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Educational optimism in China: migrant selectivity or migration experience?

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ABSTRACT

This paper addresses the so-called paradox of immigrant optimism, which accounts for the higher educational expectations of immigrant-origin children, compared to non-immigrants in destination countries, conditional on social background and school attainment. We are interested in clarifying whether the mechanisms behind this optimism are related to migrant selectivity or family migration experience. To do this we use data from the China Education Panel Study, a representative survey of junior high school students in China. We use a two-pronged analytical strategy. Firstly, we look at whether having experienced family migration (within China) is associated with higher educational expectations. Secondly, we take a step back and explore whether adolescents who wish to migrate themselves when they grow up report higher educational expectations. Our findings confirm that adolescents who wish to migrate themselves when adults are already more optimistic even before any intentions of moving come to fruition. This we take as an indirect proof of selectivity. In contrast, we find no effect of family migration on expectations.


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Social research on immigration has identified two important paradoxes that inspire part of the current research agenda of sociologists, economists, and demographers interested in the integration outcomes of immigrants and their children. Both refer to a residual advantage for immigrants in relation to comparable ‘natives’ in host countries conditional on standard socio-demographic controls. Firstly, the ‘Healthy Immigrant Paradox’ points to the better health outcomes of immigrants compared with non-immigrants (McDonald and Kennedy 2004; Kennedy et al. 2015), despite lower average socioeconomic status and poorer access to health care. The second paradox refers to the empirical finding that immigrants’ educational expectations (as reported both by parents and children) are more ambitious than those declared by natives of comparable social origins and school results. Since Kao and Tienda’s (1995) seminal paper on minority children in the U.S., this regularity has been labelled the ‘Paradox of Immigrant Optimism’ (Raleigh and Kao 2010). A similar pattern has also been documented in European countries such as Germany (Salikutluk 2016), France (Brinbaum and Cebolla-Boado 2007), the Netherlands

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(van de Werfhorst and Van Tubergen 2007), Belgium (Teney, Devleeshouwer, and Hanquinet 2013), and the U.K. (Fernández-Reino 2016).

This literature has been more successful in confirming the pattern of optimism internationally than in identifying its drivers, with much of it providing an *ex post* explanation to unexplained migrant–native differentials in expectations. At the risk of over-simplifying complex scholarly traditions, it could be said that the aforementioned paradoxes of immigrant integration outcomes have been explained using two lines of argument. On the one hand, immigrant advantage is regarded as resulting from the migration process itself, which in many ways represents a turning point in the life course of individuals, changing their views and behaviours. According to this logic, there is a causal link between migration and optimism. On the other hand, it has been argued that these paradoxes emerge not as a consequence of migration but actually before it even takes place, since emigrants are a self-selected population compared with non-migrant co-nationals. This suggests that both optimism and migration share a common link to prior individual characteristics such as certain individual traits including ambition, exposure to broader ideas about progress and individual agency, thus making emigrants essentially different from their non-emigrant co-nationals. We frame our research using these two blocks of explanations. Specifically, we ask the following questions: (1) does having experienced migration (defined as growing up in a family who migrated within China) boost the expectation of attaining tertiary education?¹ and (2) do children who have expectations of migrating to large cities within China or internationally when they grow up (designated as prospective migrants) already show traces of optimism regardless of their family migrant status? While our first question is more conventional in the literature, the second represents a step back from the dominant approaches and focuses on future migration plans and educational expectations.

The choice of China as the case study in our research is not coincidental. Since 1978, migration and educational expansion have been connected with the ‘modernisation’ of China (i.e. transition to a market economy and broad social reforms), which significantly increased the possibility of upward social mobility for the younger generations (Liu 2007). This expectation of mobility created unprecedented levels of internal migration, which has been captured in the recent national survey data sets such as the China Educational Panel Study (CEPS). For generations born in the 1980s and the 1990s, rural to urban migration has been the principal means of improving family well-being (Xu and Xie 2015). At the same time, China has experienced a rapid expansion of its education system (Treiman 2013). The reintroduction of the standardised National Higher Education Entrance Examination (*Gaokao*) in 1978 inaugurated the modern system of higher education in China and furthered the idea of ‘meritocracy’ in education (Liu 2013). Additionally, the one-child policy, along with the increasing middle-class incomes, has fed into this educational expansion by making it possible to pool resources that multi-generational families can invest (Cai, Chen, and Zhou 2010). According to the Ministry of Education, 7.95 million college students are expected to graduate in 2017. The drastic expansion of tertiary education enrollments over the last two decades in China transformed the system into a social space of fierce competition (Samir et al. 2010). Combined with extensive regional differences in access to and quality of education, this has boosted not only internal but also international migrations for educational reasons.

In addition to its highly dynamic migration and educational context, using Chinese data provides an additional advantage. It allows us to provide evidence from a major

migrant-sending country highly relevant to the current research interest in linking immigrant integration outcomes with the country of origin dynamics (van de Werfhorst, van Elsas, and Heath 2014). While research investigating health outcomes has often done exactly this (Argeseanu Cunningham, Ruben, and Venkat Narayan 2008), most existing analysis of immigrant educational optimism considers natives in destination countries to be the meaningful reference group. As a result, testable mechanisms of optimism are often limited to that which is in place after, or as a consequence of, immigration, and thus references to migrant selectivity are generally made *ex post* when interpreting residual, unexplained immigrant–native differentials. A recent literature addressing the issue of selectivity prior to migration discusses selection by education (Ichou 2014; Feliciano and Lanuza 2017). In this paper, we also focus on pre- and post-migration settings, but advance empirical analysis and theoretical arguments further by focusing on the relationship between selectivity on the basis of unobserved characteristics and migrant optimism.

Explaining differential educational expectations between native and immigrant students

Although sociology has a longstanding tradition of examining educational expectations² as a mediator between social origins and educational outcomes (Sewell 1971; Morgan et al. 2013), research on immigrant optimism developed independently of said tradition. It was led by scholars interested in immigrant integration outcomes rather than by those investigating educational stratification. In the 1990s awareness of the persistence of unexplained ethnic residuals in integration beyond time since immigration (Borjas 1992) fed a creative academic debate. Since then explaining the weak correlation between educational expectations and performance among immigrant–origin children has constituted a challenge to researchers.

We can identify two broad clusters of scholarship in relation to immigrant optimism. The first understands immigrant advantage as the very consequence of migration. This broad perspective perceives different explanations. Migration may represent an ‘income shock’, thus heightening expectations of social mobility. Or it may expand the “aspirational window,” i.e. the awareness about new opportunities, which most likely corresponds with increasing aspirations’ (Czaika and Vothknecht 2014, 4). Others within this cluster of scholarship emphasise the types of social networks that migrants create upon arrival in their destination country, and the kind and intensity of social capital they provide to co-ethnics as the central reason why migrants tend to outperform natives in outcomes such as health (Gu, Zhu, and Wen 2015) and their children’s education (Portes and Rumbaut 2001). Alternatively, optimism has been perceived as the consequence of immigrant families anticipating discrimination in the labour market (Jackson 2012), a common narrative in the accounts of Asian Americans’ extraordinary educational success (Sue and Okazaki 1990; Xie and Goyette 1997). Finally, optimism has also been explained as the byproduct of information deficits regarding the functioning of host society institutions. Kao and Tienda (1998), for instance, argued that in the U.S. insufficient information about college financial aid packages and social segregation contributes to the formulation of unrealistic educational expectations among immigrant origin youth.

While there are many different mechanisms through which migration may create optimism, our case study of internal migration in China relates only to arguments about income-shock. In the case of internal migrants, the role of supportive ethnic networks is not applicable since groupness is more diffuse. Similarly, information deficits may not be responsible for shifting educational expectations since we are looking at mobility within one system of higher education. Furthermore, anticipatory discrimination could be less of an issue since internal migration does not imply the same loss of human capital as international migration as it does not involve overcoming barriers such as language or institutional practices (Friedberg 1996).

The second cluster of scholarship explains immigrant advantage through systematic differences in individual characteristics of emigrants and non-emigrants of a given national origin. The idea that migrants are not a random sample representing the broader population of origin brings us to now-mainstream research questions in the sociology of immigration: Are migrants a representative population of those who do not migrate or rather a (positively) self-selected group? Mentions of selectivity as the ultimate cause of immigrant-native differentials in integration outcomes can already be found in early seminal contributions in the field of intergenerational mobility (Borjas 1992), and recent research on health outcomes (Arenas et al. 2015; Riosmena, Kuhn, and Jochem 2017) as well as in the general study of aspirations gaps by migrant status (Czaika and Vothknecht 2014). Recently, in the field of education, the idea of migrant selectivity has also found echo (Feliciano 2005a, 2005b). Selection may happen on the basis of observable (education, social origin) and/or unobservable characteristics (Chiswick 1999). Research regarding the first (Lessard-Phillips, Fleischmann, and Van Elsas 2014) and its consequences (Feliciano and Lanuza 2017) is sound. By contrast, evidence for the latter is more difficult to identify. Migrant families are known to be different from natives in destination countries in aspects such as a propensity for effort (Goyette and Xie 1999; Hsin and Xie 2014), or high interest in schooling (Feliciano and Lanuza 2016), which may be due to migrant selectivity.

It is precisely in relation to this second dimension of selection that our paper makes a contribution. Patterns of unobserved selectivity are undertheorised both from the demand and the supply side. From the demand-side, the impact of certain destination characteristics as magnets for skilled migrants is largely documented (Brücker and Defoort 2009; Belot and Hatton 2012). From the supply side, the identification of selectivity as driver of emigration at the individual level is more complex and difficult to address empirically, which explains why it is mostly provided as an *ex-post* explanation to empirical facts (Chiswick 1999). The increasing number of references to selectivity in contemporary research in economics, sociology, demography, and social epidemiology, with analytical insights obtained by using data from both origin and destination countries, prevail upon us to provide further evidence and find innovative ways of measuring its importance. This requires a certain amount of sociological imagination combined with, whenever possible, high-quality data from countries sending immigrants, which we attempt in this paper.

Hypotheses

The preceding review inspires two hypotheses that we use to account for differences in the expectations for higher education among migrants/prospective migrants and non-migrants

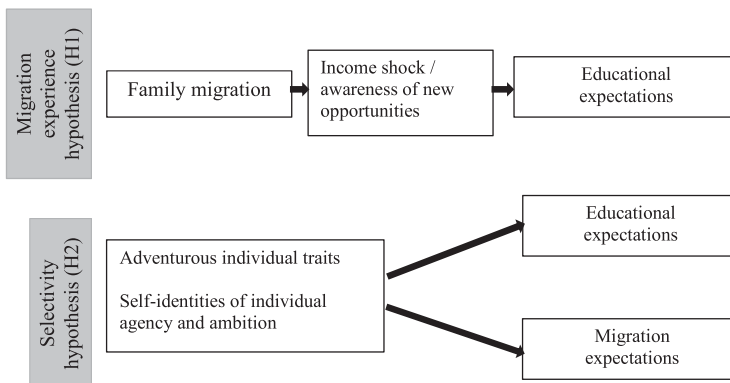
conditional on prior academic performance and social origin, which we define as optimism. The first one presents optimism as a by-product of migration (H1), while the other argues that optimism should be traceable before emigration actually takes place, reflecting selectivity (H2 and H2a). Conveniently, our data set allows us to identify school children whose direct family experience already exposed them to migration. If educational optimism is, as argued in the literature, the consequence of family migration experience by inducing income shock and expanding awareness of new opportunities, parents and children from mobile families within China may well reflect it. Thus, we make a causal assertion in line with the following hypothesis:

H1: Parents and children from families that experienced internal migration are more optimistic than those from non-migrant families.

Optimism, alternatively, may result from migrants being essentially different, more aspirational and driven in terms of social mobility than non-migrants. Unfortunately, measuring these differentials between migrants and non-migrants is rather complicated, thus we adopt an implication strategy. Our second hypothesis holds that both wishes to migrate and higher educational expectations correlate but are not causally linked. If potential migrants also hold higher educational expectations, we could deduce that selectivity on unobserved characteristics could be the source of both. We suggest that unobserved features can be traced to specific individual traits such as being more adventurous and risk-taking, or self-identities built around claims of individual agency and ambition. Psychologically oriented understandings would emphasise inner personality traits, but from a more sociological orientation we place great importance on the increasingly standardised models of the agentic and ambitious individual – transmitted through scientific theories and ideologies of education—which create expectations and equip individuals with such narratives of the self (Frank and Meyer 2002). We suggest the following hypothesis:

H2: Children reporting expectations of migration are more aspirational than those not declaring such expectations.

Summary of main hypotheses



Finally, as an extension of H2, we expect the gap in the educational expectations of children expecting to migrate and such expectations to be at its maximum among the least

successful students. If optimism results from selectivity, then we would expect less successful students to be more resilient to their current level of scholastic performance and any other objective constraint. We hypothesise:

H2a: Optimism should be more evident among less successful students.

Data, variables, and method

Data

The CEPS is a representative, large-scale survey of junior high school students in 7th and 9th grades conducted by the National Survey Research Center at Renmin University in Beijing. The survey is designed as a longitudinal tool for the study of educational dynamics in China. In this study, we use the first wave, carried out in the academic year 2013–2014.

The survey adopted a multistage sampling; 19,487 students³ from 443 classes in 112 schools were selected across counties, districts, and cities throughout China. These geographical units do not allow analysis of regional variation. The CEPS draws information from students, their families, schools, and teachers. Not only does it compile socio-demographic information from students, but it also measures their cognitive and scholastic performance including tests scores, school evaluations, and self-placement in class rankings.⁴

Variables

Our dependent variables are dichotomic recodifications of the *educational expectations* of respondents obtained from the student and parental questionnaires ('What is the highest level of education you expect yourself/your child to receive?'). We transformed the answers given to these questions into dummies scoring 1 when the selected response implies tertiary education (bachelor, master, and doctoral degree) and 0 otherwise.

Migrant status is a secondary variable allowing us to differentiate between students whose families migrated within their province of birth or across provinces, and those who did not migrate. Using this information we can test the effect of having direct family exposure to migration as a predictor of educational expectations. In the analysis, we used two dichotomic versions to capture the different impact of migration: (a) 1 for families who migrated within or across provinces, and 0 for non-migrant families; (b) 1 for families who migrated across provinces and 0 for those not having migrated across provinces (regardless of whether they migrated within provinces). The effect of having migrated within and across provinces is tested separately since, as we explain later, admission to tertiary education in China can be affected by provincial quotas.

Expectations of migration are self-reported by students ('Where do you expect to live and work when you grow up?'). Students choose their answer from a drop down list including: 'in a rural area', 'in a medium-sized or small city', 'in a large city (such as Beijing and Shanghai)', 'abroad', and 'I do not care'. We recodified the original variable to create two indicators of migration expectations. Firstly, in order to capture the expectation of migration to large cities, we restricted our sample to students registered in rural settings (defined as having an agricultural *Hukou*).⁵ This indicator takes the value of 1 for students in rural areas reporting expectations of moving to large cities such as Beijing and Shanghai; and 0 for those who do not intend to move. Secondly, using the entire sample,

we recodified the original variable to isolate expectations of migration internationally by assigning 1 to respondents opting for the ‘abroad’ option, and 0 for the rest. We are aware that using cross-sectional data does not allow us to judge whether expectations of migration abroad in adulthood finally materialise. However, desire to migrate is commonly considered a precondition for migration (Creighton 2013).

In identifying optimism, controlling for student academic performance and social background is crucial. Our models are conditional on socioeconomic status (a composite secondary variable from CEPS that we decomposed into three: low, middle, and high), and parental education (primary, lower secondary, upper secondary, and tertiary education). For academic performance, we use test scores in Chinese language and mathematics, standardised across schools and grades. We also control for student gender (1 = females), grade (1 = 9th grade), and whether the student is an only child (=1).

A final set of controls takes into consideration the students’ *Hukou* status. *Hukou* refers to Chinese citizens’ administrative residential registration based on their hometown in a given province, independent of where they might actually live. *Hukou* is known to be a strong determinant of lifecourse opportunities in China since it restricts access to social services, education, and welfare to the place of residence in which one is officially registered (Solinger 1999). The *Hukou* system is particularly consequential for rural-urban migrants who cannot easily move their registration (Wu 2009). Migrants face institutional barriers in sending their children to local schools due to an annual recruitment quota system that privileges students who are locally registered (Liu, Liu, and Yu 2017); often they have to pay special fees to have their children enrolled in local public schools. For those who cannot afford fees, the alternative is to send their children to migrant-run schools (with poor resources and quality), or send them back to the province of registration (Nielsen et al. 2006). Our models control for *Hukou* status, distinguishing between agricultural, non-agricultural, and residential (i.e. residence assigned to all in a locality, regardless of agricultural or non-agricultural background).⁶ Additionally, we control for family registration at the time of the child’s birth (using identical *Hukou* categories).

Reforms since the 2000s have weakened the importance of *Hukou* status to a certain extent. Sociologists of China have pointed out the increasing importance of local residential permits, which provide certain access to health insurance, unemployment benefits, and public education (Liu, Liu, and Yu 2017). Local *Hukou* registration has further implications for educational attainment at the tertiary level, since higher education institutions favour the recruitment of local students through quotas, making it difficult to gain admission to non-local colleges and universities (Tam and Jiang 2015).⁷ Thus, we control for whether the student’s registration is in the municipality in which s/he is studying (1) or not (0), which we label *local Hukou* in our models.

Table A1 in the Appendix shows the distribution of all variables used in our analysis.⁸

Method

We develop separate analyses for H1, comparing the offspring of migrant and non-migrant families, and for H2, comparing students with migration expectations with those without. Since our first hypothesis implies a causal connection between migration experience and educational expectations, we use ‘treatment effects’. H2 on the other hand only suggests a correlation between migration expectations and expectations of

higher educational attainment, for which we use linear probability models (LPM) with school fixed effects.

Treatment effects

Ideally, estimating the effect of migration on expectations requires a random sorting of migrant status across respondents. Since this kind of experimental setting is difficult, if not impossible, to achieve, we use a semi-experimental method belonging to the broad family of ‘treatment effects’ (TE) designed to approximate the estimation of causal effects using observational data. TE refer to a set of estimation protocols to isolate the effect of a given predictor when the sorting of individuals across treatment and control groups is not random. TE estimate the average effect of treatment status for each subject in the sample using the logic of counterfactuals (i.e. regardless of the treatment received). Specifically, we estimate inverse probability weighting with regression adjustment, TE (IPWRA) available in STATA 15 (Austin and Stuart 2015). IPWRA first fits a binary outcome regression (we use a logistic model) to predict the treatment status in the sample. In China, the decision to migrate appears to be conditioned by factors, among other household characteristics, such as families living in urban or rural areas. Socioeconomic status appears to be the largest difference across families by migrant status (Table A2 in the Appendix includes a description of the background of migrant and non-migrant families in our data set). We estimate a logistic regression analysis to predict migrant status. Unfortunately our data set does not include a large amount of retrospective information prior to migration. In the treatment model we include the highest level of parental education and family *Hukou* status at the time the child was born. This information is then used to allow for comparisons of treated (migrants) and control group (non-migrants) observations conditional on other covariates. The difference between the average treated and non-treated outcomes is called ‘average treatment effect’, which corresponds with to the difference between the expectations of the children of migrant and non-migrant families.

LPM with school fixed effects

Since our data set is organised hierarchically, with students being clustered across schools, we estimate LPM with fixed effects at the school level to test the validity of our second hypothesis. This cancels out differences in the school characteristics of internal migrants and non-migrants in China (Chen and Feng 2013). The specification of our models is:

$$Y_{ij} = \beta X_{ij} + \alpha_i + u_{ij},$$

where Y_{ij} is the expectation of attaining tertiary education for student i (or his/her parents, $i = 1 \dots n$) in school j ($j = 1 \dots M$); α_j unknown intercept for each school; β the coefficient of a given independent variable; and u_{ij} an error term.

Results

The impact of migration on expectations

Figure 1 presents the distribution of educational expectations across family migrant status (migrants vs. non-migrants), as well as future migration expectations. Figure 1(a) plots the

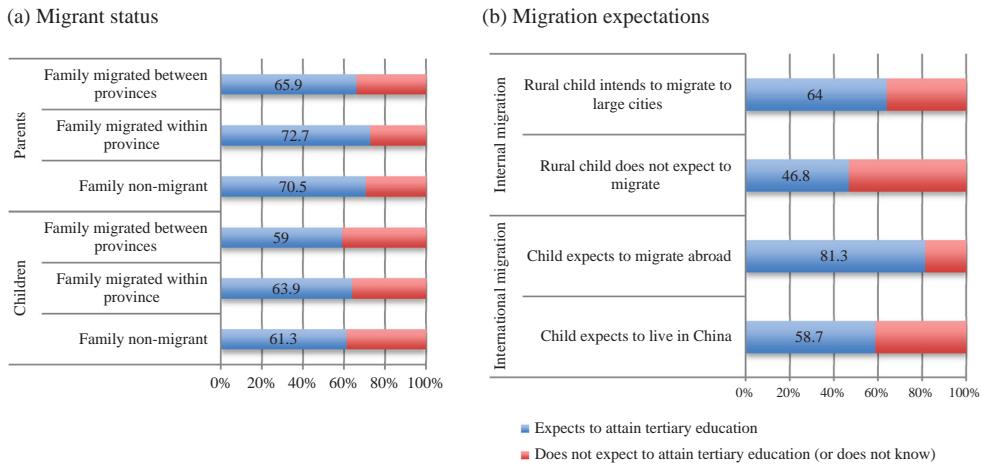


Figure 1. Unconditional Expectations to Attain Tertiary Education across Migrant Status and Migration Expectations. Source: Own calculations from CEPS 2013–2014. Percentages are weighted.

row percentages from two crosstabulations, one for migrant status and children’s expectations of attaining tertiary education, and another for their parents’ expectations. Figure 1 (b) shows percentages corresponding to another two crosstabulations: one for the children’s expectations of moving abroad (using the entire sample), and another using the children’s expectations of living in a large city (restricting the analysis to students whose *Hukou* was agricultural at the time of the survey).

Systematically, families who migrated within the same province appear to be slightly more aspirational (63.9% among students and 72.7% among their parents) than non-migrant families (61.3% and 70.5% respectively). However, families migrating across provinces are less expectant than the other two groups (students 59% and parents 65.9%). It is likely that the latter group of families report lower expectations because migrants across provinces are somewhat more likely to reside in municipalities in which they are not registered, which might mean that their children are required to take their *gaokao* in their ‘home’ province, and are ineligible for local university quotas where they actually live and go to school (Tam and Jiang 2015). Thus, their expectations might be curtailed by this disadvantage even from the beginning. Table A2 in the Appendix crosses migrant status with whether the student has local registration.

By contrast, there is a large difference between the percentage of students expecting to emigrate from China aiming to achieve a university degree (81.3%) and those with the same educational expectations who do not report expectation of moving abroad (58.7%). There is also an important gap between children in rural areas whose plans for the future are to move to large cities such as Beijing or Shanghai and their peers who do not plan to do so. Within the first group 64% aspire to attain a university degree, as opposed to 46.8% in the latter.

This is a preliminary confirmation of higher expectations among prospective migrants. Figure 2 reports the results of our estimation of the impact of migration on expectations of higher education using TE (the complete table showing estimates and standard errors is provided in Table A3 in the Appendix).⁹ The results represent a sound rejection of our

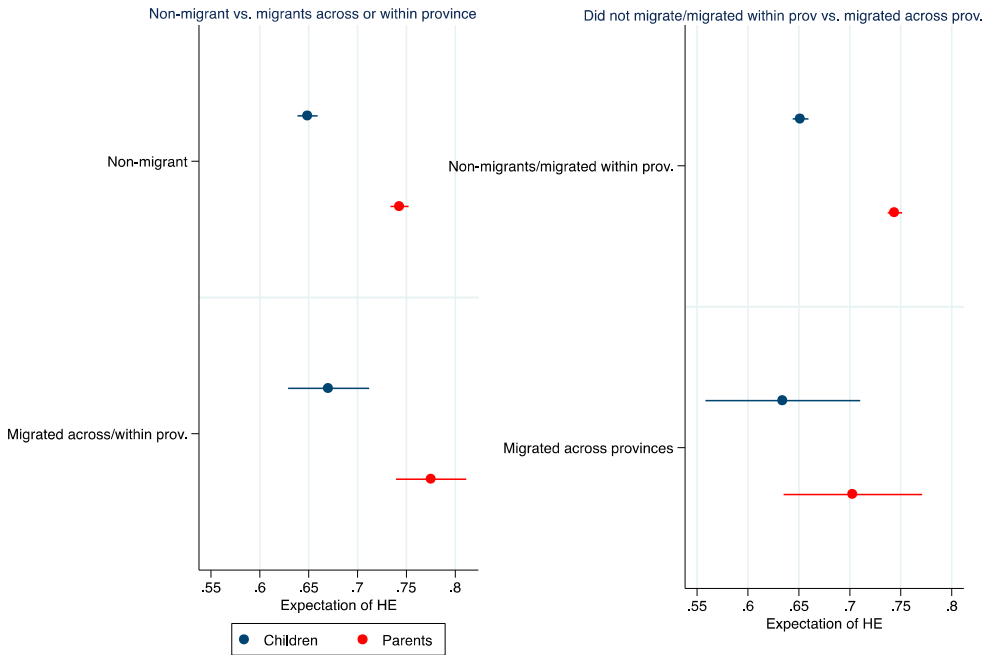


Figure 2. Differences in the expectation of attaining higher education by Migrant status.

Note: TE-IPWRA population means and 95% confidence intervals obtained from models shown in Table A3.

first hypothesis. As in the descriptive uncontrolled analysis, conditional on social background and prior educational performance, parents and children from households that migrated in the past are not more likely to expect higher levels of education than members of comparable households who did not migrate.

Children whose families migrated within China do not turn out to have higher educational aspirations than those who did not experience migration. The same applies to their parents' expectations. Furthermore, among parents who migrated across provinces, the conditional expectation of their children attaining higher education is four percentage points lower than for those who did not migrate. The complete model (Table A3 in the Appendix) shows that the impact of test scores on the outcome variable for the control and the treated groups is of a similar size, and that, if anything, the slope of test scores is higher within the treated group than the control. Again, this should be interpreted as a rejection of optimism once we model selection into the treatment.¹⁰ Other controls in the equations for the treated and control groups behave as predicted; female students, those without siblings, and those from more advantaged households are more likely to expect higher education.¹¹

The impact of expectations of mobility

Figure 3 plots the predicted probability of expecting higher education for prospective migrants and non-migrants (detailed results are provided in Table A4 in the Appendix). The children's expectations of migrating abroad increase by some 14 points compared with the reference group. These results imply a sound acceptance of our second

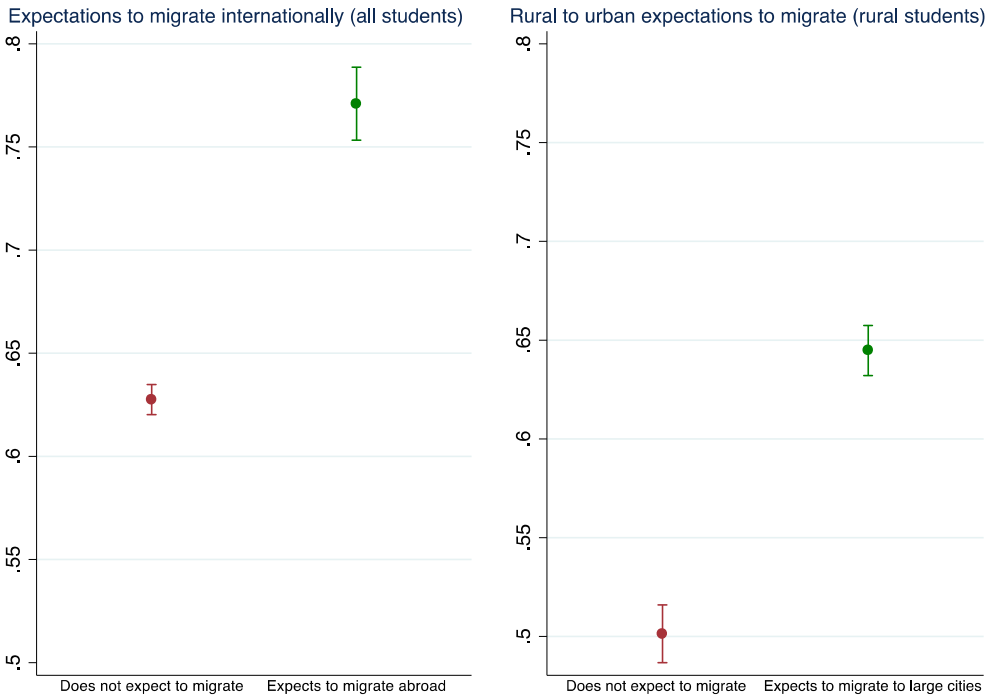


Figure 3. Effect of migration expectations on expectations of attaining higher education.
 Note: Estimates and 95% confidence intervals obtained from LPM (school fixed effects) 1 and 2 in Table A4.

hypothesis, which suggests that selectivity could be the main driver of why migrants appear to be a particularly optimistic population while in the destination country.

Using intention to migrate from rural areas to large cities in the future as the main independent variable also confirms the selectivity hypothesis. Note that this analysis is restricted to students who at the time of the survey had an agricultural *Hukou* (the *N* in Model 3 [drops to 9614 observations), conditional on social background and prior performance. In quantitative terms, we can see that expectations of migrating abroad among students in the entire CEPS sample and expectations of migrating to large cities among students from rural areas similarly boost conditional expectations of higher education (14 percentage points).

Our final hypothesis (H2a) requires testing an interaction between international migration expectations and school performance. The idea here is that difference in expectations of reaching tertiary education should be more visible among the least successful students who expect to go abroad. To allow for nonlinearity, we introduce this interaction after breaking down our original measure of performance into quintiles. The results are summarised in Figure 4 (the full model is presented in Table A4 in the Appendix). It can be clearly seen that it is among the least successful students that optimism peaks.

It should be noted that in all models our controls behave as predicted. Students with an agricultural *Hukou* are disadvantaged compared with those with alternative administrative registrations; females are more ambitious, and children without siblings are more likely to expect tertiary education.

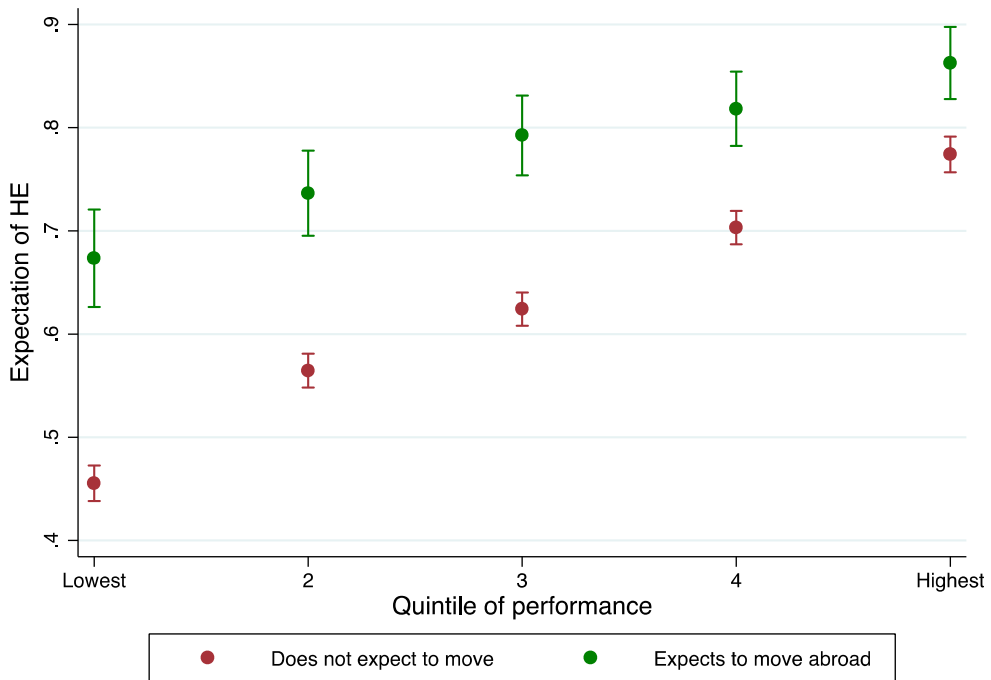


Figure 4. Expectations of attaining tertiary education by quintile of performance and intentions to migrate internationally.

Note: Estimates and 95% confidence intervals obtained from LPM 3 (school fixed effects) in Table A4.

Sensibility checks

We have conducted a number of sensibility checks that prove the robustness of our conclusions. Using more detailed recodification of our dependent variable to consider different levels of tertiary education (bachelor, masters, or doctorate) implies no substantive changes in our results. Our results are not sensitive to replacing our proxy of school performance, standardised scores, with other kinds of proxies of attainment such as self-placement of the student relative to his/her class ('How does your academic record rank in your class at present?' 1 'Near the bottom'; 2 'Below the average'; 3 'About the average'; 4 'Above the average'; and 5 'Around the top'). This is a more contextual measure of scholastic success which though more imprecise may better reflect the difference in outcomes due to school practices. No changes are to be reported. The effect of grades is also stable if we use scores in mathematics or Chinese language separately. There are no changes to be reported if alternative controls of socioeconomic status are introduced into our models, such as parental (father's or mother's) level of education or the composition of households (living in a multigenerational household, absence of father or mother, etc.).

Selection into treatment in TE models (Table A3) predicting the effect of migration experience could be improved by specifying other variables capturing the family status such as students' birth weight or the reported family socioeconomic status when the student was in primary education. While our conclusions do not change when we do so, we did not include them in the final models because of the loss of cases they impose

on the analytic sample. We re-estimated our IPRWA models using Coarsened Exact Matching techniques with no changes in our conclusions to be reported.

We re-estimated the LPM estimating the effect of migration expectations using hierarchical logistic regressions. The transformation of these logistic estimates into marginal effects implies no major substantive changes. Results also don't change if migration expectations variable is decomposed into its more detailed, original categories – expectations to live in rural areas, medium or small cities, big cities, and abroad – in order to disentangle their separate effects. Finally, substituting schools with the geographic units used in the sampling of the survey as fixed effect in the LPM models does not alter our results.

Conclusions

The evidence presented in this paper points to selectivity as the driver of migrant optimism. Although our confirmation of the importance of selectivity is indirect, it represents an innovation which we believe sheds light on the mechanisms underlying the 'Paradox of Immigrant Optimism'. Chinese school children declaring expectations of migrating when they grow up appear to also be more likely to expect to attain tertiary education. This applies both to children expecting to migrate abroad and to those from rural areas whose expectation is to move to large Chinese cities such as Beijing or Shanghai in the future.

While educational expectations of Chinese internal migrant families, in relation to discrimination and structural constraints, have been studied (Koo 2012), our paper is to the best of our knowledge, the first looking at migrant optimism among internal migrants. Our analysis suggests that internal migration in China does not necessarily foster the emergence of optimism. While the literature looking at the effect of the international migration experience on optimism proposes a number of mechanisms such as information deficits, anticipatory discrimination, the creation of supportive ethnic networks or income shocks, internal migration in China is an appropriate context only for studying the latter. Although we do not necessarily discard the possibility of the other factors playing a role, we show that experiencing migration in itself does not necessarily lead to optimism.

We trust that our paper represents a noteworthy contribution to the existing literature in several ways. It jointly evaluates the differential impact of migration and expectations of migration in the formation of educational expectations. Also, it provides evidence from one of the most important countries of origin of contemporary migration flows. While the convention in the literature is to compare immigrants with natives in destination countries, our paper represents a step back, showing that optimism has earlier roots and that higher education expectations can be traced back to the time prior to migration. We interpret this as indirect evidence of selectivity engendering optimism.

Migrant selectivity on the basis of unobserved characteristics is rarely tested as the explanation for the paradox of migrant optimism. Our paper provides evidence that immigrant optimism is likely to be sourced in the origin. Significantly we also find that optimism is most 'acute' among those who perform poorly, the very people whose aspirations are most unlikely to be realised. It is here that we also see the possibility that optimism is a product of asserting a self-identity of 'one who aspires' (where educational aspiration signals 'perseverance' and 'success' itself) rather than of 'rational

calculations' about compensating for disadvantages (Frye 2012). Future research should focus on unpacking of unobserved characteristics in regard to educational aspirations by paying attention to their broader cultural and institutional underpinnings.

Our paper reinforces the importance of using data from countries of origin in explaining dynamics that shape the integration outcomes of immigrants. While the research on the health advantages of immigrants in destination countries frequently used such data, few papers accounting for immigrant advantages in educational expectations have done so. We expect that future educational research will develop comparison not only between immigrants in the destination country with natives, but also with other meaningful groups, namely those who stay in their country of origin. Given the intensifying 'culture of education' across the globe (Baker 2014), which anticipates evermore educated and ambitious and agentic individuals (Lerch et al. 2017), and to which not only those who move, but also those who do not move are exposed (Soysal 2015), such research is imperative.

Notes

1. We acknowledge the large sociological literature conceptualising migrant children in China as those moving from rural to urban settings. In this paper, we depart from this standard adopting a broader understanding of migrant children as children of all families who migrated internally in China, including between urban settings.
2. Stratification scholars assign expectations intentionality and future planning (as opposed to desire and hope), but in the immigration literature the terms expectations and aspirations are often used interchangeably. We follow this convention; as statements about future, hope and intentions are not easily distinguishable (Frye 2012).
3. 25.8% of the sample is 12 years old, 22.3% is 13, 26.9% is 14, and 19.3% is 15 years old.
4. Further information and technical details are available here: <http://www.chinaeducationpanelsurvey.org>
5. Intense urbanisation in China over the last two decades implies that not all students whose hukou status is agricultural actually live in rural areas. Unfortunately, our dataset does not allow to use a more refined proxy of real ruralness such as city/population size.
6. In 2014, China's State Council passed a reform to eliminate the differences between rural and urban *hukou*. The reform foresaw rural and urban categories to be replaced by a residential category which was based on person's job and residence rather than their origin of birth. In 2016, about 29 province-level regions had already unveiled action to follow the reform (China Daily 2016).
7. Even if these requirements have been relaxed since 2010 with recent reforms in the context of ongoing decentralisation and initiatives by local governments, they may constitute significant obstacles for the cohorts we are studying.
8. Our analytic sample amounts to 92.6% of the total N for the models using information taken from the student survey and 89.8% for the parental. In other words, the specification of our models implies no dramatic loss of cases from the original sample.
9. Appropriate tests were conducted to check the consistency of our results in light of overlap and balancing assumptions required by treatment effect modelling.
10. Regarding the equation predicting treatment status in Table A3, the results are the expected. Migration within China was more common among residents with agricultural hukou than among those with non-agricultural or residential ones at the time of the students' birth. Parental education seems to impact negatively on the likelihood of migrating, although this effect is uncertain.
11. Interactions between local hukou and hukou status are non-significant and do not alter our findings. This also applies to the following block of analysis.

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Appendix

Table A1. Summary and distribution of variables.

	Variable	N	Mean	S.d.	min	max
Educational expectations	Children	16,820	.65	.48	0	1
	Parents	16,830	.74	.44	0	1
Migrant status	Non-migrant	16,820	.83	.37	0	1
	Within province	16,820	.08	.27	0	1
	Across provinces	16,820	.09	.28	0	1
Migration expectations	Abroad	17,780	.15	.36	0	1
	Large city	9614	.57	.5	0	1
<i>Hukou</i> status	Agricultural	16,820	.54	.50	0	1
	Non-agricultural	16,820	.26	.44	0	1
	Residential	16,820	.20	.40	0	1
Local <i>Hukou</i>		16,820	.83	.37	0	1
<i>Hukou</i> at birth	Agricultural	16,820	.26	.44	0	1
	Non-agricultural	16,820	.15	.36	0	1
	Residential	16,820	.59	.49	0	1
Female		16,820	.50	.50	0	1
Grade		16,820	.48	.50	0	1
One child		16,820	.44	.50	0	1
Socioeconomic status	Low	16,820	.21	.41	0	1
	Medium	16,820	.73	.44	0	1
	High	16,820	.057	.23	0	1
Parental education	Primary	16,820	.09	.29	0	1
	Lower Secondary	16,820	.49	.5	0	1
	Upper Secondary	16,820	.29	.46	0	1
	Tertiary	16,820	.12	.32	0	1
Test scores		16,820	.03	.85	-2	2.7

Source: Own calculations from CEPS 2013–2014.

Table A2. Parental education, *Hukou* status, and socioeconomic status at the time of the survey by migrant status in CEPS 2013–2014.

		Primary	Lower sec	Upper Sec	Tertiary
Parental education	Non-migrant	13.83	54.46	24.19	7.52
	Migrated within province	13.78	53.26	26.50	6.45
	Migrated across provinces	14.63	55.55	24.57	5.25
<i>Hukou</i> status		Agricult.	Non-agric.	Residential	
	Non-migrant	67.09	17.36	15.44	
	Migrated within province	68.73	17.74	13.33	
	Migrated across provinces	69.50	16.24	13.92	
Socioeconomic status		Low	Medium	High	
	Non-migrant	29.26	66.69	4.05	
	Migrated within province	24.03	71.31	4.66	
	Migrated across provinces	16.03	79.27	4.70	
Local <i>Hukou</i> status		No	Yes		
	Non-migrant	1.87	98.13		
	Migrated within province	87.16	12.84		
	Migrated across provinces	93.27	6.73		

Source: Own calculations from CEPS 2013–2014. Percentages are weighted.

Table A3. Inverse probability weighting with regression adjustment treatment effects.

		(1)	(2)	(3)	(4)
		Child	Child	Parents	Parents
Migrant status	Non-migrant household	0.65*		0.74*	
		(0.01)		(0.01)	
	Moved across/within province	0.67*		0.78*	
		(0.02)		(0.02)	
	Non-mobile		0.65*		0.74*
			(0.004)		(0.004)
	Moved across province		0.63*		0.70*
			(0.04)		(0.04)
<i>Control group</i>					
<i>Hukou</i> status (ref. is non-agricultural)	Agricultural	0.11*	0.11*	0.11*	0.11*
		(0.01)	(0.01)	(0.01)	(0.01)
	Residential	0.05*	0.04*	0.05*	0.05*
		(0.01)	(0.01)	(0.01)	(0.01)
Local <i>Hukou</i>		-0.01	-0.02	-0.02	-0.02
		(0.02)	(0.01)	(0.02)	(0.01)
Controls	Female	0.12*	0.12*	0.07*	0.06*
		(0.01)	(0.01)	(0.01)	(0.01)
	Grade	-0.02*	-0.02*	-0.05*	-0.05*
		(0.01)	(0.01)	(0.01)	(0.01)
	One child	0.04*	0.05*	0.05*	0.06*
		(0.01)	(0.01)	(0.01)	(0.01)
Socioeconomic status (ref. is low)	Medium	0.02*	0.02	-0.001	-0.001
		(0.01)	(0.01)	(0.01)	(0.01)
	High	0.05*	0.05*	0.01	0.01
		(0.02)	(0.02)	(0.02)	(0.02)
Test scores		0.13*	0.13*	0.12*	0.12*
		(0.01)	(0.004)	(0.004)	(0.004)
Constant		0.53*	0.54*	0.68*	0.69*
		(0.03)	(0.02)	(0.02)	(0.01)
<i>Treated group</i>					
<i>Hukou</i> status (ref. is non-agricultural)	Non-agricultural	0.06*	0.05	0.09*	0.09*
		(0.02)	(0.03)	(0.02)	(0.03)
	Residential	-0.02	0.01	0.02	0.04
		(0.02)	(0.03)	(0.02)	(0.03)
Local residential <i>Hukou</i>		0.02	-0.01	0.05*	-0.01
		(0.03)	(0.05)	(0.02)	(0.04)
Controls	Female	0.11*	0.13*	0.04*	0.04
		(0.02)	(0.02)	(0.02)	(0.02)
	Grade	-0.01	-0.03	-0.06*	-0.08*
		(0.02)	(0.03)	(0.02)	(0.02)
	One child	0.08*	0.07*	0.08*	0.05*
		(0.02)	(0.03)	(0.02)	(0.03)
Socioeconomic status (ref. is low)	Medium	0.01	0.06	0.02	0.06
		(0.02)	(0.04)	(0.02)	(0.03)
	High	0.08*	0.14*	0.04	0.10*
		(0.04)	(0.05)	(0.04)	(0.05)
Test scores		0.14*	0.16*	0.12*	0.14*
		(0.01)	(0.02)	(0.01)	(0.01)
Constant		0.54*	0.48*	0.67*	0.63*
		(0.03)	(0.04)	(0.02)	(0.04)
<i>Prediction of treatment</i>					
<i>Hukou</i> at birth (ref. is Agricultural)	Non-agricultural	-0.47*	-0.54*	-0.46*	-0.53*
		(0.06)	(0.08)	(0.06)	(0.08)
	Residential	-0.36*	-0.49*	-0.37*	-0.50*
		(0.07)	(0.09)	(0.07)	(0.09)
Parental education (ref. Primary)	Lower secondary	-0.048	-0.021	-0.053	-0.026
		(0.07)	(0.09)	(0.07)	(0.09)
	Upper secondary	-0.054	-0.13	-0.058	-0.14
		(0.08)	(0.10)	(0.08)	(0.10)
	Tertiary	-0.095	-0.20	-0.094	-0.19
		(0.10)	(0.14)	(0.10)	(0.14)
Constant		-1.42*	-2.09*	-1.42*	-2.09*

(Continued)

Table A3. Continued.

	(1) Child	(2) Child	(3) Parents	(4) Parents
	(0.07)	(0.08)	(0.07)	(0.08)
<i>N</i>	16,820	16,820	16,830	16,830

Notes: Impact of Migrant status on child (1,2) and parental (3,4) expectations to attain tertiary education. Standard errors in parentheses.

* $p < .05$.

Table A4. LPM with school fixed effect.

		(1)	(2)	(3)
Migration expectations (ref. not moving)	Abroad	0.14* (0.01)		0.22* (0.03)
	To a large city		0.14* (0.01)	
Migrant status (ref. non-migrant)	Within province	0.002 (0.02)	0.04 (0.03)	-0.00 (0.02)
	Across provinces	0.01 (0.02)	0.04 (0.04)	0.01 (0.02)
<i>Hukou</i> status (ref. Non-agricultural)	Agricultural	-0.04* (0.01)		0.04* (0.01)
	Residential	-0.03* (0.01)		-0.03* (0.01)
Local <i>Hukou</i>		-0.01 (0.02)	0.03 (0.03)	-0.01 (0.02)
Controls	Female	0.11* (0.01)	0.12* (0.01)	0.11* (0.01)
	Grade	-0.02* (0.01)	-0.01 (0.01)	-0.01 (0.01)
	One child	0.032* (0.01)	0.01 (0.01)	0.03* (0.01)
Socioeconomic status (ref. is high)	Low	-0.01 (0.02)	0.02 (0.025)	-0.02 (0.02)
	Medium	-0.02 (0.01)	-0.01 (0.02)	-0.02 (0.01)
Test scores		0.12* (0.005)	0.14* (0.01)	
Quintiles (ref. 1st)	2nd			0.11* (0.01)
	3rd			0.17* (0.01)
	4th			0.25* (0.01)
	5th			0.32* (0.01)
Interactions (ref. 1 st *abroad)	2nd *abroad			-0.05 (0.03)
	3rd *abroad			-0.05 (0.03)
	4th *abroad			-0.11* (0.03)
	5th *abroad			-0.13* (0.03)
Constant		0.61* (0.02)	0.43* (0.04)	0.44* (0.03)
Model info	Sigma(e)	0.44	0.46	0.44
	Sigma(u)	0.10	0.11	0.10
	<i>N</i>	17,780	9614	17,780
	<i>F</i>	114.1	86.8	74.2

Notes: Children's expectations of attaining higher education by migration expectations. Standard errors in parentheses.

* $p < .05$.