Do ethnic enclaves and networks promote immigrant self-employment?

Maude Toussaint-Comeau

Introduction and summary

Immigrants have a high tendency to be self-employed. I estimate that in the United States, the number of immigrant businesses rose from 2.7 million in 1997 to 3.3 million in 2002—an annual increase of 4 percent (compared with 2 percent yearly growth for all U.S. firms).[1] According to the Ewing Marion Kauffman Foundation, immigrants outpaced native-born Americans in new business start-ups: Immigrants had an entrepreneurial index activity rate that increased from 0.37 percent in 2006 to 0.46 percent in 2007, while that of the native born remained constant at 0.27 percent over the same period.[2]

Immigrants' businesses tend to be clustered in distinct neighborhoods, and they have become an integral and growing aspect of the vitality of metropolitan areas throughout the U.S. Scholars from various fields have studied the geographical concentration of immigrants in distinct locations across the U.S., as well as how this concentration affects immigrants' integration and assimilation into American society (Bartel, 1989). In this article, I focus on the relation between ethnic geographical concentration and the propensity for self-employment among immigrants to the U.S. I ask whether ethnic enclaves (geographical concentrations of an ethnic group) and ethnic networks (social or business networks among people of the same ethnicity, not necessarily living in proximity to one another) influence the decision by immigrants to be self-employed.

The relation between ethnic enclaves and self-employment remains unclear. Ethnic enclaves could affect the rate of self-employment of an immigrant group in different ways. On the one hand, these enclaves often provide prime settings for immigrant entrepreneurs to capture the market for "ethnic goods"—products (and services) that appeal strongly to members of a particular group. These entrepreneurs may have a comparative advantage in this type of market because they have

more information on—as well as a better understanding of—the tastes and preferences of their own group. On the other hand, enclaves may be negatively related to self-employment for other reasons: Entry by potential immigrant entrepreneurs may become relatively difficult as established immigrants could block the entry of more recent immigrants. Also, some enclaves may be economically poor areas where residents have lower purchasing power, possibly restraining the potential for business growth.[3]

There are variations in geographical concentration patterns and self-employment rates among immigrant groups. For example, immigrants from Cuba tend to have relatively high geographical concentration in the U.S., as well as above-average rates of self-employment. For such groups, there certainly might be a link between ethnic enclaves and self-employment opportunities. Some other groups, for example, immigrants from India, are much more broadly dispersed, although they too have above-average rates of self-employment. For such groups, it is unlikely that their self-employment behavior is based *solely* on specialization in ethnic goods within ethnic enclaves. In general, immigrants with more human capital (higher education and job skills) are less likely to live in ethnic enclaves. Given this tendency, other job market factors and personal characteristics might play a greater role in the choice of self-employment among immigrant groups with a greater proportion of individuals who have more education and higher skills. Finally, some groups, such as Mexican immigrants, have ethnic

Maude Toussaint-Comeau is an economist in the Economic Research Department at the Federal Reserve Bank of Chicago. She thanks Phil Doctor for valuable research assistance. She thanks Anna Paulson, Leslie McGranahan, Ellen Rissman, Gadi Barlevy, and Ludovic Comeau, Jr., for valuable comments and suggestions.

geographical concentrations that are very large, but they remain relatively underrepresented in business ownership. This suggests that the "quality" of the social or business network within the ethnic enclave is also relevant.

I also examine the role of ethnic social and business networks in the choice of self-employment. Immigrant communities may be particularly good locations in which to form such networks. These communities tend to be relatively cohesive social units—often with a common language, culture, and religion. Since immigrants are, by definition, relative newcomers to a country, they are likely to experience problems in getting information on job opportunities or business opportunities (as well as on housing, schooling for their children, and other needs). This lack of information often generates a need for such social and business networks. Yet, it remains unclear how ethnic networks operate and how much they affect the self-employment status or other labor market outcomes of immigrants. For example, Munshi (2003) shows that ethnic networks help Mexican migrants find jobs in low-wage, labor-intensive sectors. If this is representative of how ethnic networks operate, then the existence of such networks might be associated with lower rates of self-employment.

In this article, I provide a brief survey of the literature on possible effects of ethnic enclaves and networks on self-employment rates among immigrants in the U.S. I use the U.S. Census Bureau's *Public Use Microdata Samples* (PUMS)—specifically, the 5 percent sample from the 2000 U.S. *Decennial Census*—to analyze the variations in self-employment rates, the characteristics, and industries of these immigrants from a variety of countries of origin. I also identify various locations across the U.S. with relatively large ethnic concentrations. Next, I conduct an empirical analysis to determine the factors that influence the decision to be self-employed, including assessing the effect of ethnic enclaves and networks. I find that ethnic networks have a positive effect on the decision for immigrants to be self-employed as an alternative to wage employment. Immigrants' personal characteristics such as years since migration, English language fluency, and education level are also important in their decision to be self-employed. However, I find no clear impact of ethnic geographical concentrations on the self-employment decision.

From a policy perspective, the recognition that self-employment could potentially enhance socioeconomic standing has inspired business development and funding initiatives that encourage self-employment among more vulnerable populations and communities, including immigrant ones. Thriving business communities benefit not only individual business owners but also local economies. Ethnic enclaves and networks may also be particularly important for immigrant populations because these populations are often underserved by mainstream financial institutions and businesses.

Review of literature

The role of ethnic enclaves and ethnic networks in the choice of self-employment among immigrants has been explored extensively in the sociology literature. Economists have also developed theories and models that incorporate informal nonmarket institutions, such as ethnic social networks.

According to Aldrich and Waldinger (1990, p. 127), "ethnic social structures consist of the networks of kinship and friendship around which ethnic communities are arranged, and the interlacing of these networks with positions in the economy (jobs), in space (housing), and in society (institutions)." Ethnic enclaves potentially provide environments where information can be shared more readily and easily and where ethnic business networks can thrive. They offer a *protected market* for ethnic goods production, and provide experience and apprenticeship from co-ethnic employers.

Ethnic networks can also play a role in mobilizing monetary and information resources for small businesses. For example, studies have found that financial resources raised through ethnic networks are critical for immigrant businesses, especially during the formation stage when entrepreneurs tend to have greater liquidity constraints (Van Auken and Neeley, 1998; and Anthony, 1999). Bond and Townsend (1996) find that Hispanic immigrant business owners in a Chicago neighborhood tend to seek financing in the informal sector (through ethnic networks) instead of the formal financial sector (through banks) because of their preference or cultural factors. They argue that these informal networks may be particularly efficient at facilitating financing arrangements at relatively lower information, search, and monitoring costs to the immigrants. Other studies have found that informal loan activities (for example, rotating credit associations) in ethnic networks are important to many different ethnic business communities (Min, 1988; Light, 1972; and Bonnett, 1981).

Ethnic enclaves are formed (or emerge) as a result of interconnected factors. Among the reasons often cited for immigrants to move to a particular area are the following: First, the area may be a port of entry, which historically has attracted a cluster of immigrants from the same country of origin; once the immigrants have established themselves in such an

area, they tend to stay, since moving elsewhere is costly. Second, immigrants are often motivated to reunify with family, friends, and co-ethnic members who have already settled in the host country. Third, immigrants follow economic opportunities.

According to Chiswick and Miller (2002, p. 5), an ethnic enclave is distinguished by the fact that it is an environment where "the consumption characteristics of an immigrant/ethnic group [are] not shared with the host population." Chiswick and Miller (2002, p. 5) broadly define immigrants' consumption of ethnic goods as the consumption of "market and nonmarket goods and services, including social interactions for themselves and their children with people of the same origin." They imply that the economies of scale in the production of these ethnic goods lead to concentrations of co-ethnic businesses and institutions. However, ethnic networks may develop outside of ethnic enclaves, based on members' shared involvement in a business sector or niche (Bonacich and Modell, 1980).

Research suggests that shared language, culture, and information are key components to the creation of an "ethnic enclave effect," which is relevant for ethnic businesses and economic activities (see, for example, Lazear, 1999). Fafchamps (2001) finds that trust, maintained through repeated social interactions, leads to the emergence of spontaneous ethnic markets, causing traders' businesses to grow faster. Clark and Drinkwater (2000) explore the high rates of self-employment among ethnic minorities in England and Wales. In doing so, they extend the classic two-sector model of wage work and self-employment developed by Lucas (1978) and Evans and Jovanovic (1989) into a formal model of ethnic enclaves and self-employment outcomes. Clark and Drinkwater find that an ethnic enclave exerts a positive influence on the self-employment of immigrants as it shifts up the business's profit function for the immigrant (hence making self-employment among immigrants more attractive). They suggest that the potential explanation for this ethnic enclave effect is that the relative costs of production in the enclave are lower as the group in the ethnic enclave has a "better" distribution of knowledge and information—that is, greater access to ethnic networks and contacts, as well as familiarity with the tastes and preferences of the ethnic clientele.

Measuring the size of ethnic enclaves is difficult because most data sets do not provide information on the enclaves' geographical boundaries. Most previous studies have used neighborhoods' average characteristics, such as the proportion of an immigrant or language group in a metropolitan statistical area (MSA), to approximate neighborhood or enclave effects.[4] For example, using this measure, Borjas (1986) finds that Hispanics in the U.S. are more likely to be self-employed in areas (MSAs) that have larger Hispanic populations. However, he finds no "enclave effect" (the percentage of the ethnic minority in the MSA) on the decision to be self-employed among Asians. Alternatively, defining ethnic enclaves in terms of "language concentration" (the percentage of individuals who speak the same language in an MSA), Borjas (1986) finds no enclave effect for immigrants from English-speaking countries. This result is driven in part by the heterogeneity in culture and experience of immigrants from the large pool of English-speaking countries, including England, Jamaica, and the Philippines.

Measuring ethnic social and business networks is also difficult because few data sets contain information on *relationships* among individuals who make up an ethnic immigrant group. Borjas (1995) proposes a proxy for measuring a "network effect" based on ethnic group similarity. In essence, he uses the average characteristic of the group to measure the network effect. He refers to this as the "average quality" or "ethnic capital" of the group. He assumes that groups with more ethnic capital will transmit more skills to others within their respective groups or to subsequent generations, and this would be the mechanism by which ethnic capital operates.

Bertrand, Luttmer, and Mullainathan (2000) conduct a study on social networks and welfare culture in the U.S. Using the (non-English) language spoken at home, they proxy for the social links between minority individuals in a neighborhood. In other words, they measure the "quantity" of a social network for an individual as the number of people the minority individual "interacts" with through this language. Bertrand, Luttmer, and Mullainathan are also interested in the knowledge or attitude that the people who speak this language have about a particular activity (in this case, welfare participation). They measure the "quality" of the social network by counting the number of people in this language group who use welfare. In essence, they suggest that there is a social network effect because they find evidence that increased contact availability raises welfare use among those language groups that already have high welfare participation.

In this article, I use the conventional measure of ethnic geographical concentration and apply Bertrand, Luttmer, and Mullainathan's (2000) measure of social networks (the interaction between "quantity" and "quality") to explore the self-employment decision of immigrants in the U.S. I am interested in whether and to what extent the self-employment decision is affected by ethnic geographical concentrations and ethnic networks.

Characteristics of immigrants and self-employment rates

In my analysis of the self-employment rates of immigrants, I use the U.S. Census Bureau's *Public Use Microdata Samples*; in particular, I use the 5 percent sample taken from the 2000 U.S. Census. I restrict the sample population to immigrant males who are 25–54 years old and who live in a metropolitan statistical area. I focus on males because the inherent gender differences in labor market decisions would make a consideration of females' self-employment decisions a separate analysis; this is not within the scope of my article. To identify the ethnic immigrant groups, I select immigrant individuals based on their countries of origin (to be explicit, these individuals must have been born *outside* of the 50 U.S. states and the District of Columbia).[5] Further, I restrict this study to individuals in groups from countries of origin with 1,000 people or more sampled in the 5 percent PUMS from the 2000 U.S. Census. I do this because of concerns about interpreting results from too small a group sample size. These selection criteria leave me with a sample of 307,079 individual males—from 33 countries of origin in 297 metropolitan statistical areas and 1,572 public use microdata areas (PUMAs).[6]

Table 1 reports the characteristics of my population sample by the selected countries of origin (grouped by region[7]). Mexican immigrants make up 40 percent of the sample population. On average, they have less education than other immigrants. Over 40 percent of Mexican immigrants have less than a high school level of schooling. Immigrants from Puerto Rico, as well as those from South and Central America and the Caribbean, also have lower than average schooling. By contrast, the majority of immigrants from India and Pakistan; immigrants from Africa (notably those from Nigeria); and immigrants from various countries in Northeast Asia, Southeast Asia, and the Middle East have some college education. Similar to the differences in educational attainment, a much lower proportion of Mexican, South and Central American, and Caribbean immigrants speak English fluently than those from other countries. The differences in educational attainment and English language fluency are likely to influence the types of businesses (professional services or not) that the self-employed immigrants enter.

Table 1 also reports self-employment rates. Broadly speaking, immigrants from South and Central America, Southeast Asia, and the Caribbean tend to have lower average rates of self-employment (those from Cuba being a notable exception). By contrast, generally, immigrants from Northeast Asia, India, Pakistan, the Middle East, Europe, and Canada have higher average

rates of self-employment. Differences exist among immigrants from different countries within the same region. For example, among immigrants from the Caribbean region, Cubans and Dominicans have relatively higher rates of self-employment than Haitians and Jamaicans. Similarly, among immigrants from the Northeast Asia region, (North and South) Koreans[8] have a higher rate of self-employment compared with the other two large immigrant groups—the Chinese and the Japanese. All the immigrant groups from the Middle East region have a fairly sizable rate of self-employment. However, immigrants from Israel, Iran, and Lebanon have even higher rates of self-employment, ranging from 25 percent to 28 percent. Among immigrants from Europe, those from Italy and Poland have relatively much higher rates of self-employment, compared with those from Germany and France. The heterogeneity in self-employment status among immigrant groups suggests that it is useful to disaggregate them by country of origin as opposed to by region or common language.

Industries of self-employed immigrants

The types of industries that self-employed immigrants enter can provide useful insights as to the relative importance of location. For example, translation services and restaurants with specialty ethnic food may be characterized (more or less) as businesses that sell ethnic goods—defined earlier as products (and services) that draw a co-ethnic clientele. As such, self-employed individuals in these types of businesses would more likely be in a location with a potential co-ethnic market. By contrast, other businesses such as taxi services and landscaping services are less likely to be dependent on a co-ethnic market.

I summarize here the most common industries in which some immigrant groups start their own businesses (see the appendix for more details). The most common industries for self-employed Mexican immigrants are construction, landscaping, and auto repair. Some of the top industries for self-employed immigrants from Jamaica and Haiti are taxi and limousine services, auto repair, and restaurants. Physician office services, computer design, and insurance services are also among the top industries for self-employed Haitians. Self-employed Cuban immigrants tend to be in construction, but they are, for the most part, fairly dispersed over a wide range of industries, including truck transportation, auto repair, real estate, and physician office services.

Among immigrants from the Northeast Asia region, particularly those from China and (North and South) Korea, most of the businesses are restaurants and other food services. Dry cleaning and laundry facilities are

TABLE 1

Characteristics of immigrants

Region/ Country of origin	Sample population	Share with less than high school education	Share with some college education	Share who speak English well or very well	Self-employment rate
		(- *percent* -)			
U.S. nonimmigrant sample population	2,024,918	5	61	—	11
Immigrant	307,079	23	42	71	11
South and Central America					
Columbia	5,916	9	53	71	12
El Salvador	12,372	39	18	59	8
Peru	3,573	4	59	74	11
Guatemala	6,904	41	20	56	9
Mexico	123,383	44	15	52	8
Middle East					
Iraq	1,190	11	50	88	19
Iran	4,341	1	85	95	25
Egypt	1,761	1	85	94	16
Israel	1,790	2	67	97	28
Lebanon	1,770	4	74	97	25
Turkey	1,207	6	71	90	18
Africa					
Ethiopia	1,038	2	72	96	11
Nigeria	2,280	0	89	99	13
India/Pakistan					
Pakistan	3,505	4	72	94	16
India	15,281	1	87	96	11
Europe					
Poland	4,637	3	52	77	15
Italy	4,325	9	51	95	20
France	2,163	1	80	98	12
Germany	9,643	1	76	99	11
Canada	7,659	1	80	99	14
Caribbean					
Haiti	5,087	10	46	85	7
Jamaica	5,772	5	48	99	9
Dominican Republic	7,372	21	31	60	11
Cuba	9,636	6	48	69	16
Puerto Rico	13,301	12	37	86	6
Northeast Asia					
China	10,942	12	64	69	11
Korea	1,470	2	81	80	24
Japan	4,927	1	84	89	11
Southeast Asia					
Laos	2,494	22	36	75	7
Cambodia	1,682	38	43	75	12
Philippines	14,846	2	80	96	5
Vietnam	13,594	11	54	72	11
Thailand	1,218	3	74	87	10

Notes: The sample here is made up of immigrant males aged 25–54 who live in a metropolitan statistical area. (The U.S. nonimmigrant male sample population, also aged 25–54, is provided for the sake of comparison.) For convenience, Mexico is put in the South and Central America group, although only southern Mexico is typically considered part of Central America. The population from the U.S. overseas territory Puerto Rico is included, although individuals from there are technically not immigrants. The U.S. Census data do not specify whether the immigrants from Korea are from North Korea or South Korea (two distinct nations), but here the immigrants from Korea are considered to be those from both North Korea and South Korea.

Source: Author's calculations based on data from the U.S. Census Bureau, 2000 *Decennial Census*, *Public Use Microdata Samples*, 5 percent sample.

also popular industries for self-employed Chinese and Korean immigrants.

The industry mix is slightly different for immigrants from the Southeast Asia region. The top industries reported by immigrants from Vietnam are nail salons, followed by restaurants and other food services. The main business activities for immigrants from Laos are crop production from farming. They also list restaurants and other food services as their other most popular choice for self-employment.

Some top industries for self-employed Indian and Pakistani immigrants are physician office services, grocery stores, taxi and limousine services, restaurants, and construction.

Immigrant entrepreneurs from Israel report construction and real estate, as well as grocery stores, as their top industries. For self-employed immigrants from Iran, construction, beauty salons, and taxi and limousine services are among their top industries.

Self-employed immigrants from Africa—specifically, immigrants from Nigeria and Ethiopia—are concentrated mostly in taxi and limousine services; beyond that, their businesses are in a wide range of industries.

The variety of immigrant businesses listed here suggests that, while some may not require English language skills to operate, they are not necessarily catering exclusively to an ethnic clientele in an ethnic enclave.

Where are immigrants located?

To identify where immigrants are located across metropolitan statistical areas in the U.S., and to assign a value to the potential size of their ethnic enclaves, I look at the total number of persons in the entire 2000 U.S. Census from the same country of origin living in an MSA as a percentage of the MSA's overall population (see table 2, panel A). I show the top three MSAs for each ethnic immigrant group. I also look at the population of each ethnic immigrant group in its respective top three MSAs relative to the group's overall population in the country (see table 2, panel B). So, where are ethnic immigrant groups concentrated?

To start with, Miami is the clear location of geographical concentration for Cubans. They make up 23 percent of the population of Miami (table 2, panel A). Los Angeles; New York City; Chicago; Miami; Orlando, Florida; and Washington, DC, receive the largest shares of all the immigrants from South and Central America (table 2, panel B). Places like McAllen–Edinburg–Mission, Laredo, and El Paso in Texas have sizable portions of their populations (25 percent or above) originating from Mexico (table 2, panel A).

Immigrants from Southeast Asia and Northeast Asia also have visible percentages in some MSAs, as seen in panel A of table 2. For example, over 7 percent of the population in San Francisco is from China. Nearly 9 percent of the population of Honolulu, Hawaii, is from the Philippines. And about 5 percent of the population of San Jose, California, is from Vietnam.

African immigrants generally represent a very small percentage in any MSA (table 2, panel A). However, the largest shares of African (Nigerian and Ethiopian) immigrants are in Washington, DC, New York City, and Atlanta (table 2, panel B).

Haitian and Jamaican immigrants have the largest share of their population in New York City, Miami, and Fort Lauderdale, Florida (table 2, panel B).

The panels in figure 1 (pp. 38–39) display graphically the relationship between the ethnic concentration levels of selected immigrant populations in MSAs and their self-employment rates. (The ethnic concentration level here is defined as the percentage of the immigrant group, irrespective of age or gender, in an MSA divided by the percentage of the immigrant group in the entire country.) There is a tendency for Mexican immigrants to have higher rates of self-employment in MSAs with larger shares of their population (panel A). Interestingly, the reverse is true for the other groups. Immigrants from the other ethnic immigrant groups exhibit either equally representative self-employment rates in all the different MSAs, regardless of their respective population share (for example, immigrants from Cuba), or they have higher rates of self-employment in places with lower shares of their populations (for example, immigrants from Haiti, Nigeria, the Philippines, and Vietnam).

Measuring ethnic networks

Following Bertrand, Luttmer, and Mullainathan (2000), I define ethnic network here as the interaction between the size of the network (the conventional measure of ethnic enclave) and the quality of the network:

$$NETWORK_{jk} \approx E_{jk} \times Q_{k,}$$

where E_{jk} is the "ethnic enclave" of a person from a country of origin group k living in area j, defined as follows:

$$E_{jk} = \ln \frac{\text{Number of people from group } k \text{ in area } j \text{ /}}{\text{Total population in area } j}$$
$$\frac{}{\frac{\text{Number of people from group } k \text{ /}}{\text{Total population in country}}}.$$

Note that the percentage of the group in the MSA is divided by the group proportion in the U.S. This

TABLE 2

Location of immigrants

Region/ Country of origin	First MSA	Percentage	Second MSA	Percentage	Third MSA	Percentage
A. Top three MSAs for each immigrant group						
South and Central America						
Mexico	Laredo, TX	28.5	McAllen–Edinburg– Mission, TX	27.5	El Paso, TX	25.1
El Salvador	Los Angeles– Long Beach, CA	2.6	Washington, DC–MD–VA	2.2	San Francisco, CA	1.8
Guatemala	Los Angeles– Long Beach, CA	1.6	Stamford–Norwalk, CT	1.5	Trenton, NJ	1.3
Columbia	Miami, FL	3.6	Jersey City, NJ	2.2	Fort Lauderdale, FL	1.9
Peru	Jersey City, NJ	1.5	Miami, FL	1.1	Bergen–Passaic, NJ	1.1
Middle East						
Iran	Los Angeles– Long Beach, CA	1.0	Modesto, CA	0.8	Orange County, CA	0.7
Iraq	Modesto, CA	0.7	Detroit, MI	0.7	San Diego, CA	0.3
Israel	Myrtle Beach, SC	0.3	New York, NY	0.3	Bergen–Passaic, NJ	0.3
Egypt	Jersey City, NJ	1.1	Middlesex–Somerset– Hunterdon, NJ	0.4	Trenton, NJ	0.2
Lebanon	Lawrence, MA–NH	0.4	Detroit, MI	0.4	Waterbury, CT	0.3
Turkey	Bergen–Passaic, NJ	0.4	Nassau–Suffolk, NY	0.2	State College, PA	0.2
Africa						
Ethiopia	Sioux Falls, SD	0.3	Washington, DC–MD–VA	0.3	Minneapolis– St. Paul, MN–WI	0.2
Nigeria	Houston, TX	0.3	Washington, DC–MD–VA	0.3	Newark, NJ	0.2
India/Pakistan						
India	Middlesex–Somerset– Hunterdon, NJ	4.0	Yuba City, CA	3.2	San Jose, CA	2.8
Pakistan	New York, NY	0.4	Middlesex–Somerset– Hunterdon, NJ	0.4	Jersey City, NJ	0.4
Europe						
France	San Francisco, CA	0.3	Stamford–Norwalk, CT	0.3	Salinas, CA	0.2
Germany	Killeen–Temple, TX	3.7	Clarksville– Hopkinsville, TN–KY	3.4	Fayetteville, NC	2.7
Italy	Waterbury, CT	1.7	Bergen–Passaic, NJ	1.3	Stamford–Norwalk, CT	1.2
Poland	Hartford, CT	1.9	Chicago, IL	1.7	Bergen–Passaic, NJ	1.5
Canada	Bellingham, WA	3.4	Nashua, NH	2.0	Fitchburg–Leominster, MA	2.0
Caribbean						
Cuba	Miami, FL	22.9	Jersey City, NJ	4.5	Fort Lauderdale, FL	1.9
Dominican Republic	Lawrence, MA–NH	6.6	Jersey City, NJ	4.2	New York, NY	4.1
Haiti	Miami, FL	3.1	Fort Lauderdale, FL	2.7	West Palm Beach– Boca Raton, FL	2.3
Jamaica	Fort Lauderdale, FL	3.6	New York, NY	2.1	Hartford, CT	1.7
Puerto Rico	Waterbury, CT	7.8	Vineland–Millville– Bridgeton, NJ	5.7	Springfield, MA	5.1
Northeast Asia						
China	San Francisco, CA	7.3	San Jose, CA	4.2	Oakland, CA	3.4
Japan	Honolulu, HI	2.6	San Jose, CA	0.7	Salinas, CA	0.7
Korea	Honolulu, HI	0.3	Boulder– Longmont, CO	0.3	Rochester, MN	0.3
Southeast Asia						
Laos	Wausau, WI	2.1	Fresno, CA	1.6	Merced, CA	1.5
Cambodia	Lowell, MA–NH	2.0	Stockton–Lodi, CA	0.9	Modesto, CA	0.6
Philippines	Honolulu, HI	8.8	Vallejo–Fairfield–Napa, CA	5.1	San Francisco, CA	4.5
Thailand	Merced, CA	0.9	Fresno, CA	0.6	Stockton–Lodi, CA	0.5
Vietnam	San Jose, CA	5.2	Orange County, CA	3.8	Worcester, MA–CT	1.4

TABLE 2 (CONTINUED)

Location of immigrants

| Region/ Country of origin	First MSA	Second MSA	Third MSA	Percentage
B. Top three MSAs relative to each immigrant group's population nationwide				
South and Central America				
Mexico	Los Angeles–Long Beach, CA	Chicago, IL	Houston, TX	31
El Salvador	Los Angeles–Long Beach, CA	Washington, DC–MD–VA	Houston, TX	53
Guatemala	Los Angeles–Long Beach, CA	New York, NY	Washington, DC–MD–VA	43
Columbia	New York, NY	Miami, FL	Fort Lauderdale, FL	41
Peru	New York, NY	Miami, FL	Los Angeles–Long Beach, CA	32
Middle East				
Iran	Los Angeles–Long Beach, CA	Orange County, CA	Washington, DC–MD–VA	46
Iraq	Detroit, MI	Chicago, IL	San Diego, CA	54
Israel	New York, NY	Los Angeles–Long Beach, CA	Chicago, IL	39
Egypt	New York, NY	Los Angeles–Long Beach, CA	Jersey City, NJ	34
Lebanon	Los Angeles–Long Beach, CA	Detroit, MI	New York, NY	40
Turkey	New York, NY	Los Angeles–Long Beach, CA	Bergen–Passaic, NJ	28
Africa				
Ethiopia	Washington, DC–MD–VA	Atlanta, GA	Minneapolis–St. Paul, MN–WI	38
Nigeria	New York, NY	Washington, DC–MD–VA	Houston, TX	31
India/Pakistan				
India	New York, NY	Chicago, IL	San Jose, CA	21
Pakistan	New York, NY	Chicago, IL	Washington, DC–MD–VA	35
Europe				
France	New York, NY	Los Angeles–Long Beach, CA	Washington, DC–MD–VA	21
Germany	New York, NY	Washington, DC–MD–VA	Chicago, IL	11
Italy	New York, NY	Nassau–Suffolk, NY	Chicago, IL	32
Poland	Chicago, IL	New York, NY	Bergen–Passaic, NJ	51
Canada	Los Angeles–Long Beach, CA	Detroit, MI	Seattle–Bellevue–Everett, WA	13
Caribbean				
Cuba	Miami, FL	Fort Lauderdale, FL	New York, NY	69
Dominican Republic	New York, NY	Miami, FL	Bergen–Passaic, NJ	66
Haiti	New York, NY	Miami, FL	Fort Lauderdale, FL	54
Jamaica	New York, NY	Fort Lauderdale, FL	Miami, FL	53
Puerto Rico	New York, NY	Orlando, FL	Philadelphia, PA–NJ	35
Northeast Asia				
China	New York, NY	Los Angeles—Long Beach, CA	San Francisco, CA	40
Japan	Los Angeles–Long Beach, CA	New York, NY	Honolulu, HI	22
Korea	Los Angeles–Long Beach, CA	New York, NY	Washington, DC–MD–VA	31
Southeast Asia				
Laos	Minneapolis–St. Paul, MN–WI	Fresno, CA	Sacramento, CA	27
Cambodia	Los Angeles–Long Beach, CA	Philadelphia, PA–NJ	Seattle–Bellevue–Everett, WA	28
Philippines	Los Angeles–Long Beach, CA	San Diego, CA	San Francisco, CA	28
Thailand	Los Angeles–Long Beach, CA	Minneapolis–St. Paul, MN–WI	Washington, DC–MD–VA	24
Vietnam	Orange County, CA	Los Angeles–Long Beach, CA	San Jose, CA	31

Notes: MSA means metropolitan statistical area. Panel B shows the top three MSAs for each immigrant group as a pooled percentage of the group's population nationwide (whereas panel A shows the top three relative to each MSA's total population). For convenience, Mexico is put in the South and Central America group, although only southern Mexico is typically considered part of Central America. The population from the U.S. overseas territory Puerto Rico is included, although individuals from there are technically not immigrants. The U.S. Census data do not specify whether the immigrants from Korea are from North Korea or South Korea (two distinct nations), but here the immigrants from Korea are considered to be those from both North Korea and South Korea.
Source: Author's calculations based on data from the U.S. Census Bureau, 2000 *Decennial Census*, *Public Use Microdata Samples*, 5 percent sample.
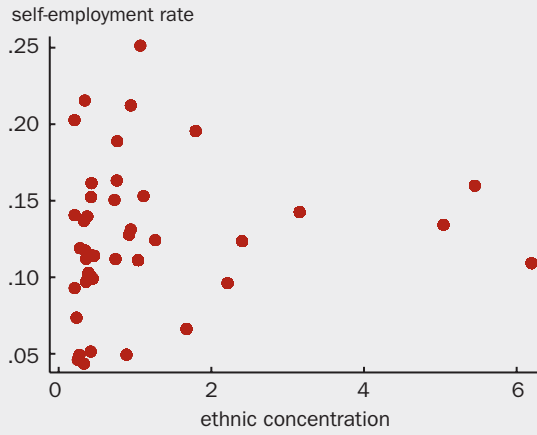
FIGURE 1

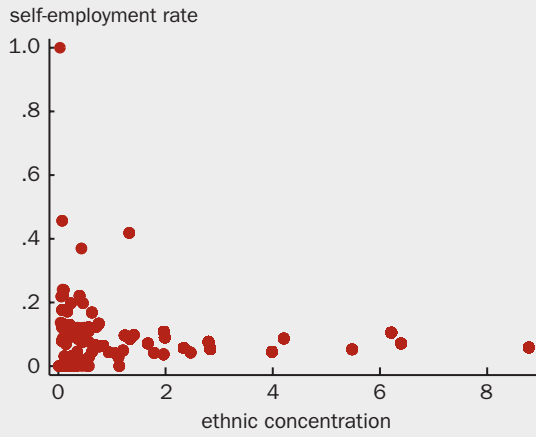**Ethnic concentration levels and self-employment rates for selected immigrant groups**
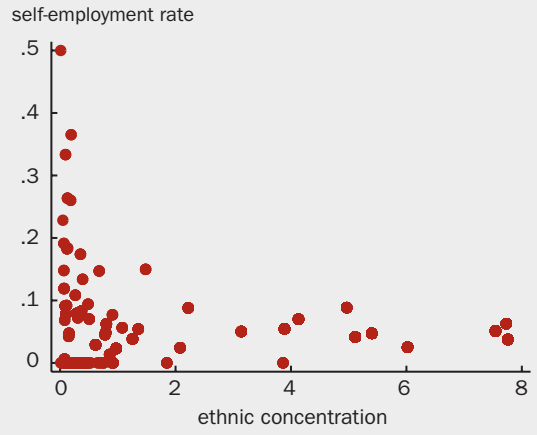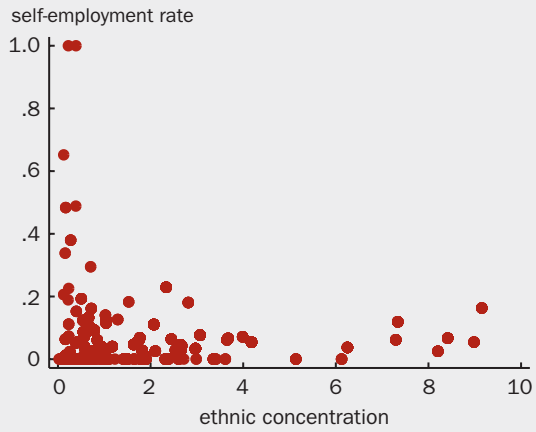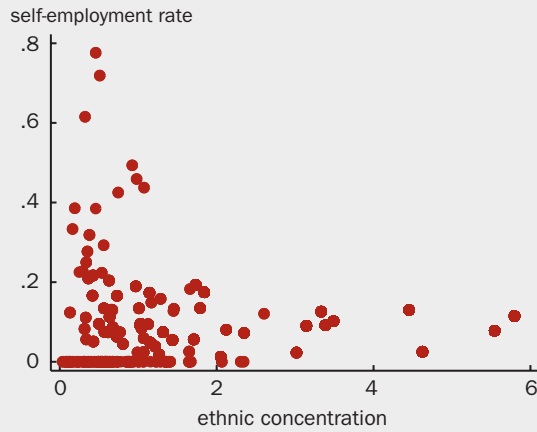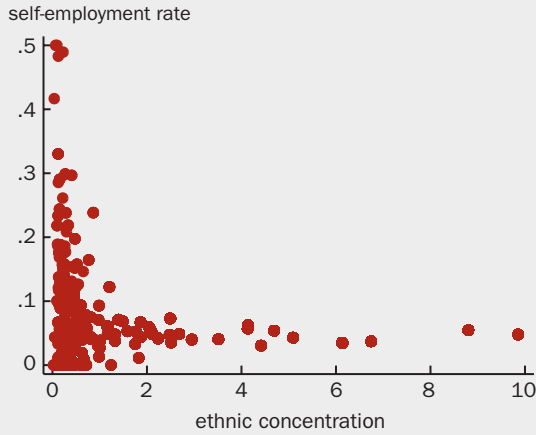
A. Immigrants from Mexico
self-employment rate
ethnic concentration

B. Immigrants from Cuba
self-employment rate
ethnic concentration
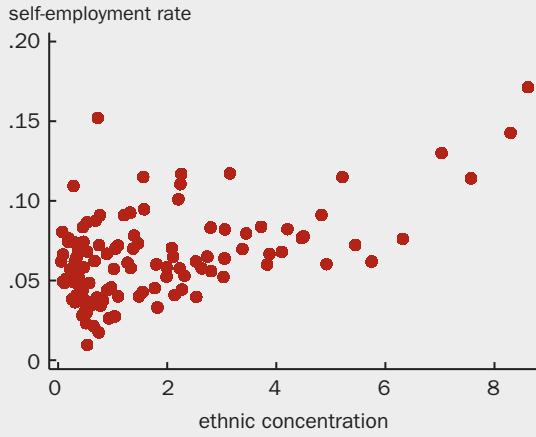
C. Immigrants from the Dominican Republic
self-employment rate
ethnic concentration

D. Immigrants from Haiti
self-employment rate
ethnic concentration

E. Immigrants from Laos
self-employment rate
ethnic concentration

F. Immigrants from Nigeria
self-employment rate
ethnic concentration

FIGURE 1 (CONTINUED)

Ethnic concentration levels and self-employment rates for selected immigrant groups

G. Immigrants from the Philippines
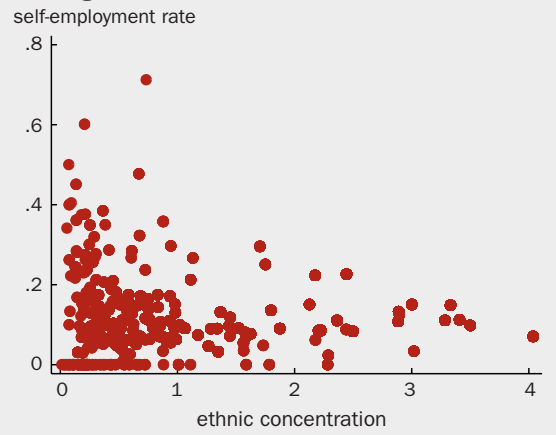self-employment rate

ethnic concentration

H. Immigrants from Poland
self-employment rate

ethnic concentration

I. Immigrants from Korea
self-employment rate

ethnic concentration

J. Immigrants from Vietnam
self-employment rate
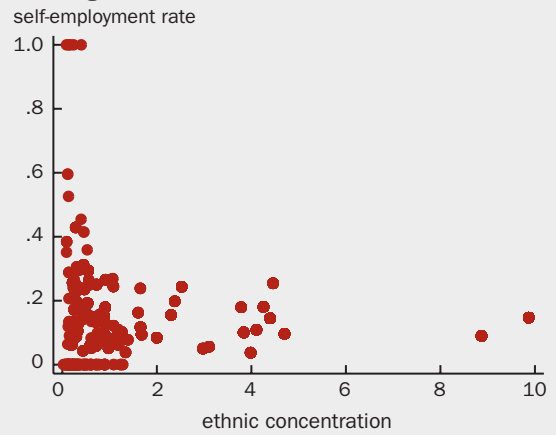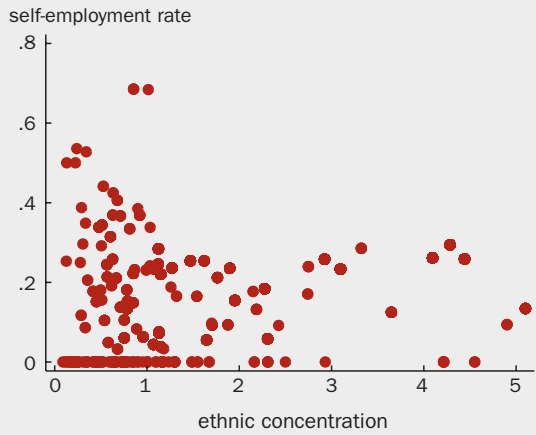
ethnic concentration

Notes: The ethnic concentration level here is defined as the percentage of the immigrant group, irrespective of age or gender, in a metropolitan statistical area divided by the percentage of the immigrant group in the entire country. The U.S. Census data do not specify whether the immigrants from Korea are from North Korea or South Korea (two distinct nations), but here the immigrants from Korea are considered to be those from both North Korea and South Korea.

Source: Author's calculations based on data from the U.S. *Census Bureau*, *2000 Decennial Census*, *Public Use Microdata Samples*, 5 percent sample.

instills the interesting property whereby if individuals in a particular group are evenly distributed across areas, the measure will equal to 1 for all people in that group (or it will equal 0, in log form).

Here, Q_k stands for the quality of the networks or the "knowledge" and "attitude" of others from the country of origin group k. This is measured by the average self-employment rate of the group in the U.S. For ease of interpretation of the "network effect" (the interaction term between E_{jk} and Q_k), independent of the pure "enclave effect," I subtract E_{jk}, an adjusted measure of self-employment plus the deviation of the average

self-employment rate of ethnic immigrant group k from the average self-employment rate of the entire U.S. population sample. Hence, I redefine "network quality" as follows:

$$Q_k = \overline{SELFEMP}_k - \overline{SELFEMP}.$$

Table 3 reports the average values of the two measures—the "enclave effect" measure (E_{jk}) and the interaction term, or "network effect" ($NETWORK_{jk} \approx E_{jk} \times Q_k$), for each of the 33 immigrant groups. (To make the results easier to see, the ethnic immigrant

ethnic networks. By contrast, Mexicans, El Salvadorans, Laotians, and Filipinos, as well as Haitians, have lower average values of ethnic networks relative to the average value for all immigrants.

The results reported in table 3 suggest that ethnic geographical concentration (enclaves) and ethnic networks may operate in different ways and have different effects. To illustrate this, I group immigrants into the following four categories: 1) those with above-average (or high) geographical concentration and above-average (or high) self-employment rates (business/social networks); 2) those with above-average (or high) geographical concentration and below-average (or low) self-employment rates; 3) those with below-average (or low) geographical concentration and above-average (or high) self-employment rates; and 4) those with below-average (or low) geographical concentration and below-average (or low) self-employment rates. Table 4 displays where the immigrant groups from the different countries are placed within these four categories.

Regression analysis

I now turn to a multivariate analysis to evaluate in a more rigorous manner the impact of ethnic concentration and ethnic networks on the self-employment decision among immigrants. To do so, I estimate a linear probability model of self-employment choice in which the right-hand side contains, in addition to ethnic network and ethnic concentration, personal characteristics—namely, education, proficiency in English, years since migration, age, marital status, and race. (As mentioned previously, I only perform this analysis for the immigrant male population aged 25–54 in my sample.) Table 5 displays the results.

The results for all the covariates are consistent with expectations. Years since migration raise (at a decreasing rate) the probability of self-employment, consistent with previous research (Borjas, 1986). Relative to the omitted category (those with only a high school diploma), those with some high school level of education (who did not graduate) have a higher probability of being self-employed, while those with very low education (less than a high school level education) have a lower probability of being self-employed. The result that very low education hampers self-employment propensity is consistent with previous findings. Individuals with more education or human capital may be positively self-selected for self-employment for several reasons. Business owners' human capital may influence the businesses' viability (Bates, 1990). The educational attainment of entrepreneurs might also help facilitate financing opportunities and business success as it can serve as a basis for screening in lenders' evaluations (Cressy, 1996). Even so,

groups' countries of origins are arranged by decreasing order of magnitude of the enclave effect measure.)

Table 3 shows that the Cubans, the Dominicans, the Haitians, the Iraqis, the Jamaicans, the Polish, and the Chinese are the most spatially concentrated immigrant groups in the sample. Other immigrant groups such as Israelis, Mexicans, Egyptians, Nigerians, and Indians are fairly dispersed. French and German immigrants, as well as Canadian ones, are the most widely dispersed.

Table 3 also shows that Israeli, Cuban, Iranian, Iraqi, Lebanese, Korean, Italian, and Polish immigrants have some of the highest average values for

TABLE 4

Ethnic concentration and self-employment classification

High concentration, High self-employment	High concentration, Low self-employment
Cambodia	El Salvador
China	Haiti
Columbia	Jamaica
Cuba	Laos
Dominican Republic	Philippines
Ethiopia	
Iraq	
Poland	

Low concentration, High self-employment	Low concentration, Low self-employment
Canada	Guatemala
Egypt	Mexico
France	Puerto Rico
Germany	Thailand
India	
Iran	
Israel	
Italy	
Japan	
Korea	
Lebanon	
Nigeria	
Pakistan	
Peru	
Turkey	
Vietnam	

Notes: The population from the U.S. overseas territory Puerto Rico is included, although individuals from there are technically not immigrants. The U.S. Census data do not specify whether the immigrants from Korea are from North Korea or South Korea (two distinct nations), but here the immigrants from Korea are considered to be those from both North Korea and South Korea.
Source: U.S. Census Bureau, 2000 *Decennial Census*, *Public Use Microdata Samples*, 5 percent sample.

table 5 shows that those with some college education have a lower probability of being self-employed relative to high school graduates. This finding suggests that increasing returns to schooling in the labor market make the opportunity costs of wage employment higher for college graduates.

Immigrants who speak English "well" or "very well" have a higher probability of being self-employed compared with those who do not speak English. This finding is consistent with previous research (Fairlie and Meyer, 1996).

I now turn to the ethnic network effect and ethnic enclave effect. Prior to discussing the results, it is instructive to briefly discuss the econometrics of the identification strategy. One concern was to ensure that the effects of ethnic networks and ethnic enclaves were not really being driven by characteristics that are affecting self-employment but are correlating with the

ethnic measures. I address this concern by adopting the Bertrand, Luttmer, and Mullainathan (2000) strategy; I use the stepwise approach as presented in their paper. The fact that the effects remain positive and significant even as I successively augment the model with the explanatory variables shows their robustness. The group fixed effects dummies and the PUMA fixed effects dummies allow me to control for potential "unobservable" characteristics (such as ability or motivation). The PUMA fixed effects dummies allow me to control for differential neighborhood effects, addressing Manski's (2000) "reflection problem."[9]

In the first column of table 5, I begin with a regression that contains the ethnic enclave size effect variable, the relative ethnic network effect indicator variable, and the dummy variables for the country of origin group and PUMAs (the coefficients of those dummy variables are not listed, since there are too many). In the second column, I introduce the variables for age, marital status, race, and education. The network effect coefficient barely changes. In the third column, I add the remaining controls—the English language proficiency and the years since migration. The network effect coefficient increases very slightly. Overall, I note that across all the specifications the ethnic network positively affects the choice of self-employment for immigrants. The results suggest that a 1 percentage point higher ethnic network corresponds to a 1.5 percent increase in the likelihood that an individual will become self-employed.

The results for the ethnic enclave effect are in contrast with those for the ethnic network effect. The ethnic enclave effect has a coefficient of nearly zero across all the specifications, suggesting that there is no clear impact of ethnic geographical concentration on the self-employment decision and that immigrants overall tend to be equally likely to be self-employed, regardless of their population density in an MSA. (This finding was also apparent in figure 1 on pp. 38–39 for immigrants from several countries.)

What make ethnic networks operate?

I find that ethnic networks affect positively the likelihood that immigrants are self-employed. In this section, I discuss the mechanisms by which these networks could operate. If, as I found in table 5, ethnic networks promote the choice of self-employment for immigrants, they should have a greater influence on the self-employment decision of individuals with a relative disadvantage in the wage sector due to their personal characteristics. To test for this supposition, I reestimate the models for self-employment by adding an interaction term between ethnic network and

	1	2 Add demographics	3 Add English proficiency and years since migration	4 Drop immigrants from Mexico	5 Drop immigrants from Cuba
Ethnic network effect	0.132*** (0.018)	0.139*** (0.018)	0.148*** (0.018)	0.156*** (0.019)	0.161*** (0.020)
Ethnic enclave effect	–0.002*** (0.001)	–0.003*** (0.001)	–0.004*** (0.001)	–0.005*** (0.001)	–0.003*** (0.001)
Age		0.007*** (0.001)	0.004*** (0.001)	0.007*** (0.001)	(0.004)*** (0.001)
$(Age^2)/100$		–0.005*** (0.001)	–0.002*** (0.001)	–0.005*** (0.001)	–0.002* (0.001)
Black		–0.021*** (0.005)	0.003*** (0.000)	–0.021*** (0.005)	–0.023*** (0.005)
Married		0.018*** (0.001)	–0.006*** (0.000)	0.023*** (0.002)	0.017*** (0.001)
Less than high school		–0.004*** (0.002)	–0.023*** (0.005)	0.002 (0.004)	–0.001 (0.002)
Some high school education		0.005*** (0.002)	0.018*** (0.001)	0.010*** (0.003)	0.006*** (0.002)
College education or more		–0.010*** (0.002)	0.000 (0.002)	–0.016*** (0.002)	–0.011*** (0.002)
Speaks English well or very well			0.006*** (0.002)	0.002 (0.002)	0.008*** (0.001)
Years since migration			0.012*** (0.002)	0.005*** (0.000)	0.003*** (0.000)
Years since migration^2			0.008*** (0.002)	–0.009*** (0.001)	–0.006*** (0.000)
PUMA fixed effects	Yes	Yes	Yes	Yes	Yes
Country of origin fixed effects	Yes	Yes	Yes	Yes	Yes
R-squared	0.0343	0.0433	0.0453	0.0575	0.0453
Number of observations	307,079	307,079	307,079	183,696	297,443

*Significant at the 10 percent level.
***Significant at the 1 percent level.
Notes: The sample here is made up of immigrant males aged 25–54 who live in a metropolitan statistical area. The dependent variable is *SELFEMP*, as defined in the text. The corrected robust standard errors, clustered around the public use microdata areas (PUMAs), appear in parentheses. PUMA fixed effects are the 1,572 dummies for the PUMAs in the sample. Country of origin fixed effects are 33 dummies. Ethnic enclave effect and network effect are defined in the text. The linear probability coefficient estimates are reported in all the columns. As a robustness check, all individuals from Mexico and Cuba are dropped from the sample in the fourth and fifth columns, respectively.
Source: Author's calculations based on data from the U.S. Census Bureau, 2000 *Decennial Census*, *Public Use Microdata Samples*, 5 percent sample.

the characteristics of individuals—namely, years since migration, English language proficiency, and education. A positive coefficient for these interaction terms would signal that the network exerts a greater positive effect on the self-employment decision of individuals with particular characteristics.

The results are reported in table 6. The first row of this table shows how the network effect varies with years since migration. The positive coefficient signals that the network effect appears to be more important if the individuals have resided in the U.S. for a longer period. Intuitively, although recent immigrants are likely to have greater information problems, which generate the need for networks, the start-up costs of business are likely to be a deterrent to entry for more recent cohorts (Borjas, 1986). This result suggests that the longer the immigrants reside in the U.S., the better they may be able to take advantage of available information through networks and realize their goal of self-employment.

English language proficiency allows immigrants to organize and operate their businesses, communicate with customers who may not belong to the same ethnic group, and adhere to legally mandated practices. It may also allow the immigrants to become financially assimilated and access formal financial markets, and it may provide a positive signal to financial institutions. However, for individuals who do not speak English, the ethnic network should mitigate the costs of language deficiencies for self-employment. This appears to be consistent with the finding in the second row of table 6, which shows the interaction between English language proficiency and network to be statistically insignificant. This suggests that the fact of speaking English fluently does not confer a significant advantage over those who do not speak English fluently, provided the immigrant is in a position to benefit from an ethnic network.

The third and fourth rows show how the network effect varies with education. The results suggest that the ethnic network may be more important in increasing the chances of self-employment if individuals have some high school level of education. In contrast, the network is relatively less important in terms of the self-employment status for immigrants who are highly educated (those with college degrees).

TABLE 6

Interaction of ethnic networks with personal characteristics of immigrant individuals

			Standard deviation
1	Networks	0.0304	(0.251)
	Networks × years since migration	0.0062***	(0.001)
2	Networks	0.1053**	(0.0314)
	Networks × English language proficiency	0.0494	(0.0306)
3	Networks	0.077***	(0.017)
	Networks × high school or less	0.11248***	(0.02957)
4	Networks	0.2174***	(0.0253)
	Networks × college degree	–0.11248***	(0.02957)

 **Significant at the 5 percent level.
***Significant at the 1 percent level.
Notes: The sample here is made up of immigrant males aged 25–54 who live in a metropolitan statistical area. The dependent variable in each of the four regressions is *SELFEMP*, as defined in the text. In addition to the variables reported here, the regressions control for the group fixed effects and public use microdata area fixed effects, age, martial status, race, education, English language proficiency, and years since migration. The robust standard errors appear in parentheses. The ethnic network indicator is defined in the text. The linear probability coefficient estimates are reported.
Source: Author's calculations based on data from the U.S. Census Bureau, 2000 *Decennial Census*, *Public Use Microdata Samples*, 5 percent sample.

Conclusion

In this article, I provide an overview of the literature on ethnic enclaves and networks. I discuss, define, and measure these two concepts, and then assess the mechanisms through which they affect the self-employment decisions of immigrants in the U.S. Then, I analyze the data, present the descriptive statistics, and conduct empirical analyses to reaffirm some of the intuitive results gleaned from the data. I find that ethnic networks play a positive role in the likelihood that immigrants will choose self-employment as an alternative to wage employment. Immigrants' personal characteristics such as years since migration, English language proficiency, and education level are also important in their decision to be self-employed. However, I find no clear impact of ethnic geographical concentrations on the self-employment decision.

From a policy point of view, the role of self-employment in potentially enhancing the socioeconomic standing of more vulnerable populations and communities, including immigrant ones, has inspired initiatives that encourage self-employment. The findings from this article provide some insights into self-employment among immigrant groups—an important avenue toward economic integration and socioeconomic mobility.

NOTES

[1]I approximate this growth in the number of immigrant businesses over the period 1997–2002 based on data from the U.S. Census Bureau's *Decennial Census of Population and Housing, Profile of General Demographic Characteristics: 2000*; 2002 *Survey of Business Owners*; and 1997 *Survey of Minority-Owned Business Enterprises*. In 2002, there were 22,974,655 firms in total: 19,899,839 were white-owned; 1,573,464, Hispanic-owned; 1,197,567, black-owned; and 1,103,587, Asian-owned. In 1997, there were 20,821,934 firms in total: 17,782,901 were white-owned; 1,199,896, Hispanic-owned; 912,959, Asian-owned; and 823,499, black-owned. The estimates of the number of immigrants firms from these totals are based on the assumption that 5.8 percent of the white owners are immigrants, 66 percent of the Hispanic owners are immigrants, 11.8 percent of the black owners are immigrants, and 89 percent of the Asian owners are immigrants. (See www.census.gov/csd/sbo/chartable_a.xls and www.census.gov/prod/ec97/e97cs-1.pdf.)

[2]See www.kauffman.org/items.cfm?itemID=1036. The Kauffman Index of Entrepreneurial Activity is derived from the U.S. Census Bureau's monthly *Current Population Survey* (CPS). Using detailed demographic information on race, education, region, age, and immigrant status, the Kauffman Index of Entrepreneurial Activity captures all adults aged 20–64 who initially start a business (in the business's first month), including those who own incorporated or unincorporated businesses and those who are employers and nonemployers.

[3]See Light (1979), Wilson and Portes (1980), Evans (1989), Lazear (1999), McManus (1990), Aldrich et al. (1985), Chiswick and Miller (2002), Sanders and Nee (1996), and Bates (1990, 1996).

[4]The literature covers research of neighborhood effects on a wide variety of individual behaviors, including welfare participation, crime, drug use, educational attainment, and sexual behaviors. See, for example, Case and Katz (1991); Nechyba (1996); Glaeser, Sacerdote, and Scheinkman (1996); Borjas (1995); Bertrand, Luttmer, and Mullainathan (2000); Munshi (2003); and Topa (2001).

[5]People from U.S. overseas territories, such as Puerto Ricans, although not technically immigrants, may be included insofar as the U.S. Census asks them about when they came to the United States and whether they speak English or a different language at home.

[6]PUMAs are areas whose boundaries are defined by the U.S. Census Bureau; each PUMA has a population of 100,000 or more.

[7]For convenience, I put Mexico in the South and Central America group, although only southern Mexico is typically considered part of Central America.

[8]The U.S. Census data do not specify whether the immigrants from "Korea" are from North Korea or South Korea (two distinct nations), but I consider the immigrants from Korea to be those from both North Korea and South Korea.

[9]Some critics point out that findings of positive correlations between self-employment choice and neighborhood ethnic concentration are only suggestive of the network effect. Manski (2000) refers to this situation as the "reflection problem"—an inherent problem in studying social interaction effects due to the inability to control for correlated unobserved characteristics within the community. For example, areas may have high self-employment for a variety of reasons (for example, favorable small business entry policies and better zoning regulations that encourage small shopping malls). This would make individuals in the area more likely to be self-employed.

APPENDIX: TOP TEN INDUSTRIES OF SELF-EMPLOYED IMMIGRANTS

Region/ Country of origin	1	2	3	4	5	6	7	8	9	10
South and Central America										
Columbia	Construction	Taxi and limousine services	Auto repair	Truck transportation	Services to buildings and dwellings	Restaurants and other food services	Real estate	Landscaping services	Technical/consulting	Retail trade
El Salvador	Construction	Landscaping services	Truck transportation	Auto repair	Services to buildings and dwellings	Restaurants and other food services	Services to private households	Services incidental to transportation	Professional—engineering	Grocery stores
Guatemala	Construction	Landscaping services	Auto repair	Truck transportation	Restaurants and other food services	Services to private households	Services to buildings and dwellings	Real estate	Specialty food stores	Car washes
Mexico	Construction	Landscaping services	Auto repair	Truck transportation	Restaurants and other food services	Crop production	Services to buildings and dwellings	Retail trade	Auto dealers	Services to private households
Peru	Construction	Services to buildings and dwellings	Taxi and limousine services	Auto repair	Services to private households	Truck transportation	Landscaping services	Real estate	Restaurants	—
Middle East										
Egypt	Taxi and limousine services	Restaurants and other food services	Construction	Offices of dentists	Clothing and accessories	Wholesale trade	Physician offices	Professional—scientific/technical services	Dry cleaning and laundry facilities	Liquor stores
Iran	Construction	Beauty salons	Taxi and limousine services	Auto repair	Auto dealers	Professional—engineering	Physician offices	Legal services	Real estate	Retail—furniture/home furnishing
Iraq	Construction	Grocery stores	Liquor stores	Auto repair	Taxi and limousine services	Real estate	Video rental stores	Gas stations	Manufacturing—printing	Beauty salons
Israel	Construction	Real estate	Grocery stores	Taxi and limousine services	Arts/entertainment	Restaurants	Physician offices	Consulting	Nondepository credit and related	Legal services
Lebanon	Construction	Restaurants	Auto repair	Jewelry, luggage, and leather goods stores	Grocery stores	Gas stations	Clothing and shoes stores	Wholesale trade	Taxi and limousine services	Physician offices

APPENDIX: TOP TEN INDUSTRIES OF SELF-EMPLOYED IMMIGRANTS (CONTINUED)

Region/ Country of origin	1	2	3	4	5	6	7	8	9	10
Middle East										
Turkey	Construction	Restaurants and other food services	Taxi and limousine services	Wholesale trade—durable goods	Manufacturing—wood product	Retail—jewelry, luggage, and leather	Dry cleaning and laundry facilities	Insurance carrier and related services	Auto repair	Gas stations
Africa										
Ethiopia	Taxi and limousine services	Truck transportation	Beauty salons	Consulting	Retail trade	Gas stations	Professional—technical services	Construction	Auto repair	Transportation
Nigeria	Taxi and limousine services	Technical/ consulting	Financial investment	Bookkeeping	Construction	Physician offices	Wholesale trade	Transportation	Professional—engineering	Nondepository credit and related
India/Pakistan										
India	Physician offices	Taxi and limousine services	Grocery stores	Traveler accommodations	Computer design	Restaurants	Truck transportation	Construction	Financial investment	Technical/ consulting
Pakistan	Taxi and limousine services	Grocery stores	Construction	Physician offices	Restaurants and other food services	Gas stations	Retail trade	Wholesale trade	Truck transportation	Auto repair
Canada	Construction	Performing arts	Real estate	Legal services	Technical/ consulting	Computer design and related	Physician offices	Motion picture and video services	Securities, funds, and financial services	Auto repair
Europe										
France	Construction	Accommodations and food services	Real estate	Restaurants	Professional—technical services	Computer design	Management technical consulting	Landscaping services	Financial investment	Technical/ consulting
Germany	Construction	Performing arts	Technical/ consulting	Legal services	Real estate	Auto repair	Trusts, funds, securities, and financial services	Physician offices	Professional—engineering	Professional—scientific/ technical services
Italy	Construction	Restaurants and other food services	Barber shops	Landscaping services	Beauty salons	Auto repair	Performing arts	Legal services	Trusts, funds, securities, and financial services	Real estate

APPENDIX: TOP TEN INDUSTRIES OF SELF-EMPLOYED IMMIGRANTS (CONTINUED)

Region/ Country of origin	1	2	3	4	5	6	7	8	9	10
Europe										
Poland	Construction	Truck transportation	Services to buildings and dwellings	Auto repair	Taxi and limousine services	Real estate	Restaurants and other food services	Services to private households	Technical/ consulting	Computer design and related
Caribbean										
Cuba	Construction	Truck transportation	Auto repair	Landscaping services	Real estate	Professional services	Physician offices	Services to buildings and dwellings	Accommodations and food services	Restaurants and other food services
Dominican Republic	Construction	Taxi and limousine services	Grocery stores	Auto repair	Restaurants	Retail trade	Truck transportation	Real estate	Retail trade— other direct establishments	Grocery and related wholesalers
Haiti	Taxi and limousine services	Construction	Auto repair	Transportation	Services to buildings and dwellings	Physician offices	Restaurants	Truck transportation	Computer design	Insurance carrier and related services
Jamaica	Construction	Auto repair	Taxi and limousine services	Landscaping services	Landscaping services	Services to buildings and dwellings	Bookkeeping	Restaurants	Real estate	Artist
Puerto Rico	Construction	Auto repair	Truck transportation	Landscaping services	Real estate	Performing arts	Services to buildings and dwellings	Beauty salons	Taxi and limousine services	Restaurants and other food services
Northeast Asia										
China	Restaurants and other food services	Construction	Taxi and limousine services	Grocery stores	Consulting services	Performing arts	Dry cleaning and laundry services	Securities, funds, and financial services	Wholesale trade	Computer design and related
Japan	Construction	Restaurants and other food services	Performing arts	Landscaping services	Technical/ consulting	Wholesale trade	Legal services	Computer design and related	Specialized design services	Real estate
Korea	Construction	Restaurants and other food services	Dry cleaning and laundry services	Grocery stores	Clothing and accessories stores	Auto repair	Services to buildings and dwellings	Real estate	Physician offices	Liquor stores

APPENDIX: TOP TEN INDUSTRIES OF SELF-EMPLOYED IMMIGRANTS (CONTINUED)

Region/ Country of origin	1	2	3	4	5	6	7	8	9	10
Southeast Asia										
Cambodia	Restaurants and other food services	Construction	Retail bakeries	Taxi and limousine services	Personal/ household goods repairs	Truck transportation	Agriculture— fishing, hunting, and trapping	Manufacturing— seafood and other miscellaneous	Landscaping services	Auto repair
Laos	Crop production	Restaurants and other food services	Construction	Auto repair	Traveler accommodations	Manufacturing— electrical supplies	Jewelry, luggage, and leather goods stores	Manufacturing— fabric mills	Grocery stores	Computer design and related
Philippines	Construction	Restaurants and other food services	Physician offices	Insurance carrier and related services	Auto repair	Real estate	Legal services	Landscaping services	Accounting, bookkeeping services	Technical/ consulting
Thailand	Restaurants and other food services	Construction	Auto repair	Retail trade	Real estate	Technical/ consulting	Administrative and waste management	Miscellaneous retail trade	Gas stations	Gift, novelty, and souvenir shops
Vietnam	Nail salons	Restaurants and other food services	Construction	Landscaping	Beauty salons	Auto repair	Agriculture— fishing, hunting, and trapping	Real estate	Grocery stores	Manufacturing— cut and sew apparel

Notes: For convenience, Mexico is put in the South and Central America group, although only southern Mexico is typically considered part of Central America. The population from the U.S. overseas territory Puerto Rico is included, although individuals from there are technically not immigrants. The U.S. Census data do not specify whether the immigrants from Korea are from North Korea or South Korea (two distinct nations), but here the immigrants from Korea are considered to be those from both North Korea and South Korea.

Source: U.S. Census Bureau, 2000 *Decennial Census, Public Use Microdata Samples*, 5 percent sample.

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