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Résumé de l'article

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Does It Pay to be a Bilingual Entrepreneur? The Effect of Language Acquisition on Income Among Latino Entrepreneurs in the United States

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While African-American and Asian-American entrepreneurs are the subject of several studies on ethnic entrepreneurship, Latino immigrant entrepreneurs are relatively neglected. Previous research shows that non-immigrant ethnic minorities tend to earn more as employees than as entrepreneurs, but the reverse is true for many immigrants. Despite the fact that immigrants from Latin American to the United States have shown a propensity to become self-employed and hold skills that often lead to success in the entrepreneurial market, their income as entrepreneurs is lower than other ethnic groups. This study shows that most of this disparity is linked to languagability. If they are bilingual in Spanish and English with strong English skills, Latino immigrants to America, like other immigrant groups, earn more on average as entrepreneurs than as employees.

1. Introduction

Lofstrom (2002) discusses the "stylized" fact that recent immigrants to the United States earn less reported income than comparable immigrant groups in previous generations. Using Census data, Lofstrom shows that the inclusion of self-employment reduces the disparity between earnings of natives and immigrants, but immigrants from Mexico and Central and South America still underperform immigrants from most other parts of the world. Using data from surveys of Latino immigrants, this study shows that the major difference in earnings between entrepreneurs and employees among Latino immigrants is bilingual ability, with English language ability as a key indicator of entrepreneurial success.

Economic research before 1980 largely neglected the effects of self-employment and entrepreneurship on the American economy and labor market. Cornelius, Lanstrom and Persson (2006) observed that entrepreneurship research did not establish itself until the 1980's, a period in which major economic events such as the oil crisis, recession and globalization "created a level of uncertainty and disequilibrium that constituted a breeding ground for innovation and entrepreneurship" (Cornelius 2006). Cornelius, Lanstrom and Persson examined this evolution of entrepreneurial research with a bibliometric analysis of research articles cited between the years 1982 and 2004. They found that ethnic entrepreneurship (immigrant entrepreneurship included) research was the most cited research stream between the periods of 1982-1990, indicating that the ethnic entrepreneur was an intense focus of study throughout the inception of entrepreneurship research.

By 2004 ethnic entrepreneurship was described to be "shrinking" and "retreating from the research front" (Cornelius 2006). Cornelius, Lanstrom, and Persson (2006) described this phenomenon (for any area of entrepreneurial study) as an area of study reaching a maturity level, where less research is necessary to describe the characteristics and commonalities within ethnic entrepreneurship. Based on previous studies within the field of ethnic entrepreneurship, there were fewer questions unanswered by economic research. Cornelius, Lanstrom and Persson showed that the area of ethnic entrepreneurship as a whole has reached a maturity level, but recent economic and social developments suggest that immigrant ethnic growth, a subfield of ethnic entrepreneurship, has not reached its maturity level.

Bean and Spener (1999) introduced the idea of "disadvantaged-based entrepreneurship," suggesting that immigrants start businesses out of necessity. Education, language ability and experience are skills that some immigrants may lack which puts them at a disadvantage in both an entrepreneurial market and an employee market, but entrepreneurship offers the individual less of a disadvantage. If an individual is self-employed, the hiring process which tests for language, education and experience is negated[1] Parker (2004) theorized that immigrants are traditionally viewed as efficient in trading because they have two advantages: i.) direct access to certain products desired in a niche community and ii.) the ability to hire trusted, low wage workers among their ethnicity. Hence, there are opportunities to begin businesses with ample social capital and ethnic resources for specific niche communities.

An immigrant's propensity to be self-employed due to linguistic and educational disadvantages gives reason to focus specifically on self-employed individuals. Further, of the entire immigrant movement in the past decade, the largest group has been individuals of Latino descent (Pew Hispanic Center). The following research addresses this development by examining the effect additional human capital has on the self-employed Latino-American [2]and the Latino-American employed by a firm. The research utilizes a 2002 survey, which allows the data to encompass undocumented migrants and incorporates the more recent, large Latino immigrant movement[3]

Fry and Lowell (2003) studied a 1992 National Adult Literacy Survey (NALS) and established the foundation of language ability and human capital in the immigrant labor market. This research builds on their findings by studying the income effect of bilingualism and education on a more recent dataset and additionally explores the difference these linguistic and educational dynamics hold between the self-employed and employed Latino-American labor markets. It focuses specifically on the effects of bilingualism using established protocols for testing an individual's language proficiency.

Primary regressions found that there is a significant difference in income potential between the Latino-American employed by a firm and the self-employed Latino American. The self-employed Latino-American experiences, on average, higher income than the individual employed by a firm, which follows previous entrepreneurial research of different cultures. Primary regressions also find that gender, marriage, education, and age are significant factors to income. Bilingualism, however, shows varying results within the combined Latino labor market. Bilingualism is unrelated to income for Latinos overall, but bilingualism is related to higher income among entrepreneurs and lower income among employees. These results suggest that serving as language intermediary may contribute to entrepreneurial success.

2. Literature Review

Aldrich and Waldinger (1990) provide a "framework" for ethnic entrepreneurship based on three components: group characteristics, opportunity structures and ethnic strategies. Aldrich and Waldinger discuss group characteristics to include ideas such as selective migration. They explain that the occupation type of an immigrant (white collar vs. blue collar) can have a significant impact on entrepreneurial success as well as settlement characteristics, which include ethnic enclaves (a group of the same ethnicity concentrated within one community). Opportunity structures focus on aspects such as market conditions, including ideas such as interest rates and consumer confidence, which are issues within the entire entrepreneurial market. For the ethnic entrepreneur, market conditions will also include niche consumers and language barriers among non-ethnic markets. The current market conditions combined with the ethnicities' characteristics are evaluated to develop a strategy to achieve that individual's goal, building the "framework" of the ethnic entrepreneur.

Yuengert (1993) builds on Aldrich and Waldinger's framework by exploring self-employment rates among immigrants in the United States. Yuengert examined the hypothesis that better market conditions for the employed Latino-American may discourage ethnic entrepreneurship. He found that immigrants are more prevalent in high tax states where self-employment rates are higher due to the opportunity of tax breaks, an idea equivalent to the settlement characteristics of Aldrich and Waldinger. Yuengert also explained that self-employment rates of native countries have a positive and significant effect on the self-employment rates of those who immigrate to the United States, supporting Aldrich and Waldinger's idea of a group characteristic.

Additionally, Yuengert theorized that self-employment is important to the immigrant economy. Small businesses employ the owner as well as employees typically of the same culture. Consequently, Yuengert found that self-employment rates are not significantly higher based on high concentrations of immigrants in a particular area. Based on the theories of Aldrich and Waldinger, the presence of an ethnic enclave supports better market conditions for the

employed immigrant. Thus, these market conditions do not harbor the ethnic entrepreneur and possibly cannibalize the self-employed labor market within the enclave.

On the other hand, Evans (1989) suggests that the enclave offers a "linguistically isolated labor pool whose skills can be more efficiently tapped by co-ethnic rather than majority group entrepreneurs" (Evans 1989, 950). It allows employed ethnic groups a comfort zone, typically associated with a higher success rate. McManus (1990) also found that based on the 1980 census survey, enclaves support "English-limited" male immigrants by reducing income losses. He showed that increasing English speaking men among the enclave only reduces income returns for those with an extensive knowledge of English.

Within an enclave an ethnic entrepreneur is not at a disadvantage based on poor native language skills and other human capital. In fact, a bilingual individual versed in English may be at a disadvantage when compared to entering a non-enclave market. As the knowledge of English increases in an enclave, income returns fall for individuals. There is a "limit" on the amount of English that is beneficial in an enclave market. The foreign language appears to be a more accepted means of communication in business relevant to income returns and losses.

In the self-employed labor market, Bean and Spener (1999) found that as Mexican self-employment increased within an ethnic community, wages and hours worked fell. They suggested that this phenomenon results from a low labor demand in the Mexican market, as well as the idea that the self-employed tend to start manual labor jobs in which large numbers of employees and higher pay is less applicable or efficient. Davila and Mora (2005) found similar results studying census data through the 1900's, indicating that linguistic isolation does not enhance entrepreneurship nor does the size of an enclave. An enclave provides a comfort zone for self-employed English-limited immigrants. Consequently, self-employment within an enclave does not bring higher returns and discourages English-versed bilingual individuals from the labor market, which leads to the first hypothesis:

> **H1a**: Self-Employment will show positive and significant returns to individuals with English strong bilingualism, because they do not have to rely on enclave consumers.
>
> **H1b**: Self-Employment will show negative returns to individuals with Spanish strong bilingualism, because they tend to rely on the enclave consumer.

Grenier (1984) investigated the relationship between income and education to understand language characteristics and the effects they have on wages for Hispanic-Americans outside of an enclave. Though the data is outdated, Grenier found that language abilities do play an important role on the wages of Hispanic-Americans. Language ability increases networking and productivity, which explains the positive relationship between wages and language abilities. Grenier also found that the mother-tongue (first language learned) of an individual effects wage returns on education. A Spanish mother-tongue shows lower wage returns based on education levels than an English mother-tongue among all Hispanic-Americans, leading to the second hypothesis:

> **H2:** The employed Latino-American labor market will show higher returns to bilingualism if the individual demonstrates a strong English proficiency, assumed to be an equivalent to English mother tongue.

The second hypothesis contradicts the findings of Fry and Lowell (2003), who developed explanations of income potential based on the findings of the NALS survey. Their study examined 26,000 adults employed by a firm and found that there is little advantage from bilingualism for the employed Hispanic-American. It showed that there is a premium put on bilingualism within America; however, the increase is explained by the higher education most bilingual individuals possess and not bilingualism per se. Their research, however, impresses one weakness to the data. Language ability was self-reported and therefore exaggeration may be present in their data which could explain the results they found for the Hispanic-American. Further, there study does not test the self-employed market, which based on other entrepreneurial studies may show different results as well. Their study does, however, demonstrate a strong significance related to education in the Latino-American labor market.

Parker (2004) theorized that the entrepreneur places less of a premium on higher education, preferring more practical educational pursuits such as technical training. "Indeed, formal education might even inculcate attitudes that are antithetical to entrepreneurship…if employers demand education from their workers primarily as an otherwise unproductive screening device, then self-employed who do not face this requirement can be expected to quit education before its rate of return falls as low as that of employees'" (Parker 2004, 20-21). Fry and Lowell (2003) show a

significant and positive relationship between education and income among employed Latino-Americans, however, Parker explains a lack of desire for a high level of education among self-employed Latino-Americans. Thus, the final hypotheses were formulated to follow this trend:

H3: The employed Latino labor market will place a premium on a Bachelor's degree.

H4: The self-employed labor market will not place a higher premium on a Bachelor's Degree.

There is a lack of research dedicated specifically to the dynamics of the Latino-American labor markets, and the studies that have examined these factors use data anywhere from twenty to thirty years ago. Fry and Lowell (2003) studied bilingualism and its effects on the employed labor market and were able to distinguish the income effects of bilingualism on the Latino population, however they did not distinguish the income effects between different labor markets and used data that allowed individuals to self proclaim their language abilities. Further, Parker (2004) found evidence that education levels may be irrelevant in a self-employed market. This idea suggests that self-employed labor markets will react differently to bilingualism and show a significant impact, which could pose several social and economic implications on the Latino-American culture.

Church and King (1993) examined such network externalities and the implications of language attainment by formulating a function to measure the utility of a native English speaker learning Hebrew and a native Hebrew speaker learning English. The function measures the utility based on the number of individuals one can communicate with minus the cost of attaining a language. The Hebrew speaker greatly increases the number of individuals he/she can communicate with and thus the utility greatly increases, but because the English speaker can already speak with the majority of the population the need to learn a second language does not exceed the current utility. This study formulates a basic model for language attainment, however, it is important to understand that these studies do not take into account an important issue, "…learning a second language may have benefits beyond enhancing one's ability to communicate with more people" (Shy 2001, 259). Also, these theories do not grasp cultural influences of the Latino-American culture.

Aparicio (1998) studied the bilingual and cultural influences of the Latino-American culture by interviewing Anglo and Latino-American college students. Aparicio discovered with anecdotal evidence that in the Anglo-American culture Spanish-English bilingualism is encouraged because it follows the theories of Linton, Church and King. They gain the ability to communicate with the largest linguistic population apparent in their surroundings, other than English. Yet, Latino-American cultures discourage educated individuals from maintaining a Spanish ability both directly and indirectly.

This research examines the theories of Linton (2004), Church and King (1993), and Aparicio (1998) based on the results of a regression model. The model was developed based on the "framework" of the ethnic entrepreneur, the theories of "disadvantaged-based entrepreneurship" and previous studies of the entrepreneur, in general. The model's results contribute a basis to the understanding of bilingualism in both the employed and self-employed Latino labor markets. It also establishes the groundwork for future research of policy and entrepreneurship in the Latino labor markets.

3. Data

The data for the research was part of the Pew Hispanic Center/Kaiser Family Foundation 2002 National Survey of Latinos[4]. The survey was conducted by the International Communications Research in April of 2002. Individuals versed in Spanish and English conducted the interviews over the phone with a response rate of 56.6%, not including non-contacts (disconnected, fax line, government number, language barrier or no answer). Interviewers dialed 103,030 numbers in set geographic regions in order to complete the 4,213 surveys of which 2,929 participants considered themselves Latino-American. The survey also targeted a Non-Latino sample in order for comparisons to the Latino response. The Non-Latino sample was omitted from the regressions in order to capture the income dynamics of only the Latino labor markets.

The survey sampled a nationally represented population. It included 114 questions that asked the individual income status, political affiliation and personal views on discrimination among many others. The interviewer was also expected to answer questions regarding gender, time and the language the interview was conducted in. Table 1 shows the sample statistics from the 2002 data and Table 2 outlays the mean characteristics of the data utilized from the 2002 Survey.

Table 1: Demographic Characteristics

Characteristic				
Interview Language	Spanish=55%	English=45%		
Length of Employment	< 1 year=22%	1 – 5 years= 41%	5 – 10 years=17%	>10 years=20%
Occupation Type	Non-Manual=45%	Manual =55%		
Marriage	Married=50%	Other=50%		
Education	No H.S.=28%	H.S. /GED=27%	Technical=23%	College Degree=21%
Language Ability	Spanish=42%	Spanish Bilingual=18%	English Bilingual=16%	English=24%
Gender	Male=52%	Female = 48%		

Table 2: Income and Age Mean Characteristics

	Latino Descent		**Non-Latino Descent**	
Characteristic	**Observations**	**Mean**	**Observations**	**Mean**
Lower Bound Income	1661	$37,916.92	754	$54,277.19
Upper Bound Income	1717	$46,013.40	725	$66,889.66
Age	1937	38	745	41

The survey asked each participant to report their employment status at the time of the interview. Each was asked to claim themselves as employed by a firm, self-employed, a homemaker, a student, unemployed or retired. Some participants did not answer the question and were omitted from the data, because they could not be categorized into a labor market. Based on the employment question, the data was split into three groups: employed, self-employed and other (homemaker, unemployed, retired, student). The "other" group was omitted in order to capture the working population of the data set.

3. Data Analysis

Three ordinary least squares interval regressions were run on the dataset. The first analyzed the income dynamics and potential of the entire Latino labor market, including self-employed Latinos and Latinos employed by a firm. The second and third interval regressions split the data into employed and self-employed individuals to test the same dynamics.

Language ability was measured using a formula based on literacy questions and the language, the interview was conducted in to determine the individual's language ability. English bilingual represented those who were tested as bilingual, but showed more of an aptitude to use English, whereas Spanish bilingual represented individuals who showed more of an aptitude to use Spanish[5]. The survey did not ask questions regarding an individual's mother tongue, but this data goes beyond mother tongue and captures an individual's comfort with the native language. This measure serves as a surrogate to Grenier's (1984) mother-tongue hypothesis and possibly captures a more accurate affect of bilingualism in an English driven environment.

Previous entrepreneurship research has found that the self-employed place a smaller premium on a bachelor's degree or post graduate education. Therefore, technical school was tested through an interaction variable that indicated the relationship a minimal post high school education has on income in both markets. The "interaction variable" observes the relationship between technical school, college dropouts, and Associate degrees versus a Bachelor's degree and post graduate education. Table 3 describes all of the dynamics that were tested:

Table 3: Regression Variables and Descriptions

Dependent Variables	
Income	Includes a lower and upper bound income statistic
Independent Variables	
AgeSq	Squared due to assumption of diminishing returns
Married	1 indicates individual is married
Gender	1 indicates individual is male
Employment	1 indicates individual is self-employed
Language Ability	Based on four variables; English dominant, Spanish Dominant, Spanish Bilingual, and English Bilingual where English was dropped as the comparison variable
Education	Based on three variables; no high school, high school diploma or GED, and post high school Education (higher education) where no high school was dropped as the comparison variable
Interaction Term	Tested the effect of a less than bachelor's degree higher education i.e. technical school, or an associate's degree (Technical*Higher Education)

Table 3 Regression Equations

Combined Latino Labor Market

$$\text{Income} = \beta_1 + \text{Married}X_1 + \text{Agesq}X_2 + \text{Gender}X_3 + \text{Employment}X_4 + \text{Spanish}X_5 + \text{Spanish Bilingual}X_6 + \text{English Bilingual}X_7 + \text{High Sschool}.X_8 + \text{Higher Education}X_9 + (\text{Technical} * \text{Higher Education})X_{10} + \varepsilon$$

Self-Employed Latino Labor Market

$$\text{Income} = \beta 1 + \text{Married}X_1 + \text{Agesq}X_2 + \text{Gender}X_3 + \text{Spanish}X_4 + \text{Spanish Bilingual}X_5 + \text{English Bilingual}X_6 + \text{High School}.X_7 + \text{Higher Education}X_8 + (\text{Technical} * \text{Higher Education})X_9 + \varepsilon$$

Employed Latino Labor Market

$$\text{Income} = \beta 1 + \text{Married}X_1 + \text{Agesq}X_2 + \text{Gender}X_3 + \text{Spanish}X_4 + \text{Spanish Bilingual}X_5 + \text{English Bilingual}X_6 + \text{High School}X_7 + \text{Higher Education}X_8 + (\text{Technical} * \text{Higher Education})X_9 + \varepsilon$$

Fry and Lowell (2003) controlled for immigrant status in their research of bilingualism, but this research does not control for an individual's immigrant status. The hypotheses explain that language ability is the determinant of income potential, not the citizenship status. Thus, when an individual migrates to a foreign country, the ability to communicate in the native language will outweigh the individual's immigrant status, specifically for the self-employed. Language ability is apparent at first glance, however, immigrant status must be researched through background check, government-issued documents, etc. Whether self-employed and communicating with customers or employed and communicating in an interview, a strong knowledge of the native language detours possibilities of discrimination and allows more focus on abilities. Thus, an immigrant variable focuses on an aspect of the Latino culture that surpasses the goals of this study.

High levels of correlation between independent variables were a factor in the decision of which controlled variables to include as well. Employment length was dropped from the regression due to correlation with age. Age did not produce significant results in every regression, but employment length was dropped because of the inefficient data provided by the survey. Employment length was answered categorically; therefore the data did not encompass the most accurate effects of the length of employment or self-employment for an individual. Age represented an explanatory variable, so it was included as a more efficient control variable.

Occupation type was available from the data, but was not included in the regression model. The occupation data would have been manipulated into manual and non-manual occupations, where manual included white-collar professions such as management, clerical, and government, and non-manual occupations would have included service and farm jobs. The data was not included because of the self-employment regression. Occupational type was lost in the self-employed model because the survey allowed the individual to answer owner for occupation type. In this case, the variable did not capture manual versus non-manual in the self-employed regression and was left from the model. Finally, of the 2,929 Latino individuals interviewed, 1,661 participants (57%) were included in the regression. The regression models are shown in Table 4:

Table 4: Regression of combined Latino-American Labor Market

	Coefficient	Standard Error	Z-Value
Gender* **	6,381.67	1,259.23	5.07
Employment* **	9,482.57	1,778.31	5.33
Marriage* **	10,272.18	1,283.83	8
High School	255.64	1,765.54	0.14
Higher Education* **	20,927.97	1,969.15	10.63
Interaction Term* **	-10,134.56	1,876.33	-5.4
Age* **	214.12	51.83	4.13
Spanish* **	-22,108.33	1,724.42	-12.82
Spanish Bilingual **	-4,790.51	1,922.21	-2.49
English Bilingual	-2,284.16	2,006.40	-1.14
_cons	25,626.61	2,661.21	9.63

*** - Significant @ 90% level**
**** - Significant @ 95% level**
***** - Significant @ 99% level**

4. Empirical Results

The first regression analyzed the data for both employed and self-employed Latino-Americans. Table 4 shows the results of this analysis, including all 1,672 observations. Coefficients were considered significant if their P-value was 10% or less. There were six variables tested, all of which showed significance at the aforementioned level.

The "gender" variable showed that in the combined Latino labor market males, on average, will experience significantly higher income potential than females, which is consistent with the existing literature. Parker (2004) cited three possible explanations based upon the all cultures of the female population: females tend to have less work experience; they are more likely to start a business without established training or success in that field and tend to operate smaller businesses, which is attributed to a family factor. Females may operate smaller businesses to avoid "family disruptions" (Parker 2004, 128). Further, the majority of empirical labor economic studies find a gender difference.

The "marriage" variable tested the income potential of a Latino-American who is married versus a single or divorced Latino-American. The regression shows that a married Latino-American experiences a significantly higher income than a Latino-American who is divorced or single. Marriage often indicates family stability, and increases the number of members in the household. Hence, higher incomes become important, because the working individual must provide for more than just themselves. This increase often incurs larger grocery, utility and miscellaneous bills, compared to the lifestyle of an individual.[6]

Age was controlled for in response to previous literature which indicated that age will positively affect income in a labor market. There is no previous data in the literature review that offers a comparison to these results. However, logic incurs that an elder individual will have more work experience and knowledge than a younger individual, assuming a diminishing returns model. Age was squared to model diminishing returns to experience.

The "education" variable measured the premium the Latino labor market placed on formal education. Following previous literature, higher education does increase income potential significantly. The results show that, although there is no significant difference in income potential between a high school degree and no degree, there is a significant and positive relationship between income and a higher education. Any post high school education significantly increases the income potential of any working U.S. Latino. This finding is consistent with previous literature.

The interaction term measures the relationship between a technical school education or Associate's degree and a Bachelor's degree or post graduate education. The results indicate that there is a significant relationship between the two different levels of higher education. In the combined Latino labor market, college graduates experience higher incomes than individuals who have a post high school education, but not a Bachelor's degree.

The "language ability" variable was split into four binary variables: English dominant, Spanish dominant, English bilingual and Spanish bilingual, dropping English dominant as a comparison variable. The results indicate that, in the combined labor market, Spanish dominant language ability has a significantly negative effect on income potential, which follows previous literature. The knowledge of the host country's language is critical for economic success. Further, if an individual is bilingual and Spanish is their strongest language (Spanish bilingual) the subject will experience a lower income than the English dominant Latino. Church and Fry (2000) explained this relationship by showing that the utility of language can be demonstrated by the number of individuals one can communicate with. In a market where the majority language is English, it is understood that the lack of an English proficiency will produce a low utility.

The regressions also show that there is no significant difference between English dominant individuals and bilingual individuals whose stronger language is English. A bilingual individual with strong English proficiency (English bilingual) does not earn a higher income than an English dominant individual. Thus, the combined Latino labor market does not place a premium on English bilingualism.

The final variable was the "employment variable." It tested the income potential of the self-employed versus the employed Latino-American. The results indicate that a self-employed Latino will experience higher income potential than the employed Latino. As hypothesized, the self-employment market offers higher returns to the Latino-American. These results follow Bean and Spener's (2003) theory of "disadvantaged-based entrepreneurship." The Latino-American can negate capital factors that can be tested for in the employed labor market if they participate in the self-employed market.

The results of the primary regression are consistent with the majority of entrepreneurial research among all ethnicities. The "employment" variable also gives reason to study the employed and self-employed labor markets separately. The regression results show that there is a significant and positive effect to income from self-employment. Thus, results based on the same dynamics may vary between the employed and self-employed labor markets.

The primary regression also offers insight to the necessity of testing labor markets separately. The "employment" variable indicates significant differences to income potential between the employed and self-employed labor markets. Based on previous literature, the "education" variable suggests that the self-employment market will react differently to higher education. Finally, based on the theory of human capital and "disadvantaged-based entrepreneurship", language ability may also react differently in the self employed market.

The second and third regressions separated the labor market into the self-employed and employed in order to distinguish these hypothesized differences in the two labor markets. The hypotheses, based on the review of literature, suggest that different dynamics in each market will have stronger affects on income. There were 243 observations in the self-employed market and 1,429 observations in the employed market. Table 5 shows the regression results of the employed and self-employed Latino labor markets:

Table 5: Regression of Employed and Self-Employed

Employed			
	Coefficient	Standard Error	Z-Value
Gender* **	4,171.33	1,206.41	3.46
Marriage* **	9,726.37	1,226.72	7.93
High School	506.76	1,674.63	0.3
Higher Education* **	21,797.01	1,905.23	11.44
Interaction Term* **	-12,163.53	1,819.34	-6.69
Age* **	202.98	51.49	3.94
Spanish* **	-19,627.35	1,649.83	-11.9
Spanish Bilingual*	-3,471.88	1,838.10	-1.89
English Bilingual* **	-4,909.25	1,882.10	-2.61
_cons	26,605.07	2,544.07	10.46
*** - Significant @ 90% level**			
**** - Significant @ 95% level**			
***** - Significant @ 99% level**			

Self-Employed			
	Coefficient	Standard Error	Z-Value
Gender* **	17,826.06	4,713.81	3.78
Marriage* **	15,207.99	4,888.64	3.11
High School	3,905.04	6,978.12	0.56
Higher Education **	17,580.64	7,017.07	2.51
Interaction Term	2,285.72	6,513.88	0.35
Age	215.54	161.54	1.33
Spanish* **	-34,321.90	6,314.87	-5.44
Spanish Bilingual*	-12,086.56	7,126.97	-1.7
English Bilingual **	18,841.77	8,366.81	2.25
_cons	29,594.12	10,135.34	2.92

The first variable examined was "gender". The results follow the primary regression and indicate that in both labor markets a male will experience a higher income than a female, on average. The self-employed market shows higher returns to the male gender than the employed market. Parker (2004) found similar results in regards to gender indicating that the male is more apt to be self-employed and find success, due to the theories described previously in regards to family management. Females tend to maintain small businesses to minimize the sacrifices to family time.

The "marriage" variable showed similar results to the "gender" variable and followed the results of the primary regression. Marriage in the self-employed market again holds a higher premium than the employed market. Parker (2004) found similar results indicating that the self-employed spouse can offer direct assistance to their significant other. The spouse of an employed individual cannot offer direct pecuniary assistance, but still offers family stability, explaining the continued positive relationship in the employed market.

Age has no significant effect on the income of self-employed Latinos, while the employed market places a premium on age. This may be explained by the notion of a raise. In the employed market loyalty and continued

performance coincides with a raise in wages. In the self-employed market a raise in income is based on the output and profits of the business. Continued performance does not guarantee a raise in profits. Further there is no limit on the income available to a self-employed individual (Parker 2004). Therefore, the first year of a business may reap huge profits whereas the first year as an employee will have limits on income potential. Further, the "age" variable suggests that the employed individual has the ability to "learn by doing", without suffering direct pecuniary disadvantages. The self-employed Latino does not have the luxury of "learning by doing". Pecuniary success of the business is contingent on the individual's ability to perform immediately, thus increases in income with the increase in age is not apparent. The individual must have success in the early stages of self-employment.

5. Results

The "education" variable shows no difference in the employed or self-employed market when pertaining to the significance of a high school degree compared to no degree. An individual will experience statistically significant returns to income from a high school degree. Further, both markets show a significant and positive return to income from a higher education, and the employed market follows the primary regression indicating that a technical school education offers lower returns to income than a bachelor's degree or post graduate education, hypothesis H3 was unable to be rejected. However, the self-employed market shows there is no significant relationship between a technical education and a bachelor's degree, hypothesis H4 is unable to be rejected. The difference in education desires between the two labor markets indicates that a bachelor's degree may be less important in the self-employed labor market, which follows Parker's (2004) theory on the education of the self-employed. The self-employed individual desires some education, but does not require a Bachelor's degree to succeed.

In response to hypothesis H1b, the self-employed regression shows that strong Spanish bilingualism has a significant and negative effect on income, hypothesis H1b is also unable to be rejected. A bilingual individual that shows strong Spanish proficiencies will experience a negative return to income in the self-employed market. As hypothesized, these results indicate that the enclave consumer may place the bilingual individual at a disadvantage, assuming the Spanish strong bilingual relies on the enclave consumer.

The employed regression shows that regardless of bilingual strength there is a significant and negative relationship to income potential when compared to English dominant individuals. Bilingualism does not place an individual at an advantage in the employed Latino labor market. Thus, hypothesis H2 is rejected, the employed market does not offer a premium to English strong bilingualism. Aparicio (1998) gives possible explanation to this phenomenon in the anecdotal study of Anglo-American bilingualism and Latino-American bilingualism.

Aparicio's (1998) study showed that Anglo-American students are encouraged to learn a foreign language, specifically Spanish, because it is one of the fastest growing foreign languages in the United States. Yet, Latino-American students are discouraged from learning Spanish, if they do not already know it and many times they are punished for using Spanish if they are fluent in both English and Spanish. In the U.S. Latino culture the knowledge of Spanish as a whole is sometimes looked upon as a disadvantage in the American labor market. Latino students are encouraged to learn a language other than Spanish for language requirements set in the American education system. Further, Aparicio (1998) noted that English-only education programs in the United States continue to push Latino-American students away from Spanish. These programs slowly remove Spanish from the communication means of the classroom, until English is the only language used. This allows the Spanish-speaking individual to learn English, but it does not allow the individual to maintain a strong Spanish proficiency.

In order to further examine the implications of language attainment in the Latino labor market a final regression was run that dropped Spanish dominant language abilities as the comparison variable. This regression allows the investigation of Latino income dynamics based on the necessity to learn English. Table 5 shows the income effects on the Latino labor market based upon the attainment of a second language.

The results are based on regression models dependent upon the dropped comparison variable[7]. For example, to determine the income effects of a Spanish dominant individual attaining an English ability, the Spanish variable was dropped as the comparison. The resulting table represents the regression coefficient of "Spanish bilingual", indicating the change in income a Latino experiences moving from Spanish dominant to bilingual. The variable is measured against Spanish bilingual and not English bilingual, because it is assumed the individual holds a preference to the primary language. An individual who uses a primary language to learn a new language will continue a preference towards the

primary language. Further, to determine the income effects of an English dominant individual attaining a Spanish ability, the English variable was dropped as the comparison. The table is then represented by the regression coefficient of "English bilingual", assuming this individual will hold a preference to the primary language, English.

To demonstrate, in the combined Latino labor market the Spanish individual gains approximately $17,000 in income potential if the individual learns the English language, and the English dominant individual losses approximately $2,200 in income potential if he/she commits the time and effort to learn the Spanish language. Therefore, as earlier regressions showed, there is a negative return to attaining bilingual proficiencies if a Latino already speaks English fluently. Following, table 4.3 shows the only positive return to bilingualism, if an individual is English dominant, is in the self-employed market.

Clearly there is a difference in the premium placed on bilingualism between the self-employed and employed markets. The premium to English strong bilingualism, in the self-employed market, may be attributed to the individual's ability to communicate with higher income consumers in the English community and low wage employees in the Spanish dominant community, whereas that is not as beneficial in an employed market. However, the need to communicate across global borders is ever present. Why does the employed market negate returns to English strong bilinguals when they could maintain a cultural tie, as well as a linguistic tie, to foreign business partners? A deeper examination of the implications of language attainment offers a possible explanation to the linguistic phenomenon present in this study, which does not follow the theory of human capital in the labor market.

6. Implications of Language Attainment

The examination of previous literature indicated that knowledge of the host country's language is crucial for economic success, which was demonstrated by the regression results. Further, bilingualism, despite the addition of human capital, did not increase income potential. However, there is a more in depth story to this finding. This study found a deeper explanation to the insignificant effects of bilingualism found by Fry and Lowell by examining the bilingual strength of an individual, as well the labor market of the individual.

The control variables Spanish bilingual and English bilingual begin to differentiate the individual who learns English to communicate at basic needs and the individual who better understands and uses the English language. The survey data tested each individual's language use in daily life to discover Spanish dominance versus bilingual versus English dominance; this study goes one step further by separating the bilingual into two separate groups. An individual can be bilingual and communicate in two different languages, but success is dependent upon how well an individual communicates in both languages. If an individual is surveyed on religion, politics, discrimination and income, he/she will want to communicate in their strongest language. A division of bilingualism based on the language an interview was conducted captures this strength and shows significance in regression analysis.

This division of bilingualism then incorporates an interesting implication of the current language attainment trends within the Latino-American labor markets. The self-employed labor market shows a strong incentive to become bilingual, despite the individual's primary language. The employed labor market, however, shows a negative return to bilingualism if the individual is already proficient in English.

7. Limitations

The first limitation of this study is the testing of a mother tongue. The survey did not test for the mother-tongue of each individual, and though the language of the interview captures a preference of language, an analysis of each individual's mother tongue may show stronger significance. However, based on the research of Aparicio (1998) the returns to bilingualism should remain negative. This study also examines income variables as a categorical interval. Exact income data is difficult to obtain in a telephone survey, but testing higher incomes on a boundless interval may skew some results. In the future, a specific survey should be formulated to examine these variables in a more specific fashion.

The research of Aparicio and the results of the study suggest discrimination factors may be apparent in the Latino labor market. The dataset and previous research does not offer enough information or data to support the theory of discrimination, and it is unfair to attribute the findings of this study solely to employer discrimination without further research. Future studies should avoid this dilemma by including discrimination variables. A possibility is to include a

binary discrimination question in the survey in order to test employer and capital discrimination in the employed market versus the self-employed.

Further, the survey should test for the individual's preferred language, how and when the second language was learned, and the individual strength of each language. Testing for an individual's preferred language examines the trends of immigrant and second generation Latino-American's comfort with the English language. Testing how and when the second language was learned will examine educational statistics and test the theories of Aparicio on an equivalent dataset. It would be beneficial to the dynamics of this study to understand how each type of language attainment affects both language strength and income potential with empirical evidence, rather than anecdotal. Finally, testing the actual strength of each language will offer a stronger explanation of Spanish bilingualism and English bilingualism on the self-employed market.

This study is limited to a single immigrant ethnic group in a single country. More research is needed with other ethnic groups and in other countries.

8. Conclusions

Spanish-English bilingualism has been denoted as insignificant by previous literature (Fry and Lowell, 2003). This study concurred with these studies and found that the employed Latino-American does not experience income returns from a strong English bilingual ability nor a strong Spanish bilingual ability. Aparicio's (1998) research suggests this is a direct effect of what Latino-American students are encouraged to learn in school. If the Spanish language is only looked upon as an advantage for Anglo-American students, Latino-American students have no reason to maintain fluency in Spanish. The results in table 4.3 showed, based on regression results, that the employed market discourages the attainment of Spanish if a Latino-American already understands English. This phenomenon suggests possible prejudice and employer discrimination in the employed Latino-American labor market, and may also be a direct effect from the increase in illegal worker documentation. The employer no longer needs a medium to communicate between low-wage labor and management.

By contrast, in the self-employed market, there is a high premium placed on strong English bilingual abilities. Though the employed market has no premium for bilingualism, in accordance to "disadvantaged-based entrepreneurship", the self-employed market places a high premium on strong English bilingualism. Hence, this study found a labor market for the Latino-American that maintains a premium for bilingualism, but only if the individual has a strong knowledge of the host country's language.

The self-employed market is void of employer discrimination, because there is no employer (Parker 2004). Therefore, the individual who has an ability to communicate between two different cultures present in one market increases their income potential. Strong English bilinguals have the skills necessary to communicate with the host country's market, and the cultural and linguistic background to communicate with the foreign market as well. In order to realize gains from additional human capital in the self-employed market, it is not sufficient to learn the host country's language, to realize returns from bilingualism in a less-biased market an individual must fully understand and be able to use the host country's language.

The examination of the implications of language attainment illustrated a progressive issue in the Latino labor market. The self-employed market encourages bilingualism. The Latino-American self-employed labor market has the potential to offer strong linguistic advances among the Latino culture. However, the current linguistic movement of the labor market presents a possible dilemma from a continued push towards English monolingualism in the employed market.

Endnotes:

[i] Entrepreneurship and self-employment are assumed equivalent for this study, as asking an individual their employment status is the only effective survey strategy.

[ii] In the remainder of the thesis U.S. Latino, Latino-American, Hispanic American and Latino will be used interchangeably.

[iii] Though the survey includes undocumented immigrants, this study's goal is not to focus on the dynamics of "illegal" Latinos. It should be understood that undocumented immigrants may skew results, but it is impossible to measure this

group in the dataset. The inclusion of possible undocumented immigrants simply encompasses the entire U.S. Latino labor market.

[iv] "The Pew Hispanic Center and the Kaiser Family Foundation bear no responsibility for the interpretations offered, or conclusions made based on analysis of the Pew Hispanic Center/Kaiser Family Foundation 2002 National Survey of Latinos dada." (Pew Hispanic Center).

[v] In order to capture this effect, it was assumed if an individual preferred to answer the survey in mostly Spanish he/she was more comfortable with Spanish and if an individual preferred English he/she was more comfortable with the English language.

[vi] An effect that could not be controlled for was combined income in marriage cases. Participants were asked to report personal income, but there is a possibility some individuals reported combined income that would skew results.

[vii] All regression coefficients were found significant at the 90% confidence interval or stronger.

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