mother's age	.130	1.928	1.139
Mother's income	.033	.023	1.034
Mother's length of time in city	.365	4.430**	1.441
Husband's work location	-1.078	5.369**	.340
Mother's level of education ¹ :			
Primary school	-7.637	5.213**	.000
Junior middle school	-5.844	4.013**	.003
Senior middle school	-6.935	5.996**	.001
Polytechnic	12.270	.000	.000
Constant	2.842	5.098	

¹ The education reference category is 'three year higher education, or higher'