The determinants of compulsory education performance of migrant children in Beijing: An analysis of two cohorts

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A B S T R A C T

Based on sampling data of 2008 and 2011, this paper adopts the ordered probit model to investigate the determinants of academic performance for two cohorts of migrant children in Beijing. We found: (1) Age (different directions for the two cohorts), being a girl, family income, mother's education, parental expectations, parental tutoring, and the degree of satisfaction with schools were associated with children's academic ranking in the class for both cohorts. (2) Family income only mattered for the 2008 cohort and only for girls; additionally for 2008, educational expectations, study time and being a student leader were significant predictors. (3) Heterogeneous effects by gender, by education stage and by school type were also documented.

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1. Introduction

Being the political, cultural and economic center of China, Beijing has attracted numerous workers from all over the country. Education provides an essential foundation for the survival and development of these migrant workers' next generation. "Migrant children" is a disadvantaged group in the city's educational system. This issue has long been a social concern in modern China. According to the definition of the China National Knowledge Infrastructure (CNKI), migrant children refers to those who have lived for a certain period with their migrant-worker parent(s) in one place, mostly in a city, while their registered household residence (hukou) are not in that place (Zhu et al., 2005). This group of children is the counterpart to the other group of children of migrant workers, i.e., the left-behind children who stay in their hometown while their parents work in other places (Fan, 2005). In February 2009, there were more than 400,000 school-age migrant children who were receiving the nine-year compulsory education (grade 1 to grade 9) in Beijing. About 66.2% of them were in public schools, where the tuition is free for the compulsory education grades. However, a large proportion of migrant children still attend private migrant-children schools, either registered or unregistered (Xinhua Net, 2009). Many of those migrant-children schools are facing problems such as being in remote locations, inconvenient transportation, barely furnished buildings, shortages of instructional equipment, low teacher quality, and so forth. Unbalanced allocation of educational resources seriously threatens the education of migrant children (Zhang, 2014).

With urbanization and the impact of the rural land circulation policy, the 2010 census showed that China's urban population had grown to be 666 million, or in other words, half of the national population. In addition, since many regions are reforming the household registration system so that there will be no distinction between agricultural households and non-agricultural households, it is predicted that there will be more children from rural China pursuing their education in the cities in which their parents work (Research Group and Wu, 2007).

Where do migrant children receive their compulsory education? Because of the hukou restriction, migrant children, who do not have the hukou of the destination cities, have only a limited choice of schools. This was at least true for the years prior to July 2014, when the Chinese government finally claimed to significantly reform the hukou policy. Due to school choice fees and other policy or information barriers, a significant proportion of migrant children have been unable to enroll in public schools.

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They have to prepare for all the required certificates before enrolling in a public school. This is the fundamental reason why private migrant-children schools as alternatives have developed so fast in Beijing, and it is expected that this type of school will exist for a long time. The distribution of enrollment by school type differs from city to city. In the case of Beijing, from 2000 to 2004 and until even more recently, the portion of migrant children attending private migrant-children schools was always about one third (Beijing Morning News, 2011; Han, 2001, 2007).

In China, academic performance in compulsory education plays an important role in one's entrance into higher level of education, and therefore it captures a lot of attention from students, parents and researchers. Studies have found that the academic performance of children left behind in rural areas was adversely affected by the fact that their parents were working away (Hu and Li, 2009). Concerns are also centered on the other set of children who had the opportunity to migrate with their parents: what factors influence their study in urban settings, and how to improve the academic performance of this special group of children. However, previous studies of China's migrant children focused on their educational opportunities/attainment (Hannum, 1999; Liang and Chen, 2002; Sa, 2004), with limited and mostly descriptive works concerning the determinants of their academic performance. Recently some researchers have started to focus on the performance issue, but systematic analysis is still rare.

There have been some policy changes in recent years regarding migrant children in Beijing. For example, in 2000, following the document titled *Act for Beijing's Implementation of the Compulsory Education Law in China*, the city, district and county government are required to make sure all the children of appropriate age receive compulsory education. Government funding should be spent in public schools, with no text book fees or miscellaneous tuition fees. Since 2008, such subsidies have been given to students from 63 public schools, and some public funding was invested in a number of private migrant-children schools in some districts/ counties. These moves may have altered the effects of family income and school type on migrant children's academic performance. Furthermore, in April 2010, the Beijing government released a policy document to improve migrant children's transition from primary school to middle school in their nearest neighborhood. This may affect how individual and family factors influence children's performance.

In order to comprehensively test the determinants of migrant children's academic performance, as well as to uncover possible changes in the significance of these determinants under different policy contexts, this article employs the order probit model to examine the influence of student, household and school characteristics on the academic performance of two cohorts of migrant children, and also whether their effects differ according to gender, grade and school type. Our data come from a Ford Foundation-supported survey regarding the state of migrant children's education in Beijing, which was conducted in two waves: one in early 2008 and the other in 2011. This study enriches the literature for migrant children's academic performance that is still emerging. The analysis of student- and family-level predictors is also broader than prior empirical studies given the rich information in the dataset. Additionally, the use of two periods of data is a strength of this paper, which offers a unique opportunity to see whether the determinants have changed over time. Keeping in mind China's regional diversity of the social economy (featured by differences in the distribution of migrant children across school type and variations in relevant policies developed by local government), we account for the institutional environment in Beijing when explaining our findings.

The structure of the paper is as follows. The second section reviews prior studies on this topic. The third section introduces the data source and sampling method, as well as the rationale behind the selection of econometric models and variables. Descriptive statistics for the measures of student, household and school characteristics are also provided in this section. The fourth section presents and explains the results. The last section summarizes the study with reference to Beijing's politics, economy and relevant education policies, and raises policy suggestions for governments of migrant-worker destinations aimed at supporting the education of migrant children.

2. Literature review

In general, lots of studies have discussed the major determinants of Chinese migrant children's education. Among them, the majority are theoretical and descriptive studies, while the amount of rigid quantitative research is small but increasing. However, as mentioned in the introduction, empirical studies regarding migrant children's education in China have mostly focused on educational opportunities and attainment (Liang and Chen, 2002; Sa, 2004) with limited empirical studies addressing academic performance. This section summarizes the theoretical perspectives and empirical studies on the predictors of children's academic performance in schools, focusing on the primary and lower-secondary stages. We first describe a simple framework for organizing the potential predictors of academic performance. We then present the findings from relevant empirical studies specific to migrant children in China. Finally, we position this topic in a broader scope and discuss the empirically identified predictors for academic performance for children in general.

2.1. A simple framework regarding the determinants of academic performance

The question of detecting the determinants of academic performance is a classical empirical topic for the economics of education field. To reveal the relation between educational inputs and outcomes (here academic performance) of migrant children, the classic theory of education production function, discussed in Hanushek (1986), is a helpful framework to begin with. In the theory, educational outputs are produced by school inputs such as teachers, expenditure per pupil, and peers, in addition to family and neighborhood factors. We chose this framework because it has been widely used and is highly related to our research question. During our estimation, some modifications were made to this framework so that other individual and school factors that are of particular importance for migrant children could be incorporated into the framework, for example, the number of school transfers and students' overall assessment of the school. Symbols for the inputs were also slightly modified to reflect the direct distinctions among different factors.

$$A_t = f(I_t, F_t, T_t, OS_t, P_t)$$

As shown in the above model, a student's academic performance at time t is seen to be produced by a set of inputs: I_t refers to individual factors such as age, gender, participation in tutoring classes; F_t stands for family factors, including parental education, family income, etc. T_t refers to teacher input; OS_t represents other school factors such as per-student spending, school type, and so on; and P_t stands for peer effect.

We are going to use this model to organize the empirical studies in the two sections below and to guide our empirical model for this paper.