University of North Carolina Asheville
Journal of Undergraduate Research
Asheville, North Carolina
December 2022

Effects of Immigration on Small Business

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Abstract

Immigration Economics is a field rich with compelling analysis of immigrant productivity and contribution. One topic that has been somewhat overlooked, however, is the entrepreneurial spirit of immigrants and the effects this has on their destination cities and its inhabitants. Starting a business, much like moving away from your home country, requires a healthy appetite for risk. We find that proclivity to/success in entrepreneurial pursuits vary on axis of gender, immigration status and age –showing that young immigrant entrepreneurs typically make more than their native counterparts. This research will use American Community Survey data from the 2010s to demonstrate the relationship between immigrant population and small business outcomes on the metropolitan area level. To accomplish this, we use descriptive statistics, Least Squares regression analysis, confirmed by Logistical regression analysis. Further, this research will demonstrate the magnitude of the effect of immigration on native entrepreneurs, provide possible explanations for this and resulting policy suggestions.

1. Introduction

Economists love to talk about immigration – from the labor market shifts induced by new arrivals[6] to remittance trends, there are all sorts of rich topics waiting for proper research. The act of relocating from one country to another is an involved endeavor for individuals as it involves leaving behind family, social circles and human capital[7]. Immigration also provides an opportunity to the immigrant's destination market to use their skills efficiently to provide benefits to their population as a whole.

When economists study the effects of immigration on a local economy, their research is generally focused on either the productivity of immigrants themselves or the effect on the partial equilibrium of a labor marketas a whole. While these studies offer interesting conclusions about overall productivity of workers in a local market and the benefits of increased immigration, they generally skip over the spillover effects of this immigration on the native population. Taking this next step provides clarity to the whole-market effects of immigration in a given city. Gaining an understanding of these trends also give us better framework to use when crafting immigration policy suggestions.

Similarly, the mainstream immigration economics literature generally assumes that both immigrants and native workers are identical units of labor, a commodity that is traded between pre-existing firms. This model of the labor market undermines the workforce's autonomy and the available alternatives for making a living – principally self-employment through entrepreneurship. Starting one's own business is attractive to both immigrants and natives as it offers a different set of risks and benefits compared to traditional employment. Prior research has established that immigrants are more likely to become entrepreneurs than natives (Vandor, 2021). To expand our understanding of this immigration-fueled entrepreneurship phenomena, this paper seeks to identify and analyze the relationship between immigrant population density and various indicators of business success for both immigrant entrepreneurs and natives on the city level.

2. Literature Review

Fairlie and Loftstrom, 2013 demonstrates that immigrant-owned businesses are more likely to be exporters than native owned businesses[1]. My paper uses this work to help explain the success of small business markets with many immigrants present.

Constant and Schultz-Nielsen, 2004 concludes that the level of welfare in a given destination country has an inverse effect on the level of immigrant entrepreneurship[2]. In this study, immigrants settled in Denmark are less financially incentivized, and thus less likely, to be self-employed over immigrants settled in Germany. My research quantifies the pull towards entrepreneurship in the United States, a country not known for its social safety nets.

Vandor, 2021 confirms that the personality trait correlated with both immigration status and entrepreneurship is willingness to assume risk[3]. If there is a positive relationship between immigrant density and native entrepreneurship, this could form a possible hypothesis – that being exposed to individuals with a higher risk tolerance than you have pushes you to take on additional personal risk link starting your own business. I use this to explain why high-immigrant density cities create on average more native entrepreneurs.

Ottaviano and Peri, 2006 find a positive correlation between urban diversity and native earnings[4]. These findings, while relevant to my research, do not claim to provide causation. One caveat that these authors highlight is the possible relationship between one's education and the value that they place on living in a diverse environment – correctly allowing that urban selection is anything but random. My research points to the fact that educated individuals may correctly assert that their earnings will be highest when they live in a diverse environment, one with a high immigrant density.

3. Data and Regression Equation

The hypothesis that I seek to support is that there is a positive correlation between the diversity of a city (as calculated by the proportion of immigrants in the total population) and the overall state of entrepreneurship in the city. I will analyze this both in terms of extensivean individual's likelihood to become and entrepreneurand the income they derive from these activities. From my dataset I have created a variable that quantifies the population share of immigrants in the metropolitan area of each individual respondent. This, combined with data on annual business income split between large and small business allows me to pursue my research.

To analyze this, I will run OLS regressions with data from three years of the American Community Survey to create an estimate the likelihood of someone in their metropolitan area to be self-employed and the local business incomd. The American Community Survey provides a variety of helpful variables to help answer these research questions. In my regression equation, the outcome variable is a dummy for whether the survey respondent is an entrepreneur. The variables of interest for my equation are the metropolitan share of immigrants and whether an individual is an entrepreneur/immigrant. I also include a variety of controls such as educational attainment, race, gender and time and city fixed effectsendogeneity, denoted below as . age, gender, education, year (to capture business cycle effects) and race.

(1)

$$\text{LogBusinessIncomei} = \beta_0 + +\beta_2 \text{ImmigShare} + \text{Ci} + \qquad (2)$$

The American Community Survey provides a variable for Metropolitan Area from the 2013 OMB delineations. I use this to group individual respondents geographically. I have determined that this variable provides more accurate results than using address city or other tools.

In my work, I define whether an individual is an immigrant based on reported birthplace being outside of the United States. While I recognize that this may create some cases where a child is born abroad to U.S. citizen parents is marked as an immigrant, I do not find this concerning. Given my sample size (n=9,402,127 over 3 years of the ACS), any inaccuracy would be minimal. I would also argue that a U.S. citizen raised abroad, and thus imparted with many of the values, experiences and education of natives in their birth country, would encounter many of the same challenges faced by non-citizen immigrants to the United States – especially in the labor market.

To define whether the respondent was an entrepreneur or not, I filtered by the classwkr variable provided in the ACS to include only those entries from those not engaged in W-2 salaried employment. While this would include gig workers and independent contractors, I am comfortable using this as a marker of entrepreneurial tendencies, spirit. Even when engaged in consistent pseudo-employment with a firm, an independent contractor would still need to possess some level of entrepreneurial tendancy in order to have reached that status.

While examining business income in my regressions, I found it necessary to delineate between entrepreneurs young and old and cities large and small. After extensive threshold testing of results by age, I found that 35 years old is the most likely inflection point for young/old entrepreneurs. For city size, I label small cities those with fewer than 50,000 people and large cities those with more than 50,000 people. Increased stratification of city size and specific areas (such as the San Francisco Bay Area) would be excellent opportunities for further scholarship.

4.

Table 1. Summary of Continuous Variables Data**Summary of Continuous Variables**

	Mean	**Std. Dev.**	**Min**	**Max**
Business Income	$175,651	378,796.2	-9,400	999,999+

for natives	$198,847	397,567	-9,400	999,999+
for immigr.	$48,758.52	211,473.8	-9,400	999,999+
City Share of Immigrants	15.4%	10%	0.84%	39.2%
Age	40.35	23.4	0	96

Table Notes: N= 6,917,530

Table 2. Summary of Dummy Variables Data**Summary of Dummy Variables**

	Mean	**Std. Dev.**
Immigrant	.15454	0.3614
Female	.5143	.4998

	N=
Table Notes:	6,917,530

correlatedwith

Figure 1. Native Entrepreneurship and Share of Immigrants graph

Figure 2. Mean Wage/Share of Immigrants graph

5. Results and Discussion

5.1 Who Becomes an Entrepreneur?

First, I'd like to examine with one's likelihood to be an entrepreneur using six OLS regressions. I use Entrepreneur Status as my Y variable with X variables for immigration status, sex, age, city share of immigrants plus education and annual fixed effects.

$$EntrepreneurStatus = \beta_0 + \beta_1 Immigrant_i + \beta_2 F_i + \beta_3 A_i + \beta_4 ImmigShare_i + \Sigma\delta_j Educ_{ji} + \Sigma\gamma_j Year_{ji} + \varepsilon_i \quad (3)$$

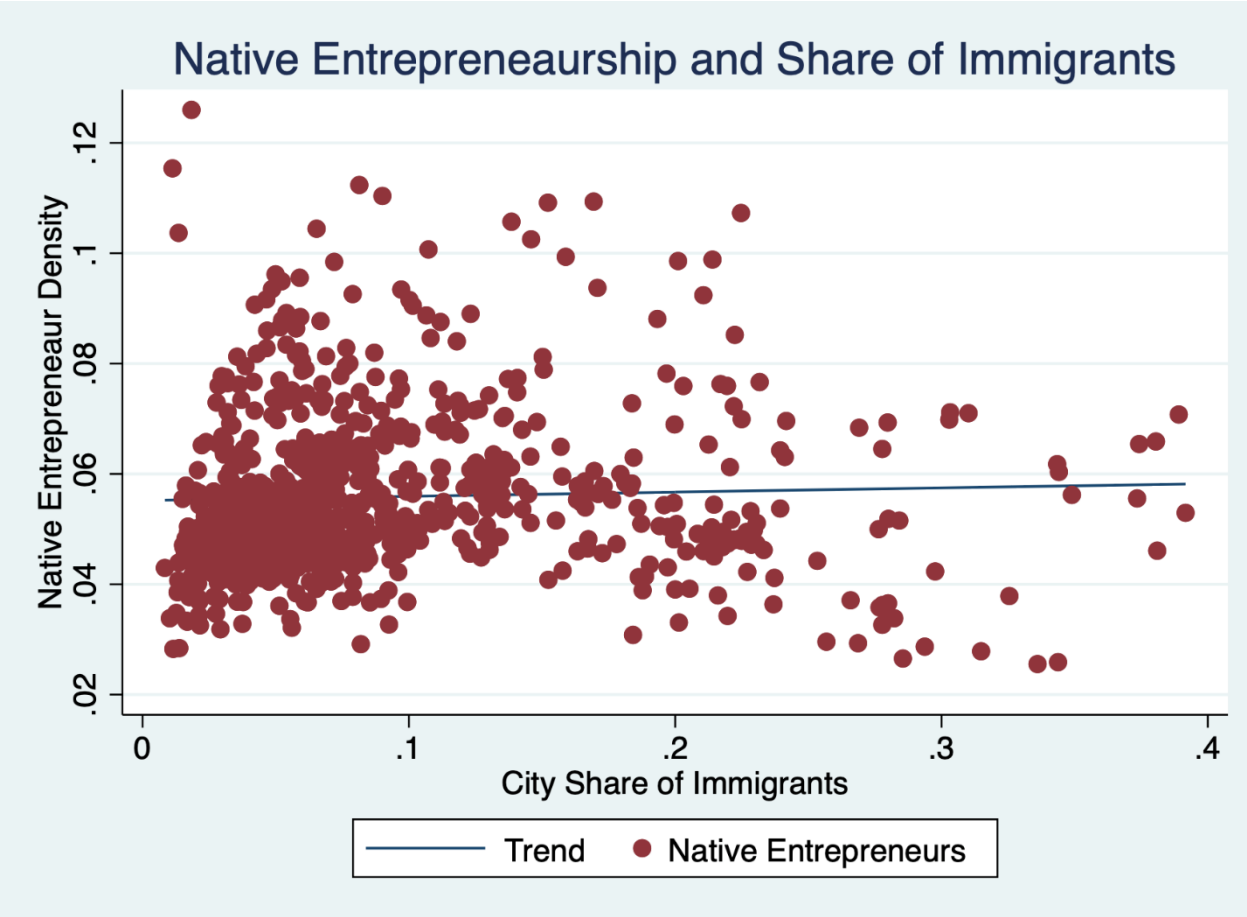
Table 3. Results of Proclivity to Entrepreneurship Regressions

OLS – Proclivity to Entrepreneurship

	1st	2nd	3rd	4th	5th	6th
Immigrant	0.03***	0.031***	0.023***	0.02***	0.021***	0.021***
	(122.48)	(124.33)	(95.03)	(78.76)	(82.87)	(82.87)
Female		-0.03***	-0.033***	-0.033***	-0.033***	-0.0329***
		(-167.30)	(-184.32)	(-184.37)	(-184.95)	(-184.95)
Age			0.0012***	0.0012***	0.00077***	0.00077***
			(311.16)	(313.09)	(163.95)	(163.93)
City Share of Immigrants				0.041***	0.037***	0.037***
				(44.53)	(40.08)	(40.06)
Education Fixed Effect					X	X
Annual Fixed Effect						X

Table Notes: t-stat in (), confidence interval, * = 90%, ** = 95% and *** = for 99%.

This series of regressions demonstrates that immigrants are overall more likely to engage in entrepreneurship than their native neighbors. This result withstands the addition of controls such as education. It also demonstrates that women are slightly less likely to be entrepreneurs than men even when we control education. The most interesting result of these regressions however if the fact that they identify a positive correlation between a city's share of immigrants and the overall likelihood of native residents to engage in entrepreneurship. These results support my hypothesis that there is a spillover effect of risk-tolerance from immigrant density in a given city.



Given the importance of these results to my hypothesis that immigrants improve small business/entrepreneurial results, I chose to verify these results using Logistic Regressions for a higher level of confidence. In this verification, each logistic regressions returned the same sign as OLS – imparting confidence for my initial results and the soundness of my hypothesis.

Table 4. Results to Logical Regressions for Proclivity to Entrepreneurship

Logistic Regression – Proclivity to Entrepreneurship						
	1st	**2nd**	**3rd**	**4th**	**5th**	**6th**
Immigrant	.474	.484	0.4	0.343	0.39	0.39
	(121.34)	(123.39)	(100.92)	(81.77)	(93.23)	(93.24)
Female		-0.545	-0.614	-0.614	-0.61	-0.605
		(-165.27)	(-184.14)	(-184.19)	(-181.11)	(-181.11)
Age			0.022	0.023	0.015	0.015
			(307.08)	(308.46)	(176.22)	(176.2)
City Share of Immigrants				0.681	0.65	0.65
				(40.73)	(38.59)	(38.59)
Education Fixed Effect					**X**	**X**
Annual Fixed Effect						**X**
Log likelihood	-1551409.4	-1537394.1	-1487976.2	-1487155.4	-1450710.2	-1450703.5
Table Notes:	z-stat in ()					

5.2 What Makes an Entrepreneur Successful?

Entrepreneurship is generally considered to be a marker of success. That binary indicator is rather incomplete, however. The next question that I want to address is what characteristics make one most likely to earn the most as an entrepreneur. In this research, we will use business income as reported by the American Community Survey.

$$Ln(BusinessIncome)_i = \beta_0 + \beta_1 Immigrant_i + \beta_2 F_i + \beta_3 A_i + \beta_4 ImmigShare_i + \Sigma\delta_j Educ_{ji} + \Sigma\gamma_j Year_{ji} + \varepsilon_i \quad (4)$$

Table 5. Business Income among Entrepreneurs regression results

Log of Business Income among Entrepreneurs						
	1st	**2nd**	**3rd**	**4th**	**5th**	**6th**
Immigrant	-1.65***	-1.65***	-0.242***	-0.266***	-0.301***	-0.301***
	(-272.82)	(-272.58)	(-64.52)	(-69.80)	(-99.36)	(-99.36)
Female		0.962***	-0.108***	-0.108***	-0.103***	-0.103***
		(29.95)	(-55.52)	(-55.67)	(-66.50)	(-66.50)
Age			-0.089***	-0.0877***	-0.017***	-0.0172***
			(-1628.38)	(-1627.95)	(-171.22)	(-171.30)
City Share of Immigrants				0.0362***	0.227***	0.226***
				(36.72)	(29.04)	(28.85)
Education Fixed Effect					**X**	**X**
Annual Fixed Effect						**X**
Table Notes:	t-stat in ()	confidence interval, * = 90%, ** = 95% and *** = for 99%.				

This series of regressions continue to demonstrate my hypothesis of the positive relationship between small business outcome and share of immigrants on the city level. This table also quantifies a negative business income coefficient for immigrant entrepreneurs. Equation 6 offers the most comprehensive analysis due to the included controls. It shows that immigrants who start a business in U.S. cities will earn ~30% less than native entrepreneurs.

What puzzled me in this table was the dramatic reduction in the immigrant income coefficient magnitude when age was added as a control. Perhaps young immigrants prove to be better substitutes for native entrepreneurs than older immigrants? If age plays a material role in determining the earnings of immigrant entrepreneurs – what is behind this and at what age does this effect come into plat? To investigate further, I restrained a similar series of regressions only respondents under 35 years old.

Table 6. Business Income among Entrepreneurs under 35 regression results

Log of Business Income among Entrepreneurs Entrepreneurs Under 35					
	1st	**2nd**	**3rd**	**4th**	**5th**
Immigrant	0.13***	0.139***	0.033***	0.094***	0.094***
	(14.62)	(16.30)	(3.65)	(9.94)	(9.94)
Female		-0.55***	-0.55***	-0.557***	-0.557***
		(-77.01)	(-77.93)	(-78.54)	(-78.59)
City Share of Immigrants			1.23***	1.15***	1.14***
			(33.97)	(31.65)	(31.41)
Education Fixed Effect				**X**	**X**
Annual Fixed Effect					**X**
Table Notes:	t-stat in ()	confidence interval, * = 90%, ** = 95% and *** = for 99%.			

After constraining my regressions, we see a far different trend for immigrant entrepreneurs at different ages. The business income of young immigrant entrepreneurs is consistently higher than their native peers. When constraining my analysis to only immigrants under 35, I see that earnings among immigrant entrepreneurs is 9.5% higher than natives. This lends itself to the hypothesis that immigrants are increasingly better substitutes for native entrepreneurs. One other possible finding from this experiment is that the risk-tolerance effect that propels immigrant-dense small business economies may be acutely present among young entrepreneurs. This is possible due to the lack of responsibilities in one's early life. Alternatively, it could be a sign of intense drive to provide for their families in their origin country.

My explanation for the finding that young immigrant entrepreneurs earn more is two-fold. First, given the increasing digitalization of the US economy, it is far easier to gain the skills needed to succeed in the United States in one's home country prior to immigration. For example, it easier now than ever before for a 14-year-old in Kathmandu, Nepal to gain the skills necessary to be hired in San Francisco as a web developer. The magnitude of skill portability has only grown in the internet age and will certainly continue to grow. Second, when an immigrant is younger when they respond to the American Community Survey, it is perhaps more likely that they have spent a great percentage of their life living and being educated in the United States. This too would make them a better substitute for a native entrepreneur. To add additional robustness to my possible explanations, I ran the series of equations, including only respondents 35 years old and older.

Table 7. Business Income among Entrepreneurs under 35 regression results

Log of Business Income among Entrepreneurs

Entrepreneurs Over 35

	1st	**2nd**	**3rd**	**4th**	**5th**
Immigrant	-0.6***	-0.6***	-0.617***	-0.061***	-0.061***
	(-122.76)	(-122.76)	(-124.2)	(-29.55)	(-29.55)
Female		0.0033	0.0033	-0.016***	-0.016***
		(1.56)	(1.57)	(-18.57)	(-18.58)
City Share of Immigrants			0.212***	0.092***	0.091***
			(20.03)	(20.99)	(20.90)
Education Fixed Effect				**X**	**X**
Annual Fixed Effect					**X**

Table Notes: t-stat in () confidence interval, * = 90%, ** = 95% and *** = for 99%.

This table confirms our suspicions that younger immigrant entrepreneurs are more likely to be successful in launching their own businesses. We see that older immigrants (over 35) earn ~6% less than native entrepreneurs. Immigrant business income coefficients from this series of regressions are lower across the board compared to the analysis of young entrepreneurs. One other interesting trend emerges here as well– the effect of age on female entrepreneurs. In our regressions of the entire dataset and the group of young entrepreneurs, we see statistically significant negative coefficients for female entrepreneurs. This series of regressions demonstrates that the difference in earning by gender largely shrinks as a female entrepreneur grows older. This trend is fascinating and requires further scholarship to understand better what factors are at play here – be it early-career discrimination, unequally distributed childcare duties, differing levels of risk tolerance or other factors.

6. Who is Successful in Different Scales of Business?

So far in our research, we have considered where entrepreneurs are likely to success and who is likely to succeed as an entrepreneur. One aspect that remains is the question of business scale. When considering entrepreneurial outcomes, it's easy to think of small business activity as being homogeneous. That understanding, of course, would skew one's understanding of the true forces at play.

I was curious to measure the difference in performance between very small businesses and larger small businesses. To make this distinction, I constrained my regressions to include respondents with business income either above or below $65,000/year. This threshold comes from the thought that if business grows beyond $65,000 per year in income, it is plausible that the entrepreneur could hire the time of others to help them run the business in addition to supporting themselves. In my mind, that takes the business out of the "very small" category.

Table 8. Small Business Income regression results

Log of Business Income among Entrepreneurs

Small Business

	1st	2nd	3rd	4th	5th
Immigrant	0.367***	0.367***	0.29***	0.297***	0.297***
	(47.72)	(47.94)	(36.77)	(34.79)	(34.81)
Female		-0.361***	-0.365***	-0.365***	-0.365***
		(-57.23)	(-57.81)	(-57.92)	(-57.96)
City Share of Immigrants			0.769***	0.804***	0.797***
			(23.57)	(24.59)	(24.37)
Education Fixed Effect				X	X
Annual Fixed Effect					X

Table Notes: t-stat in () confidence interval, * = 90%, ** = 95% and *** = for 99%.

When our regression is constrained to very small businesses only, we see a strong advantage of immigrant entrepreneurs – much different from the negative coefficient held by immigrant entrepreneurs in the complete dataset. When engaging in small business, equation 5 shows that immigrants make 29% more than natives and a positive correlation between the city's share of immigrants. This suggest that immigrants' skills likely lend themselves to success in small business.

Table 9. Small Business Income regression results

Log of Business Income among Entrepreneurs
Large Business

	1st	2nd	3rd	4th	5th
Immigrant	-0.17***	-0.169***	-0.166***	-0.018***	-0.018***
	(-111.10)	(-111.20)	(-108.80)	(-36.00)	(-36.01)
Female		0.054***	0.054***	-0.0004***	-0.0004*
		(85.79)	(85.80)	(-1.78)	(-1.78)
City Share of Immigrants			-0.06***	0.0042***	0.0042***
			(-18.74)	(4.06)	(4.03)
Education Fixed Effect				X	X
Annual Fixed Effect					X

Table Notes: t-stat in () confidence interval, * = 90%, ** = 95% and *** = for 99%.

When confined to businesses earning more than $65,000/year, we see that immigrants' slightly negative coefficient from our prior regressions returns. Equations 2 and 3 suggest that female entrepreneurs are more successful than male entrepreneurs at the large business threshold, a diverging result from the small business analysis – earning 5.4% more on average. This result would be an interesting topic for further scholarship. To provide additional certainty to these results, I have verified these results using logical regressions, as well.

Table 10. Business Income among Entrepreneurs logistical regression results

Log of Business Income among Entrepreneurs

	1st	2nd	3rd	4th	5th	6th
Immigrant	-0.96	-0.95	-0.171	-0.176	-0.031	-0.031
	(-15.18)	(-15.06)	(-2.69)	(-2.64)	(-0.46)	(-0.47)
Female		0.397	0.136	0.136	0.172	0.168
		(7.98)	(2.71)	(2.71)	(3.43)	(3.36)
Age			-0.0597	-0.0597	-0.013	-0.0138
			(-56.86)	(-56.85)	(-7.60)	(-7.88)
City Share of Immigrants				0.0629	-0.124	-0.228
				(0.25)	(-0.50)	(-0.91)
Education Fixed Effect					X	X
Annual Fixed Effect						X
Log likelihood	-13337.495	-13304.747	-11502.879	-11502.847	-10834.312	-10534.758

Table Notes: z-stat in ()

7. Crowding-out of native entrepreneurs?

One question raised by this research is the quandary of whether a high density of immigrants, who we have shown are more likely to be entrepreneurs, in a given city would yield negative effects on the business prospects of native entrepreneurs. On a basic level, it would stand to reason that as the share of immigrants rises, the share of immigrant entrepreneurs and thus competition for native entrepreneurs would also rise. While this occurs to some degree, native entrepreneurs actually find their business prospects better off given high share of immigrants in their city.

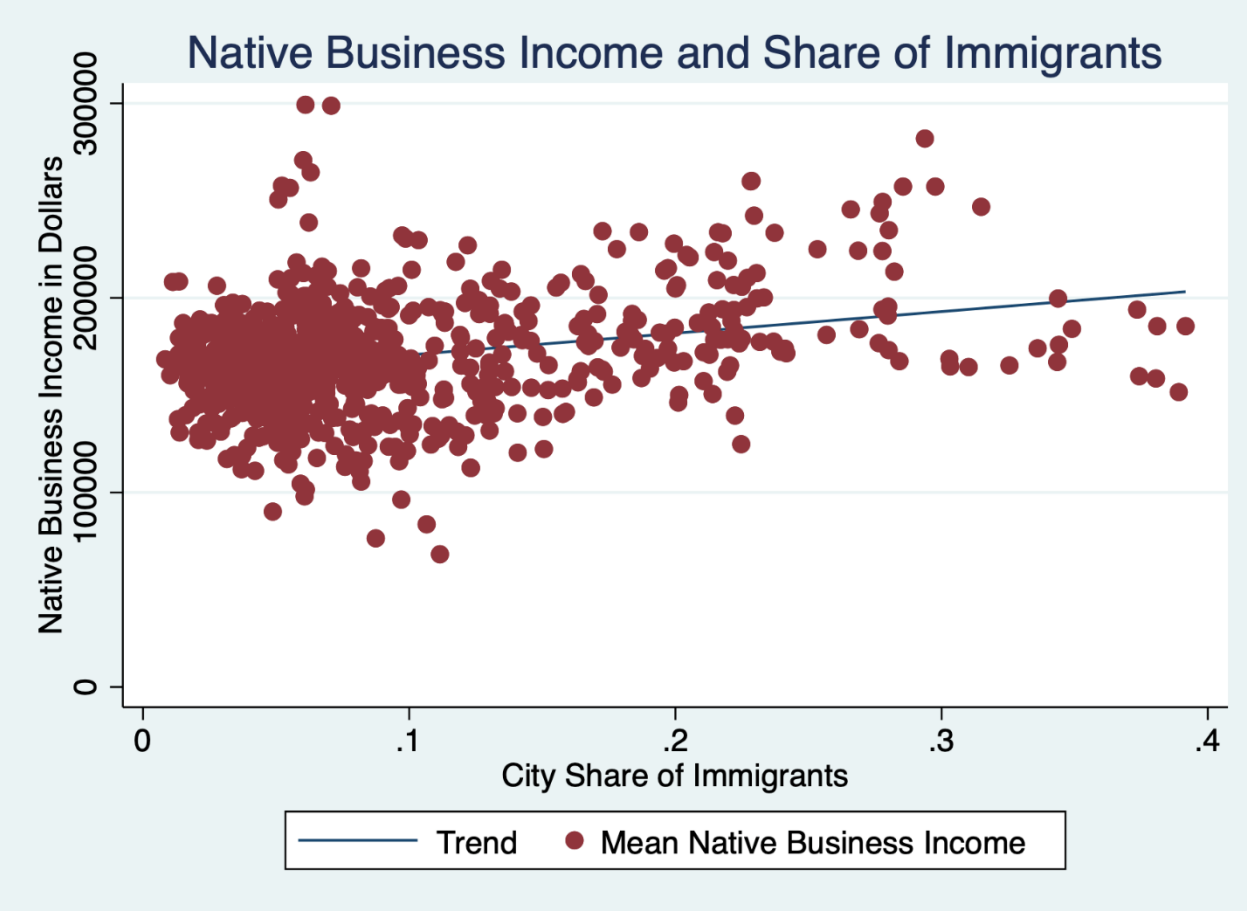


Figure 3. Native Business Income and Share of Immigrants graph

Congruent with my hypothesis, this graph demonstrates a positive correlation between the self-employed business income of natives and the share of immigrants in their city. This trend provides a balm to any crowding-out concern of immigrant entrepreneurs. I believe that this trend is thanks to the contributions of immigrant entrepreneurs to their local environments. Immigrant entrepreneurs create whole-market growth through increased demand for goods and services, close connection to their home-countries for import/export activities, and skills/experiences that would not otherwise be present in the local market made up solely by natives.

8. Possible Omitted Variable Bias

As in any econometrics-based research project, I have worked to remove the risk of Omitted Variable Bias from my regressions that could potentially affect my estimates. My outstanding concern is the idea that the destination selection of immigrants coming to the United States is not random. Immigrants often gravitate towards cities where there are existing populations of individuals with whom they share traditions and heritage. If these cities have high costs of living, this could cause an overstatement of the relationship between city share of immigrants and mean wage/business income. To address this, future scholarship could examine my hypotheses on individual city levels to test the effect among entrepreneurs in a single metropolitan area such as New York or San Francisco. If omitted variable bias results from this, I would expect it to bias my results positively.

One other bias possibly present in this research is that of discrimination experienced my immigrant entrepreneurs. This could be seen either as the prejudice of potential customers against the individual entrepreneur or against the physical location of the entrepreneur's business. If for instance, an immigrant-dense area of a city lacks public transportation or other public services, it may be harder to reach the same number of customers were the business to be located elsewhere. I would expect any effect of this omission to bias my results negatively. Future scholarship could focus their testing of my hypotheses on a single neighborhood with a city-representative level of diversity to remove this bias.

9. Conclusion

This research uses data from the American Community Survey to access the effects of immigration on the small business conditions of destination cities in the United States. It finds a positive relationship between immigrant density and the entrepreneurship, business income and mean wage of the given city. Thus, supporting my hypothesis that there immigrants impart an risk-prone entrepreneurial spirit to their destination. We also demonstrate that immigrants are favored to earn more when they are younger than 35 years of age and when operating a small business.

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