

DOES SOCIAL INFLUENCE SPAN TIME AND SPACE? EVIDENCE FROM INDIAN RETURNEE ENTREPRENEURS

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Research summary: We study returnee entrepreneurship through the lens of social influence. Contrary to the conventional view that treats returnee entrepreneurship as discrete decisions by individuals, we examine the transmission of entrepreneurship through important peer networks—university dorm peers and ethnic association networks. We propose enduring effects from peer influence funnelling entrepreneurship entry in distant locations by shaping career aspirations and facilitating resource and information transfer. Using a unique dataset of overseas alumni of a top Indian university, we find strong evidence of the impact of peer influence on the likelihood of returnee entrepreneurship. However, the effect of university peer influence does not extend beyond immediate peer groups in the same cohort.

Managerial summary: The repatriation of highly skilled migrants has been viewed as important to the supply of entrepreneurial talent in emerging markets. Our study of the overseas alumni of a top Indian university points to the importance of peer influence in determining returnee entrepreneurship. We find that peer ties formed in the early years of university study play a significant role in subsequent career choices and entrepreneurship entry in the home country. We also find co-ethnic professional networks facilitate engagement in returnee entrepreneurship. While policies to encourage returnee entrepreneurship have been geared largely toward promoting formal institutions and economic incentives, our work demonstrates a strong social amplification effect through networks and suggests that peer networks, especially those connecting alumni and ethnic professionals, are important channels to induce returnee entrepreneurship. Copyright © 2015 Strategic Management Society.

INTRODUCTION

Despite the importance of entrepreneurship in the development process (Agarwal, Audretsch, and Sarkar, 2007; Van Stel, Carre, and Thurik, 2005), emerging markets face severe constraints on the supply of entrepreneurial talent (Wennekers *et al.*, 2005). Wright *et al.* (2008) argue that this could be partially offset by return migration, an idea that has attracted increasing attention from scholars and policy makers (Kapur, 2001; Martin, 2003;

Saxenian, 2006; Vertovec, 2006). For example, the emigration of highly skilled personnel from India and China is now being reversed (Li *et al.*, 2012; Qin, 2015), with returnees bringing with them new business ideas, financial capital (Findlay, 2002), and extensive ties with the business or technology communities (Kerr, 2008; Saxenian, Motoyama, and Quan, 2002). Returnees also often become actively engaged in entrepreneurship (Kapur and McHale, 2005; Saxenian, 2006; Wadhwa *et al.*, 2011).

Little is known about the factors and mechanisms influencing migrants' entrepreneurship entry to their home countries. Recent studies attribute the high rate of returnee entrepreneurship to alluring business opportunities available in the home countries. However, only a fraction of migrants in an arriving

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cohort choose to return to their home countries to start a new business. So why do some migrants pursue returnee entrepreneurship while others do not? The entrepreneurship literature places emphasis on the role of social influence (though it has rarely been considered in the context of returnee entrepreneurship) (Lerner and Malmendier, 2013; Nanda and Sørensen, 2010); social connections are seen as affecting the aspiration to become an entrepreneur, as well as access to relevant information and resources. In this study, we investigate what affects migrants' participation in entrepreneurial activities when moving back to the home country. Particularly, we identify elements of social influence that operate over time in the transnational space to induce returnee entrepreneurship.

Returnee entrepreneurs are people who move back to their home countries to start a business after spending a period of time studying or working abroad. We treat returnee entrepreneurship as a social process in which social ties help in shaping a migrant's aspirations, identifying the opportunities in the home country, and providing support. Social capital and social influence have been emphasized in the fields of entrepreneurship (Davidsson and Honig, 2003; Fershtman, Murphy, and Weiss, 1996; Nanda and Sørensen, 2010) and international migration (Boyd, 1989; MacDonald and MacDonald, 1964; Massey, 1990; Massey, Goldring, and Durand, 1994). However, applications mainly focus on situations that are geographically and temporally confined—a limitation largely due to the contexts in which the concept is examined. In most settings, it has not been appropriate or feasible to test whether social influence can extend beyond geographic boundaries or be viable over time. Returnee entrepreneurship represents a good setting to explore unbounded social capital because social influence is highly relevant, geographic factors can be distant, and temporal elements are long. The emerging market environment further strengthens these arguments because local connections and knowledge represent a particularly significant challenge to returnee entrepreneurs in contexts where factor markets and formal institutions are underdeveloped (Batjargal *et al.*, 2013; Li and Atuahene-Gima, 2001, 2002; Li *et al.*, 2012; Peng and Luo, 2000; Xin and Pearce, 1996; Zhang and Li, 2010).

The high rate of returnees' involvement in entrepreneurship is usually associated with the accumulation of human and financial capital overseas. However, these attributes could be offset by a corre-

sponding loss of social capital; migrants are uprooted from their domestic social contexts and, hence, lacking access to information about home country entrepreneurial opportunities: 'out of sight, out of mind' (Wahba and Zenou, 2012: 891). These countervailing forces are often seen to influence returnee decisions and the subsequent performance of returnee-founded ventures (Li *et al.*, 2012). However, the implicit focus on social connections within a given local or regional environment is, at best, incomplete because social space cuts across geographic boundaries. Social influence pertaining to returnee entrepreneurship may endure over long distances and persist for decades. In particular, migrants are exposed to important peer influence within educational- and ethnicity-based networks that may have a lasting impact over an individual's career. This may be prior to migration, in the case of school peer connections, or after migration, in the case of ethnic associations. Thus, we propose that social capital is not necessarily localized or geographically confined.

We base our empirical examination on an alumni survey of a top university in a major emerging market—India. We use event history analysis to examine the impact of time-varying factors such as the change in various types of social influences on returnee entrepreneurship over an individual's lifetime. Our unique dataset covers the career and migration history of the alumni of a leading Indian Institute of Technology (IIT). The empirical strategy generates a well-defined population, covers a long time horizon, collects detailed social capital measures not available in existing datasets, and allows systematic analysis of entrepreneurship entry and return migration simultaneously. The IIT alumni data are particularly suitable for examining our research question because these graduates are among the most active players engaging in both international migration and business venturing. The setting also enables us to study the actual behavior of returnee entrepreneurship rather than intentions. Moreover, IIT alumni, with similar human capital characteristics, constitute a suitable population to test the effect of social influence.

We make a number of contributions to the literature. First, we develop a model of returnee entrepreneurship in emerging markets that integrates important elements of the literatures on entrepreneurship and return migration. Second, we analyze the potentially enduring effects of social relations and peer influence across locations, which we test on

returnee entrepreneurs using information about university alumni career history. Further, we study some potentially significant, but underexplored, social influences: ties with school peers established in university and with professional peers of the same ethnicity. We also distinguish between peer and selection effects, thus addressing a major challenge in identifying the impact of peers. Studies on peer effects are not usually able to rule out self-selection, or the fact that the observed effect could be caused by endogenous sorting whereby individuals choose to be associated with others with similar career objectives. This problem is alleviated in our study because our main measure of peer influence—university peers residing in the same dorm during the same time period—is formed by exogenous assignment. We are also able to separate the peer effect from a potential cohort effect.

The article proceeds as follows: the next section presents the theoretical framework and reviews previous research on social influence, return migration, and entrepreneurship. The subsequent sections describe the methods of data collection and analysis and the model specification. Then the results are presented and interpreted and the implications for policy are discussed.

THEORY AND HYPOTHESES

Returnee entrepreneurship

Recent research places emphasis on the characteristics and consequences of returnee entrepreneurship. It finds that the distinctive human and social capital that returnees possess creates unique value by facilitating exporting (Filatotchev *et al.*, 2009), promoting the development of high-tech clusters (Wright *et al.*, 2008), and enhancing the technological capabilities of local firms (Liu *et al.*, 2009). As noted earlier, Li *et al.* (2012) identify a trade-off in analyzing the impact of returnees on venture performance in China, between their advantages in terms of higher education and overseas experience and their disadvantages that stem from a lack of local connections and knowledge. Economists have also examined the factors that affect returnees' occupational choices; entrepreneurial career decisions have been found to be positively associated with education (Dustmann and Kirchkamp, 2002), the availability of financial capital (Ilahi, 1999), and the duration of stay (McCormick and Wahba, 2001).

Entrepreneurship involves the discovery and exploitation of opportunities (Shane and Venkataraman, 2000). Past research has attributed returnee entrepreneurship to favorable opportunity structure in the home countries (Agunias and Newland, 2007; Martin, 2003). However, the existence of opportunities at the national level does not necessarily entail their recognition and exploitation (Westhead, Ucbasaran, and Wright, 2009), especially by individuals who live in distant locations. A number of factors may influence migrants' discovery and enactment of opportunities emerging in their home countries. These include access to information in the home country; availability of resources; the ability to execute the business idea; and the willingness to undertake the risks associated with migrating again and starting a new venture. These factors are largely shaped by an individual's experiences and the social environment in which the person is embedded, as well as the macroeconomic context.¹ This leads us to take a closer look at the social context in which the migrant is embedded, in addition to human capital and financial resources at the micro-level and economic environment in the host and home countries at the macro-level.

Social influence

Social capital refers to the ability of actors to derive benefits from their relational or structural ties (Bourdieu, 1983; Burt, 1992; Coleman, 1988; Lin, Ensel, and Vaughn, 1981; Portes, 1998). While the concept in the literature is broad (Baron and Hannan, 1994), we focus on the idea of social influence in this study (Dobrev, 2005; Sørensen, 2007). Entrepreneurship and international migration represent two social processes in which an individual's position in the social structure could influence his/her choice over whether, when, and where to start a business.

The network approach provides a framework for the role of social embeddedness in entrepreneurship (Aldrich and Zimmer, 1986; Birley, 1985). The decision to participate in entrepreneurship can be seen as an individual's response to cues from the social environment (Dobrev and Barnett, 2005; Sarason, Dean, and Dillard, 2006), while the actions can themselves either be facilitated or hindered by the social

¹ Although the important role of social influence and social networks in facilitating entrepreneurial activities among returnees is implied in a few case studies (e.g., Saxenian, 2006), it has not been systematically tested in a larger and more representative population of returnee entrepreneurs.

environment (Burt, 1992; Davidsson and Honig, 2003). Individuals who can tap into a broad and diverse social network and receive support from their network are more likely to succeed as entrepreneurs (Aarstad, Haugland, and Greve, 2006; Brüderl and Preisdörfer, 1998; Davidsson and Honig, 2003).

Social embeddedness also has been an important theme in the migration literature (Portes and Sensenbrenner, 1993). Prior research has suggested that networks between existing and potential migrants can reduce migration costs and enhance newcomers' employment opportunities in the host country. Abundant empirical evidence supports the existence of *chain migration*—migration flows that are promoted, facilitated, and perpetuated by social networks (Boyd, 1989; MacDonald and MacDonald, 1964; Massey, 1990; Massey *et al.*, 1994). Social networks also influence how a job is obtained in the host country; previous migrants can smooth the path to employment for their family members and social contacts (Greenwell, Valdez, and DaVanzo, 1997; Massey *et al.*, 1994).

Studies on the role of social ties in careers are also relevant (Granovetter, 1973, 1985; Mouw, 2002, 2006). A variety of mechanisms have been identified by which migrants or ethnic minorities can be driven into certain jobs while being excluded from others (Fernandez and Fernandez-Mateo, 2006). In particular, entrepreneurship entry among migrant groups has been found to be much higher than for natives. Migrants have a higher propensity to become entrepreneurs, relying predominantly on their ethnic resources, particularly social capital (Kloosterman, Van der Leun, and Rath, 1998; Rath and Kloosterman, 2000; Yinger, 1994). Moreover, ethnic networks offer important supporting mechanisms often denied to migrants through other channels (Light and Gold, 2000; Piore, 1979; Waldinger, 1996, 2001; Waldinger and Der-Martirosian, 2001). Ethnic networks are the main channels through which new migrants enter ethnic niches (Piore, 1979; Sassen, 1995; Waldinger, 1996, 2001; Waldinger and Der-Martirosian, 2001). The paucity of access to regular jobs pushes migrants into occupational niches, while co-ethnic ties pull them into ethnic economies that often involve entrepreneurship (Light, 1984; Light and Bonacich, 1988; Zhou, 2004).

In our analysis, we decompose social influence to distinguish the effects from different social ties. We focus on two categories of social ties—with school peers and with peers in ethnic associations—in analyzing returnee entrepreneurship.

Ties with school peers

The behavior of social actors is widely regarded as being molded by the actions of their relevant peers (Burt, 1992; Coleman, 1988; Granovetter, 1985), though the application of these ideas to entrepreneurship is relatively new. Recent empirical studies have provided evidence of the impact of peer networks—particularly those with coworkers (Nanda and Sørensen, 2010) and school peers who previously engaged in entrepreneurship (Lerner and Malmendier, 2013)—on an individual's entry into entrepreneurship.

The actions of peers affect individual behavior through three main mechanisms: (1) facilitating access to information and resources, i.e., differences in social networks may account for varying access to information and resources (Gompers, Lerner, and Scharfstein, 2005; Lerner and Malmendier, 2013; Sorenson and Audia, 2000); (2) status homophily, i.e., individuals are more likely to associate with those with whom they share similar social status characteristics (Lazarsfeld and Merton, 1954); and (3) shaping career aspiration and attitude, i.e., social networks shape individual career aspirations and attitudes toward a particular action independent of the knowledge required to pursue that action (Giannetti and Simonov, 2009).

While the first mechanism involves the actual transfer of information and resources, the other two mainly work through a contagion effect derived from observing socioeconomically proximate peers. We propose that peer networks present a distinct type of social connection—a tie of observability that affects individuals' aspirations and attitudes, even when there is no flow of information and resources. In this context, with the ties created at a formative stage in people's careers, university peer groups are unique in their lasting effects in shaping individuals' career orientations. For instance, Dobrev (2005) finds that an increase in the number of people in an alumni population who transition to new jobs increases the visibility of these transitions, transmits information about the new jobs, and triggers similar mobility among other members. Thus, we expect that peer effect catalyzes return entrepreneurship, as individuals observe what others in their peer group have done and 'follow the flock' of their peers by returning to their home countries to found new businesses.

Hypothesis 1: The likelihood of a migrant returning to his/her home country to start a business

increases if more people in his/her school peer group have previously become returnee entrepreneurs.

Ethnic association ties

When individuals emigrate from their country of origin, they lose some locally embedded ties in the home country and need to reconstruct their interpersonal fields and develop new networks of personal affiliations (Eisenstadt, 1952). Ethnic associations represent a particularly important arena for co-ethnic ties to be fostered, as well as a major source of social capital (Breton, 1964; Brettell, 2005; Schoeneberg, 1985). Ethnic associations are an important form of voluntary associations. Voluntary organizations in general are the basis of a wide spectrum of social life in which members become involved and, through their interactions, become linked in a cohesive interpersonal network (McPherson, Popielarz, and Drobnic, 1992; McPherson and Smith-Lovin, 1986, 1987). Such networks give rise to substantial information exchange (Brettell, 2005; Portes, 2001), shared orientations (McPherson, Smith-Lovin, and Cook, 2001), and homophily of behavior and practice (Knocke, 1990). Voluntary groups are also important because they operate and remain relevant over an entire lifetime (McPherson *et al.*, 2001).

Ethnic associations play an important role in migrants' social and professional lives. Saxenian *et al.*'s (2002) study of immigrant professionals in Silicon Valley found that professional associations represent unique fora for mobilizing ethnic resources to support information exchange, career advancement, and entrepreneurship. The earlier work of Breton (1964) on immigrant communities has offered some interesting insights into the role of ethnic associations, which suggests that the presence of a formal structure—the degree of 'institutional completeness'—has important consequences on the ability of ethnic communities to influence the direction of a migrant's interpersonal integration (whether toward the home country or the host country). An immigrant member of a formal organization in an ethnic community is found to be three times more likely to have shifted to a high proportion of ingroup/co-ethnic relations than those in a more informal social structure. A formal structure can reinforce the cohesiveness of preexisting networks and expand these networks through new contacts. So we expect co-ethnic networks with formal structures

to be more likely than informal networks to funnel information and resources pertaining to the country of origin.

Earlier research also highlighted the variety of social organizations among ethnic communities (Breton, 1964; Schoeneberg, 1985) and the distinctive nature of different kinds of ties. In our study interviews with Indian migrants carried out by the first author identified two categories of ethnic associations that were established in the migration and settlement processes, based on the motives governing their formation: some have strong professional orientations and others are mainly of a cultural, religious, or social nature. This distinction is relevant because it relates to the mediating structure of the organization. Ethnicity-based professional associations have proliferated in the past two decades and are very different from traditional ethnic associations; they bring together migrants from the same country of origin who are working in the same industry. Hence, members share similar experiences in migration, education, and work, and these professional associations have an explicit focus on business and career activities, often operating in a transnational space. In contrast, the traditional ethnicity-based organizations largely serve to facilitate migrants' settlement in the host country and are often found in ethnic enclaves or ethnic niches that are locally embedded (Piore, 1979; Zhou, 1995). Saxenian *et al.* (2002) found that professional associations in Silicon Valley provide service and programs aimed at fostering entrepreneurship. They also report that association members are keen on becoming returnee entrepreneurs, with 76 percent of Indian respondents considering relocation back to their native country.

We propose that ethnic professional networks can facilitate participation in returnee entrepreneurship in three ways. First, many of these networks are transnational networks. For instance, The Indus Entrepreneurs (TiE), first established by Indian entrepreneurs in Silicon Valley, is now the largest professional network in the world and has dozens of chapters worldwide—both in and outside India. Such networks offer channels through which potential returnees can access and share technology, business, and labor market information related to the country of origin. Second, cases of successful returned entrepreneurs become more visible to the migrants and can positively influence their aspirations toward returnee entrepreneurship. In our

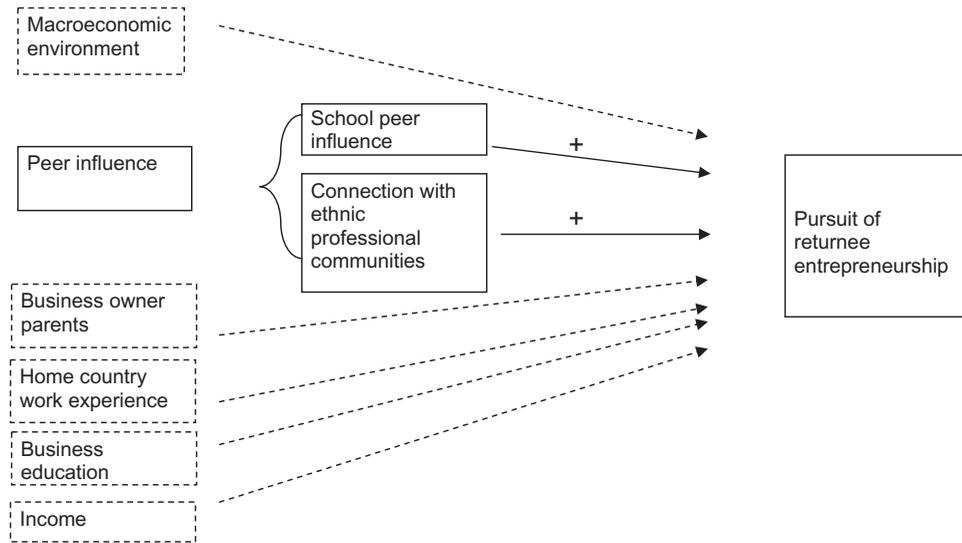


Figure 1. A theoretical model of returnee entrepreneurship

interviews we observe core groups simultaneously involved in the local associations and a range of business activities in their home countries, including start-ups and venture funds. These veterans act as role models and mentors for potential returnee entrepreneurs. Third, such networks connect the overseas communities with the key stakeholders in the home country and facilitate the process of return migration. Professional associations often engage in a brokerage role linking the diaspora to the country of origin—for instance, by arranging meetings between members and government officials from their home country.

Past research has also pointed out the difficulties in relying on networks to mobilize resources (Portes and Sensenbrenner, 1993). Not all social ties are necessarily instrumental in returnee entrepreneurship. Ethnic associations that are organized to help migrants carve out a social space in the host society are not usually concerned with business activities and entrepreneurial opportunities and, hence, may not provide enabling mechanisms for returnee entrepreneurship. However, we expect ties with ethnic peers through professional associations to have an instrumental effect on returnee entrepreneurship and propose:

Hypothesis 2: The likelihood of a migrant returning to the home country to start a business increases with his/her level of participation in ethnicity-based professional networks.

The hypotheses are illustrated in Figure 1.

RESEARCH SETTING, DATA, AND METHODS

Research setting

To test our hypotheses, we assemble data for a refined risk set of individuals likely to participate in returnee entrepreneurship—a relatively rare phenomenon among the general population of migrants. The setting we choose for this study is the overseas alumni of one of the Indian Institutes of Technology.

After India attained independence in 1947, the IITs were founded to train scientists and engineers. The IIT we chose as our research setting has played a key role in establishing the IIT global brand name and has established its reputation as a leading engineering institution in India over decades. It also has one of the largest student enrollments and one of the largest global alumni networks among all IITs.

With a leading position in engineering education in India and a large number of graduates emigrating, this university provides an ideal setting to study the careers and international mobility of highly skilled migrants. Its alumni represent a well-defined population who are not selected on the basis of entrepreneurship entry or success, but through a centralized alumni directory that contains up-to-date contact

information.² Career history data of these alumni were assembled through a survey conducted by the first author. The alumni survey instrument includes social capital measures not available in existing public datasets. Given that the alumni are located in different countries, a Web-based survey was conducted.³ Data collection was carried out in 2006 with 3,127 responses received (a 33 percent response rate).⁴ The survey instrument contains several sections, including migration history, work experience, educational attainment, and demographic information. According to their answers, the respondents are divided into three groups—migrants, returnees, and nonmigrants—and directed to questions tailored to each group.

To control for nonresponse bias, we performed the Kolmogorov-Smirnov two-sample tests. Under the assumption that late respondents are more similar to nonrespondents than to early respondents, we compared the characteristics of early and late respondents. Test results indicate that the distributions of main characteristics are not statistically different between the two groups, which suggests that there is little nonresponse bias in our survey. The results are reported in Appendix Table A-1.

Methods

In this study, we use event history analysis (survival analysis) to explore the probability of returnee entrepreneurship over the course of an individual's career and the impact of covariates on that probability. In the language of event history analysis, an alumnus becomes 'at risk' of engaging in returnee entrepreneurship at the moment of first emigration from India. The 'event' occurs if he/she becomes a returnee entrepreneur, after which he/she is no longer at risk. If an alumnus has not returned to India to start a business by the time of the survey, this observation is then right censored. We reformat the dataset into a person-year structure. The resulting data file contains 12,992 person-year observations.

² When an alumnus changes address, he/she can easily update the information in the online directory.

³ An introductory e-mail with the address of the survey Web site was sent to each of the 9,510 alumni in the database.

⁴ The response rate is comparable with previous alumni surveys, such as the Stanford (Lazear, 2004) and MIT surveys (Hsu, Roberts, and Eesley, 2007). After eliminating incomplete responses, the number of usable responses totalled 2,976. Paring down the data to only those respondents for whom we had complete records did not introduce a detectable bias in the final sample.

We use the Cox proportional hazard rate model, in which the probability of returnee entrepreneurship can be measured by the hazard rate function. The hazard rate $h(t)$ is the probability of returnee entrepreneurship at time t , conditional on the event that the alumnus has not returned to start a business before time t , where t is the analysis time (the time since onset of being at risk).

We operationalize peer influence by measuring the engagement in returnee entrepreneurship among people who resided in the same IIT dorm at the same time as the respondent. Our choice of dorm mates as the indicator of peer influence was based on the findings from our interviews with the alumni carried out prior to the survey. Interviewees consistently asserted that dorm peers represent a social group against whom they benchmark themselves when evaluating their own career achievements. Indeed, when describing their years at the IIT, many interviewees introduced themselves by mentioning their years of study and their dorm. Moreover, it was suggested that such peer influence could persist throughout their careers.

Dorm residence is a result of a random assignment process in general. Dorms became the most important social space for students, and the ties established within dorms were usually maintained after graduation. The long length of dorm residence enabled strong ties to be formed, and these have lasted for many years. Even when there is no longer any direct tie between two dorm mates, career information is circulated within the peer networks. Hence, in our design for the survey we include a set of questions regarding dorm residency at IIT. For each person-year observation, we compute the ratio of entry into returnee entrepreneurship among one's overseas dorm mates in the previous time period. This ratio changes throughout a person's career. Focusing on dorm peers provides a more fine-grained specification than previous studies where the entire university network was often used to calculate peer effects. Analysis at the university level also makes it difficult to distinguish whether the observed actions among peers are due to social influence or the institutional impact of universities. There should be a much higher level of interaction and observability among dorm peers than among all students from the same university. We also include the lagged returnee entrepreneurship ratio among people outside the focal individual's dorm but in his/her cohort, in order to separate out peer influence from a potential cohort effect.

The measurement for the other type of social tie, via co-ethnic networks, is more straightforward. We

ask respondents to report whether they have ever been affiliated with ethnicity-based association(s), the type of the association(s), and the time of the affiliation. A higher proportion of respondents have participated in nonprofessional (14 percent) than professional (6.4 percent) ethnic networks.

Turning to controls, we commence with an important type of social capital, parental ties.⁵ We expect parental ties to be important for returnee entrepreneurship because it entails reentering a social and economic environment from abroad. Parents are often the strongest and most durable social contacts in the home country and could serve as an important source of support, resources, and information about entrepreneurial opportunities. To measure this, we control for whether respondents have parents who own businesses.

The literature suggests we must also control for a variety of macro- and microeconomic measures, such as education (including advanced business education), home country work experience, and host country income and work experience. Both the level (Jasso and Rosenzweig, 1990) and the nature of education (Lazear, 2004) have been shown to have an effect on entrepreneurship; Lazear indicates that training in balanced skills is more beneficial to entrepreneurial success than training in a narrow range of specific skills. An advanced business degree (MBA) in particular may have a positive impact on entrepreneurship entry. Financial capital may also affect migrants' ability to exploit entrepreneurial opportunities in their home countries. While some empirical studies point to positive selection whereby more successful migrants among the arrival cohort are more likely to return to the home country, others suggest that repatriation is an outcome of unfulfilled expectations in the host country, whereby those who are less successful are forced to leave (Beenstock, 1996; Lam, 1986; Stark and Bloom, 1985). We include host country income in our model to control for migrants' own financial resources. Individuals may also draw from past work experience when starting a business (Shane and Khurana, 2003), which we

control for through organization size and industry. Home country experience should be particularly relevant to returnee entrepreneurship in offering migrants the necessary knowledge, connections, and confidence to start a business in the home country after staying abroad for years. Therefore, we also control for home country work experience.

Finally, the literature suggests that macroeconomic conditions may either stimulate or impede entrepreneurial activity. The economic growth in the home country is obviously relevant to the creation of entrepreneurial opportunities (Kapur, 2001; Kapur and McHale, 2005; Saxenian, 2006), but the economic environment in the host country may also push migrants to explore opportunities back in the home country. To account for these forces, we control for the ratio of host country/home country GDP per capita.

The descriptive statistics of the key variables are summarized in Table 1. Table 2 presents the correlations between key variables at the person-year level. There are no correlations sufficiently high to cause concerns about multicollinearity in the regression.

RESULTS

Tests of hypotheses

Table 3 presents the results of the event history analysis. The estimated effect of the independent variable on the dependent variable is positive when the hazard ratio is larger than 1 and negative when the hazard ratio is less than 1. A number of estimated coefficients are significant at the 95 percent level and higher. The p-value of the test of the Cox proportional hazard assumption is 0.700, which indicates that the proportional hazard assumption cannot be statistically rejected.

Based on the estimated model, we plot the curve of the baseline hazard function in Figure 2. On the X-axis are the years that have passed since emigration and on the Y-axis is the probability of undertaking returnee entrepreneurship in a given year. Some interesting patterns emerge. The propensity of a migrant returning to India to start a business is nonmonotonic over his/her life. It increases over time to reach a plateau roughly 10 years after emigration, then picks up again in another half decade, reaches a second peak around 20 years after emigration, and finally declines. The eventual decline is consistent with the prediction of the life course

⁵ Past empirical studies have found that individuals with parents who are entrepreneurs are more likely to start up their own businesses and to succeed in entrepreneurship (Aldrich and Kim, 2007; Aldrich, Renzulli, and Langton, 1998; Davidsson and Honig, 2003; Halaby, 2003; Hurst and Lusardi, 2004; Kim, Aldrich, and Keister, 2006; Niittykangas and Tervo, 2005; Sanders and Nee, 1996). This pattern has been identified in Britain (Taylor, 2001), Denmark (Sørensen, 2007), Germany (Carroll and Mosakowski, 1987), and the United States (Dunn and Holtz-Eakin, 2000).

Table 1. Summary statistics

Variable	Mean	Standard deviation
Age	35.848	10.343
MBA degree	0.142	0.350
Business owner family	0.130	0.336
Work experience before emigration (years)	2.755	4.395
Professional ethnic network affiliation	0.064	0.284
Nonprofessional ethnic network affiliation	0.140	0.375
Host country/India GDP per capita ratio	22.066	5.173
Income	108,350	99,546
Lagged dorm mate return entrepreneurship (RE) ratio (%)	0.230	0.760
Lagged non-dorm mate RE ratio (%)	0.232	0.248
Work organization size	2.451	0.793
Work industry = IT	0.334	0.472
Work industry = finance	0.066	0.248

theory that an individual's risk-taking propensity declines with age (Elder, 1975).

Our results provide strong support for the impact of school peer influence on returnee entrepreneurship (H1): the likelihood of returning to the home country to start a business is positively associated with the proportion of dorm peers who have done the same shortly before. It is worth noting that such an association is not observed between the focal individual and those in the same cohort but outside the person's dorm, which lends further support to our hypothesis that the focal individual's choice about returnee entrepreneurship is influenced by the peer group formed in the social space of dorms, rather than being the consequence of a cohort effect. The result of dorm peer influence is robust after host country/home country GDP per capita is controlled. Figure 3 shows that the likelihood of returnee entrepreneurship is higher, i.e., the baseline curve is shifted upward, if the ratio of returnee entrepreneurship is greater among dorm network peers in the previous time period.

Our analysis also yields interesting results about peer influence from the ethnic communities. In line with our theoretical argument in Hypothesis 2, migrants who actively participate in ethnic professional networks are more likely to engage in returnee entrepreneurship than those who are outside such networks. Figure 4 plots the hazard rate curves for people who are part of these networks and for those who are not. It shows that the scale of the effect is very large; participants are, on average, 2.7 times more likely to become returnee entrepreneurs than

nonparticipants. As expected, we do not observe the same effect from the control for nonprofessional ethnic networks.

Our analysis also provides interesting findings concerning the role of the control variables. We find that overseas IIT alumni with business owner parents are more likely to return to India to start a business than those who are not from a business owner family. The other findings from the controls are largely consistent with the literature. In particular, we find returnee entrepreneurship to be positively associated with the level of host country income. We also find evidence in support of the push-pull forces at the macro level, in that participation in returnee entrepreneurship is negatively associated with host country/home country GDP ratio. However, we find no significant effect from management education.

Robustness checks

We performed a number of robustness checks to explore alternative model specifications. The results of these tests are reported in Table A-2 in the Appendix. First, we consider alternative statistical models in examining the hazard rate. We use the Cox proportional model in this study as it offers more reliable treatment of the baseline hazard and superior handling of the proportional hazards assumption. However, as a robustness check, we also estimate an alternative model specification and perform complementary log-log (clog-log) analysis. The results, as reported in Model A of Table A-2 in the Appendix, are consistent with that of the Cox model. In

Table 2. Correlation between key variables

	Age	MBA	Business owner family	Log work experience before migration	Professional network	Nonprofessional network	Host country/India GDP per capita ratio	Log income	Lagged dorm mate RE ratio	Lagged non-dorm mate RE ratio	Work organization size	Industry (IT)	Industry (finance)
Age	1												
MBA	0.0900	1											
Business owner family	0.0131	-0.0512	1										
Log work exp. before migration	0.3425	0.1358	-0.0628	1									
Professional network	0.1658	0.0523	0.0324	0.0874	1								
Nonprofessional network	0.1673	0.0279	0.0241	0.0351	0.0346	1							
Host country/India GDP per capita ratio	-0.1562	-0.0599	0.0132	-0.0897	0.0251	0.0333	1						
Log income	0.3373	0.1603	0.0361	0.0087	0.0538	0.0818	-0.0234	1					
Lagged dorm mate RE ratio	0.0122	0.0358	0.0168	-0.0146	0.0102	-0.0064	-0.0163	0.0547	1				
Lagged non-dorm mate RE ratio	0.0569	0.0111	0.0664	-0.0115	0.0170	0.0223	-0.1775	0.0370	0.0810	1			
Work organization size	-0.1279	-0.0652	-0.0421	-0.1042	-0.0710	-0.0328	-0.0432	-0.0815	0.0348	0.0348	1		
Industry (IT)	-0.1932	-0.0242	0.0012	-0.0505	-0.0097	-0.0313	0.0002	0.1046	0.0020	0.0020	-0.1131	1	
Industry (finance)	-0.1314	0.2097	0.0286	-0.0444	-0.0270	-0.0464	-0.0409	0.0707	0.0199	0.0199	0.0468	-0.2079	1

Table 3. Cox proportional hazard rate regression on returnee entrepreneurship

Variables	Hazard ratio
Lagged dorm mate RE ratio	1.335* (0.181)
Lagged non-dorm mate RE ratio	1.781 (2.085)
Professional ethnic network affiliation	2.659~ (1.542)
Nonprofessional ethnic network affiliation	0.310 (0.329)
Business owner family	4.273** (2.246)
Age	0.897 (0.063)
Log income	3.340** (1.389)
MBA degree	1.999 (1.172)
Log work experience before emigration (years)	1.434 (0.593)
Host country/India GDP per capita ratio	0.887* (0.048)
Work organization size	0.849 (0.260)
Work industry = IT	1.944 (1.045)
Work industry = finance	0.364 (0.430)
Log likelihood	-86.89
Number of observations	12,992
Prob > Chi2	0.0011
Test of proportional hazard rate assumption	0.700
Prob > Chi2	

Standard deviations are given in parenthesis. P-value key: *** < 0.001, ** < 0.01, * < 0.05, ~ < 0.1.

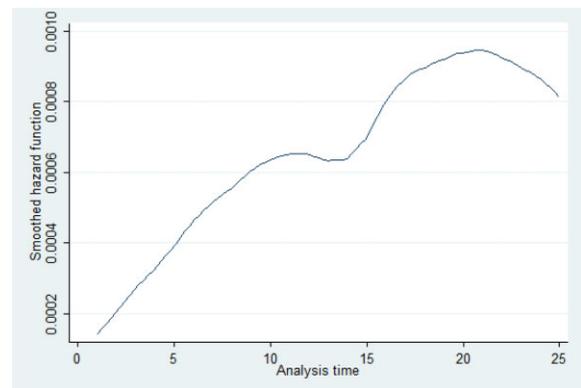


Figure 2. Hazard function of returnee entrepreneurship

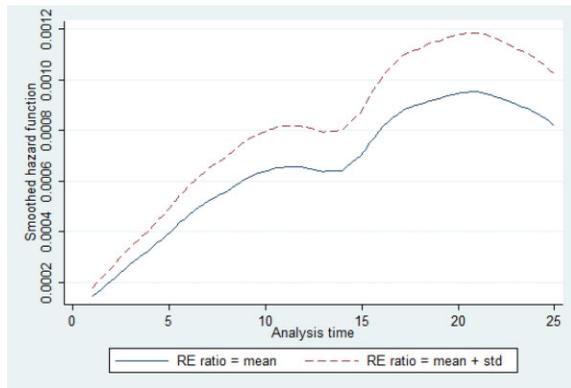


Figure 3. The effects of lagged dorm mate returnee entrepreneurship

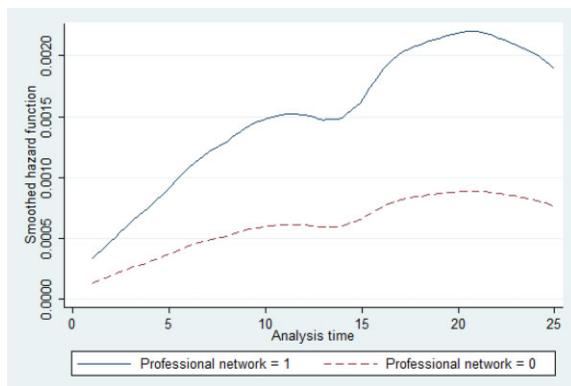


Figure 4. The effects of affiliation with ethnic professional networks

addition, we estimated a Weibull model. The results under the Weibull distribution are found to be very similar to the results in the Cox proportional model.

Second, the potential of self-selection into networks is a common challenge in social network studies.⁶ Therefore, we exploit the longitudinal feature of our data to consider the effects of associational influence in a lagged form. In fact, all the findings are confirmed in this specification, as shown in Model B of Table A-2 in the Appendix. These lagged estimations partially alleviate self-selection concerns, although the lagged effect cannot rule out the situation where the unobserved quality differ-

⁶ We cannot completely rule out this possibility, but if the intention to engage in returnee entrepreneurship is a factor influencing participation in certain networks, people must view the membership of these networks as valuable in returnee entrepreneurship, which reinforces our argument about the instrumental effects of such networks.

ences affecting selection are correlated over time. We acknowledge this as a limitation. We further address this problem by including income, education, industry, and the size of work organization as controls.

Intertemporal variation in entrepreneurial entry may also be related to the changing entrepreneurial environment (Hsu *et al.*, 2007). To account for potential impacts of environmental changes, besides using home country/host country GDP ratio to control for the macroeconomic environment, we further test year fixed effects. The directions of all the key coefficients do not change, and the effects remain significant. None of the year dummies are significant. The results are reported in Model C of Table A-2 in the Appendix.

DISCUSSION

This study fills a gap in the entrepreneurship literature regarding the mechanisms driving returnee entrepreneurship entry. Our results demonstrate that there are significant effects of social influence from peer networks; exposure to such connections engenders durable influence on career aspiration and facilitates resource and information transfer over a long time horizon and in distant locations.

The analysis reveals the importance of a particular category of social networks, i.e., peer networks that are acquired in various social settings—ties with school peers and connections with co-ethnic professional peers through voluntary associations. School peers are found to be an important social group against whom a person will benchmark career achievements throughout his/her life. We show that peers' engagement in returnee entrepreneurship influences an individual's decision to do the same. This finding contributes to the literature on social group membership (Kramer and Brewer, 1984; Williams, 2001) and also adds to an emerging research stream investigating peer influence in entrepreneurship entry. For instance, in a recent study of Harvard Business School (HBS) graduates, Lerner and Malmendier (2013) find that exposure to peer entrepreneurs improves the evaluation of entrepreneurial opportunities and also that the entrepreneurial experiences of section peers at HBS strongly predicts subsequent post-MBA entrepreneurship rates of students without entrepreneurial backgrounds. Our finding suggests that the career experiences of school peers constitute an important part

of the informational and normative environment within which individuals choose their own careers. This study also advances the empirical strategy in measuring peer influence by examining dorm peer group and the larger cohort in the university simultaneously. Our findings lend strong support to the existence of social influence within peer groups, which operates independently from the cohort effect.

There could be two possible mechanisms underlying what we observe here. The first channel for dorm peer influence is the direct or indirect interactions among the peers through the ties that are maintained over time. Returnee entrepreneurs could play a critical role in knowledge dissemination in the peer network and in encouraging others to pursue the same endeavor. An alternative mechanism could be that the presence of returnee entrepreneurs in the network alone will increase the visibility of returnee entrepreneurship as a career option. The experience of past returnee entrepreneurs may encourage others in the network to follow their steps, i.e., a case where birds of a feather flock together. This effect can take place with or without interpersonal interactions. The second mechanism—peer influence through observability—is consistent with the views offered by many IIT alumni in our interviews. As one of our interviewees put it, ‘There are two important invisible business cards you carry when doing business in India. People know you by your family name and the school you attended.’ This suggests both a reputation and a network effect. Perhaps when there is uncertainty in a particular career prospect and it is difficult to make a rational calculation of costs and benefits, individuals may follow the steps of their peers.

We also extend the literature concerning social ties in professional networks; we find significant positive influence of professional peers with the same ethnicity, as depicted in Figure 4. In identifying various mechanisms through which social structures affect economic action, Portes and Sensenbrenner (1993) contend that exchange through social networks does not always entail positive consequences. Our results are in line with this argument. Membership of professional ethnic networks enhances the probability of returnee entrepreneurship, while involvement in nonprofessional ones does not show the same effect. This is consistent with the view that ethnic networks, mainly of a cultural, religious, or social nature, do not have instrumental effects on returnee entrepreneurship. Indeed, those who are more embedded in the ethnic communities in the host country for social and cultural

reasons can be even less motivated to return to the home country. Thus, we find suggestive evidence that social networks do not always serve as catalysts to entrepreneurship, depending on the nature of the networks.

We also confirm the importance of entrepreneurial parental ties in inducing entrepreneurship (Halaby, 2003; Sørensen, 2007), providing further evidence on the sustained effect of parental ties over a migrant’s career. Our other control variables on income and macroeconomic conditions also have the expected significant effects on returnee entrepreneurship. There are two possible mechanisms underlying the positive association between host country income and returnee entrepreneurship. One has to do with resource availability. The income in the host country largely determines the amount of financial resources a migrant is able to mobilize to return to the home country and start a new venture. This result could also be explained by the positive selection idea in the international migration literature—that return migration occurs when migrants achieve their predetermined saving goals.

CONCLUSION

Drori, Honig, and Wright (2009) have highlighted the importance of returnee entrepreneurship, especially in emerging market contexts. In this article, we explore theoretically and empirically the determinants of returnee entrepreneurship using a unique dataset of overseas alumni from a top university in India. Our study is the first of its kind to systematically examine the role of social factors in returnee entrepreneurship entry. The prevalent approach to returnee entrepreneurship focuses on the rise of entrepreneurial opportunities in the fast-growing home countries and returnees’ ability to leverage the skills and resources they accumulated abroad to take advantage of, or reshape, such opportunities. However, very little attention has been devoted to what leads to the exploitation of such opportunities by migrants and who are more likely to do that.

We hypothesize that in addition to the factors discussed in the extant literature, the decision by emigrants to return and create a new business in their country of origin would be affected by a variety of social factors. In particular, contrary to the conventional view that treats returnee entrepreneurship entry as discrete decisions by individuals, we examine the transmission of entrepreneurship

through important peer networks—university peer networks and co-ethnic association networks. We propose the lasting effects of school peer influence funnelling entrepreneurship entry in distant locations. We have also developed a theoretical framework to analyze the influence of ethnicity-based professional peer groups on returnee entrepreneurship. Although the importance of associations have been noted in a few empirical studies (e.g., Saxenian *et al.*, 2002), these studies are largely descriptive. For instance, Saxenian's study of professional associations among migrant communities in Silicon Valley offers important insights into the prominence and value of such networks, but it sampled only members of these associations.

Using a dataset especially well designed for this issue, we test these hypotheses and our results are supportive of our predictions. Thus, our findings suggest that in elite engineering schools in emerging economies, the peer ties formed in the early years of university study, on the basis of location within dorms, play a significant role in subsequent career choices and affect entrepreneurship entry in the home country. We also find co-ethnic professional networks developed after migration facilitate engagement in returnee entrepreneurship.

Nonetheless, our study has certain limitations. Our dataset is well suited to address our research questions in many ways, but by design it focuses only on those with technical education, rather than on people with different intellectual backgrounds. This may have an influence on the range of individual characteristics we cover in our models. Future research may wish to explore whether our results hold for a wider variety of elite schools from emerging markets or whether they could be generalized to the broader population of highly skilled migrants. It might also be useful to have more information about the characteristics of businesses to which the returnees came back.

We believe our findings not only shed light on the mechanisms of returnee entrepreneurship (an underinvestigated subject in the entrepreneurship literature), but also contribute to theory development around the role of social capital in entrepreneurship in general, by further developing the concept of social influence, differentiating various forms of social influence, and analyzing their distinct effects.

Our study points to the importance of social influence in determining returnee entrepreneurship and has important policy implications. While governments of the home countries of highly skilled

migrants have strived to tap their overseas talent pools and to attract their best and brightest to repatriate, the policies have primarily been oriented toward promoting formal institutions and economic incentives. Our work demonstrates a strong social amplification effect through networks and suggests that informal networks, especially those connecting alumni and ethnic professionals, are also important channels to induce return migration and entrepreneurship among highly skilled migrants. Moreover, we find support for the view that social connections can function as substitutes for formal institutional support in emerging markets (Xin and Pearce, 1996). In short, the research highlights the critical role of social connections for entrepreneurship—and especially returnee entrepreneurship—and provides a detailed account of the varying effects of different types of social influence and the mechanisms through which each type of social influence works. This can offer important practical implications for policy makers and practitioners.

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APPENDIX

Table A-1. Kolmogorov-Smirnov two-sample test for early and late respondents

Characteristics	Kolmogorov-Smirnov d-statistic	P-value
Log income	0.1056	0.406
Log work experience before emigration (years)	0.0309	1.000
Business owner family	0.1013	0.198
Age	0.0810	0.438

Table A-2. Robustness checks (Cloglog model and Cox models)

Variables	Model A	Model B ⁺	Model C
	Cloglog model	Cox model (Lagged association effect)	Cox model (Year fixed effect)
	Coefficient	Hazard ratio	Hazard ratio
Lagged dorm mate RE ratio	0.387** (0.135)	1.307* (0.181)	1.290~ (0.188)
Lagged non-dorm mate RE ratio	0.263 (1.169)	1.640 (1.959)	1.042 (1.947)
Professional ethnic network	1.118* (0.509)	3.619** (1.817)	3.091~ (1.841)
Nonprofessional ethnic network	-1.351 (1.072)	0.299 (0.321)	0.346 (0.367)
Business owner family	1.658*** (0.501)	4.557** (2.422)	4.552** (2.446)
Age	-0.099 (0.075)	0.890~ (0.062)	0.891~ (0.062)
Log income	1.392*** (0.399)	3.353** (1.410)	3.134** (1.328)
MBA degree	0.631 (0.578)	2.177 (1.289)	2.139 (1.279)
Log work experience before emigration (years)	0.395 (0.415)	1.409 (0.587)	1.521 (0.634)
Host country/India GDP per capita ratio	-0.131* (0.053)	0.885* (0.048)	0.924 (0.072)
Work organization size	-0.085 (0.306)	0.828 (0.254)	0.862 (0.267)
Work industry = IT	0.789 (0.524)	1.936 (1.040)	1.715 (0.959)
Work industry = finance	-0.839 (1.143)	0.371 (0.439)	0.291 (0.351)
Elapsed time	0.031 (0.075)		
Year fixed effect			Yes
Log likelihood	-114.50	-85.66	-76.61
Number of observations	12,992	12,992	12,992
Prob > Chi2	0.0001	0.0005	0.0048
Test of proportional hazard rate assumption Prob > Chi2		0.704	0.9366

Standard deviations are given in parenthesis. P-value key: *** < 0.001, ** < 0.01, * < 0.05, ~ < 0.1.

⁺In Model B, professional ethnic network takes the lag form.