

Equal Access of Ethnic Minority Students to Different Types of Higher Education Institutions

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Equal Access of Ethnic Minority Students to Different Types of Higher Education Institutions?

Introduction

Yunnan Province is situated in south-west China and is home to 55 ethnic minorities (EMs). Twenty-five of these EMs have a population greater than 5,000 people, and they inhabit an area of two thirds of Yunnan Province. The largest part of the province is mountainous, and that has consequences for the education of EM children. Primary and secondary schools are often far away from the places where some minorities live. Children have to walk a great distance to attend classes; a lot of them learn, eat, and sleep at school or stay with guest families during the week and only go home at the weekends. In some villages students are taught in the local language of the EM, in other places Mandarin Chinese is the teaching language (Hansen, 1999; Jiang, 2002). None of these methods is the best route to a successful introduction for young students into higher education. Language fluency is very important for higher education (HE), but a lot of candidate EM students are missing that fluency at the time of taking university entrance exams (Tsung & Clarke, 2010). Although such students receive preferential treatment in these exams, it is not enough for many students to open the door to higher education institutions (HEIs) (James Jacob, 2006). Living in a mountainous area means, for most EMs, that the major economic activity is agriculture, although the land is not always very productive. Poverty may be one of the consequences. All these factors together certainly do not favor the participation of EM students in HE.

Moreover, HE in Yunnan Province has experienced a long, slow zigzag process, during which it has changed from small to large scale, from a single type of HEI to multiple types, and from a sporadic state to a comprehensive system. Before 1971, there was no EM HEI in Yunnan. In 1971, the Yunnan

Nationality College (founded in 1951) was re-established and became a HEI. From then on, Yunnan had its own ethnic college. Between 1957 and 2006, Yunnan ethnic education has made great progress. Before 1993, the number of EM students in Yunnan was below 10,000. During the 50 years from 1957 to 2006, the percentage of EM students has always been below 26.37% (in 1976). For about 32 years this percentage was even lower than 20%. For 50 years, the percentage of the EM students in Yunnan Province has been lower than the percentage of the EM population of Yunnan. In 2001, for example, about 35% of the population of Yunnan Province consisted of EMs, whereas only 19.51% of Yunnan HE students were members of EMs. In spite of all kinds of policies to create equal educational opportunities for EMs (Jiang, 2002; Kayongo-Male & Benton Lee, 2004; Wang, 2007), the target has not yet been reached. Universities have different positions and not all universities are equally accessible. This raises the questions: what types of HEIs are chosen by EM students and why do they choose these institutions? To answer this question we will first focus briefly on the theory that supports this research. Second, some information on EMs and HE will be offered. Third, we will present the method applied to answer our research questions. Fourth, we will present the results of our research. The focus is on the following questions:

- 1) To what occupational groups do the parents of the EM students belong, and is participation in the different forms of HE the same for all occupational groups?
- 2) What level of education did the parents of these students receive and does this make a difference to students when choosing a particular type of HE?
- 3) What is the annual family income of the parents and does it make a difference for students when choosing a particular type of HE?
- 4) Where do the parents of these students live and does this make a difference to students when choosing a particular type of HE?
- 5) Do female and male EM students choose different types of HE and does the choice differ depending on the entrance exam score?
- 6) What are the reasons for EM students to choose a particular type of HEI?
- 7) What factors allow predicting access to what type of HEI?

At the end we draw a conclusion.

Theoretical background

For many years, researchers in the field of sociology have raised questions similar to those posed in this paper. In the 1960s, Blau and Duncan (1967) offered an explanation for the occupational attainment of sons in the USA. It was the starting point for many studies into occupational and educational attainment, and for the development of many theories. We confine our presentation of the theoretical explanations for educational attainment to two important approaches, and offer some methodological implications.

First, educational attainment may be seen as the result of *structural factors* that open up, reduce, or stop opportunities for students. The list of variables influencing educational attainment is long and varied. In a basic model, researchers mostly use: age, gender, father's and mother's occupational class, educational qualifications of the respondent and of the parents, and ethnicity (Vucasović & Sarrico, 2010; Jaoul-Grammare, 2010; Schmid, 2010; Scherger & Savage, 2010; St. John & Musoba, 2011). St. John and Musoba (2011) (see also Schmid, 2010) also added the following factors: family income, school urbanicity, the proportion of ethnic minority and impoverished students enrolling in secondary school, eligibility for a study grant, and whether a SAT (Scholastic Aptitude Test) was taken or not. Studying the transition to different types of colleges, they also included the variable: high school GPA (grade point average). For the investigation of persistence in a particular study course during the first two years, the following variables were added to the model: campus type and academic major in the freshman year. Once enrolled in college, changes of majors were explained using the former independent variables together with, among others, remedial course work, enrolment status in the first semester, the late enrolment indicator, and dependency status. Other researchers (Vucasović & Sarrico, 2010; Jaoul-Grammare, 2010) also made observations at different times during the progress through education, while using the basic explanatory model described above. These observations can show that access to every level of HE is not equal for every student.

Second, many authors also include in the study of educational attainment the meaning of *values* shared within society or by some social categories. For example, in a large sample of adults in the UK, Scherger and Savage (2010) studied the relationship between cultural socialization, educational attainment, and intergenerational social mobility. In addition to the basic variables, these authors applied an index of parental socialization. This variable covers parts of the cultural capital of the family into which the respondent was born. On the one hand the index refers to visits with parents or other

adults to museums, the theatre, exhibitions, and the like. On the other hand it refers to parental stimulation to practice all kinds of art.

Studying the educational attainment of indigenous students in Australia, Gray and Beresford (2008) and de Plevitz (2007) referred to educational processes at home and at school, policy, and historical data in order to explain educational attainment. Historical data included, for example, the legacy of colonialism, racism, the belief of politicians in the deficit theory, reform policy, the limits of public administration, and the resistance of aboriginals to education (see also Kay-Lambkin, Pearson, & Rolfe, 2002). Focusing on EM students, researchers in the USA (Hurtado et al., 2007) and the Netherlands (Severiens, ten Dam, & Blom, 2006) expanded the basic model by looking at the social and academic integration of students in a university.

The study of educational attainment often goes together with the question of the inequality of educational opportunities. This is the case for most of the previously mentioned research. In this context, the equality of educational opportunities is linked with the social position of students in society. Since the positions of students' families are not equal (in economic, cultural, and social terms), it is very likely that students will also not have equal opportunities to attain either particular levels of education, or a particular professional status. The models described above can help to explain inequality in educational opportunities, and the different measurements for educational attainment can be used as indicators of its equality or inequality.

The huge variety of factors presented above could not all be introduced into our project. The paragraph describing the methodology shows how we have used the basic indicators from the first model, together with some value judgments by the students. Inequality of educational attainment will be indicated by the access to four types of HEIs of students with differing social status.

EMs and HE

Educational attainment cannot be understood without some knowledge of the local educational structure and other characteristics of social life. Chinese HE is competitive. In June every year, Chinese high school graduates who want to attend HEIs have to take the national entrance exam (*Gao Kao*). Three subjects are compulsory: Chinese, Mathematics, and English. Further, art and humanities students have to choose two subjects out of Politics, History, and Geography, and science students two out of Biology, Chemistry, and Physics. A student's general mark allows them to register in one of the different types of HEI. In our research we met four types of HEIs. Key universities are both nationally and provincially organized, receive much higher levels of funding from the government than other universities, and attract the most promising students. Public undergraduate universities are organized at provincial level and attract mainly students who are closer to the average than to the top of a cohort. Advanced vocational colleges are locally organized and attract more vocationally oriented

students. Private colleges are funded by social partners or celebrities. They attract all kinds of students, but students pay a tuition fee two or three times higher than in other universities.

In order to understand the small chance of EM students enrolling in a university, the description of the basic characteristics of Yunnan EM education by Chunlin Feng and Zhiguo Zhao (as cited in Jiang, 2003) is very instructive. EMs live mostly in remote, mountainous areas, far from cities. Because of the mountainous terrain they often live in small groups, with little contact between these groups. The effects are that schools are very small (teaching points or *jiaoxuedian*) and if children are able to attend larger schools, they meet many different cultures (Wang, 2007). Quite a lot of EMs live close to the country's border, which creates contacts wider than within their own country. And last but not least, the EM population is greatly dispersed.

Because the unequal position of EMs in the People's Republic of China was politically unacceptable, the Chinese government has developed a policy to improve the living conditions of these groups. Hasmath (2008) refers to lower taxes, easier access to public office, freedom to practice religion, and funding to express their culture. EMs are also exempt from China's population control policy. A more direct influence results from a higher education policy in favor of EMs. The government has established special HEIs for EMs (Postiglione, 2002), but at the same time has tried to open the doors to other HEIs by adding 10 points or more to the entrance examination scores of EM students, or by lowering the scores needed by EM students to enter a university (Wang, 2007). Hasmath (2008) shows that this policy has certainly had a positive effect on the educational attainment of EM students in Beijing, who accounted for a larger proportion in HEIs than did Han students. This was also true for nine of the twenty-five EM nationalities in Yunnan Province, but not for the others (Zhang & Verhoeven, 2010).

Although most former research has investigated the educational attainment of EMs in comparison with the majority in a country, this is not the purpose of this article. In this article we are solely interested in answering the question: is the access to higher education equal for all EM students and what variables contribute to the possible differences?

Methodology

In order to answer this question we drew a random sample of 2,400 students in ten HEIs in Yunnan Province. The students received a questionnaire in the classroom and 2,315 (response rate = 96.5%) answered it. 600 respondents (or 26.6% of the sample) belong to an EM group. Only the answers of these students will be analyzed in this article.

(Here Table 1)

Our questionnaire was based on the one developed by Professor Zuoxu Xie (Xiamen University), who was the organizer of the national project “Research on mass education and reducing the discrepancy between social strata.” In a pilot study this questionnaire was tested in large and small samples. This was the basis for the final questionnaire.

This questionnaire focuses on 24 items, spread over four sections. In items 1 to 6 we asked for information about gender, age, type of HEI, grade, field of study, and the EM group of students. The second part of the questionnaire (items 7 to 14) contains questions about family background, the urbanization level of the place of the family residence, the home province of the student, the annual income of the family, the occupation of the mother and father, and the persons who are responsible for the family income. In part three the following items (15 to 22) are covered: information about the lives of students, the tuition, their consumption pattern, the choice of a particular HEI, and field of study. Part four was composed of questions about the motivation of the students to choose a HEI and field of study. We offered in the questionnaire some items that could influence the choice of the students for a particular HEI or field of study: the employment prospects of the students, their hobbies, the amount of tuition, the reputation of the university, the location of the university, and the influence of parents and high school teachers. Students were asked to rate them on a Likert scale pattern with the labels very important, important, not sure, not important, and no importance at all.

Questions 1 to 5 will be answered by presenting the distributions of the data and testing the differences between the choices for different types of HEIs. Question 6 will be answered by variance analysis, and the predictions for question 7 will be made based on a multinomial logistic regression analysis (Long, 1997; Agresti, 2002).

Before embarking on the analysis of the results, some indicators need some clarification. Unequal access to HEIs is indicated by the four different types of HEIs. Although it is possible to see

the classification vocational, public and key universities as a kind of ordinal scale, we apply them as a nominal classification in the multinomial logistic regression analysis. Therefore dummies (e.g. 1 = private college; 0 = other universities) will be used in order to search for some predictors for the choice of a particular type of university.

Education attainment theory has shown a large variety of explanatory variables. Ten of them will be checked as possible predictors for access to different types of HEIs. First, the level of education of the father and mother. A difference is made between those who finished primary school or not, junior middle school, senior middle school, and junior college or higher (see Table 1). Second, fathers and mothers are divided into ten occupational categories (see Table 2). Because this is not a clear scale (see below), we use a dummy in the logistic regression analysis: 1 = commercial service workers, industrial workers, agricultural workers, jobless, unemployed, and part-time workers; 0 = all other categories. Family income is reduced to four categories (see Table 5). The characteristics of the place of the family residence are reduced to a dummy: 1 = rural area; 0 = other places. To answer question 5 we will use the entrance exam score and gender (0 = male; 1 = female) of the students. Question 6 is answered by using a list of questions where students are asked to give a motivation for choosing a university (see Table 8). Using all former independent variables in a multinomial logistic regression analysis, an answer will be given to question 7. Although this model is more limited than some mentioned above, it uses most of the significant variables from similar projects.

Results

Occupational groups of the parents and type of HEI

To place the fathers and mothers of the EM students within some large occupational groups, we used the classification developed by the Chinese Academy of Social Sciences (Lu, 2002). The categories in Table 2 are not only seen as simple occupational classification categories, but also as a kind of ranking of these occupational groups in China. Nevertheless, they are not the same as the social strata defined by Lu. It is for instance possible that some 'national and social administrators' and some 'private entrepreneurs' may belong to the social upper class, and other members of these groups to the upper middle class (Lu, 2002).

(Here Table 2)

Only a small proportion of the students have fathers in the three top categories. About 8% of the fathers of these students have a leading position in politics, administration, business, or production. About 23.5% of the fathers belong to the level of trained technicians, independent shopkeepers, or craftsmen. Two thirds of them are workers and the largest proportion is composed of agricultural workers (60.2%). This stratification seems to support the idea that working class EM students certainly have opportunities to improve their position by attending university. To a certain degree this is correct, but on the other hand data shows that only 15.8% of these students attend a key university: the other students attend public undergraduate universities, advanced vocational colleges, or private colleges.

(Here Table 3)

Table 3 shows that access to HEIs is not equal for EM students of working class families in comparison with others. Students whose father ($\chi^2 = 14.79$; $df = 3$; $p = .002$) or mother ($\chi^2 = 18.69$; $df = 3$; $p = .0003$) are workers, register significantly less in key and private universities than other students. The similar results related to the status of fathers and mothers could be expected because of the relatively strong correlation between the status of the fathers and the mothers ($r = 0.58$). Similar inequalities are present when we compare some of the ten occupational groups. For example, only 11.5% of students whose father is an agricultural worker register in a key university. This figure is 23.5% for children of a state administrator. The choice for a private university is found respectively at 3.4% and 8.8%.

Educational level of the parents and type of HEI

Many parents of EM students did not benefit from much formal education. 23% of the fathers of these students finished primary school or left this school before graduating. The proportion of mothers of EM students with a primary school diploma or less is twice as large (46.2%; see Table 1). Only 11.5% of the fathers and 4.2% of the mothers are junior college graduates or hold a higher degree (see Table 1).

(Here Table 4)

Although the distribution of students categorized by the educational level of the father in Table 4 does not deviate significantly from the expected distribution, a trend is visible. Students whose father is a college graduate register more in key and private universities than other students. A similar phenomenon is noted by St. John and Musoba (2011) and Schmid (2010) in the USA. This trend is confirmed, taking into account the educational level of the mothers. This could be expected knowing that there is a strong correlation ($r = 0.54$) between the educational levels of mothers and fathers.

Annual family income and type of HEI

HEIs charge very different tuition fees. For example, private HEIs might charge students 8,000 Yuan a year, whereas public universities do not ask more than about 4,800 Yuan. It is clear that this

has some influence on the choice of a HEI, taking into account the annual income of the families of EM students. If the family income is lower than 1000 Yuan a year, sending a son or daughter to a university might be a heavy burden. A lot of EM families face this challenge. It is no surprise that 75% of students declare that the cost of tuition is a heavy or very heavy burden for their family, and 57% consider it a heavy or very heavy burden for their studies. Among working class students these figures are respectively 83% and 64%.

The family income of 50% of the students is lower than 1000 Yuan a year, and 32% have an income of between 1000 and 5200 Yuan a year. For their parents (82% of the EM students) it is certainly not easy to find the necessary money to send their children to a university. Only 0.2% of the EM students live in families with an annual income higher than 20,000 Yuan. To illustrate the less prosperous situation of EM families, we compare some figures with those of James Jacob (2006) in a nationwide survey in ten Chinese universities (N = 797 of which 5% were EM students). 29% of students' parents had an annual income of less than 10,000 Yuan and 43.4% had an income higher than 20,000 Yuan. The financial situation of EM families makes a lot of these students needy. Earlier studies have confirmed this. In 2005 it was found that 20% of the students in local HEIs were destitute (Yuxi Normal College, 2005; see also Huang, 2000).

(Here Table 5)

The smallest number of students register in a private university (5.3%). This is not only because these institutions are rather new, but also because of the high tuition fees. Table 5 shows that the proportion of students registering in a private university increases correspondingly with the annual family income, although there is almost no difference between the second and third income categories. Also, key universities attract a higher proportion of students from the two highest income categories than from the lower income categories (see also St. John & Musoba, 2011; Schmid, 2010). An annual family income of more than 5200 Yuan offers more opportunities for EM students to enter key or private universities compared to other EM students.

Place of family residence of EM students and choice of HEI

Table 1 shows that the parents of the majority of EM students (62.8%) live in rural areas. Smaller numbers of them live in small towns with a registered permanent city residence (13.3%) or in county cities (18.4%). Only 5.5% live in larger provincial and municipal cities.

Depending on the place of residence, EM students choose different types of HEIs (see Table 6). Students from rural areas attend more public undergraduate universities (72.3%) than do other students. The lowest proportion is found among the EM students whose family is living in provincial and municipal cities (53.1%). The option of a private university is just the opposite: private universities are more popular in provincial and municipal cities (15.6%) than in rural areas (2.7%). The same may be said of the choice of key universities: 21.9% of the students living in provincial and municipal cities had access to a key university; in rural areas only 11.7%. This trend is even more visible when we compare students from rural areas to students living in towns ($\chi^2 = 17.56$; $df = 3$; $p = .0005$). Similar observations have been made by St. John and Musoba (2011) in the USA.

(Here Table 6)

Gender differences and entrance exam score

The results show that male and female EM students have different preferences for universities ($\chi^2 = 9.01$; $df = 3$; $p = 0.03$). Private and vocational universities seem to be more popular among female students, whereas public universities are more attractive to male students (Table 7).

(Here Table 7)

Key universities attract students with the highest scores in the university entrance exam (M score = 532.7; SD = 64.1). The average score of students (M score = 405.1; SD = 78.5) entering public undergraduate universities is clearly lower, and this is followed by students at the advanced vocational colleges (M score = 395.7; SD = 60.2). Private colleges attract students with a higher average score (M score = 436.4; SD = 80.6) than do public universities and vocational colleges.

Reasons for choosing a type of HEI

Education attainment might not only be determined by structural variables such as the occupational category of the parents or the place of family residence. It is also the result of the motivations of the students. Students were asked to rate some motives for choosing an HEI on five point Likert scales. The following motives were offered: the employment prospects of students, their hobbies, the level of tuition fees, the reputation of the university, the location of the university, and the influence of parents and high school teachers.

What is the importance of these motives, according to the EM students, in choosing a particular type of HEI? The most important factor is the tuition fees (score 4.1 out of 5). This factor is rated significantly higher ($t = 20.77$; $p < .0001$) than the reputation of the university (3.86). That comes second, followed by the hobbies of the student (3.82), employment prospects (3.75), the influence of parents (3.62), the location of the university (3.17), and the influence of teachers (2.9). There is no significant difference between the reputation of the university, hobbies ($t = 0.13$; $p = .89$), and

employment prospects ($t = -1.28$; $p = .199$), but the reputation of the university scores higher than the influence of parents ($t = 4.42$; $p < .0001$) and lower ranking motives, and so do employment prospects ($t = 2.52$; $p = .01$) and the higher ranking motives.

(here Table 8)

Only three of these motives played a role in choosing a type of university. EM students choose different types of HEIs depending on the extent of tuition fees, the reputation of the HEI, and employment prospects (see Table 8). The average score for the extent of tuition fees in private universities (4.5) is significantly higher than in key and vocational universities (see also James, 2000). We also see that the reputation of the university plays a more important role for students in private universities than in public and vocational universities. It has also been stated in the UK that the reputation of a university might have some importance to EM students, but the influence might go in two directions: positive or negative, for a well established university (Smith, 2007). The least attention (2.7 out of 5) was paid to employment prospects by students at private universities, and this was significantly less than in key (3.8), public (3.8), and vocational universities (3.6).

Analysis of variance also shows that the other motives, i.e. hobbies, the location of the university, and the influence of parents or high school teachers did not contribute to a different option for the four types of HEIs.

What variables allow predicting the access to different types of universities?

Access to key universities is different to other universities. The most popular is the public university. The others attract fewer students. Taking into account the variables of the education attainment theory, we hypothesized that the social stratum and educational level of the father and the mother of the students, the family income, the rural character of the family residence, the gender, the entrance exam score, the importance of the tuition fee, and the reputation of the university could all be helpful in predicting the chances of a student attaining enrollment in a particular type of university. Using these ten variables we applied a multinomial logistic regression analysis, and took as the university of reference the most popular one: the public university (see Table 9). The likelihood of registering in one of the three university types other than a public university will be compared to the likelihood of registering in the latter. Contrary to our expectations, only three factors have more impact than all others on the choice of a type of university: the score on the entrance exam (Wald $\chi^2 = 68.22$; $df = 3$; $p < .0001$), the importance of the reputation of the university (Wald $\chi^2 = 13.79$; $df = 3$; $p = .003$), and the importance of the amount of the tuition fees (Wald $\chi^2 = 9.46$; $df = 3$; $p = .021$). From Table 9 we learn, while controlling for the other explanatory variables, that if a student scores higher in the entrance exam, it is more likely that he or she will prefer a key university ($p < .0001$) or a private university ($p = .005$) to a public university. The likelihood of a student registering in a vocational college is the same as for a public university ($p = .804$). The data also shows that students who consider the amount of the tuition fees to be important when choosing a university will be more likely to attend a private university ($p = 0.02$) than a public university, and students who consider the reputation of the university important, will be more likely to choose a key ($p = 0.002$) or a private ($p = 0.019$) university than a public university. This model explains 37.35% of the variance of the registration in different types of universities (global null hypothesis test: $\chi^2 = 189.9$; $df = 30$; $p < .0001$). One might wonder why the other variables do not have a significant impact on the explanation of the different access to HEIs by EM students. We come back to this later.

(here Table 9)

Conclusion and discussion

In Yunnan Province, EMs live in very different areas, enjoy different educational opportunities, and face different economic situations. Taking this into account, and taking into consideration the suggestions of the education attainment theory, it could be expected that these would have some

influence on the access to HEIs. In China, different types of HEIs have different missions and it could be expected that this would be visible in the choice of these HEIs by EM students. Our analysis shows that there is a different preference among EM students for private, key, public, or vocational universities. It is also demonstrated that this might be influenced by the occupational position of the parents. Working class EM students (with a father and/or mother who are workers) opt less for key or private universities, and this is also true for rural students. A similar trend has been found among those students whose mother or father has lower than college education. In key and private universities, more students belonging to families with an annual family income higher than 5201 Yuan can be found (see for EMs in other countries Smith, 2007; Modood, 2006; Gray & Beresford, 2008). Asked about the motives that lead them to choose a university, students mentioned successively: the tuition fees (highest score), the reputation of the university, the hobbies of the students, the employment prospects, the influence of parents, the location of the university, and the influence of secondary school teacher, but only the level of the tuition fees, the reputation of the university, and the employment prospects brought students to a different choice of university type. For instance, the level of the tuition fees was important to students who choose a private university and less important for students in key or vocational universities, and the reputation of the university was significantly more chosen by students in key or private universities than in others.

In a last step we checked whether it was possible to predict with more likelihood the choice of a particular type of university by EM students, by using ten possible determinants for the choice. Using a multinomial logistic regression analysis we focused on the occupational category and the educational level of the mother and father of the student, the family income, the rural character of the family residence, the gender, the score of the student in the entrance exam, the judgment of the student about the importance of the reputation of a university, and the tuition fees as the factors influencing the choice of a particular type of university. We expected that a model of combined factors could deliver a better prediction of the choice by students of different types of universities. Contrary to

our expectations, we found that only the entrance exam score of a student, and their judgment of the importance of the reputation and the tuition fees when choosing a university allow for improvement in our predictions. One of the reasons for this might be that applying a multinomial regression analysis only includes the results of respondents who answered all the questions. This has the effect of excluding from the regression analysis any students who did not answer one or more questions concerning the ten assumed predictors. In order to receive answers to as many questions as possible, it would be better to replace classroom interviews with face to face interviewing. Moreover, by using dummy variables, parts of the social reality are no longer visible. Just one example: In the regression analysis a dummy was used, differentiating between rural students and others. In this differentiation all rural EM students are included, regardless of whether they live in a mountainous area where they could or could not attend a local school, whether or not they received bilingual teaching, or whether there were other major differences. Indeed, ethnographic research has clearly shown that there are important differences between rural EMs as far as daily life and education are concerned (Hansen, 1999; Jiang, 2002; James Jacob, 2006). Supported by this ethnographic knowledge, it would be possible to build better research instruments to make better predictions of the differences in access to different types of HEIs by EM students. This is a limitation of this study that deserves attention in further research concerning the educational attainment of EMs.

Besides indicators that cover more details of social life, this model needs also more indicators as has been shown above. For instance, St. John and Musoba (2011) pinpoint the different consequences for access to higher education resulting from students having attended different types of high schools and having different curriculums. Some high schools prepare students better for higher education than do others. In our project no detailed information was available about the high school experiences of the students. However, it is known that secondary education in China is delivered by key schools and others. Key schools have many privileges: they can select the best students and the best teachers, they have more funding, and are first in line for new equipment (Dong & Zhang, 2008). Moreover there is a discrepancy between urban schools and rural schools, the former having more advantages than the latter. We know that most of the EM students live in rural areas. Therefore we can hypothesize that most of these students did not benefit from education in key schools. A proportion of these EMs live in more urban areas, but we do not have detailed information about the type of secondary school these students attended either. More knowledge about the secondary school

education of these students would have helped to form a more reliable picture of the inequality of educational opportunities. Only empirical research can solve this problem. Similar questions may be asked about the parental socialization that might improve or diminish the opportunities for these students (see Scherger & Savage, 2010).

Considering the limitations of this research, we think it would be incorrect to conclude simply that all inequalities of opportunity among EM students have disappeared, because our multinomial regression analysis only showed a difference between students' choice of HEIs based on their entrance exam scores and some opinions about tuition fees and the reputation of a university. The data shows that in comparison with EM students attending public universities, EM students with the highest exam scores are more likely to attend key universities. This could be seen as an indicator that entrance exams are doing what they are supposed to do: giving educational opportunities to those who are capable, while disregarding the occupational status and income of the parents. Should we agree with this conclusion? Not everybody will. Wang (2007), for instance, stresses that EM students are handicapped because the entrance exams are designed for students of the Han culture and do not pay attention to the individual characteristics of EM cultures. The entrance tests do not refer to the local culture of EMs, which makes the tests harder for EM students. If the basis on which equal opportunities are granted is not valid, doubt about the resulting equality of opportunities is not far away. Although it cannot be denied that education policy has contributed to more equal educational opportunities for EM students, policy makers should certainly invest in checking the functioning of some policy instruments. This can only contribute to more equal chances for those groups that only share some parts of the mainstream culture.

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Tables

Table 1

Some characteristics of EM students (N = 600)

Categories		%	Categories		%
Gender	Male	44.1	HEIs' type	Key universities	13.8
	Female	55.9		Public undergraduate universities	67.8
Home province	Yunnan Province	88.6		Advanced vocational colleges	13.1
	Other provinces	11.4		Private colleges	5.3
Place of family residence	Provincial & municipal cities	5.5	Persons responsible for the family income	Parents	95.5
	County cities	18.4		Brothers & sisters	2.5
	Towns with registered permanent city residence	13.3		Grandparents	0.5
	Rural regions	62.8		Others	1.2
Fathers' education level	Primary school or lower	23.0	Mothers' education level	Primary school or lower	46.2
	Junior middle school	36.9		Junior middle school	32.5
	Senior middle school & secondary specialized school	28.6		Senior middle school & secondary specialized school	17.1
	Junior college or higher	11.5		Junior college or higher	4.2

Table 2

Breakdown of EM students into the occupational groups of their parents (N = 600)

Occupational groups	Ethnic students in Yunnan		
	Father	Mother	Average
State & social administrators	5.8	1.8	3.83
Managers	0.3	0.3	0.33
Private entrepreneurs	2.0	0.8	1.42
Specialized technicians	12.5	6.8	9.67
Clerks	4.5	2.5	3.50
Individual businesspeople (e.g. shopkeepers, craftsmen)	6.5	5.0	5.75
Commercial service workers	1.3	1.2	1.25
Industrial workers	4.5	2.8	3.67
Agricultural workers	60.2	75.2	67.67
Jobless, unemployed & part-time employed persons	2.3	3.5	2.92

Table 3

Proportion of students having a father or mother who belongs to the working class, registered by different university types (N = 592)

University type	% of students whose father belongs to		% of students whose mother belongs to	
	not working class	working class	not working class	working class
Key universities	19.2	11.9	19.7	13.0
Public undergraduate universities	57.8	71.8	54.9	70.0
Advanced vocational colleges	14.4	12.6	12.7	13.3
Private colleges	8.6	3.7	12.7	3.7
Total	100.0	100.0	100.0	100.0

Table 4

Choice of university type by students and education level of parents (%)

University type	Education level of father ^a				Education level of mother ^b			
	Primary school or lower	Junior middle school	Senior middle school & secondary specialized school	Junior college or higher	Primary school or lower	Junior middle school	Senior middle school & secondary specialized school	Junior college or higher
Key universities	12.7	14.5	14.3	17.7	11.2	14.9	20.9	18.2
Public undergraduate universities	75.4	66.0	68.8	59.7	74.5	63.8	61.5	45.5
Advanced vocational colleges	10.3	14.5	10.4	12.9	12.7	15.5	7.7	13.6
Private colleges	1.6	5.0	6.5	9.7	1.6	5.8	9.9	22.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^a $\chi^2 = 10.28$; df = 9; p = .328^b $\chi^2 = 35.07$; df = 9; p < .0001

Table 5

Choice of type of HEIs by EM students and annual family income in Yuan^a (%) (N = 592)

	Less than 1000 Y	1001 -5200 Y	5201-9400 Y	9401-20,000 Y	Total
Key universities	14.0	10.1	34.2	17.4	13.8
Public undergraduate universities	71.6	68.1	50.0	52.2	67.8
Advanced vocational colleges	11.6	15.7	10.5	13.0	13.1
Private colleges	2.8	6.1	5.3	17.4	5.3
Total	100.0	100.0	100.0	100.0	100.0

^a $\chi^2 = 36.08$; $df = 9$; $p < .0001$

Table 6

Choice of type of HEIs by EM students and place of residence of their families (%) (N = 586)

	Rural areas	Towns with registered permanent residence	County cities	Provincial Municipal cities	& Total
Key universities	11.7	17.9	15.7	21.9	13.8
Public undergraduate universities	72.3	64.1	59.3	53.1	67.8
Advanced vocational colleges	13.3	10.3	15.7	9.4	13.1
Private colleges	2.7	7.7	9.3	15.6	5.3
Total	100.0	100.0	100.0	100.0	100.0

Table 7

Choice of type of HEIs by male and female EM students (%) (N = 590)

	Male	Female	Total
Key universities	13.8	14.3	14.1
Public undergraduate universities	72.1	63.9	67.6
Advanced vocational colleges	11.5	14.3	13.1
Private colleges	2.6	7.5	5.2
Total	100.0	100.0	100.0

Table 8

Analysis of variance concerning the reasons for choosing the type of HEIs

Reason for choosing HEIs	Mean score (max = 5)	SD	F value	Tukey test
- employment prospects of students	3.75	1.26	F(3, 583) = 7.92; p < .0001	Key, public and vocational universities > private universities
- hobbies	3.82	1.05	F(3,587) = 1.62; p = .183	-
- level of tuition fees	4.08	0.92	F (3, 584) = 5.02; p = .002	Private universities > key and vocational universities
- reputation of the university	3.86	0.85	F (3, 571) = 6.39; p = .0003	Private universities > public and vocational universities
- location of the university	3.17	1.12	F(3,559) = .50; p = .682	-
- influence of parents	3.62	1.01	F(3, 559) = .67; p = .57	-
- influence of high school teachers	2.90	1.08	F(3,555) = 1.21; p = .305	-

Table 9

Analysis of maximum likelihood estimates for the choice of key, vocational and private universities in comparison with public universities (multinomial logistic regression)

Parameter ^a	HEI	DF	Estimate	SE	Pr > χ^2
Intercept	Key university	1	-16.594	2.440	< .0001
	Vocational college	1	-1.250	1.578	0.428
	Private university	1	-15.366	3.154	0.0001
	Ref.cat. = public university				
Exam score	Key university	1	0.028	0.003	<.0001
	Vocational college	1	-0.0005	0.002	0.804
	Private university	1	0.0098	0.003	0.005
	Ref.cat. = public university				
Importance of tuition for choice of university	Key university	1	-0.016	0.228	0.944
	Vocational college	1	-0.282	0.160	0.079
	Private university	1	0.811	0.348	0.020
	Ref.cat. = public university				
Importance of fame of university for choice of university	Key university	1	0.807	0.263	0.002
	Vocational college	1	0.250	0.178	0.160
	Private university	1	0.857	0.365	0.019
	Ref.cat. = public university				

^a Only the variables with significant estimates are included in this table.