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The entrepreneurial process is the result of the interaction between the individual entrepreneur and the surrounding environment or entrepreneurial ecosystem, which is heterogeneously endowed with knowledge, institutions, resources, and demand for products. Such a perspective raises an important policy question: Are metropolitan areas with disproportionally high shares of entrepreneurs or self-employed people systematically linked to particular attributes of the entrepreneurial eco-system or support system? In this paper non-farm proprietorship (NFP) employment data is utilized as a proxy for entrepreneurship. To examine the spatial patterns of NFP employment by MSA, data on the percent share of NFP employment relative to total employment was collected for 356 MSAs. It is hypothesized that NFP employment by MSA will be linked to both key predictor variables that capture higher qualities of life and access to capital (i.e., opportunity-based entrepreneurship) and, on the other hand, underperforming entrepreneurial eco-systems featuring poorly educated labor pools and high unemployment rates (i.e., necessity driven self-employment). Based primarily on previous research, 26 independent variables were amassed according to their expected relationships with NFP employment. Data on all independent variables was obtained from the Census Bureau's American Community Survey, the Bureau of Economic Analysis, or the Bureau of Labor Statistics. Ultimately, it was determined that NFP employment by MSA seems to be best explained by metro-wide ecosystems that have a high percent FIRE, median age, percent Hispanic, and median home value.

GEOGRAPHIES OF ENTREPRENEURSHIP: NON-FARM PROPRIETORSHIP

EMPLOYMENT BY U.S. METROPOLITAN AREA –

THE KEY PREDICTORS

by

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APPROVAL PAGE

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CHAPTER I

INTRODUCTION

Entrepreneurship is an increasingly important driver of economic change and it is also a distinctly spatially uneven process (Bosma and Schutjens 2008; Stam 2009). Better understanding the geography of entrepreneurship has been increasingly recognized as an important element in explaining variations in regional economic development patterns (Acs and Armington 2004; Fritsch 2008). Recent research has suggested that there are pronounced differences within and between U.S. counties and metropolitan areas in the rates of entrepreneurship and in their determinants (Shrestha *et al.* 2007; Goetz and Rupasingha 2009; Rupasingha and Goetz 2013; Carree *et al.* 2015), implying that entrepreneurship can be a potentially substantive and important explanation of the uneven economic development of regions and places.

Although the entrepreneurship process begins with individuals with relatively unique personal attributes and a likely penchant for risk taking and achievement, entrepreneurs are "hardly lone individuals who rely primarily on their extraordinary efforts and talents to overcome the difficulties inherent in the formation of a new firm" or idea (Stam 2009, p.4). Instead, the entrepreneurial process is the result of the interaction between the individual and the surrounding environment or entrepreneurial eco-system

which is heterogeneously endowed with knowledge, institutions, resources and demand for products. Furthermore, these factor endowments can vary dramatically by metropolitan area.

Such a perspective raises an important policy question: Are U.S. metropolitan areas with disproportionately high shares of entrepreneurs or self-employed people systematically linked to particular attributes of the entrepreneurial eco-system or support system, relative to those places with fewer such workers? The answer to this sort of research question is not straightforward because different types of entrepreneurship may require different types of explanations (Stam 2009). While for some individuals, those metropolitan areas that offer access to capital, culture and technologically innovative, high-growth start-ups may generate entrepreneurial opportunity, in other places, home-grown entrepreneurship may be the only viable source of economic growth, triggered not by a nurturing entrepreneurial eco-system but by a strategy of last resort and a high unemployment rate, deceasing levels of general demand and obsolescent industries. According to Rupasingha and Goetz (2013 p.143), it remains unclear to what extent the uneven growth of self-employment at the county scale "is a response to opportunity or the result of necessity (such as layoffs)." They further argue that analyzing the spatial variation of the proportion of individuals who are self-employed provides "an excellent laboratory for understanding their effects on local economic performance." (p. 143).

This paper sheds new light on how certain metropolitan-scale economic and social variables might influence self-employment shares by place in the post-recession era (2010-2014) so we can better understand why some metropolitan areas have

generated disproportionately more entrepreneurial opportunities than others since the Great Recession of 2008. Although a substantive and growing literature exists on the determinants of self-employment in national or international contexts, relatively little is known about how the disproportionate contributions of entrepreneurship or self-employment may be linked to broader measures of economic performance by locality (Rupasingha and Goetz 2013) especially by both metropolitan area and during the post-recession era. Metropolitan areas were chosen as scale of analysis in this thesis, because they are small enough to account for regional heterogeneity within the U.S. but at the same time large enough to be considered a localized market – based on journey to work commuting ties – that precludes the need to account for spatial interactions between regions (Rey *et al.* 2011; Carree *et al.* 2015).

Utilizing the non-farm proprietorship (NFP) data from the U.S. Bureau of Economic Analysis (BEA) as a proxy for self-employment or entrepreneurship, this paper approaches the concept of entrepreneurship in a quantitative manner. Proprietorship data are widely used in entrepreneurial research (Acs and Armington 2004; Shrestha *et al.* 2007; Goetz and Rupasingha 2009; Coomes *et al.* 2013; Rupasingha and Goetz 2013; Carree *et al.* 2015). The BEA classifies total full- and part-time employment into two major categories: wage and salary jobs, and proprietorships. Wage and salary workers are employed by others while proprietorships are self-employed (Rupasingha and Goetz 2013). The NFP data are derived from filings of federal tax Form 1040 (Schedule C) and form 1065 (Rupasingha and Goetz 2013). It should be noted that these estimates include individuals who may be otherwise employed but generate additional income from self-

employment. Although NFP's are not a complete measure of entrepreneurship, Rupasingha and Goetz (2013 p.142) suggest that "they include full or part-time owners of small non-farm businesses that organize and operate a business, take risks, and earn profits or incur losses." In this sense, NFP's have more in common with entrepreneurs than with wage and salary workers employed by a larger business or with workers who choose to remain unemployed after a lay-off. Goetz and Rupasingha (2009 p.426) persuasively point out that "proprietors create new jobs for themselves, and often for others" even though some may not be as creative or as innovative as true entrepreneurs.

Since the 1960's, a growing number of workers in the US have turned to self-employment through non-farm proprietorships (NFP) as a source of employment and income (Rupasingha and Goetz 2013). More recently, the number of non-farm self-employed workers or proprietors has increased 53% from 25.5 million in 2000 to 39 million in 2014. By contrast, the number of full and part-time wage and salary workers grew by only 5% over the same time period. The level of interest among policy-makers, practitioners, and academics in NFP's as sources of economic development has increased dramatically in recent years (Acs and Armington 2004; Carree *et al.*, 2015; Goetz and Rupasingha 2009; Shrestha *et al.* 2007). That said, very little is known about the recent contributions of entrepreneurship through NFP's to the economic performance of localities in the US during the post-recession years.

In this paper, I concentrate on the post-recession era and focus on the effects of NFP employment share on total employment change (%) from 2010 to 2014 because differences in NFP employment share by place may materialize only after a couple of

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years. The basic model that total employment growth is partly explained by the relative share of NFP's is expanded by controlling for other variables that have emerged in the extant literature including: various demographic attributes (e.g., racial and ethnic composition, percent foreign-born, and median age), levels of educational achievement (e.g., percent of the population aged 25 years or older with a Bachelor's degree or higher), economic indicators (e.g., median earnings, per capita income, unemployment rate, the share of jobs in major industries, and poverty rate), growth measures (e.g., employment and population growth rates), and internet connectivity metrics (e.g., percent of households with cable, DSL, and fiber).

Based on a regression analysis and related GIS spatial statistical analysis, it will be argued that self-employment as measured by the percent of the labor pool attributable to NFP's will be partly explained by a combination of socio-economic predictors that captures both necessity self-employment (e.g., high unemployment rate, large immigrant populations) and self-employment as opportunity (e.g., access to capital, quality of life issues). It is suggested that a complete understanding of the geography of NFP is not straightforward and requires a clear distinction be drawn between these two very different drivers of self-employment rates.

It is for this reason that I chose the title *Geographies of Entrepreneurship* to remind us that it does not make sense to talk about *the* geography of entrepreneurship (Stam 2009). Different explanatory frameworks are needed to explain different kinds of entrepreneurship dependent on the geographic scale of the analysis and the manner in which entrepreneurship is defined. Our goal in this paper is to simply illustrate how the

geography of one measure of entrepreneurship – NFP – can yield very divergent

explanatory outcomes, at least at the metropolitan scale of analysis.

CHAPTER II

LITERATURE REVIEW

Although entrepreneurship plays an important role in economic development, it does not happen in isolation from the local context. According to Stam (2009, p.2), "entrepreneurship is the result of the interaction between individual attributes and the surrounding environment." On the one hand, entrepreneurs tend to be individuals with a penchant for risk-taking and a need for achievement with specific skills, knowledge, attitudes and values that drive their motivations and behaviors (Simon 1957; McFadden 2001). However, these same entrepreneurs should not be viewed as lonely heroes that effectively change the economy on their own (Stam 2009). He argued that "the process of starting a new firm is eminently social, as information and resources are to a large extent acquired via the personal networks of the (nascent) entrepreneur" (Stam 2009, p.4)

In this sense, entrepreneurs are more likely to thrive and be innovative in environments that provide a mix of institutions, regulatory regimes, infrastructure, venture capital, and a demand for products capable of nurturing innovation and opportunity. These so-called entrepreneurial ecosystems or systems of entrepreneurship can be explicitly geographically bounded phenomenon in their more successful, well-known manifestations, particularly in places like Stanford and Boston in the U.S. and Oxford and Cambridge in the U.K. (Stam, 2009).

According to Audretsch and Belitski (2016), theoretical and empirical research on entrepreneurial ecosystems has rapidly emerged in recent years in recognition of the key role that both individual entrepreneurial action and contextual factors play in influencing the type of start-ups. Stam (2009) has argued that the local context can substantively influence the type of start-up that might evolve in any given geographic area coining the phrase "necessity versus opportunity driven" entrepreneurship. He argued that different types of entrepreneurship require different types of explanations in different geographic settings particularly when differentiating between the self-employed entrepreneur "out of necessity" versus the ambitious and technologically innovative high-growth start-up.

> High rates of necessity self-employment are positively affected by high levels of unemployment, which is often driven by decreasing levels of general demand, and maturing industries, and is more likely for low skilled young and old individuals. On the other hand, high rates of ambitious and technologically innovative high-growth entrants is stimulated by high levels of investment in knowledge, abundant supply of informal investors and venture capital, fluid markets and loose buyer-supplier ties (Stam 2009, p.10).

This discussion of different types of entrepreneurship make it difficult to talk about *the* geography of entrepreneurship because different explanatory frameworks and definitions can generate different kinds of entrepreneurship. Embracing a "*geographies* of entrepreneurship" perspective changes the optics and permits a more nuanced position no matter what type of entrepreneurship is under analysis.

Most empirical studies of entrepreneurship have taken new firm formation or self-employment as the primary indicators of entrepreneurship while Acs *et al.* (2008, p.7) has argued that self-employment rates are "the best available statistical measure of

entrepreneurial activity by location." That said, they also point out that there are limits to using the self-employment rate because it captures all types of business owners "whether they are replicating what others have done but in a different location or market, or are offering or using innovative products, services, and/or methods of production and delivery" (Acs *et al.*2008).

Shrestha *et al.* (2007) conducted one of the first systematic, and explicitly spatial analyses, of how self-employment or non-farm proprietorship formation impacted overall job creation in the U.S. economy. They pointed out that "interest among policy-makers, practitioners, and academics in proprietorships and self-employment as sources of economic development has increased dramatically in recent years" (Shrestha *et al.* 2007, p.147). Some of the logic for this policy shift was linked to the fact that many communities had struggled to attract new jobs due to various technological challenges and the forces of globalization, and were increasingly looking internally to entrepreneurship and self-employment as ways to remain economically viable. To that end, Shrestha *et al.* (2007, p.147)) suggested that "the relative dearth of studies in the U.S. on the effect of these workers on total job growth is surprising."

Shrestha *et al.* (2007, p.148)) focused on non-farm proprietorships because they suggested that profound differences existed between the farm and non-farm sectors, "ranging from fixed asset requirements and unique skill sets to laws and regulations, such as bankruptcy laws and tax accounting rules." They pointed out that from 1969 to 2004, non-farm proprietorship had increased by an annual average of 3.2 percent compared to just 1.8 percent for wage and salary employment during the same period. Based on an

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analysis of 3,035 counties from 1985-2004 (excluding Alaska, Hawaii, and Washington D.C.) they found that self-employment or proprietorship rates are associated with faster job growth in the wage-and-salary sector, and the effect is statistically significant.

In detail, Shrestha *et al.* (2007) regressed the percent change in non-farm wage-and-salary employment in U.S. counties on lagged net proprietorship formations (i.e., percent change in the number of NFPs per total employment), changes in wage-and-salary earnings, lagged wage-and-salary employment growth, and several additional control variables. They utilized five-year lags for several key independent variables because they argued that the impact of new firm formation is not immediate. The additional control variables included various socio-demographic characteristics (e.g., percent of adults with a college degree, percent foreign-born, ethnic diversity) and various other indicators including the number of broadband suppliers, the number of high tech establishments, industry diversity, and per capita unemployment insurance compensation.

For the most recent time period (2000-2004), Shrestha *et al.* (2007) found the east and west coasts stood out for their strong wage-and-salary job growth patterns, even as the overall U.S. economy declined. With respect to the covariate of primary interest, growth in proprietorship, Shrestha *et al.* (2007, p.159) found that "for each one percentage point increase in the change (growth) in the number of proprietors per total workforce in the lagged period (1995-1999) at the sample mean, the overall rate of job growth increased by over 0.253 percentage points in 2000-2004." They also pointed out that the equivalent percentage in 1995-1999 and 1990-1994 was 0.74 percentage points.

Shrestha *et al.* (2007, p.159) suggested that "the larger job growth impact of proprietorship formation in the earlier two periods compared to the last period studied may be due to the recession." They also noted that in 1995-1999, the "metropolitan counties experienced more rapid job growth (4.5 percentage points higher) than non-metropolitan counties but that the discrepancy fell to one-half that amount in 2000-2004" (Shrestha *et al.* 2007, p.159). Regarding the other variables included in the analysis, they suggested that a large share of college graduates and foreign-born positively impacted job growth but ethnic diversity had a negative effect.

Overall, they concluded that their analysis provided "unequivocal support for the argument that lagged proprietorship formations lead to increased job growth, controlling for other factors and regardless of the time period considered" (Shrestha *et al.* 2007, p.164). However, they also found that this relationship appeared to be more resilient when the U.S. economy was "recovering from recession and smaller when it was in recession" (Shrestha *et al.* 2007, p.164) thus, begging the question of how the geography of NFPs might have been affected by the most recent 2008/9 recession, and the subsequent recovery through 2017.

Goetz and Rupasingha (2009) built on the work first conducted by Shrestha *et al.* (2007) by focusing on disentangling the key determinants of growth in non-farm proprietorship densities by U.S. county from 1990 to 2000. They pointed out that one of the "most remarkable and least-studied labor market trend in recent decades has been the sharp rise in non-farm proprietor employment" (Goetz and Rupasingha 2009, p.425). According to Goetz and Rupasingha (2009), the number of full- and part-time non-farm

self-employed workers or proprietors tripled between 1969 and 2004 from 9.6 to 29.2 million, while the ratio of self- to wage-and-salary employment nearly doubled from 0.12 to 0.21 during the same period.

They argued that in many communities this shift towards self-employment likely represented an effort to avoid becoming unemployed, particularly in rural areas where home-grown entrepreneurship or self-employment may be the only viable source of economic development. According to Goetz and Rupasingha (2009, p.426), "if the alternative to creating proprietorships is unemployment, then it is important for local and state decision-makers to know whether and how state- and county-level policies and socio-economic characteristics foster or impede the net formation of proprietorships." Goetz and Rupasingha (2009) argued that although much of the existing literature has focused on individual firm data, it may be more appropriate to focus on county characteristics as proxies for the average characteristics of the population pool from which proprietors are drawn in order to help better assess the relative strengths and weaknesses of the local entrepreneurial eco-system within which they operate.

In analyzing the net change in proprietor jobs as a share of all jobs from 1990 to 2000, Goetz and Rupasingha (2009) uncovered a high concentration of proprietorship change in Western and Midwestern counties, and Southeast and Northeast counties. Additionally, based on a LISA cluster analysis, hotspot clusters of high proprietorship growth were evident in parts of Tennessee and Idaho, and cold-spots in parts of Texas, Oklahoma, Pennsylvania and Maryland.

Regarding the key determinants of the geography of NFPs, Goetz and Rupasingha (2009, p.436) found that the "age or experience of the potential proprietor population and education – but only up to a point – are associated with larger increases in proprietor densities, as are higher levels of wealth and collateral." In detail, they found that both the percent of owner-occupied homes and median housing value were positive effects and highly statistically significant, potentially confirming the importance of personal collateral when securing loans. By contrast, Goetz and Rupasingha (2009, p.435) found that per capita income was inversely related suggesting that "individuals are more likely to seek self-employment opportunities in periods of economic downturn because it is an 'option of last resort' as often argued by small business administration (SBA) councilors." They also found that ethnic diversity was inversely related suggesting that self-employment densities grew less rapidly in more ethnically diversified communities although curiously percent Hispanic was statistically significant at the 5% level. Finally, they found that high concentrations in both the construction and service sectors were positively related to more rapid growth in self-employment rates while counties with higher amenity levels experienced an increase in self-employment densities. Goetz and Rupasingha (2009) speculated that footloose entrepreneurs may be attracted to communities that offer superior natural amenities.

One of the most noteworthy and recent analyses of the geography of NFP in the United States was that by Rupasingha and Goetz (2013, p.146) who pointed out that "empirical inquiries into the relevance of entrepreneurship to local economic performance in the US have been relatively rare." By using NFP data from the BEA as a

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proxy for self-employment or entrepreneurship, they suggested that their study is an attempt to fill this information gap. Rupasingha and Goetz (2013) argued that while the growth in NFPs has been steady from 1969 to 2006, it has also been very uneven across US counties. They argued that the "cross-county variation in the proportion of individuals who are NFPs provides an excellent laboratory for understanding their effects on local economic performance" (Rupasingha and Goetz 2013, p.143). Although the share of NFPs as a percentage of total employment is a relatively static measure – given the underlying firm entry, growth and exit dynamics – they argued that "it does provide a reasonable representation of the size (or density) of NFPs in a locality." (Rupasingha and Goetz, 2013, p.148).

The central focus of their research was to explore whether or not U.S. counties with higher numbers or shares of entrepreneurs are better-off than those with fewer entrepreneurs as measured by the share of NFPs by county. In detail, Rupasingha and Goetz (2013) analyzed whether or not per capita income and employment grew faster in counties with higher percentages of self-employed people while controlling for a number of other potential determinants of economic growth (such as the level of educational attainment, race, government spending, population density and employment mix). They also explored whether counties with higher shares of self-employed people were more able to reduce poverty rates than those with lower shares.

Overall, the findings were mixed, at least for the metropolitan US counties. Rupasingha and Goetz (2013) found that a statistically significant relationship existed between NFPs and income and employment growth even when controlling for the other

determinants of economic growth. They argued that NFPs can create "new economic development opportunities for communities by generating more jobs and more incomes" (Rupasingha and Goetz, 2013, p.158-159). However, self-employment did not play a significant role in reducing poverty rates in the metropolitan counties for the three decades considered in their study, although it played a statistically significant role in mitigating poverty levels in the non-metropolitan counties.

Rupasingha and Goetz (2013) do not elaborate on the potential factors that might explain this discrepancy, but they did point out that the average non-farm proprietor earned only $29,950 in 2006 compared with $41,991 for the average wage-and-salary worker, and that the earnings gap is growing over time. It is possible that in some communities the less-productive workers are being pushed into self-employment as a result of an under-performing local economy and lay-offs – a sort of entrepreneurship of last resort and necessity rather than one of opportunity.

It is also not clear whether the relationships established at the county level by Rupasingha and Goetz (2013) are replicable at the metropolitan scale or during the post-recession years since 2008/9. Rupasingha and Goetz's analysis extended from 1970 to 2000 so it remains unclear if these findings have applicability in the new millennium.

Carree *et al.* (2015) is one of the first studies to examine self-employment and job generation rates at the metropolitan scale. They argued that "the role of individual entrepreneurship in regional development is far from obvious" (Carree *et al.* 2015, p.182), in part, because some individuals may start firms simply to avoid unemployment or to evade taxes. They also suggested that while entrepreneurship is an ill-defined

concept, one approach to consider when assessing the impact of entrepreneurial activities on metropolitan economies is to use self-employment rates. Carree *et al.* (2015, p.182) argued that while self-employment and entrepreneurship are not synonymous, "there are reasons to assume that a self-employed individual will, on average, show a higher degree of entrepreneurial activities than an employee of a firm." In this study, the self-employment rate is measured by the number of sole proprietors which is widely used in entrepreneurial research (Acs and Armington 2004; Coomes *et al.* 2013; Rupasingha and Goetz 2013). Carree *et al.* (2015) argued that while sole proprietorship data may not perfectly reflect the notion of innovative activity, they are the simplest and least expensive business structure to form, and the business owner in a sole proprietorship is directly responsible for all financing, management decisions and liabilities of the business.

They found that the average self-employment rate in the US had increased from about 11% in 1969 to 19% in 2009. Carree *et al.* (2015) also pointed out that the overall quality of these jobs had deteriorated as measured by a self-employment income/wage income ratio that had decreased by half during this time period. They suggested that the poor quality of self-employed/proprietorship jobs relative to more conventional wage and salary jobs is, in part, explained by the increased popularity of part-time, self-employment. While traditional wage and salary jobs imply individuals are working for someone else, it does not preclude taking on some form of self-employment as a part-time occupation next to their main job. It is also possible that in those metropolitan areas experiencing high levels of unemployment, some workers are seeking refuge in poorly

paid self-employment opportunities because it has proven difficult to find formal wage employment.

With respect to the geography of self-employment, Carree *et al.* (2015) found that in 2009, 9 out of the 10 metropolitan statistical areas (MSAs) with the highest total employment growth rates also had self-employment rates above the 19% national average. Conversely, nine of the ten slowest growing MSAs had a below average self-employment rate with the only exception being Flint, MI which had a 24.5% self-employment rate in 2009, compared to just 7.1% in 1969. Carree *et al.* (2015) argued that while self-employment can contribute to economic growth and the reduction of unemployment, it is also true that unemployment may also lead to increased self-employment rates if unemployed individuals find it difficult to find wage employment – what we can call the Flint effect and Thurik *et al.* (2008) labelled the "refugee" effect.

Carree *et al.* (2015) then examined to what extent US metropolitan areas in the 1969 – 2009 period with relatively high rates of self-employment also experienced relatively high rates of total employment growth while also accounting for the influence of other factors including sectoral composition, wage levels, educational attainment, the presence of research universities, and the population size of the MSA. They found that MSAs with high self-employment rates experienced higher total employment growth rates up till the 1990s but the relationship was less pronounced in the latter stages of the study period.

Carree *et al.* (2015) suggested that the weakening of the positive effect of the self-employment rate on total employment growth may be partly linked to a decline in the

average managerial or entrepreneurial talents of the self-employed over time. They

pointed to the decrease in average self-employment income relative to average wage

income over time as a good indication of declining quality. Carree *et al.* (2015) also

argued that since the mass layoffs of the late 1970s and early 1980s, large firms have paid

more attention to 'intrapreurial' initiatives that have precluded some of the innovation

that used to be spawned through self-employment. They also suggested that the increase

in the number of people having both a job as a proprietor and as an employee has played

a role. It is likely that 'part-time' self-employment is less likely to be innovative or fast-

growing relative to a 'full-time' business. Given these trends, a key unanswered question

is how have these relationships played out in MSAs after the 2008/9 recession?

CHAPTER III

RESEARCH DESIGN

The purpose of this paper is to explore why certain metropolitan areas have generated disproportionately more entrepreneurial activity than others during the post-Great Recession years of 2010 to 2014. Previous literature has suggested that the spatial unevenness of entrepreneurship may be partly explained by a divergence in the types of entrepreneurs emerging over time. Expanding upon the research conducted by Goetz and Rupasingha (2009) and others, I employ NFPs as a proxy measure of entrepreneurship and seek to investigate how various socio-economic predictors capture different forms of entrepreneurship.

It is hypothesized that during the post-recession era, the geography of non-farm proprietorship is best explained by a combination of variables that represent both "opportunity-based" entrepreneurship and "last resort" self-employment. It will be argued that the share of NFP employment by MSA will be systematically linked to both key predictor variables that capture higher qualities of life and access to capital (i.e., opportunity-based entrepreneurship) and, on the other hand, underperforming entrepreneurial eco-systems featuring poorly educated labor pools and high unemployment rates (i.e., necessity driven self-employment).

We utilize the U.S. Bureau of Economic Analysis (2015) definition of NFP which states

> Non-farm proprietorships are full and part-time sole proprietorships, partnerships, and other private nonfarm businesses that are unincorporated and organized for profit. A sole proprietorship is an unincorporated business required to file Schedule C of IRS Form 1040 (Profit or Loss from Business). A partnership is an unincorporated business association required to file IRS Form 1065 (U.S. Return of Partnership Income)

Although NFP's are not a complete measure of entrepreneurship, they have more in common with entrepreneurs than with more conventional wage and salary workers since proprietors essentially create jobs for themselves, and others. According to the U.S. Small Business Administration (2016), a sole proprietorship is the simplest and most common structure chosen to start a business. Essentially a sole proprietorship is an unincorporated business owned and run by one individual. Although a sole proprietorship is easy and inexpensive to form, and can provide a sole owner complete control, it is frequently difficult to raise money and can expose the owner to unlimited personal liability. By contrast, a partnership is a single business where two or more people share ownership.

To examine the spatial and temporal patterns of NFP employment by MSA, data on the percent share of NFP employment relative to total employment was collected for each MSA in the contiguous U.S. from 2010 through 2014. Data for NFP employment was obtained from the U.S. Bureau of Economic Analysis. Correlation and stepwise regression analysis were performed to identify variables that may help explain the observed spatial and temporal variations in NFP employment by MSA. Initially, 26 potential independent variables were expected (Table 3.1) to exhibit some relationship with NFP at the MSA scale. The selection of this initial cohort of variables was based primarily on previous research (Shrestha *et al.* 2007; Goetz and Rupasingha, 2009;

Rupasingha and Goetz 2013; Carree et al., 2015) which hypothesized and/or established connections between NFP and such local variables as population growth rate, median age, race, level of education, percent of households with internet capabilities, per capita income, median earnings, poverty rate, unemployment rate, housing stock and local employment composition by industry, among others.

Data on all independent variables were obtained from the U.S. Census Bureau's American Community Survey, the U.S. Bureau of Economic Analysis, or the U.S. Bureau of Labor Statistics (Table 3.1). Measures of educational attainment (e.g., percent of population aged 25 years or older with a Bachelor's degree) as well as various economic performance metrics (e.g., median earnings, poverty rate) are incorporated in order to capture how the spatial variation in financial and human capital by MSA account for the spatial-temporal variation in the share of the labor force employed in NFP. Employment composition by major industry is also included as a measure of metropolitan specialization to assess whether or not certain employment eco-systems are systematically linked to the geography of NFP by MSA. All the included industries are defined based upon the North American Industry Classification System (NAICS) and represent all the major industry components of the U.S. labor pool.

A two-tailed Pearson correlation analysis was completed using all variables prior to performing stepwise regression analysis to 1) assess whether statistically significant relationships exist between NFP and each independent variable separately, and 2) reduce the potential for collinearity in the regression by identifying statistically significant

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Table 3.0.1 Variables, Descriptive Statistics, and Data Sources

Variables	Mean	Standard Deviation
Percent Non-Farm Proprietorship Employment[1]	20.8	3.9
Demographic Variables[2]		
Population Growth Rate (2013 – 2014)	0.7	0.8
Median Age (Years)	37.92	4.85
% White	79.4	12.0
% African American	10.5	1.7
% Hispanic	13.4	1.6
% Foreign Born	9.9	6.9
% of the Population Aged 25 years of Older with High School Diploma or less	41.7	8.2
% of the Population Aged 25 years or older with a Bachelor's Degree or Higher	27.3	8.2
% of Households with Internet		
% of Households with Cable	39.3	9.1
% of Households with DLS	14.8	0.5
% of Households with Fiber	3.3	0.37
Economic[2]		
Per Capita Income ($)	26,147	4490.1
Median Earnings ($)	28,252	4276.9
Poverty Rate (%)	16.4	4.2
Unemployment Rate	7.1	2.4
% Housing Stock, Owner-Occupied	65.8	5.9
Median Home Value ($)	176,056	88,414.7
Employment[1]		
% Construction	5.3	1.4
% Manufacturing	8.2	5.0
% Retail	11.0	1.5
% Finance, Insurance and Real Estate	7.9	2.3
% Education and Health Services	13.4	3.3
% Professional and Business Services	5.2	2.3
% Leisure[3]	13.8	5.0
% Arts, Entertainment and Recreation	2.0	0.7
% Accommodation and Food	7.6	0.8

Data Sources: [1] U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information Systems by MSA; [2] U.S. Census Bureau, American Community Survey by MSA; [3] U.S. Bureau of Labor Statistic

correlations between independent variables. Among each pair of variables with a high degree of correlation, the one least correlated with the dependent variable (NFP) was chosen for elimination. Linear regression analysis was then performed using the stepwise procedure to identify the most powerful predictors of NFP among the remaining independent variables.

It should also be noted that 23 MSA's located within the contiguous U.S. were excluded from this analysis due to incomplete data. Under the U.S. Census Bureau nondisclosure rule, data is suppressed when someone can infer data values for a particular business in order to protect firm specific confidentiality. Those MSA's with incomplete data for five or more of the independent variables due to the nondisclosure rule were excluded from this analysis (Table 3.2).

Table 3.0.2 List of Excluded MSAs due to Incomplete Data

Albany, GA	Hattiesburg, MS	Morristown, TN
Alexandria, LA	Hinesville, GA	Peoria, IL
Amarillo, TX	Huntington-Ashland, WV-KY-OH	Pine Bluff, AR
Bowling Green, KY	Johnson City, TN	Provo-Orem, UT
Cape Girardeau, MO-IL	Lake Charles, LA	Terre Haute, IN
Champaign-Urbana, IL	Lynchburg, VA	Warner Robins, GA
Clarksville, TN-KY	Macon, GA	Winchester, VA-WV
Decatur, AL	Midland, TX	

Most of the excluded MSA's were located in the less well developed parts of several Southeastern states including Georgia, Kentucky, Louisiana and Tennessee, and tended to be located in markets that generated NFP employment shares well below the national average of 20.8 percent.

CHAPTER IV

FINDINGS

One of the most substantive and least-studied labor market trends in recent

decades has been the rapid rise in non-farm proprietor employment in the United States.

The number of full- and part-time non-farm self-employed workers or proprietors nearly

tripled between 1979 and 2014 from 13.4 to 39.1 million (Figure 4.0.1). Furthermore, the

number of NFP workers continued to increase even after the recession of 2008/9. By

contrast, the number of full- and part-time wage-and-salary workers grew by only 48.8

percent from 97.4 million in 1979 to 144.8 million in 2014 (Figure 4.0.1). Additionally,

the number of wage-and-salary workers noticeably declined after the recession dropping

from a high of 143 million workers in 2008 to just 136.8 million workers in 2009

although by 2014 the labor pool had recovered to near 2008 employment levels. The

ratio of NFP to wage-and-salary employment over this period more than doubled from

1979 to 2014, increasing from 0.14 to 0.27 suggesting that NFP is playing an increasingly

substantive role in the national economy. Furthermore, most of these NFP workers are

geographically concentrated in the nation's MSA's which accounted for 86.2 percent of

all such workers in 2014.

Much of the growth in NFP employment is likely attributable to a mix of factors

including the deindustrialization of the national economy and the shrinking workforce in

manufacturing, the increased popularity of part-time self-employment, the decline in the number of farm proprietorships, and the disruptive impact of scalable information technologies. What is less clear is whether or not this growth in self-employment is in response to opportunity or the result of necessity (such as lay-offs).

In absolute terms, the largest NFP labor markets by MSA included New York (2.75 million workers), Los Angeles (2.1 million) and Chicago (1.1 million) (Table 4.0.1). Although the top twenty largest NFP markets by MSA tended to match the rank hierarchy of the most populated and largest employment labor pools in the nation, several MSAs serve as notable exceptions to the rule including Miami and Philadelphia.

Figure 4.0.1 Non-Farm Proprietor and Wage-And-Salary Employment, and Ratio, 1979 - 2014
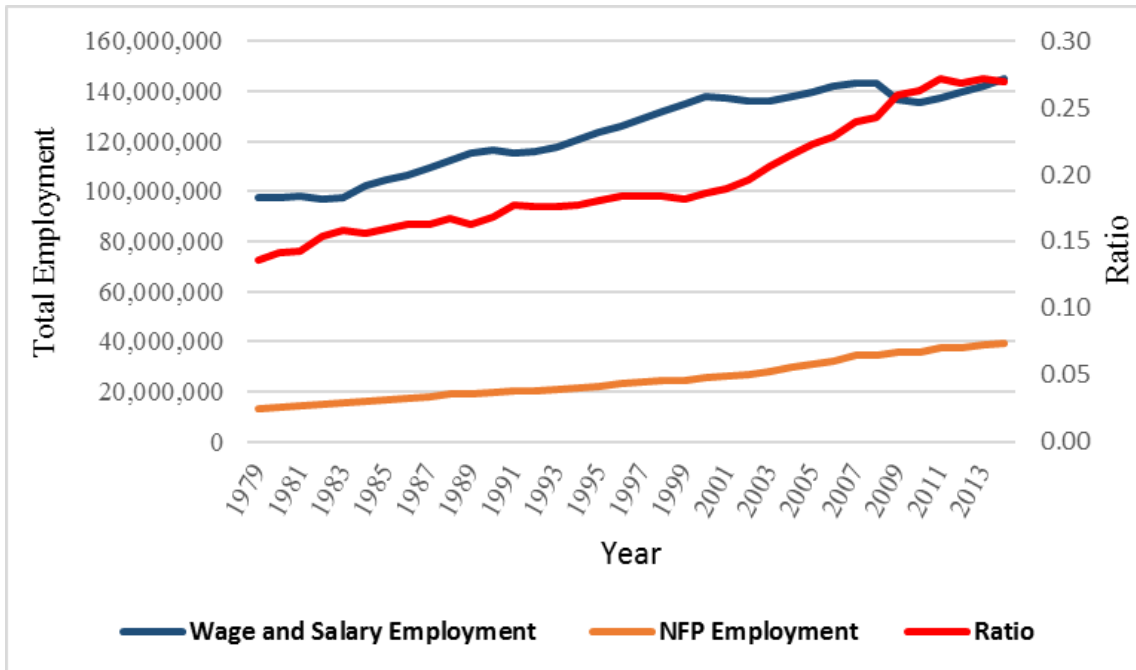
In 2014, Miami was the eighth largest MSA based on population totals but the fifth

largest market in terms of total NFP employment suggesting that Miami may be punching

above its weight in terms of NFP employment generation rates. Furthermore, along with

its large absolute critical mass, the relative share of NFP employment was highest in the

Miami MSA (i.e., 28.6%) among the top twenty largest NFP markets (Table 4.0.1). By

contrast, although Philadelphia is the seventh most populated MSA in the nation, it

ranked just tenth in NFP employment and had one of the lowest relative shares (i.e.,

18.8%) among the top twenty largest NFP markets. These differentials suggest that the

geography of NFP employment may be influenced by more than just critical mass.

Table 4.0.1 Top Ten Metropolitan Areas Ranked by Total Non-Farm Proprietorship
(NFP) Employment, 2014

Metropolitan Area	NFP Employment	% of Total
New York-Newark-Jersey City, NY-NJ-PA	2,750,156	22.7
Los Angeles-Long Beach-Anaheim, CA	2,090,948	25.6
Chicago-Naperville-Elgin, IL-IN-WI	1,148,799	19.8
Dallas-Fort Worth-Arlington, TX	1,067,796	23.9
Miami-Fort Lauderdale-West Palm Beach, FL	1,015,252	28.6
Houston-The Woodlands-Sugar Land, TX	909,280	23.0
Washington-Arlington-Alexandria, DC-VA-MD-WV	823,977	20.2
Atlanta-Sandy Springs-Roswell, GA	809,893	24.0
San Francisco-Oakland-Hayward, CA	745,161	24.3
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	669,760	18.8
Top Ten MSA Average	1,203,102	23.1
MSA Average (n=358)	88,395	20.8

A closer inspection of the relative geography suggests a radically different spatial

configuration (Table 4.0.2 and Figure 4.0.2). In 2014, the percent share of NFP workers

by MSA varied from a high of 33.2% in Punta Gorda, FL to a low of 10.1% in Ames, IA, with a mean of 20.8% across all MSA's. The top ten MSA's with the highest relative NFP employment (%) averaged a 30.9% share – 10 percentage points higher than the national average of 20.8% – although they tended to be much smaller MSA's in absolute terms, employing an average of 40,144 NFP workers – less than half the national MSA average of 92,607 NFP workers.

Table 4.0.2 Top Ten Metropolitan Statistical Areas Ranked by Percent Non-Farm Proprietorship Employment, 2014

Metropolitan Area	NFP Employment	Total Employment	% of Total
Punta Gorda, FL	23,160	69,995	33.2
Barnstable Town, MA	46,724	146,688	31.9
North Port-Sarasota-Bradenton, FL	132,270	415,988	31.8
Homosassa Springs, FL	15,609	49,830	31.3
Naples-Immokalee-Marco Island, FL	63,399	202,939	31.2
Ocean City, NJ	19,679	63,531	31.0
Bend-Redmond, OR	30,478	103,090	29.6
Grants Pass, OR	10,822	36,616	29.6
Santa Cruz-Watsonville, CA	43,943	148,684	29.5
Gettysburg, PA	15,360	52,367	29.3
Top Ten Average	40,144	128,973	30.0
MSA Average (n=358)	88,395	444,633	20.8

A disproportionate number of these MSA's tended to be geographically concentrated in Florida, the Northeast, and the West Coast. Four of the top five MSA's in terms of relative NFP employment were located in Florida including Punta Gorda (33.2%), Sarasota (31.8%), Homosassa Springs (31.3%), and Naples (31.2%) (Table 4.0.2). More broadly, 20 of the top 25 MSA's were located in either Florida (7), smaller

Northeastern MSAs like Barnstable Town MA and Ocean City NJ (5), or

California/Oregon (8). The only heavily populated MSA's to feature in the top 25

included Miami ranked 13th (28.6%) and Los Angeles ranked 25th (25.6%). Many of the

MSA's with a disproportionate share of NFP workers tended to be smaller, amenity rich

markets with a high median age population and substantive tourism economies. What is

less clear is whether or not this holds true for the entrepreneurship ecosystem for a

preponderance of MSA's across the country.

Figure 4.0.2. Spatial Distribution of the Percent Non-Farm Proprietorship Employment by MSA, 2014
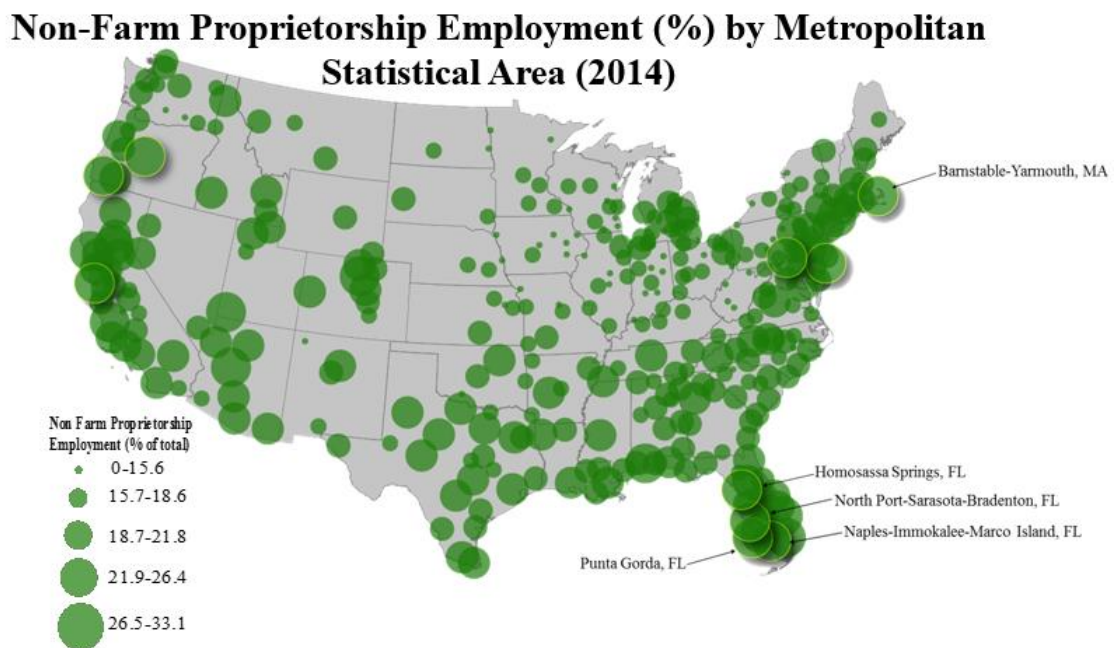
In the case of Barnstable Town MA, more commonly known as Cape Cod, the

aforementioned characterization reigns true. However, it does not entirely capture the

complexities of the greater Barnstable-Yarmouth ecosystem. While tourism is in fact the

dominate industry of Barnstable Town, with a percent employment in leisure currently lying at an overwhelming 23.1 percent, opportunity based entrepreneurship is still prevalent. According to Koncza (2013), Barnstable Town is microcenter of start-up activity within its own size class (populations smaller than 250,000) boasting 15 startups per 100 people. Moreover, while Barnstable Town's median age of 51.8 is especially elder even when contrasted against Floridian MSAs, this has done little to impede the MSA economically. Not only does Barnstable Town exhibit a comparably low unemployment rate of 5.8 percent, but its median earnings (34,771 dollars) surpasses the national average of 28,252 by over 6,000 dollars.

4.1 Identifying Predictors of NFP

A step-wise linear regression analysis was performed to assess quantitatively the potential relationships between NFP and select socio-economic and demographic variables by MSA for each year from 2010 through 2014. Diagnostic tests indicated that the regression models exhibited low multicollinearity among independent variables (VIF < 3, CI < 20), and met assumptions of linearity, normality, and homoscedasticity. All models and independent variables were significant at the $p < 0.05$ level.

In the final regression model for 2014 (i.e., Table 4.1.1), 61.0 percent of the variation in percent NFP employment by MSA was accounted for by: the percent of the labor pool employed in financial services, median age, percent Hispanic, and median house value (MHV).

As indicated by the variable's b coefficient, the relationship between percent FIRE and NFP is such that a one percent increase in the percent FIRE is expected to result in a 0.86 increase in the percent NFP.

Table 4.1.1 Regression Models Indicating Associations Between Socio-Economic Variables and Non-Farm Proprietorship Employment (%) by MSA, 2010-2014

Model	Variable	Model R^2	b	SE b	β	p-value
2010	Constant	0.44	9.469	1.944		.000
	% FIRE		.705	.109	.399	.000
	% For Born		4.88	1.184	.222	.000
	% AER		1.352	.338	.222	.000
	% Const		.649	.180	.188	.000
	% Hisp		-.137	.043	-.175	.002
2011	Constant	0.41	3.756	1.940		.054
	% FIRE		.507	.104	.298	.000
	% Hisp		.083	.013	.356	.000
	% AER		1.488	.345	.275	.000
	% Med Age		.202	.054	.228	.000
2012	Constant	0.57	-.242	1.929		.900
	% FIRE		.834	.082	.531	.000
	% Const		.743	.164	.195	.000
	% Hisp		.078	.016	.256	.000
	% Accom		.306	.081	.185	.000
	Med Age		.161	.049	.176	.001
2013	Constant	0.47	-4.024	2.878		.165
	% FIRE		.860	.132	.539	.000
	% Retail		1.23	.224	.355	.000
	MHV		1.272 E-5	.000	.266	.004
	% Hisp		.05	.020		.001
2014	Constant	0.61	-2.236	2.045		.276
	% FIRE		.858	.120	.463	.000
	Med Age		.328	.056	.395	.000
	% Hisp		.054	.014	.257	.000
	MHV		8.683E-6	.000	.209	.000

The MSA's with the highest percent FIRE included: Bridgeport CT (18.2%), Naples, FL (17.2%), Bloomington, IL (15.2%), Punta Gorda (15.0%), and Sarasota, FL (14.6%) (Table 4.1.2 and Figure 4.1.1). By contrast, the average percent FIRE for all MSAs was 9.7 percent. Highly concentrated financial service labor pools seem to mimic, in part, the geography of NFP with a preponderance of high percent FIRE MSAs in both Florida and the Northeast, although this is less the case in California.

Table 4.1.2 Top Ten Metropolitan Statistical Areas Ranked by Percent Finance, Insurance, and Real Estate (FIRE) Employment, 2014

MSA	FIRE Employment	Total Employment	Percent of Total Workforce
Bridgeport-Stamford-Norwalk, CT	116,309	640,232	18.2
Naples-Immokalee-Marco Island, FL	34,883	202,939	17.2
Bloomington, IL	17,992	118,277	15.2
Punta Gorda, FL	10,476	69,995	15.0
North Port-Sarasota-Bradenton, FL	60,581	415,988	14.6
Phoenix-Mesa-Scottsdale, AZ	351,537	2,448,608	14.4
Ocean City, NJ	9,095	63,531	14.3
Cape Coral-Fort Myers, FL	46,502	332,902	14.0
Hartford-West Hartford-East Hartford, CT	110,823	807,246	13.73
Jacksonville, FL	115,866	844,261	13.72
MSA Averages:	41,032.7	422,256.8	9.7

It is possible that percent FIRE is acting as a proxy for access to loan capital and other financial services in this analysis. Previous research by Rupasingha and Goetz (2013) has suggested that total and part-time employment in urban counties grew faster in counties that had higher employment shares in FIRE.

Figure 4.1.1 Spatial Distribution of the Percent Finance, Insurance and Real Estate Employment by MSA, 2014
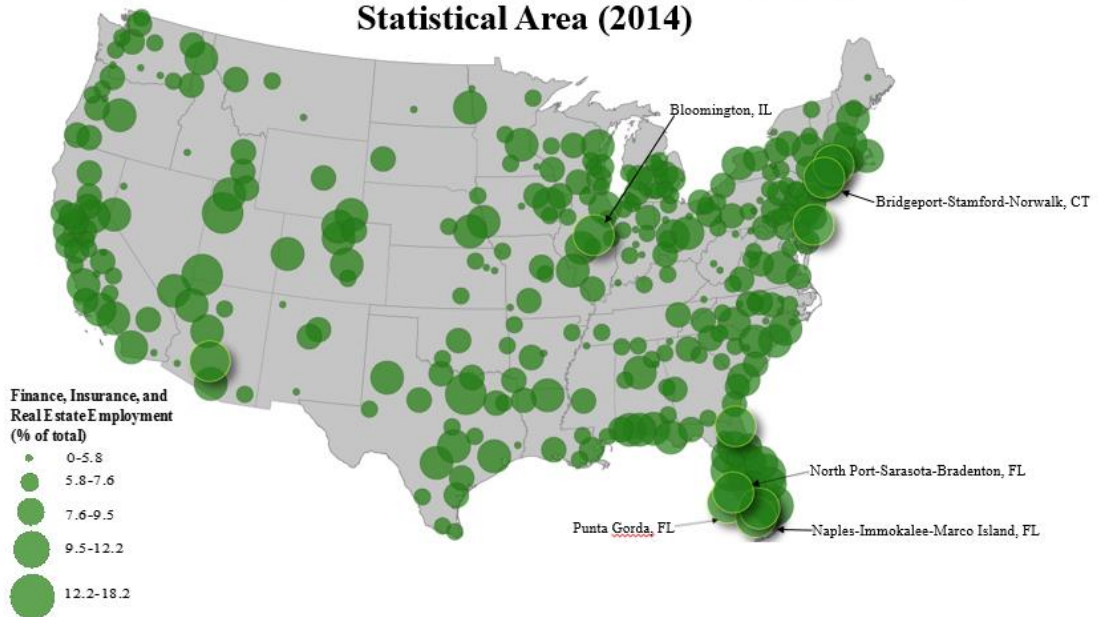
They also argued that access to capital via banks enhances the growth of self-employment rates. We suspect that much the same sort of thing is happening in this paper where MSA communities with a substantial share of financial services are more likely to facilitate the crucial access to capital that many NFP's need as they begin their business. The dominance of the percent FIRE variable in the regression models was also evident in

models 1 through 3 for 2014, and it also featured prominently in the models for 2010

through 2013 – a point to which we shall return to later in this paper.

The regression analysis not only identified financial services as a key predictor in

shaping the spatial distribution of NFP by MSA, it also highlighted the important role

that median age can play in shaping the geography of NFP (Figure 4.1.2). The

unstandardized regression coefficient suggested that if the median age increased by one

year then the share of NFP employment would increase by 0.33%. In 2014, the median

age varied from a high of 66.0 years in The Villages, FL to a low of 25.9 years in Logan,

UT with a mean of 37.92 years across all MSAs.

Figure 4.1.2 Spatial Distribution of Median Age by MSA, 2014
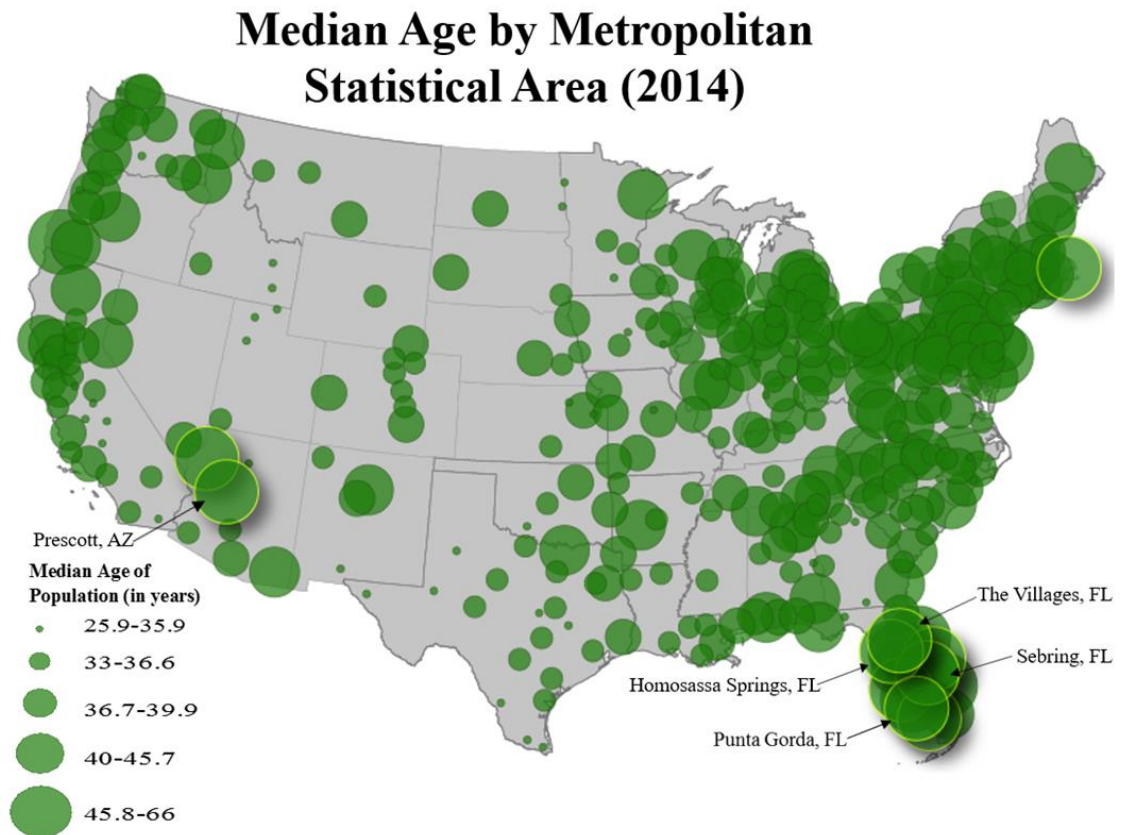
Unsurprisingly, 12 of the top twenty MSAs with the highest median ages were all located in Florida. Along with The Villages, these included Punta Gorda (57.5 years), Homosassa Springs (55.5), Sarasota (51.1), and Naples (48.7). These four additional Florida MSAs all featured prominently in Table 4.1.2 which listed the top ten MSAs in the nation for percent NFP employment. Other MSAs with high median ages and disproportionately high NFP labor pools included Barnstable Town, MA (51.8 years), Ocean City, NJ (48.5), and Grants Pass, OR (46.8). Much of the existing research on this point suggest that it is certainly the case that self-employment rates increase with age. Goetz and Rupasingha (2009, p.428) has suggested that this trend reflects "both greater expenditure levels and potential age discrimination in the labor market" although it may also reflect the increased popularity of part-time, self-employment among the elderly as a way to supplement income or even avoid taxes

The spatial variation of percent NFP employment by MSA is also influenced by race and ethnicity particularly the percentage of the population classified as Hispanic. The unstandardized regression coefficient indicates that if the percentage of the population that is Hispanic increased by one percentage point then the share of the labor pool in NFP will increase by 0.06%. Although this is a modest change, in recent decades, the number of Hispanic entrepreneurs has grown exponentially. From 1990 to 2012, the number of Hispanic entrepreneurs in America more than tripled, going from 577,000 to more than 2 million which far outstripped the population growth rate for the working-age Hispanic population (Partnership for a New American Economy, 2014). In 2014, the percent Hispanic population by MSA varied from a high of 95.2% in Laredo, TX to a low

of 0.4% in Parkersburg- Vienna, WV with an average of 13.4% across all MSAs (Table

4.1.3 and Figure 4.1.3). Not surprisingly, 29 of the top 40 Hispanic MSA's are located in

either California (17) or Texas (12) including McAllen-Edinburg-Mission, TX (91.2%),

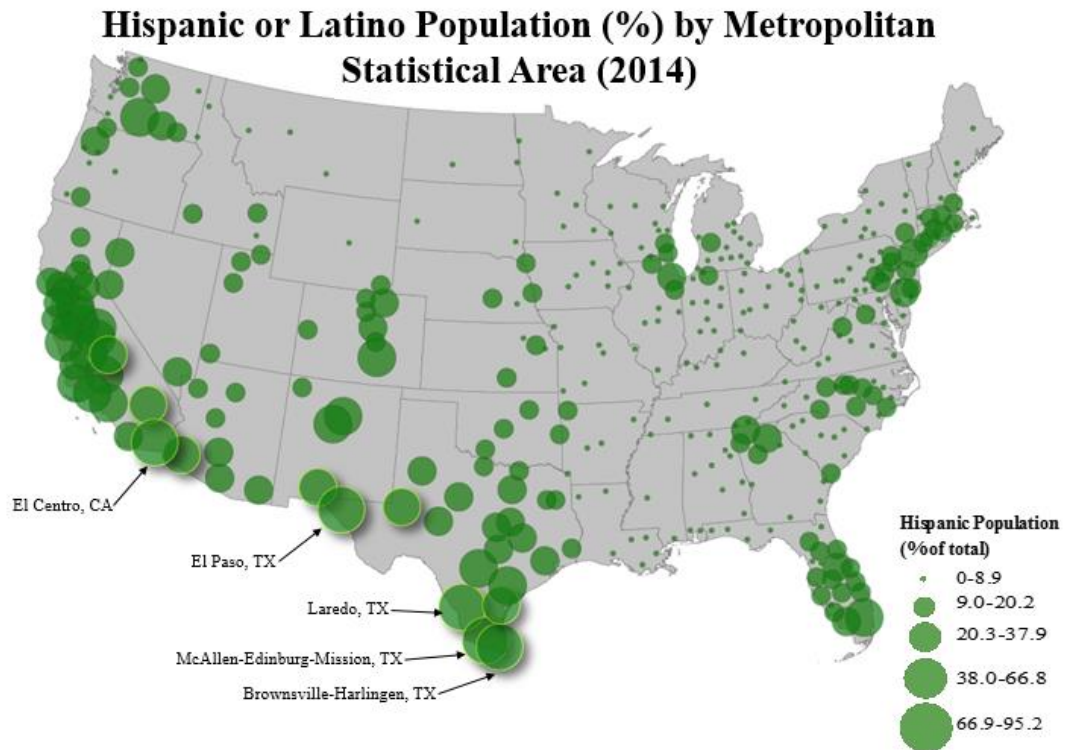Brownsville, TX (88.7%), El Centro, CA (82.3%), and El Paso, TX (81.2%).

Table 4.1.3 Top Ten Metropolitan Statistical Areas Ranked by Percent Hispanic
Population, 2014

Metropolitan Area	Hispanic Population	Total Population	% of Total
Laredo, TX	247,596	259,471	95.2
McAllen-Edinburg-Mission, TX	733,179	806,447	91.2
Brownsville-Harlingen, TX	366,892	415,103	88.7
El Centro, CA	144,090	177,026	82.3
El Paso, TX	673,580	827,206	81.2
Las Cruces, NM	141,087	212,942	66.8
Visalia-Porterville, CA	279.022	451,108	62.9
Yuma, AZ	122,270	201,453	61.7
Corpus Christi, TX	256,897	437,528	59.6
Merced, CA	147,270	261,609	57.5
Top Ten Average	311,188	404,989	74.7
MSA Average (n=358)	129,790	703,030	18.5

It is important to note that Hispanic or Latino entrepreneurs are a heterogeneous

group (Valdez 2014). Cuban-Americans report much higher rates of business ownership

than Mexican Americans, in part, because the post-Castro Cuban migrant was largely

comprised of a professional and managerial class that geographically concentrated in

compact ethnic enclaves particularly in the Miami-Fort Lauderdale MSA. According to

Valdez (2014, p.3), Mexican Americans are much less likely to engage in

entrepreneurship than Cuban Americans because of a long history of Mexican migration

to the US that can be characterized as a "revolving door of low-skilled, low- wage, and often unauthorized or temporary labor".

Figure 4.1.3 Spatial Distribution of Percent Hispanic by MSA, 2014

Hispanic or Latino Population (%) by Metropolitan Statistical Area (2014)

Hispanic Population (% of total)
- 0-8.9
- 9.0-20.2
- 20.3-37.9
- 38.0-66.8
- 66.9-95.2

El Centro, CA
El Paso, TX
Laredo, TX
McAllen-Edinburg-Mission, TX
Brownsville-Harlingen, TX

Valdez (2014, p.3) argues that many Mexican American entrepreneurs may be pursuing an entrepreneurship of last resort when she suggests that Mexican Americans are:

> More likely to engage in business ownership to combat unemployment or underemployment in the general labor market; they are basically providing themselves with a job in the absence of other labor market opportunities. Not surprisingly, then, economic downturns in the economy are often associated with an uptick in self-employment among disadvantaged immigrant, ethnic and racial minority groups. When the economy rebounds, self-employment rates drop. This relationship requires us to challenge the mainstream viewpoint that entrepreneurial activity is always equated with the American Dream, when for some, it may indicate an American dream denied. (Valdez 2014, p.4)

The final predictor variable to enter the regression model in 2014 was median home value which varied from a high of $672,900 in San Jose, CA to a low of $72,000 in Danville, IL with an average median home value of $176,056 across all MSA's. Eight of the top ten most expensive housing markets were located in California including San Francisco ($602,800), Santa Cruz ($535,500), Los Angeles ($453,500), Oxnard-Thousand Oaks-Ventura ($443,700), and Napa ($443,000). Several of the ten MSA's with the disproportionately largest NFP labor pools in the nation (Table 4) were also very expensive housing markets including Barnstable Town, MA ($361,300), Ocean City, NJ ($308,200), and Santa Cruz. Two other MSAs that ranked 11th and 12th respectively in percent NFP also featured prominently as very expensive housing markets including Bridgeport, CT ($420,600), and Santa Rosa, CA ($406,900). It is possible that fluctuations in the local housing market could affect the availability of financial capital for some NFP's because, in many cases, the entrepreneurs own housing is the single most important source of collateral for bank loans (Black *et al.*1996; Stam 2009).

Table 4.1.4 lists the Coefficient of Determination and all the statistically signifiant predictor variables for the final regression model for each of the post-recession years from 2010 through 2014. The percent FIRE and percent Hispanic variables featured prominently in every year as the U.S. economy evolved out of recession suggesting that both predictors are temporally consistent influences on the geographies of entrepreneurship although with potentially very divergent explanatory frameworks. Median age was also an important determinant for three of the last four years which partly explains why Florida is such a bastion of self-employment. Other variables that

featured more than once included percent Construction employment (2010 and 2012),

percent Arts and Entertainment employment (2010 and 2011) and Median Home Value

(2013 and 2014).

Table 4.1.4 The Geography of Non-Farm Proprietorship (% of workforce) by MSA: The Key Predictors, 2010 – 2014

Year	Predictor Variables	Coefficient of Determination (R^2)
2014	+ve % FIRE Employment +ve Median Age +ve % Hispanic +ve Median Home Value ($)	0.61
2013	+ve % FIRE Employment +ve % Retail Employment +ve Median Home Value ($) +ve % Hispanic	0.47
2012	+ve % FIRE Employment +ve % Construction Employment +ve % Hispanic +ve % Accommodation and Food Services Employment +ve Median Age	0.57
2011	+ve % FIRE Employment +ve % Hispanic +ve % Arts and Entertainment Employment +ve Median Age	0.41
2010	+ve % FIRE Employment +ve % Foreign Born +ve % Arts and Entertainment Employment +ve % Construction Employment +ve % Hispanic	0.44

Goetz and Rupasingha (2009, p.435) have pointed out that "many construction

workers are self-employed, and this trend appears to be increasing over time."

Furthermore, the arts and entertainment sectors have been increasingly recognized as a vital asset in economic development. Creative class theory suggests that a high-tech, highly educated workforce prefers locations with creative amenities (Florida 2003). Although the causal links are less clear, MSAs like Boulder, CO and Austin, TX have successfully connected elevated creativity in the arts and culture to a strategy to retain and attract the most entrepreneurial workers, especially younger ones. Finally, the role of median home value may be more temporally contingent. As home prices began to recover from the housing bust of 2008, it is important to note that median home value only featured prominently in the two most recent years (i.e., 2013 and 2014). In the earlier years, it is unlikely that home equity featured prominently as a source of collateral because of the precipitious decline in home prices in many MSAs and the reluctance of banks to provide loan capital.

4.2 The Golden Horseshoe NFP Region

Featuring both global entrepreneurs "spreading their cultural peculiarities" in and around Miami's Cuban Enclave and Rust Belt retirees with less than average fears of failure, the state of Florida is an inimitable bastion of self-employment (Arboleya, 2013). In absolute terms, Florida has the third largest pool of the self-employed with 2.69 million NFPs as of 2014, following Texas at 3.7 million and California at 5.21 million. Despite trailing in absolute numbers, the self-employed account for an unrivalled quarter of Florida's entire workforce and, as previously noted, Floridian MSAs dominate in terms of relative NFP employment as only three Californian MSAs and no Texan MSAs ranked within the top twenty of NFP shares. While it has already been remarked that these same

Floridian MSAs, including Naples and Punta Gorda, maintain substantive tourism economies, it does not necessarily follow that all self-employment within Florida is geared towards the lower wage tourism industry. On the contrary, in a recent analysis conducted by Reedy et al. (2016), Florida was characterized as a widely unrecognized "high-performing state" in the midst of a "start-up surge." Moreover, the industry witnessing the greatest increase in self-employed workers within Florida is not tourism, but professional services (Schneider, 2015). In truth Florida, like the majority of the US, is witnessing a spatial divergence in the types of entrepreneurship emerging over time with necessity driven, tourism based mom and pop shops existing alongside high-tech opportunity-based start-ups. This is most palpable in a location we are referring to as the Golden Horseshoe NFP Region.

The Golden Horseshoe NFP Region is located in the southernmost portion of Florida (Figure 4.2.1) and is composed of six contiguous MSAs that all ranked within the top twenty of in percent NFP employment, with the exception of Cape Coral-Fort Myers which ranked 21st with an NFP share of 26.9 percent. Alongside exhibiting NFP shares greater than the largest MSAs in the US, the Golden Horseshoe NFP Region has a collective average employment share in FIRE (14.4 %) nearly double that of the national average (7.9 %) with very little variation between MSAs (Table 4.2.1). Furthermore, because these MSAs are not entirely removed from the dominance of tourism within Florida, the Golden Horseshoe NFP Region also demonstrates combined average employments shares in leisure (17.4 %), arts and entertainment (3.15 %) and accommodation and food (8.36 %) that are noticeably greater than the national averages

of 13.8 percent, 2.0 percent, and 7.6 percent, respectively. Demographically, the Golden

Horseshoe NFP Region again epitomizes its Floridian environment with a collective

population growth rate (1.6 %) more than double the national average of 0.7 percent and

a median age (48.7 years) nearly ten years higher than the national MSA mean of 37.9

years.

Figure 4.2.1 The Golden Horseshoe NFP Region of South Florida

The Golden (?) Horseshoe NFP Region

North Port-Sarasota-
Bradenton

Punta Gorda

Cape Coral-Fort Myers

Naples-Immokalee-
Marco Island

Port St. Lucie

Miami-Fort Lauderdale-
West Palm Beach

Table 4.2.1 Selected Characteristics of Golden Horseshoe MSAs ranked by NFP Shares

	Regression Model Variables				**Other Key Variables**				
	Fire[1]	MedAge[2]	His[3]	MHV[4]	UE[5]	ForBor[6]	BA[7]	Fiber[8]	Prof[9]
1. Punta Gorda	14.9	57.5	6.7	$146,300	11.7	9.8	21.2	1.8	5.1
3.North Port-Sarasota-Bradenton	14.5	51.1	12	$183,300	5.6	12.2	31.4	15.4	7.1
5. Naples-Immokalee-Marco Island	17.2	48.7	26.7	$273,100	6.5	23.0	34.8	2.1	6.1
11. Port St. Lucie	12.2	46.8	16	$151,800	7.2	13.3	21.6	3.3	6.2
13. Miami-Fort Lauderdale-West Palm Beach	13.6	40.5	43.3	$210,000	8.2	38.7	29.4	3.6	7.6
21.Cape Coral-Fort Myers	13.9	47.3	19.6	$163,400	7.2	15.4	26.5	1.5	6.2
Golden Horseshoe Average:	14.4	48.7	20.7	$187,983	7.7	18.7	27.5	4.6	6.4
Total MSA Average:	7.9	37.9	13.4	$176,056	7.1	9.9	27.3	3.3	5.2

Abbreviations: [1] Percent Finance, Insurance, Real Estate [2] Median Age [3] Percent Hispanic [4] Median Home Value [5] Unemployment rate [6] Percent Foreign Born [7]Percent Bachelor's Degree [8] Percent Households with Fiber [9] Percent Professional and Business Services

However, median age and population growth rate demonstrate more variation between MSAs, and the similarities amongst the Golden Horseshoe MSAs diminish upon further examination of each individual MSA.

Ranked number one in terms of employment shares in NFP, the Punta Gorda metropolitan area is located in the southwest Florida (Figure 4.2.1) and has the smallest square area of the Golden Horseshoe MSAs, comprised solely of Charlotte County. Regardless of, or as a consequence of its size, Punta Gorda appears to generate more "last-resort" self-employment than any other MSA in the Golden Horseshoe NFP Region. Perhaps the most telling reason for Punta Gorda's potentially elevated levels of necessity driven self-employment is its unemployment rate of 11.7 percent, which is over four percent higher than the national average of 7.1 percent and greater than any single MSA within the Golden Horseshoe NFP Region, including the more urban Miami-Fort Lauderdale-West Palm Beach metro (8.9 %) (Table 4.2.1). Punta Gorda's median earnings are likewise indicative of necessity self-employment at a low $23,621, over four thousand dollars less than the national MSA average of $28,252. Moreover, while Punta Gorda has the highest owner occupancy rate of the Golden Horseshoe NFP Region at 78.7 percent, its median home value is dismally low at a mere $146,300 (Table 4.2.1), over 30,000 dollars less than the Golden Horseshoe average. The loan capital obtained from such lower priced homes is guaranteed to be minimal, and as such the businesses formed from home loans in Punta Gorda are likely cheaper "last-resort" mom and pop shop. Although this requires additional research.

Punta Gorda's inclination towards necessity based self-employment is most straightforwardly attributed to the fact that its population is less educated as a whole, with a percent BA (21.2 %) considerably lower than the national average of 27.3 percent (Table 4.2.1). Furthermore, Punta Gorda's population is fairly elderly even within the Floridian context with a median age of 57.5, over six years higher than the second oldest Golden Horseshoe MSA North Port-Sarasota-Bradenton at 51.5 years. Nevertheless, the elderly should not be regarded as impediments to Punta Gorda since, as previously demonstrated through the regression models from 2011 to 2014, self-employment levels increase with age.

Geographically detached from the Cuban Enclave in Miami, Punta Gorda does not receive the same influx of highly educated, entrepreneurial Cuban Latinos. Case in point, Punta Gorda has the smallest Hispanic population of the Golden Horseshoe MSAs at 6.7 percent, exactly half of the national MSA average of 13.4 percent (Table 4.2.1). More than simply lacking Hispanics, Punta Gorda is inordinately Caucasian with a percent white of 90.2 percent and a foreign born population that is comparably insignificant at 9.8 percent (Table 4.2.1) the majority of which are retirees originating from Europe (Eisenhaur et al, 2007). Overall, the inability to attract innovative Cuban Latinos has undoubtedly contributed to the proliferation of necessity self-employment within Punta Gorda. Instead of business owners participating in the professional endeavors Cubans and Latin Americans are known for, they invest in the largest, tourism based employment sectors in Punta Gorda retail (15.1 %) and leisure (16.8 %), with the

more affluent professional and business services accounting for just 5.1 percent of all jobs, the lowest average of the Golden Horseshoe NFP Region (Table 4.1.2).

Located in the more northerly portion of Southwest Florida, the North Port-Sarasota-Bradenton MSA ranked third overall in terms of percent shares in NFP at 31.8 percent, as such it may be the best example of opportunity-based entrepreneurship within the Golden Horseshoe NFP Region. In terms of the major indicators, North Port-Sarasota-Bradenton does not stand out within the Golden Horseshoe NFP Region. Ranking only third highest within the Golden Horseshoe NFP Region in both percent FIRE and median home values, North Port-Sarasota-Bradenton was still double the national employment average in FIRE at 14.5 percent, while its median home value was only $ 7,000 above the total MSA average of $183,300 (Table 4.2.1). Furthermore, the percent Hispanics (12 %), was a full eight percentage points below the Golden Horseshoe mean (Table 4.2.1). This may in part be due to its spatial location, yet North Port-Sarasota-Bradenton is not as profoundly codependent on the entrepreneurial Latino class as Miami and as of late has invested in an exclusive strategy to support and attract a wide-range of entrepreneurs.

In the latter portion of 2010, Sarasota County invested in a fiber network with the primary purpose of enhancing the existing traffic control network, but as the local media and larger community became aware of the impending "bargain fiber," a collective patronage of the entrepreneurial class began to arise. Pollick and Sword (2010, para. 18) captured the alleged pre-fiber limitations of Sarasota county in stating "the co-called creative class -- bandwidth entrepreneurs on a budget -- struggle to get by on mediocre

connections that are largely repackaged retail offerings." Not satisfied with simply

bolstering the experience of existing entrepreneurs, Sarasota's community aspirations for

its fiber network became more competitive and long-term in nature with Pollick and

Sword (2010, para. 27) suggest that:

> South of us, in Naples, it is private enterprise driving high-octane broadband, the
> work of a technology-savvy entrepreneur and a like-minded group of millionaires
> who want what many of us raising families in Southwest Florida are after: an
> economy that would allow our kids to remain here with good jobs.

As of 2014, 15.6 percent of households within the North Port-Sarasota-Bradenton MSA

were equipped with fiber internet, this is three times the total MSA average of 5.2 percent

and 11.8 percentage points greater than the more obviously high-tech Miami-Fort

Lauderdale-West Palm Beach MSA at 3.6 percent. More notably fiber is responsible for

at least some of the increase in NFP, as it was the fifth variable to enter our regression

model for 2014 though it did not enhance the r squared value greatly.

The real triumph of Sarasota's fiber network is not in the quantitative change of

NFPs, which only increased from 31.2 percent in 2010 to 31.8 percent in 2014, but rather

the quality of NFPs and the community as a whole. While we cannot not claim a

definitive one to one relationship between fiber and North Port-Sarasota-Bradenton's

NFP evolution, we do heavily believe that the fiber expansion has helped in many

different ways. Not only has North Port-Sarasota-Bradenton's population growth rate

doubled from 0.7 percent in 2011 to 1.43 percent in 2014, its professional and business

service industry has grown from a record low of 2.8 percent in 2012 to becoming the

second largest in the Golden Horseshoe NFP Region at 7.1 percent (Table 4.2.1). Perhaps

even more remarkable is that during the same year of the fiber network's installation in 2011 the unemployment rate in North Port-Sarasota-Bradenton was at an alarming 11.8 percent, yet by 2014 it diminished considerably to the point that North Port-Sarasota-Bradenton emerged as the MSA with the lowest unemployment rate in the Golden Horseshoe NFP Region in 2014 at a mere 5.6 percent. In conjunction with higher levels of employment, North Port-Sarasota-Bradenton has encountered a surge in its college educated population, with a percent BA growth rate of one percent per year from 2010 to 2014. While North Port-Sarasota-Bradenton's current percent BA of 31.4 percent is still overshadowed by Naples-Immokalee-Marco Island's impressive 34.8 percent BA, fiber may have presented Sarasota with a competitive edge, although more research is needed in this area before a definitive statement can be made.

Recently ranked by the Milken Institute as second in the nation for wage growth and fourth in overall employment growth from 2012 through 2014, Naples-Immokalee-Marco Island may well be a national model of how high-tech opportunity based entrepreneurship can coincide harmoniously with a lucrative tourism industry (DeVol et al., 2015). At 21. 8 percent of the workforce employed in leisure, tourism is the primary industry within Naples-Immokalee-Marco Island. Furthermore, due to spillover from the Miami Cuban Enclave, Naples-Immokalee-Marco Island boast an exceptionally diverse population (26.7 % Hispanic and 23 % foreign born), which in turn enables it to attract large quantities of Latin American tourists with notoriously high purchasing power. Wisely investing the capital accumulated through tourism, Naples-Immokalee-Marco Island has successfully matured its secondary employment sector FIRE.

Headquarter to both the Fifth Third Bank and Premier Sotheby's International

Realty, it is not surprising that the Naples-Immokalee-Marco Island MSA maintains the

highest percent share in FIRE (17.7 %) within the Golden Horseshoe NFP Region (Table

4.2.1) while also ranking second nationwide behind Bridgeport-Stamford-Norwalk, CT

(Aronow, 2012). In tandem with easily accessible financial services is a booming real

estate market that boast a median home value $273,100, well above the Golden

Horseshoe average ($187,983) and the national average ($176,056) (Table 4.2.1). Such a

capital rich environment has enabled entrepreneurs to flourish and compete, as Naples-

Immokalee-Marco Island ranked 12th in the nation in high-tech start-up growth from

2013-14 (DeVol et al., 2015). While its high-tech industry is still relatively modest when

compared to the likes of Silicon Valley, Naples-Immokalee-Marco Island has made great

strides in fostering entrepreneurship by actively building entrepreneurial networks and

encouraging business ownership. As a consequence, its NFPs continue to surge with

10,000 self-employed workers added between 2013 and 2014.

The Miami-Fort Lauderdale-West Palm Beach MSA has one of the largest

geographic concentration of Latinos within the US. Illustrative of this, Miami-Fort

Lauderdale's population is an astounding 43.4 percent Hispanic, more than double the

Golden Horseshoe average of 20.7 percent and over three times greater than the national

average of 13.4 percent (Table 4.2.1). As such, the cultural and economic influence of

Cubans in Miami-Fort Lauderdale cannot be overstated. Perhaps the most direct impact

of Cuban integration within Miami- Fort-Lauderdale has been the sustained elevated

levels of employment in professional and business services which currently stand at 7.6

percent, the highest in the Golden Horseshoe NFP Region (Table 4.2.1). Miami-Fort Lauderdale's lower median age (40.5 years) is likewise attributable to its Cuban inhabitants as they continue to attract professionals of Cuban origin as well as younger Latinos from Brazil and Venezuela. Fortunately, unlike their American counterparts, younger Latin American's possess a proclivity for risk that outweighs their lack of experience, and opportunity based entrepreneurship thrives within Miami-Fort Lauderdale in spite of a significantly less senior population.

Underperforming in prototypical Golden Horseshoe industries, such as construction (4.58 %), retail (10.6 %), and leisure (14.4 %), the Miami-Fort Lauderdale-West Palm Beach MSA is as far removed from a conventional Floridian market as possible while still being located within Florida. It is not that the aforementioned industries never boomed within the greater Miami-Fort Lauderdale MSA, but rather that their importance has diminished over time as a direct consequence of the Cuban Enclave. According to Portes and Puhrmann (2015), before the mass migration of post-Castro Cubans "Miami was a typical southern city, with an important population of retirees and veterans, whose only activity consisted of the exploitation of tourism during the sunny winters." Today, Miami-Fort Lauderdale has evolved into an entrepreneurial hotbed, now boasting 247.6 startups per 100,000 people and a sizable percent NFP share of 28.6 percent (Reedy et al., 2015). Such a profound progression is the sole product of nearly six decades of transnational entrepreneurship, which saw Miami's elite, bilingual Cuban residents become both the suppliers and financers of their relatives in Cuba.

As a result of the post-Castro Cuban's endeavors abroad, Miami-Fort Lauderdale has emerged as a major Latin American hub accounting for an impressive "fifty percent of Florida's foreign trade" and "90 percent of US shipments to the Cuban subcontinent (Arboleya, 2013)." However, Miami-Fort Lauderdale is much more than a launching point for Cuban goods. With a relative foreign born population (38.7 %) greater than any other MSA in the US, Miami-Fort Lauderdale's penchant for diversity and its embrace of the entrepreneurial Hispanic community has garnered it much international recognition in the form of investment. In 2014, it was estimated that Latin American investors spent 6.1 billion dollars on Miami-area real estate, or 36 percent of all such investments (Sirk, 2016). By comparison, only 8 percent of real estate sells in the entire US were attributed to foreign investment in that same year (Sirk, 2016). Such lucrative patronage undoubtedly contributed to the resurgence of Miami-Fort Lauderdale's real estate market, as its median home values have increased from an immediate post-recession low of $ 174,000 in 2011 to $210,000, or approximately $ 35,000 greater than the national average (Table 4.2.1). Latin American ventures within Miami-Fort Lauderdale have not been restricted to property, however, as over one third of the nation's most important Hispanic companies and at least fifty-three South American based financial institutions have materialized in Miami over the last decade (Arboleya, 2013).

The aptly titled Latin American banking capital, Miami- Fort Lauderdale hosts the greatest concentration of international banks in the US. Funding entrepreneurial pursuits within Miami and attracting "much of the private capital that emigrates from Latin America in search of security and higher profits" these foreign owned banks are the

driving force behind Miami's rich start-up community (Arboleya, 2013). Nevertheless, Miami-Fort Lauderdale-West Palm Beach's employment share in FIRE is the second lowest of the Golden Horseshoe MSAs at 13.6 percent, a fact that has very little bearing on reality (Table 4.2.1). With incipient forms of venture capital and loan capital mounting hundreds of millions of dollars each year, Miami-Fort Lauderdale's financial market is undeniably superior to every MSA within the Golden Horseshoe NFP Region and the entire state of Florida. Thus its comparably trivial percent FIRE is not reflection of an underperforming financial market, but rather an indication of how diverse Miami-Fort Lauderdale's ever evolving job market is.

CHAPTER V

CONCLUSION

Since the Great Recession, local governments have grown increasingly interested in cultivating entrepreneurship as a means to revive their economies. However, virtually no attention has been given to the rising economic significance of non-farm proprietors, or what these individuals can reveal about the state of post-recession entrepreneurship. This is especially unfortunate given that, as of 2015, 40.7 million or nearly a quarter (21.4%) of all US workers were classified as either full or part time NFPs. In addition to its relative size, policy makers and practitioners alike should note that, non-farm proprietorship is one of the most rapidly expanding employment sectors in the US. Reflective of this, between the years 2010 to 2015, the growth rate of NFP employment (14.3 %) was over five percentage points greater than that of wage and salary employment (8.9 %). As if these figures were not enough to fully capture the importance of NFPs, previous literature has suggested that studying NFPs enables a better assessment of the strengths and weaknesses associated with entrepreneurial ecosystems (Shrestha *et al.* 2007; Goetz and Rupasingha 2009; Rupasingha and Goetz 2013; Carree *et al.* 2015). Therefore, since local governments seem concerned with producing viable and vibrant entrepreneurial ecosystems, they should pay closer consideration to amount and types of NFPs in their region.

In absolute terms, the largest metropolitan areas (i.e. New York, Los Angeles, and Chicago) exhibited the highest numbers of NFPs. However, those MSAs with the greatest shares of NFP workers, were smaller, tourism based economies concentrated in Florida, the upper Northeast, and California/Oregon. With the most noteworthy instance of overlap between these two extremes being the Miami-Fort Lauderdale MSA, which ranked in the top twenty of NFP employment shares, and all but exceeds the nation in terms of NFP employment generation rates. Reflective of its geography, the relative share of NFP employment by MSA seems to be best explained by metro-wide ecosystems that have a high percent FIRE, median age, percent Hispanic, and median home value. While unemployment and education (percent BA, percent HS) were not as imperative in explaining the geography of entrepreneurship as was initially assumed, it appears that the aforementioned combination of socio-economic predictors captures both *last resort* self-employment (e.g., low-skilled, immigrant populations and aging populations) and self-employment of *opportunity* (e.g., access to capital). Supporting our initial hypothesis.

Interestingly, percent FIRE, the variable most explicitly linked to opportunity-based entrepreneurship also exhibited the greatest correlation with NFP employment as was predicted. As of 2014, with every one percent increase in percent FIRE an 0.86 percent increase in NFP is expected. Given their strong relationship, it is not surprising that the overall spatial configuration of percent FIRE is nearly identical to that of NFPs. Highlighting both Florida and the Upper Northeast, percent FIRE has several top ten ecosystems in common with NFP, including Naples, Punta Gorda, North Port-Sarasota, and Ocean City NJ. In spite of this, the existence of higher employment shares in FIRE

appears to be an overwhelmingly east coast phenomenon, as California and Oregon did not exhibit the same prominence within FIRE. While it may be that other socio-economic factors not captured within this research are more influential in bolstering self-employment in these ecosystems, the appearance of FIRE as the first variable in every regression model from 2010 to 2014 affirms how imperative access to capital is in promoting entrepreneurial pursuits nationwide.

Concentrating primarily in Florida and the desert northwest, median age strayed even further than FIRE from the distinctly bicoastal geography of NFPs. Nevertheless, several MSAs not located within Florida featured prominently for both median age and NFP employment shares, including Barnstable, Ocean City, and Grant Pass OR. While the relationship between median age and NFP employment was not as pronounced, in the most recent year, if median age increased by one year then the share of NFP employment would increase by 0.33 percent. Moreover, as median age featured in three of the five study years (2011, 2012, and 2014) and has been connected to NFP employment in previous research (Goetz and Rupasingha, 2009), it can rather confidently be asserted that self-employment rates increase with age. However, the proliferation of elderly self-employers within an ecosystem is not necessarily a positive indication of entrepreneurship. It appears instead to be an alarming signal of ageism in the workforce coercing the "unemployable" elderly into proprietorship as a means to supplement their income.

When contrasted against median age, the Hispanic population exhibits only a modest influence on NFP employment. In 2014, a one percentage point increase in

percent Hispanic was associated with a mere 0.06 percent increase in NFP shares of employment. Nonetheless, as they were the only ethnic group to feature within our models and did so for all five study years, Hispanics seem to be an increasingly significant factor in explaining the geography of NFPs. While those Hispanics classified as Mexican Americans are often linked to temporary self-employment that is last resort in nature, Cuban Americans, especially those within the Miami Cuban Enclave, are widely distinguished as inventive, opportunity driven entrepreneurs. Despite such a distinction, Cuban Americans appear to be the less prevalent subgroup as there are currently greater concentrations of Hispanics outside the Miami Cuban Enclave than within it. Case in point, Miami-Fort Lauderdale did not break into the top twenty of percent Hispanic, instead those MSAs located within the more southern portions of Texas and California, including Laredo TX, El Paso TX, and El Centro CA boasted the highest concentration of Hispanics throughout all five study years.

Reinforcing the importance of loan capital, the variable median home value featured in the regression models for the two most recent study years and while it appeared lower in 2014, the r squared value for this year was an unsurpassed 0.61. Since median home value emerged alongside FIRE, policy makers should recognize that within post-recession US, healthy financial and real estate markets may be more conducive to entrepreneurship than those elements associated with pre-recession entrepreneurship, including creativity (percent AER) and diversity (percent foreign born). However, as percent AER featured in the two immediate post-recession years of 2010 and 2011, it cannot be definitively claimed that this proxy for creativity will never reemerge as a

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significant factor. Similarly, percent construction was included within the regression models for two years (2010 and 2012) and as self-employment continues to increase amongst construction workers, this variable may become more vital in the future, though it will likely never exhibit the same prominence as the key socio-economic predictors in this research.

While this thesis did uncover a combination of factors that largely account for the spatial unevenness of entrepreneurship and self-employment during the post-Great Recession years of 2010 to 2014, questions remain for future research. Recognizing that such a small body of research is dedicated to NFPs, despite their ever-growing economic consequence, it goes almost without saying that greater, more periodic studies should be conducted on NFPs and their relationship with entrepreneurship. Furthermore, as data on NFPs was not available for 2015 at the beginning of this study and has yet to be published for 2016, it would be worthwhile to update this research. In revisiting this analysis of NFPs, several time sensitive issues should be addressed, including if access to capital will maintain its pivotal role in bolstering entrepreneurship and self-employment. More specifically, the variable median home value should be reexamined as it emerged as a key determinate only within the last two study years and may reveal if entrepreneurs remain dependent on home loans as a source of collateral. Although percent fiber did not feature within any of the models, its near inclusion within the 2014 model, suggests that fibers correlation with NFP employment should likewise be reexplored.

As indicators of both last resort self-employment and opportunity-based entrepreneurship were visible throughout all five study years, it is highly recommended

that future studies continue to explore the "yin and yang" of entrepreneurship. However, as unemployment is the primary gauge of necessity self-employment as stated in the literature yet did not feature within any model, more metrics should be developed to separate each form of entrepreneurship. Moreover, while Hispanics were primarily linked with "last-resort" self-employment within this thesis, better distinctions should be drawn between and within each subpopulation. This includes geographically distinguishing between those Hispanic proprietors with low and high income levels as well as low and high business failure rates despite nationality. As this thesis depended primarily on MSA level data to profile the Golden Horseshoe NFP Region, it would be beneficial to perform a disaggregated, county level analysis of this region. Lastly, future research should be extended into areas such as Europe and Asia to establish whether or not entrepreneurship is driven by the same or similar socio-economic factors internationally.

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