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Human Mobility and Returnee Entrepreneurship: Evidence from Mexico

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Abstract

Three main obstacles to entrepreneurship in developing economies have been identified: (1) limited access to reasonably priced financing, (2) shortage of skilled and educated labor, and (3) a lack of social and institutional support for entrepreneurial activity. Tapping a comprehensive survey of individuals crossing the U.S.-Mexican border between 2004-2009, our study investigates the role of migrant work experience in overcoming these obstacles. Controlling for pre-migration attributes, we find that cross-border work experience may reduce key entrepreneurial obstacles as migrants who gain human capital through on-the-job training while working in the U.S. and those who are exposed to an entrepreneurial-supportive social context via employment in entrepreneurial firms in the U.S. are more likely to employ remittances for entrepreneurial activities. Indicative of the importance of easing financial constraints, we find that the likelihood that remittances are used for entrepreneurial activities increases with the absolute level of remittances (total dollars sent back). Recent studies have shown a high-level of entrepreneurship by foreign-born professionals who return to their native country after working in the United States. Our study adds to this literature providing initial evidence that this phenomenon also holds for lesser skilled returnees.

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Introduction

The link between migration and entrepreneurship has intrigued scholars for many years. Early work focused on ethnic enclaves and ethnic entrepreneurs. Entrepreneurial activities originating from these immigrant communities were thought to arise as either a defensive response to limited external opportunities or as a strategic exploitation of internal, group-specific, opportunities (Light, 1972; Aldrich and Waldinger, 1990). Entrepreneurship offered a viable recourse for those facing discrimination in the labor market. Two paths were common. Enclave entrepreneurs emerged to serve the unique needs of the ethnic community, such as providing foreign language newspapers or traditional foods. Others, known as middleman minorities, leveraged cultural knowledge and connections to facilitate trade between the host and origin societies (Bonacich, 1972).

More recent work has re-introduced the idea of mobility, coining the term transnational entrepreneurs to represent foreign-born individuals who travel frequently in support of entrepreneurial endeavors that span and leverage social networks rooted in both their home country and their host country (Portes, et. al., 2002; Saxenian, 1999, 2002). Though present within numerous sectors, intense transnational activity has emerged in the high-technology industry shepherded by an elite set of highly-educated, highly-skilled migrants (Saxenian, 2007). These individuals combine global contacts with technical know-how to facilitate private equity investments and multi-national firm development.

A third group of migrant entrepreneurs that have received somewhat less attention in the literature are returnee entrepreneurs. These entrepreneurs act at the intersection of ethnic entrepreneurship and transnational entrepreneurship (Drori, et. al.). Returnee entrepreneurs

differ from traditional ethnic entrepreneurs in that they return to their home country to open new local ventures. They differ from the “transnational entrepreneur” in that they do not accentuate bi-nationality but center their ventures in a single country. Though returnee entrepreneurs may leave business ties behind, they take with them the business skills and knowledge acquired from their cross-border experiences. The social capital that circulates between Mexico and the U.S. as migrants return to Mexico after working in the U.S is especially important. Social remittance theory suggests that individual’s experiences prior to return migration may have a profound effect on both what they remit, as well as what they do when they return (Levitt, 2010). Access to business skills may be particularly important for those individuals that initiated their original migratory journey from a low-education, low-skill position.

Moving beyond classification, understanding what distinguishes between migrants that choose to engage in entrepreneurial actions from those who do not is important. Entrepreneurial theory has broadly explored how individual-level factors influence entrepreneurial behavior. For example, the lack of financial resources has been widely shown to be a significant detriment to entrepreneurial activity (Cooper, Gimeno-Gascon, & Woo, 1994; Evans & Jovanovic, 1989; Evans & Leighton, 1989). Controlling for availability of financial resources, the literature then turns to levels of human capital, social capital, and institutional regulations to understand entrepreneurship propensity (Bates, 1990; Davidsson & Honig, 2003). Social remittances generally increase investments in human capital in countries of origin (de Haas, 2007).

Using survey data of Mexican migrants, this article explores the combined role of remittances and migrant experience on entrepreneurial activity of returnee migrants, accounting for which country (U.S. or Mexico) provides the financial, entrepreneurial and human capital

levers. The unique dataset captures the differential effects of important entrepreneurial exposure and human capital variables such as on-the-job training in both home and foreign countries, education, job continuity, salary and the acquisition of general vs. specific skills on the likelihood of starting a business in one's home country.

We begin by providing a brief overview of Mexico-U.S. migration flows, associated remittances levels, and the entrepreneurial landscape in Mexico. We then leverage the entrepreneurship literature to develop our hypotheses linking cross-border work experience with entrepreneurial activity. Next, we describe our data and methods, and present our results. We conclude by discussing the implications and limitations of the study and by providing suggestions for future research.

Study Context

Migration at the U.S.-Mexico Border¹

Between 1970 and 2007, the Mexican-born population in the United States increased significantly, growing from below 1 million to a peak of 12.6 million. Mexico, which accounts for 30% of all current migrants living in the U.S., sends six times the number of migrants to the United States as does China, the second largest source country. Approximately half of these Mexican migrants (51%) entered the country without authorization. Compared with other immigrants to the U.S., Mexican-born immigrants are younger. The median age of a Mexican-born migrant living in the U.S. is 37, approximately 6 years younger than the average age across other migrant groups. Education levels are also lower. Of the Mexican-born migrants 25 or older, less than 5% are college graduates and only 40% have completed high school. For other

¹ The data in this section is drawn from the recent PEW Report: Passel, J., Cohn, D. and Gonzalez-Barrera. 2012. "Net Migration from Mexico Fall to Zero – and Perhaps Less," *Pew Research Center/Pew Hispanic Center*.

immigrants, these numbers are 36% and 79%, respectively. In addition, Mexican-born migrants are both poorer and less likely to speak English than those from other immigrant groups.

In the past decade, there has been a remarkable shift in the population flows across the Mexican-U.S. border. In response to the widespread slowdown in the American economy and the intensified enforcement at the U.S. border, inflow has decreased by nearly half while the outflow has almost doubled. Currently, net migration rates are close to zero and the population of Mexican-born individuals in the U.S. has leveled off at 12M. Between 2004 and 2008, just shy of the time period of this study, an estimated 1.7M individuals migrated from Mexico to the United States, while a slightly lower number, approximately 1.3M, returned to Mexico from the United States. The growth in this unique returnee population provides the opportunity for, and highlights the importance of, increasing our understanding of the economic ramifications of such movements.

Remittances

During the time that they are in the U.S., the majority of Mexican-born migrants send money back to family in Mexico. One recent survey of head-of-household migrants found that 71% of these individuals remitted, sending an average of \$450 home each month (Amuedo-Dorantes, et. al., 2004). According to the U.S. Congressional Budget Office, total remittances sent from the U.S. to Mexico averaged \$18.25B a year during the 2004-2008 period (CBO, 2011). Worldwide, remittances to Mexico were \$21.2 billion in 2009 constituting the second highest source of foreign income for the country after oil exports (Banco de Mexico).

This level of financial transfers is clearly material and would seemingly have the potential to spur significant economic development. While information on the uses of remittances is limited, existing data suggest that only a small proportion of these funds are

leveraged for entrepreneurial activity (IME, 2006). Remittances are primarily used for consumption, with expenditures for healthcare, food, and lodging being most common. (Durrand and Massey, 1992; Zarate-Hoyos, 2004). Fewer migrants state that remittances sent will be used for investment purposes – with less than 1% claiming business start-up or expansion as the primary reason for remitting. However, when investment is mentioned as a primary motivation, the dollar values transferred tend to be larger (Amuedo-Dorantes, et. al., 2004). An open question is what factors differentiate the subset of individuals that chose to apply remittances to entrepreneurial activities from those that do not.

Entrepreneurship in Mexico

There is currently a great deal of interest in catalyzing entrepreneurship in Mexico as a means to spur innovation and economic growth (Mittelstadt & Cerri, 2009).² To date, however, success on this front has been elusive. Though Mexico did experience a 27% rise in the number of new businesses created between 2005 and 2008, relatively few of these firms have grown to any substantial size (Ernst and Young, 2011). Recent studies of the Mexican economy have identified three main obstacles to beyond-subsistence entrepreneurship: (1) limited access to reasonably priced financing– short-term interest rates and bank overhead costs are high in Mexico; (2) shortage of skilled and educated labor; and (3) a lack of social and institutional support for entrepreneurial activity (Mittelstadt & Cerri, 2009).³

Circular migration – movement of workers from Mexico to the U.S. and then home again – could conceivably provide an avenue for mitigating each of these obstacles. In the section that

² Entrepreneurship has been shown to be positively correlated with economic growth (Klapper, Amit, and Guillen, 2010).

³ Self-employment is quite high in Mexico, comprising an estimated 25% of the Mexican workforce. However, close to 90% of these self-employed individuals work by themselves, having no employees (Farlie and Woodruff, 2007).

follows, we build from the entrepreneurship and migration literature to develop hypotheses linking cross-border work experience with entrepreneurial activity.

Hypotheses

Financial Capital

Entrepreneurial activity requires both the recognition of an opportunity and the willingness and capability to assemble the resources necessary to exploit the opportunity identified (Shane and Venkataraman, 2000). Perhaps the most fundamental input in the entrepreneurial process is financial capital. For most ventures, the first source of capital tapped is that of the founders themselves, their friends and/or their family. Access to such funds is particularly important in economies where there are limited institutional sources of affordable financing. This is the case in Mexico. The institutional venture capital sector in Mexico is underdeveloped; in 2007 the level of venture capital as a share of GDP was only 0.0003% (Lerner, 2010). Similarly, bank financing, given the high overhead costs and large interest margins of Mexican banks, is rarely a viable option for Mexican entrepreneurs (Mittelstadt & Cerri, 2009; Chen, 2001). Unfortunately, with a Gini coefficient of 51.7 in 2008, excess in the family budget is also relatively rare for a large section of the population in Mexico. Remittances, funds sent back by immigrants working abroad, are thus a lifeline for many Mexican families. While supporting basic living expenses is a major use of such transfers, there is the possibility that, once such needs are met, remaining funds can be used to provide start-up capital. In this respect, remittances may serve to relax capital constraints and spur entrepreneurial activity by providing an accessible pool of investment funds (Woodruff and Zenteno, 2001, Dustmann and Kirchkamp, 2002). Thus, we hypothesize:

H1: There is a positive relationship between the amount of remittances sent back to Mexico and the likelihood that part of these remittances will be used for entrepreneurial purposes.

Human Capital

In addition to financial resources, human capital is also considered to be an important input for entrepreneurial action. Human capital, the skills and knowledge acquired through education and work experience, shapes an individual's career prospects (Becker, 1962, 1994). Individuals have been shown to be more likely to pursue entrepreneurial opportunities, and subsequently be successful in this pursuit, if they have relevant know-how and experience (Ucbasaran, Westhead and Wright, 2008; Unger, Rauch, Frese and Rosenbusch, 2011). The combination of a weak educational system and limited work-force training opportunities has left Mexico with a human capital deficit (Mittelstadt & Cerri, 2009). The country falls significantly below the United States, Japan, and OECD averages in literacy, mathematical, and scientific proficiency (OECD PISA database, 2009; UNESCO Institute for Statistics,). This deficit is arguably a significant obstacle to entrepreneurial activity.⁴ Thus, identifying means and/or mechanisms for building and extending human capital is crucial if entrepreneurship is to play a role in Mexico's economic development.

Migration, and the potential to accumulate human capital through the relocation experience, has been nominated as one possible solution (Ma, 2001). If, through their employment activities in the U.S., returning migrants can gain or deepen their skills, they may be better positioned to take the entrepreneurial path. As noted by Becker (1962), firms make investments in on-the-job training to raise the future productivity of their workers. In most

⁴ Lofstrom and Wang (2006, 2007) and Fairlie and Woodruff (2010) find empirical support for the hypothesis that differences in self-employment and business ownership between Mexican-Hispanics and Whites in the U.S. is partially due to the lower education attainment and subsequent human capital constraints of the former group.

cases, the training an employee receives is not entirely specific to the job at hand but, once absorbed, may be redeployed to other related activities and/or other work situations (Schultz, 1961). For instance, training on how to make successful sales calls, a skill essential for prospective entrepreneurs, may be applied to generate customers for a range of products or services. In addition to providing key business skills, on-the-job training and the associated accretion of human capital raise the potential for opportunity discovery (Davidsson and Honig, 2003). Through the exposure to new challenges and the acquisition of new skills, employees may gain new insights into problems as well as broader problem-solving capabilities. As such, we argue:

H2a: Individuals that received “on-the-job” training while in the U.S. are more likely to use remittances for entrepreneurial purposes.

Relatedly, tenure and focus of work experience contributes to the development of human capital. Individuals that anchor their activities in a particular industry or a trade have the opportunity to develop deep knowledge that can provide a solid foundation for related entrepreneurial activities (Cooper et. al., 1994). Simon and Chase (1973) argue that it takes ten years of experience in a specific role or industry for an individual to become an expert. Expertise, in turn, has been shown to both influence opportunity identification (Shane, 2000) and increases the likelihood of successful opportunity exploitation (Gimeno et. al., 1997). With respect to the first, individuals with extensive experience gain perspective on both what creates value in their line of business as well as an awareness of the limits and weaknesses of existing offerings. In this sense, focused experience supports entrepreneurial alertness, a key precursor to the discovery of potentially valuable opportunities (Kirzner, 1997; Foss and Klein, 2009). With

respect to the second, on-going participation in a specific field enables individuals to develop processes and routines, build repertoires of pertinent skills, and generate market understanding. It is the accrual of such relevant know-how, and the potential for such know-how to reduce uncertainty and mitigate liability of newness, that engenders confidence and may spur an individual to pursue entrepreneurial opportunities identified along the similar trajectory (Colombo and Grill, 2005). Thus we hypothesize:

H2b: Individuals that show career continuity – extending their human capital by pursuing the same job type in the U.S. as they previously held in Mexico – are more likely to use remittances for entrepreneurial purposes.

In addition to the value of deep function-specific knowledge gained from career continuity, the character of the work experience may also have implications for entrepreneurial activity. Lazear (2004, 2005), for example, highlights the value of general human capital that may be acquired through work experience variety. It is commonly asserted that a central task of the entrepreneur is to assemble the broad set of resources needed to exploit an opportunity. Even to open a small retail venture, an entrepreneur would need to obtain funds, oversee store construction or leasehold improvements, acquire and manage merchandise, hire and train employees, generate and serve customers, as well as handle accounting tasks and maintain positive cash flow. In order to successfully bring together and supervise such a wide array of resources, the entrepreneur needs to have at least a basic understanding of all these areas. Breadth of experience acquired through work varies by the nature of the job and position. Some occupations both require, and provide an opportunity for, workers to engage in a complex set of interactions with co-workers, customers, and suppliers. Others may give workers experience

with a broader range of responsibilities across operations and processes. Rather than deep job-specific human capital, entrepreneurship requires “jack-of-all-trades” individuals who are broadly competent (Lazear, 2004). As such it may be that generalists, or those that have held positions with more expansive tasks requirements, are more likely to engage in entrepreneurial activity than specialists. Acquiring a broad skill set may be particularly important in the Mexican context where the vast majority of entrepreneurial ventures are quite small and the entrepreneur must take on many roles in operating the business.⁵ Thus, we propose:

H2c: Individuals that acquire a greater range of experience during their tenure in the U.S. are more likely to use remittances for entrepreneurial purposes.

Entrepreneurial Exposure

Finally, neither access to capital nor availability of skills is likely to lead to entrepreneurial behavior unless such behavior is deemed valuable and viable. Shapero (1982), in his model of entrepreneurial intentions, argues that the decision to start a business rests on perceptions of both feasibility and desirability and that such perceptions are, in turn, shaped by an individual’s prior exposure to entrepreneurial activity. Two types of exposure, whether an individual has family active in entrepreneurial endeavors (Krueger, 1993; Dushesneau and Gartner, 1990) and whether an individual has had hands-on experience with entrepreneurial companies (Aldrich, 1990) appear to significantly raise the likelihood that an individual will, themselves, become entrepreneurial. Experience in the U.S. may provide relevant exposure to such entrepreneurial activity for the migrant worker.

⁵ More than 95% of the businesses in Mexico are “micro-enterprises” employing 0-10 individuals. (OECD, SMEs in Mexico 2007)

Exposure to entrepreneurship through family connections is expected to be particularly salient in our context as the family plays a central role in Mexican culture.⁶ In addition to providing emotional support, strong kinship ties transfer information, attitudes, and aspirations. Previous research has shown that the initial decision to migrate (i.e., “the culture of migration”) is significantly influenced by an individual’s family ties as migrant-supporting values are spread from current migrants to non-migrants through these channels (Kandel and Massey, 2002). Relatedly, studies of entrepreneurship in Mexico have found that family encouragement (especially by one’s mother) is an important motivating factor for start-up activity (Young and Welsch, 1993). On average, entrepreneurial ventures started by Mexican-Americans in the U.S. are more successful than comparable Mexico-based ventures – the failure rate of entrepreneurial ventures in Mexico is higher, the rate of growth is lower, and the level of profits is lower.⁷ Those migrants that have an opportunity to work in a family-owned business while in the U.S. have a greater chance of experiencing a viable effort and are thus likely to become more positive regarding both the feasibility and desirability of such entrepreneurial actions. As such we hypothesize,

H3a: Individuals that worked at family-owned firms in the U.S. are more likely to use remittances for entrepreneurial purposes.

Similarly, a migrant’s belief about the attractiveness of entrepreneurial activities can be gained through direct, self-generated, experience. The literature on ethnic entrepreneurship and

⁶ Familism, which involves a “deeply ingrained sense of the individual being inextricably rooted in the family,” is considered to be a defining attribute of the Latino community (Bacallao and Smokowski, 2007: 53)

⁷ Within the U.S., however, the rate of start-ups as well as the performance of businesses started by Mexican-Americans or Mexican immigrants is lower than the U.S. national average (Fairlie and Woodruff, 2010).

immigration has long pointed to entrepreneurship as a source of economic opportunity for disadvantaged groups that face discrimination in the labor market (Glazer and Moynihan, 1970). More specifically, a migrant may opt for self-employment out of necessity, but through the process may acquire both a taste for, and accumulate the skills necessary for, such a career path. Such immersion-driven inculcation may shape the future employment choices of returning migrants.

H3b: Individuals that have worked as entrepreneurs in the U.S. are more likely to use remittances for entrepreneurial purposes.

Data and Methodology

Data

Our study takes advantage of a comprehensive survey about migration on Mexico's northern border called "Encuesta sobre Migración en la Frontera Norte de México" (EMIF). The U.S. – Mexican border extends over 1864 miles. Migrants cross the border at 23 localities, out of which eight localities account for 94% of the migratory flows in both directions. The survey is conducted in these eight cities. We use the part of the survey that analyzes migrants that cross the border from the U.S. to Mexico. The EMIF survey is applied separately to two types of migrants: the ones that return voluntarily to Mexico and those who are "returned" by the U.S. border patrol. We focus on the migrants that return voluntarily to Mexico because these individuals are expected to be more likely to answer questions about their U.S. based activities truthfully. We also limit the sample to returning migrants who give Mexico as their primary home or base

residence as these individuals better reflect the returnee entrepreneur as they are more likely to have made plans to stay in Mexico.

There are three sampling regions: the Eastern Region, which includes the border cities of Piedras Negras, Nuevo Laredo, Reynosa, and Matamoros; the Central Region, which includes the cities of Nogales and Ciudad Juárez; and the Western Region, which includes Tijuana and Mexicali. In each of these cities, surveys are conducted at the bus station central (or the bus lines' central station), the airport, the international crossing bridges, immigration checkpoints ("garitas"), and Mexican customs inspection points. The survey is conducted in each quarter in order to account for different migratory flows across time. We use the surveys from 2004 to 2009 since the question regarding the use of remittances was first added to the survey in 2004. On average, 6,900 surveys are collected each year.

Dependent Variable

Our dependent variable is a measure of remittance-based entrepreneurial activity. As such, we restrict our analysis to those survey respondents who sent money to Mexico and who answered the questions about the use of these remittances.⁸ Specifically, the survey asks respondents whether remittances sent were used to open or expand a business. We code a dummy variable, where 0="No" and 1="Yes" based on responses to this question. Approximately 7.6% of those individuals who sent remittances back, answered this question affirmatively.

Independent Variables

⁸ Though a total of 34,583 surveys were collected in the 2004-2008 period, only slightly more than a quarter of the respondents (8,904) affirmed that they sent money and answered the questions about remittances.

Our first independent variable, used to test H1, is a measure of financial resources. Respondents provided information about the total amount of remittances (in U.S. dollars) that they sent back to Mexico. The mean value of remittances sent was \$2,626 with a maximum value of \$9,800. Remittances can be used for many purposes. Purchasing food and paying rent are the most common uses cited, with 85% of the respondents indicating expenditures in these categories.

Our next three independent variables capture human capital dimensions. First, we created a dummy variable to indicate whether the respondent received on-the-job training while employed in the United States. In hypothesis H2a, we argue that such training enhances the human capital of the employee and thus may increase subsequent entrepreneurial activity. Second, to test hypothesis H2b, we coded another dummy variable to represent whether the respondent was employed in the same type of job in Mexico immediately prior to their employment in the U.S. We argue that continuity in employment focus provides the individual the opportunity to enhance human capital as the worker builds expertise in a particular occupation. Third, we used detailed data provided about job type and job activities in the survey, along with the Dictionary of Occupational Titles⁹ to characterize U.S. work experience as being either the province of high or low general human capital, based on the premise that every job requires a worker to function, to some degree, in relation to people and things. The identifications attached to these relationships are referred to as Worker Functions, and provide standard terminology for use in summarizing how a worker functions on the job. They appear in the form of listings arranged in each instance from the relatively simple to the complex in such a manner that each successive relationship includes those that are simpler and excludes the more

⁹ The US Dept of Labor supplies this information. For more information see: <http://www.occupationalinfo.org/index.html>

complex. For example, a machine operator would be considered to have high general human capital with respect to things, but low human capital with respect to people. This last variable was used to investigate H2c.

The final set of independent variables, (used to test H3a and H3b), are measure of entrepreneurial exposure while in the United States. The survey asks about the type of assistance that the migrant received from family located in the same city as their U.S. destination. One category of assistance was that family provided employment (this category was distinct from family providing assistance in finding a job with another employer). The ability of the family to provide employment indicates the existence of a family-run business which, as documented in many previous studies of immigrant or minority-owned small businesses (e.g., Shin and Han, 1990), often hire relatives in start-up and early growth stages to control labor costs and to benefit from the trust and commitment accorded to family ties. A dummy variable, coded as 1 if the family provided employment and zero otherwise, is used to capture entrepreneurial exposure resulting from such employment. About 8% of the survey respondents reported employment by family. The second entrepreneurial exposure dummy variable is an indicator of whether the respondent was their own boss or whether they worked independently while they were in the U.S. Such self-employment is often associated with entrepreneurial activities (Hamilton, 2000; Parker, 2009).

Control Variables

We include several sets of control variables in our analysis. To confirm that entrepreneurial activity is related to the human capital and/or entrepreneurial exposure gained through work experience in the United States, it is essential that we control for the pre-migration

work-related human capital of the survey respondents. To do so, we have coded Mexico-based human capital variables that replicate the U.S.-based human capital variables detailed above. First, we control for whether the migrant received work training through jobs held in Mexico (1=Yes, 0=No) prior to their employment in the U.S. A surprisingly small number, only 4% of the respondents, declared that they had received on-the-job training while employed in Mexico. To control for pre-existing expertise, or depth of job-specific knowledge, we also created an indicator variable reflecting continuity of employment focus while in Mexico. Specifically, respondents were asked if their previous work experience in Mexico was in a similar type of job as the job they held in Mexico immediately prior to crossing the border to seek work in the U.S. Affirmative responses were coded as “1”, negative responses were coded as “0”. Finally, a generalist/specialist dummy variable for work experience in Mexico was coded using the same categories for job type and job activities used in the coding of the U.S.-based variable. As might be expected, migrants were much more likely to be employed as “generalists” in the United States than in Mexico. Similarly, we control for entrepreneurial experience in Mexico using an indicator of self-employment. In addition to work-related human-capital, we control for the education level of the migrant, coding high educational capital as having obtained a bachelor, professional or post-graduate degree.

We also control for the migrant’s access to resources while in the United States. First, we account for the daily salary earned by the migrant. Second, we control for whether the migrant received material assistance from family in the U.S. Specifically, we include dummy variables (1=Yes, 0=No) indicating whether local family members provided assistance by (1) lending the migrant money; (2) helping with lodging or food; (3) aiding the migrant in finding a job; or (4) providing other (non-specified) resources.

Key demographic control variables have also been added to the model. We control for gender (Male=1, Female=0) as previous studies have shown that males are more likely to engage in entrepreneurship (Brush, 1992; Minniti and Nardone 2007). Age, which has been identified as an important triggering factor of entrepreneurship (Reynolds, 1997; Levesque and Minniti, 2006), is also controlled for in the analysis. Following the literature that shows a curvilinear relationship between age and the rate of entrepreneurship, we generate an age dummy coded as 1 if the migrant is between 25 and 34, and 0 otherwise. This age range is the “entrepreneurial sweet spot” as, according to a key study, the prevalence of startups among those of ages 25-34 is twice the average rate (Reynolds, 2000). A variable capturing the number of dependents supported by the migrant is also included, as such responsibilities are believed to increase the perceived opportunity cost of entrepreneurship. Those with large immediate families or responsibilities for large extended family may select the relatively certain wages of employment over the less certain residual returns associated with entrepreneurship. Finally, we control for survey year to capture business cycles and economic changes over time. Specifically, we included a recession dummy variable indicating whether the migrant was returning to Mexico post-recession onset in 2008 or 2009.

Descriptive statistics and correlations are presented in Table 1.

Insert Table 1 about here

Methodology

Given the dichotomous dependent variable, we use a logit estimation procedure. First, however, we account for survey sampling design characteristics that may affect the point estimates and standard errors calculations via Stata's *svy* commands.

Results

Table 2 provides estimates of the probability that remittances were used for entrepreneurial activity. Model 1 presents a baseline model, while Model 2 is the full model that contains all independent variables. We use Model 2 as the reference model in the discussion of results below.

Insert Table 2 about here

As predicted, the amount of remittances sent back to Mexico and the likelihood that part of these remittances will be used for entrepreneurial purposes are positively related ($p < 0.001$). Thus, we find support for H1. Once basic consumption needs are met (e.g., food, lodging, education), remaining funds may be used in support of entrepreneurial activities. In this way, remittances provide one means to address the endemic capital constraints of the Mexican market.

We turn now to the human capital variables. In support of H2a, we find that receiving on-the-job training during U.S. employment significantly increases the probability that a migrant's remittance dollars will be allocated to business start-up or expansion efforts ($p < 0.001$). Interestingly, on-the-job training received in Mexico does not have the same generative effect – the relationship between such training and entrepreneurial action is not significant. Clearly, there is a pertinent difference in the quality and/or focus of the training programs provided

workers in the two locales. The ability to accumulate human capital through the relocation experience thus seems to offer a pathway for overcoming skill deficits and catalyzing entrepreneurial undertakings. Relatedly, the coefficient on the job continuity variable is positive and significant ($p < 0.05$). This finding is in-line with expectations, per H2b, that building expertise within a career domain through steady efforts can position an individual to recognize and take advantage of entrepreneurial opportunities. As in the case of on-the-job training, the benefits of domain persistence that accrue with cross-border experience are not evident with previous employment consistency within Mexico. The coefficient on this control variable is negative and not significant.

A positive relationship is found between a migrant engaging as a “generalist” in U.S. employment and expending remittances on entrepreneurial ventures ($p < 0.10$). As such, we find modest support for H2c. Unlike the other human capital measures, however, a negative relationship is also found when such “generalist” experience is acquired through previous work in Mexico. It seems that building a wide-array of skills while working in cross-border employment increases confidence in one’s ability to handle the broad demands that come with starting and/or growing a small business. The negative coefficient on the generalist experience gained in Mexico variable implies a higher opportunity cost to entrepreneurial activity for returning migrants having generalist work history in Mexico.

Our results for the entrepreneurship exposure hypotheses (H3a and H3b) are mixed. H3a is supported as we find that those migrants who are employed in family-owned businesses while in the U.S. are more likely to direct their remittances to similar entrepreneurial activities in Mexico ($p < 0.05$). Through active involvement in a family-operated enterprise, credible and concrete information about both the requirements for, and the feasibility of, such entrepreneurial

efforts is conveyed to the migrant. This allows for the conversion of previous “unknowns” into “knowns” which may reduce the perception of risk, seed entrepreneurial aspirations and spur start-up activities. Counter to expectations, those individuals with an entrepreneurial history of self-employment, either while in the U.S. or previously while in Mexico, show no significant propensity to leverage remittances to support further entrepreneurial undertakings. Thus, H3b is not supported. Consideration of the motives underlying self-employment status provides a possible explanation for this puzzling result. In some instances, self-employment may be chosen due to a lack of better employment options, a case of necessity entrepreneurship. In others, self-employment may be voluntarily selected in order to pursue an identified opportunity, a case of opportunity entrepreneurship (Acs, 2006; Hechavarria and Reynolds, 2009). Perceptions about the desirability of entrepreneurship have been shown to be much lower in the former case as compared to the later, controlling for the financial success of the new venture (Block and Koellinger, 2009). If necessity is the driver of self-employment for a large proportion of the individuals in our sample, which is not an unreasonable supposition given relatively low human capital levels of many, it would be unlikely that such experience would imprint the migrant with an entrepreneurial orientation.

Several of the demographic control variables are significant. With respect to age, our findings were contrary to expectations. Migrants between the ages of 25 and 34, ages thought to be in the “entrepreneurial sweet spot,” were found to be less likely to than their older or younger peers to direct remittances to business start-up and/or growth ($p < 0.05$). This negative relationship may be an artifact of the context of our study. Previous research on Mexican migrants and remittances show that one of the primary purposes of those who remit is to educate children (Amuedo-Dorantes, et. al., 2004). Therefore, for this group, it appears that those who

are most likely to use remittances for entrepreneurial purposes are those who are either a) too young to have children or b) old enough that their children have all completed high school. Having access to additional resources via local family assistance was only material when that assistance went beyond meeting the migrant's basic need for lodging, food or job references. Not surprisingly, migrants who listed the United States as their primary country of residence were less likely to earmark money remitted to Mexico to support start-up activity. Finally, there is a time effect evident in the data. It is clear that those migrants surveyed during the recession were much less likely to participate in entrepreneurial behavior. Use of remittances for entrepreneurial activity is less likely for the migrants surveyed more recently.

Discussion and Conclusion

Using survey data of Mexican migrants, this article explored the combined role of remittances and migrant experience on entrepreneurial activity of returnee migrants. It was found that migration provided a means for overcoming the three main obstacles to entrepreneurship—limited access to financing, shortage of skilled and educated labor and a lack of institutional support—and significantly increased the likelihood of entrepreneurial activity.

In conclusion, we provide two major contributions in this research. First, we identify that where entrepreneurial, social and human capital is gained has a significant impact on the entrepreneurial behaviors of these returnees. As shown above, both on-the-job training and work experience received in the U.S. have a very different effect from that received in Mexico. These findings may also represent social remittances being picked up while in the U.S., which we are able to observe through entrepreneurial remittances. Similarly, being employed in a family firm while in the U.S. is associated with more entrepreneurial behaviors. Second, immigrant returnees

face a relatively high opportunity cost to becoming entrepreneurs. This is an important point, as entrepreneurship theory tends to propose that education has a positive association with entrepreneurial behavior. Clearly, there is an opportunity cost that quickly comes into play as the workers come home with newly acquired expertise.

One limitation of our study is the inability to capture performance data of the remittance-based entrepreneurial ventures formed. If, as our logic suggests, the relocation experience enables migrants to accumulate levels of financial capital, human capital, and social capital necessary to overcome the significant barriers to entrepreneurship in Mexico, they should also generate higher performing businesses. Future research can hopefully add the contribution made in this paper by measuring the performance of firms created by returning migrants. Additionally, future research can track the activities of the migrant returnees, as this paper is only able to proxy for that returnee's entrepreneurial behavior through the observation of remittance flows.

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Table 1
Descriptive Statistics

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Remittances for Entrepreneurship	1																				
2	Total Remittances Sent (\$)	0.03	1																			
3	On-the-job Training in U.S.	0.12	-0.09	1																		
4	Job Continuity in U.S.	0.04	-0.01	0.01	1																	
5	Generalist in U.S.	0.08	-0.10	0.14	0.05	1																
6	Employed by Family in U.S.	0.15	-0.01	0.09	-0.05	0.07	1															
7	Self-Employed in U.S.	-0.01	-0.05	-0.03	0.02	0.03	-0.02	1														
8	On-the-job Training in Mexico	0.00	0.02	0.03	-0.06	-0.01	-0.01	-0.02	1													
9	Job Continuity in Mexico	-0.05	0.01	-0.16	-0.16	-0.07	-0.11	0.01	0.19	1												
10	Generalist in Mexico	-0.03	0.01	-0.08	-0.12	0.10	-0.03	0.03	0.25	0.39	1											
11	Self-Employed in Mexico	0.00	0.16	0.01	0.06	-0.00	0.11	-0.04	-0.14	-0.48	-0.30	1										
12	High Educational Capital	-0.01	-0.01	-0.00	-0.02	0.04	0.01	0.05	0.06	0.01	0.06	-0.03	1									
13	Daily Salary	0.01	0.02	0.01	-0.04	-0.02	0.01	0.02	-0.03	-0.04	-0.00	0.04	-0.00	1								
14	Family Assistance: Funds	0.08	0.05	0.05	-0.02	-0.02	0.20	-0.02	-0.02	-0.02	-0.01	0.12	-0.04	-0.01	1							
15	Family Assistance: Food/Lodging	0.05	0.13	-0.06	-0.02	-0.01	0.14	-0.02	0.01	-0.06	-0.01	0.15	-0.02	-0.02	0.40	1						
16	Family Assistance: Job Search	0.05	0.06	0.00	-0.10	0.05	0.15	-0.06	0.00	0.02	0.01	0.09	-0.03	-0.00	0.45	0.60	1					
17	Family Assistance: Other	0.10	-0.08	0.10	0.05	0.10	0.10	-0.01	-0.04	-0.06	-0.03	0.06	-0.04	-0.02	0.27	0.24	0.30	1				
18	Male	0.00	0.04	-0.00	-0.04	0.07	-0.03	0.00	0.02	0.07	0.03	0.05	-0.05	0.00	-0.04	-0.02	-0.04	-0.02	1			
19	Age-"Entrepreneurial Sweet Spot"	-0.00	0.02	0.07	-0.03	0.08	0.01	-0.03	-0.03	-0.05	-0.02	0.14	-0.00	0.01	0.08	0.04	0.07	0.09	-0.03	1		
20	Number of Dependents	0.02	0.03	-0.11	0.01	-0.10	-0.12	0.02	0.00	0.10	0.04	-0.11	-0.03	-0.02	-0.06	-0.05	-0.08	-0.03	0.07	0.04	1	
21	Recession Year	-0.07	0.02	0.10	0.19	0.13	0.01	-0.01	-0.07	-0.08	-0.06	0.09	-0.03	-0.06	-0.08	-0.04	-0.10	0.04	0.01	-0.22	-0.29	1
	Summary Statistics																					
	Mean	0.08	2626	0.18	0.75	0.42	0.08	0.01	0.04	0.32	0.15	0.33	0.01	133	0.37	0.77	0.60	0.18	0.96	0.45	1.25	0.47
	Standard Deviation	0.27	2560	0.38	0.43	0.49	0.27	0.11	0.19	0.47	0.36	0.47	0.11	483	0.48	0.420	0.49	0.38	0.18	0.50	0.48	0.50
	Min.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max.	1	9800	1	1	1	1	1	1	1	1	1	1	5000	1	1	1	1	1	1	15	1

Table 2
Use of Remittances for Entrepreneurial Purposes
 Logit Estimation

<i>Dependent Variable:</i> Use of Remittances for Entrepreneurial Purposes	Model 1		Model 2		
	Coef.	s.e.	Coef.	s.e.	
<i>Independent Variables</i>					
Total Remittances Sent (\$)			0.0002	0.0000	***
On-the-job Training in U.S.			1.1635	0.2498	***
Job Continuity in U.S.			0.6948	0.2891	*
Generalist in U.S.			0.3940	0.2081	+
Employed by Family in U.S.			0.7284	0.2807	*
Self-Employed in U.S.			-0.1136	0.6943	
<i>Control Variables</i>					
On-the-job Training in Mexico	1.0777	0.8073	0.8815	0.7110	
Job Continuity in Mexico	-0.1352	0.2672	0.1707	0.2678	
Generalist in Mexico	-0.8649	0.4002	* -0.9302	0.3900	*
Self-Employed in Mexico	-0.2487	0.2412	-0.2069	0.2165	
High Educational Capital	-1.0427	0.8207	-1.0663	0.8575	
Daily Salary	0.0001	0.0001	0.0001	0.0001	
Family Assistance: Funds	0.2879	0.2349	0.0935	0.2464	
Family Assistance: Food & Lodging	0.0313	0.3679	0.1150	0.3438	
Family Assistance: Job Search	-0.2459	0.2868	-0.2427	0.2798	
Family Assistance: Other	0.7720	0.2264	** 0.7315	0.2347	**
Male	0.9877	0.5232	+ 0.7007	0.5276	
Age-"Entrepreneurial Sweet Spot"	-0.3336	0.2172	-0.4575	0.2328	*
Number of Dependents	-0.3323	0.2190	-0.2467	0.2252	
Recession Year	-0.5347	0.2248	* -0.7265	0.2250	**
Constant	-2.6492	0.6333	*** -3.9840	0.6635	***
N	2983		2983		
F-Stat	3.55 ***		4.72 ***		

***p<0.001; **p<0.01; *p<0.05, +p<0.10