

**VULNERABILITIES AND ECONOMIC
WELLBEING OF HISPANICS IN NON-METRO MISSOURI**

By

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Forthcoming in the spring issue of: Latino Research Review, Vol. 6, n°3, 2008

*We are grateful to Georgeanne Artz, and the anonymous referees for helpful suggestions. Partial funding for this work was provided by the Strategic Initiative Funds through the Cambio Center.

Abstract

Non-metro Missouri has observed a net in-migration in the last decennial period and great part of these immigrants are Latinos. The literature contends that Latinos are being pulled into the rural areas by large agricultural operations and pushed out of urban areas by harsh “context of reception” immigration laws, and low job availability. A livelihood framework factors explaining vulnerabilities faced by Latinos, economic conditions in non-metro Missouri, using the PUMS as well as county level data on racial profiling (proxy for context of reception) and DESE database. The results show that nativity, work experience, mobility, racial profiling and gender play a significant in Latinos’ earnings in non-metro Missouri. Interestingly, mobility has a negative effect on income earnings. Suggesting the need to explore further the reasons for moving which may be related to Context of Reception.

INTRODUCTION

The United States (US) has experienced successive waves of immigration. Currently, in the US, Latinos make up 60 percent of immigrants each year (Lazos; Census, 2004). In Missouri, 2.3 percent of the total population is of a Latino¹ origin and is still increasing. While this might come across as an unimpressive portion of the population, the reality is very different in some counties of non-metro Missouri². For instance, Sullivan County has observed a 2,164 percent increase in the Latino population in the last decade and Latinos now make up to 9 percent of the total population in that county alone (Census, 2003; OSEDA³, 2004). The relative increase in immigration to rural areas by Latinos has prompted various sectors of the society to raise a plethora of questions. One question, often raised, is: What is the economic impact of Hispanics? One aspect of this question concerns how Latinos are doing in economic terms, including what factors affect their earnings, and how they play a role. Recent qualitative research documents progress in economic conditions for Latinos, such as wage increases at different levels of settlement and adjustment, but do not address what factors explain this.

The most common pull to non-metro Missouri has been employment opportunities in food processing, manufacturing and services. Jobs in these sectors have an inherently high injury risk, and low pay, especially in the case of immigrants (Rosenbloom 2003; Bowe 2003; Vasquez and Campbell 2002; and Wirth 2001). Some of the challenges Latinos experience include low English proficiency, different cultural capital, and unfamiliarity with the local public services and with the law. Moreover, government policies and people's attitude towards Latinos in many areas are considered ambivalent at best. Migration to rural towns in the Midwest is now a main settlement pattern in Missouri meant a reduction in population from 55 to 49.8 percent of all Latinos living in St. Louis and Kansas City between 1990 and 2000 (Census 1990 and 2000; OSEDA, 2004). Rural communities, often racially and ethnically homogeneous, are now faced with dramatic changes.

¹ Some authors distinguish between Latinos and Hispanics. Here we use them interchangeably.

² For a lack of a better term non-metro Missouri has been chosen to refer to the whole part of the state of Missouri excluding those areas covered by St. Louis and Kansas City.

³ Office of Socio-Economic Data Analysis

This study analyzes how human capital and the climate of the receiving communities – the context of reception – affect the income earning ability of Latinos in non-metro areas of Missouri that have for years been homogeneous in race and ethnicity.

BACKGROUND

Wellbeing, Risk and the Livelihoods Framework

The literature on sustainable livelihoods focuses on how individuals and their households manage their assets. De Haan (2001), Valdivia (2001; 2004) point out that oftentimes household assets are defined as capitals and wellbeing is achieved as the individual and household strategies lead to accumulation of capital, and integration to the community. Rupasingha and Goetz (2003) demonstrate that vulnerability is shaped by the capacity, or lack thereof, to deal with risks. They state in US, poverty, and insecurity in employment, lack of access to safety net institutions, and the policies of immigration lead to vulnerable livelihoods for immigrants. Conway and Chambers (1992) and Valdivia and Gilles (2001) explain that the ability to smooth income and/or consumption is a function of different capabilities and capitals a household or individual can control, access or own. These various types of “capital⁴” can be created, acquired and depleted. Income accumulation builds financial/liquid assets that mitigate risks. Morduch (1995) explains that economies with well functioning markets provide access to insurance mechanisms, reducing the impact of the realization of risk. In the US there are many alternative forms of income smoothing, especially among the poor. There are assistance programs for the poor but the extremely high eligibility requirements and the rigid way that most assistance programs operate alienate those who need it the most (McDonough and Korte 2000). Additionally, research shows that migration has been used as a coping strategy (after a shock), and as an income diversification strategy for rural households (Kandel and Parrado, 2002; Valdivia et al).

English proficiency

Good command of the English language has been considered one of the most important factors influencing the adjustment of the Latino immigrant in the US. Abalos (1996) stated that for immigrants moving to the US it should be expected that the ability to read and write be given special consideration.

⁴ Conway and Chambers (1992) divide capitals into five groups: financial, human, natural, physical, cultural and social.

However, studies on the subject have produced mixed results at best. For instance, Borjas (1995), Reimers (1985a, 1985b), did not find a significant impact of English literacy on the earning ability of Latinos in the US. In contrast Grenier (1984), McManus et al (1983), and Vasquez-Case and Campbell (2002), concluded that lack of good command of the English language limited ability to enter the mainstream job market and social integration in to the local community, and thus limited earnings potential.

Educational attainment

Melendez, Rodriguez and Figueroa (1991) report that Latinos have long been stereotyped as being less educated than other ethnic minorities in the US. Roderick (2000) argues that education has historically been the most important factor of social mobility for immigrants and non-immigrants. However, the NCLR⁵ reports that new Latino immigrants face barriers towards improving their education. These barriers include unfamiliarity with the American educational system, language, overcrowding in urban and rural schools, low quality education in poor areas, family and social disruption, and discrimination by schools and teachers often unfamiliar with the new group's cultural norms. Figueroa (1991) adds to this list by stating a combination of lack of a home environment conducive to higher levels of learning, low income, and family language status explains large part of the poor school performance and low educational attainment of Latinos. In Missouri, Latinos have lower levels of educational attainment, but there has been an overwhelming increase in enrollment of rural schools (OSEDA). The interaction effect of Latino language and education to wages *per se* has been given scant attention by prior research. Reimers (1985) study showed the interaction effect increased the returns to income for all major groups, except Cubans and other Hispanics.

Industrial and occupational distribution

Overall the number of Latinos in industries that require high intellectual input has increased in the US (Ortiz, 1991). The vast majority though, still work in the service industry (Cheswick and Hurst, 2000). However, recent studies link Latinos with the agricultural industry and industries that require high physical work rather than intellectual input (Portes and Rumbaut, 2001). Nativity also plays a big role in industrial

⁵ National Council la Raza

distribution. Cheswick and Hurst (2000) find that Latinos born in the US tend to prefer urban settings, comparatively less physical jobs, and are also work in public administration where citizenship requirements leave foreign born Latinos at bay. Latinos continue to be underrepresented in white-collar occupations, and are still overrepresented in blue-collar-ones (Hurst and Chiswick, 2000). According to Sullivan (2000), the long held myth that Latinos are mostly farm workers and prefer blue-collar work is partly due to their historic association with agriculture and low levels of formal education.

Social Networks and Capital

Portes (1995) defines social networks as “sets of recurrent associations between groups of people linked by occupational, familial, cultural, or affective ties” (p.8). The size and densities of these networks are very important in regulating individuals’ activity in the society. Size refers to the number of participants in a network, and density to the number of ties between them (Portes, 1995). Networks provide avenues for acquisition of information, resources, and capital that an individual could otherwise not access. Social capital gained such an emphasis because, for the poor or families lacking in other capitals, collective action can provide means for access to scarce resources by virtue of being members of a network (Valdivia and Gilles, 2001). Examples of these resources include tips about employment, interest-free loans, best schools for children, access to welfare programs, acquisition of formal documents and the like (Portes, 1995). Social capital takes many forms, but the most visible ones are bonding (exclusive) and bridging (inclusive) (Fukuyama, 1999). Bonding has to do with associations between people, normally related to tight relationship such as kinship or very close friends; bridging, on the other end, deals mostly broader relationships, whereby people are connected by weak ties such as work-related clubs and church groups. Roberts (1995) states that immigration is a manifestation of social capital because it involves a collective effort of many individuals within a well established social network.

Poverty and Alternative Sources of Income

Latinos in the US experience many social problems because of poverty, marginalization, and discrimination. In 1990 Latinos were among those with a high probability of living below the poverty line, with 28.7%, second only to blacks with 32.7% (Perez and Martinez, 1993). Welfare has been a safety net for

those that become unemployed in the US, but access is based on where you are born, length of permanence in the US, and documentation status (Frisk, 1998). In Missouri Vazquez-Case and Campbell (2002), and Wirth (2001) find that health care and Women with Infant Children (WIC) are the benefits most often used by Latinos, while for other emergencies the majority of Latinos felt that close family members and friends are the best safety net.

Latinos' Context of Reception (welcoming mat effect)

The level of assets that an individual is able to command in a given society depends on the context of reception that he or she encounters in the community selected. Latino immigration to the US has been affected by ambivalent principles, which has been aptly termed “legal inconsistency” (Lazos, 2002). The government has been trying to push forward new and more vigorous efforts to police immigrants in the community. The move has consisted of passing *tough* laws, extending the authority of the police force to encompass some aspects of immigration and passing *tough* penalties to those industries that knowingly employ undocumented immigrants (De Colores, 2002; Lazos, 2002). Some of these laws fall in the realm of what has been called “racial profiling” (De Colores, 2002; Lazos, 2002).

The ‘legal inconsistency’ clearly manifests itself in the apparent contradiction on the application of the said laws stated above. Some industries have been employing immigrants without proper documentation and have gone unmolested by the authorities (Bowe, 2003). Lazos (2004), quoting Tom Donahue, the President of US Chamber of Commerce, said that immigrants have been the backbone of these industries and if these immigrants were actually sent home, the US economy would virtually stop dead in its tracks – there is a need for a clear stand on these issues.

METHODS AND PROCEDURES

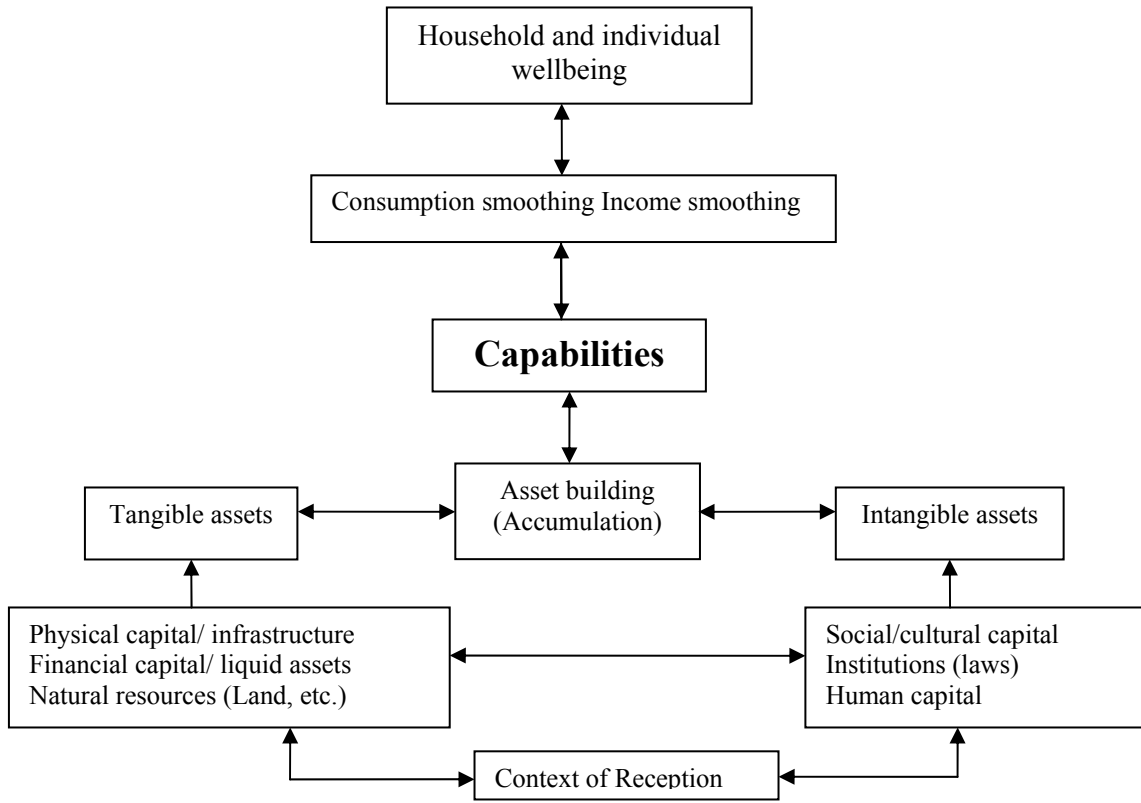
Theoretical Framework

The principle of capability refers to the ability to perform certain basic functions. It describes what a person is capable of doing and being (Sen, 1981; Dreze and Sen, 1989). Issues such as the ability to lead a comfortable life, avoid preventable morbidity and mortality, be adequately nourished, live a life without shame, to be able to visit and entertain family and friends, and to be comfortably clothed are included in this

concept. The principle of capability incorporates the ability to cope with stress and shocks, and the ability to find and make use of livelihood opportunities. An important lesson arising from this idea is that the elements embodied in the capability theory are not just “reactive”. These elements can also be “proactive and dynamically adaptable”, for example gaining access to and using services and information, exercising foresight, experimenting and innovating, competing and collaborating with others and exploiting new conditions and resources (Valdivia and Gilles, 2001).

Related to this theory, Swift suggests three main categories of focus: intangible assets, tangible assets, and investments. Chambers and Conway (1992) argue that these three categories could be grouped into two: stores and resources, and claims and access. Figure 1 depicts a flow chart with these elements and their implied interrelationships in a livelihood and wellbeing framework. Stores and resources refer to the tangible assets that a given individual is able to gain access to including food stocks and stores of value, such as jewelry and cash savings in banks and or credit schemes. Intangible assets however, do not depend only on the individual or household. They also include a certain participation of external societal effects such as institutions, laws and social capital (Flora, 2001; Valdivia, 2001; Putnam, 1993). Intangible resources refer to acquired capital (human), created capital (social), and facilitating capital (institutions). Human capital refers to qualities such as educational attainment, language proficiency, and relevant work experience that a given individual is able to command. For most authors, social capital refers to “features of social organization, such as networks, norms, and trust that facilitate coordination and cooperation for mutual benefit” (Flora, 2001; pp.45). Institutions are the sources of norms and laws that prescribe and coordinate behavior in a given society (Douglass, 1990). Therefore, they can facilitate or destabilize wellbeing for a given individual or household in a specific society.

Figure 1. Conceptual Framework of Wellbeing



Source: adapted from Chambers and Conway (1992)

This study adds to the livelihoods model by considering the context in which individuals operate: markets, the attitudes of local residents, institutions and policies. In the analysis of settlement of Hispanics in the Midwest, the context of reception is the ‘enabling environment’.

Site and Data

The study excludes the St. Louis and Kansas City areas, incorporating all the remaining counties in Missouri. For a lack of a better term, the area covered was called “non-metro Missouri”. Reasons for the exclusion of the two large metropolitan areas are mainly twofold: they have long experience with Latino population and immigrants, and they possess more extensive resources to serve incoming immigrants. Secondly, the rates of growth have been higher in non metro areas. Ability to respond to this growth may reflect factors that affect income earning capacity.

The main source of data on non-metro Latinos comes from the U.S. Census Bureau's Public Use Microdata Sample (PUMS) for 2000. The PUMS data is a five percent sample of the confidential Missouri Microdata, which are the individual records containing information about each person and housing unit in Missouri collected during the 2000 Census. The Census Bureau derived statistical weights for each person and housing unit, which helps expand the sample to the relevant population. By using the PUMS data, statistically sound micro-level analyses and special tabulations can be performed that avoids disclosing confidential information about households or individuals. In Missouri, the PUMS data is geographically disaggregated into 17 rural regions with a minimum population of 100,000 each. A second source of data to confirm the educational achievement of Latinos was the Department of Elementary and Secondary Education (DESE) data, which spans 1990 to 2004.

A third source of data is the racial profiling data obtained from the Assistant Attorney General's website⁶. Missouri's law requires law enforcement agencies to prohibit racial profiling practices and report statistics. It also requires peace officers to report certain information concerning each stop of a vehicle, including racial identity of the person stopped, the violations alleged, and the circumstances surrounding any resulting search and whether any arrest was made. The data is reported by each individual police or sheriff station within each county. The law further mandates that each agency should report the information to the Attorney General who compiles the data in an annual report to the governor and general assembly, identifying patterns regarding disproportionate share of stops of minority group members. The Attorney General Office uses a "disparity index", explained below. Two indicators of the disparity index were developed for this study. The first, aggregated is an average of the police and sheriff stations within a given county; and – we used it to represent the 'disparity index' for the whole county (the normal case scenario⁷); second, we selected the highest 'disparity index' within the county and used as an indicator of the fact and degree of racial profiling in that specific county.

⁶ For more information please see the following website: <http://www.ago.mo.gov/racialprofiling/racialprofiling.htm>

⁷ The average may mask the fact that racial profiling occurs in a given region

The three sources of data had one element in common: the counties. Therefore, PUMS and racial profiling database were merged through the use of a specially created crosswalk file in order to create a unique master file to for the analysis. The crosswalk file consists of PUMS codes and the respective county names from the racial profiling data. Given that main focus of the study is on earnings, unless indicated, all results will be based on persons that were between 16 and 65 years old at the time the data was collected by the Census Bureau.

Empirical Framework

A probit regression analysis was performed with the purpose of determining the representativeness and/or the probability that a Latino was present in the labor market or in some other sector e.g. student. Then, two separate semi-log wage equations were estimated in order to determine the effect of human capital and context of reception on Latinos' earnings.

Empirical analysis

It is well known that the largest single contributor to the global earnings for Latino immigrants is their wage. Therefore, it is only logical to use this variable as a proxy for earnings. Empirically, the typical earnings equation estimated in the literature is in the non-linear form. The dependent variable is normally transformed to a linear logarithm because of the skewed distribution of earnings. The non-constant regressors (present in **S**) are not in log form because in large cross-section data, the relationship between these variables and lnW is linear⁸. Therefore, earnings and its determinants will be in the form given by:

$$LnW_{ij} = \gamma'_j \mathbf{S}_{ij} + \varepsilon_{ij} \quad i = 1 \dots n; \quad j = 1, 2 \quad (1)$$

Where **LnW** is the natural logarithm of the wage rate for the individual *i* in group *j*, where *j* consists of 2 different groups: US and foreign born Latinos. γ'_j is a vector of coefficients to be estimated, \mathbf{S}_{ij} is a vector of human capital variables and observable demographic characteristics and institutional environmental factors influencing the wage rate of individual *i* in group *j*, and ε is the unobservable error term.

⁸ The linear log equation is obtained from the following specification: $W_{ij} = \exp(\gamma'_j \mathbf{S}_{ij}) \exp(\varepsilon_{ij})$

However, because the study aims to assess the Latino population, it is necessary to estimate how representative Latinos are in the selected sample in non-metro Missouri. Further, it is well known that the participation in the labor market is not a random act; therefore there is bound to be some selection bias in the sample. Heckman (1979) has postulated a two stage binary probit approach to correct for the selection bias, where a person in the wage sample is given a value of 1 and 0 if not. Thus, the probability that an individual i in group j , participates in the wage sample (or is in labor market) is represented by:

$$P_{ij} = F(\alpha_{ij} + \phi'_j \mathbf{X}_{ij}) = F(Z_{ij}) \quad (2)$$

in this case F is a cumulative probability function and \mathbf{X} is a vector of individual characteristics and is stochastic; ϕ' represents the vector of unknown coefficients, and α is a random error that reflect unknown influences on the participation decision. In this case an assumption is made that Z_{ij} is a theoretical index determined by explanatory variables represented by the \mathbf{X} vector⁹. We would assume that ε_{ij} and α_{ij} are jointly normally distributed, and not correlated with each other¹⁰. The expected values of expression (1) above conditional on positive wage rate, allows us to determine if a Latino will be in the sample of those participating in the labor market; these estimates will obtained from the following specification¹¹:

$$E(\ln W_{ij} | \mathbf{S}_{ij}, W_{ij} > 0) = \gamma'_j \mathbf{S}_{ij} + \sigma_{12j} \hat{\lambda}_{ij} \quad (3)$$

The variables in the above expression are defined as follows: \mathbf{S}_{ij} is the vector of human capital and demographic characteristics needed to derive the semi-log model specified in (2) above; ξ represents those in the sample; $\hat{\lambda}$ is the inverse Mill's ratio and σ_{12j} is the associated coefficient that represents the selection bias in the sample. In order to get consistent estimates of γ'_j , we estimate a sample participation equation

⁹ The Z_{ij} is assumed to be continuous and normally distributed and can be express it as: $Z_{ij} = \alpha_{ij} + \phi'_j \mathbf{X}_{ij}$. That is an individual is in the wage sample only if s/he possesses the characteristics specified in the vector \mathbf{X} .

¹⁰ That is $E(\varepsilon_{ij}) = E(\alpha_{ij}) = 0$.

¹¹ The expression is obtained as follows: $E(\ln W_{ij} | \mathbf{S}_{ij}, W_{ij} > 0) = E(\gamma'_j \mathbf{s}_{ij} + \varepsilon_{ij} | W > 0) = \gamma'_j \mathbf{s}_{ij} + E(\varepsilon_{ij} | W_{ij} > 0) = \gamma'_j \mathbf{s}_{ij} + E(\varepsilon_{ij} | \xi) = \gamma'_j \mathbf{s}_{ij} + \sigma_{12j} \hat{\lambda}_{ij}$ Where $\xi = W_{ij} > 0$ and $\hat{\lambda} = f(Z_{ij} \hat{\gamma}_j) / F(Z_{ij} \hat{\gamma}_j)$.

(probit) to obtain $\hat{\phi}_j$, which is used to compute $\hat{\lambda}_{ij}$, and included as an additional regressor in the wage function, which is then estimated by ordinary least squares:

$$LnW_{ij} = \gamma'_j \mathbf{S}_{ij} + \sigma_{12j} \hat{\lambda}_{ij} + \eta_{ij}, \quad (4)$$

the novel element in this equation η_{ij} , is the new error term that is normally distributed with zero mean and variance Σ_j .

This study, as specified above, includes only those Latinos that worked when the survey took place, and reported information on *all explanatory variables*. Students working part-time were excluded from the study given that they might distort results because they chose jobs based on convenience and not necessarily based on the full human potential (Reimers, 1985).

The variables included in the model, which are in turn represented by vector \mathbf{S} , are defined using human capital theory (Willis cited in Rivera-Batiz, 1991). The theory suggests that human capital can be used to explain individuals' skills, which can subsequently be used as a proxy for determining productivity and thus labor market earnings. Individual skills can be acquired through a myriad of activities that include formal schooling, vocational and onsite training programs, all of which are measured in years.

Educational attainment will be measured in years of schooling that each individual has accumulated over time, which will be obtained directly from the 2000 Census.

English proficiency, which could enable a given individual to navigate in the society and understand the particulars of his/her job, is likely to have a positive effect on productivity Latino immigrants and, consequentially, on earnings. The census survey has asked two questions related to the ability to speak English: one asks the individual to directly rate his/her level of English ability and the other question asks if they speak English at their home. For this study only the first question will be used to represent the level of English ability by the Latino.

Special skills and some vocational training cannot be measured solely by using years of academic training, therefore a measure reflecting *potential work experience* is introduced to reflect skills learned outside the formal academic arena. Years a person spent working in an industry are assumed to contribute to

acquiring a specific set of professional knowledge. The variable will be measured by age of the person minus preschool years (5) and formal school years. In order to eliminate those without any industrial experience from the sample, this variable is defined only for those that have indicated that they have been working in the past 10 years.

Mobility is another variable that explains earnings. In this case it measures how newcomers are faring when compared to those who have been in the area for a longer period. Newcomers are assumed to have fewer connections and less knowledge of the area, which precludes them from getting the better-paying jobs, and from settling without many problems. To measure mobility a 2000 Census question identifies Latinos who have moved into the area in the last 5 years as opposed to those who did not move or moved earlier.

Age is expected to impact on income earnings. The main assumption is that the Latino is healthy enough to participate in the labor force. The Census data records age directly.

Gender is another factor that may explain wage earnings ability, and is closely related to the type of work, the recruiting process, the immigration rigor, and the age group. The sex of the respondent is the variable used, recorded directly in the 2000 Census.

Disparity index on racial profiling is used as a proxy for the context of reception in non-metro Missouri. Disparity index is the ratio of stops made to an individual member of a specific ethnic group over the total number of individuals composing that same ethnic group living in a specific area. Two variants are used in the analysis: the “worse case” scenario and the “normal” level. For the worse case scenario, the highest level of disparity index reported in each major town was used; and for the normal case, an average level of disparity index of all towns in a county. The disparity index is a proxy measure of a society’s attitude, assuming that this is reflected in its institutions. The rationale for the selection of the variable was that the industries immigrants normally work, by their very nature, are located mostly in the peripheries of these towns. Public transportation is almost non-existent. Thus, the ability to be mobile, e.g., having a car is very important. However, the ability to be mobile can be severely constrained if the policy “profile” citizens possessing certain characteristics. Racial profiling indicates the degree of over-representation or under-

representation bias that the law enforcement has over a given race/ethnic group, which can severely hinder (or foster, in case of under representation) their ability to move around and travel to work.

Finally, **nativity** makes a difference (US born vs. foreign born) as research has shown that those Latinos born in the US have different perceptions about their future, education and the choice of jobs (see Valdéz; Roderick). In addition, rights and privileges that accrue to each are different, i.e., citizens' rights far outweigh those of the foreign born. Two separate regressions are estimated, one for US born, and another one for foreign born Latinos. The purpose is to capture the variability brought about by the difference in nativity¹². The nativity variable is extracted directly from the 2000 Census.

The model proposes that wage earnings are a function of educational attainment, English language proficiency, work experience, age, mobility, racial profiling, and nativity and the interaction effects of English ability and education. The model that we used to explain the wage rate of Latinos in rural Missouri is the following:

$$\begin{aligned} LnW_{ij} = & \beta + \gamma_1 Ed_Att + \gamma_2 E_1 + \gamma_3 E_2 + \gamma_4 A + \gamma_5 G + \gamma_6 RP + \gamma_7 W_Exp \\ & + \gamma_8 Mov + \gamma_9 EdxE_1 + \gamma_{10} EdxE_2 + \sigma_{12j} \hat{\lambda}_{ij} + \eta_{ij} \end{aligned} \quad (7)$$

Where LnW in the linear logarithm wage rate for individual i in group j , Ed_Att is the educational attainment measured in years of schooling; E_1 and E_2 are binary variables representing English language proficiency of individual i (E_3 is omitted – which represents those who do not speak English at all). $EdxE_1$ and $EdxE_2$ are interaction effects; W_Exp is the *potential* work experience of individual i ; Mov is mobility; A represents age¹³; RP is racial profiling for PUMS; G is gender; and η is the new random error term; β is the intercept and γ s are coefficients; $\hat{\lambda}_{ij}$ represents the estimator for the inverse Mill's ratio for individual i in group j and σ is the associated estimator for the group j .

¹² For more see the above discussion on the research done on the nativity difference.

¹³ Some econometric studies include age squared to represent the non linear character of the relationship between experience and earnings. We have excluded the square effect and instead we included in the model the interaction effect and mobility to capture the non-linearity.

Table 1 Definition of Variables Used in the Probit and Semi-Log Analyses.

Variable	Description
LnW	= Log linear hourly wage rate
Wage	= Hourly wage rate
Age	= Age in years
E_1	= English ability (1 if speaks English very well or well and 0 otherwise)
E_2	= English ability (1 if speaks English not well and 0 otherwise)
Ed_Att	= Highest level of educational attainment in years
G	= 1 if female and 0 otherwise
EdxE_1	= Interaction effect of educational attainment and good English ability
EdxE_2	= Interaction effect of educational attainment and poor English ability
RP	= Racial Profiling (the level of over or under representation in traffic stops)
W_Exp	= Potential Work Experience
Mob	= Mobility
ξ	= A binary variable indicating the presence of the Latino in the sample (if yes = 1; if no = 0)
$\hat{\lambda}$	= Inverse Mill's ratio

HYPOTHESES

Human Capital

The literature states that skills of individuals determine their productivity and thus their labor market earnings (Batiz-Rivera). Roderick observed that, generally, present low parental education, low family income and low levels of English ability by the family helps explain much of Latinos' low school performance, which later becomes a problem for the adults in the job market. Therefore, low parental human capital is more likely to affect the future economic success of their children, i.e., if all variables are low then it will affect the future negatively and vice-versa. It is also believed that bad economic performance, by the parents, will affect the type of education that they will give to their children due to the limited resource endowment, past experience and recursive interrelation that these factors have to each other. Therefore, we would expect educational attainment, and English ability to have a positive effect on Latinos earning ability.

Secondly, work experience, representing skills learned, might possibly affect Latinos earnings. For instance, there is anecdotal evidence that some Latinos working in Missouri's poultry industry were recruited directly from outside Missouri and/or their home country provided that they had been working before in their home country's *haciendas*¹⁴. Thus, previous hard manual work signals their willingness to carry out menial

¹⁴ These are large farms in Latin American countries.

labor in the future (Bowe). Therefore, it is expected that the higher the potential work experience the higher the earning ability of a given Latino in non-metro Missouri.

The literature identifies Latinos mostly with menial jobs in service and agricultural industries and portrays the Latino as a very young ethnic group (Rosenbloom, 2003; Bowe 2003; Hurst and Cheswick 2000). The high turnover rate and physical requirements of these jobs would lead us to expect that age will have a negative effect on earnings i.e. the older you get the lower you earn.

It is expected that gender will affect the income generating ability of Latinos. Immigration has tough psychological effects and, given that most immigrants do not know the area, this requires the movement of one person first, usually the male. Furthermore, the types of jobs that most immigrants initially get are more likely to be accepted by males due to their grueling routines. Finally, there is the possibility that some immigrants are directly recruited from their home countries, which is likely to favor males rather than females due to local cultural capital.

Mobility, Nativity and the Context of Reception

Studies on Latinos' income generation have proven that urban residents have a slight advantage in getting jobs and thus higher earnings as compared to those residing in rural areas (Borjas and Tienda, 1985). This will provide the basis to determine the effect of mobility in the earning ability of Latinos in non-metro Missouri. It is expected that the constant movement of Latinos will have a negative effect on income because they are not moving as a result of work contracts but to look for work, thus they are more likely to start at a lower level and have lower earnings.

The majority of Latinos moving to non-metro Missouri areas bring along their cultural capital, which is very different from that of local citizens. Their perception of the law is different. For instance, Latinos might have a perception that the police are there to make their life miserable as opposed to protect them. These factors would severely limit Latinos' mobility and thus ability to generate income.

Nativity will be used to separate regressions for US born and foreign born Latinos because much of individual's human capital is country specific and, as the social science literature contends, foreign born Latinos tend to be disadvantaged because their cultural and social capital does not readily fit in the US labor

market (Bean and Tienda, 1988). Reimers (1985) suggested that within the Latino population there are significant differences which have some bearing on their success in the labor market. For instance, Valdes (2002) argued that Latinos' perception towards the future and the means to achieve their objectives varied by nativity: foreign born were more driven to work, less selective of the type of work, and their benchmark of success was much lower as compared to US born Latinos. On the demand side, Roberts (1995) argued that foreign born Latinos are viewed by their employers as temporal workers therefore not worthy of positions with a high degree of responsibility. Therefore, it is expected that the majority of these variables will behave differently for US and foreign born Latinos. The discrepancy will not be correctly captured if we introduce the nativity variable only as a dummy identifier.

RESULTS AND ANALYSIS

Selectivity Bias on the Probability of participating in labor market

The probit model was segregated by nativity (US and foreign born Latinos). The dependent variable being considered here was participation in the labor market. We found that the regressors selected have a significant impact on the final decision on whether to be in the labor market or not.

For US born Latinos, age, education and number of persons in the family have statistically significant effects on the probability of a Latino participating in the labor market. For the foreign born Latinos, all variables are statistically significant at the 5 percent level.

Table 1 Probit Analysis Results for Labor Market Participation

Variables	US Born		Foreign Born	
	Estimate	Std. Error	Estimate	Std. Error
Intercept	0.5381*	0.2302	0.6786*	0.0481
Gender	- 0.0022	0.5041	- 0.0621*	0.0311
Age	- 0.0122*	0.0088	- 0.0093*	0.0072
Eng_1	0.0101	0.0033	- 0.0176*	0.0118
Eng_2	0.0014	0.0191	0.0189*	0.0319
Ed_Att	0.1399*	0.0183	0.0691*	0.0255
NPF	0.0163*	0.0831	0.0211*	0.0121
No of Observations	4,801		3,491	
Likelihood Ratio	- 1940.19		- 1511.80	

* Significant at 5 percent level.

Dependent variable is ξ (presence of Latino in the sample).

Source: 2000 Census, Public Use Microdata 5% Sample (PUMS).

Age has a negative effect on the market participation by the Latinos. A probable cause might be that as Latinos grow older they become less apt to perform the demanding physical activities, which leads to increasing probability of participating in the labor market. For US born Latinos, there is an added advantage from their citizenship status, which allows them greater access to other form of compensation as compared to foreign born Latinos. Latino males have a higher probability of being in a wage sample as compared to females, a fact that could be tied up with the dynamics of immigration and the highly demanding physical jobs available for them. English ability is a factor for foreign born Latinos but not for US born Latinos, which is intuitive. However, those foreign born Latinos that speak English well and very well¹⁵ have a lower probability of being in the wage sample. This could suggest that they would prefer being in school rather than participating in the labor market given their high English proficiency.

The number of persons in the family increases the probability of a being in the wage sample. We would suspect that for some foreign born Latinos, who already left some family back home, the decision to participate in the wage sample was what brought them here in the first place. Therefore, the results of these variables may not mean much because the less understood *motivation* effect is not captured in these variables.

Determinants of Hourly Wage for Latinos in Non-metro Missouri

Two ordinary least squares models (separated by nativity) were estimated. The coefficients, which were corrected for selectivity bias ($\hat{\lambda}$) using Heckman's two step procedure, are depicted in Table 2. The results show that, all things equal, US born Latinos have a higher hourly wage as compared to foreign born Latinos. Both wage rates reported are an improvement from the rates found in previous studies by Reimers (1985) and Rivera-Batiz (1991) with mean hourly wage of \$ 6 and \$7.8 respectively. The effect of education on hourly wages was found to be significant and positive, with each additional educational year having the effect of increasing the returns to hourly wage by 6 percent for US born and 4 percent for the foreign born Latinos.

¹⁵ These two categories of English proficiency were combined because there was no significant statistical difference between them.

The education variable here might offer almost the same information as English ability and the interpretation of these two variables independently is almost conceptually impossible. This is said because it might be difficult in practice to hold English proficiency constant when changing the educational level and vice-versa. Summarizing, having sufficient grasp of English language might help improve returns to earnings, however, it does not ensure by itself access to high status or higher hourly wages in the US labor market.

Table 2 Results of the Semi-Log Wage Estimations on the Effect of Human Capital and Demographic factors on Latinos in Non-metro Missouri in 2000

Variables	US Born		Foreign Born	
	Estimate	Std. Error	Estimate	Std. Error
Intercept	9.0194*	0.0729	8.0771*	0.0389
Ed_Att	0.0601*	0.0837	0.0398*	0.0519
E_1	0.0018	0.6305	-0.0401	0.1567
E_2	0.0001	0.0059	0.0332	0.2541
EdxE1	0.1301*	0.0283	0.0954*	0.0109
EdxE2	0.0105	0.0566	0.0489*	0.0277
Age	0.0246	0.2175	0.0311	0.0893
Gender	0.0008	0.0589	-0.0167*	0.0322
W_Exp	0.0111*	0.0045	0.1277*	0.0076
RP ¹⁶	-0.0179	0.0089	-0.0123*	0.0413
Mob	0.0321*	0.0561	-0.0433*	0.0091
$\hat{\lambda}$	-0.439*	0.038	-0.512*	0.072
R ²	0.293		0.321	

* Significant at 5 percent level; Source: 2000 Census, Public Use Microdata 5% Sample.

The literature's position on this issue is, at best, not firm on the effects of English proficiency on earnings of Latinos in the US, and from the results of this study, it looks like this issue merits further research. The effect can best be identified if we study selected groups in specific occupations rather than collapsing them all together. Additionally, the problem with English proficiency might arise because the variable is a self-reported one rather than based on a formal test of some kind.

The interaction effect of educational attainment and good English proficiency (EdxE_1), and educational attainment and poor English proficiency (EdxE_2) provided different results. The interaction effect of educational attainment and good English proficiency had a significantly large positive effect on

¹⁶ When modeled for the worse case scenario (the highest values of disparity index) US born = - 0.0188*; Foreign born = - 0.0588*.

Latinos hourly wage for both US (13%) and foreign born (9%). On the other side, the interaction effect of educational attainment and poor English proficiency, as expected, had a lower impact on hourly wages. For the US born, even though positive, this variable is not significant and for the foreign born is also not that large in magnitude but is significant.

The coefficients of these interactions are positive, which means they are synergistic. The results mean that a Latino will observe a higher increase in earnings if education increases concomitantly with the level of English proficiency. For foreign born Latinos, educational attainment has the effect of boosting earnings for those whose English proficiency is poor. This might be that US employers have the perception that educational attainment signals other economically productive qualities such as discipline, perseverance, and occupationally specific skills (Bishop, 1989). The proposition is that Latinos who have poor English skills stand a better chance of improving their earnings if they have a relatively higher education.

For foreign born Latinos, being female has an estimated effect of decreasing hourly wage by 2 percent when compared to men. This could be related to the terms of employment, both temporary and permanent, which most Latinos have access to. For the foreign born Latinos a very important issue arises: almost 56 percent of the group is female and employment discrimination might imply that a majority of the group is vulnerable, making less income. In the context of the Hispanic population this might increase their vulnerability due to added negative effects that they are subjected to.

Potential work experience has the greatest impact on hourly wage for both US and foreign born Latinos, with 11 and 13 percent respectively. This result is somehow supports the anecdotal evidence that most employers engage scouts to search for those Latinos with work experience wherever they are (Rosenbloom, 2003).

A very important pattern arises if we put into perspective some of the results. US employers, especially those located in non-metro Missouri, are trying to minimize their costs. Thus the decision to conveniently locate their operations closer to the source of raw materials (Green and Barham, 2003); erecting basic housing facilities closer to the factory to eliminate housing and transport allowances; and finally there is the issue of industrial and functional training that most employers simply do not want to deal with (Green,

2004). These issues raise questions about discrimination against women, especially for foreign born Latinos. Employers contend that foreign born Latinos have different cultural capital, which makes women less of a stable investment (e.g., training) as compared to men; because women can leave anytime and are not likely to accept working those grueling hours under harsh conditions as men do (Green, 2004).

Mobility provides a boost of 3 percent in hourly wage of US born Latinos and was significant. The effect is opposite and significant for foreign born Latinos, which reduces their hourly wage by more than 4 percent. This result is apparently paradoxical and does not conform to the mainstay economic postulates. However, one of the main economic assumptions that make this result a little odd is that we treat labor as being *uniform across the board* – there is nothing uniform about this labor. The U.S. born Latinos are American, a fact that confers them an advantage in the labor market as compared to foreign born Latinos. Therefore, we hypothesize that whereas a U.S. born Latino will likely move a result of a job offering with possibly better conditions; for a foreign born Latino the reason might be just a job offering period. Most of the time these jobs are the entry level type of work. If we look at the occupational distribution, we find that there is a considerable percentage of US born Latinos that occupy positions requiring higher skill (37%). On the other hand there is a considerable percent of foreign born Latinos that occupy relatively low skill positions (41%). This might also have to do with the idea of whether an individual found a job before or after moving.

Age has a positive effect on hourly wage and is non significant. This may not be surprising because employers might be interested in Latinos' experience rather than their age *per se*; further it has long been established in economic literature that hourly wage increases with age at a decreasing rate.

Racial profiling¹⁷, a proxy used to represent the context of reception, provided very interesting results. It is important to note that this variable does not affect only the residents of a specific county that the police station is based. For instance, Decker (2006) has reported that there is a great deal of commuting going on in the southern counties of Missouri; thus many Latinos leaving for work may interact with police officers from their county of residence or from the county where their employment is based. Given that it is

¹⁷ We used 'disparity index' as an indicator variable for this latent variable.

impossible to separating those Latinos that commuted from those who did not, we decided to estimate two regressions: the first one with average disparity index ('normal-case' scenario) and the second one with the highest disparity index in a given county ('worse-case' scenario). In so doing we hope to cover the majority of the possible interactions between Latinos and the peace officers. The results for the normal-case scenario showed a negative effect on Latinos hourly wage for both US and foreign born, even though the estimate was not significant in either instance (i.e. for US and Foreign born Latinos). For the worse-case scenario the estimates for the variables ended up being significantly negative for both US born and foreign born Latinos in non-metro Missouri. For instance, in the case of US born Latinos, the disparity index decreases the earning ability by 2.1 percent whereas for foreign born Latinos there is a decrease of 3.4 percent of the earning ability. The worse-case scenario confirms our hypothesis that the disparity index has a significantly negative effect on Latinos earning ability – the estimate is significant even at 1 percent level.

CONCLUSIONS AND IMPLICATIONS

Conclusions

The main purpose of this research was to examine the opportunities and vulnerabilities of Latinos in the greater part of Missouri, through the lenses of the immigration, well-being, and capability building literatures. The option to use these sets of literatures relates to the majority of Latinos' cultural capital and the public impression about Latinos, which tends to group all Latinos under the umbrella of immigrants even though most are actually US born. However, more than 50% of them do not have good English proficiency and have an average educational attainment just below the high school level.

US born Latinos living in Missouri have higher yearly wages when compared to foreign born Latinos. However, the assertion that low English proficiency and educational levels are the main causal factors explaining Latinos' occupational and industrial distribution do not hold in this research. Thus this assertion is missing the big picture, because there are large percentages of Latinos with at least some high school and college education and good English proficiency found in low skilled jobs. This situation suggests that Latinos tend to gravitate to a lower level of skill in order to secure a job. Alternatively, this might reflect a case of an informal institutional set up whereby long-term, high skill jobs are not offered to Latinos due to

the immigrant stigma. However, this is an issue that this research was ill equipped to assess and could very well be suitable for future research. For those Latinos that are already in the lower skill category it is assumed that they are less demanding in the type of jobs they accept. The scenario described above positions Latinos with a lower reservation wage as compared to non-Hispanics and provides the former group with a competitive advantage in accessing lower skilled jobs but not the high skill ones.

English proficiency by itself turned out to not be a significant determinant of earning ability by Latinos in non-metro Missouri. One of the most important reasons for this is that much of the information contained in the English proficiency variable might also be found in the educational attainment variable.

Potential work experience has the most important influence on wages, and thus wellbeing, of Latinos in Missouri. The high turnover nature of low skilled jobs suggests that Latinos have to keep moving in order to secure work that will allow them access to income – and mobility has been shown to have a negative influence on earnings for foreign born. This might lead to the conclusion that Latinos do not move from one job to another or one county to another to get a better job but to merely have a source of income. However, the results of this study, at best conservative because they do not include undocumented Latinos. If we extrapolate the interpretation of this result and include the undocumented Latinos in the picture, the negative effect might have been even larger.

Racial profiling negatively influences the ability of Latinos to generate income in non-metro Missouri. However, this is still a novel way in terms of looking at the effects of the context of reception and the law enforcement agencies on Latinos. However, care should be taken in order to not interpret this as unidirectional causality effect; that is only from the police to the Latinos. This information cannot be obtained from statistics alone; ethnocentric studies should be used to complement the trends that regression results have determined, which could better inform the causality factor in this case.

Policy Implications

The education of Latino new comers is not readily transferable into the American society even though some of them come with acceptable levels of education. Also, the majority of the foreign born Latinos do not have good English ability skills, which has been shown to improve Latinos earnings. So, it

should be considered that the prospect of improvement of their livelihood does not center so much on how much education they get but more on what type of education they get and how the society values the education they possess in order to improve their earnings and thus their livelihood. An extension of the situation exposed above goes on to the creation of policies that support service organizations that build on the competencies of new comers in most of these non-metro Missouri areas. At the individual level, it is believed that strengthening skills/education will have the greatest effect on earnings, and exercising choice in the market. However, Missouri's policy on education has been deemed against immigrants (Waslin & Shavers – Cambio, 2006), which will have to change if we are to help immigrants' livelihoods.

The results presented seems to support the background information that suggest that Latinos are coming into non-metro Missouri mostly due to the pull forces created by the employment opportunities generated by emerging businesses, which can not be fulfilled by the locals. Therefore, the institutions should intervene by helping create better context of reception in the receiving communities by educating members on the negative aspects that initial prejudice and racial profiling can cause on the newcomers' livelihood. Additionally, Latinos have different cultural capital, which makes their interpretation of the law and law enforcing agencies differently. So, racial profiling works more as an inhibitor of their normal activities. Also the fact that the police are now being asked to also act as immigration agents only exacerbates Latinos vulnerability; they will see the police as deporting agents too. Therefore the law enforcement agencies should refrain from using ambivalent policies in order to uphold the law. This effort will go a ling way in creating a setting where loss of capital to the community and employers is precluded – a suggestion will be that the laws should be more protective of labor in sectors where workers have less education, and very poor English skills.

Finally, it has been shown that mobility has a negative impact on new comers' earnings. Moreover, for foreign born Latinos, experience has a very positive effect on their earnings. This might suggest that policies that reduce mobility of newcomers and in the process helping Latinos gain work experience and create networks will go a long way toward improving Latinos vulnerability in these areas. Solutions suggested to these programs are various: for instance, policies that ignore on-going worker employer

positive relations in granting resident visas would appear detrimental under these findings about mobility and work experience and temporary worker programs need to take consideration for mobile workforce; in summary the legislations should promote stable and long term relations between employers and employees.

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