

Motivations and Constraints of Moving Abroad for Indian Students

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Abstract Faced with a situation in which countries compete for international students, it becomes especially important to understand students' preferences regarding migration behaviour. This paper looks at the determinants of international mobility intentions in the specific situation of Indian students in sciences and engineering. It uses the collected data from the survey held among students at five Indian universities and complements it with qualitative data from interviews. We looked at the role of students' personal and family background, universityrelated factors, their social network and preferences for living location in their motivations for moving abroad. The type of university and field of studies work as strong predictors for students' desired move abroad. Whether a student plans a career in academia or wants to work in a company has a decisive influence on where they see themselves in the near future. Professional aspects are confirmed to be the most prominent in the decision-making regarding international mobility. People who place high importance on work-related factors are more mobile, while people who place higher importance on family-friendly environment and public safety prefer staying in India. International student mobility is obviously a family decision. Parents' support is crucial for moving abroad, in moral as well as in financial terms. Normally, obligations towards family are put in the first place ahead of potential individual initiatives.

Keywords Location choices · Pull factors · Higher education · Student migration · India

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Introduction

Students are increasingly interested in spending at least part of higher education abroad. 4.5 million tertiary students were enrolled in a higher education institution outside their country of origin in 2012. The numbers of internationally mobile students are increasing at a fast pace, with more than a threefold increase from 1990 (1.3 million) to 2012 (4.5 million) (OECD 2015). The main benefits attached to studying abroad for the student are education at a higher level of quality or in the field of specialization which is not available in their home country (Waters et al. 2011). International educational experience is also considered an important attribute of intercultural competence, useful for future job-market chances (Shaftel et al. 2007; Cubilo et al. 2006; Cant 2004). Often, studying abroad is considered a stepping stone towards migration in the future (Vincent-Lancrin 2008). Foreign students, especially those from developing countries, demonstrate high stay rates in a host country after the graduation (Rosenzweig 2006; Finn 2003; Hein and Plesch 2008). A degree obtained in a host country's institution is often considered as an investment towards finding a job after the graduation either in the host country or in a third country. Next to the benefits in terms of greater international recognition, many host countries reward degrees obtained in their country by allowing students to stay in the country after their studies and treating them favourably when applying for a residence permit.

Simultaneously with the increased interest of individuals in higher education, new competitors are entering the global competition for talents. Competition is played out among a growing number of educational institutions and is expanding to national governments, with national active promotion strategies and targeted immigration policies. Many industrialized countries are changing their policies to become more attractive for highly skilled migrants, with enhancement of student mobility as one of the mechanisms to achieve this goal. Easy and transparent access to visas, possibility to work while studying, and extended job-searching periods after graduation are among the policy measures introduced to attract international students.

Faced with a situation in which countries compete for international students, it becomes especially important to understand students' preferences regarding migration behaviour. India, as one of the major and fastest-growing countries of origin for the internationally mobile students, has been frequently prioritised in the strategic plans of higher education policies in destination countries, which makes it an illustrative case for an evolving context of motivations and expectations from international mobility. This paper uses the collected data from the survey held among students at five Indian universities to describe and analyse the decisionmaking about moving abroad in the future. The main objective of the paper is to observe the factors which influence the decision to either stay in India or move abroad. We begin with the short review of the existing contributions on student migration decision-making and their shortcomings. We discuss the specific role of expectancy-based perceptions in mobility decisions. Second, we offer a brief account of migration from India with an emphasis on student mobility, and describe the survey data methodology. In the third section, we analyse characteristic differences between students who plan to move abroad compared to those without such plans and identify which factors influence the decision on moving abroad by using logistic regression analysis. The fourth section supports the



quantitative analysis with results from the qualitative interviews. The last two sections (5 and 6) offer a discussion and a conclusion.

Related Literature

Notwithstanding the wealth of contributions to the field of international student mobility (for example, Alberts and Hazen 2013; Brooks and Waters 2011; King and Raghuram 2013), we identify some weaknesses in academic debates. First, there is a bias towards retrospective studies (King et al. 2004; Szelenyi 2006; Brettel and Hollifield 2007; Mosneaga and Winther 2013; Geddie 2013), which only include those who have migrated and leave out those who decided against it or could not move abroad. Second, perspectives of individuals and their agency are downplayed since the majority of papers in the wider body of literature on migration determinants deal with macroeconomic analyses, combining sets of origin and destination countries (Beine et al. 2011, 2014; Rosenzweig 2006; Grogger and Hanson 2011; Baryla and Dotterweich 2001). Keeping in mind the shortcomings of these two strands of literature, our paper focuses on a single case study of Indian science and engineering students and their declared migration intentions as predictors of future migration. We highlight how students' backgrounds influence their aspirations and capabilities to move (or not) (de Haas 2011) and at the same time reject the homogenisations found in push-pull analysis (Favell et al. 2006). This enables us to include the role of individuals and surrounding social factors, and it this way add to a more holistic understanding of mobility decisions. While some studies of the European context reveal the individualistic pursuit of international exposure and learning of other cultures (Findlay et al. 2012; King and Ruiz-Gelices 2003; De Grip et al. 2009), such aspects have not been studied in the context of developing countries such as India. Notably, research in the Asian context emphasizes overseas education as a strategic route for social mobility and career advancement among Asian families (Harvey 2011; Waters 2006; Huang and Yeoh 2005). This literature concludes that families are central to migration decision-making for students. Families' social capital may play a role by setting either opportunities or constraints (Ackers 2008; Brooks and Waters 2011). At the same time, international mobility is not only a means to distinguish oneself, but it also has a value to the family's social class position (Brooks and Waters 2011; Findlay et al. 2012; Waters 2012). This paper advances the discussion on the role that families and social networks play in shaping individual considerations, and whether with the increased expectations of international mobility, Indian students are going in the direction 'with less direct family guidance and input and more independence of mind apparent' (Brooks and Waters 2009: 206) as earlier studies in the context of European students have shown.

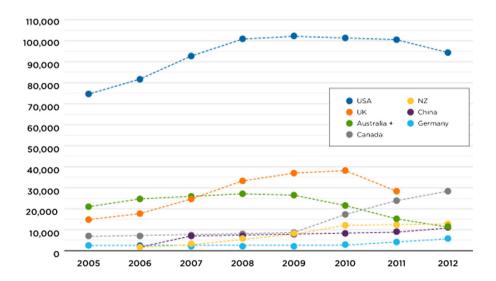
In terms of methodology, our paper is specifically tied to the contributions which use the method of asking people to state their intentions instead of observing their actual move (De Jong 2000; Frieze et al. 2004; Van Dalen et al. 2005) and apply it to the student population as a subgroup of potential skilled migrants. In line with Gibson and McKenzie (2009), we pay attention to the role of personal and study-related characteristics, family background, migration history and network abroad and add a special section to individual preferences with respect to work places, lifestyle, social contacts and public services.



Background and Methods

Student Migration from India

The growth of international student mobility from India in recent years is remarkable: from 2000 to 2013, the number of internationally mobile students from India almost tripled from 62.342 to 181.872 (UNESCO-UIS 2015). Internationalization of higher education has been a major driving force behind this trend, as well as a rising middle class in India, able to afford foreign university programmes (Kumar et al. 2009). Expanding incomes, economic growth and rising tertiary enrolments are key reasons for Indian growth in mobile postgraduates (British Council 2014). In addition, foreign student policies have become a tool in the international competition for skilled persons. This takes place through the so-called two-steps migration, namely, first through the attraction of international students, and then by the retention of those students as skilled workers for the national labour markets (OECD 2010). Providing attractive study-to-work routes has led to a diversification of destinations for interested students. The studied case of India shows that while the USA and the UK remain the most important destination countries, there has been an increase of student mobility towards countries like Canada and New Zealand, which are offering prolonged stays after graduation and in general solicit students as desirable migrants. Figure 1 also shows that the UK and Australia both witnessed a recent decrease in student enrolments, explained mainly by tightening of post-study work options and increased costs of studying (World Education Service 2013).



Source: World Education Services 2013

Fig. 1 Indian higher education enrolments in top 7 receiving countries, 2005–2012. Source: World Education Services 2013



Methodology

This paper uses the collected data from the survey held among students at five Indian universities (Jawaharlal Nehru University (JNU), IIT-Delhi, Banaras Hindu University— Institute of Technology (BHU-IT), Indian Institute of Science—Bangalore (IISc) and Jammu University) to describe and analyse the decision-making about moving abroad in the future. This study clearly targets students from institutions that are reputed for offering high quality higher education, as either recognized by the University Grants Commission or graded by the National Assessment and Accreditation Council under the 'A category' denoting 'high level of academic accomplishment as expected from an institution' (NAAC 2007). In addition to the quality criteria, the universities used in the study also exemplify the geographic heterogeneity of the student populations and the different education systems in India. In order to be eligible to take part in the study, students from the mentioned institutions had to study in the fields of sciences and engineering. Such purposeful sampling allows us to include students with most transferable and sought after skills. We realise the choice of the high-ranking institutions and the field of studies biases our targeted student population towards inclusion of more mobile students and students that are freer to choose their future opportunities. It is expected that students at these universities have more often moved within India in order to attend a specific programme and are therefore more positive towards moving internationally. In total, 412 students in science and engineering fields participated in our survey, answering sets of questions on their personal situation, their preferences to move abroad and their social networks. Of those 412 students, 262 (63.6 %) indicated to have an interest to move abroad, and 150 indicated no desire to leave India. The survey data were complemented with qualitative data, obtained during interviews with students at the same universities.

This study includes mobility plans for the purpose of education, for work or for another reason. Reasons for going abroad are strongly interconnected, and oftentimes, it is difficult for respondents to single out only one reason. Working while studying, shifting to employment upon graduation, and looking for employment abroad in order to accompany a partner are just some examples of how different reasons for mobility take place at the same time and how boundaries between migrant categories are blurring (Raghuran 2013). Therefore, this paper addresses the general motivation for international mobility.

To understand the factors which influence migration decision-making, we analyse if those students that wish to go abroad differ substantially from those that wish to stay in India. Table 1 illustrates the differences between the two groups. There are proportionally less female students among the students that plan to move abroad, and students who plan to move abroad are on average older. According to the quota system at Indian universities, there is a reserved percentage of positions for students from scheduled castes and tribes and other 'backward classes' (OBC), and our sample includes 16.5 % of students belonging to any of the reserved categories. Students from minority communities are highly represented among students with plans to move abroad. Also, students who are married indicate a higher intention to move abroad.

With respect to the university background of the students, we observe that students from JNU are more likely to express plans to move abroad, while BHU-IT stands out with predominantly home-oriented students. Compared to students of engineering fields, those in natural sciences students have a higher representation among the students with mobility plans (38 %) than among students without such plans



Table 1 Comparison of the S and E students by main characteristics (in %)

	No plan to move abroad	Plan to move abroad	Total
Total <i>N</i> =412	36.41	63.59	100
Personal characteristics			
Gender (Pr=0.292)			
Female	32.31	26.90	29.05
Male	67.69	73.10	70.95
N = 327			
$Age^{***} (Pr = 0.000)$			
Younger than 22 years***	56.92	27.66	39.62
From 23 to 26 years	32.31	37.23	35.22
27 and older***	10.77	35.11	25.16
N = 318			
Community** (Pr=0.012)			
Non-Hindu	13.39	25.14	20.20
Hindu	86.61	74.86	79.80
N = 302			
Reserved group (Pr=0.202)			
Reserved group	13.11	18.62	16.45
Non-reserved group	86.89	81.38	83.55
N = 310			
Relationship (Pr=0.125)			
Single	78.46	75.79	76.88
Relationship (boyfriend/girlfriend)	15.38	11.58	13.13
Married*	6.15	12.63	10.00
N = 320			
Children (Pr = 0.393)			
No children	77.86	73.68	75.39
Children	22.14	26.32	24.61
N = 321			
University characteristics			
University*** (Pr = 0.000)			
JNU***	27.41	50.23	41.43
IISc Bangalore	19.26	22.33	21.14
IIT Delhi	22.96	6.51	12.86
BHU-IT***	15.56	9.77	12.00
Jammu	14.81	11.16	12.57
N = 350			
Field of studies (Pr=0.123)			
Natural sciences	29.41	37.95	34.71
Engineering	70.59	62.05	65.29
N=314			



Table 1 (continued)

	No plan to move abroad	Plan to move abroad	Total
Level of studies*** (Pr=0.000)			
Bachelor programmes***	37.82	19.89	26.89
Masters programmes*	41.18	31.18	35.08
PhD and post-doc***	21.01	48.92	38.03
N = 305			
Average grade* (Pr=0.059)			
Lower than first class (below B+)	33.04	23.03	26.96
First class (A+, A, A-)	66.96	76.97	73.04
N = 293			
Proficiency in English*** (Pr=0.006)			
Medium, bad, very bad	32.56	19.15	24.61
Very good and good	67.44	80.85	75.39
N = 317			
Family background			
Mother's highest education level ($Pr = 0.2$)	89)		
Less than university education	43.65	49.74	47.30
University education	56.35	50.26	52.70
N = 315			
Father's highest education level (Pr = 0.80	2)		
Less than university education	25.20	26.46	25.95
University education	74.80	73.54	74.05
N = 316			
Support of family to move abroad*** (Pr	= 0.000)		
Encourages move***			
Doesn't care/neutral	46.51	67.02	58.68
Prefers stay***	5.43	6.38	5.99
N = 317	48.06	26.60	35.33
Average household monthly income (Pr=	0.959)		
Less than Rs. 25,000/-			
Between Rs. 25,001/- and 30,000/-	39.84	40.86	40.45
Between Rs. 30,001/- and 40,000/-	19.53	18.28	18.79
More than Rs. 40,000/-	17.19	15.59	16.24
N = 314	23.44	25.27	24.52
Area of residence (Pr = 0.514)			
Urban metropolitan area	35.88	29.79	32.29
Semi-urban, smaller cities and towns	49.62	53.72	52.04
Rural area	14.50	16.49	15.67
N = 319			



Table 1 (continued)

	No plan to move abroad	Plan to move abroad	Total
Migration history			
Not lived abroad (Pr=0.195)	89.12	84.38	86.25
Lived abroad	10.88	15.63	13.75
N = 371			
Network abroad			
Parents (Pr = 0.478)			
Not lived abroad	93.10	90.75	91.70
Lived abroad	6.90	9.25	8.30
N = 289			
Siblings ($Pr = 0.494$)			
Not lived abroad	80.51	83.63	82.35
Lived abroad	19.49	16.37	17.65
N = 289			
Extended family (Pr = 0.847)			
Not lived abroad	56.67	57.80	57.34
Lived abroad	43.33	42.20	42.66
N = 293			
Friends** (Pr = 0.012)			
Not lived abroad	57.89	42.86	48.79
Lived abroad	42.11	57.14	51.21
N = 289			
Colleagues*** (Pr=0.000)			
Not lived abroad	73.68	49.71	59.30
Lived abroad	26.32	50.29	40.70
N = 285			

Pearson's chi-square test and Fisher's exact test. Critical values for the two-tailed test: 1.645 for confidence level 90 %*, 1.96 for confidence level 95 %**, and 2.575 for confidence level 99 %***

Significance levels *p < 0.1, **p < 0.05, ***p < 0.01

(29.4 %). PhD students and post-doctoral students more often want to move abroad than bachelor and master students. And students with high grades and a good command of English more often consider moving abroad than students with lower grades and weaker language skills.

Interestingly, we do not find any significant differences between the two groups of interest regarding their parents' educational background and household income. There are differences, however, in the family support to move abroad. While students with moving intentions report in 67 % of cases that their family encourages their move abroad, this share drops to only 46.5 % for students who do not consider moving abroad.

The results of the survey comply with the expectation that students with prior migration experiences (defined by De Jong (2000) as 'personal migration capital') more often have plans to move again in the future. Looking at the network that students have, we find that migration experience of friends and colleagues positively correlates



with migration wishes of students. This relationship is less clear when looking at the migration experiences of close and extended family.

Evaluation of the Factors Influencing Migration Intentions

Students' preferences also influence their future mobility plans. The students were asked to rank a list of 26 factors on a five-point Likert scale, indicating for each factor the importance this factor has in selecting the place where they would like to live. These factors are not all seen as exogenous to migration planning, but we view them as a helpful descriptive instrument for better understanding migration decisions (Gibson and McKenzie 2009). The differences in preferences can help us explain which factors draw students abroad and which factors make them want to stay in their home country. Figure 2 presents mean responses for each factor separately for people that plan moving abroad in the near future and for those who did not report such plans.

Most relevant for this study are those factors which are viewed differently by 'movers' and 'non-movers'. Students with migration plans consider it much more important that English is commonly spoken in the host country. These students also assess the demand for their qualifications, recognition of qualifications, good research facilities and high salaries higher compared to students without mobility intentions. This is in line with other studies showing that career advancement opportunities draw people abroad (Mahmood and Schömann 2003; Gibson and McKenzie 2009; Harvey 2011). At the same time, family -friendly environment, political stability, public safety and job security are on average evaluated higher by people who did not express plans to move abroad. These results are in line with earlier studies which have shown that more risk-averse people are less likely to have ever migrated (e.g., Gibson and McKenzie 2009; Jaeger et al. 2008).

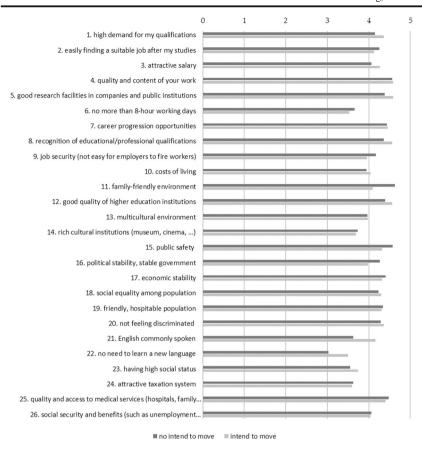
We have so far demonstrated that there are characteristic differences and differences in evaluating places between people with plans to move and those with plans to stay. To identify which of these factors really increase the likelihood that students express plans to move, we use a logistic regression analysis in the next section.

Empirical Analysis of Migration Intentions

The dependent variable is the existing disposition of a student to move to another country. This variable is based on the answer to the first question in the survey: 'Are you considering moving abroad?' The yes or no answers to this question allow us to use the binary logit model. The independent variables are a vector of individuals' characteristics and perceptions, which are used to predict which individuals are more likely to intend moving abroad. The results of the logit probability model show which variables increase or decrease the likelihood of having plans to move abroad and whether these influences are significant. Table 2 presents the marginal effects from the logit estimation of the correlates of planning to move abroad.¹

¹ Because of item non-response, not all variables are available for every respondent. Therefore, we first investigate the role of various sets of variables, before combining all of them together. We test for a subset of models, in which we explore the role of different sets of variables. In the last model, we combine all variables. In all models, we include gender, community belonging and reserved status as control variables.





Notes: Answers on a scale from 1-5 (1 = not important at all, 2 = somewhat unimportant, 3 = don't know/ neutral, 4 = somewhat important, 5 = very important) in mean values

Fig. 2 Importance of characteristics/facilities in potential host country. Answers on a scale from 1-5 (I = not important at all, 2 = somewhat unimportant, 3 = do not know/neutral, 4 = somewhat important, 5 = very important) in mean values

The first model looks only at the role of personal characteristics and shows significant effects only for belonging to a reserved group. Plans to move abroad are more likely among students who belong to a scheduled caste, scheduled tribe or other 'backward classes' (OBC). This is consistent with the hypothesis that people from minority groups attribute higher benefits to moving abroad. Their options in the home country are worse than that of the majority group, despite the reservation system in education institutions and government jobs. As shown earlier, age visibly plays a role in migration decision-making. Since the variable for age is strongly correlated with some other explanatory variables such as having children or the educational level of students, it takes a lot of explanatory power from the other variables. We hence decided to present the regression results for models without the age variable, while recognizing the relevance of respondents' life cycle for their decision about moving abroad or staying in India.

Model 2 investigates the role of students' university background. The results show that there is a significant difference between students from research-oriented universities



 Table 2
 What determines plans to move abroad? (marginal effects after logit regression)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dependent variable: plan to move abroad						
Female	-0.053 (0.099)	-0.207*** (0.058)	-0.078 (0.091)	-0.064 (0.082)	-0.062 (0.090)	-0.113* (0.063)
(Reference: from a Hindu community) From a non-Hindu community	0.132 (0.128)	0.142 (0.144)	0.128	0.159 (0.113)	0.075 (0.133)	0.121
(Reference: from a non-reserved group)						
From a reserved group	0.092* (0.055)	0.081 (0.062)	0.050 (0.072)	0.045 (0.074)	0.079 (0.054)	-0.044 (0.130)
(Reference: single as a reference)						
In a relation/married	0.056 (0.069)					0.031 (0.130)
Has children	0.059 (0.140)					0.021 (0.055)
(Reference: research-oriented universities)						
Practical/applied universities		-0.268*** (0.028)				-0.301** (0.146)
(Reference: studies engineering)						
Studies natural sciences		0.005 (0.084)				0.003 (0.121)
(Reference: enrolled in Bachelors programme)						
Enrolled in Masters		-0.037 (0.105)				-0.046 (0.154)
Doing a PhD or post-doc		0.166** (0.076)				0.030 (0.149)
(Reference: mother with less than university education)						
Mother with university education			-0.031 (0.079)			-0.193 (0.170)



	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
(Reference: father with less than university education)						
Father with university education			0.064 (0.108)			0.001 (0.089)
(Reference: parents prefer stay)						
Parents encourage move			0.255*** (0.034)			0.237*** (0.054)
Parents neutral to move			0.155 (0.149)			0.238*** (0.067)
(Reference: below average household income)						
Above average household income			0.016 (0.108)			0.046 (0.157)
(Reference: from an urban area)						
From a semi-urban area			0.103* (0.059)			0.193** (0.098)
From a rural area			0.085 (0.076)			0.068 (0.143)
(Reference: respondent never lived outside India)						
Lived outside India in the past				0.160 (0.119)		0.034 (0.097)
Parents have lived abroad				0.001 (0.109)		0.157** (0.074)
Siblings have lived abroad				0.002 (0.071)		-0.085 (0.146)
Extended family lived abroad				-0.096 (0.115)		0.025 (0.192)
Friends lived abroad				0.082 (0.076)		0.125 (0.194)



Table 2 (continued)

Table 2 (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Colleagues lived abroad				0.240***		0.176**
Importance of quality and content of work					0.053	0.013 (0.063)
Importance of attractive salary					0.043 (0.046)	0.101**
Importance of good quality of education institutions					0.148 ***	0.155*
Importance of family-friendly environment					-0.236*** (0.048)	-0.281** (0.108)
Importance of public safety					-0.105*** (0.017)	-0.124 (0.108)
Importance of English commonly spoken					0.146*** (0.035)	0.099***
Importance of medical services					-0.035 (0.037)	-0.122** (0.058)
Number of observations	287	264	273	236	266	194
Pseudo R^2	0.0198	0.1016	0.0604	0.0877	0.1809	0.3250
GOF (%)	60.3	70.5	64.1	67.4	6.69	79.4
Pearson chi ²	14.7 (0.84)	50.9 (0.10)	141.8 (0.03)	73.7 (0.62)	193.7 (0.70)	169.8 (0.36)

All models are estimated by logistic regression. Dependent variable is the plan to move abroad. All standard errors (in parentheses) are robust and clustered by university groups. GOF is the percentage of correctly classified data points. Pearson is a chi-square goodness of fit test. Number in parenthesis is the p value of the Pearson test Significance levels ***p < 0.01, **p < 0.05, *p < 0.1



(JNU, University of Jammy and IISC Bangalore) and practical universities (IIT Delhi and BHU-IT), with the first group more likely to have mobility intentions. Employment opportunities for students from practical universities, such as IITs, have improved greatly in India, which decreases the motivations for looking for opportunities abroad. The Associate Dean of Students at IIT Delhi, Prof. Shashi Mathur explains that due to lack of financial assistance for studying abroad and difficulties of finding jobs straight out of the university, most IIT students opt for joining multinational companies in India which come to on-campus placements. On the contrary, for students who want to specialize in academic research, the expectation to pursue further studies or work abroad still persists. This finding is supported by significant differences in terms of mobility plans for students enrolled in different educational levels. In comparison with students who are enrolled in a Bachelor programme, respondents who are doing a PhD or hold a post-doctoral position are significantly more likely to have plans to move abroad. This demonstrates the international orientation of people pursuing academic careers (Ackers and Gill 2005).

Model 3 examines whether mobility plans vary according to family background of students. Again, it is shows that families matter in the decision-making on moving abroad mainly in terms of 'migration norms' (De Jong 2000). Students who have support from their family are significantly more likely to plan a move abroad in the near future. Also, students from semi-urban areas of residence (compared to students from urban areas) are more likely to express mobility plans, which could be explained by inter-linkages between the internal rural-urban migration and international migration (Skeldon 2006; Czaika 2012).

Model 4 looks at the role of social networks. Since in our database very few students have themselves been out of India in the past, and few have close family members with such experiences, these results have to be treated with caution. But findings indicate that having colleagues who have been abroad in the past has a statistically significant effect on mobility plans. This is in line with Granovetter's (1973) hypothesis on the 'strength of weak ties'. Social ties consist of social relationship and of the resources they carry, which means that social networks influence migration only when they have access to the right resources. Following Harvey's (2011) typology of social contacts, colleagues abroad function as 'fact providers' about foreign places and in some cases also as 'enticers', while families function as 'influencers' strongly involved in the combined decision about going abroad.

Model 5 investigates the role of some of the preference variables that represent respondents' choices for working place and lifestyle. These factors are often omitted from studies but were assessed by our respondents with high importance for the choice of the place where they want to live. Good qualities of higher education institutions and English-speaking environment have a positive and significant effect on mobility intentions. And students who assess family-friendly environment and public safety as very important are less likely to plan moving abroad.

In the last model (6), we combine all these variables together. In the complete model, we see that mobility plans are more likely for male students who come from research universities, whose parents encourage their move abroad, come from semi-urban areas and whose parents and colleagues have lived abroad. In line with other studies, the role



of salary level is found to be significant. As in model 5, such plans are more likely for those students who attribute high importance to quality of educational institutions and English-speaking environment. Same as above, importance for family-friendly environment is proven to keep students in the home country.²

Discussion

In this section, we reflect on the presented findings using the 35 qualitative interviews with students from the same universities. Our quantitative analysis shows that students' educational and family background matter most for their future intentions. It shows that students from research-oriented universities, like JNU and IISc Bangalore, are more likely to report interest in taking up positions abroad. For more explanatory power, we held interviews among students and experts and reviewed what the interviewees indicated relating to the importance of work conditions in their decision, as well as the influence of social networks in the decision.

The main motivations to move were inductively derived from our interview data and reflect the prominence of work-related reasons for their mobility plans. The interviews support the findings from the survey as better working conditions is the most often mentioned reason. As a male student of mechanical engineering at IIT Delhi put it, 'since I'll be going there for work, either for work or for studies, the working environment should be good'. A PhD student in life science at JNU illustrated how going abroad is a social norm associated with success, 'We need to do it because it is preferred to have good Post-docs, good publications in our field. Everybody does it. It's a normal thing, normal trend.' One of the key motivations for going abroad is perceived enhancements of career prospects and higher status implied in studying abroad. International positions give students 'the edge over other people in India'. International exposure is highly valued in the case of our target group. A male PhD student of environmental engineering at JNU describes this type of expectations in the context of India: '[..] so it's sort of self-understanding that a person who went abroad, he must be having good knowledge, he must be having good exposure to the things and all that. So it's a sort of understanding. And in some institutes, it's a mandatory requirement that if you are applying for a faculty position that [...] your post-doc must be done in some other country or so. So it's a requirement in some fields.'

Several other respondents who want to pursue an academic career in Indian universities mentioned similar reasoning. Better working conditions abroad are closely linked

² The reasons for changes in significance levels across the different models for some of the variables have been reviewed by different tests. Due to item non-response, not all variables are available for every respondent so the models are based on different numbers of observations, from n = 287 in the most parsimonious specification to n = 194 in the most complete model. To find out if changes in significance levels happen because of a different composition of observations in the models, we have undertaken several control checks. When testing the same models only on observations which include all of the variables in the models (n = 294), we find out that the results regarding the effect of belonging to a reserved group on mobility plans should be treated with caution. When testing the models on the smaller sample, the effect of belonging to a reserved group turns negative, just like in the last model, suggesting that changes in the coefficient signs for this variable, as presented in Table 2, are due to dropped observations in model 6. We do not find significant difference for the other variables. The explanatory power of model 6 is the strongest of all models, and we thus believe that the effects that were picked up by some variables in the earlier models are shifted to more influential variables in the last model.



to reasons for going abroad in order to improve career prospects for the future. The competition for academic posts is very strong, making at least part of their postgraduate education abroad necessary. The positions targeted by our respondents are at the few selected institutes in India which have many applicants for only a few opening positions. Only having a PhD is not sufficient for getting an academic post. A PhD student in environmental engineering from JNU explains his reasons for planning his post-doctoral studies either in the USA or Europe: 'So in India, now not a lot of good research is going on. In very good universities in India, like JNU or NII (National Institute of Immunology) or the IISc Bangalore, they started good research. All the good research is going on in these universities in India. Average research is also going on so if I want to go in an average institute in India, I will get a position but for a good university in India, it is tough for me to get a job there without any experience like a post-doc. But in Europe, even I if I get one post-doc, I can get a job there'.

Better research funding and infrastructure drives people to research institutes in which they can advance best during their stay abroad. 'The primary reason for people going abroad from India is that they want to work in a good environment where people are dealing with new highly advanced technology', explains a male Master student of mechanical engineering at IISc Bangalore. Our respondents are currently based in good universities in India, and for those who want to pursue their careers in academia, it is important to improve their technical skills in places with better infrastructure, where they get acquainted with different facilities and procedures. A PhD student in environmental sciences at JNU wants to go abroad for post-doctoral research because of better facilities, the use of which would improve her future career prospects in academia. '[...] it would be nice if I could get an exposure to the advanced instrumentation so we can start things like that in India. ...of course with exposure to these instruments and facilities you will learn more and get more. It has an advantage if you do your post-doc abroad compared to India.'

Lack of facilities in India is related to the lack of financial support for research. A PhD student of environmental engineering at JNU explains the problems with funding at Indian universities and why, according to him, this is the main reason for being able to do better research in Europe: '... if I am holding the same position in India as I will hold in Europe, I will do better research in Europe than in India. Because funding is the main problem. Also there is a lot of collaboration between all the European countries. So if you will get a project you will easily jump from one country to another for a research purpose. But for India you have to go for something like the visa and for funding'.

The malfunctioning of the system in India was mentioned as a push factor by several other respondents. Because of bureaucratic hurdles and alleged corruption, 'they are not able to do big things very fast and quick'. A Master student of technical engineering at IISc Bangalore complains about the system in India: 'At every step I have to face corruption or biases. People out there in government organizations, they don't have a say fair approach. I mean maybe even in the US they might not be fair. But at least if you are working, you should be given a little smooth drive, you know. It's not absolutely frictionless but at least it will be smoother than what currently exists in India'.

Several students mentioned exposure to foreign cultures as an important drive for spending some time abroad. By going abroad, students get to 'interact with students from different countries, teachers from different countries' and in this way 'come to know



about cultures of different countries'. A Master student at the Center for Electronics Design and Technology explains: 'You get to know people and their culture indeed. That is one of the aspects other than the studies, of course. You can learn how the people are there and see what other opportunities you might have. That is what I expect.'

Several respondents mentioned that the salary levels in India have improved a lot and that despite the fact that salaries would be higher abroad, this is not the turning point in the decision for international move. Especially for people in science and engineering, it is typical that they place less importance on monetary benefits of their work (De Grip et al. 2009). Nevertheless, higher remunerations abroad can make our respondents consider staying abroad for longer periods. A Master student of aerospace engineering at IISc says that his impression is 'if I work for 2 years, I will make as much money as here in India in maybe 10 years', which in his opinion also means that his savings will be that much higher. Similarly, a bachelor student in mechanical engineering from IIT Delhi explains that after doing an MBA abroad 'even if I don't want, I'll have to work (abroad) since going abroad to study is a very costly affair. So you can't pay back your loan or you can't support yourself without working there'. It is obvious that our hypothesis that for students who want to move abroad, the career-advancement opportunities are especially relevant and are supported by the results of the regression analysis as well as the information from in-depth interviews.

Our quantitative analysis indicated family support as an important factor in the decision to move abroad. Family-friendly environment and public safety in India are most often set against the benefits of living abroad. For example, a PhD student in mathematics at IISc Bangalore explains: 'Obviously if you go outside of India you will get good progress, basically money wise. [...] But the life will be, I think not that much more beautiful. Because when you live with your family, when you live in your country, your top satisfaction will be there. So outside India if you go, you can get the money; fine, but then you have to sacrifice a lot of things. [...] So for me living in India will be much better than going outside. When I will not be getting more money, but still it's fine to stay with the family, with the people I know, and miss. In India it is good to work for your country'.

Among all students who were interviewed and are not planning to go abroad (6 out of 35 interviews), the prime reason for wanting to stay in India was related to their family. Staying in India means that 'you are with your parents, with your family. It is like a different level of comfort and mental stability which helps you to work'. A female student in physics at JNU explains that staying close to her family is so important to her that no opportunities abroad would make her change her mind about staying in India: 'I don't want to leave my family members and stay away for like, lifelong. I mean, ultimately it's for them and therefore I am... If I'm not able to see my parents when they are old, then I feel there's no point in me doing anything. Ultimately, it's for them, and they are the people who are the most... Who are like happiest if I do something. And if they are unable to see my happiness, then I don't think it makes any sense to me at least staying abroad away from them. So I feel nothing could change me. I mean nothing could actually stop me if I want to come back to India; any of the opportunities I get'.

Moving abroad is a family decision which is clearly exemplified by a male student pursuing Masters of computer science at JNU who puts the decision about the actual move abroad in the hands on his family: 'From my point of view, I am ready to go, live



there, permanently but it depends on many things, on my family members. ... It depends on them. If they will deny me to go abroad, then surely I will not go. I will do everything by taking permission from my parents'.

Those people who stayed abroad are considered to have foregone their family obligations. When talking about his friend, who intends to stay in Canada, a male student of computational and systems biology at JNU thinks that 'this is a very bad practice. If your parents are here, they have cared for you, they have made everything for you in their life and now you have left them just for your opportunities in staying in some other country. Because your parents can't come to that country'.

In the logistic regression, we find that if parents encourage the move, or are neutral, the fellow is more likely to be interested in going abroad. This is in line with common expectations. However, in our qualitative study, we find that family support depends on how long our respondents are planning to stay abroad. While shorter stays are often encouraged, longer stays are less desirable. One respondent indicated that when planning to move abroad 'for a short period, they will be happy that I am going abroad, that I will earn more money and make my financial situation better but if I will go for a long period or for a lifetime, then I don't think they are going to support me'.

Most respondents do not have plans to settle down abroad for a longer time period. They focus their deliberations on their main rationale for going abroad, which is in general work or study-related. Out of 29 respondents in our in-depth interviews only 7 said they could stay abroad a bit longer while all the others strongly affirmed that they want to return to India immediately after finishing the programme they plan to follow abroad. The envisaged duration of stay abroad will have an impact on what they consider important.

The importance of family in the decision-making process of migration cannot be neglected. It is crucial either in a form of family support as a facilitator for the move or impediment for people to consider new undertakings. Tight social networks involve obligations which may undermine individual economic initiatives through claims on individuals to support family and community members (de Haas 2010). Not only that the moral support from family matters for international move, family is crucial also in terms of financial support (Czaika 2011, 2012; Fielding 2016) Khartik, pursuing a Master in Technology at IISc Bangalore, explains his situation: 'I have two brothers, they are married. My brothers are supporting my family. This makes it fine for me to go abroad and come back and support also'. As an example of social interaction between siblings (Stöhr 2015), this quote shows how taking care of the elderly parents matters for the migration decisions.

Despite the fact that family income does not have a significant effect on migration plans in our survey, several respondents in the in-depth interviews brought up the financial aspect of their decision and its link to family support. A male PhD student in chemistry from BHU-IT explained that he was already accepted for a PhD abroad but due to financial problems he could not leave. Getting financial support from his parents is not an option: 'I didn't want to get money from my family. I am from a very poor family. Right now my father is a street hawker. He supported me and I am here right now. So it's really difficult to manage'. His low household income has also been an obstacle for him to obtain a loan for education because he cannot secure it with family assets. It is clear that social class continues to be a salient factor when it comes to individual choices.



Other reasons, such as language barriers or concerns for public safety, might work as 'repel' factors for migration (Van der Velde and Van Naerssen 2007). Safety abroad repeatedly came up as a concern for Indian students in the interviews. People consider staying in India safer than going abroad. Respondents often mentioned fear of being discriminated because of their skin colour, which would dissuade them from the choice of living abroad. As a Master's student of Aerospace engineering from IISc Bangalore accounted for his reasons for preference to stay in India: 'I think if you are in a foreign land so there are security issues... Because you are minority right, so there is obviously a security issue, because anyhow if you are doing wrong thing, so no one will protect you. Something like that you have in your mind and this is too hard, because this is human nature. ... For the proper living and the proper staying as your life, so this is probably according to this, best in home land'. It should, however, be noted that 'decisions are constantly under review and subject to change' (Ackers et al. 2008: 41). Not only do external events, such as racist attacks brought up by this student, affect mobility motivations and also roles and responsibilities change over time. The limits to mobility placed by partnering and parenting (Ackers 2008), taking care of elderly parents and shared responsibilities with siblings (Stöhr 2015) as well as social class implications (Findlay et al. 2012; Fielding 2016) defy simple explanations and point to the role of social bonds in shaping geographic mobility.

Conclusion

This paper looks at the determinants to plan a move abroad in the specific situation of Indian students in sciences and engineering. We investigated at the role of students' personal and family background, university-related factors, their social network and preferences for living location in their motivations for moving abroad. Going abroad for work straight out of the university is very uncommon. More common paths are either going abroad for advanced studies or joining a company in India at a campus placement, after which people are often sent abroad for specific assignments. Studying abroad still represents an insurmountable financial burden for most Indian students. In case family or networks cannot afford the move, for students making plans to go abroad is only feasible in the situation of offered scholarship or paid positions. As very few Bachelor and Master programmes offer any scholarships, it is unlikely that students will plan the move abroad at this stage. Our survey confirms that PhD students are most likely to plan their future career outside of India, expecting to get accepted to paid positions. This difference obviously also occurs because people who are currently in PhD programmes mostly envisage their future in academic careers. The quantitative survey as well as the in-depth interviews shows us the difference in career planning between students at different universities. Especially students at universities focused on applied work, like in our case IIT Delhi and BHU-IT, are more likely to get hired by companies in India straight after their finished studies. As a result, the type of university and field of studies work as strong predictors for students' desired move abroad which is in line with other research indicating enormous differences in mobility between disciplines and scientific specialties (Ackers 2005; Laudel 2005). Whether a student plans a career in academia or wants to work in a company has a decisive influence on where they see themselves in the near future.



Professional aspects are confirmed to be the most prominent motivator in the decision-making regarding international mobility. The four most important factors mentioned by our interviewees to move abroad were better possibilities for career advancement, better working and research conditions abroad, international exposure and financial benefits. It has been confirmed that students in sciences and engineering place less importance on financial aspects of their future jobs. The main pull factor to go abroad is the expectation of a better working environment, either because of better facilities or smoother bureaucracy. The importance of stability and social security, as well as attractive local environment turns out to be secondary in the importance of preferences for the place of living. The survey shows preference variables as strong predictors for mobility plans. As expected, people who place high importance on work-related factors are more interested in migration. Equally in line with our expectations, people who place higher importance on family-friendly environment and public safety prefer staying in India.

International student mobility is obviously a family decision. Parents' support is crucial for moving abroad, in moral as well as in financial terms. When parents withhold their support for moving or they are in a constraining situation, for example because of their old age or financial difficulties, this would usually undermine individual's own interests. This finding confirms that social class location remains relevant for persons' choice about leaving, as it does about location choices and manners of insertion into the destination society (Fielding 2016). Normally, obligations towards family are put in the first place ahead of potential individual initiatives. Thanks to its focus on intentions of potential migrants and by including those students who decided against moving abroad or could not surpass the obstacles; this paper enriches the debate on student migration by showing that a family's social capital may also act as a constraint—not only as a much investigated support in terms of social networks.

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