IMPACT OF SOCIAL NETWORKS ON WELL-BEING: EVIDENCE FROM LATINO IMMIGRANTS IN NON-URBAN MISSOURI COMMUNITIES

A Dissertation

Presented to

the Faculty of the graduate school

at the University of Missouri-Columbia

In Partial fulfillment of the

Requirements for the Degree

Doctor of philosophy

---

by

PEDRO VALENTIM DOZI

Dr. Corinne Valdivia, Dissertation Supervisor

JULY 2010

© Copyright by Pedro Dozi 2010
All Rights Reserved

The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

IMPACT OF SOCIAL NETWORKS ON WELL-BEING: EVIDENCE FROM LATINO IMMIGRANTS IN NON-URBAN MISSOURI COMMUNITIES

Presented by

PEDRO VALENTIM DOZI

A candidate for the degree of Doctor of Philosophy,
And hereby certify that, in their opinion, it is worthy of acceptance.

_____
Dr. Corinne Valdivia, Chair

_____
Dr. Georgeanne M. Artz

_____
Dr. Judith I. Stallmann

_____
Dr. Thomas G. Johnson

_____
Dr. Jere L. Gilles

DEDICATION

To my parents who were determined to make their children learn something amid all hopelessness…and, Mama, if you were here, I bet you would have had an answer to your question. I hope you are resting in peace wherever you are.

ACKNOWLEDGMENTS

My quest to become an economist has followed a convoluted path that can only be described as long, unconventional, and, sometimes, exhilarating. Succeeding at this level was a collaborative process to which many people have contributed. I cannot mention every single one of them, but I would be amiss if I did not thank those who have contributed more closely to my academic, personal, and professional development.

First, I would like to thank my advisor, Dr. Corinne Valdivia, for her support and encouragements along all these years. Her constructive guidance was instrumental in sharpening my research and critical thinking skills during my training process. I am grateful to my committee, Dr. Jere Gilles, Dr. Thomas Johnson, Dr. Judith Stallmann, and Dr. Georgeanne Artz for ceding their valuable time, providing advice and suggestions, which has helped improve this dissertation tremendously.

I would like to express my gratitude to Cambio Center, principal investigators and supporting staff at the Asset Accumulation project for supporting my graduate education and from whom I learned immensely. Special thanks to Dr. Steve Jeanetta for his encouragements, advice, and support throughout this process.

Finally, I would like to thank my parents, who spared no sacrifices to see this project through; and my brothers and sisters, for their understanding and acceptance of my constant absences in the pursuit of education.

TABLE OF CONTENTS

ACKNOWLEDGMENTS ..... **II**
LIST OF TABLES ..... **VI**
LIST OF FIGURES ..... **VII**
CHAPTER I – IMMIGRATION, WELL-BEING AND SOCIAL NETWORKS **1**
I. 1. INTRODUCTION 1
I. 2. BACKGROUND 4
I. 3. OBJECTIVES 7
I. 4. CHAPTER CONCLUSION 8
CHAPTER II – LITERATURE REVIEW **9**
II. 1. INTRODUCTION 9
II. 1.2. HISPANICS POPULATION DYNAMICS IN THE MIDWEST 10
II. 2. THE SOCIAL NETWORK LITERATURE 11
II. 2.1. Theoretical social network analysis *11*
II. 2.2. Empirical social network literature *18*
II. 3. UNITARY APPROACH TO HOUSEHOLD RESOURCE ALLOCATION 21
II. 4. THE WELL-BEING LITERATURE 22
II. 4.1. Alternative approach to understanding well-being *24*
II. 4.2. Empirical well-being assessment *25*
II. 5. OPERATIONALIZING NETWORKS: SOCIAL CAPITAL 29
II. 5.1. Social capital and well-being *29*
II. 5.2. Social capital and the household production function: empirical uses *30*
II. 5.3. Econometric methods used on social networks *32*
II. 6. EMPIRICAL WELL-BEING ASSESSMENTS USING SOCIAL NETWORKS 35
II. 7. SUSTAINABLE LIVELIHOODS 38
II. 7.1. Acculturation *39*
II. 7.2. Community Climate *40*
II. 8. SHORTCOMINGS WITHIN THE LITERATURE 41
II. 8.1. Social networks *41*
II. 8.2. Well-being *43*
II. 8.3. Empirical social network assessment *43*
II. 9. CONTRIBUTION TO THE LITERATURE AND CONCLUSION 44
II. 9.1. Contribution of this study to the literature *44*
II. 9.2. Chapter conclusion *45*
CHAPTER III – CONCEPTUAL FRAMEWORK **47**

III. 1. INTRODUCTION 47
III. 2. BACKGROUND 47
III. 2.1. Rationale for the selection of theoretical approaches 48
III. 3. ECONOMIC (FORMAL) MODEL 51
III. 4. CHAPTER CONCLUSION 59
APPENDIX III.1 – A MATHEMATICAL NOTE 61
CHAPTER IV – THE DATA 63
IV. 1. BACKGROUND AND SELECTION CRITERIA FOR THE STUDY AREA 63
IV. 2. THE DATA FOR THE STUDY 63
IV. 2.1. Preliminary assessment and qualitative data collection 64
IV. 2.2. The survey instrument 65
IV. 2.3. Data collection methods and sample frame development 68
IV. 3. THE SAMPLING PROCESS 69
IV. 3.1. Data entry and cleaning 71
IV. 3.2. Constraints and strategies of the survey implementation 71
IV. 4. VARIABLES USED IN ANALYSES 73
IV. 4.1. Dependent variables 73
IV. 4.2. Independent variables used in the study 75
IV. 5. DESCRIPTIVE STATISTICS 84
IV. 5.1. Sample size and response rates 85
IV. 5.2. Demographic characteristics 87
IV. 5.3. Householder's perceptions 91
IV. 5.4. Social networks 93
IV. 6. DESCRIPTIVE STATISTICS AND TESTS PERFORMED ON THE SAMPLE USED IN THE ANALYSES 93
IV. 6.1. Correlation and reliability statistics of PWI and SLS 98
IV. 7. CHAPTER CONCLUSIONS 100
CHAPTER V – PARTICIPATION IN SOCIAL NETWORKS 101
V. 1. INTRODUCTION 101
V. 2. BACKGROUND AND HYPOTHESIS 101
V. 3. EMPIRICAL APPROACH 103
V. 3.1. Variables used 103
V. 3.2. Approach used for the interpretation of results 104
V. 4. PARTICIPATION IN RECREATIONAL AND INFORMAL SOCIAL NETWORKS 106
V. 5. PARTICIPATION IN FORMAL SOCIAL NETWORKS 108
V. 6. PARTICIPATION IN RELIGIOUS SOCIAL NETWORKS 110

V. 7. CHAPTER CONCLUSION 112
CHAPTER VI – REGIONAL NETWORK'S IMPACTS ON WELL-BEING 114
VI. 1. INTRODUCTION 114
VI. 2. INFLUENCE OF SOURCES OF INFORMATION ON WORK TYPE 114
VI. 2.1. Variables used 115
VI. 3. RESULTS AND DISCUSSION 118
VI. 4. CHAPTER CONCLUSIONS 129
CHAPTER VII – SOCIAL NETWORK IMPACT ON WELL-BEING 131
VII. 1. INTRODUCTION 131
VII. 2. OBJECTIVES AND HYPOTHESIS 131
VII. 3. EMPIRICAL FRAMEWORK (ESTIMATION MODEL) 132
VII. 3.1. The Selection Model: Estimation of IMR 132
VII. 3.2. The Substantial Model: Social networks impact on well-being 135
VII. 3.3. Variables used 137
VII. 4. RESULTS OF THE OLS ESTIMATION 140
VII. 4.1. Discussion and implications of empirical results 142
VII. 5. CHAPTER CONCLUSION 152
CHAPTER VIII – CONCLUSIONS, LIMITATIONS, AND FURTHER RESEARCH 154
APPENDIX A – HOUSEHOLD SURVEY 162
REFERENCES 184
VITA 195

LIST OF TABLES

Table 1. Characteristics of the communities surveyed 63
Table 2 Response rates for the household survey per region 85
Table 3 Educational level per region surveyed 87
Table 4. Age distribution per region 88
Table 5. Marital status per region surveyed 88
Table 6 Latinos country of origin per region surveyed 89
Table 7. Latino's last community of residence before moving to 90
Table 8. Distribution of Latinos immigrants per employer category 91
Table 9. Well-being scores 92
Table 10. Acculturation scores 92
Table 11. Acculturation scores 92
Table 12. Social network participation percentages 93
Table 13. Descriptive statistics of the variable used in OLS analysis 94
Table 14. Descriptive statistics of the community variables used in analysis 95
Table 15. Collinearity statistics 96
Table 16. Summary results of work type by region (in percent) 97
Table 17. Job information source per region (in percent) 98
Table 18. Well-being, acculturation, and climate scale Reliability statistics 99
Table 19. results of the participation in recreational networks 106
Table 20. results of the participation in formal networks 109
Table 21 Results of the participation in Religious networks 111
Table 22 list of variables used in multinomial logistic regression analysis 117
Table 23 Results of the probability of choosing a given job for region A 119
Table 24 Results of the probability of choosing a given job for region B 122
Table 25 Results of the probability of choosing a given job for region C 125
Table 26. Probit results of for the selectivity estimation 135
Table 27. list of variables used in OLS analysis 139
Table 28. Results of the impact of social network on well-being 141
Table 29. Analysis of variance for the well-being equation 142

LIST OF FIGURES

Figure 1.Bronfenbrenner's (1979) Ecological Model..... 41
Figure 2. Schematic representation of the empirical model..... 86

CHAPTER I – Immigration, well-being and social networks

I. 1. Introduction

Latino immigrant migration patterns in recent years have shifted from urban to rural. A large proportion of immigrants today is men and women, who often move with their families. Not enough is known about their livelihoods or the impact on the communities where they settle. Immigration is a heated political topic in the US, with laws that have been enacted that limit how immigrants can benefit from government programs. Often immigrants are a vulnerable group due to their low skills and low income levels. The stylized fact that most Latino immigrants favor settling in major cities is now being challenged. This recent wave of immigration into rural areas has been raising concerns about resource distribution and utilization (Borjas, 2001). Concerns have been raised about immigrants depleting local and community resources that could be employed elsewhere. Therefore, today there have been efforts not only to study Latinos and well-being to address concerns raised, but also to understand how they can settle and integrate in communities.

Immigration and its costs and benefits are sources of heated debate. Research to date finds that the immigrant workforce is important to economic development of the receiving communities (Card, 2005). Besides contributing positively to the generation of income in the community, immigrants infuse these towns with diversity a fact that is instrumental to the socioeconomic survival of communities (Jacobs, 1969). Researchers have also argued that diversified economies are essential ingredients for creativity and growth of a community (Florida, 2004). However, recent developments in the social capital arena have challenged this heterogeneity theory by arguing that that more homogeneous communities foster growth (Putnam, 2001). Research has also suggested that immigrants have been changing most of the small cities that they have located in, draining resources and altering the quality of life (Borjas,

2001). Additionally, Latino immigrants have been linked to overuse of government aid programs such as over usage of social welfare to sustain their well-being and hospital emergency rooms thus leaving hospitals with unpaid bills (Borjas, 2001). However, the claim that Latino immigrants overwhelm social welfare services to sustain their well-being seems a little bit confusing since current law does not allow newcomers to have access to welfare programs. In the late 1980s and early 1990s, amendments introduced to both the welfare programs and the immigration law virtually removed newly arrived immigrants' access to most welfare programs and pressured many employers hiring immigrants into firing Latinos (Preston, 2010).[1] As of late, large part of the debate has been on the pressures that immigrants put on hospitals, schools, and community programs such as food pantries. However, little is known about how Latino immigrants sustain or even improve their well-being in these communities.

Answers to the question posed above have fallen mostly within two main 'fields' of inquiry. The first focuses on explaining the negative impacts of immigrants on labor market outcomes and costs to the receiving communities. The second focuses on the positive impacts of immigrants on similar areas. Neither group considers non-market institutions as explanatory factors within their neo-classical framework to explain how immigrants sustain their well-being (Card, 2005). Instead, these models rely heavily on cost-benefit analysis whereby the immigrant factors in the economic incentives as well as expected income at the destination before making a decision to move (Dust, Orazem, and Wohlgemuth, 2008).

An alternative approach is to use social network theory as a complement to neo-classical models. The central thesis of the study is that social networks represent social capital. Recent qualitative research has been pointing to an increasing use of social networks by immigrants as a likely way to guarantee well-being (Hagan, 2004; Menjıvar, 2006). This approach suggests that

[1] Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) is one example of these amendments

besides cost-benefit analysis, individuals factor into their decisions the ability to garner help from others - social resources - in order to make a living in these communities. For instance, they might count on friends and civic groups for information on job opportunities, or direct assistance on issues such as housing, food, children's school, and transportation once they are in a community. Thus, social networks help reduce transaction costs thereby adding another dimension to the analysis of the factors affecting immigrants' well-being (Winters, Davis, and Corral, 2002).

Concerns about the impact of increased immigration to the rural areas started to gain importance at the end of last decade in Missouri (OSEDA, 2005). This was the period when many of the rural areas saw a rapid increase in immigrant population (OSEDA, 2005). Research has suggested that the overwhelming majority of immigrants come to the US to work (Portes and Sensenbrenner, 1993). The majority of immigrants that land in the United States do not return to their countries of origin (Portes and Rumbaut, 2006). This suggests that most of these immigrants have either been very successful with the old strategy or have developed new alternative strategies to sustain and improve their well-being, increasingly believed to be a result of social networks (Portes and Sensenbrenner, 1993). These findings and observations support the need to reconsider conclusions of previous research that did not consider use of social networks.

The theoretical framework will be extended to include social networks in order to study well-being. Social networks are non-market institutions that are instrumental in access to resources (Valdivia and Gilles, 2001). This study aims to assess the impact these social networks have on Latino immigrants' well-being in the communities where they settle, defined as receiving communities. The present research adds to the neo-classical framework by incorporating social capital/networks in the analysis.

I. 2. Background

Immigration is a collective process. It takes careful planning and preparation, which usually involves more than one person in both the sending and receiving communities. Further, the whole process of immigration is not a onetime decision. It has been hypothesized that the process 'flows' along routes established by previous immigrants (Granovetter, 1973). In fact, the process is so connected that it has been likened to a chain or a network (Granovetter, 1973). The process of "chain migration" has been defined as a "movement in which prospective migrants learn of opportunities, are provided with transportation and have initial accommodation and employment arranged by means of primary social relationships with previous migrants" (MacDonald and MacDonald, 1964, p. 82).

Thus, a large component of the process of immigration is the social networks, which indirectly affect well-being of those Latinos that immigrate. Even though theoretical postulates have already established the link between social networks and potential benefits for individuals and communities, little quantitative empirical assessment of the social network impact on well-being has been undertaken due to the difficulty of assessing how immigrants and communities benefit from the elements of the network (Hagan, 1998). Impacts of these networks vary. The outcomes of the network are conditioned by who belongs to it, what they know, how many times network services are used, and by the cities where these networks and members are established (Portes and Sensenbrenner, 1993). The question of why immigrants relocate to specific places has been empirically addressed (Dust *et al.,* 2008), as well as the social and economic consequences of immigrants to the receiving communities (Artz, Orazem, and Otto, 2007). However, while the question of how immigrants employ social networks and resources to sustain and/or improve their well-being has been studied through qualitative methods, less has been addressed through quantitative analyses (Hagan, 1998).

Social network analysis has been employed to analyze the interconnections within immigrant enclaves in receiving communities. Granovetter (1973), who helped popularize the idea in the social science research with his book *Getting a Job.* However, the ideas behind social network analysis are not new (Wasserman and Faust, 1994). Granovetter's (1973) main objective was to identify how individuals navigated the job market, what factors affected mobility in specific industries and, particularly, what role social or work-related acquaintances played in determining the type of job that an individual finally obtained (Lin, 2001a). One of the main conclusions from the book was that the majority of people gained access to employment through accidental contacts with others rather than purposeful job search via official means, he termed these types of accidental contacts "*weak ties"*. Comparatively, very few people got their job through family members and close friends or what he termed "*strong ties"* (Granovetter, 1973). These two ties came to be known collectively as 'social capital' (Coleman, 1988; Lin, 2001b; Portes, 1989).

Granovetter's seminal work illustrated some important characteristics of social networks. Firstly, it demonstrated how individuals may access assets and sustain well-being. Secondly, it pointed out how individuals may access important resources necessary for advancement. Thirdly, it showed that relationships could help individuals become integrated into their society (*well-being*). For a long period it was assumed that individuals with the same cultural background or shared goals would naturally gravitate towards each other, either by creating informal networks or formal associations in order to pool resources needed to sustain their well-being (Olson, 1971). This perspective assumed that these networks had access to other necessary resources needed to assist members adapt to their new environment (Sandler, 1992).

The natural formation of social networks principle has been challenged by theorists. Researchers have argued that individuals will get together only if it is in their self-interest to do so (Olson, 1969; Sandler, 1992). The thesis defended is that adherence to social networks is not

automatic; the incentives to join the group should be compelling and the benefits apparent (Ostrom, 1991). Additionally, cultural perceptions affect an individual's understanding of the benefits to be derived from the network and also how that person uses the network. This means that individuals, households and communities consciously invest in their networks according to the perceived benefits to be derived from it (Narayan and Pritchett, 1999; Ostrom, 1991).

Social network is hypothesized as transaction cost reducer because of its nature. The network is a *relational* concept whereas economic impact is a *transactional* concept (Portes, Guarnizo, and Haller, 2002). The link between the two concepts revolves around the notions of resource and exchange. Lin (2001b, p. 98) quotes Sewell (1998) who defines resources as "material or symbolic goods", which could be human and non-human in nature. Lin (2001b, p. 132) defines exchange as "a series of interactions between two or more actors in which a transaction of resources takes place". In a social network, individuals are involved in repeated exchanges. These frequent exchanges create a repertoire of ties that establishes the basis for individual (or collective) reputation, which in turn facilitates future economic exchanges and possible gains. This reputation works as a form of referral to prospective employers. It becomes much easier for individuals to access jobs through their accumulated connections. The end result is a decrease of transaction costs by both sides involved in the exchange.

Research has conceptually addressed networks through the Sustainable Livelihoods framework, studying the tangible and intangible assets (Chambers and Conway, 1991), where social capital is included in the latter set (Bebbington, 1998; Valdivia and Gilles, 2001; Winters *et al*, 2002), and contributes to activities and livelihood outcomes (Scoones, 1998).

I. 3. Objectives

Available research suggests that individuals devise various strategies to maintain their well-being, which is mediated by their daily negotiations and choices (Valdivia and Gilles, 2001). These negotiations and choices are made by taking into account the capitals and capabilities they are able to access. Using the capitals and capabilities approach, this research intends to contribute to the literature by assessing the role of social capital in sustaining and or improving well-being. In this case, social network investment is a choice and will vary from one person to the next given that resources need to be diverted into the creation, maintenance and use of social capital. It should be recognized that almost all people use social capital to some level. Therefore, this proposition suggests that the variability in livelihood outcomes and strategies should correspond to the intensity of social capital use.

Summarizing, the aim of this research is to shed light on the importance of social networks in terms of sustaining the well-being of Latinos in selected non-urban areas of Missouri. The areas selected have observed a large increase in Latino immigrant population due to location specific pull factors generated by their economic development (OSEDA, 2005). This study assesses household well-being from the point of view of the Latino immigrant. Additionally, it incorporates the Latino's subjective/perception measures of the context of reception in the community, and the acculturation paths of individuals in the assessment of the impact of social networks on well-being (Valdivia *et al,* 2008). The study will concentrate on the following specific objectives:

a) Develop an economic model to assess the interaction of social network assets and the context of reception on well-being of Latinos in these areas of study.
b) Comparatively assess the impact of local social networks on Latino immigrants' well-being strategies such as employment;

c) Assess the characteristics influencing Latino householder's participation in social networks and the impact that these have on well-being.

I. 4. Chapter conclusion

This chapter presented the rationale and background related to the objectives of this research. A summary of the hypotheses guiding this study were also presented. The rest of the document is organized as follows: chapter II presents the literature review. Chapter III presents the conceptual framework of the impact of social capital on well-being. Chapter IV presents the data and statistical analyses on selected constructs. Chapter V presents results of the assessment of the participation in social networks. Chapter VI presents findings and discussion of the influence of social networks on job type. Chapter VII presents the analysis of the impact of social networks on well-being. Finally, chapter VIII presents conclusions, limitations, policy recommendations and areas of further research.

CHAPTER II – Literature Review

II. 1. Introduction

Discussions about the effectiveness and usefulness of social networks' benefits and their subsequent impacts on well-being can be found in a wide range of social science disciplines such as economics, political science, psychology, anthropology and sociology. Each discipline has a different emphasis, has specific assumptions, and uses different approaches when assessing the usefulness of social networks. However, the objective is usually the same: to establish the basis of benefits derived from social networks. A summary of relevant theoretical and empirical work is necessary to provide the basis for the propositions being studied in this research. This chapter provides that summary.

There are many types of social networks studied in social sciences. The summary of the literature provided here is restricted to the issues concerning how social networks affect well-being. Traditional as well as innovative methodologies and theories used to assess this relationship are also reviewed here. The approach of modeling social networks as social capital is known as informal social networks modeling. Formal models of social networks that deal with how networks are created will be mentioned but not be reviewed in great length because these are not related to the objectives of the study.

The chapter is organized as follows: section 2 consists of the theories and methodologies related to social network literature. Section 3 focuses on the theoretical well-being literature. Section 4 consists of how social network have been operationalized in the literature. Section 5 reviews empirical well-being studies using social networks principles. Section 6 addresses some shortcomings of the well-being and social networks in the literature. Finally, section 7 concludes the chapter.

II. 1.2. Hispanics population dynamics in the Midwest

The Midwest experienced one of the fastest growth rates in Latino population in the U.S. between 1990 and 2000. However, it should be acknowledged that most areas experiencing fast growth in the Midwest have started with a low Latino population base. This region had a 80.9 percent increase, and harbors 9 percent of the Latino population in the country (OSEDA, 2005). Previously, immigrants favored metropolitan areas such as Chicago, Denver, Kansas City, and St. Louis. However, recent immigrants tend to favor rural communities, which in the past have been majority Anglo (Cooper, 2001, p. 1).

The most significant immigration of Hispanics to the U.S. occurred at the beginning of the 20th century to work in the farms and industrial cities. Demand was generated by factories (e.g., steel mills, automobile and electrical factories), manufacturing and meatpacking industries (Pitt and Vargas, 1999). The immigration reform of the 1920s coupled with high demand for unskilled labor for the railroad and steel industries and agricultural farms helped increase Latinos immigration to the United States (Pitt and Vargas, 1999). Latinos originally settled in Texas, Arizona, and Utah and from there moved to the Midwest region. Many companies in the railroad and agricultural industries employed the services of headhunters who went as far as central Mexico to recruit labor (Pitt and Vargas, 1999). These initial migrants form the core of first generation Latinos in the Midwest.

Present day Midwest is still attracting migrant workers albeit for different industries and reason. Currently, migrant workers are mostly found in the meatpacking, manufacturing, and hospitality industries. Researchers contend these industries have been the main pull factors to the non-traditional destination such as non-urban areas of the Midwest (Pitt and Vargas, 1999). Even though the literature on immigration is slowly converging on the causes of in-migration of Latinos to rural areas, there are diverging views about the consequences. For instance, some

researchers find that Latinos move in to fulfill a labor demand void left by local human capital out-migration, while others believe that Latinos are crowding out local labor (Borjas, 2001). However, their presence in has helped many rural communities revitalize their industrial base thus creating more economic opportunities in these areas (Card, 2005).

II. 2. The social network literature

Two main approaches have been used to study social network impacts. The first emphasizes the structure and formation of social networks and their dynamics, mostly used by the natural sciences such as statistical physics (Jackson, 2007). The second approach focuses on the effects of social resources on livelihood's outcomes such as well-being. This latter approach is by far the most used in social sciences and it is used in this study.

II. 2.1. Theoretical social network analysis

Social networks analysis in economics is not new. However, Granovetter's (Granovetter, 1973) work gave a new dynamic to the study of the impact of social networks in the labor market which was later extended to other realms of social sciences. Formal social network modeling has its roots mainly in two areas of inquiry, random graph theory and game theory literature in economics (Jackson, 2007). Random graph theory is used to determine how a network forms through a series of stochastic processes. The approach relies on a specific distribution or a specific algorithm in order to determine how the links are connected to one another or simply how these links are generated (Jackson and Watts, 2002). The theory has two main working assumptions: (a) networks are large and complex, and (b) links form at random (Jackson, 2005). These assumptions do not hold when studying small, localized social networks that most likely have nodes choosing who they want to be in touch with (Wasserman and Faust, 1994).

The economic modeling of social networks' impact has two approaches: (a) equilibrium networks, and (b) the social capital approach (Goyal and Vega-Redondo, 2005). The former owes most of its existence to game theory principles, which has allowed researchers to incorporate different pay-off mechanisms as well as cost and benefit considerations as part of the modeling process (Slikker and Van den Nouweland, 2001). The latter approach uses a multidisciplinary method to address the effects of social resources on economic and other livelihood outcomes.

Jackson (2005: *p. 34*) argues that equilibrium networks allow a researcher to consider questions related to "whether the right networks form in the sense of maximizing total benefits to individuals and society." Under this setting, importance is given to self-interested individuals who dictate which links form and which do not form. These economic models essentially make it possible to provide answers to questions related to why certain networks form and others do not, and why certain networks work in one setting and not in another. This goes beyond the descriptive characteristic of initial social network analysis work done by earlier researchers (Jackson, 2007). Even though these models are very useful, they still have limiting issues. For instance, they require that individual members of the network be identified in order to trace out the linkages. This precondition is very difficult to achieve on highly mobile populations such as immigrants (Calvó-Armengol, 2004; Heckathorn, 2002).

There is another perspective on modeling social capital. In social science literature as well as popular understanding there is a common understanding that households possessing similar characteristics are normally drawn together (Bemak, *et al.*, 2002; Berry, *et al.*, 1989; Falicov, 2000; Geertz, 1977). Common ways of seeing the world help people have "webs of meaning" along certain issues, which makes life predictable (Geertz, 1977). Thus, it is only natural that Latino immigrants seek each other for jobs, information about the new community. This is also closely related to the Latino's concept of *familismo*, which relates to the principle of inclusiveness and participation in large family networks (Suarez-Orozco and Suarez-Orozco,

2001). In view of the development economics literature, the familismo concept is closely related to the informal insurance mechanisms, which social networks are said to provide to its members (Fafchamps and Lund, 2003).

II. 2.1.1. Formal models of social networks

One of the main functions of a social network has been to create and transmit information for and to interested members (Ioannides and Loury, 2004; Jackson, 2007). Therefore, the majority of formal models assessing their impact deal with some form of information sharing in a given market. The most developed of these models is in the area of job information and risk sharing. These models are being presented here because it is thought that they deal with elements (labor market, risk-sharing and informal insurance) that are integral components of an immigrant householder's well-being and livelihood strategy (Fafchamps and Lund, 2003).

Social networks as a source of labor market information

One of the first economic models that sought to confirm Granovetter's (1973) hypothesis of tie strength in finding employment was developed by Montgomery (1991). His model traced out the trade-offs between different tie strengths in the labor contact networks. In the model, each node makes a decision to pass information according to the type of contact that belongs to his immediate network and also according to what impact this decision might have on his wages and employment status. Montgomery (Montgomery, 1991) theorized that it is possible to estimate the probability that an individual would accept a job offer as a function of a referral from a network.

Data show that earnings are the majority of individuals' income in the US. And current research is slowly showing the increased importance that social networks have on job acquisition through transfer of job-related information from one individual to another in his/her circle of influence (Burt, 1992).

Calvo-Armengol and Jackson (2004) expand on Montgomery's (1991) insights and develop a slightly different model of job-related information sharing through a social network. In this model, the network structure, information, and unemployment are all exogenously given. In their conceptualization, if an unemployed individual hears of a job opening, he keeps it or uses it. If the individual is already employed, the information is passed along to other members in the network. Relative weights are given according to the importance of each individual in the social ties sphere, which determines the probabilities that a node will get this job information relative to some other job information. These weights are supposed to represent Granovetter's tie strength hypothesis.

Calvo-Armengol and Jackson (2004) hypothesize that since information about jobs is captured by a member of the network, the members' social connections type, amount, strength, and status will influence other network members' wages and employment. Their simulated results show that a specific location and degree of a node within an established network affects individuals' employment and wages. They also show a "contagion effect" whereby one node's status will influence the decisions of other social ties that are part of the network. They suggest that the contagion effect might explain differences in wages, employment status, and drop-out rates across races and ethnic groups.

Social networks have been also shown to have a substantial impact on wage distribution among individuals belonging to a certain network. Mortensen and Vishwanath (1994) have used an exogenous job information model to show that there are high probabilities of increase in equilibrium wages if the job offer came from a contact. They reach this conclusion by showing that most individuals will only know of job offers from their immediate milieu, which will then be passed on to their contacts. So, wages in the network will reflect the distribution of the members in the network.

The endogenous or strategic models of labor market information, which rely mostly on directed social networks, have introduced concepts such as *efficiency* and *stability* of a network. An efficient network is one that provides higher returns or payoffs for each link to its nodes. A stable network relates to the impossibility of any individual benefiting disproportionately by creating a new link (contact) into the network (Jackson, 2007). Jackson and Wolinsky (1996) developed one of the few existing formal models incorporating both of these concepts (Jackson, 2007). They used social networks as their initial focus point and deduced that the nodes derived utilities from using resources established in the network structure in a given area. Using game theoretic methods, they lay out a model of contact establishment within a network by self-interested maximizing nodes' decisions.

Starting from the premises that social networks are sources and conduits of information of various types, which are then used in the decision making process, Jackson and Wolinsky (1996) developed the *connections model*. The main objective of this model is to characterize how individuals communicate with their connections and how they benefit from indirect connections and vice-versa. They develop a model that assesses utility for each individual in a given network where intrinsic value and cost to an individual in maintaining a contact are included as independent variables. Their main insight is that close connections have more value than distant ones. Additionally, they find that if the costs of creating a new link in the network are low, an efficient network will include all available links and adding a new connection always increases welfare for the individual nodes in the network. However, if costs are in the mid-range the only efficient structure is a star pattern, whereby all individuals are connected to a center element with a minimal amount of links (one, at most two). And finally, if costs are high it will not make sense to maintain any link – the costs outweigh the benefits.

Calvo-Armengol and Jackson (2004) state that social network and context also creates some sort of dependence. For instance, social environment may influence how long an individual

might be employed. Longer bouts of unemployment might suggest that the individual's social environment is not as rich as compared to other citizens.

Social networks as source of risk-sharing and informal insurance

Risk-sharing is an important element of well-being. There is an assumption that the majority of the Latino immigrants do not possess formal insurance instruments to be used for protection against unexpected shocks (Borjas, 2001). Additionally, some Latinos residing now in small towns across U.S. were, not so long ago, living under developing country conditions. Therefore it is expected that they share the same risk-sharing and informal insurance mechanisms explained by models studying this phenomena in developing countries, which are presented below, due to similar cultural capital (Fafchamps and Lund, 2003).

Risk-sharing and informal insurance networks exist because of inaccessibility to formal methods of risk-sharing and insurance, scarcity of credit and insurance markets, and endemic fluctuations in income levels (Fafchamps and Lund, 2003; Ray, 1998). The inaccessibility to programs providing formal risk-sharing methods can be literal or implicit. The literal refers to the absence of credit markets and/or inexistence of acceptable collateral to back up the credit (Todaro and Smith, 2005) and the implicit refers to absence of the necessary information or documents to access insurance resources (Ray, 1998; Fafchamps and Lund, 2003; Todaro and Smith, 2005).

Social networks are thought to reduce the degree of imperfect information that exists between two trading partners thus diminishing the degree of transactions costs associated with economic exchanges. This is achieved mainly through reducing the level of risk and uncertainty (Ray, 1998). This diminished transaction costs facilitates the existence of services that could not have happened otherwise (Udry, 1994). This reduction in transaction costs is thought to happen either by improving information flow between individuals or by vastly increasing the assortment

of enforcement mechanisms in case of default when legal action is not always possible, e.g., threat of ostracism from the community in case of a default on paying previous loans (Ostrom, 1991). These arrangements may help reduce an individual's exposure to vulnerable situations leading to higher incomes given that the individual can now engage in riskier but potentially more rewarding activities (Genicot and Ray, 2003).

However, research on informal risk-sharing models does not completely explain all risk sharing patterns observed in most societies. For instance, in selected areas of Africa, Southeast Asia and Latin America only a chosen few, within a larger community, may enjoy the benefits of having their vulnerability to risk reduced, contrary to the perception that the whole community benefited as previously believed (Udry, 1994). One reason advanced to explain this phenomenon is that in these areas networks are organized around familial, friendship, or clan ties within a community as opposed to a single risk-sharing network for the community as a whole (Udry, 1994).

Thus far, research on informal risk-sharing has had the following recurring themes: strategic connections within the network, its evolution over time, and the effect of risk sharing on strategic connections. The next logical step in this research has usually been to assess how these previous themes influence incentives that could increase well-being within the network (Fafchamps and Lund, 2003). In this regard, social networks have been used to assess the role that connections play on the gift and loans decision making between nodes in a community where formal insurance mechanisms are scarce (Jackson and Watts, 2002; Ray, 1998).

Formal models of risk sharing and informal insurance are very few in the literature. Among the few, Bloch, Genicot, and Ray (2008) developed a theoretical model of risk-sharing and informal insurance, which assumes that even though social norms function as an informal legal mechanism, individuals must have an incentive to adhere to these norms. In an essence,

linkages are determined by familial, friendship, or social contacts. Their model is based on a network created through direct links of individuals that share a common bond rather that a "club of several people" (Fafchamps and Lund, 2003, p. 26). Their analysis is aimed at the study of self-enforcing insurance schemes in networks. Their work, however, falls under the realm of experimental assessment with very strict assumptions, making it very impractical to be applied in real world situations. Additionally, the model falls short of assessing the results that could arise if unobservable third-party transfers were to be considered.

II. 2.2. Empirical social network literature

Using Montgomery's work (1991) as a starting point, Munshi (2003) developed an empirical model to assess the impact of social networks on job information among Mexican migrants. In his model, referrals play a central role in conveying information to potential job candidates from the sending community (Mexico) to the receiving community (U.S.). He defines social networks by the origin-community of each individual present in the sample. He hypothesizes that Latinos' social networks are based mostly on kinship, friendship, and on a common origin-community (Massey, *et al., 1987*). Rainfall in the individual's sending community was used as instrument given that is was found to be negatively correlated with employment in the US – because the largest employer in these sending areas is mostly rain-fed agriculture. Using fixed effects OLS to estimate the effects of networks in employment and occupation of individuals and rainfall at the original community as an instrument to predict the size of a network in the receiving community, he finds that local social networks have an important impact on Mexican immigrants' labor transition. These networks perform a vital job of matching specific immigrants to specific jobs in US firms. Networks composed mostly of young members do not achieve the same results as large, older networks. Those immigrants that belong to large, older, and more established networks have a high probability of being employed in a

non-agricultural job, which dramatically increases earning prospects and job benefits thus improving well-being.

Social networks have also been used to explain the neighborhood effects, which is how the behavior of one member in the network might affect the other, and the impact that these have on labor market outcomes. Weinberg et al (2004) use data from the 1990 industrial census to assess neighborhood effects of labor market behavior. Their results show that neighborhood social characteristics and job proximity are positively correlated with the type of work an individual obtained and the amount of hours an individual works. They argue that these effects are larger for minorities such as Hispanics and less-educated individuals. Bayer, *et al* (2008) also use the 1990 US census for the Boston metropolitan area to illustrate the effects of social networks and geographical proximity on job markets. They show that geographical proximity of social network members influence decision making behavior, i.e., people who lived close to each other tended to work together. Additionally, social interactions are highly influenced by similarities in education, age, and presence of children in the household. These connections get stronger if individuals connected are both working. The opposite happens if two individuals that are connected are drop-outs, young, or married females (Bayer et al., 2008).

It has been also suggested that the difference observed in the type of jobs that individuals obtained, their wages and drop-out rates from the labor force could be explained by the level of usage of informal vs. formal sources of information about jobs (Corcoran, *et al.,* 1980). Corcoran's study reveals that white women 45 years old and under were 48 percent less likely than non-Hispanic white men to use informal sources for job information. The story is a little bit different with Hispanics. The difference in usage between men and women is very small and, by comparison, Hispanic men have higher probability of using their friends and relatives as sources of job information as compared non-Hispanic whites (Smith, 2000). However, not all

differences in the intensity of using social networks for finding a job can be explained by usage alone.

Researchers have had some success in showing that there are apparent discrepancies between a group's usage of social networks that go beyond age, gender, race, and ethnicity. Korenman and Turner (1996) used 1990 U.S. census data for the Boston metropolitan area to study ethnic use of social networks and their results show that non-Hispanic whites, who found jobs through contacts, had 19 percent wage gains compared to Hispanics and 23 percent gains compared to African Americans. The wage difference with non-Hispanic white and Hispanics is even larger for those individuals that are less-educated and use informal contacts and the overall effect is that only information about less paying jobs are passed to them which results in a significantly lower wages (Elliott, 1999). However, Smith (2000) observed that the difference in wages between non-Hispanic whites and Hispanics is drastically reduced when the comparison is restricted to individuals who found jobs through formal sources.

In a different vein, there is a related empirical literature investigating the effects of risk-sharing and informal insurance mechanisms on well-being as mediated by social networks. Fafchamps and Lund (2003) have assessed the effect of social networks on informal risk-sharing mechanisms using data from a rural community in Philippines. They extend Udry's (1994) empirical model by introducing gifts and transfers, and focus on financial flows, which they assume are affected by shocks that consequently condition loan and gift giving among network members. They also account for selectivity bias and labor market participation and savings, unlike Udry. Using survey data, they included variables representing characteristics of each household and the network partners. They also recorded the amount of gifts, transfers, remittances, and loans that each individual made. They assessed also consumption and income shocks for all members of the network, and created a subjective measure of individual's own assessment of financial well-being. These variables were used in a maximum likelihood model

and their results suggest that mutual insurance is highly localized and in most cases it does not include the whole community, rather households and individuals help each other through networks of friends and relatives.

Similar results were obtained by Murgai *et al.*, (2002) in their study of the impact of social networks on localized and incomplete mutual informal insurance in an irrigation canal scheme in Pakistan. Using all variables in a linear regression estimation directly, as compared to Fafchamps and Lund (2003) who created latent variables, they find strong evidence that informal insurance schemes are organized within subgroups in a given community. Researchers have argued that a possible explanation for this occurrence may be individual familiarity and strategic objectives (Genicot and Ray, 2003). That is, not everyone in a community has a level of intimacy with other members who could guarantee informal insurance.

II. 3. Unitary approach to household resource allocation

Unitary models refer to how households act as one in order to create well-being for its members. These models have also been termed as "common preference" model, the "altruism" model, or the "benevolent dictator" model (Alderman, *et al.,* 1995). The central assumption here is that there exists a welfare function for the head of the household and that all other resources, used in the "production" of the household well-being are pooled (Strauss and Thomas, 1998).

Households have long been considered units of production and consumption generating large economics activity (Ellis, 1993). Chayanov's study of Russian peasants sought to expose this characteristic of households for rural families (Ellis, 1993). Becker's treatise on the family sought to extend the approach, using standard demand analysis, to mainstream economics (Becker, 1965). The essence of Becker's household production theory was that, "in accordance with a single set of preferences, the household combines time, goods purchased in the market, and

goods produced at home to produce commodities that generate utility for the household" (Strauss, 1986, p.73).

Unitary models have seen extensive use in development economics, especially in research applied to developing countries' rural areas. In its present form, the unitary approach has been extended to assess the demand for education, health, fertility, migration, child fostering, crop adoption, labor supply and home production (Singh, Squire and Strauss, 1998). Singh *et al.,* (1986) developed a model of joint production and consumption decisions for rural areas of the developing countries that is one of the first such extensions of the original home production model.

One of the most studied unitary models is the parental investment in children. That is, in the area of human capital development, unitary models have been used assess the determinants of resource allocation to each child's education (Becker and Tomes, 1976), and the determinants of health production in a household (Pitt, 1997). Here a household well-being function is defined according to the preferences of the head of the household, own consumption, and the future income of the children (and possible transfers made to these). These preferences are maximized subject to income constraints of the head of the household and the future income of the children, which depend on their own human capital and initial endowment. Researchers have developed different variations of this model by introducing specific assumptions to address specific issues (Haddad, *et al.,* 1997).

II. 4. The Well-being literature

Well-being refers to the quality of life that an individual leads. Many economic studies tend to concentrate on the level of income that a household has because it is assumed that it gives an indication of access to goods and services (Krugman and Obstfeld, 2005; Mankiw, 2008;

Pindyck and Rubinfeld, 2008), and as such, empirical research has measured well-being mostly through the use of economic indicators that affect the level of income (Dasgupta, 1995). These factors are the 'objective criterions' of well-being. Scanlon (2003, p. 75) defines an 'objective criterion' of well-being as "[…] a criterion that provides a basis for appraisal of a person's well-being which is independent of the person's tastes and interests." Examples of the objective criterion used in economics are money income, wealth, or a variation of thereof such as GDP, and income per capita.

However, Sen (2000, 1985, 1987) has criticized the use of the objective criterion of well-being by suggesting that the construct falls short of capturing the essence of what is meant by well-being since it did not include additional contextual factors that affected well-being. He argues that the objective criterion deals with the concept of how 'well-off' people are and not their 'well-being' (Sen, 1987, p.92). The fundamental difference is that the concept of being well-off is related to wealth as in "how rich is s/he?" or "what goods and services can s/he buy?" (Sen, 1987). Alternatively, the concept of well-being relates to something that is achieved as in "what kind of a life is s/he leading?" "What does s/he succeed in doing and in being?" Thus, Sen proposed that an individual's well-being should be given by a level of *capabilities* that an individual can muster through a collection of *functionings* (Sen, 1987). Capabilities are a collection of what an individual is able to do or to be (Sen, 1987).

Therefore, the standard of living normally accepted in a society is made up of a set of functions – functionings – that are interrelated. "[T]he primary feature of well-being can be seen in terms of how a person can 'function'" (Sen, 1985, p. 197). To assess well-being there is a need to assess these constitutive elements that form the functionings (Sen, 1987). The set of capabilities will reflect what type of life a person chooses to live. These capabilities are strictly dependent on an individual's characteristics, environmental circumstances, and societal conditions.

But Sen does not elaborate on specifics that could be used in each of these categories and some functionings tend to overlap with others. His approach specifies the general model and provides some causes of successes or failures, but has not operationalized it for quantitative analysis. The concept of capability has been empirically implemented by Nussbaum (1993) but her approach has been criticized as context specific (Gasper, 2000). An area of research that requires further study is how to implement this. An measure that has potential do deal with this issue is the subjective well-being concept, which will be discussed in the next section.

II. 4.1. Alternative approach to understanding well-being

Well-being is complex, and recently researchers in various disciplines have made advances in this concept (Frey and Stutzer, 2002). The fields of psychology and behavioral economics have made advances in the assessment of this concept. Previously, there was a clear divide in the approaches taken by different fields: economics concentrated on the "objective" measures and other social sciences placed more emphasis on the "subjective" measures.

Objective measures came about due to the assumption that rational individuals invested in their well-being through money income by purchasing goods and services necessary to maximize their utility (Pindyck and Rubinfeld, 2005; Mankiw, 2003). Logically, the level of individual or household income has been used as a proxy for well-being (Easterlin, 2003b). However, recent empirical studies have challenged the concept of objective measures, especially the main proxy, income because it fails to capture all facets of the well-being concept (Easterlin, 2003b; Frey and Stutzer, 2002). Additionally, it has been hypothesized that in most western countries economic growth has not been correlated with well-being increases (E. Diener and Oishi, 2000; Easterlin, 2003b). Finally, studies have also revealed that, in general, income per capita does not correlate well with well-being in western economies even though the correlation is positive within pocket of society, e.g. middle class non-Hispanic white (Helliwell, 2003).

In light of these latest developments, a different type of well-being measure has been proposed by the behavioral economics field called "Subjective Well-being" or SWB (Kim-Prieto *et al.,* 2005). This concept of SWB is complex, because it has many components and can be estimated in different ways. This concept introduces the idea of "a global assessment of life and its facets", thus effectively evaluating life based on "personal judgment of satisfaction and quality of life" (Kim-Prieto *et al.,* 2005: *p. 263*).

This concept of a multifaceted assessment of life has slowly permeated the economics field, especially the behavioral economics. The bulk of research is in the category of "happiness" research (Frey and Stutzer, 2005a). There have been two different approaches used to gather information necessary to create a SWB measure. The first approach consists of asking a single question "how happy are you, all things considered?", and the second approach creates a latent variable through a set of questions that are designed to assess each specific facet of life thereby creating the Personal Well-being Index (Frey and Stutzer, 2005b, 2005a).

The indicators used to create the SWB originate from the hedonistic approach to well-being, whereby individuals seek happiness by avoiding pain (Bruni and Porta, 2005). In this process, individuals may seek the acquisition of material goods, and increase the network of friends, among other things. However, which goods an individual may buy or even what type of friends the individual may decide to have depends solely on the individual's choice, therefore, subjective. Terms such as "life satisfaction", "well-being", "happiness", and "SWB" are used interchangeably in recent empirical research (Easterlin, 2003b).

II. 4.2. Empirical well-being assessment

The literature on empirical well-being measures is growing and there is an agreement that better empirical well-being measures need to be created (Cummins, 2008). Currently, there are

studies using capabilities approach (Martinetti, 2000). There are others using Personal Well-being Index [PWI] (Frey and Stutzer, 2004), and others still using the SWB (E. Diener, Lucas, and Oishi, 2002).

Empirical studies using a theoretical perspective suggested by Sen are not many due to its strong informational and methodological requirements (Qizilbash, 1996). Martinetti (2000), using fuzzy sets theory, develops a methodology of multidimensional assessment of well-being using Sen's functionings concept, and tests it empirically in Italy using socio-economic survey data. In the empirical study, five functionings were used: housing, health, education and knowledge, social interactions, and psychological conditions. However, the study does not include income or wealth variables. The author follows Sen's reasoning, where, income has only an indirect and derivative role (Sen, 1987). This means that income level can help understand why a person did not fully develop a given functioning (education or housing), which are constitutive elements of well-being but income or wealth by themselves are not (Sen, 1993).

The results obtained by using Sen's approach compared to those using 'traditional' approaches of well-being assessment, i.e., income-based, have some similarities. For instance, Martinetti's study shows that the elderly and those with lowest level of education form the majority of the poorest individuals (Marinetti, 2000). However, the use of this method shows that by using the functionings approach the inequality that is commonly observed between male and female, young and the elderly, and within and between occupational groups are not as large as those observed using the income-only approach. Additionally, she states that this method provides better results in terms of tangible assets such as housing and intangible assets such as education and knowledge as well as social relationships. Accordingly, her focus on the individual allows for inner introspection into the causes of inequality and deprivation, which could not be achieved by using traditional methods of well-being assessments that were based on income and assumed the household as the unit of analysis.

A more intuitive approach of assessing well-being has been to use the Personal Well-being Indicator (PWI) suggested by the behavioral economics and psychology fields. Following the philosophy of the PWI, Helliwell and Putnam (2004) created a multidimensional indicator of well-being by arguing that the well-being variable should be defined by the individual even though guided by the researcher using indicators that represent accepted standards of well-being. In that light, they posit that major developments have been done in assessing subjective well-being reliably and validly through the use of self-rating questions related to 'life satisfaction' (Helliwell and Putnam, 2004; Cummins, 2008). This literature has shown that the responses to questions related to self-assessment of life satisfaction correspond to individual observed behavior (E. Diener and Oishi, 2000). Support for the construct validity of these subjective measures of well-being is slowly emerging (Helliwell, 2001). This body of literature contends that additional important indicators of subjective well-being are natural individual traits such as optimism and self-esteem and other personality factors. However, since individuals might not correctly judge these traits, there are other 'social correlates' that could also be used to assess subjective well-being (Helliwell and Putnam, 2004). For instance, physical health has been used as an indicator of 'observable' well-being.

Very little empirical research has been done using SWB in economics (Easterlin, 2003). This approach has been criticized lately. The issue is that, until recently, most economists assumed that individuals derived higher utility from their material possessions, which was directly correlated with well-being (Easterlin, 2003). This assumption holds true in countries with low levels of economic development. However, after a certain threshold, usually the OECD median income, it has been shown that this assumption breaks down (Easterlin, 2003). In this situation, when individuals have passed the threshold, income effects are reduced or even imperceptible (Frey and Stutzer, 2002). Additional research on well-being has shown also that the importance of income, after a certain point, becomes relative. This means, after a certain

threshold, it is not how much money I have but *how much money I have relative to my neighbor* (Easterlin, 2003; Helliwell, 2003). Thus, individual well-being had to be more that just material income; it had to include other social dimensions of livelihood used to gauge how well an individual is performing in life.

Recent empirical studies have tackled this. For instance, in their study of the impact of unemployment and inflation on individual well-being, Oswald (1997) used PWI measures as proxies for individual well-being. Their results suggest that the cost of losing a job for an individual ranks higher than the equivalent cost of losing income. Their results were replicated by the work of Di Tella and MacCulloch (2000) arriving at essentially the same conclusions. Alternatively, Frey and Stutzer (2002) assessed individual well-being in Switzerland using PWI variables combined with institutional variables such as direct accountability of local administrations in long term democracies. Their results show that SWB is positively correlated with a local administration that is accountable.

Additional empirical research suggests that there is a strong correlation between social networks and SWB. Social connections such as marriage, close friends and family members figure within the most robust correlates to subjective measures of well-being (Helliwell and R. D Putnam, 2004). It has been established that a socially accepting environment, such as friendly neighbors, supportive coworkers, and close friends, reduces the probability that an individual feels low self-esteem or feels rejected in a given place (E. Diener et al., 2002). Research reports that most people find that even though income helps in subjective well-being after a certain threshold, usually the mean income of the OECD countries, social connections are far more important correlates of life satisfaction. For instance, Helliwell and Putnam (2004) study the 'happiness effects' of social network and how these effects are equivalent to income. For instance, being married was equivalent of quadrupling an individual's annual income. Other activities such as monthly club meeting, volunteering, civic engagements and church attendance

corresponded to a doubling of an individual's income. However, the authors readily admit that research in this area is sketchy and concede that more research is needed to confirm their findings.

II. 5. Operationalizing networks: social capital

II. 5.1. Social capital and well-being

Well-being (the subjective) is sustained and/or improved under certain conditions, which depends on the characteristics of the people involved in the well-being activity in question. In developing countries, where most Latino immigrants come from, people face several constraints such as financial capital, human capital, access to formal institutions such as banks, and information necessary to sustain livelihood in a specific community. However, these individuals may possess a very efficient system of social capital, which substitutes for the capital that is short supply or substitute for official institutional failure.

Empirical research on social capital is slowly ascertaining that social capital can be a valuable asset for households lacking in other capitals (Fafchamps and Minten, 2002). Social capital has been used to explain production, market integration, income and well-being. The concept has been defined in several ways. In economics, social capital has been used to explain economic well-being (Narayan and Pritchett, 1999). However, the recent concept of considering social capital as an input in a household's production function (Grootaert, 1999) therefore, as an asset that can be accumulated and that yields a flow of benefits, has opened new conceptual options in the analysis of its contribution to the well-being analysis.

The production function approach has been used in recent empirical studies by Grootaert (1999) on the assessment of social capital's impact on household's welfare and poverty in Indonesia. Maluccio *et al.,* (1999) also use the production function approach to assess the impact

of social capital on income generation in South-Africa. Narayan and Pritchett (1999) used the same approach to assess the impact of social capital on expenditure in Tanzania. Ruben and Strien (2001) conceptualized social capital as an input in the household production function in their assessment of household income in Nicaragua.

However, previous empirical studies have mostly approached the study of social capital effects by conceptualizing the construct as an aggregate index. This index has been defined as the quantity and quality of membership in social groups (Putnam, 2001; 2000; Narayan and Pritchett, 1999). If we consider that many individual indicators contribute to the creation of social capital, then much information is lost by using a single index to represent social capital. This is said because in such circumstances, it is not possible to know which indicator contributed what information (Sadoulet and De Janvry, 1995). Another issue worth mentioning is that the empirical literature does not seem to give much importance to the issue that social capital is highly context specific (Woolcock, 2001), which means that social capital may be different for different production processes.

II. 5.2. Social capital and the household production function: empirical uses

Empirical studies related to social capital are gradually becoming voluminous. The lack of a concrete unit of measurement as well as abstract conceptualization of the construct, at its early stages of study, lead many economists to question social capital's usefulness (Arrow, 2000; Sobel, 2002). An early use of social capital to assess economic phenomena was done by Fukuyama (1995), who measured social capital as trust in institutions. In his analysis of world economic development, Fukuyama introduced social capital as an explanatory variable in an exclusively economic framework. This approach, considering social capital as a factor in a production function, gave a firmer theoretical underpinning of social capital and a much broader analysis of policy options for economic assessment.

Since Fukuyama (1995), many more empirical studies have used the production function approach to study social capital's impact on various facets of life. Narayan and Pritchett (1999) use this approach to assess social capital's impact on expenditures in rural Tanzania. They created an index of social capital by measuring the level of membership and characteristics of community groups, individual values, and individual attitudes towards the groups they belong. They conclude that the social capital index has a positive impact on household expenditures. Other empirical studies follow the lead of Narayan and Pritchett (1999) and use the same methodology to assess social capital's impact on economic development and well-being in Indonesia (Grootaert, 1999); economic development and well-being in Bolivia (Grootaert and Narayan, 2004); and economic well-being in Burkina Faso (Grootaert, Oh, and Swamy, 2002).

In every instance the social capital index was found to be statistically significant and positive. Household expenditures were deemed to be a much more accurate proxy for household well-being due to the issue of saving and dissaving of rural households (Narayan and Pritchett, 1999). Additionally there was the issue of recall that made using household income a poor proxy for well-being. In regards to individual components of social capital index, the most important ones are the number of groups to which a household belongs and the composition of groups. That is, those households that belonged to many groups were better off that those who belonged to fewer groups; those that belonged to more heterogeneous groups had higher level of well-being than those that belonged to more homogeneous groups. Using different demographics, but same social capital index, Maluccio et al. (1999) in South Africa and Ruben and Strien (2001) in Nicaragua arrived at essentially the same conclusions – that social capital has a positive effect on economic well-being. This time economic well-being was proxied by household income.

The most important criticism of these studies is the same problem affecting indexes mentioned above. Firstly, social capital used in the studies was designed to capture the impact of bridging alone leaving bonding totally out of the analysis. Secondly, it is very difficult to

disentangle the effect of a single indicator on household well-being. Thirdly, it is not clear what role information sharing and informal insurance mechanisms play in these analyses. The literature on social capital has already established that information sharing facilitates the flow of information, which reduces transaction costs and avoids problems related to opportunism and market failure because of imperfect information (Fafchamps and Minten, 2002).

In order to address some of the issues mentioned above several studies have followed a different approach. Taking a cue from a definition of social capital as "resources embedded in relationships among households that facilitate productive capacity of households (Lin, 2001b, p. 14)", some researchers have operationalized social capital by focusing on specific aspects of the relationships embedded in the social capital concept. These aspects are associational activity, information sharing (social relations), trust, and reciprocity (Van Ha, Kant, and MacLaren, 2004).This emphasis on the aspects of relationships focuses on actual or potential benefits which could be obtained from social networks (Burt, 1992). This approach distances itself from conceptualizing social capital as a public good as theorized by Coleman (1988), instead the approach conceptualizes social capital as a household good (Glaeser, Laibson, and Sacerdote, 2002; Ioannides and Loury, 2004). Assuming that social capital is a household good allows an easier transition to a production function framework.

II. 5.3. Econometric methods used on social networks

In empirical studies well-being is modeled as a latent variable, usually a single proxy, such as income or expenditures. Conversely, social networks are mostly modeled as complex, endogenous (or latent) variables. One of the most common methods used is the ordinary least squares (OLS). This method specifies a normal least squares estimation and introduces a dummy variables that assumes the value of 1 if the individual uses social contacts or not. This is the

approach used by Narayan and Pritchett (1999) and other studies that followed their approach, even though they created an index. This equation used takes the form of:

$$Y = \beta_o + \beta X_i + \alpha SC_i + \varepsilon_i$$

This specification applies to most empirical analyses (Wooldridge, 2008). For instance, Y could represent well-being, β_o represents the intercept, β represents a vector of unknown coefficients that affect well-being and X_i are the associated characteristics, SC_i represents the use of social networks, which is equal to 1 if an individual used a social network, and zero otherwise and α is its associated unknown coefficient, ε_i is the associated error term. This model assumes that social networks are exogenous to the user (Greene, 2003).

Another approach to this model has been to include both those individuals that have used and those that have not used the networks in the OLS estimation (Goldberger, 1991). This will obviate the use of the intercept since both groups are already represented (Goldberger, 1991). Thus, the empirical equation will look like this:$Y = \beta X_i + \alpha SC_i + \delta NSC_i + \varepsilon_i$ Under this specification, the only difference is the introduction of δNSC_i, which is meant to represent those not using social networks. This model too considers that social network choice as exogenous (Goldberger, 1991).

Alternatively, variables could be assumed to have some selection bias embedded in them or to be endogenously given (Heckman, 1979a). One of the most used method used for self-selectivity correction is the Heckman method (Wooldridge, 2008). This and other similar methods (such as the Tobit) fall under the Instrumental regression methods. Under these methods, a truncation of the data (namely on the dependent variable) is assumed to exist, or it is assumed that the independent variable of interest is generated by choice of the population under study thus creating a selectivity bias (Greene, 2003). This truncation or selectivity bias is modeled as a

specification error (Heckman, 1979). The Heckman method, a two-step procedure, aims at correcting this specification. First, a propensity of an individual to use or not the social network is estimated. Secondly, the result is used on a subsequent step on a normal regression of choice (which depends on the type of explained variable) as an additional variable. Theoretically, this is supposed to represent a missing variable caused by the specification error (Greene, 2003). Thus, the first step takes the following form of the Probit regression:

$$PN = \gamma D_i + \vartheta_i$$

Here, PN, is the propensity to participate in social network; D is the vector of characteristics affecting social network participation, γ_i being the associated coefficient; and ϑ_i being the error term. Results of this estimation are used to estimate the Inverse Mills Ratio (IMR). This variable is obtained by dividing the standard normal distribution over the cumulative distribution values obtained from the propensity to participate in social networks.

The second step, a normal regression is estimated with the IMR as the added variable representing the use or not of social networks. The regression will be of the following form:

$$Y = \beta_o + \beta X_i + \sigma IMR_i + \varepsilon_i$$

This latter regression expression corrects for the endogeneity, by accounting for the selectivity bias of participating in social networks, by correcting the variance-covariance matrix. This two-step procedure gives unbiased results (Wooldridge, 2008). Additionally, this regression method is also recommended in cases where the data to be used is truncated (Greene, 1991; Wooldridge, 2008).

The methods specified above address the issue of endogeneity. However, if the variable of interest is not modeled as a single index but the indicators are used directly as independent variables, then a multi-colinearity problem may arise (Wooldridge, 2008). A solution to this issue

has been to use weights on specific variables as dictated by theoretical postulates about a given variable of interest. For instance, it could be assumed that age is twice as important to social networks as education (Gujarati, 2003). This relationship could be expressed in the regression equation thereby removing a given level of colinearity.

II. 6. Empirical Well-being Assessments using Social Networks

In empirical assessments, social networks have been modeled as social capital (Jackson, 2007; Narayan and Pritchett, 1999). Winters *et al.,* (2002) describe methods that have been used to assess the impact of social networks. The first method creates a composite index, which is essentially a weighted average of all constitutive elements of social capital defined by the researcher. Under this approach the higher the value of the index the higher the social capital. The second method uses proxy variables of social capital, as defined by the literature and the researcher, directly in the regressions without creating an index. The third method uses structural equation modeling postulates (factor analysis and path analysis) to create a unique *latent variable,* in this case "social capital", which is later used to explain the observed phenomena.

The first and third methods differ in the derivation of the index. In the first method, the researcher defines the indicators and the weights, which are all subjective. In the second, even though the researcher still defines the indicators, the weights are eliminated and the index is defined by structural equation results (Winters *et al.,* 2002). Narayan and Pritchett (1999) use the first of these methods to assess the impact of social networks on individual and households' consumption and well-being in a rural area in Tanzania. They use the Social Capital and Poverty Survey data (World Bank, 2003) to identify specific factors that affect consumption and well-being in Tanzania. In their study, expenditures were used as a dependent variable. They argue that expenditures reflect permanent income better than current income held by individuals or households due of constant saving and dissaving. The empirical model used is:

$$H_{ij} = \beta \cdot SC_j + \alpha \cdot Z_{ij} + \gamma \cdot X_j + \varepsilon_{ij}$$

In this empirical model H_{ij} is household expenditures; SC_j is an index of social capital of the village$j$; Z_{ij} is a vector of household i characteristics; and X_j is a vector representing village j variables; and ε_{ij} is the error term. The creation of social capital index used two different sets of questions. The first set was used to identify membership in groups, which was used to assess if groups had an effect on economic outcomes of the household. The second set of questions was used to identify the characteristics of the groups to which individuals belonged. These questions were subdivided into those related to (a) "kin heterogeneity", i.e., if all members of a group were of the same clan, tribal group and the like, (b) "income heterogeneity," i.e., if all members of a group earned or had the same level of income, (c) "group functioning", (d) "decision making,", (e) "voluntary membership. With these set of questions the researchers sought to identify three dimensions of social capital, namely: membership in groups, group characteristics, and individual's values and attitudes, especially those related to trust.

Their OLS results show that expenditures are positively correlated with community social capital as measured by group membership. They suggest that alternatively social capital could be considered as a normal consumption good. Communities with many wealthy individuals will have a higher level of social capital. They find also that even though social capital is very important for consumption and operates at the village level, other village and household characteristics also have statistical significant effect on income. They caution that the circumstantial nature of the associational life in the community they studied does not allow for a generalization of the econometric results obtained to all other social and economic contexts (Narayan and Pritchett, 1999).

An empirical example for the second method of studying the impact of social capital mentioned above is the study done by Janvry and Sadoulet (2001). In this study of the rural

Mexican population, they include social, institutional, and human capital as well as regional factors that affect income generation activities directly into the linear regression model. They find that institutional and social factors have statistical significant effects in the generation of capital, especially for those individuals that live farther away from major cities. In their institutional factors they have included elements such as the Mexican *ejido* policy, which was designed to promote the use of common land among the community. Therefore, those that had land could produce enough (by helping each other through social connections). This translated into higher economic returns. However, this method has a potential drawback in that it requires a large dataset given that many variables are included in the OLS procedure. Additionally, the *certeris paribus* clause is a little bit hard to apply here. For instance, it is hard to see how an *ejido* policy could succeed without increasing social capital at the same time.

Winters *et al.* (2002) use the third method, which combines factor analysis with regression, in their assessment of the impact of assets, activities, public and social capital on income generation and well-being of rural dwellers in Mexico. They use a livelihoods approach in order to conceptualize how households generate income through the use of assets as mediated by activities. They use two empirical techniques to analyze their data: latent variable analysis and OLS. They justify the use of latent variable analysis by explaining that the link between assets and activities makes it fit for latent variable analysis, in the form of factor analysis, which could be used to "describe the relationships among many variables in terms of a few underlying, but unobservable, *factors"*(Winters et al., 2002, p. 148).

They use data from a nationally representative sample of land reform in Mexico. They first estimate the income equations using Lee's (1983) generalization of Amemiya's (1978) two step estimation principle of a simultaneous equation model and then use factor analysis to introduce social and public capitals into the estimations. Social capital is subdivided into eight (5) factors, which are: population size, co-operation, lack of formal production arrangements,

household's access to infrastructure, and formal *ejido* organization. Their results suggest that these two forms of community assets, social capital, influence the participation in activities and play a very instrumental role in the generation of income, which suggests that the use of single indicator to represent social capital is not adequate.

II. 7. Sustainable livelihoods

The concept of sustainable livelihoods has been considered central to the debate about poverty reduction, rural development, economic integration and settlement. Scoones (Ian Scoones, 1998, p. 5) defines sustainable livelihoods as follows:

> *"A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base."*

From this definition, various subcomponents can be highlighted in order to inform our study. The first subcomponent relates to the ability of a household to have a combination of livelihood strategies to create gainful employment (Chambers and Conway, 1992). The second subcomponent relates to ability of to assess the poverty level of a household (Amartya Sen, 1975). The third subcomponent relates to the notions of 'well-being' (Chambers, 1997) and 'capability' (Sen, 1987). Well-being is defined as the quality of life a household leads (Chambers, 1997) and capability is 'what people can do or be with their entitlements' (Sen, 1985, p.41). These concepts transcend the material concerns of food intake and income. The final subcomponent of importance here is the ability of household to be able to deal with and recover from stresses and shock. Inability to cope (temporary adjustment in the face of change) or adapt

(longer tem shifts in livelihood strategies) might not be able to have sustainable livelihoods (Chambers and Conway, 1992).

Central to the concept of sustainable livelihoods are the resources used to create or pursue a strategy. These livelihood resources are referred to as 'capital base from which different productive streams are derived from which livelihoods are constructed' (Scoones, 1998, p.7). As an example of capitals mostly used are the following: human capital (skills, knowledge, work experience, physical health and capability), financial/economic capital (cash, credit/debit, savings, and a variation of these and other economic assets including infrastructure), social capital (networks, social claims, social relations, affiliations, associations, social norms and customs). This emphasis on the use of various capitals in the sustainable livelihoods approach facilitates integration of research from various disciplines, which is appropriate for this study.

II. 7.1. Acculturation

The meeting of people of different culture, caused by various reasons, has been going on for millennia. On constant in this meeting process has been the need to get acquainted with this new civilization's norms, habits, and other formal and informal ways of doing things – culture. This process of getting to know other people's culture is what is commonly known as *acculturation*. A more formal definition of the concept is "those phenomena which results when group of individuals having different culture come into continuous first-hand contact, with subsequent changes in the original culture patterns of either of both groups" (Redfield, Linton, and Herskovits, 1936, p. 149). This definition was slightly modified in 2004 by the International Organization of Migration (IOM), which defined it as: "the progressive adoption of elements of a foreign culture (ideas, words, values, norms, behavior, and institutions) by persons, groups or classes of a given culture" (IOM, 2004).

Even though the term and the concept are not new, only in the last decades that a major upward trend in research interest in the topic in economics is seen albeit under a different construct. Even though the concept is not as developed as in other social sciences, the economics field has been addressing this concept under the term institutions. In other fields of social sciences such as psychology, sociology, and anthropology the research on the topic goes back at least to the 1980s. Researchers have attributed this increase in acculturation research to: (a) increase in immigration, and (b) increase in the importance of understanding the link between culture and human behavior (Sam and John W. Berry, 2006).

Acculturation research originated in the field of anthropology and further developed in sociology (Sam and Berry, 2006). However, the cross-cutting nature of the topics addressed by the construct made it very practical in the explanation of large phenomena occurring in the fields of psychology and, most recently, economics. In many ways the concept of acculturation is similar to the concept of socio-economic adaptation in the sustainable livelihoods literature.

II. 7.2. Community Climate

Community climate refers to the conditions prevalent in a community and its influence of individual's perception (Bronfenbrenner, 1979). This concept has been developed in regards to immigration by Portes and Rumbaut (2001) as context of reception. The context of reception refers to the welcoming mat of the community that an immigrant moves into (Valdivia and Dannerbeck, 2008). This context is shaped by immigration policies, labor conditions, public attitudes, perceptions, and knowledge of newcomers, and the social networks that can support the newcomers, including relatives, friends, and local organizations.

The interconnections between policies and public attitudes and its subsequent influence on individual perceptions, values and self-identity have been succinctly presented in the

ecological model designed by Bronfenbrenner (1979). From the figure below, it can be deduced that the relations between new and old residents will impact long term settlement, and long term return to families and communities. How families settle, households organize, and especially how children are taken care of, will lead to well-being or vulnerability.

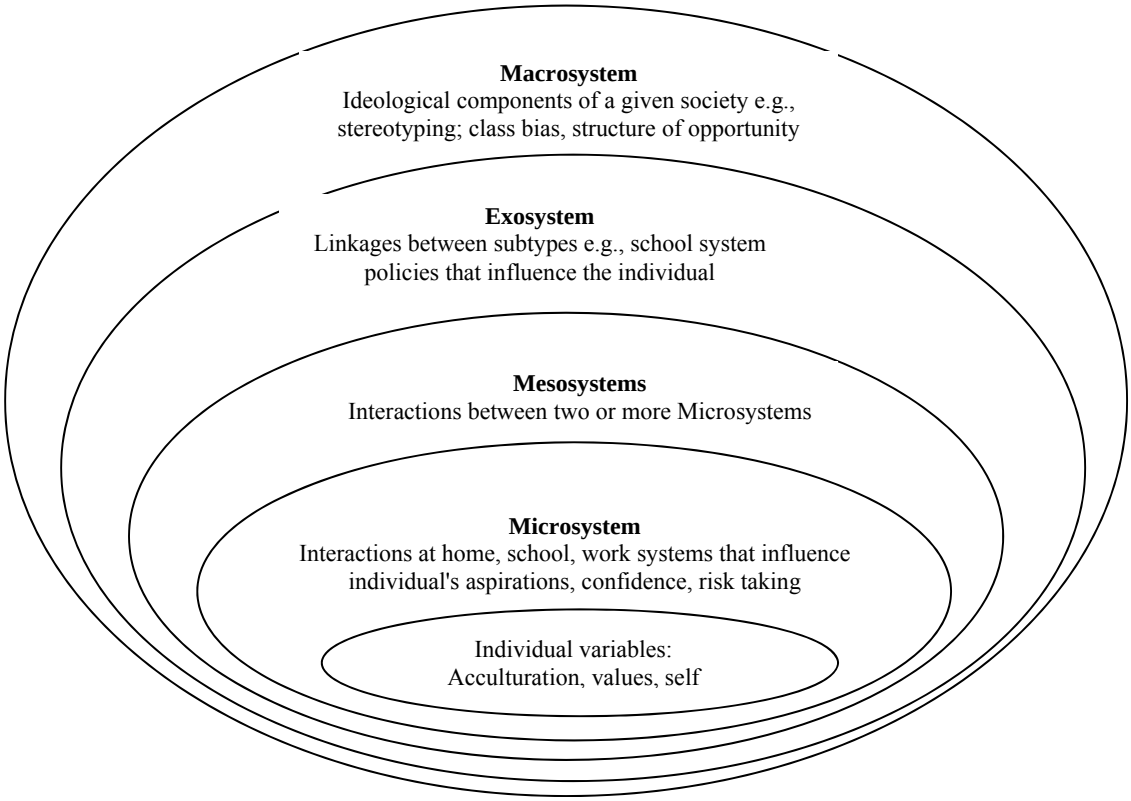

FIGURE 1.BRONFENBRENNER'S (1979) ECOLOGICAL MODEL

II. 8. Shortcomings within the literature

Some remaining caveats in the studies reviewed are indicated in this section.

II. 8.1. Social networks

The literature raises certain issues that social network models have yet to address in meaningful ways. Most social network economic models assume that networks are created by

uncoordinated actions of individuals or relationships are exogenously given (Jackson, 2007; Calvó-Armengol, 2004; Fafchamps and Lund, 2003; Genicot and Ray, 2003). In either case these models can't tell us if the job-related information that is exchanged in the networks is dependent on individual members within the network and individual idiosyncrasies. It is widely believed that the strength of a relationship is determined by number of individuals that make up the network (Wasserman and Faust, 1994). However, there are very few studies demonstrating how this factor works across different ethnicities (Jackson, 2007). The initial approach to a network study commonly used in the literature is that social networks function as a conduit of information for all individuals that are present in the network and that everyone is connected. However, there are some contradictions with some studies suggesting that not everyone is connected to everyone (Calvó-Armengol, 2004).

The economics field has long been more interested in answering the question related to why networks exist versus how networks work (Jackson, 2007). However, even though the economics field claims to ask the why question, the quantity of empirical studies assessing why certain networks form and their impacts to the network members and the society at large are still limited.

The literature mentions that most issues related to social networks depend on the context (Granovetter, 1983, 1973; Portes and Sensenbrenner, 1993). There are few qualitative and almost no quantitative studies explicitly modeling the impact of culture and context of reception on well-being. Therefore, the role of social networks in acquiring, disseminating, and using information related to a job is not clear cut and there still no consensus as to why certain ethnic groups use informal methods, such as social networks, more than others (Loury and Ioannides, 2005). This issue extends to the types of jobs and the earnings that individuals get as a result of their contacts, which vary widely from group to group. Empirical examples assessing these issues exist in the literature. However, the literature does give a convincing argument why that happens.

II. 8.2. Well-being

Well-being assessment is inherently subjective. This subjectivity creates many skeptics in relation to the trustworthiness of the results. At the center of the contention, researchers point out that there are econometric issues that some studies assessing the impact of networks on well-being do not seem to contemplate (Durlauf and Fafchamps, 2003). For instance, most studies use OLS to assess the impact of social networks. However, there is a simultaneity problem that arises with the estimation of the network effects, due to the inability to control for correlated unobservable (or latent) variables present in the network. The resulting correlation could affect the ability of the researcher to assess the impact of the network on individuals effectively (Manski, 2000).

There is also the issue of the empirical method used to quantify the impact of one element towards the other. Measuring the impact of 'economic' well-being using a single proxy provides unreliable, results (Diener, *et al.,* 2002), which could compromise the conclusions derived from these empirical assessments (Wooldridge, 2008). This is because conceptually, well-being is a complex construct and cannot be reliably assessed by the use of a sole proxy (Diener *et al.,* 2002). Instead, research should strive to consider that these variables are 'latent' in nature and need a group of 'manifest' variables that could work as a proxy – and not a single one.

II. 8.3. Empirical social network assessment

The first method of estimating social capital econometrically, which creates an index of social capital, "requires strong and somewhat arbitrary assumptions about the weights for each variable in the aggregation" (Winters, *et al.,* 2002, p.7) This problem is best appreciated if it is considered that there are many forms of social capital that could be expressed in a social network such as linking capital, bonding capital, and bridging capital (Woolcock and Narayan, 2000a).

There are problems also with the second method of empirically measuring social capital mentioned above, which uses all manifest indicators of social capital directly into the equations as separate parameters. This method might lead into the problem of having too few degrees of freedom. Alternatively if these elements have some correlation with each other, as some researchers have shown, we might have a multi-colinearity problem (Woolcock and Narayan, 2000; Wooldridge, 2008). Additionally, Winters *et a*l. (2002) mention that if the amount of variables included in the equations are reduced, it is very difficult to know which variables best represent this construct and which ones should be excluded. In the third method, the issue of arbitrariness is still present when it comes to selecting which factors to study and what are their respective latent indicators. Additionally, the latent indicators, as determined by the structural equation modeling, are very subjective and require a considerable level of knowledge about the construct in order to give these results some meaning (Kline, 2004). Additionally, there is the issue of loss of variability, i.e., it is very difficult to know which type of social capital is mostly affecting the observed change in the dependent variable.

II. 9. Contribution to the literature and conclusion

II. 9.1. Contribution of this study to the literature

While one construct, well-being, has seen considerable development in its measurement, the other, social networks, still does not have good, consistent instruments to assess its impact on socio-economic measures.

This study contributes to the literature by first creating an economic model that incorporates current concepts of social networks as an additional explanatory variable needed to understand the dynamics of well-being of Latino immigrants in rural areas of Missouri. Second, it introduces the acculturation and context of reception variables that were not included in previous

quantitative or qualitative studies assessing the impact of social networks. This study creates a framework that could be used to assess the impact of social networks on other similar socio-economic characteristics of vulnerable people living in similar communities or under similar conditions elsewhere.

Empirically, this study proposes a different way to assess social networks and its impact on well-being. Most studies assume participation in a social group as automatic *usufruct.* Thus, these studies use one or the other and never both. In this study this assumption is relaxed and the impacts of participating and using social networks are assessed. Additionally, social networks are segregated by type: bonding, bridging, and linking variables – as postulated by the current literature – and each type's impact is assessed.

II. 9.2. Chapter conclusion

The literature review showed that subjective well-being is a growing field, and due to its complexity straddles various fields. Subjective well-being has been studied and indexes developed and tested for reliability and validity. An alternative approach to assess well-being, subjective well-being is introduced and one of the most common indexes used was explained: Personal Well-being Indicator. The index has high content validity and is highly reliable. Empirical studies show that, after a given threshold, well-being is not correlated with income. However, perceptions about the community and achievement have a very influential role on the level of well-being. In terms of social networks, the literature review showed that social capital is context specific, i.e. cannot be generalized. Most studies of social networks have conceptualized it as social capital following Granovetter's postulates of strong and weak ties. Lately, a third form of social capital, linking, which reflects relationship of power, has emerged. Empirically, social capital has been operationalized both as an index and as a single binary variable. The index approach has been criticized due to its ability to mask the variability of the

elements. Empirical studies showed that social capital affects expenditures, income generation, and informal insurance of the members of the network. The next chapter presents the data used, rationale for selection of variables, and descriptive statistics on selected variables used in the analysis.

CHAPTER III – Conceptual Framework

III. 1. Introduction

This chapter presents the theoretical approach used to assess the impact of social networks on well-being. The model is based on the sustainable livelihood strategies framework, which has as unit of analysis the household, and household heads as decision makers.

The chapter is organized as follows: section 2 consists of a brief background and supporting literature. Section 3 presents the theoretical model and section 4 concludes the chapter.

III. 2. Background

In this research, the sustainable livelihoods framework provides the overall theoretical basis used to specify the structural relationships between assets and livelihoods (Chambers and Conway, 1992; Ellis, 1992; Scoones, 1998). This framework is particularly suitable because it specifies the interrelationships between the behavior of households as dictated by resource endowments, and the contextual and institutional environment that influence options available to achieve livelihoods outcomes, which could be translated to maximizing utility. This framework hypothesizes that households' access and control over their resource endowment is affected by the community, local institutions, availability of public goods and local policies.

Ellis (2000, p. 7) defines livelihood as "the assets (natural, physical, human, financial and social capital), the activities and the access to these (mediated by institutions and social relations) that together determine the living gained by an individual or household". The living gained by an individual, or well-being, has been defined as "the ability of an individual to function" in a given community or society (Sen, 1985, p.189). These concepts relate to this research because in this

study the focus is on how institutions and social relations mediate in the ability of a householder to function in the different contexts of three communities in Missouri.

The assumption that markets always perform well in the coordination of societal activities has been challenged by household and new institutional economics (Furubotn and Richter, 2005; North, 1990; I. Scoones, 1998). These researchers propose that, in case of market failure, other institutions may arise to perform activities previously ascribed to markets. The imperfection in market functionality provides an economic rationale for the existence and formation of alternative institutions to provide the same functions as the market (North, 1992). These institutions are defined as the formal rules and informal social norms that coordinate the behavior of individuals and provide structure for social interactions or "the rules of the game" (North, 1992, *p.3*). In terms of sustainable livelihoods framework, institutions can be considered as resources that facilitate access to resources needed in livelihood strategy, termed facilitating capitals (Scoones, 1998). A social network is an example of such an institution that occasionally substitutes for the market in performing allocating and facilitating functions.

III. 2.1. Rationale for the selection of theoretical approaches

Generally, economic theory assesses issues related to producers, consumers, and labor supply by considering the behavior of each group separately (Deaton, 1997). For instance, producers are assumed to maximize profits with respect to inputs and subject to constraints dictated by input prices, factors of production and existing technology; consumers are thought to maximize utility of goods and services consumed as they are constrained by the prices of these goods and services, household characteristics and available income; workers are thought to maximize utility from income and time at home constrained by earned wages, time endowment and individual characteristics (Becker, 1991; Deaton, 1997).

Alternatively, sustainable livelihoods framework addresses most of these issues related to producers, workers, and consumers, simultaneously. This process is accomplished by using an analytical toolbox that draws from various disciplines. The framework links activities, assets, and sustainability focusing on how resources, such as labor and capitals, are accessed and allocated to achieve well-being, often considering both the environment and people. A household economics model analyzes how resources are allocated to production and consumption in order to maximize utility. A contribution by economists to the sustainable livelihoods empirical analysis has been the use of production function approach to specify economic models that could be used to assess the impact of assets on livelihoods' outcomes (Barrett and Reardon, 2000; Taylor and Yunez-Naude, 2000; Winters et al., 2002).

A formal economic approach that incorporates production, consumption and labor decisions in one model is the household-production approach proposed by Becker (Becker, 1965, 1981). Central to Becker's approach is the idea of intermediate outputs used to produce additional goods at home, Z-goods. That is, many inputs and outputs normally associated with providing direct utility are actually means to achieve the intended final objective and do not generate utility by themselves (Pitt, 1997). Together with time and other assets that an individual household may possess, these market goods are considered inputs in a production process that creates commodities, called Z-goods, which become arguments in a utility function that generates the final utility. For instance, the utility derived from food consumption is not in eating the meal but in the health benefits it provides, or as Ellis (1993, p. 126) states "is not carrot, potatoes, and beans which yield utility, but the vegetable soup made from them which possesses utility giving attributes". Even though Becker assumed that only those goods that couldn't be purchased in the market qualified as z-goods, Gronau (1977) states that z-goods could actually be substitutes, i.e., purchasing a meal in a restaurant vs. cooking at home.

Our contribution to the literature is to develop a specification that allows a more systematic assessment of relationships specified by sustainable livelihoods framework from an economics perspective. The working hypothesis is that the Z-goods approach helps researchers comprehend the impact of social networks on well-being, which also provides a link between utility and well-being, i.e., from microeconomics to sustainable livelihoods. Here social networks are divided into three main subtypes: bonding, bridging, and linking (Woolcock, 2001).

A household that starts with a large stock of close friends, good neighborly relations, and a sizeable family in the region will have substantial bonding capital as compared to those who do not. Likewise, an individual that has many acquaintances, such as associates and colleagues (of work or in school) and good contact with distant or 'just' friends in the community will be able to build up a good repertoire of bridging capital as compared to those who do not. Linking social capital is a vertical metaphor, that is, it connects social network members with individuals in a position of power. These are circles that are not easily penetrable. Therefore, being connected to powerful individual, assumed to be public representative, congressman, etc, helps an individual get access to institutions and resources that non-connected individuals cannot.

The model presented below originates from the formal household behavior model originally developed by Becker (1965; 1981) and subsequently further developed by other researchers, especially Thomas's rural household production model (Thomas, 1997). These models have since been used in the study of the demand for health goods by households in rural as well as urban areas (Pitt, 1997; Thomas, 1997) and technology adoption by farm households (Fernandez-Cornejo, Hendricks, Mishra, and USDA, 2005).

III. 3. Economic (Formal) Model

The framework for livelihood analysis suggests that households allocate their resources according to different strategies in order to achieve a specific outcome. The model being described below follow the same principle. The model assumes that household heads are decision makers who act within the environment created by their social networks. The framework includes the specific context of the regions where Latinos live. The Latino immigrant householder's set of cultural values are elements of the model. The model assumes also that financial or economic capital is fungible in household decision making, because it can be used for productive activities as well as for emergencies. Additionally, the model assumes that this population has high levels of asymmetry in accessing local institutions, which may affect how they construct their household portfolio of activities from existing and acquired assets, and in turn affect well-being. The formal representation follows Thomas (1997).

Formally, in order to simplify the analysis, household well-being, W_H, is a function of the head of the household's utility function. The utility function will be a function of a vector of aggregate consumption,C, a vector of home produced goods, Z, and household specific endowments,D, and the unobserved variability,ϑ. This utility function is presented in equation *(III.1)*.

$$(III.1)\ W_H = U(C, Z: D, \vartheta)$$

Home produced goods, Z, are a function of a vector of market goods, X, social network use, k_s, time used to produce z-good, l_Z, other household endowments, D, and an unobserved variability,τ; this is presented in *(III.2)*. Social networks enter the equation indirectly and directly. First, it enters indirectly through the acquisition of information necessary to purchase market goods, X, used in the production of z-goods. Secondly, it enters the equation directly by providing

an alternative method of producing the z-good. For instance, some households may outsource the production of the z-good to an acquaintance (cooking meals while they are at work or raising their children in some other community while they are working here):

$$(III.2)\ Z = Z[X(k_s), k_s, l_Z : D, \tau]$$

The difference between *X* and *C* goods is that *C* goods are goods that don't need or use less social networks resources in order to be acquired, processed, and consumed. The *X-type* goods are thought to benefit more from social networks and might provide indirect utility to the householder through the z-good. In relation to the constraints, the total time available for the household, L, is a function of time devoted to labor market, l_w, and time devoted to the production of home good, l_Z. Given the nature of the z-good's production, it is assumed here that households will also use part of the time to produce z-goods for social network use. Thus, equation (*III.3*):

$$(III.3)\ l_w + l_Z \leq L$$

Likewise, the household will have a cash income constraint. In equation (*III.4*) wl_w represents earned wage income from the labor market; A represents transfers or non-labor income that households are able to get; p_C is the price of each good in the consumption vector C; p_X is the price of each good in the vector of market goods X used to produce home goods Z:

$$(III.4)\ I = A + wl_w = p_C C + p_X X(k_s)$$

Central to the conceptual framework is the idea that social networks help households access resources that make their lives easier in the communities in which they choose to live. Throughout this exposition, the main idea is that one way that social network use affect household well-being is through the production of z-goods.

Now, there are many forms that a social network can help households access or achieve their goals, which will end up improving well-being. For example, nutrition has been considered an important part of "producing" health by a household (Pitt, 1997; Becker, 1991). In the quest of having a healthier family, a householder may need to purchase the necessary inputs that are affordable. However, if the householder does not possess the necessary information as to where to acquire these affordable inputs, a large amount of income might be spent on inputs that have the same quality but sold in different areas/shops at higher prices.

A house is not necessarily a z-good per se (unless built by the owner), but a home is. The distinction being made here is between a physical structure (house) and a psychological status of refuge, comfort, rest and protection (home). Household's contacts in the community may provide information about affordable renting properties. Consequently, these people will be better off than those that have no contact in the community, who might end up renting a house at high rates and possibly in bad neighborhoods. Children's education is also considered a z-good given that is produced both at home, by the parents, and other willing participators, such as teachers, in a school establishment (Becker, 1991). Thus, accessing information about the location of good schools for kids is a plus. Summarizing, adherence to these networks will help decrease search costs, improve access to necessary information, and decrease transportation costs. Essentially, it is hypothesized here that social networks help reduce transaction costs in multiple areas that influence well-being.

Small rural communities are difficult for householders that have no personal cars. Thus, being able to get rides to the supermarket and having as much time to shop as needed is a very important asset provided by the network. This allows households to do comparison shopping and thus saving money while acquiring high quality goods. The end result is improved well-being of those households that have no means on their own, but rely on the network to get to the market. This helps them save income given that they would not be buying in a hurry or paying to get rides

to the supermarkets. Additionally, social networks allow individuals to help each other, especially immigrant members, in paying miscellaneous bills by providing a gift or the direct provision of temporary loans. This "soft loan" is repaid when these households are able to pay their bills for themselves – all without any interest.

Therefore, it is reasonable to assume that inputs, *X*, used to produce the home good, Z, will be a function of social capital that a household has, $X(k_s)$. Thus, the household maximization problem will be expressed thus:

$$(III.5)\ \mathcal{L} = U\{C, Z[X(k_s), k_s, l_Z; D, \tau]: D, \vartheta\} - \lambda[p_C C + p_X X(k_s) - A - w l_w] - \varphi(l_w + l_Z - L)$$

The Kuhn-Tucker First Order Conditions (FOCs) necessary to derive the optimality conditions are obtained from the structured Lagrangian expression, presented (*III.5*). In these equations, λ and φ are the Lagrange multipliers. Maximizing the Lagrangian over the choice variables yields the following FOCs:

$$(III.6a)\ \frac{\partial \mathcal{L}}{\partial C} = U_C - \lambda p_C \leq 0 \qquad (III.6b)\ C^* \geq 0$$

$$(III.7a)\ \frac{\partial \mathcal{L}}{\partial l_Z} = U_Z \frac{\partial Z(\cdot)}{\partial l_Z} - \varphi \leq 0 \qquad (III.b)\ l_t^* \geq 0$$

$$(III..8a)\ \frac{\partial \mathcal{L}}{\partial X} = U_Z \frac{\partial Z(\cdot)}{\partial X} - \lambda p_X \leq 0 \qquad (III.8b) X^* \geq 0$$

$$(III.9a)\ \frac{\partial \mathcal{L}}{\partial l_w} = \lambda w - \varphi \leq 0 \qquad (III.9b) {l_w}^* \geq 0$$

$$(III.10a)\ \frac{\partial \mathcal{L}}{\partial k_s} = \left[\left(U_Z \frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s} + U_Z \frac{\partial Z(\cdot)}{\partial k_s}\right] - \lambda\left(p_X \frac{dX}{dk_s}\right) \leq 0 \qquad (III.10b) {k_s}^* \geq 0$$

$$(III.11a)\ \lambda[p_C C + p_X X(k_s) - A - w l_w] = 0 \qquad (III.11b) \lambda^* \geq 0$$

In the equation presented above the $U_{\boldsymbol{Z}}$, and $U_{\boldsymbol{C}}$, represent the partial derivatives of the utility function with respect to home good, and aggregate consumption respectively. Here, it is assumed that households have positive levels of consumption,$\boldsymbol{C}$, input utilization, *X*, and social networks use, $\mathbf{k_s}$. Thus, the equations *(III.6a), (III.7a), (III.8a), (III.9a),* and *(III.10a)* are going to hold with equality; the conditions *(III.6b), (III.7b), (III.8b), (III.9b), (III.10b)* and *(III.11b)* represent the optimal levels of these variables.

From the FOCs derived above, optimal demand functions could be derived, which depend on the price of goods, wages, alternative income, social networks, and household characteristics. Thus, using vector notation, these demand conditions are:

$$(III.12a)\ \boldsymbol{C} = f(w, p_C, A, k_s{:}\, D, \gamma)$$

$$(III.12b)\ \boldsymbol{X} = f(w, p_X, A, k_s{:}\, D, \gamma)$$

In these demand functions, γ represents the new stochastic term. Substituting these demand functions into the income constraint described in the equation *(VI.4)*, which is presented above, the following full or maximum household income could be specified as:

$$(III.13)\ \boldsymbol{Y}^* = A - p_i f(w, p_C, p_X, A, k_s{:}\, D, \gamma) + w l_w \qquad i = \boldsymbol{C}, \boldsymbol{X}$$

Using this expression and substituting it in *(IV.12)* new demand functions could be expressed as follows:

$$(III.4a)\ \boldsymbol{C}^* = f(w, p_C, Y^*, k_s{:}\, D, \gamma)$$

$$(III.14b)\ \boldsymbol{X}^* = f(w, p_X, Y^*, k_s{:}\, D, \gamma)$$

The reduced form expression is derived by solving simultaneously the necessary FOCs together with the maximum household income presented in equation *(III.13)*. Thus, the reduced form for total well-being could be represented as follows:

The nature of the variables under analysis and the data used for this study make it very hard to derive an explicit functional form that could correctly explain the relationship described in the discussion above. In this case, the implicit function theorem could be used (Dowling, 2000; Fernandez-Cornejo et al., 2005; Wainwright and Chiang, 2004). The theorem is designed to derive solvability of non-linear equations from solvability of linearized equations (Dowling, 2000).

$$(III.15)\ W^* = g(w, p_x, p_c, Y^*, L, k_s : D, \gamma)$$

From this theorem, if a function, such as *G* in this case, has continuous partial derivatives and if the partial derivative of W^* is nonzero, then there exists an *m*-dimensional neighborhood of independent variables in which W^* is an implicitly defined function of the independent variables in the form of (*III.*15) (Wainwright and Chiang, 2004). Basically, the equation (*III.15*) indicates that optimal household well-being is a function of income in the form of wages, the prices of inputs for home-produced goods as well as the prices of consumption goods, the maximum household income, leisure, social networks, other household characteristics and stochastic disturbance. The decisions to produce the home good and consume are made simultaneously. However, assuming that the household takes prices as fixed and that it maximizes utility subject to full-income, and uses home good production function constraints in order to maximize utility, it is possible to model the choices made as recursive (Strauss, 1986). In this case, the arguments used to instrument the above equation will also include exogenous variables that affect household's access to resources that are not provided in their social networks.

In relation to social networks use, and impact on well-being, equation (*III.*16a) depicts the optimality condition whereby the term in the first bracket, is the total derivative dZ/dk_s. In order to derive the equilibria of household investment in social networks, equations (*III.*7a), (*III.*9a), and (*III.*10a) are used. Solving these equations we will have the following expression:[2]

$$(VI.16)\ w\left[\left(U_Z\frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s}+U_Z\frac{\partial Z(\cdot)}{\partial k_s}\right]\geq p_X\left[U_Z\left(\frac{\partial Z(\cdot)}{\partial l_Z}\right)\left(\frac{dX}{dk_s}\right)\right]$$

In equation (*VI.*16), the first term represents the marginal benefit and the second term represents the marginal cost of social networks to the householder. The marginal benefit is in relation to how social networks influence the production of home goods. That is, the householder values the production of home goods at the wage rate in the labor market. For the marginal cost of social capital, the household values the cost of acquiring the inputs for the production of home goods at their price in the market. The price that a given household pays for the inputs used in home production will be influenced by the information it gets from its social network, as elaborated earlier. The expression holds with inequality because it is assumed that social network use is non-negative (i.e., it might be zero). The cost of home goods is valued at the marginal value of leisure since home goods are produced at home; the householder will assess the utility of producing the z-good vs. leisure.

Social networks are conceptualized as a choice by the householder. Under the relationship presented in equation (*III.*16), the equilibrium condition is achieved when marginal benefit is higher or equal to marginal cost. If the marginal cost is higher than marginal benefit, then the householder might either (a) strategically reduce investments and reliance on social networks that are not providing many benefits, given that these are indirectly increasing costs or

[2] Please see the appendix to this chapter for complete derivation of this expression

(b) increase investments in the area/contacts that promote benefits from social networks, thus raising the benefits side of the relationships.

In order to assess the impact of social networks on well-being, it is necessary to assess the impact of social networks on utility, i.e. $\partial U/\partial k_s$. However, social networks do not affect utility directly, they enter into the utility estimations indirectly through the home produced goods, Z. Thus the effect of social networks should be seen through $\partial U/\partial Z(\cdot)$. Using $(III.10a)$ in order to determine the impact of social networks on household well-being and assuming that all households will have at least some form of social network usage making the expression a strict equality, we have:

$$(III.17a)\left[\left(\frac{\partial U}{\partial Z(\cdot)}\frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s}+\frac{\partial U}{\partial Z(\cdot)}\frac{\partial Z}{\partial k_s}\right]-\lambda\left(p_X\frac{dX}{dk_s}\right)=0$$

From (A.V.2), $\lambda=[U_Z(\partial Z(\cdot)/\partial l_Z)]/w$, then we have:[3]

$$(III.17b)\ U_Z\left[\left(\frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s}+\frac{\partial Z(\cdot)}{\partial k_s}\right]-\frac{U_Z(\partial Z(\cdot)/\partial l_Z)}{w}\left(p_X\frac{dX}{dk_s}\right)=0$$

For ease of representation, let $a=\left(\frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s}$, $b=\frac{\partial Z(\cdot)}{\partial k_s}$, and $c=(\partial Z(\cdot)/\partial l_Z)$. Using this notation we have the following:

$$(III.17c)\ U_Z(a+b)-\frac{U_Z}{w}c[p_X(dX/dk_s)]=0$$

Solving for U_Z will lead to:[4]

$$(III.17d)\ U_Z=\frac{c[p_X(dX/dk_s)]-wb}{a}$$

[3] Please see the appendix to this chapter below
[4] Please see the appendix to this chapter for a full derivation

Substituting, leads to:

$$(III.17e)\ U_Z = \frac{(\partial Z/\partial l_Z)[p_X(dX/dk_s)] - w(\partial Z/\partial k_s)}{(\partial Z/\partial X)(dX/dk_s)}$$

Following the properties of the production function, all arguments in the equation are positive. However, the overall result of equation (17e) is ambiguous. The presence of input prices on one side and the market wages on another side implies that the householder assess the social network impact in terms of input prices and market wages. If the second term on the numerator is higher than the first, the numerator becomes negative, thus the overall effect is also negative. This implies that if wages are high enough, home production becomes less valuable than investing this time in the labor market. This will make the householder to invest more time in the labor market and less on home production. Alternatively, if the first term is higher than the second term then home production and substantial social network investment aimed at increasing this activity becomes very attractive to the householder. This suggests that investing in social networks aimed at increasing home production actually increases utility of the householder.

In relation to the denominator, both terms are expected to be positive. That is, using the production function properties of the home-good, as the quantity of the input used to produce z-good increases so does utility. However, as mentioned before, the overall sign of the expression is determined by the magnitudes of the arguments in the numerator.

III. 4. Chapter conclusion

This chapter was devoted to the development of the theoretical model used to explain the relationship between well-being and social networks as well as other socio-economic, demographic and institutional variables. In development of the theoretical model, the overall framework used was the sustainable livelihoods concept as presented in economic development

literature. The formal development of the model relied heavily on Becker's (1981) theory of household behavior and its subsequent modifications by later authors such as Thomas (1997), and Cornejo *et al.*,(2005). This model is estimated empirically in chapter VII. The next chapter presents the data used in this study.

APPENDIX III.1 – A mathematical note

Equilibrium conditions:

The optimal household investment into the social networks can be illustrated through the use of equations (*III.*7a), (*III.*9a), and then (*III.*10a). Throughout the derivations, it is assumed that $l_Z > 0$ and $w > 0$. Thus we have:

From (9a):

$$(A.III.1)\ \lambda w - \varphi \Rightarrow \lambda w = \varphi$$

From (7a):

$$(A.III.2)\ U_Z \frac{\partial Z(\cdot)}{\partial l_Z} - \ \varphi \Rightarrow U_Z \frac{\partial Z(\cdot)}{\partial l_Z} = \varphi \Rightarrow U_Z \frac{\partial Z(\cdot)}{\partial l_Z} = \lambda w \Rightarrow \frac{U_Z(\partial Z(\cdot)/\partial l_Z)}{w} = \lambda$$

From (10a):

$$(A.III.3)\ \left[\left(U_Z \frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s} + U_Z \frac{\partial Z(\cdot)}{\partial k_s}\right] - \ \lambda\left(p_X \frac{dX}{dk_s}\right) \leq 0$$

$$(A.III.4)\ \left[\left(U_Z \frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s} + U_Z \frac{\partial Z(\cdot)}{\partial k_s}\right] \leq \frac{U_Z(\partial Z(\cdot)/\partial l_Z)}{w}\left(p_X \frac{dX}{dk_s}\right)$$

$$(A.III.5)\ w\left[\left(U_Z \frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s} + U_Z \frac{\partial Z(\cdot)}{\partial k_s}\right] \leq p_X\left[U_Z\left(\frac{\partial Z(\cdot)}{\partial l_Z}\right)\left(\frac{dX}{dk_s}\right)\right]$$

Sign determination of the effect of $\boldsymbol{k_s}$

$$(A.III.6)\left[\left(\frac{\partial U}{\partial Z(\cdot)}\frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s} + \frac{\partial U}{\partial Z(\cdot)}\frac{\partial Z}{\partial k_s}\right] - \ \lambda\left(p_X \frac{dX}{dk_s}\right) = 0$$

From *(A. III..2)* $= \frac{U_Z(\partial Z(\cdot)/\partial l_Z)}{w}$, then we have:

$$(A.III.7)\ U_Z\left[\left(\frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s} + \frac{\partial Z(\cdot)}{\partial k_s}\right] - \ \frac{U_Z(\partial Z(\cdot)/\partial l_Z)}{w}\left(p_X \frac{dX}{dk_s}\right) = 0$$

For ease of representation, let $a = \left(\frac{\partial Z(\cdot)}{\partial X}\right)\frac{dX}{dk_s}$, $b = \frac{\partial Z(\cdot)}{\partial k_s}$, and $c = (\partial Z(\cdot)/\partial l_Z)$. Using this notation we will have the following:

$$(A.III.8)\ U_Z(a+b) - \ \frac{U_Z}{w}c[p_X(dX/dk_s)] = 0$$

Solving for U_Z will lead to:

$(A.III.9)\ U_Z a + U_Z b = (U_Z c/w)[p_X(dX/dk_s)]$

$(A.III.10)\ U_Z a + b = (U_Z c/w)[p_X(dX/dk_s)]/U_Z$

$(A.III.11)\ b = c/w\ [p_X(dX/dk_s)] - U_Z a$

$(A.III.12)\ wb = c[p_X(dX/dk_s)] - U_Z a$

$(A.III.13)\ U_Z a + wb = c[p_X(dX/dk_s)]$

$(A.III.14)\ U_Z a = c[p_X(dX/dk_s)] - wb$

$$(A.III.15)\ U_Z = \frac{c[p_X(dX/dk_s)] - wb}{a}$$

Substituting, $(A.III.15)$ leads to:

$$(A.III.16)\ U_Z = \frac{(\partial Z/\partial l_Z)[p_X(dX/dk_s)] - w(\partial Z/\partial k_s)}{(\partial Z/\partial X)(dX/dk_s)}$$

CHAPTER IV – The Data

IV. 1. Background and selection criteria for the study area

Three Missouri rural regions were selected for the study based on the pull and push factors that influence immigration of Latinos. These communities have invested heavily in economic development programs, especially in agribusiness and hospitality industries, which are well known to attract low skilled labor. Each community has placed emphasis on a specific type of industry. This industrial specificity was used to select the regions included. For instance, region A has mainly poultry processing, Northern region has pork processing and Southern region has tourism. These communities are located in different geographical areas: region A in Pettis County in mid Missouri, region B in Sullivan County in the northern part of the state of Missouri, and region C in Taney County in the Southern part of the State of Missouri. Due to confidentiality reasons these areas are going to be referred hereafter only as region A, region B, region C.

TABLE 1. CHARACTERISTICS OF THE COMMUNITIES SURVEYED

Region	Population	% Hispanic	Unemploy. Rate	Main employer
A	20,196	5.6	4%	Tyson poultry processing; retail and sales sector, restaurants.
B	1,863	22	8%	Farmland Pork processing factory
C	6,050	4	4%	Hotels, restaurants, and tourism related

A preliminary demographic assessment was taken from the Census 2000 data in order to create the baseline to be used for the survey. These characteristics are presented in table 1. The unemployment data refers to the period of July, 2008.

IV. 2. The data for the study

An interviewer-administered survey was carried out between fall of 2008 and winter of 2009 in order to collect data from the target population using a close-ended questions survey.

This instrument is included in appendix A. The process of developing the survey instrument started with qualitative and quantitative exploratory work in the form of focus groups, photovoice and case studies. The design process, from conception to data collection was subdivided in three parts, which are described below.

IV. 2.1. Preliminary assessment and qualitative data collection

The preliminary assessment of the community and the subsequent data collection was undertaken in two phases. In the first part, qualitative interviews and discussions with individuals were conducted in the three selected communities. These discussions, conducted in the form of focus groups, helped identify Latinos' perceptions about well-being, context of reception, and the impact of social networks and local institutions in their daily lives. In each community, focus groups were separated by gender. The gender separation was done in accordance to the sensitive nature of the topics being raised and also acknowledging the cultural capital of Latinos.

In the second part of the first phase, case studies of selected members of the community were carried out. The objective of these case studies was to narrow down the topics to a manageable number of important ones that could be used to fine tune the survey instrument. The format of the case studies was the following: three females and three males in each community, for a total of eighteen case studies. In these case studies an effort was made to include representative members of the community: highly educated, low educated, business persons, factory workers, and the unemployed.

The second phase was reserved for data collection process using the survey instrument developed as a result of the qualitative interviews carried out in the first phase. In order to better reflect the issues raised by the community and collect the data necessary for the study, the survey instrument was built in modules. The modules were rearranged to have seamless continuity

between sections while facilitating the interviewer's work. The questionnaire modules and its design are explained next.

IV. 2.2. The survey instrument

The survey instrument consisted of ninety four questions subdivided into five main modules. Section 1 (Q1 to Q7) collected socio-demographic data. Section 2 (Q8 to Q27), collected household activities and decision making data. Section 3 (Q28, 29, 29(a) and Q29(b)) collected data related to acculturation (this question had 24 statements) and context of reception (this question had 27 statements), satisfaction with life (had five statements) and cultural capital (had 7 statements). Section 4 (Q30 to Q68) focused on immigration, employment, and remittances. Finally, section 5 (Q69 to Q95) was focused at learning about social capital and institutional support in the community. All participants were informed of the objective of the study and the survey was conducted in Spanish due to language barriers.

Section 1 collected socio-demographic data necessary to establish the identity of the participant. Besides the age, gender and marital status, questions about self-identified cultural group and race were also included in this section. And finally, participant's origin was asked.

Section 2 collected data on household activities and decision making. Specifically, this section collected data about members of the household, their language skill and educational levels. It also collected data on physical housing characteristics such as type of housing, its estimated value, rental rates, mortgage, strategies to pay rent, obstacles to acquire housing, household expenditures and emergencies as well as household properties such as cars. Finally, a Personal Well-being Index (PWI) scale aimed at assessing the satisfaction with life concluded the section. With the exception of the satisfaction with life scale, all questions were created specifically for this study. The satisfaction with life module's construct validity has been proven

in the field of behavioral economics and is used as a standard instrument to assess well-being or happiness (Frey and Stutzer, 2002).

Section 3 collected data on Latinos' acculturation and context of reception. In order to properly achieve its objectives, this section was subdivided into three subsections: acculturation, climate and context of reception, and identity. Acculturation was assessed using the Bidimensional Acculturation Scale for Hispanics (Mar\'ın and Gamba, 1996). This scale is comprised of 24 statements graded on a scale of 1 to 4. The climate and context of reception were assessed using a custom made scale, which was developed by adapting indicators used to create scales for other measures. These measures were: (a) students' perceptions of the academic environment scale and (b) acculturative stress scale (Valdivia and Flores, *In review*). This *ad-hoc* scale consisted of a set of 27 questions/statements, graded on a scale of 1 (Strongly disagree) to 7 (strongly agree). This set had three dimensions: (a) socio-environmental (12 questions), (b) racial discrimination (8 questions), and (c) language pressures (7 questions). The final objective of this scale was to create a subjective picture of the Latino's perception of the community. The final subset of questions, six in total, aimed at assessing the level of cultural identity of the Latino with own culture. This set of questions comes from the reduced Multigroup Ethnic Identity Measure ([R-MEIM] Valdivia and Flores, *in review*).

Section 4 obtained data about immigration, current and past employment and frequency and quantities of remittances sent home. In order to create a certain level of rapport with the participant, questions about immigration were kept very simple and intentionally general. The next set of questions was designed to collect data necessary to create a labor history of the immigrant and also have an idea of their earnings. The earnings part was also designed to collect data on extra sources of income such as private business, government assistance and direct assistance from other sources. Individuals were asked the remittance frequency and quantities as well as the cost of sending income to their countries.

Section 5 collected data on social capital and the hypothetical impact of local institutions. This study's objectives guided the selection of questions asked. First, the *Saguaro Seminar* on social capital was used in order to obtain questions needed to assess voluntary involvement in the community (civic engagement, political awareness), club participation and social network involvement. Second, the World Bank effort on assessing the impact of social capital on various socio-economic areas contributed part of questions, especially the study done by Narayan and Pritchett in Tanzania (Narayan and Pritchett, 1999).

All parts of the survey instrument were tested in the field in late spring and early summer of 2008. All issues raised with the questionnaire were addressed and necessary modifications were introduced as needed prior to the start of the final survey process. There were 24 pilot tests done in the period of a month. The pilots were done in region A and were subdivided as follows: 3 women and 3 men of lower level of education and 3 women and 3 men with high level of education totaling 6 for each educational level. The purpose of this division of participants was to test their understanding of the survey instrument. Their feedback was incorporated in the instrument and a different set of testers were used to assess the new survey instrument, the same strategy was used to separate participants.

The survey process started in late fall 2008. The questionnaire was relatively long – it took an experienced interviewer around 40-60 minutes to administer. Thus, participants were awarded a gift certificate with a value of 10 dollars as an incentive to participate in the survey and help recruit additional participants for the survey. The offer of the gift certificate was justified to the participants as recognition of the value of their time and the gift certificate could be used in a large local retail store.

The project used mostly graduate students fluent in both English and Spanish as interviewers. They were transported from Columbia to the areas where the survey was to take

place. The main reason for selecting outside interviewers was to provide a trust level to the participants that their information was not going to became part of public domain in their community. All interviewers were trained on the proper interviewer techniques of vulnerable population as instructed by the Internal Review Board (IRB).

All participants were instructed on their rights. That is, participants were informed that they did not *have* answer any question that they felt uncomfortable with and that steps were taken to keep their participation anonymous, participants were also informed of the purposes of the survey, and most importantly, participants were told that the project obtained a Certificate of Confidentiality from the federal government that protected the information participants gave, and their identity. Interviewees were encouraged to provide feedback to researchers, and were also encouraged to seek further information to which the address of the principal investigator was given. All this information was printed and a copy, called the consent form, was given to the participant after the participant provided oral consent.

IV. 2.3. Data collection methods and sample frame development

Normally, the standard approach to surveys is the randomized design with or without replacement (Deaton, 1997). However, in some instances, the use of randomized design is not possible. Such was the case of the population under this study. This survey was designed to survey Latino immigrants living and working in rural areas, some of whom are "non-properly documented" immigrants, where there is no population census that identifies where they live.

Most Latino immigrants living in the rural areas fall under the 'hidden population' category (Heckathorn, 2002). The most indicated approach to survey this type of population is the snowballing technique. However, the snowballing is only effective as long as there are participants willing to refer others to participate. Therefore, this study used a combination of methods in order to develop the sample frame necessary for data collection. These approaches

may collectively fall under the general umbrella of the community-based participation strategy. More specifically, recruitment of participants initially took place through trusted organizations working with Latinos. Information about the research was shared in churches, organizations that serve minorities, and at forums. The snowballing technique was used heavily in the initial stages of the survey and was later complemented by targeted selection of locations where Latinos lived or worked in order to build a representative sample of the population, and key informant-guided participatory research (Parrado and Flippen, 2005). The population recruited into the sample was compared to the population described by the Census, and questions asked of key informants in the region to ensure that we were not missing key groups of people. Variations of this alternative method have been effectively used elsewhere in order to sample hard-to-reach populations (Massey *et al.,* 1987).

IV. 3. The sampling process

The survey process used a variety of methods in order to reach difficult to survey population. Regional specificity and general context of reception conditions surrounding the immigrant's livelihood forced the survey team to improvise in order to supplement the general sampling strategy designed to recruit participants. The general sampling was to identify Latino residences and then approach participants. The second and subsequent steps differed slightly as dictated by regional specificity. It is important to realize that the survey aimed at collecting data on Latinos 18 years and older. However, these participants are most of the time working during weekdays. This made it useless to visit these areas during weekdays. Additionally, the legal situation of many potential participants made the process of knocking on doors less effective because Latinos would simply ignore requests to open the door, thus the need to improvise.

For region A the proximity to Columbia made it possible to conduct frequent weekend and occasional weekday visits to interview participants. Initially, a targeted snowball approach was used. After exhausting the possibilities of the snowball approach, community leaders as well

as church officials were enlisted to help recruit participants. The research team made two presentations in the Catholic Church and another one in the Lutheran church to explain possible uses of research's results and made a case why more participants were need. Interviewers then proceeded to interview those interested and for those who could not stay appointments were made.

For region B, initially the team stayed in community for a whole week, mainly for two reasons: (a) distance to and from Columbia and (b) create a familiarity element in the community. The size of the community allowed interviewers to walk around the community, approach any Latinos and ask them to participate in the survey. Since the threshold numbers were not reached with the initial visit, subsequent visits, with lower duration periods (2-3 days), were made. In this region, the team also took advantage of a large soccer tournament of Latinos, held every Sunday, in order to recruit participants for the survey. Thereafter, subsequent visits to the region took place on Sundays where survey team members would stay on the soccer field and ask any Latino to participate in the survey. Previous visits allowed local Latinos to instantly recognize members of the team and be more willing to participate. These last visits were mostly daily visits: the team will leave early in the morning and return in the evening.

The travel time to region C was around 3 and half hours. This meant that daily travel was not practical. Thus, the survey team opted for an initial weeklong visit and subsequent long weekend stays in the community. The initial visit was facilitated by key informants and the Catholic Church, which made its facilities available as a neutral place for interviews. Most participants in this community had hectic schedules due to the fact that they are constantly working in various jobs during the high tourism season, and most of times only had time to meet with the survey team late in the afternoons. The proliferation of Christian churches in the community allowed the research team to convey the central message of the research and subsequently recruit participants for the research. The research team distributed flyers with contact numbers of the interview team and many participants scheduled interviews without being

approached by the key informants or the survey team members. The team also sought participants that were not church-going to address selection issues.

IV. 3.1. Data entry and cleaning

The data entry process started around mid-February 2009 and the database was built using the SPSS software. As surveys were completed, they were reviewed, corrected when necessary, and entered, The efficiency of the data entry specialist and the fidelity of the database to the survey instrument made the process of data entry relatively clean of mistakes and very fast.

The database and data cleaning process were done progressively. This process allowed for mistakes to be detected early. Periodic checks were made on questionnaires and entries. Statistics were run to check for outliers and odd entries. The purpose was to detect any inconsistencies, outliers, and mistakes. The data entry specialist also corrected minor mistakes made by interviewers, and annotated these in a ledger for future reference. This ledger can then be used, if need be, to change the entries to their original values or just to understand which transformations were done to the data. Additional cleaning of the data was done for consistency.

IV. 3.2. Constraints and strategies of the survey implementation

The data set was obtained via a questionnaire directly administered by an interviewer. This process introduces an interviewer bias (i.e., inexperienced interviewers leading participants to provide specific answers) and interviewee bias (i.e., providing answers that the participant thinks is what the interviewer wants to hear in spite of being discouraged to do so) into the answers. Additionally, there is the issue of memory recall, not every individual will be able to remember all things being asked in the interview – and the survey was quite long. These biases might be manifested in the form of measurement error (Wooldridge, 2008). In an interviewer

administered survey these biases are expected. In order to minimize these biases the interviewers were trained.

Additional constraints on the survey implementation were those normally found when surveying hidden population. Latinos are moving into areas that have had a mostly homogenous population. Besides being a minority group in most of these communities, there is also the issue of not being properly documented that the survey team had to learn how to manage. This was done by eliminating all similarities to immigration services, e.g. not arriving in a large van. The survey team did not force the participant to reveal his/her immigration status. Another factor to consider is the limited housing availability in most of these communities. In order to solve the housing problem, Latinos tend to rent houses or buy trailers and park them in few specific places in these communities. Immigrants not living in trailer parks are very hard to locate.

The precarious legal situation of some Latino immigrants force them to actively shun public exposure in order to keep their legal situation unknown to authorities or anybody representing a formal institution, making them hard to find for interviews. Thus this research did not use a randomized sampling design because using this process in such situations was not only futile but uneconomical and methodologically unsound (Parrado and Flippen, 2005; Heckathorn, 2002). This is because not every Latino in the population had an equal opportunity to be in the sample.

In order to address these limitations, modifications to the traditional survey approach were applied. Some of these approaches are mentioned above. Additional improvised mechanisms were also employed. For instance, in order to build a trust level with the community, the survey team spent weeks living in the community and speaking their language and participated in recreational and cultural activities organized by the local Latino community. This helped overcome some distrust issues created by a combination of tenuous legal situation and

hostile immigration environment. Also it should be considered that Latinos' cultural and human capital have a large impact on their understanding and processing of local customs, which in turn affects their willingness to participate in activities that have no clear direct impact on their lives, such as this survey. Therefore, much more effort needed to be made in order to convince Latinos to participate in the survey and that the study was actually worth their time.

IV. 4. Variables used in analyses

This section presents the rationale for the variables used in the next chapters, the estimations, and statistics.

IV. 4.1. Dependent variables

There are three dependent variables used in estimations in this study. The first dependent variable is the household well-being. The second dependent variable is the participation in social networks. The third dependent variable is a Latino's occupation.

IV. 4.1.1. Operational definition of well-being

Well-being is conceptualized as an unobserved variable, which is measured through indirect indicators. The Personal Well-being Index (PWI) measure used in this study combines both objective and subjective well-being measures. The PWI has been used to assess individuals' implicit standard of living in various settings and is gradually gaining wide use in well-being studies (Cummins, 2000; Frey and Stutzer, 2004). This is a scale formed by combining seven (7) different domains of satisfaction with life, with each domain rated on an 11-point Likert-like scale (0-10) that are averaged in order to create the index. The specific domains that comprise the measure are the following: (a) physical health, (b) personal safety, (c) personal achievement, (d) future safety, (e) mental health/religion, (f) community safety, and (g) personal wealth. It is

assumed here that well-being is best assessed by who is living the situation. Thus, it is our belief that the PWI does a better job in capturing household well-being as compared to other indicators. The questions that are used to develop this indicator in the survey are Q26 using sub-questions I to VII.

IV. 4.1.2. Operational definition of social networks

There are two types of social network variables used as dependent variables in this study. Both variables are not observed; are dummy variables created using a set of three different indicators. The first dependent variable got a value of one if the respondent indicated that he/she belonged to any type of social network and zero otherwise. Three questions asked about participation in social networks. These questions asked about participation in informal (conversational, friendship, and recreational), religious, and formal social networks respectively. These are questions 69, 70, 71, and 73 in the survey. This dependent variable is used in the first step (probit) of the Heckman procedure. No organization was given more weight than any other given that the objective was to get data on those who participate as compared to those who do not participate.

The second type of social network variable used in estimations is separated by the type of network: informal, formal, and religious social networks. The informal social networks included those Latinos that meet at various places to "just talk" about issues afflicting them or maybe to just reminisce about their country (Q69 and Q70). The formal network includes those organizations that individuals need to pay fees in order to be a member (Q73). And finally, the religious and or community networks are those pertaining churches, community advocacy groups, and similar organizations (Q71).

IV. 4.1.3. Operational definition of occupation

This is one of the two dependent variables used in chapter VI. The other dependent variable is the well-being variable defined above. Latinos were asked about their place of work and a database variable was created specifically for it. This variable was meant to a proxy for the skill level, since this was not asked. The occupations were defined using the codes defined by the bureau of labour, which are also used in the US Census. In order to make the analysis manageable, Latino immigrants were grouped into as few groups as possible. For instance, occupations such as slaughtering, cutting and packing meat were all grouped under the category of meat processing.

IV. 4.2. Independent variables used in the study

IV. 4.2.1. Social networks

This is the social network variable used in the analysis presented in chapter IV. This variable is developed using the social capital postulates separating the variable into three latent capitals: bonding, bridging, and linking. Each unobserved indicator uses more than one indicator variable in its specification. The variable[s] is exclusively specified as unobserved in the literature (Narayan and Pritchett, 1999; Woolcock, 2001). The same approach is followed here. The three types of social capital, bonding, bridging, and linking, are included separately in the analysis in order to understand the type that has more influence in well-being. Each was assessed by asking questions related to each concept.

The bonding social network construct was operationalized from responses to questions about their family connections in the community (Question 75d in the questionnaire)[5], and the existence of any close friends that have helped them in times of need (Q29a (L)). These were

[5] Hereafter references to the questionnaire (which is in appendix A) will be done in the following way: Q75a. Q stands for question.

mostly binary variables, included in the regression as such. Bridging social network construct was operationalized from questions asking individuals about their connections in the community related to "just friends" (Q70), workmates (Q78b), involvement in community works (Q81), and if they used friends in times of need, for transport, and job information. Linking social network construct was specified by assessing the level of involvement with contacts in position of power, was also captured by assessing the involvement in matters related to government and if they actually knew somebody (and made petitions) in local government (Q83 – 90).

Additionally, an attempt has been made to determine the extent to which there was an existing social network versus networks that were established as the individuals arrived. It is hypothesized that a Latino's use of networks is affected immensely if they already have contacts in the community to which they intend to migrate. This is assessed by asking Latinos if they had family and/or friends living in the region before moving into the community (Q76). Comparatively, those individuals that had no prior contact in the community will be considered as having created their own social networks.

IV. 4.2.2. Acculturation

The ability to effectively network, especially with the community is affected by how well immigrants acculturate in the community. Acculturation is defined as the ability of a newcomer to learn and be a willing participant in a local culture (J. W Berry, 1997; J. W Berry et al., 1989; J. M Hagan, 2004). In this study, acculturation was assessed using the bidimensional acculturation scale for Hispanics developed by Marin and Gamba (1996). The scale, which is made up of 24 English and Spanish language items, assessed using a 4-point Likert scale (1 = poorly and 4 = very well), creates Anglo and Latino subscores. The process to create these two dimensions of acculturation takes place by separating the indicators of the index into 12 Latino characteristics and 12 Anglo-American characteristics. These subscores are obtained by averaging English items (Anglo subscale) and the Spanish items (Latin subscale), the closer to 4 the higher the

acculturation level. It is expected that Latinos with high level of language acculturation will have lower use of social networks as compared to those who have lower levels of acculturation. This is because those with high levels of acculturation have the perception that they could succeed on their own in the community.

IV. 4.2.3. Climate

Climate refers to the context of reception existent in a specific community, which is the 'welcoming mat' or perceptions newcomers have about how the receiving community perceives them (Valdivia *et al.,* 2008). In contrast with previous studies, where climate was assessed using proxy indicators of climate such as racial profiling (Decker, 2004) in the local community (Valdivia *et al.,* 2008), this study uses subjective measures from the perspective of the immigrant. This allows the assessment of how perceptions from the individual affect their own sense of well-being. It is the immigrant who ultimately experiences the reception, and if negative, the immigrant has to cope or leave.

Climate is assessed through the use of an index (Q29(a)) assessing the community's welcoming attitude from the newcomer's perspective. This index is composed of 3 modules namely: socio-environmental and community perception (12 questions), racism and discrimination (7 questions), and language pressures (7questions). Each question in every module is scored using a scale that ranges from 1 (strongly disagree) to 7 (strongly agree) with 4 being neutral. Each module of the index is created by averaging across all questions from the specific module; a score of less than 4 indicates positive climate or context of reception.

The literature posits that the climate is inversely correlated with social network participation (Hagan, 2004). Thus, it is expected that immigrants in those areas where climate is perceived to be particularly hostile will tend to highly favor social networks and vice-versa. That is, immigrants will tend to participate more in social networks in order to dampen the effects of negative climate of the community towards them, also they will tend to rely more on social

networks to sustain or improve their well-being. They might also rely on different types of networks: less formal and more informal and religious-related ones.

IV. 4.2.4. Community influence

Social network has a very strong community dimension (Granovetter, 1973; Narayan and Pritchett, 1999; Portes, 1989). Social capital, according to Narayan and Pritchett (1999), is almost always enabled by the network. Therefore, for the study of participation in social networks, community characteristics are included. Following Rupasingha *et al.,* (2006), community influence was modeled as an index composed of median education level of the community, mean age over 25, income distribution and ethnic fractionalization variable. The following subsections present the empirical specification of the community influence variables in this study. Each indicator was given equal weight in the construction of the index.

IV. 4.2.4.1. Ethnic composition

Putnam (2000) argues that homogenous communities tend to have higher social capital and use it more effectively to achieve better livelihood outcomes as compared to heterogeneous ones. The most widely used measure of ethnic composition present in the literature is the ethno-linguistic fractionalization variable or ELF (Alesina *et al.*, 2003). ELF is defined as the "Herfindahl index of ethno-linguistic group shares, and reflect the probability that two randomly selected individuals from the population belonged to the same groups". Formally, ELF is derived as follows:

$$\text{ELF}_{rj} = 1 - \sum_{i} \left(S_{ij}\right)^2$$

where S_{ij} denotes the share of group i in community j; and is determined by:

$$S_{rj} = (group_r / tot\ pop)$$

which denotes the share of population self-identified as of group $r \in R$; and R = (*Whites, Blacks, Hispanics, Asian and Pacific Islander, American Indian, Other).*

IV. 4.2.4.2. Income distribution

Rupasingha *et al*. (2006) argue that beside the ethnic composition of the community, income distribution affects the effectiveness of social capital. They posit that higher income inequality in a community decreases the effectiveness of social networks on livelihood outcomes, such as well-being. Thus, in a community where income inequality is highly pronounced, social networks are likely to be of utmost importance for Latinos' well-being. Therefore, it should be expected that Latinos living in communities where income distribution is severely skewed will rely on bonding social networks for most of their well-being needs. There are several measures used to assess income inequality. The one used here is the ratio of the median of the household income of the interested population (in this case Latinos, from the survey) to the median household income of the community (Rupasingha *et al.*, 2006).

IV. 4.2.4.3. Educational level of the community

Researchers have argued that social networks are highly affected by goodwill, tolerance, and openness of the population. Putnam (2000) and Florida (2004) argue that these factors are highly correlated with average education of a given community. These authors posit that as the education of a given population rises, so does the population's willingness to help and connect with individuals that are not of the same group.

In the study of participation in social networks this variable is more likely to affect bridging and linking capitals than bonding, and it is also expected to be positively correlated with education. Thus, it should be expected that those communities that have higher levels of education will (a) have higher levels of bridging and linking social capital participation by

Latinos, and (b) higher levels of social capital impact on well-being. Comparatively, it should be expected that Latino immigrants, living in communities with high levels of average education, will have higher levels of well-being as compared to those living in communities with a relatively lower level of education. This variable will be measured by averaging the level of education people over 25 years of age in the community as reported by the census estimates.

IV. 4.2.4.4. Mean age of the community

This variable is obtained from the latest estimates of the Census Bureau population estimates. The literature mentions that age and social capital follow a life cycle pattern (Glaeser *et al.,* 2005).

IV. 4.2.5. Demographic characteristics

The demographic variables used in the estimations are the following: Age, gender, work status, and education level. All variables are directly taken from the survey responses.

For those that have low levels of Anglo-acculturation and high Latino acculturation levels, it is expected that social networks should still play a very important role in improving well-being no matter the age. For those individuals that cannot successfully navigate the society, as they get older it becomes increasingly difficult to take care of themselves. For these individuals, Latinos' cultural capital dictates that they may be taken care of by their extensive bonding network.

Married people tend to report higher levels of well-being (Frey and Stutzer, 2005). Gender has an indirect impact on well-being through social networks. That is, have higher use of social networks which increase their levels of well-being by proving moral and material support. For employment status, the literature posits that Latinos rely more on their social networks for

employment information that any other ethnic group (Ioannides and Loury, 2004). Thus, it is expected that there should be a positive relationship between employment and well-being. Research suggests that Latinos' human capital that is brought in (education and work experience) does not readily translate in the American society (Borjas, 2001). Therefore, it is expected that these will not be significant in determining the level of well-being of Latinos and they will rely even more heavily on social networks.

IV. 4.2.6. Mobility

Labor economics theory suggests that, under normal circumstances, mobility should improve livelihood conditions through its positive indirect effect on employment (Chiswick, 1999). That is, there is not much logic in leaving your current employment if that new employment, in a different place, does not pay better or provide better benefits. However, in the case of Latinos, their human capital is poorly translated to the US society thus they will move wherever a job appears should they lose the current one (Chiswick, 1979). A previous study of Latino immigrants shows that mobility has a negative effect on foreign-born Latinos' earnings (Valdivia *et al*., 2008a). Earnings are part of the instruments that are used to create PWI. Therefore, it is expected that higher levels of mobility might affect a Latino's level of well-being negatively due to its indirect effect on well-being. Mobility is measured by a question asking the number of times the respondent moved (Q35).

IV. 4.2.7. Income and transfers

In this study, income is assumed to be an instrument that households use to potentiate their well-being. It is assumed also that everyone in the household works towards a common goal, which is to create an environment conducive to well-being. Thus, household members who have income sources will either help the benevolent dictator – the household head – in the quest of

providing for the household or pool the income and let the head of the household make all decisions.[6] Either option has the same result given that the necessary activities are being done. Even though income is not synonymous with well-being, it has a very strong positive correlation, up to a given threshold (Easterly, 1999; Stutzer, 2004). Latino immigrants are usually not too far off from the threshold that income ceases to be an important component of well-being. Therefore, it should be expected that income will affect well-being positively.

Therefore, overall household income is used as an independent variable and measured directly by asking respondents to report their yearly incomes. Respondents were also asked to report on additional sources of income that they have. These alternative sources of income include: (a) government assistance (WIC, SSI, disability income, unemployment income), (b) income from NGOs, (c) income from community organizations, and (d) income from family and friends.

IV. 4.2.8. Residential or legal status

For foreign-born Latinos, residential status affects the ability to work, obtain government assistance, and in some extreme circumstances, ability to rent a home. These are some of the basic issues related to well-being for Latino immigrants created by their legal status. Previous studies have found that residential status affects earnings of Latino immigrants in the US (Borjas, 2001; Card, 2005; J. M Hagan, 1994; C. Valdivia et al., 2008). Considering our definition of well-being, this suggests that residential status has an indirect effect through income earnings and other elements that influence well-being.

For this study, residential status was assessed by asking one direct question (Q94). This question had options regarding citizenship and another any other condition besides legal

[6] The head of the household will be referred to hereafter as the *householder*.

residence. It is expected that well-being will be negatively affected by non-properly documented status. This is so because, besides not being able to find high paying jobs that provide benefits, Latinos that are not properly documented are in a state of constant worry of being deported. There are many consequences of this state of being. An obvious one is psychological, which is beyond the scope of this research. The other one is the need of not setting up 'roots', that is Latinos may make only temporary investments knowing that their stay will not last and this affects well-being.

IV. 4.2.9. Cultural capital and Length of residence

Cultural capital is thought to influence immigrants' perceptions about the host society (Portes and Rumbaut, 1996). This is subdivided in two parts: perceptions about the receiving society, which is captured by the acculturation variables, and internal perceptions or a householder's understanding of earning a livelihood, i.e., the correct way of living, which is molded by upbringing captured by issues that have to do with own culture. For instance, it has been reported that a Latino immigrant's concept of success is different than that of an Anglo-American's (Corinne Valdivia and Lisa Flores); it is even different to that of Latinos who were born in the US (Browning *et al*., 1985).

Thus, here it is hypothesized that the householder's cultural capital changes with the length of residence in the US. As the length of residence increases the individual's perception of the society in question also changes to the positive side, *all else equal*. So, it is expected that positive attitude, which comes from own upbringing, coupled with length of residence in the community may have a positive relationship with well-being. The assessment of cultural capital is done through the use of Multigroup Ethnic Identity Measure-Revised (Q29(b)) (Phinney and Ong, 2007). This is a 6-item construct intended to assess the level that a householder identifies with his/her culture. The items are assessed using a scale of 1 (strongly disagree) to 4 (strongly

agree). This instrument has been shown to have high internal consistency in assessing cultural capital. The length of residence is assessed directly.

IV. 4.2.10. Sources of information

This variable was created by asking Latinos where they got their information about the jobs that they currently have. Each source of information was coded as a dummy variable, that is, if a job was gotten as a result of information sourced from friends then this was classified as a friends' source of information and the variable was given a value of 1 otherwise it was given a value of zero. The process was repeated until all the information was obtained.

There were five sources of information considered in this study: (a) friends, (b) familial, (c) religious (or church-related), (d) employer, and (f) the media source of information. The media source of information was used as a default in the study. This decision was made because media could be considered impartial, anybody can access it and don't need to belong to any special type social network to get access to the information being disseminated by the media.

IV. 5. Descriptive statistics

Selected descriptive statistics of the sample used in the study are presented below. There two types of statistics presented below. The first type of statistics presents data on the variable of interest (also those variables used analysis) in relation to the whole sample. The second type of statistics presents data on the relevance and relationships of the latent variables created specifically for the purposes of this study. These statistics are useful for describing the basic features of the household data collected and the interpretation of the findings.

IV. 5.1. Sample size and response rates

This statistic is calculated as the number of people approached to participate in the survey divided by the number of people that actually participated. There were a total of 460 participants interviewed. The survey used the targeted selection of participant coupled with a snowballing method. Therefore, due to the nature of the sampling method, the refusal rate was not high. The table below presents the overall rate and the rate per region.

TABLE 2 RESPONSE RATES FOR THE HOUSEHOLD SURVEY PER REGION

Community	People		
	Approached	Accepted	Response Rate
Region A	226	154	68.14
Region B	183	152	83.06
Region C	201	154	76.62
Total	610	460	75.94

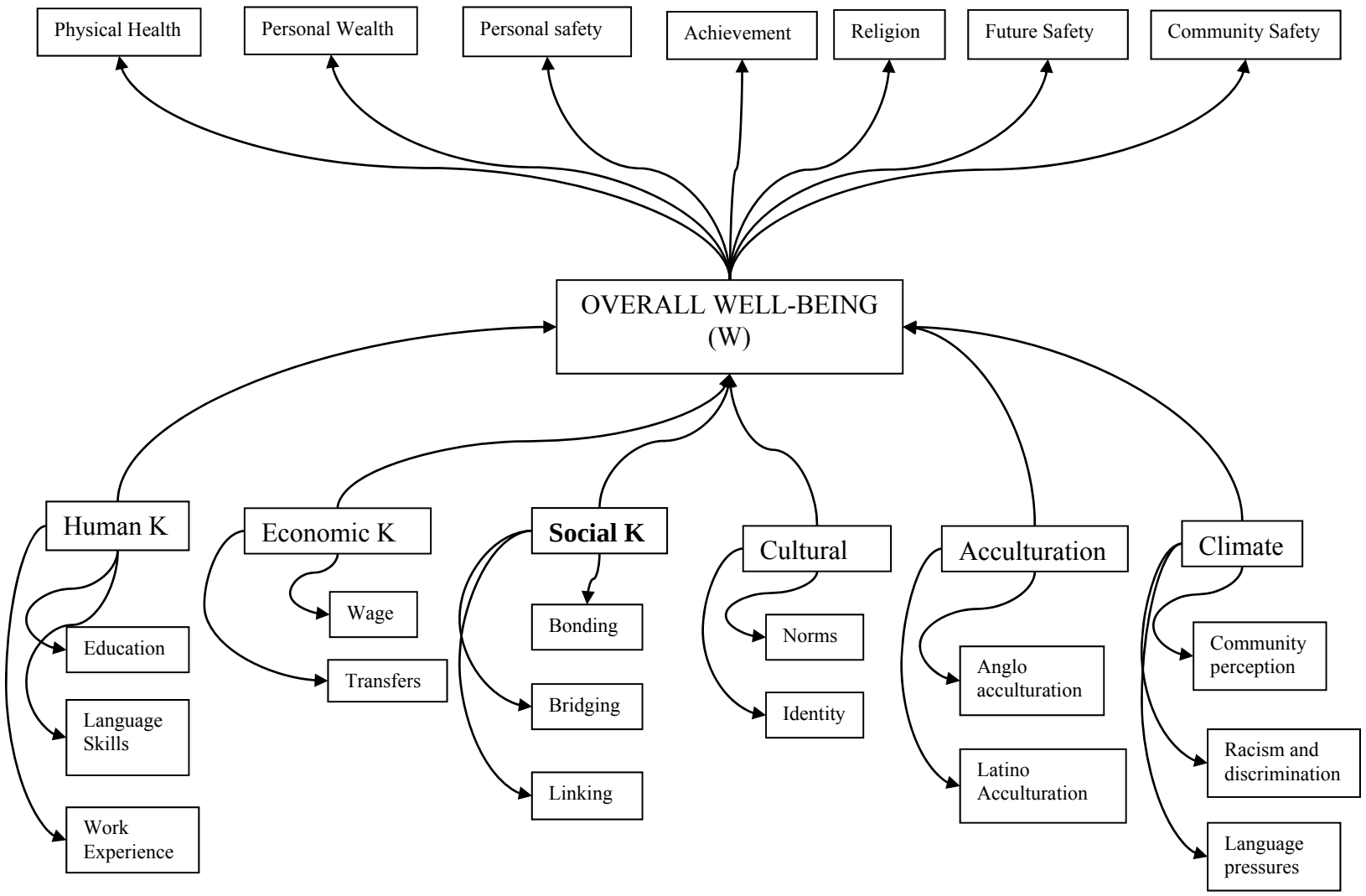

FIGURE 2. SCHEMATIC REPRESENTATION OF THE EMPIRICAL MODEL

IV. 5.2. Demographic characteristics

In this study, demographic characteristics are the following variables: age, gender, marital status, educational level, and English and Spanish language ability, work status, work experience, number of people in a household, female headed households, number of children in a household, and country of origin. In terms of gender, the overall distribution was 49.5 percent of the participants were male and 50.5 percent were females. In relation to the regions, region A had 48 percent males; region B had 51 percent males; and region C had 49 percent males. Overall, more than 50 percent of the participants had low levels of speaking (73.7%), reading (76%), and writing (82.8%) the English language. Table 3 presents the literacy levels of participants.

TABLE 3 EDUCATIONAL LEVEL PER REGION SURVEYED

Household member's educational level	Place of Interview						
	Count				Percent		
	Region A	Region B	Region C	Total	Region A	Region B	Region C
Without any formal education	11	16	2	29	7.2	10.7	1.3
Fourth grade or less	22	14	8	44	14.5	9.3	5.3
5th or 6th grade	26	33	21	80	17.1	22	14
7th or 8th grade	11	14	10	35	7.2	9.3	6.7
9th grade	7	15	14	36	4.6	10	9.3
10th grade	9	9	3	21	5.9	6	2
11th grade	6	6	7	19	3.9	4	4.7
12th grade w/diploma	10	8	20	38	6.6	5.3	13.3
high school graduate	25	16	36	77	16.4	10.7	24
1 or more yrs of college w/diploma	9	6	9	24	5.9	4	6
Associate degree	8	6	10	24	5.3	4	6.7
Bachelor's degree	6	6	9	21	3.9	4	6
Masters' degree	2	0	0	2	1.3	0	0
Professional degree	0	1	1	2	0	0.7	0.7

The mean age for the whole sample is 36 years and the maximum age is 80 years of age. It is worth remembering that due to the objectives of the study, the age limit was truncated at 18 and above. For region A, the mean age is 37.5 years and the maximum is 68 years. For region B,

the mean age is 32.6 years and the maximum age is 61 years. For region C, the mean age is 36.3 years and the maximum age is 80 years.

TABLE 4. AGE DISTRIBUTION PER REGION

Table IV.4.

Age group	Place of interview			Total
	Region A	Region B	Region C	
18-25	21	37	21	79
26-30	28	27	37	92
31-35	21	40	27	88
36-40	28	18	23	69
41-45	17	18	16	51
46-50	16	2	14	32
51-55	14	4	9	27
56-60	5	5	2	12
61 and +	4	1	5	10

Table 5 shows marital status distribution of participants. It could be seen that an overwhelming majority of Latinos surveyed in these communities are either living with a partner or are already married. One of the important things related to social networks is the householder's origin.

TABLE 5. MARITAL STATUS PER REGION SURVEYED

Marital Status	Place of Interview						
	Count				Percent		
	Region A	Region B	Region C	Total	Region A	Region B	Region C
Married	91	80	79	250	59.5	55.2	51.3
Living with a partner	15	29	38	82	9.8	20	24.7
Divorced	3	0	1	4	2	0	0.6
Widow or widower	2	1	1	4	1.3	0.7	0.6
Separated	9	3	4	16	5.9	2.1	2.6
Single	33	32	31	96	21.6	22.1	20.1

Table 6 shows the distribution of Latino people origin per region. The category of other Latin countries includes Cuba and Chile in region A; and includes Belize, Nicaragua and Peru in region C. Caution should be taken in assessing the results of table 6, this refers only to the place of birth.

TABLE 6 LATINOS COUNTRY OF ORIGIN PER REGION SURVEYED

Country of Origin	Place of Interview						
	Region A	Region B	Region C	Total	Region A	Region B	Region C
Mexico	110	94	107	311	71.4	61.8	70.4
El Salvador	21	16	26	63	13.6	10.5	17.1
Honduras	3	14	4	21	1.9	9.2	2.6
Guatemala	6	19	6	31	3.9	12.5	3.9
Other Latin countries	2	0	5	7	1.2	0	3.4
Puerto Rico	4	2	0	6	2.6	1.3	0
US	6	7	3	16	3.9	4.6	2
Venezuela	2	0	1	3	1.3	0	0.7

The place of birth is not the same as the last place where a Latino lived before coming to its present community – this is presented in table 7. The household survey was designed to consider only those Latinos that have continuously lived in the community as counting to the present length of residence. If, by any chance, an individual had a brief stay in community previously and returned later this was considered as a migration.

The overall mean length of residence of Latinos in the sample is 6 years of living in the community with the maximum being 28 years. The average stay per region varies. For region A, the average stay is 6.2 years; in region B the average length of stay in the community is 5.9 years; and in region C the average length of residence in the community is around 6.25 years. The majority of participants (72%) reported having a job. Region C reported the highest level of employed participants with 85 percent followed by region B with 73 percent and lastly region A with 58 percent of the household sampled working. The majority of participants work in an industry related to food processing in two regions, 69 percent in region A and 84 percent in region B; in region C the majority (43 %) work in the hospitality and tourism related industry.

TABLE 7. LATINO'S LAST COMMUNITY OF RESIDENCE BEFORE MOVING TO THE PRESENT REGION

Table IV.7. Latino's last community of residence before moving to the present region

Place of origin	Place of Interview			
	Region A	Region B	Region C	Total
New England (Northeast)	1	0	0	1
Middle Atlantic (Northeast)	4	1	2	7
South Atlantic (South)	5	14	8	27
East south central (South)	0	4	1	5
West south central (South)	25	22	31	78
East north central (Midwest)	2	17	10	29
West north central (Midwest)	12	32	8	52
Mountain (West)	3	5	8	16
Pacific (West)	47	30	23	100
Honduras	1	2	4	7
Guatemala	2	5	5	12
El Salvador	3	3	7	13
Mexico, Other	42	16	45	103
Mexico, Distrito Federal	5	0	1	6
Total	152	151	153	456

Table 8 shows employment distribution. The overall average work journey is around 38 hours per week. The average monthly earnings of the whole sample is around $1,722. Comparatively, Region A and region B Latinos earn slightly above average monthly wages with $1,728 and $1,765 respectively, whereas region C Latinos earn slightly below the average monthly wages with $1, 672. The overall average yearly income is around $23.012. Comparatively, both region A and region B had yearly incomes below the average with $19,377 and $16,770 respectively whereas those living in region C had yearly incomes averaging $24,831.

TABLE 8. DISTRIBUTION OF LATINOS IMMIGRANTS PER EMPLOYER CATEGORY

Employer category	Place of Interview		
	Region A	Region B	Region C
Arts design, entertainment, sport, and media	1	0	3
Business and financial operations	2	3	0
Community and social services	1	0	2
Construction and extraction	6	2	19
Education, training, and library	3	1	2
Food preparation and serving related	6	3	34
Healthcare support	1	0	0
Installation, maintenance and repair	4	0	6
Legal	1	0	0
Office and administrative support	1	0	0
Personal care and service	1	2	1
Production	64	98	1
Protective service	0	0	1
Sales and related	2	8	5
Hospitality and tourism related	0	0	58

IV. 5.3. Householder's perceptions

This subsection presents householder's perceptions. Only those perceptions that have direct bearing on the objectives of this study are reported here. Perceptions reported here are well-being and acculturation.

IV. 5.3.1. Subjective well-being

The literature on self-assessment of well-being has favors the use of multi-indicator latent constructs in order to assess well-being. There are two main types: (a) Personal Well-being Indicator (PWI), and (b) Satisfaction with Life Scale (SLS). The literature does not seem to show preference to either one of the indicators therefore both indicators are reported here.

TABLE 9. WELL-BEING SCORES

Scale	Region A	Region B	Region C	Overall
PWI	7.73	7.98	7.6	7.71
SLS	4.84	4.81	4.71	4.79

PWI: max: 10; min: 0; average: 5

SLS: max: ;7 min:1; average: 4

IV. 5.3.3. Acculturation

Acculturation is a latent variable that was created using language and socio-cultural variables linked to language. Indicator variables used a scale ranging from 1 (not at all) to 4 (always). These variables where used to create 12 "Anglo" indicators and 12 "Hispanic" indicators. Each group of indicators is then averaged in order to create a single Anglo or Hispanic variable.

TABLE 10. ACCULTURATION SCORES

Scale	Region A	Region B	Region C	Overall
Anglo	2.05	1.75	2.18	1.99
Latin	3.41	3.31	3.54	3.42

Max: 4 min: 1

IV. 5.3.4. Cultural identity

Cultural identity was assessed using the MEIM-R scale composed of six indicator questions. These questions were scored with a scale ranging from 1 (do not agree) to 4 (completely agree). The final scale was constructed by taking the average of all six questions. A score below 2.5 implies that a householder does not identify with any particular ethnic group.

TABLE 11. ACCULTURATION SCORES

Scale	Region A	Region B	Region C	Overall
Cultural capital	3.12	2.85	3.09	2.99

Max: 4 min: 1

IV. 5.4. Social networks

Social networks were assessed using the standard social capital naming convention. Thus, it was sub-divided by bonding, bridging, and linking. Each construct was assessed by asking participants to identify who helped them in cases of emergency, paying bills, transport, first lodging in the community, and job information; and each response was allocated accordingly. Here, bonding refers to the familial social network; bridging refers to the friendship social network; and linking refers to the community social network. In this study, social networks were subdivided by *use* and *participation.* Using refers to deriving material gain from the network while participation refers to gaining mostly moral support from the network. The results of social networks use are reported in the table 12. In terms of bonding, only region A had higher levels of social network participation. In terms of bridging, it was actually the opposite: region A had participation levels below the overall participation rates whereas the other two regions had participation rates above overall participation rates. In terms of linking, region C was higher than the rest.

TABLE 12. SOCIAL NETWORK PARTICIPATION PERCENTAGES

Type of network	percentage participation			
	Overall	Region A	Region B	Region C
Bonding	79.17	86.09	76.97	74.51
Bridging	36.8	34.86	37.56	37.91
Linking	7.03	7.94	2	11.09

IV. 6. Descriptive statistics and tests performed on the sample used in the analyses

After the cleaning of the data, the sample used for the OLS estimation, which is presented in chapter VII, consisted of 391 participants. The difference between total surveyed and the sample used for analysis had to do with missing data and outliers, who were removed from the analysis. The variable distinguishing by the place of birth was removed from the analysis because the large majority of the Latinos in the sample (96 percent) report being foreign born. The

variable marital status was re-coded as follows: (a) singles: widows, single, separated, and divorced and (b) married: included those married or living with a partner. The literature makes a strong argument that social capital has a community influence. Given that survey was directed to Latinos only, community variables were captured by calculating the community variables from the Census estimates as published by the Census Bureau (2009), and these are presented in table14.

TABLE 13. DESCRIPTIVE STATISTICS OF THE VARIABLE USED IN OLS ANALYSIS

Variables	Mean	Std. Deviation	Min	Max	N
Subjective Well-Being	7.753	1.415	0	10	391
Gender = Female	0.504	-	-	-	391
Currently working	0.722	-	-	-	391
Legal residence = not legal and other	0.671	-	-	-	391
Receiving government assistance	0.337	-	-	-	391
Alternative income	0.090	-	-	-	391
Bonding social capital	0.788	-	-	-	391
Bridging social capital	0.412	-	-	-	391
Linking social capital	0.121	-	-	-	391
Member of any informal group	0.403	-	-	-	391
Member of any religious organization	0.418	-	-	-	391
Member of formal group	0.056	-	-	-	391
Family member provided first lodging	0.493	-	-	-	391
Married	0.681	-	-	-	391
Age	35.519	10.410	18	85	391
Length of time at this current job	3.566	3.095	0.3	15	391
Length of residence in the community	6.191	3.953	0.2	17	391
Mobility	2.078	0.978	1	6	391
Anglo-American acculturation score	2.013	0.755	1	4	391
Latin-American acculturation score	3.427	0.438	1	4	391
Community Perception: Socio-Environmental context	3.462	0.930	1	7	391
Community Perception: Racism and Discrimination	3.708	1.427	1	7	391
Community Perception: Language Pressures	4.234	1.313	1	7	391
Cultural Identity/Capital	3.401	5.899	1	4	391
Educational Level	8.586	4.251	0	16	391
Log of total household income	9.499	0.800	3.079	11.601	391

TABLE 14. DESCRIPTIVE STATISTICS OF THE COMMUNITY VARIABLES USED IN ANALYSIS

Variables	Region A	Region B	Region C
Mean age of the community	35.8	35.6	43
Median educational level of the community	12.42	11.23	13.11
Income distribution index	0.531	0.763	0.42
Ethnic fractionalization Index	0.941	0.981	0.923

In relation to the analysis done in chapter VII, there was a need to collect data on the working status as well as the source of information about jobs held by Latinos. The survey collected data on the working status of Latino immigrants. Overall, there were 94 Latinos working in the region A, whereas region B and C had 117 and 134 respectively. In total, around 72.1 percent of the participants sampled reported working. The distribution of the type of work done per region is presented in table 16. The analysis of the job distribution was done in order to give us a sense of the skill distribution of the Latino immigrants of the population surveyed. The ultimate determination of the skill distribution was done by looking at the sample data and making a determination case by case. From the data on the industrial distribution, it could also be seen that a small pattern emerges in regards to where some Latinos choose to work. Additionally, there is also the issue that some industries do not exist in certain regions. The majority tended to work in the most dominant industries in the region where they lived, with the region A having 56.4 percent in the poultry processing, region B having 73.8 percent in meat processing, and region C having 67.2 percent of Latinos working in the hospitality, tourism and restaurants.

Collinearity and multicollinearity

This is a situation when a regression has two (or more) predictors with a linear relationship is referred to a collinearity (multicollinearity). In this situation, the estimates for a regression cannot be uniquely calculated (Woodridge, 2008). Even though multicollinearity does not violate any assumptions of OLS (Gujarati, 2003), it inflates the estimates (Greene, 2003). The "tolerance" and Variance Inflation Factors (VIF) can be calculated for each estimate in order to

diagnose the existence of multicolinearity (O'brien, 2007). The tolerance shows a percent of variance in the predictor that cannot be explained by any other predictor in the estimation (the larger the better). The values range from 0 to 1. The VIF is measured as 1 divided by tolerance. Values above 5 are worrisome and greater than 10 are not desirable (O'brien, 2007). From table 15, it can be that our results concerning multicollinearity of variables used in the estimation procedure in chapter VII are within the acceptable range.

TABLE 15. COLLINEARITY STATISTICS

Variables	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Bonding social capital	.847	1.181
Bridging social capital	.822	1.217
Linking social capital	.540	1.851
Member of informal group	.748	1.336
Member of religious group	.815	1.226
Member of formal group	.871	1.149
First lodging by family	.894	1.119
Anglo acculturation	.525	1.906
Latino acculturation	.553	1.808
Socio environmental	.817	1.224
Racism and discrimination	.592	1.689
Language pressures	.511	1.956
Being female	.808	1.238
Age	.623	1.606
Educational level	.625	1.601
Non properly documented	.752	1.329
Length of employment	.781	1.280
Married householder	.824	1.214
Mobility	.814	1.229
Length of residence	.831	1.204
Government assistance	.836	1.197
Alternative income	.907	1.102
Community influence	.612	1.633
Log income	.886	1.129
IMR	.773	1.293

TABLE 16. SUMMARY RESULTS OF WORK TYPE BY REGION (IN PERCENT)

Type of work	Region of interview		
	A	B	C
Construction	9.57	0.85	7.46
Hotel services	-	-	42.54
Mexican store/business	-	2.56	1.49
Firm (Bank, Insurance, MasterCard, etc)	5.32	2.56	1.49
Restaurants	4.26	0.85	24.63
Family business	1.06	1.71	-
Self employed	1.06	0.85	4.48
Construction crews	1.06	0.85	5.22
Own business	2.13	3.42	3.73
Farm/crop and animal husbandry	1.06	-	-
Factory meat and poultry processing (includes food companies)	56.38	73.76	-
Housekeeping	-	-	2.24
Cleaning services (industrial sanitation)	12.77	10.85	0.75
Retired	-	-	0.75
School district	2.13	0.85	-
Chauffer (rides, may be own business)	-	0.85	-
Personal assistant	1.06	-	0.75
Other	1.06	-	0.75
Community services (Church and other)	1.06	-	2.24
Sales	-	-	0.75
Maintenance	-	-	0.75

In terms of the source of information about jobs, table 17 presents a summary of the source of information about jobs per region. It could be seen that the vast majority of immigrants obtained information about jobs either from friends or family members. The media category includes TV, radio, newspapers, posters about town, and any other type of advertisements not conveyed by any of the categories.

TABLE 17. JOB INFORMATION SOURCE PER REGION (IN PERCENT)

Source	Region of interview		
	A	B	C
Family	17.8	32.2	27.5
Friends	46.7	44.3	45.0
Church	1.1	-	2.3
Employer	7.8	8.7	3.8
Community Center	-	0.9	0.8
Media	26.7	13.9	20.6

IV. 6.1. Correlation and reliability statistics of PWI and SLS

There were two main constructs of well-being captured by this survey. The main reason for this approach was due to the inexistence of preference for either construct in the literature. Both the PWI and the SLS were assessed with this survey. For the sample used, the mean PWI was 7.70 with a standard deviation of 1.44. The mean SLS was 4.80 with a standard deviation of 1.27. However, results tend to vary from one study to next, which suggests that the correlation between PWI and SLS depends on the sample used. Even thought there is no preference on the scales in the literature, this study is interested in using the PWI scale given that its design includes more facets of livelihoods than the SLS (Cummins, 2008). That is the composition of PWI has seven different dimensions of livelihoods (Q26 I – VII) vs. five dimensions of SLS (Q28). However, it is instructive to calculate the correlations between the two constructs to see if they provide the same information and the results are presented below.

The Pearson correlation results show significantly positive correlation (.690). Given that Pearson's correlation only presents proportional or linear correlation, two other non-parametric correlation results have been carried out in order to complement and help make informed decision of the dependent variable to be used. Kendall's tau show a significant positive correlation (.559), and Spearman's rho also showed a significant positive correlation (.648) between PWI and SLS.

Since these are latent constructs, social science literature advises assessing the internal reliability of the measure. That is, it should be assessed how well a construct measures what it is intended to measure. Table 18 presents the results of the Cronbach's alpha for the scales used in this research. Cronbach's alpha is a statistic developed in order to measure how well a set of indicators measure a single unidimensional latent construct. Cronbach's alpha is a coefficient of reliability or consistency and should not be confused with a statistical test (Santos, 1999).

The optimal range for Cronbach's alpha is between 0.700 – 0.950, anything below 0.700 would be measuring a multi-dimensional construct instead of a unidimensional one, and anything above 0.950 would need to be re-estimated since there may be many data points that are not contributing useful information – that is, there is redundancy built in (Santos, 1999).

TABLE 18. WELL-BEING, ACCULTURATION, AND CLIMATE SCALE RELIABILITY STATISTICS

Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Personal Well-Being Index	0.723	0.726	7
Satisfaction with Life Scale	0.814	0.823	5
Anglo Acculturation	0.929	0.949	12
Latin Acculturation	0.781	0.815	12
Socio-Environmental Context	0.768	0.775	12
Racism and Discrimination context	0.889	0.889	8
Language pressures	0.764	0.767	7

A decision was made to remove the variables used to measure English language skills from the estimation. This is because they might be correlated with the Anglo-acculturation variables, which are based on language skills also. However, in order to be certain a correlation between these variables was carried out and the results show a highly significant positive correlation between speaking (.762), reading (.756) writing (.687) English language and Anglo-acculturation. These were all significant at 1 percent level of significance.

IV. 7. Chapter conclusions

This chapter was concerned in discussing the survey data used for this study. Specifically, this chapter provides the background and the selection criteria of the areas included in the study. Additionally, a discussion of the questionnaire in regards to its composition, implementation and data collection process was also presented. Some constrains and limitations of the data, and consequentially the database, were also provided.

This chapter provided a description of the sample of Latinos surveyed as well as region specific process applied to the survey process. The process of developing the selecting participants for each region was described. The process of data entry and cleaning was also described. In this chapter, all variables used in the analysis in subsequent chapters were also described. Selected statistics were presented in order to show a profile of Latino immigrants used in the analysis. Since the well-being indicator used in the study is relatively new in the development economics arena, the reliability and correlation statistics of the well-being indicators were presented.

The variables presented in this chapter are used in the next three chapters as follows: chapter V presents the estimations of the propensity of a Latino to participate in social networks while controlling for context, acculturation, and specific demographic variables. Chapter VI presents the analysis of the impact of sources of information on occupation. And finally, chapter VII presents the estimations and analysis of the impact of social networks on well-being.

CHAPTER V – Participation in social networks

V. 1. Introduction

This chapter addresses the third hypothesis of this study. The factors influencing a Latino immigrant householder's participation in social networks are assessed to understand the characteristics of those Latinos who participate. Given that social networks use is context specific, this study also seeks to compare the literature findings with these results. The rationale, selection, and operationalization of both dependent and independent variables used for this study are presented below. Three types of social networks are assessed with the binary Logit regression, namely (a) informal networks, (b) formal networks, and (c) religious network. The assessment of participation in community social networks was not carried out due to lack of variability in the sample collected.

The chapter is organized as follows: section 2 provides the background for participation in social networks. Section 3 presents the empirical approach used to assess participation in friendship, recreational and informal social networks. Section 4 presents the results and discussion of the propensity to participate in informal social networks. Section 5 presents the findings and discusses the propensity to participate in formal social networks. Section 6 discusses the propensity to participate in religious social network and section 7 concludes.

V. 2. Background and hypothesis

Current social network analysis in regards to Latinos has been mostly concentrated in the influence that these networks have on various facets of Latinos' livelihood such as employment, settlement, housing, and community integration. However, very little has been said about what influences the participation in to these social networks in the first place. So far, research has

suggested that even though there are some general factors influencing participation in a specific social network, most factors are case specific (Menjivar, 2006). Furthermore, assessing the behavior of Latinos elsewhere might be informative in regards to the identification of patterns and likely factors influencing participation in a specific network.

There are many factors that influence participation is social networks. In the case of Latino immigrants, access to institutions and acquisition of information necessary to reduce transaction costs is among the most important. Participation in social networks is also interwoven in the Latino's cultural capital. However, given that Latino immigrants living in these communities are, most of the time, moving from one place to another, participation in informal social networks can no longer be considered as default. A householder needs to make a concerted effort to associate with others in order to extract the benefits that a network can bring.

Theoretically, it could be hypothesized that Latino immigrants would make a prior evaluation of the benefits to be derived from participating in a specific social network, K_s. If the analysis of the costs and benefits is positive, i.e., this activity provides more benefits than the costs incurred in seeking, obtaining, and maintaining these contacts, then a household participates, otherwise, he/she declines participations. This relationship could be explained formally using the postulates of utility. That is, assuming that the starred terms are the optimal levels, then the household will only invest in social network, k_s, if their current levels of utility is less than the optimal:

$$(V.1)\ U(C, Z; D, \vartheta) \leq U(C_i^*, Z_i^*; D, \vartheta)$$

Whereby C represents overall consumption; Z represents the home good; D represents household demographic characteristics; and ϑ is a stochastic disturbance term. Thus, whenever

the condition (*V.1*) is satisfied, it will be on the best interest of the householder to invest in social networks.

From the above discussion, it could be hypothesized that:

<u>Hypothesis:</u> participation in social networks is a function of the cultural and human capitals, the context of reception and the acculturation path.

The factors influencing a Latino immigrant householder's participation in social networks are assessed to understand the characteristics of those Latinos who participate in informal, formal and religious networks. Given that social networks use is context specific, this analysis seeks to compare the literature findings with these results, to identify unique behaviors in rural communities.

V. 3. Empirical approach

The dependent variables of interest are participation in social networks (informal, formal, and religious). These are modeled as binary variables, i.e., if a Latino participates the dependent variable takes a value of 1 and 0 otherwise. Binary logistic regression is particularly appropriate to carry out a regression analysis using these type of variables thus used for the analysis of participation in social networks.

V. 3.1. Variables used

Three dependent variables are used, namely participation in (a) informal and recreational networks, (b) formal networks, and (c) religious networks. These are assessed as binary: if a Latino participates takes a value of 1, and 0 otherwise. Each dependent variable is used once on a separate regression as reflected in the results presented below. These variables are operationalized by asking participants if they participate in these types of social networks in their communities.

All three regressions used the same independent variables for the logistic regression. The literature on the selection and participation on social networks suggests that age, context of reception, marital status, gender, length of residence in a community, education and language ability, country of origin, and community of residence influence participation in social networks.

V. 3.2. Approach used for the interpretation of results

There are many ways to interpret the results from a binary logistic regression. For the purposes this analysis, two particular methods are well suited: (a) partial impact of the coefficients on the dependent variable and (b) observing each result as the percentage change of the participation or not into a given social network. However, this interpretation is not straight forward. Coefficients need to be transformed before they can be interpreted as a percent of participation.

In order to derive the partial change impact brought about by a variable on the probability of a Latino householder participating in social network, we start by defining probability to participate given explanatory variables (Long, 1997):

$$Pr(y = 1|x) = F(x\beta)$$

In this equation, F is the logistic cumulative distribution function Λ. The partial effect is then derived thus:

$$\frac{\partial Pr(y = 1|x)}{\partial x_k} = \lambda(x\beta)\beta_k = \frac{exp(x\beta)}{[1 + exp(x\beta)]^2}\beta_k$$

$$= Pr(y = 1|x)[1 - Pr(y = 1|x)]\beta_k$$

The sign of the marginal effect is determined by the coefficient, β_k. However, the magnitude of the change is dependent on the magnitude of β_k and the value of $x\beta$.

The second form of interpreting logit results is also the most commonly used in social science research: the probability of participating, or the odds ratio. Here, a transformation of the coefficient will indicate the odds of an event, in this case participation in social network, occurring. To start, the logit model can be transformed to a log-linear form by: $\ln\Omega[x] = x\beta$ where $\Omega[x] = Pr(y = 1|x)/1 - Pr(y = 1|x)$. Therefore,

$$\frac{\partial ln\Omega[x]}{\partial x_k} = \beta_k$$

This formulation allows for the interpretation of a unit change holding other variables constant since a unit change on x_k using this approach does not depend on the level of x_k or the value of any other variable. However, this result is not always intuitive, a much more intuitive result can be obtained by transforming the coefficient once more. This can be achieved by:

$$exp[\ln\Omega(x)] = x\beta \rightarrow \Omega(x) = \exp(x\beta)$$

This result can then be interpreted as a factor change. For instance, it could be said that for a unit change, the odds are expected to change by a factor of $\exp(x\beta)$ everything else equal. For a percent change all we have to do is to use the following formula:

$$100[\exp(x\beta) - 1]$$

Using this formula, it is possible to estimate the effect of an arbitrary change induced on a variable of interest by a given value δ. For instance, if want to know the effect of an increase of 10 more years of age on social networks participation, all we have do is multiply delta (in this case the 10 years) on the coefficient:

$$100[\exp(x\beta\delta) - 1] \rightarrow 100[\exp(x\beta * 10) - 1]$$

V. 4. Participation in recreational and informal social networks

The results of the decision of a householder to participate in a recreational or informal social network are presented in table 19. The findings show that high levels of racism and discrimination, higher level of cultural identity, lower levels of ability to speak English, and belonging to other Latin American countries were significant predictors of the participation in informal social networks.

TABLE 19. RESULTS OF THE PARTICIPATION IN RECREATIONAL NETWORKS

Parameter	Estimate (β)	Std. Error	Sig.	% Change
Age	-0.010	0.011	0.323	-1.00
Socio-Environmental context	-0.038	0.115	0.741	-3.73
Racism and Discrimination	0.027	0.088	0.047**	2.74
Language Pressures	0.036	0.097	0.708	3.67
Cultural Identity/Capital	0.010	0.011	0.063*	1.01
Married individuals	0.299	0.229	0.192	34.85
Gender = females	-0.293	0.200	0.142	-25.40
Region C	-0.074	0.250	0.768	-7.13
Region B	0.157	0.248	0.527	17.00
Length of residence	0.024	0.027	0.384	2.43
Ability to speak English	-0.175	0.152	0.077*	-16.05
Educational Level	0.000	0.029	0.997	0.00
Salvadorian	0.049	0.279	0.861	5.02
Honduran	0.533	0.320	0.096	70.40
Guatemalan	-0.077	0.395	0.846	-7.41
Other Latin American	-0.376	0.049	0.053*	-31.34
Intercept	-7.251	0.792	0.000	-99.93

a. LOGIT model: LOG(p/(1-p)) = Intercept + BX **Sig. at 5% *Sig. at 10%

Dep Var: Participation in Recreational groups

-2 Log Likelihood: 434.909

Cox and Snell R square: 0.129

Nagelkerde R square: 0.189

N: 398

Cultural identity was the only variable presenting a positive significance impact among mostly negative effects. Latinos who identified strongly with Latino culture had a higher

predisposition to join this type of social network. This result makes sense if it is considered that these types of social networks are designed to allow immigrants to reminisce about the old country, meet people with similar objectives and people with similar socio-economic conditions. Additionally, these social networks function as sources of information about where to get ingredients to prepare dishes from their home country.

Having the ability to cook dishes from home country is very important for these Latinos (Suarez-Orozco and Suarez-Orozco, 2001) and the ingredients used can be very expensive if you don't know where to buy them. Participants might also have higher affinity to these social networks because they are more likely to engage in cultural activities that appeal to these groups.

Racism and discrimination was assessed using a scale that ranges from 1(low perceived racism) to 7(extremely high racism). Those who perceived higher levels of racism and discrimination had a 2.7 percent higher probability of joining informal social networks. The effects of this result are wide ranging. Some enterprising Latinos might use these social networks as sources of moral support in order to balance out the discrimination in the wider community. That is, amongst themselves they feel comfortable enough to air their grievances whereby more experienced, long term residents can advise on how to deal with whatever situation they are facing. Alternatively, the situation might force Latinos to effectively withdraw from the mainstream society and seek only their own kind thus making economic integration very difficult in these regions and effectively creating a population that is, at best, separated, and at worst marginalized from the mainstream society. This is in line with social capital research whereby discontent with certain behavior in the society fosters a creation of negative social capital such as gangs and the like (Portes and Sensenbrenner, 1993; Wacquant, 1998).

Those with higher level of English ability were 19 percent less likely to join informal groups. This result makes sense if we consider that most in the sample who reported higher

English proficiency were either born in the US or have stayed in the community for a very long time. These are more likely to be disconnected with the newcomers, the majority of whom have lower levels of education and very low level of English ability. This result can also be interpreted in the opposite direction: lower level of English ability increases the odds of joining informal social networks.

People from other Latin American countries were 31 percent less likely to join informal social networks in relation to the default group, which were the Mexicans.

V. 5. Participation in formal social networks

The participation in formal social networks also uses a binary dependent variable that 1 if a householder participates and 0 otherwise. Table 20 present the results of the binary logistic analysis. The participation in formal social networks was significantly affected by language pressures in the community, by being married (this included those living with partners), residing in the region B, and the ability to speak English. Formal organizations tend conduct most (if not all) their business in English thus it is only natural that those who felt higher language pressures were less likely to join formal social networks. It is important to realize that context of reception variables were reverse scored: 1 is positive and 7 is negative. Thus a higher positive score actually means negative impact. These had a 62 percent higher probability of not participating as compared to those who did not feel such kind of pressures.

Those Married showed a much higher probability of participating in formal social networks as compared to singles. It is also worth mentioning here that this category included both married and those living with partners. The single category combines single, widow(ed), and divorced. People living in region B had a 79 percent lower probability of joining formal networks as compared to those in region A. This could be attributed to the relative size of the

community, lack of such networks that were directly involved in recruiting Latinos and the lack of English speaking ability, which most Latinos expressed. The lack of speaking English ability could be tied up with the English pressures as one of the most important factors precluding their participation in some of these networks.

TABLE 20. RESULTS OF THE PARTICIPATION IN FORMAL NETWORKS

Parameter[a]	Estimate (β)	Std. Error	Sig.	% Change
Age	-0.030	0.021	0.154	-2.95
Socio-Environmental context	-0.296	0.256	0.247	-25.62
Racism and Discrimination	-0.151	0.189	0.423	-14.01
Language Pressures	0.485	0.190	0.011**	62.41
Cultural Identity/Capital	-0.011	0.064	0.858	-1.09
Married individuals	0.642	0.487	0.053*	90.02
Gender = female	0.354	0.418	0.397	42.47
Region C	-0.250	0.405	0.538	-22.12
Region B	-1.586	0.666	0.017**	-79.52
Length of residence	0.007	0.055	0.896	0.70
Ability to speak English	0.584	0.270	0.030**	79.32*
Educational Level	0.064	0.060	0.283	6.60
Salvadorian	0.259	0.538	0.631	29.56
Honduran	-8.595	67.661	0.899	-99.98
Guatemalan	-0.324	1.067	0.761	-27.67
Other Latin American	0.285	0.652	0.662	32.96
Intercept	-9.967	1.479	0.000	-99.99

[a]. LOGIT model: LOG(p/(1-p)) = Intercept + BX **Sig at 5% *Sig. at 10%

Dep Var: Participation in formal groups

-2 Log Likelihood: 465.664

Cox and Snell R square: 0.197

Nagelkerde R square: 0.140

N: 406

Lower participation in these types of networks has very important implications in terms of community and economic integration of immigrants in the community. It was mentioned above that there are (almost) no formal social networks that were geared towards recruiting Latinos. This does not mean that these networks do not exist. It means that there is a clear divide on what types each community adheres to, Latinos belong to operators' networks and Anglos belong to

suppliers' networks. In this region, suppliers are those involved in the gestation and/or fattening of pigs, which are then supplied to the processing plant. Operators are those working in the processing plant on these supplied pigs. The nature of the suppliers' activities make it more likely for those involved to invest in the community and much more likely to move upward economically. For the operators, the result is exactly the opposite.

V. 6. Participation in religious social networks

Religious social networks are very effective in helping Latino immigrants' access institutions and manage their daily lives. Estimation results shown in table 21 indicate that age, cultural identity, living in region C and education have a significant influence in the probability of participating in religious social networks. Age's positive impact on the probability of participating in religious social networks might be strongly related to Latinos cultural perception about the importance of religion in their livelihood. This is line with prior research, which states that older Latinos are more attuned to religion than younger Latinos (Falicov, 2000).

Latinos with higher level of cultural capital were also more likely to participate in these type of social networks. Living in region C had a negative impact on the probability of participating in religious social networks. This region's economy, and consequently jobs, is mostly hospitality and tourism-based. This leads to odd working hours. If these situations are coupled with the tendency of religious social groups to meet in early morning or evening times, the end result would be very few participants in group meetings/activities. Thus their schedules would barely leave time to participate in these social groups.

Latinos with higher educational level had a higher probability of being a member of religious social networks. This makes sense especially if we consider that most highly educated Latino immigrants have a more settled status, have better jobs and might be considered leaders of

their community. These are also the ones who might not have to work two or three jobs to make ends meet and subsequently have more time to participate in these types of social networks. Additionally, these might also be very important for these social networks in terms of planning, fundraising, and other complex activities that might require complex reasoning and the ability of understanding the law, access to institutions and the like.

TABLE 21 RESULTS OF THE PARTICIPATION IN RELIGIOUS NETWORKS

Parameter	Estimate (β)	Std. Error	Sig.	% Change
Age	0.054	0.386	0.035**	5.55
Socio-Environmental context	0.029	0.100	0.769	2.94
Racism and Discrimination	-0.112	0.077	0.148	-10.59
Language Pressures	0.111	0.082	0.174	11.74
Cultural Identity/Capital	0.154	0.101	0.009**	16.65
Married individuals	0.319	0.185	0.086	37.58
Gender = female	-0.064	0.160	0.690	-6.20
Region C	-0.236	0.177	0.183	-21.02
Region B	-0.674	0.408	0.001**	-49.03
Length of residence in the community	0.023	0.020	0.261	2.33
Ability to speak English	0.047	0.121	0.698	4.81
Educational Level	0.052	0.023	0.021**	5.34
Salvadorian	-0.003	0.228	0.989	-0.30
Honduran	0.185	0.394	0.638	20.32
Guatemalan	0.290	0.321	0.366	33.64
Other Latin American	-0.329	0.344	0.338	-28.04
Intercept	-7.278	0.632	0.000	-99.93

a. LOGIT model: LOG(p/(1-p)) = Intercept + BX **Sig at 5% *Sig at 10%

Dep Var: Participation in Religious groups

-2 Log Likelihood: 544.934

Cox and Snell R square: 0.131

Nagelkerde R square: 0.192

N: 401

It is also important to mention that some of the variables that were not significant are also important here. For instance, gender is not significant because, it can be argued, that Latino cultural perception about religion is so strongly engrained to both genders that it does not matter

who is the subject of interest. For the community climate, most of these churches and networks have gone to great lengths to make the environment accommodating to Latino immigrants thus generating some level of trust between the church and Latinos. This makes the church one of the few places where Latino immigrants feel safe to go without fear of being rounded up and deported. For instance, churches conduct masses in Spanish and have personnel very fluent in Spanish on staff to help immigrants with daily chores. Thus immigrants feel "at home" in churches almost as if they were still in their own country. Additionally, churches provide services to immigrants such as workshops about how to interpret the law and what to do in case of emergencies regarding the authorities.

V. 7. Chapter conclusion

In this chapter, a process of estimating partial effects and a method for a more intuitive interpretation of the findings was presented. The estimations of the probability of participating on social networks were separated by type, namely: informal, formal, and religious social networks. The probability of participating in familial and community social networks was not assessed. It was argued that for the familial social networks participation, factors influencing participation are linked to the sending community and previous connections that this research was ill equipped to assess. For the community social networks, the lack of variability on the data collected made the assessment not very practical.

Finding show that, for the informal social networks, racism and discrimination, cultural identity, ability to speak English, and belonging to other Latin American countries were statistically significant predictors of the participation in informal social networks; for formal social networks language pressures in the community, being married, residing in region B, and the ability to speak English were significant predictors of participation; finally for religious social networks, age, cultural identity, living in region C and education had a significant influence in the

probability of participating in religious social network. Chapter VI presents the assessment of the second hypothesis of this research, which has to do with the analysis of the influence of sources of information on job type.

CHAPTER VI – Regional network's impacts on well-being

VI. 1. Introduction

This chapter addresses the second hypothesis of this research assessing the impact of local social network effects on well-being. Most specifically, the analysis presented in this chapter looked at factors such as local employment, specific context, and community influence on well-being. The hypothesis was tested indirectly by assessing the influence of job information on type job selected. The motivation of carrying out this analysis separated by region has to do with the pull and push factors that are specific for each region. These factors are a unique characteristic of a local economy, which ends up attracting specific type of Latinos. The multinomial Logit regression was used in order to estimate the probability that a householder will have a certain type of employment given the source of information while controlling for specific demographic, context and acculturation factors.

The chapter is organized as follows: section 2 hypothesis and variables used in the model. Section 3 presents the findings and discussion in regards to the probability of working in a specific type of job given the source of information. Finally, section 4 presents the conclusions.

VI. 2. Influence of sources of information on work type

This section hypothesis assesses the implications of local social networks on the type of job. Following the Sustainable Livelihoods theory, it is hypothesized that the type of work affects the livelihood strategy a Latino develops, which will end up influencing the overall well-being. One of the main livelihoods strategy Latinos use is their employment. Thus, this hypothesis is operationalized by assessing the implications of the source of information (assumed to be local

social networks) on the type of jobs Latino immigrants have. This hypothesis is restated here as follows:

Hypothesis : the source of information about a job influences the probability of Latino to choose a specific a specific type job.

This hypothesis focuses on the effect of locality on social networks, and in turn on the probability of being in a certain type of job. Portes (1998) mentions that social networks tend reflect the characteristics of the local economy, are affected by the members, and are designed to convey specific functions. Consequently, specific job information related to certain industries ends up locked in these specialized networks (Hagan, 2004). In these regions of interest major employers are large meat packing, food processing factories, and hospitality and tourism sectors. The scenario previously described suggests that Latino immigrants who tend to rely on social networks as main sources of information about jobs would end up in low skilled jobs (most likely in the most dominant industries in the region).

VI. 2.1. Variables used

The literature of network effects on job behavior as it relates to Latino immigrants suggests that seeking information about a job from a social network is affected by age (measured by number of years, have a positive influence), education (measured by number of years have a negative effect), gender (female have higher use), English speaking ability (low skill have higher use), cultural identity (positive influence), non-properly documented Latinos (directly assessed, has a positive influence), climate variables (socio-environment and language pressure), family source of information, friends source of information, and church sources of information. The dependent variable for this analysis is the specific type of job that Latinos have in their specific region.

Here, it is assumed that family source of information is equivalent to bonding social capital, friendship is equivalent to bridging social capital, and community sources are equivalent to linking social capital. The findings of the Logit analysis, separated by regions, are presented in tables 23 (region A), 24 (region B) and 25 (region C). From the results presented in these tables, it could be seen that there is no consistency on the variables that significantly influence the selection of the type of job. This observation suggests the existence of local effects unique to each network.

It is important to note that the multinomial logistic regression estimates *k-1* models, where *k* is the number of levels of the outcome variable. In this case, for each region, the most dominant type of job was chosen as the base or referent group to which all other occupations are compared to. In the case of region A and B the poultry and meat processing were used as default. For region C, the hospitality, tourism, and food serving industries were used as default occupations. Thus, given that all estimates presented here are relative to these respective default groups, the outcome of a given variable for a specific type of job is expected to change by its respective parameter estimate (presented in log-odds). Further, within a given industrial comparison, specific dummy variables are used as default variables (Females for gender, and Media sources for job information). *The media source of information was chosen as a default because it represents an unbiased source of information (where everybody has an equal chance of getting the job advertised) and it cannot be considered a network source.*

TABLE 22 LIST OF VARIABLES USED IN MULTINOMIAL LOGISTIC REGRESSION ANALYSIS

Variables	Description
Dependent:	
Type of work	Occupation of a Latino immigrant
Independent:	
Gender = Male	Household gender: Males modeled
Not_app	If has legal residency documents and allowed to work: 1, 0 otherwise
Family Source	If has used family network to find a job: 1, 0 otherwise
Friend Source	If has used friendship network to find a job: 1, 0 otherwise
Employer Source	If has used employer network to find a job: 1, 0 otherwise
Church Source	If has used religious (or church-related) network to find a job: 1, 0 otherwise
Age	Householder's age, in years
Anglo acculturation	Anglo acculturation score, an average of 12 items
Latin acculturation	Latin acculturation score, an average of 12 items
Socio Environment	Community Perception: socio-environmental context, average of 12 items
Lang- Press	Community Perception: Language Pressures context, average of 7 items
Cultural Capital	Cultural capital, an average of 6 items on the cultural identity scale.
Education	Educational attainment, in years of schooling

Not all occupations are present in every region and from those represented, not all are used in this study due to large amount of data that the regression can produce. In order to solve this issue, occupations were grouped based on similar characteristics. The following occupations are used as dependent variables: construction (includes all aspects of construction business, except managers), Firm or other formal employment (this includes personal secretaries, bank and insurance services employees, government workers, and company secretaries), restaurant workers (includes cooks, waiters, and dishwashers), Latin market, shops and restaurants worker (includes refers to various shops that sell goods from various Latin American countries and provide various services, e.g., phone cards, money transfers to Latinos in the area – this category will be referred to as Latin market from now on), industrial sanitation (includes those working in subcontracted companies servicing the large processing plants). The restaurant worker mentioned in table 23 refers to Anglo-restaurants in contrast to Latino ones.

VI. 3. Results and discussion

Results of the multinomial Logit regression on the probability of a Latino householder choosing to work in a given type of job as influenced by the source of information while controlling for demographic, acculturation, and climate factors are presented in table 23. Various statistics are presented in the table. The first column presents the coefficient of every variable. The second column presents the standard error. The third column presents the Wald statistic, which is a standardized maximum likelihood estimator used to test the statistical significance of each coefficient (β) in the model (Agresti, 2007).

For region A, results point to different types of jobs using different networks and requiring different skills. Comparatively, more educated Latino have higher probability of being in construction business and are less likely to be employed in industrial sanitation than in poultry. Additionally, those who obtained their job information from employers are more likely to be employed in construction or sanitation rather than in poultry processing. The more Anglo-acculturated a householder is, the more likely he/she is to be working on formal jobs or in Latin markets/shops rather than working on poultry processing. Those who have obtained their job information from family sources have higher odds of being employed in restaurants, Latin markets or industrial sanitation than in poultry. Males have higher odds than females to be employed in industrial sanitation. Those Latinos who have obtained job information from friends are 1.8 times more likely to be employed in sanitation, and 1.3 times less likely to be employed in Latin markets.

TABLE 23 RESULTS OF THE PROBABILITY OF CHOOSING A GIVEN JOB FOR REGION A

Occupation	Independent Variables	β	Std. Error	Wald	Sig.	% change
Construction worker	Intercept	5.022	7.712	0.424	0.515	
	Age	0.002	0.062	0.001	0.974	0.20
	Educ	0.538	0.193	7.771	0.005**	71.26
	Not_app	-0.064	1.646	0.001	0.969	-6.20
	AngloAccult	-0.678	1.009	0.451	0.502	-49.24
	LatinAccutl	-2.485	1.657	2.249	0.134	-91.67
	Climate_SocEnvr	-0.898	0.751	1.430	0.232	-59.26
	Climate_LangPress	0.463	0.550	0.710	0.400	58.88
	Male	0.340	1.449	2.607	0.106	40.49
	FamilySource	-6.197	24.968	0.062	0.804	-99.80
	FriendSource	0.115	1.413	0.007	0.935	12.19
	ChurchSource	-5.203	87.801	0.000	1.000	-99.45
	EmployerSource	0.117	44.385	0.000	0.005**	12.41
Firm or other formal employment	Intercept	-37.519	64.302	0.340	0.560	
	Age	-0.516	0.455	1.289	0.256	-40.31
	Educ	0.619	1.157	0.286	0.593	85.71
	Not_app	-0.556	26.192	0.000	0.983	-42.65
	AngloAccult	0.318	12.752	0.001	0.090*	37.44
	LatinAccutl	1.097	12.742	0.059	0.808	199.52
	Climate_SocEnvr	3.361	8.457	0.158	0.691	2781.80
	Climate_LangPress	-4.808	7.397	0.422	0.516	-99.18
	Male	0.665	9.555	0.005	0.945	94.45
	FamilySource	0.259	21.361	0.086	0.171	29.56
	FriendSource	0.356	15.853	0.050	0.326	42.76
	EmployerSource	0.527	34.003	0.024	0.740	69.45

Table 23. cont.

Restaurant worker	Intercept	-22.830	14.080	2.629	0.105	
	Age	0.082	0.078	1.130	0.288	8.55
	Educ	0.211	0.218	0.940	0.332	23.49
	Not_app	-7.378	36.754	0.040	0.841	-99.94
	AngloAccult	2.128	1.331	2.556	0.110	739.81
	LatinAccutl	0.020	2.613	0.000	0.040**	2.02
	Climate_SocEnvr	0.876	0.911	0.924	0.336	140.13
	Climate_LangPress	0.415	0.759	0.298	0.585	51.44
	Male	-0.019	1.696	0.000	0.991	-1.88
	FamilySource	0.479	1.975	0.059	0.054*	61.45
	FriendSource	0.582	1.972	0.087	0.768	78.96
	ChurchSource	-4.514	71.514	0.004	1.000	-98.90
	EmployerSource	-0.804	2.139	0.141	0.707	-55.25
Latin market, shops, restaurants worker	Intercept	-60.984	63.184	0.932	0.334	
	Age	-0.325	0.403	0.649	0.421	-27.75
	Educ	-0.350	1.001	0.122	0.727	-29.53
	Not_app	-7.403	28.228	0.069	0.538	-99.94
	AngloAccult	-0.315	5.406	0.003	0.026**	-27.02
	LatinAccutl	1.282	19.296	0.004	0.370	260.38
	Climate_SocEnvr	-0.568	3.765	0.023	0.095*	-43.33
	Climate_LangPress	-0.163	5.168	0.001	0.040**	-15.04
	Male	-2.518	3.145	0.641	0.423	-91.94
	FamilySource	0.193	0.312	0.384	0.000**	21.29
	FriendSource	-0.128	7.534	0.000	0.086*	-12.01
	ChurchSource	0.920	33.424	0.001	0.978	150.93
	EmployerSource	1.352	18.430	0.005	0.868	286.51
Sanitation (in factories) worker	Intercept	4.301	6.376	0.455	0.500	
	Age	0.004	0.045	0.006	0.938	0.40
	Educ	-0.361	0.137	6.938	0.008**	-30.30
	Not_app	-0.134	1.263	0.011	0.915	-12.54
	AngloAccult	-0.789	0.716	1.215	0.270	-54.57
	LatinAccutl	-1.623	1.280	1.607	0.205	-80.27
	Climate_SocEnvr	-0.113	0.534	0.045	0.832	-10.68
	Climate_LangPress	0.323	0.348	0.864	0.352	38.13
	Male	0.394	0.892	0.195	0.059*	48.29
	FamilySource	0.305	1.262	0.058	0.006**	35.66
	FriendSource	0.620	1.092	0.322	0.070*	85.89
	ChurchSource	-2.052	38.052	0.003	1.000	-87.15
	EmployerSource	0.370	1.377	0.072	0.002**	44.77

-2 Log Likelihood: 631.03 ** Sig. at 5%; *Sig. at 10%
Nagelkerke R square: 0.129
N: 76
% change:[Exp(β)-1] *100

The findings of the multinomial Logit for region B are shown in table 24. These findings show that the older a householder, the less likely he/she is to work in construction or in Latin markets compared with working in meat processing type of jobs. Thos obtaining their job information from employers are 35 percent more likely to work in meat processing than in construction. Those reporting high levels of Anglo acculturation are 14 percent more likely to work in formal business and those reporting positive levels of Latin acculturation are 6.9 percent more likely to work in Latin markets as compared to the default sector. Those reporting higher language pressures and negative socio-environmental conditions are 1 times more likely to work in Latin markets. Those who have obtained their job information from friends are 65 percent less likely to work in Latin markets, 32 percent less likely to work in construction, and 12 percent more likely to work in industrial sanitation. As for family sources of information, Latinos are 7 percent more likely to work in Latin markets rather than meat packing.

TABLE 24 RESULTS OF THE PROBABILITY OF CHOOSING A GIVEN JOB FOR REGION B

Occupation	Independent Variables	β	Std. Error	Wald	Sig.	% Change
Construction worker	Intercept	-1.584	11.219	0.020	0.888	
	Age	-0.021	0.104	0.040	0.084*	-2.08
	Educ	0.008	0.281	0.001	0.977	0.80
	Not_app	-0.180	2.653	0.005	0.946	-16.47
	AngloAccult	-0.179	1.724	0.011	0.917	-16.39
	LatinAccutl	-0.095	2.252	0.002	0.966	-9.06
	Climate_SocEnvr	-0.022	1.091	0.000	0.984	-2.18
	Climate_LangPress	-0.342	0.841	0.165	0.685	-28.97
	Male	0.493	1.859	0.070	0.791	63.72
	FamilySource	-0.361	3.694	0.010	0.922	-30.30
	FriendSource	0.276	3.505	0.006	0.937	31.78
	EmployerSource	-0.438	0.245	3.205	0.092*	-35.47
Sanitation (in factories) worker	Intercept	0.869	6.421	0.018	0.892	
	Age	0.012	0.057	0.046	0.830	1.21
	Educ	0.039	0.142	0.077	0.782	3.98
	Not_app	0.751	1.678	0.200	0.654	111.91
	AngloAccult	0.134	0.499	0.073	0.036**	14.34
	LatinAccutl	-0.585	1.412	0.172	0.679	-44.29
	Climate_SocEnvr	-0.284	0.677	0.176	0.675	-24.72
	Climate_LangPress	-0.280	0.556	0.253	0.615	-24.42
	Male	-0.192	1.122	0.029	0.864	-17.47
	FamilySource	0.954	1.064	0.804	0.370	159.61
	FriendSource	0.117	0.249	0.220	0.047**	12.41
	EmployerSource	-3.595	2.267	2.514	0.113	-97.25

Table 24. cont.						
Latin market, shops and restaurants worker	Intercept	-3.487	4.748	0.539	0.463	
	Age	-0.017	0.043	0.158	0.091*	-1.69
	Educ	0.033	0.099	0.112	0.737	3.36
	Not_app	-0.681	1.143	0.355	0.551	-49.39
	AngloAccult	-0.027	0.789	0.001	0.973	-2.66
	LatinAccutl	0.067	0.985	0.005	0.497	6.93
	Climate_SocEnvr	0.184	0.452	0.166	0.684	20.2
	Climate_LangPress	0.118	0.361	0.107	0.743	12.52
	Male	-0.318	0.698	0.207	0.649	-27.24
	FamilySource	0.066	1.037	0.004	0.11	6.82
	FriendSource	-1.641	0.981	2.8	0.094*	-80.62
	EmployerSource	-2.004	1.593	1.582	0.208	-86.52

-2 Log Likelihood: 591.44 ** Sig. at 5%; *Sig. at 10%
Nagelkerke R square: 0.174
N: 92
% change:[Exp(β)-1] *100

The findings for region C are presented in table 25. These findings are in relation to the hospitality, tourism, and serving sector, which has been aggregated and called the hotel services. Findings show that older immigrants are 11 percent less likely to work in construction and 19 percent less likely to work in formal employment. Those perceiving negative socio-environmental climate are 46 percent more likely to work in construction and 65 percent more likely to work in Latin market. Those with high Anglo acculturation are 2 times more likely to work for other formal employers rather than hotel services. Those who have obtained job information from friends are 34 and 43 percent less likely to work in construction and Latin market respectively. Conversely, those who sourced job information from family members are 60 and 65 percent more likely to work in construction and Latin market respectively. In terms of gender, results show that males are 72 and 22 percent more likely to work for construction and Latin market respectively. And finally, those that are not-properly documented tend to prefer the construction business over the hotel services at a ratio of 2 to 1.

Findings have suggested that in some instances networks exert some measurable significant influence on the type of occupation held by a householder. In the case of region A, findings point to a tradeoff of construction and poultry processing jobs in terms of education and employer source of information. This can only make sense for two reasons: (a) poultry processing jobs are mostly in low skilled jobs, and (b) construction jobs are mostly localized. Another issue to observe here is the fact that some in construction are allocated to subcontractors, who normally seek specific individuals who have some skill in the types of jobs they want to perform. Family sources of information have been shown to be important to the type of business normally connected to family such as restaurants and Latin market such as ethnic shops.

By contrast friends as a source of information have more influence on the type of jobs that are less related to the family and more to the main employer of the region. This suggests a situation whereby information about job availability is passed along through the network of friends. These results are also very important if seen under the light of the levels of literacy of most Latinos in this region, which makes them averse to reading and filling “too many papers” as one Latino pointedly mentioned.

TABLE 25 RESULTS OF THE PROBABILITY OF CHOOSING A GIVEN JOB FOR REGION C

Occupation	Independent Variables	β	Std. Error	Wald	Sig.	% Change
Construction worker	Intercept	1.732	5.234	0.109	0.741	
	Age	-0.116	0.034	11.982	0.063*	-10.95
	Educ	0.045	0.113	0.160	0.689	4.60
	Not_app	0.458	0.877	0.273	0.071*	58.09
	Married	0.445	0.952	0.219	0.640	56.05
	AngloAccult	-0.730	0.693	1.110	0.292	-51.81
	LatinAccutl	-0.148	1.048	0.020	0.888	-13.76
	Climate_SocEnvr	0.381	0.601	0.402	0.022**	46.37
	Climate_LangPress	-0.016	0.338	0.002	0.961	-1.59
	FamSource	0.470	0.993	0.224	0.083*	60.00
	FriendSource	-0.420	0.922	0.208	0.096*	-34.30
	EmployerSource	-8.979	0.000	0.000	2.344	-99.99
	Male	0.875	1.324	0.437	0.000**	139.89
Firm or other formal employment	Intercept	2.135	8.208	0.068	0.795	745.70
	Age	-0.214	0.101	4.510	0.034*	-19.27
	Educ	0.441	0.281	2.468	0.116	55.43
	Not_app	2.158	1.713	1.586	0.208	765.38
	Married	2.899	1.868	2.408	0.121	1715.60
	AngloAccult	0.651	1.074	0.367	0.036**	91.75
	LatinAccutl	-1.504	1.574	0.913	0.339	-77.78
	Climate_SocEnvr	-1.521	0.933	2.661	0.103	-78.15
	Climate_LangPress	-0.031	0.419	0.005	0.941	-3.05
	FamSource	2.438	1.692	2.078	0.149	1045.01
	FriendSource	-1.420	1.684	0.710	0.399	-75.83
	EmployerSource	-1.221	3.651	0.112	0.738	-70.51
	Male	-1.719	1.442	1.423	0.010**	-82.08

Table 25. cont.

Latin market, shops and restaurants worker	Intercept	2.492	3.520	0.501	0.479	1108.54
	Age	-0.054	0.027	3.951	0.047**	-5.26
	Educ	0.107	0.077	1.908	0.167	11.29
	Not_app	-0.261	0.619	0.178	0.673	-22.97
	Married	0.874	0.632	1.912	0.167	139.65
	AngloAccult	0.080	0.443	0.032	0.857	8.33
	LatinAccutl	-0.189	0.635	0.089	0.766	-17.22
	Climate_SocEnvr	-0.950	0.363	6.861	0.009**	-61.33
	Climate_LangPress	0.058	0.218	0.070	0.792	5.97
	FamSource	0.557	0.685	0.661	0.042**	74.54
	FriendSource	-0.578	0.621	0.866	0.075*	-43.90
	EmployerSource	-0.271	2.548	0.011	0.915	-23.74
	Male	0.205	0.584	0.123	0.000**	22.75

-2 Log Likelihood:482.61 ** Sig. at 5%; *Sig. at 10%

Nagelkerke R square: 0.151

N: 103

% change: [Exp(β)-1] *100

The relative importance of educational level in influencing the type of job could also be explained if all those working in sectors other than the factory are considered. This is also reflected in the high level of seeking job information from the media, a testament of the diversification of regional economic base. The common sources of information tied to networks, family and friends, were significant in influencing the decision to which type of job to choose. This might be in line with the literature that suggests Latino move to a place where there are vacancies, and these might be (or not) better than the job that they had before (Dozi and Valdivia, 2005; Dust *et al.*, 2008).

In the Region B, the Anglo acculturation variable is significant in influencing job selection in sanitation. It should be noted that this variable includes the English language skill levels. This seems to make sense especially if we consider the job-specific knowledge required in order to work in one of these factories. It is also worthwhile to note that a large number of

participants mention having at least one member of the family who has experience in the type of job being done in the most dominant employer in the region. A common aspect in these analyses so far has been that variables that have been found to influence job selection in other studies (Hagan, 1994; Massey, *et. al.*, 1987; Munshi, 2003) such as friends and family sources of information, age, and marital status are not significant here.

Additionally, in terms of employer sources of information, Latinos who have received information from the employer tend to have higher probability of jobs related to the main industry in the region. It has to be realized that the employer also used Latino head hunters employed directly or indirectly by the factory. These "talent" searchers are effectively part of a larger network, which includes bothers, cousins, friends, fathers, mothers, country mates and so on. Thus, it could be seen that even though those using family tended to have higher probability of being employed by Latin market, the impact is very small as indicated by the Wald scores. However, those using friends tend to have higher probability of being employed by the meat processing factory. Age is also very important given the high turnover rates observed at these factories. In focus groups it was mentioned that managers at the factory are finding it increasingly hard to retain workers in the factory. Jobs are very demanding and people of certain age simply do not last long performing these jobs before moving on. Thus, managers concentrate mostly on young people to work in these factories.

There is another take on the impact of age in Region B. There is anecdotal evidence that age has a singular way of influencing job selection in the Region B. In preliminary assessments of the area through focus groups and case studies it was found that there is a high turn-over rate of young males in the region. It was mentioned that it is very hard to retain able-bodied young males for long stretches of time working in these factories. The high turnover of young males in these jobs in the Region might have less to do with the age and more to do with the legal status, and to some extent, with work conditions. Latinos in the region have reported having run away from a

neighboring community after a Immigration and Customs Enforcement (ICE) agency's raid in a pork processing plant. Most non-properly documented immigrants that were not apprehended moved down to this Region B's community. And recently the e-verify method of checking for social security has put another obstacle in the retention of young males in factories. Rather than waiting to be fired, Latino immigrants who are non-properly documented are constantly looking for jobs in much more accessible communities. When these jobs show up, they simply move, thus the turnover rate.

In regards to region C, many elements of social networks influence could be observed as influencing occupational choice. For instance, females and young are more likely to work for hotel services than in construction, formal or Latin market. This agrees with the literature, which states that young and female Latinos are more likely to use social networks than otherwise (Ioannides and Loury, 2004). These results tend to confirm our hypothesis that sources of information influence the type of job held. Table 6 shows that over 67 percent of Latinos tend to work in hospitality and restaurant business. In the hospitality business the preference tend to be biased towards females (Hagan, 1998; Menjivar, 1997); this might be one the reason that this variable is a significant influence for job selection. Unlike the other two regions (A and B), this region employs Latino in areas that are more likely to be seen by the public and work inspectors. They are also more likely to interact directly with customers. Thus the climate and acculturation are very important elements of this equation.

Latin acculturation is also a significant class of variable influencing occupation. This variable is closely linked to cultural capital and its influence can be seen in two different ways. First, work being done here requires long working hours and some Latino immigrants have two, three and sometimes four jobs. And previous studies have found that Latinos the social group's sense of worth propelled Latinos to work harder for their goals (Valdivia and Flores, *in review*). A second way of seeing the importance of this variable is through Latinos' cultural values of

helping each other. That is, during winter times most stay without work. However, the belief that if you just weather this out until the next tourism season you will be able to get work, hinges mostly on the fact that someone will be willing to help you through this period should you run into emergencies.

Concluding, it could be said that the fact that a large percentage of Latinos have obtained job information through familial and friendship contacts attest to the fact that local networks generate information that Latinos use in order to relocate to these communities. These results are consistent with past research that found Latino immigrants already in the area facilitate integration of new members by providing information on job vacancies in specific industries (Hagan, 1998; Menjivar, 1997), and other well-being related information such as housing (Massey, *et al.,* 1990). Especially Hagan (2001) found that there are instances that Latino workers in certain areas in the US found jobs for people of their country that were yet to migrate.

VI. 4. Chapter conclusions

In this chapter, an assessment of the impact of the network's local factors on employment was carried out. The objective of this hypothesis was to capture the impact of local networks on the main livelihood strategy of Latinos in rural areas. The testing of the hypothesis was conducted using multinomial Logit regression and separated per region. The impact of social networks was tested by assessing the influence of bonding and bridging sources of information on job selection in a specific region.

The findings suggest that there are some network-specific influences on job selection given that the variables that are significant are not consistent throughout the regions. Findings show that social friendship networks contribute significantly to the variation observed in the work type held by Latinos. Familial networks did not show significance. Friend social networks have

an influence on the type of jobs that Latino immigrants find in these areas via the information they provide. This, in a way works to confirm social capital postulates in regards to weak and strong ties. Next chapter presents an assessment of the impact of social networks on well-being.

CHAPTER VII – Social network impact on well-being

VII. 1. Introduction

This chapter addresses the impact of social networks on well-being. The dependent variable, well-being, is measured by Personal Well-being Indicator ([PWI] International Well-being Group, 2006). The theoretical model for this analysis was presented in chapter III.

The chapter is organized as follows: section 2 presents the objectives; section 3 presents the empirical model, variables used and the rationale for their selection; section 6 presents the results of the estimation and discussion of the results; and finally section 9 concludes the chapter.

VII. 2. Objectives and hypothesis

The objective of this chapter is to first develop an economic model to assess the effect of social networks, assets, and community context on well-being and secondly to test the model of use of social networks by Latino immigrants empirically in rural Missouri using 2009 survey data collected from three regions that differ in pull and push factors.

Based on the sustainable livelihood and the household production theories, it is hypothesized that social capital helps create relationships that are reciprocal and mutually beneficial both for the individual and the community where these individuals live. Individuals with high social capital (e.g. better connections) will be able to take advantage of their investments to sustain or improve well-being.

Hypothesis: Social capital will have a positive effect on the level of well-being.

It is generally hypothesized that higher social capital will lead to greater well-being. Social networks are operationalized mostly as social capital in the literature. Social capital has

recently been subdivided into three distinct forms: bonding, bridging, and linking (Woolcock, 2003). It is hypothesized that all three forms of social capital will have a positive impact on well-being.

VII. 3. Empirical framework (estimation model)

The empirical model follows from the theoretical developments presented above. A reduced-form approach will be followed. A Heckman (1979) two-step estimation procedure is used to estimate the influence of k_s on well-being. There are several reasons justifying the use of this approach. Firstly, the sample used, though representative, was not randomly selected. Many participants were selected based on networks connections. Consequently, other variables that influence well-being might not have been observed (or have bias) for those in the sample. Additionally, It is assumed here that social network participation is a choice made by households. By corollary, it should be also assumed that participation in social network activities follows a self-selection pattern. This self-selection creates incidental truncation on the dataset because there are variables of interest that are observed only if a householder uses social network services. A correction procedure to account for this truncation is presented below.

VII. 3.1. The Selection Model: Estimation of IMR

The Heckman procedure is designed to correct potential selectivity bias in a sample in a case that a self-selected variable is used in the estimations (Heckman, 1979b). Even though it is almost impossible to be absolutely certain if there is selectivity bias, it is safe to correct for it anyway due to the methods used to recruit participants for the survey and the requirements of this study. The correction procedure for selectivity bias is only necessary for the estimation of the impact of social networks on well-being. The procedure used here consists of estimating a model

of a decision to participate in social networks and then uses this to estimate the Inverse Mill's Ratio (IMR).

Social networks are reciprocal in nature, thus, in order to use the services of their social networks, households will consider their endowments as well as what they have to offer to their social networks in return, i.e., the costs. Additionally, there are other unforeseen factors that influence exchanges in social networks, i.e., the unobserved variability. Thus a household will only participate in social networks if it perceives that the total benefits being derived really outweigh the costs. This suggests that some individuals might choose not to participate in social networks, effectively creating a selectivity bias issue.

Selection bias must be controlled for because it is an omitted variable. This is what is being estimated equation (*VII.3*) below. A common correction procedure is the two step Heckman method, which uses the IMR, proposed by Heckman (1979). This procedure consists of firstly using a Probit regression model in order to estimate the probability that an householder will use a network's services (i.e. observing a positive outcome). In the second step, the estimates obtained from the first regression are used to calculate the IMR, which is used as an additional explanatory variable in the normal regression. The exposition being presented below follows from Wooldridge (2008). Formally, the Heckman procedure could be represented in a linear form as:

$$(VII.1)\ P_{ks} = \boldsymbol{\delta C} + \boldsymbol{\varepsilon}$$

In the equation above, P_{ks} represents the utility from participating in social networks; $\boldsymbol{C}$ is a matrix containing all the associated household characteristics that influence the participation decision with $\boldsymbol{\delta}$ being its corresponding unknown coefficients; and $\boldsymbol{\varepsilon}$, represents the stochastic term. For the estimation of the IMR, formally, the Heckman method is specified as:

$$(VII.2)\ Prob(P_{ks} = 1|\boldsymbol{C}) = \Phi(\boldsymbol{C}\pi)$$

In the equation (*VII.2*) P_{ks} indicates participation in social networks, which is equal to 1 given a vector of household explanatory variables and other characteristics $\boldsymbol{C}$ that affect the participation decision and $\boldsymbol{\delta}$, is its corresponding vector of unknown parameters ($P_{ks} = 1$ if yes and 0 otherwise); Φ represents a cumulative probability distribution. After obtaining these results, the IMR is estimated as follows (Wooldridge, 2008):

$$(VII.3)\ \lambda(\boldsymbol{C}\pi) = \rho\sigma\frac{\varphi(\boldsymbol{C}\pi/\sigma)}{\Phi(\boldsymbol{C}\pi/\sigma)}$$

Equation (*VII.3*) represents the IMR which is the ratio between the standard normal probability distribution function, $\varphi(\boldsymbol{C}\pi/\sigma)$; the standard normal cumulative distribution function, $\Phi(\boldsymbol{C}\pi/\sigma)$; σ is the standard deviation; and ρ is the correlation coefficient between the error terms. This IMR represents what is essentially a missing variable that was supposed to be included in the regression. Thus, for estimation purposes, in equation (*VII.3*) the vector $\mathbf{C}$ (evaluated at the mean) will include variables that influence households' decision to participate (or use the services of) a social network.

The dependent variable for this regression is the participation or not in any social networks by a household, which is a binary response of yes or no. This variable was created from three very specific questions that asked householders if they participated in social network activities or not. For the independent variables, it should be considered that the social network is highly community as well as individual specific. So, it is only logical that those variables pertaining to individuals and communities be included in the estimation of the participation. Wooldridge (2008) mentions that the variables used for this process should be a subset of the independent variables used for the main equation to be estimated using this IMR. Thus the variables selected are: (a) human capital (Education, ability to speak, write and read English, work status), (b) demographic characteristics (age, gender, and marital status) (c) network-related

variables (country of origin; local of current residence), (d) cultural capital, and (e) climate or context of reception.

The results of the probit estimation are presented in the table 26 these results are subsequently used for the estimation of the Inverse Mill's Ratio that is later used in the second step of this procedure as an additional variable.

TABLE 26. PROBIT RESULTS OF FOR THE SELECTIVITY ESTIMATION

Parameter	Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Age	0.005	0.002	2.559	0.010	0.001	0.009
Being female	-0.043	0.044	-0.984	0.325	-0.128	0.043
Marital Status	-0.039	0.011	-3.432	0.001	-0.062	-0.017
Ability to speak English	0.033	0.042	0.787	0.431	-0.049	0.114
Ability to write English	0.061	0.049	1.235	0.217	-0.036	0.157
Ability to read English	0.032	0.052	0.610	0.542	-0.070	0.134
Educational level	0.026	0.007	3.520	0.000	0.011	0.040
Currently working	0.060	0.051	1.182	0.237	-0.039	0.159
Socio environmental	-0.010	0.031	-0.320	0.749	-0.071	0.051
Racism and discrimination	0.009	0.018	0.500	0.617	-0.027	0.045
Language pressures	0.046	0.021	2.147	0.032	0.004	0.087
Cultural capital	0.006	0.003	2.186	0.029	0.001	0.011
Sedalia	0.625	0.052	12.118	0.000	0.524	0.726
Milan	0.192	0.052	3.712	0.000	0.091	0.294
El Salvador	-0.087	0.167	-0.522	0.602	-0.415	0.240
Guatemala	-0.054	0.180	-0.297	0.766	-0.406	0.299
Honduras	-0.209	0.184	-1.136	0.256	-0.569	0.151
Other Countries	-0.156	0.161	-0.966	0.334	-0.471	0.160
Intercept	-3.700	0.251	-14.721	0.000	-3.952	-3.449

		Chi-Square	df[a]	Sig.
PROBIT	Pearson Goodness-of-Fit Test	654.686	417	.000

VII. 3.2. The Substantial Model: Social networks impact on well-being

The dependent variable, well-being, is unobserved. Instead, a set of indicators is used to create the variable used in the estimations. These indicators use a Likert scale, which results in an ordinal (instead of a binary) dependent variable. The well-being indicator created, which is a

mean of all the manifest variables, is a continuous variable. This means the empirical estimation could be carried out using ordinary least squares (OLS).

In order to estimate the OLS model, the measurement model presented in equation *(III.15)* is used as the basis for the estimations for the impact of social network on well-being. The well-being variable is created from a group of indicators that are designed to capture different components of the Personal Well-being Indicator (PWI). Questions used to create the construct were scored on a scale of 0 to 10. These conditions are translated into the estimation model (Greene, 2003) by letting i represent household i, whereby $i = 1 \ldots, n$ and n represents the sample size. Let w_i represent household $i's$ responses as captured in the survey instrument, whereby $i = 1, 2\ldots, J$. Let W_i^* represent the underlying latent variable that aims to capture householder's propensity to correctly assess well-being as asked in the survey instrument.

The implicit function theorem allows for the conversion of a reduced-form function to an estimable linear equation (Wainwright and Chiang, 2004). Thus, after applying the postulates of implicit function theorem and adding the Inverse Mill's Ratio (IMR)[7] and an error term, an estimable equation of the following form is obtained:

$$(VII.4)\ W^* = \beta D + \gamma k_s + \alpha(C\pi) + \varepsilon$$

In equation (*VII.4*), W^* represents household well-being, which is an unobserved variable composed of various manifest instruments as explained below; D is a vector of household characteristics influencing well-being and β is its associated vector of coefficients; k_s is a vector of social network participation and γ is its associated vector of unknown coefficients; $C\pi$ is the IMR - these are a subset of k_s and D variables that influence participation in social networks; and finally ε is the unobserved error term. The IMR variable is added to the equation to

[7] The rationale for the inclusion of this term is presented in section 6 below.

correct for a possible selectivity bias and the truncation of the data explained and estimated above.

The social network impact model estimates the effects after explicitly separating the social network indicator variable from other assets in the household endowment set. This is necessary in order to clearly separate the effect of this capital from other capitals that a household might have. The assets used for the estimation of the well-being impact model are, in general terms, the following: human capital, cultural capital, context of reception, climate, acculturation, social (capital) networks and financial capital. The specific variables included are discussed below.

VII. 3.3. Variables used

This chapter is concerned about assessing the impact of social networks on well-being. All variables used in this study are described in greater detail in section 4 in the data chapter (chapter IV). Summarizing, the variables used are the following: dependent variable used was Personal Well-being Indicator (PWI). All other variables used, namely, the independent variables are presented in the table 27.

Social capital impact was separated between using and belonging to groups. Social capital is defined as "resources embedded in a relationship among households that facilitate productive capacity" (Lin, 2001, p.14). Social capital is then subdivided into bonding, bridging, and linking. Bonding refers to the close knit relationships such as family and close friends. Bridging refers to more diffuse and extensive network such as coworkers. Linking is vertical metaphor that refers to relationship of power, such as connecting to your boss or a business person (Woolcock, 2001). Portes (1998) argues that from the definition of social capital a focus should be placed on the sources rather than consequences of social capital without losing sight of

trust and reciprocity created from repeated transactions between members. Additionally, the "definition allows us to incorporate different dimensions of social capital, and to recognize that communities can have access to more or less of them" (Woolcock and Narayan, 2000b, p. 3). It is also argued that by separating sources from consequences of social capital, it is possible to observe that it is different combinations of various dimensions that generate impacts livelihoods and combinations change over time.

The preceding discussion implies that there are multiple ways that households obtain and then use social capital to sustain their livelihood. In the case of Latino immigrants, these networks are a capital used to settle, to take care of children, for a ride to work and shop, and help in case of emergencies in order to sustain their well-being, which encompasses physical health, achievement, community, future, and personal safety, wealth, spiritual health. Therefore the model incorporates belonging and using the networks as different sources and dimensions of social capital in order to determine how each impacts well-being.

TABLE 27. LIST OF VARIABLES USED IN OLS ANALYSIS

Variables	Description
Dependent:	
Subjective Well-Being	PWI: average of 7 manifest variable scored on 0 – 10 scale
Independent:	
Gender = Female	Household gender: Females modeled
Currently working	Work status: 1 if yes, 0 otherwise
Not documented	If has legal residency documents and allowed to work: 1, 0 otherwise
Gov assistance	If receiving SSI, WIC, or Food Stamp: 1, 0 otherwise
Alt source of income	Income other than wage or gov. assistance: 1, 0 otherwise
Bonding social capital	If has used family network: 1, 0 otherwise
Bridging social capital	If has used friendship network: 1, 0 otherwise
Linking social capital	If has used community center network: 1, 0 otherwise
Member of any informal group	If member of informal group: 1, 0 otherwise
Member of any religious group	If member of religious group: 1, 0 otherwise
Member of formal group	If member of formal group: 1, 0 otherwise
Family first lodging	If family member provided lodging when arrived in region: 1, 0 otherwise
Marital St. (single default)	Household marital status: 1 if married, 0 otherwise
Age	Householder's age, in years
Job tenure	Length of time at this current job, in years
Length of residence	Length of residence in community, in years
Mobility	How many community has lived before moving in
Anglo-acculturation	Anglo acculturation score, an average of 12 items
Latin-acculturation	Latin acculturation score, an average of 12 items
Socio-Environment	Community Perception: socio-environmental context, average of 12 items
Race and Discrimination	Community Perception: Racism and discrimination context, average of 9 items
Lang- Press	Community Perception: Language Pressures context, average of 7 items
Cultural Capital	Cultural capital, an average of 6 items on the cultural identity scale.
Educational Level	Educational attainment, i n years
Community Influence	Community influence, sum of income distribution, average age, mean education, and ethnic distribution
Log Income	Linear logarithm of the total household income

VII. 4. Results of the OLS estimation

The first research hypothesis of this study had to do with the impact of social networks on well-being. Social networks were subdivided into three different types: bonding (familial), bridging (friendship) and linking (upward or power. In general terms the hypothesis can be re-stated here as:

H1: social networks have a positive impact on well-being of Latino immigrants living in non-urban areas of Missouri.

The main reason for estimating the impacts using OLS rather than Probit/Logit has to do with the nature of the dependent variable (Wooldridge, 2008). That is, the dependent variable is a latent construct developed by averaging multiple indicators that are scored using a Likert-scale, which are ordered discrete variables. However, once the constructs are developed they get transformed from ordinal discrete variables to continuous variables, thus complying with the postulates of OLS. The normal OLS regression is also preferred over the censored regression because when these values are averaged, the resulting average is real-valued on the interval [0, 10] (i.e., it can take all possible real values between and including 0 and 10). The only time the literature recommends censoring at 0 or 10 is when a substantial share of the respondents (maybe 10% or more) provide boundary responses – that is, some people report all zeros or all tens so that the observed average equals zero or 10 for some fraction of the respondents (Wooldridge, 2008). This could also happen if some fraction of respondents reports all fives or some other value due to perceived indifference in the responses – this would introduce censoring in the middle of the dependent variable range. If this is true, then a censored regression model that includes lower censoring at zero and/or upper censoring at 10 (or at five or some other mid-range value that is frequently observed) should be used. Otherwise, in the absence of boundary responses, the dependent variable could be treated as uncensored values. The indifference issue is

not observed with the data used here. Findings of the OLS analysis on the impact of social networks on well-being are presented in table 28.

TABLE 28. RESULTS OF THE IMPACT OF SOCIAL NETWORK ON WELL-BEING

Variables	Unstandardized Coefficients		Std. Coeff.	t	Sig.
	β	Std. Error	β		
(Constant)	9.590	2.272		4.222	0.000
Bonding social capital	0.274	0.061	0.264	4.508	0.000**
Bridging social capital	0.073	0.036	0.025	2.053	0.041**
Linking social capital	0.015	0.300	0.005	0.049	0.961
Member of informal group	0.006	0.189	0.002	0.032	0.974
Member of religious group	0.429	0.213	0.146	2.013	0.045**
Member of formal group	0.584	0.410	0.103	1.425	0.155
First lodging by family	0.138	0.069	0.030	2.020	0.028**
Anglo acculturation	0.333	0.217	0.177	1.537	0.128
Latino acculturation	0.243	0.166	0.111	1.469	0.142
Socio environmental	-0.163	0.070	-0.049	-2.325	0.021**
Racism and discrimination	-0.028	0.178	-0.010	-0.158	0.875
Language pressures	-0.065	0.132	-0.056	-0.493	0.623
Being female	-0.603	0.197	-0.208	-3.053	0.002**
Age	0.000	0.001	0.000	0.000	0.995
Educational level	0.062	0.045	0.143	1.360	0.181
Non properly documented	-0.358	0.173	-0.122	-2.076	0.038**
Length of employment	0.003	0.002	0.000	1.636	0.096*
Married householder	0.121	0.125	0.037	0.964	0.338
Mobility	0.013	0.089	0.009	0.143	0.883
Length of residence	0.059	0.025	0.168	2.333	0.021**
Government assistance	0.035	0.021	0.012	1.683	0.093*
Alternative income	0.053	0.031	0.011	1.724	0.081*
Community influence	0.016	0.021	0.031	0.737	0.467
Log income	0.037	0.020	0.059	1.821	0.075*
IMR	-0.015	0.329	-0.003	-0.045	0.964

N: 391; **Sig. at 5%; *Sig. at 10%

The analysis of variance results show that the overall model is statistically significant.

TABLE 29. ANALYSIS OF VARIANCE FOR THE WELL-BEING EQUATION

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	155.930	26	5,997	3.298	.000
Residual	663.669	365	1.818		
Total	819.598	391			

[b]. Dependent Variable: PWI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.412	.171	.138	1.271

VII. 4.1. Discussion and implications of empirical results

In relation to bonding social network use hypothesis, based on the results presented in table 28, there is considerable evidence for the rejection of the null hypothesis at the 5 percent level. That is, there is a statistically significant and positive influence of bonding social networks on well-being of Latino immigrants, which conforms to the predictions. In relation to bridging social network use, there was evidence to reject the hypothesis at the 5 percent level of significance. However, there was not enough evidence to reject the null hypothesis for hypothesis for the linking social capital. That is, even though the effects of this type of social network conformed to the predictions, the effects were not statistically significant.

Additional variables were found to be statistically significant, namely: being female, not being legal, member of religious groups, length of residence in the community, and the socio-environmental context were found to be significant predictors of Latinos' well-being.

Results are discussed and implications are presented mostly for those variables that were found significant at the 5 percent level. These are presented in the order they appear in the estimations. Occasionally, and when the theory justifies, those variables that were significant at

the 10 percent level of significance are also discussed. Non-significant variables are mostly not discussed.

VII. 4.1.1. Gender

Immigration impacts on livelihoods are gendered. These impacts can be on well-being or any other construct (C. Suarez-Orozco and M. M. Suarez-Orozco, 2001). The gender variable was found to be a significant negative predictor of well-being in relation to males. These results should be seen in light of the larger migration literature which stresses that Latinas (women), unlike men, mostly migrate for family reunification, i.e., to join parents, husbands, etc. (Cerrutti and Massey, 2001), and a relatively low number immigrate by outright risk taking, entrepreneurial predisposition, and propensity to work (Greenlees and Saenz, 1999; Hondagneu-Sotelo, 1992). This arrangement suggests that most Latina that immigrate tend to be subject to male authority by obeying and being submissive (Parrado and Flippen, 2005), which exacerbates gender inequality in most spheres.

This submission and obedience by Latinas tends to remove the individual agency of women in regards to their own livelihood by depending solely on the plans and aspirations of the males and/or parents. Most indicators of well-being used here tend to focus on the ability to make decisions that affect a particular facet of one's livelihood. The inability to make decisions by Latinas might be partly responsible for the negative perceived well-being being captured here. For example, Orozco and Orozco (2001) explain that there have been reported instances when husbands, who were legal residents, used the threat of repatriation/deportation in order to elicit cooperation (or submission) from their wives.

VII. 4.1.2 Not properly documented worker (Legal residence)

Consistent with past research on legality and well-being of immigrants (Borjas, 2001; Card, 2005; De Haan, 2000; Menjıvar, 2006; Portes and Rumbaut, 2006), not being properly documented areas affects well-being negatively. It is important to realize that this variable was "extracted" from participants with much maneuvering. That is, there was an option for those who did not wish to reveal their real status to choose "other". Here these participants were considered as not-properly documented. A second category included those participants that were either citizens or legal residents. Any other form of legal residency, such as temporary protection status (TPS), was also considered as legal status. Legal residential status is a very important factor for present and future security of a Latino householder. Because being properly documented is necessary in order to lead a normal livelihood, the absence of legal documentation restricts the strategies that households have to deal with risk. This is understandably reflected in the high perceptions of risk and the low perceived ability to cope that non-properly documented Latinos manifested in this survey.

Aspirations of an improved human capital for future generations are a big part of a Latino householder's well-being perceptions. However, legal status plays a very important role in this aspiration. Latino immigrants and their children are often demoralized when they realize that the prospects of entering tertiary education are very limited for non-properly documented immigrants. alternatively, for those households with children that are citizens, many restrict their children's movement, what information that could be given out to authorities and where, sometimes pulling children out of schools altogether (Portes and Rumbaut, 1996; Suarez-Orozco and Suarez-Orozco, 2001) in order to avoid being exposed.

VII. 4.1.3. Bonding social capital

The bonding social networks was statistical significant at the 5 percent level. Latino norms dictate that personal matters should be kept in the "family" (Hondagneu-Sotelo, 1992). In order to illustrate this point, for instance, participants of the focus groups for this research objected vehemently to the idea of using local enumerators to carry out the survey due to the potential of leaking personal information related to income, their assets, and human capital among other issues to the region where they lived. Latino immigrants have an expectation of, and usually seek, help from fellow family members in case of need (Hagan, 1994).

The use of bonding might be an evidence of the *familismo* principle. This is suggested by the high percentage of households relying on bonding structures for information about jobs, help in case of emergencies such as help in the payment of medical bills, rental payments, mechanic payments and myriad other expenses. These informal insurance mechanisms help reduce the strain on householder's income earnings, which are normally low. Basically, these mechanisms allow the re-allocation of resources by a householder thus making it possible to invest in areas that would potentiate normal levels of well-being.

These finding about the impact of bonding on well-being yields various important insights about Latino immigrant well-being. These insights could, in turn, help inform policy on how best to integrate Latinos in the community and increase immigrants' prospects of improving well-being. One area where these networks are important for both the community and Latino immigrants is the job market. For instance, two-thirds of the sample participants report finding their job though family contacts. These bonding social networks have thus taken over the functions of facilitating institutions. These facilitating institutions main functions in relation to the job market are to sort, assign, and match prospective employees with prospective employers. In so doing, they help reduce transaction costs for both the employers and employees.

However, there is a certain ambivalence of the effects of this result, which is also reflected in some version of the "horizon problem". That is, it depends whether you're looking at the long term or short term. In the short term, given that most of these Latinos have low levels of human capital (low educational level, limited or no English ability, low professional experience that is transferrable to the US market) the end result can be positive. That is, they might not have gotten jobs had they applied to companies directly through conventional means. Additionally, those Latinos who might not have had jobs back in their communities and/or with bleak future prospects may see their economic capital skyrocket and start to support many livelihoods back home through remittances.

These social networks are very limited on the types of jobs that their members can apply, and when these jobs are available, immigrants are restricted to menial, low skilled jobs, which does not demand English ability (Valdivia and Flores, *In review*). Their quest to remain protected by the networks does not encourage them to venture outside of the network in order to improve their human capital nor participate in formal training provided by the employers, which would have allowed them to apply to different jobs (or different, higher skilled type of work within the same company). Moreover, fear of the authorities or "being exposed" sometimes reaches paralyzing proportions within these networks. In their bid to remain unseen by authorities, many endure precarious working conditions, refuse medical insurance, refuse to file tax return forms, and seek medical help for work-related injuries only when critical. Conversely, some unscrupulous employers use the perilous legal situation in order to exploit Latinos, sometimes to the point of inhumane conditions. This is in line with the literature in labor economics where reports such as deaf-mute Mexicans were found working in New York under "slave-like" conditions (Suarez-Orozco and Suarez-Orozco, 2001).

These bonding social networks are important for Latinos because, sometimes, networks provide limited sense of security by helping immigrants become "invisible" through the provision

of survival strategies. This is because they help members register their children for services, under the name of another network member who is legal. This situation, allows a household to obtain essential services for the children (who, most of the time are citizens) without revealing the identity of the parents.

VII. 4.1.4 Member of religious organization

Being a member of a religious social network was used in this study to assess the impact of affective dimension and was found to be statistically significant. Social gatherings and, most importantly, religious activity are very important components of Latinos' livelihood (D. S Massey et al., 1990; Menjivar, 1997; Portes and Rumbaut, 1996, 2006). Latinos are very religious people (Bemak et al., 2002; Falicov, 2000).[8] Religion is a very large portion of what it means being Latino, and resonates loudly with Latino's cultural identity, which is significant at 10 percent level in this study. However, the use of religious social network for material gain and support was not significant in this research. Therefore, it could be concluded that Latinos main use of religious organizations is mostly spiritual. These organizations, which include churches, community-based groups with religious inclination help Latinos endure hardships and instill a sense of hope for better days to come which is one of the constituting elements of PWI, thus an important part of well-being.

VII. 4.1.5. Length of residence in the community

Length of residence is very important because, more than anything else, it helps in the acclimatization process. That is, it works in tandem with the acculturation process given that it helps the Latino immigrant assess the context of reception. Length of residence has shown to be a significant positive predictor of well-being. This makes sense and it is in line with prior research

[8] The sociological, anthropological, historical and psychological reasons for Latinos' affinity with religion are beyond the scope of this study.

on the impact of time on Latino newcomers' perceptions. However, this is only consistent for the first generation of Latino immigrants (Portes and Rumbaut, 1996; Suarez-Orozco and Suarez-Orozco, 2001). Portes and Rumbaut (2001b) mention that first generation Latino immigrants have higher aspirations both for themselves and their children in regards to success in this society and human capital advancement. These aspirations gradually decrease with successive generations. For instance, in terms of education, even though the second generation has higher potential than their parents, mostly due to being legal residents and having access to better resources, they do not exploit these resource advantage to the maximum (Portes and Rumbaut, 2001a).

There is an alternative explanation to the impact of length of residence in the community. For instance, with each passing year, a Latino immigrant gets more comfortable with the community. After staying in the community for a long time, it becomes possible to expand the social network beyond the familial, close nit network. This expanded network can provide support in tough times, which might help stay in the community even longer without fear. Usually, when Latinos arrive in a new community they are confronted with myriad issues: finding housing and employment, the reality of being unemployed in a new community, the reality of not knowing the local language, accepting the downgrading of socio-economic status and profound changes in familial, marital, and gender roles are some of the most important ones. Research suggests that, on average, immigrants use the first two years of resettlement to try to meet the basic needs such as employment and housing and also adjust to their new reality (Bemak et al., 2002). Thus, theoretically, longer residential time in a given community would help in this adjustment process, it would also help in the elimination of prejudice, thereby allowing a householder to be integrated into the community and become a productive member rather than stay in the margins.

As discussed previously, Latinos usually have low levels of human capital, especially in regards to English ability. Extended residency in a community can help reduce the impact of

these obstacles to well-being. This is said because extended length of stay in a community may help improve language skills. Research on length of stay and language skills show that after 10 years, immigrants report complete fluency in English language (Suarez-Orozco and Suarez-Orozco, 2001), this is true for immigrant children even in areas where there is high concentration of immigrants of a given country or region (Sachs, 1999). It is important to realize that even though these skills might be the spoken or "street" level, they could allow the immigrant muster enough confidence to break away from the network stronghold and have limited negotiations with the community directly.

VII. 4.1.6. Community context: socio-environmental perceptions

Community context can be translated to be the welcoming mat of the region. These were subdivided in three in this research. Out of three community context variables, only socio-environmental context showed significance. The significance of socio-environmental context makes sense because most of the well-being and social network activities take place within the community. That is, the better an householder feels in the community the higher the well-being, all things equal. The variable was developed from an average of indicators scored from 1 (positive) to 7 (negative). The regression results are negative, which means socio-environmental context affects positively householder's well-being.

Understanding the importance of context on well-being is crucial for various reasons. First it helps us understand why individuals move from one region to another (Valdivia and Flores, *in review*). Moving from a place that you've (just) settled to another might be a symptom of well-being objectives not achieved. Socio-environmental perceptions may have a big role in the householder's decision to seek his/her well-being objectives elsewhere. The results point to the fact that those who perceived positive socio-environmental climate reported higher levels of well-being.

As reported elsewhere another (Valdivia and Flores, *in review*), these results point to the fact that in order to assess Latino experiences in a community it is necessary to look at the larger context and understand the climate impacts both the householder and the community. The way a householder feels about the community has deep effects on well-being perceptions. In the survey process many mentioned that some of the pull factors to these communities were *welcoming community* and a good place to raise a family. Therefore, the more elements of these pull factors an householder finds, which will tend to provide higher comfort level in and with the community another (Valdivia and Flores, *in review*), the higher the well-being. From the case studies leading up the survey development of this research, Latinos reported abandoning jobs and moving out of the previous community due to precarious conditions to raise a family.

VII. 4.1.7. Additional factors influencing well-being

There were additional factors used in the estimation that were statistically significant both at 5 and 10 percent level, which were deemed to be important to talk about. Both government assistance and alternative sources of income were significant predictors of well-being at this level. Government assistance was a combination of those who received WIC and food stamps. Alternative source of income did not include official sources. Staying with family member when arrived in the community and use of bridging social networks were a positive predictor of well-being at 5 percent level.

Around 30 percent of Latino immigrants in the sample reported receiving WIC assistance and around 2 percent reported receiving food stamps. Government assistance was statistically significant at 10 percent level. The importance of these sources of food for the family in no way negates our central thesis that Latinos rely mostly on family networks and own income for food acquisition and subsequent well-being. These using WIC simply point to the fact that there is in fact some integration going on in the community. For one, in order to be qualified for the WIC

program a child needs to be born here and stay here. The high documental requirements to qualify for both programs (WIC and food stamps) are the things that non-properly documented Latino immigrants seek to avoid. These facts lead us to conclude that these beneficiaries must be either US born Latinos or long-term residents. The latter group might consist of those individuals that have been in the community for long period, thus feel safe in the community. In fact they might feel good enough to bring family over (or find someone in the community and start a family).

Those people who had family provide lodging report high levels of well-being, which is significant at the 5 percent level of significance. The high percentage of people reporting family presence in the community conforms to previous research findings that Latinos carryout gradual migration (Hagan, 1994; Massey *et al.,* 1990; Munshi, 2003; Valdivia and Dannerbeck, 2009). That is, initially family member migrates and then other relatives follow. The idea of not having to worry about place to stay, besides removing one stress element from the process of immigration, it helps reduce costs of the process of settlement. The income saved could then be invested on other well-being objectives of the householder.

It can be hypothesized that one of the reasons that bridging social networks were found not be significant predictors of well-being at 5 percent level might have to do with the perceived importance that Latino immigrants attribute to these networks. These networks function as extended family and prove to be sources of support in a place strange to most of newcomers. These people who are members these networks might be good for occasional soccer games to helping taking care of child. They might also be good for providing information about jobs and related essential services and helping in case of medical emergencies.

Finally, the level of household income was also found to be a significant positive predictor of well-being. The average household size of Latino immigrants in these areas is around 4 people and the median income of the sample used is of $23,012. This level of income puts

immigrant barely above the poverty threshold as defined by federal guidelines, which is $22,050 for a household of 4 people. Therefore, it makes sense that household income is only significant at 10 percent level, given that most Latino are just in the border line of moving out of the poverty level. This also suggests that immigrants can afford the basic necessities of life and are at the level when households start to focus on the "good life" rather than just material possessions (Easterlin, 2003b, p. 58). This also suggests that there are other issues that are more important to them than just income, which sees a comparative exponential increase once they start working in the US. This goes in line with prior research in the behavioral economics literature, which stresses that after a certain threshold income ceases to be the most important thing giving way to issues such as freedom, security and prosperity (Diener and Oishi, 2000; Esterlin, 2003a, 2003b; Helliwell, 2003; Nussbaum and Sen, 1993).

VII. 5. Chapter conclusion

In this chapter an assessment of the impact of social networks on well-being was carried out. The theoretical model used to explain the relationship between well-being and social networks as well as other socio-economic, demographic and institutional variables was presented in chapter IV. The empirical assessment of the impact of social network on well-being using the survey data was presented. A Heckman two-step procedure was selected for the estimation in order to correct a potential selectivity bias. Significant variables with positive effect were: government assistance, alternative source of income, bonding, bridging, religious social network member, socio-environmental context, family providing first lodging, length of residence, and household income. Significant variable with negative effect were: gender (female), and legal residence.

In terms of implications, it was suggested that females have lower perceived well-being as compared to males, which may be due to loss of ability to make decisions about own future. In

relation to non-properly documented individuals, it was suggested that the negative impact might be caused by the need to remain invisible thus limiting their options. In relation to the use of family network, it was suggested that this might have a two-pronged impact: in the short and long run. In the short run is mostly positive impact because it helps in the settlement and job seeking. In relation to the length of residence, it was suggested that the longer an householder stays in the community the more comfortable thus able to expand the social network. In terms of the socio-environmental climate, it was suggested that views about the community play a very important role in well-being perception of Latinos. Finally, the impact of the IMR was also discussed suggesting that there is clear pattern of self-selection by Latino immigrants. Chapter VIII presents the conclusions, shortcomings, recommendations and extensions of this study.

CHAPTER VIII – Conclusions, limitations, and further research

The population of newcomers to rural regions in the Midwest has been growing in recent decades, but little is known about the factors that contribute to their well-being when they are settling. Specifically the focus was on the contribution of social capital – networks – on well-being. This research is relevant for two main reasons. First, this population is increasing, especially the younger groups, and their current mobility patterns have a negative impact on their income. And second, in light of the hotly debated immigration issue, it is important to dispel myths about how immigrants sustain their livelihood. This might help in the process of policy making and promote economic integration.

This dissertation developed a framework that is informed by: (a) the economics literature in the Sustainable Livelihoods, such as subjective well-being, household economics, and social capital, and (b) the psychology literature on adaptation such as acculturation and context of reception. Primary data collection consisted of 460 heads of household, Latino adults, who are recent settlers in three rural regions of Missouri. The field work was conducted in 2008-2009, and it took time because this is a difficult population to study. This research is part of a larger research project to understand the asset accumulation strategies in rural areas of the Midwest. The dissertation studied the characteristics of those who participate in networks in rural regions; informed on how social networks affect choice of type of job by region, and assessed the impact of networks influence well-being.

The following objectives guided this study:

- Develop an economic model to assess the interaction of social network assets and the context of reception on well-being of Latinos in these areas of study;

- Comparatively assess the impact of local social networks on Latino immigrants' well-being strategies such as employment;
- Assess the characteristics influencing Latino householder's participation in social networks and the impact that these have on well-being.

This research built on prior well-being assessments incorporating foundations laid by prior well-being and social network literatures in behavioral economics, psychology and sociology fields in order to better explain observed well-being levels. This present research makes three primary contributions: (a) identifies how Latino immigrants perceive networks and community influence and how these perceptions impact well-being, (b) it employs comparative methods on actual survey data to isolate the impact of local social networks on well-being, and (c) used a combination of perception and objective data to assess the impacts of context on well-being. These results informed how Latinos might actually be sustaining their well-being and the possible magnitudes of specific variables influencing well-being levels rather than the current optimized modeled (hypothetical) decisions.

Research objectives of this study together with hypotheses were addressed through a three-part approach found in chapters V, VI, and VII. Chapter V assessed the probability of a householder participating in a specific type of social network. There were three types of social networks: informal, formal, and religious. Participation in social networks was estimated because social networks were modeled as endogenous process whereby Latinos select to either participate or not. From the results, it was found that discrimination, cultural capital, ability to speak English, and belonging to other Latin American countries were significant predictors of the participation in informal social networks, climate, married, residing in the Region B, and the ability to speak English influenced participation in formal networks. Finally for religious social networks, age, cultural identity, living in region C and educational level had a significant influence.

Chapter VI assessed local social networks effects on occupation. This was assessed empirically by analyzing the influence of source of information on the type of jobs was assessed separating participants per regions. It was found that there are local influences on job type since significant variables differed per region. Findings show that social networks impact on the type of job Latino households obtain is statistically significant. Those households obtaining job information from family networks tended to work tended to work on Latin shops and markets, which are mostly family oriented. Those households obtaining job information from friends tended to work mostly on the default industry.

Chapter VII assessed the impact of social networks on well-being and tested the hypothesis regarding positive impact of social networks on well-being as broadly defined. Social networks were subdivided in to three in order to refer to the bonding (familial), bridging (friendship and religious), and linking (community) networks. It was found that familial networks are in fact significant predictors of well-being in these regions. Additional variables, such as gender, legal status, length of residence, and climate were found to significantly impact well-being levels too.

Taken in perspective, the results are telling regarding Latino immigrant householder's well-being practices across rural regions. Results obtained suggest that sources of information significantly influence the type of job Latinos. These results might also suggest that immigrants use their social networks for different purposes: they rely on friends for job information and on family for room, board, and emergency support. There is some evidence of government assistance impact on well-being but this is suspected to be due to those Latinos with US citizens in their household such as American-born children or US-born Latino householder. The social network environment and the context of reception appear to override commonly stated reasons that Latino immigrants use to sustain and improve their well-being.

The results and discussion of this study suggest that a much closer look should be paid to the importance of non-market institutions such as social networks. From the discussion of the impact of social networks on well-being, it is inferred that non-market institutions have evolved to substitute market and government functions when needed. In the case of Latino immigrants, social networks are used instead of official institutions that most legal and US citizens use as guarantor of overall well-being. Cultural capital, acculturation, and context of reception are important for the Latino community in terms of affecting well-being. Latinos immigrants are increasingly relying on own sources of information, as mandated by their cultural capital, to make decisions related to their livelihood. These sources of information greatly influence their perceptions about the community and their place within these communities.

Communities that seek to improve well-being and in the process integrate a productive group of Latinos immigrants will be well advised in creating an enabling socio-environmental climate. For instance, making Latinos feel welcome, respecting Latinos' cultural values, and stop pretending that Latinos are not valuable to the community are some of the elements that could be looked at in order to create a more acceptable climate. Additionally, local communities should address some of the prejudices and resistance to accept people with different perception and not force them to conform.

This research addressed a gap in the literature regarding the well-being of Latino newcomers by adding the Sustainable Livelihoods (SL) perspective into the analysis. SL argues that households create livelihood strategies that are influenced by their assets, perceptions about local culture, and the context of reception. In this case, it was hypothesized that socio-economic well-being is influenced by social (capital) networks. Adding the SL perspective allows researchers to have a bigger picture (or holistic approach) of new comers' livelihood strategies.

This research built on prior SL and household economics literature incorporating non-market institutions in the household livelihood decisions by investigating the impacts of social (capital) networks *use* and *participation* on well-being separately. This research contributes to the literature by: (1) identifying the role that Latino immigrant's perception about the community or context of reception have on socio-economic well-being, (2) comparatively assessed the impact of local networks on livelihood strategies such as work type decisions. The study developed and used various indexes for the analyses. Well-being was assessed using the Personal Well-being indicator (PWI). Cultural capital was measured using the cultural identity index. Acculturation was assessed using a purposefully developed instrument based on language and media use. Context of reception was assessed using the socio-environment, racism and discrimination, and language pressures instrument. All indexes were found to have very high construct validity and had good levels of reliability. Findings show that acculturation and context of reception affect well-being levels of Latino immigrants.

In general, if the much anticipated Immigration Reform Act finally passes, we should expect to see big changes in the dynamics of Latinos' livelihood. Given that there is a separation of functions within the networks, we would expect to see Latinos relying more on official institutions rather than inward looking. This will also prove to be a door to upward mobility since most will break free from the "safe" jobs provided by the network, which are mostly in low skill category. It is clear that if this change in policy happens, it is expected that those with higher language ability and more acculturated with the Anglo society will have an initial advantage over those with lower skills and less acculturated. However, those who once were destined to be perpetual low skill laborers would be able to access training and be promoted like other employees.

A big part of this well-being process is the perceptions that Latinos have of their communities, which creates the context of reception. It is unclear, however, if the change in the

immigration policy will do much to change local communities' perception of Latino immigrants. An ideal condition would be to have an immigration policy change accompanied with an educational effort for the community members in terms of erasing stereotypes normally held about Latinos and their culture. In almost all communities surveyed, Latinos reported either neutral-to-negative climate. The improvement of the context would create a harmonious environment where Latino households would feel welcome in the community, improve the acculturation process thereby making the integration process much easier.

An improved context and the legal conditions will certainly ameliorate both Latinos' well-being and the community's economic prospects. For once, improving institutional environment in which Latinos carryout their livelihood activities might reduce transaction costs in both sides, the Latinos and the community. This new institutional environment would allow better social outcomes given that resources would be allocated accordingly.

There are some policy implications from the results of this research. For instance, the positive impact of social network might help assess the effectiveness of outreach programs aimed at improving rural households' livelihoods. These results may help create targeted programs to those with problems accessing formal institution thus reducing transaction costs and may facilitate socio-economic integration of Latinos in the community. It was observed that those Latinos joining formal social groups tend to have good language skills. These Latinos might function as brokers of information between the two communities, thus reducing friction and improving the productive capacity of newcomers.

Given the results of focus groups, case studies, and photovoice, there are results presented in this research that did not conform to what was hypothesized. For instance, the use of linking social capital was not a significant factor influencing well-being, the opposite was expected. Since the dependent variable has a heavy perceptive component, it was expected that

being a member of a recreational and informal groups to be significant; however, they were not. Context of reception variables (socio-environment, racism and discrimination, and language pressures) were expected to be positive, however only some were. And finally, acculturation variables were not significant throughout as suggested by the literature. It is important to note that this might be a measurement issue given that some variables did not have enough variability to be included in the analysis as planned.

This research raises several interesting issues that might need further research. This research strongly suggested that climate and acculturation play a very important role in well-being. Additionally, Latino households commented that locals perceived them as destabilizing elements of the community. It should be realized that there are many forms of assessing acculturation. This research only used the language-based acculturation measures. It would be interesting to assess if other measures of acculturation also influence well-being. If so, then I would hypothesize that they would show positive influence consistent with the acculturation measure used in this research.

It was also suggested here that social networks function as informal insurance mechanisms. By using these systems that are based on favors more than anything else, Latinos effectively tune out of the formal system that could effectively work better than the personalized, customs-based mechanisms that currently use. This research was not designed to assess the informal insurance facet of social networks. Further research is needed to identify what factors influence Latino immigrant households use of such arrangements and what is needed to help transfer their trust to formal systems.

The results of this research do not apply to local Anglo-American residents given that they were not surveyed. Thus, it would be interesting to see if the conclusions about social networks utilization have the same patters for both Anglo-Americans and Latinos in these rural

areas. Finally, it should be realized that the context of reception instrument used in this study was recently constructed out of two separate scales. It is advisable that this instrument go further testing in the field in order to assess its efficiency in measuring context of reception of Latinos in these regions.

APPENDIX – A. HOUSEHOLD SURVEY

Section 1: demographic data

We will begin by asking a set of questions about yourself and the members of your household.

1. **What is your name? If you prefer, you can just tell us your name, without your last name.**

	Gender [Circle one]	**M**	**F**

2. **How old are you?**

	Years	or	Your year of birth	

3. **What is your marital status?**

Married		Widowed	
Partnered		Separated	
Divorced		Single	

4. **Culturally speaking, in the United States, what cultural group do you identify with?**

5. **Of what group do you consider yourself to be, in terms of race?**

6. **Where were you born?**

In the US	→	Which state:	
Outside US	→	Which country:	

7. **Where is your family originally from? [please specify place in the space provided]**

Mexico			Costa Rico		
Puerto Rico			Nicaragua		
Guatemala			Honduras		
El Salvador			Cuba		

Other Country

Section 2: Household, Activities and Decision Making

Now, I am going to ask you some questions about your household. "Household" includes the people who live with you and share in the income, expenses, food and purchase and investment decisions. Also included in your household are your children, who you are responsible for and other immediate relatives who you are responsible for and that can be living here or at another location.

8. **How many belong to your household based on this definition?**

9. Now, I am going to ask questions about each member of your household you included above, starting with you. I will then ask you for the name of your wife or partner, and we will continue in accordance with the name of each member of your household.

Member	Name	Living in house		Gender		Age	Language [SEE CODES FOR LANGUAGE]						Level of Education	Occupation
		Yes	No	M	F		Speak		Read		Write			

Codes for language					
English	Very well	E1	Spanish	Very well	S1
	Well	E2		Well	S2
	Not well	E3		Not well	S3
	Not at all	E4		Not at all	S4

Codes for house members			
Husband	H	Sibling	S
Wife	W	Grandparents	GP
Partner	P	Nephew/Niece	N
Own child	C	Mother/Father in Law	IL
Parent	D		
Grandchild	G		
Friends	F		
Other	O		

Codes for level of education	
No formal education	(1)
4th grade or below	(2)
5th grade or 6th grade	(3)
7th grade or 8th grade	(4)
9th grade	(5)
10th grade	(6)
11th grade	(7)
12th grade, NO DIPLOMA	(8)
High school graduate or equivalent	[9]
Attended college for more than one year, no degree	(10)
Associate degree	(11)
Bachelor's degree	(12)
Masters degree	(13)
Professional degree	(14)
Doctorate degree	(15)

9. (A) is there anybody of this household that has participated in survey?

YES NO

9. (B) IF YES, please tell us his name: _____

Now, we would like to ask you about the place where you live, the activities done in household and the decisions related to your household. I will read to you some alternatives with respect to the type of housing where you currently live.

10. What type of house do you live in?

[CODE: 1=Condominium; 2=Single bedroom house; 3= 2 bedroom house; 4=2+ bedroom house; 5=Mobile home; 6=RV; 7=Other]

11. Do you own the housing that you live in?

YES ☐ **NO** ☐

11. (a) Do you own any other property or land here or in another place?

YES ☐ **NO** ☐ **→ IF THE ANSWERS TO 11 AND 11a ARE "NO," GO TO QUESTION (16)**

12. Can you please give us an estimate of the value of your house(s) and properties? Please also indicate how you use or could use your properties (i.e. living, business, rental, etc.), and where each property is located.

Property #	Approx. value	Uses	Location

13. Are you paying a mortgage to buy your property?

YES ☐ **NO** ☐ **→ IF THE ANSWER IS NO, GO TO QUESTION (16)**

14. How much do you pay monthly on the loan?

15. Now we are going to ask you questions about the loan. Specifically, we would like to know how many years have you paid, how many are left to pay, what is the interest rate, and what institution that has loaned you the money.

Loan #	Years paid	Years remaining	Interest rate	Loaning Institution

15 (a). If you have already paid the loan, how many years did it take to pay it off?

[IF YOU OWN A HOUSE, AFTER THIS QUESTION MOVE TO QUESTION (22)]

16. Do you rent the house in which you live?

YES ☐ **NO** ☐ **→ IF THE ANSWER IS NO, GO TO QUESTION (20)**

17. How much do you pay monthly?

TOTAL RENT ☐

18. Do you share the payment of rent with other members of your household or with someone else that lives in the same house?

YES ☐ **NO** ☐ **→ IF THE ANSWER IS NO, GO TO QUESTION (21)**

19. Please tell us who contributes towards rent and how much each one pays:

Person or Institution	Relationship	Monthly Contribution

20. If you do not pay rent and do not own a house, then who pays and how?

☐

21. [IF DO NOT OWN HOUSE] From the options presented below, please choose all those that have been the reasons for why you can't buy a house [MARK ALL THE OPTIONS MENTIONED – SHOW CARD 2]:

Cannot obtain loan	
Too expensive	
Prefer to pay cash	
Do not have the necessary documents to buy a house	
Other reason – Please specify	

22. Now we will discuss your household expenditures. There are expenditure that are incurred frequently – for example foods that are bought continuously, while others expenditures are not so frequent such as school expenditures that can be every three to six months. Please tell me the amount you spend in each of the following categories; and how often. [SHOW CARD 3]

Category	Amount in dollars					
	Week	Month	3 months	6 months	year	N/A
Food						
Education						
Medical and Health care (e.g. medical insurance, medicines etc.)						
Savings						
Travel						
Telephone Service						
Television (cable or satellite)						

23. Could you estimate how much you pay in total for the following expenditures? [SHOW CARD 4]

Type	Included in rent		or	Per month		
				Minimum	Average	Maximum
Gas						
Electricity						

Water and sewer						
Oil, coal, kerosene, wood, etc.						
Others – specify						

23 (a). Did you have any emergencies, in the past year, which resulted in unexpected expenses (these can be medical, loss of job, or other type)?

SI ☐ **NO** ☐ **→IF THE ANSWER IS "NO" GO TO QUESTION (24)**

23 (b). What was the main emergency that you had?

☐

23 (c). How much did you spend last year on emergencies?

☐

23 (d). How did you finance your emergencies? CODE: 1= Loan (family); 2 = Loan (bank); 3 = Loan (friends); 4 = personal savings; 5 = church's help; 6 = help from community groups; 7 = other (specify) **[SHOW CARD 5]**

☐

24. Do you own a car(s)?

YES ☐ **NO** ☐ **→IF THE ANSWER IS "NO" GO TO QUESTION (25a)**

25. Can you tell me when did you buy it and what was the price of the car?

Year you bought the car ☐ **Price** **$** ☐

25 (a). How do you travel to work? _____

25 (b) Ho do you get around? _____

26 . We will ask you to rate how satisfied you are about several issues in your life. Zero means you feel completely dissatisfied; 10 means you feel completely satisfied. And in the center 5 means you are neither satisfied nor dissatisfied or discontent, that is you are neutral.

[**CODES FOR EXTRA SPACE – 777 = refuse to answer; 888 = Do not know; 999 = Does not apply. – SHOW CARD 6 <u>WITH THE OPTIONS/REMIND THE PERSON INTERVIEWED OF THE OPTIONS OF THE DIFFERENT VALUES THAT THEY CAN CHOOSE</u>]**

I. How satisfied are you **with your health?**

0	1	2	3	4	5	6	7	8	9	10	

II. How satisfied are you **with what you are achieving in life?**

0	1	2	3	4	5	6	7	8	9	10	

III. How satisfied are you **with your personal relationships?**

0	1	2	3	4	5	6	7	8	9	10	

IV. How satisfied are you **with how safe you feel?**

0	1	2	3	4	5	6	7	8	9	10	

V. How satisfied are you **with feeling part of your community?**

0	1	2	3	4	5	6	7	8	9	10	

VI. How satisfied are you **with your future security?**

0	1	2	3	4	5	6	7	8	9	10	

VII. How satisfied are you **with your spiritual or religious life?**

0	1	2	3	4	5	6	7	8	9	10	

VIII. **[If you have children]** how satisfied are **you with your children's wellbeing?**

0	1	2	3	4	5	6	7	8	9	10	

IX. **[If you have children]** how satisfied are **you with your children's education?**

0	1	2	3	4	5	6	7	8	9	10	

X. **[If you have children]** how satisfied are **you with your children's education opportunities after high school?**

0	1	2	3	4	5	6	7	8	9	10	

XI. **[If you have children]** how satisfied are **you with your children's access to health care?**

0	1	2	3	4	5	6	7	8	9	10	

XII. How satisfied are **you with your present job position?**

0	1	2	3	4	5	6	7	8	9	10	

XIII. How satisfied are **you with your present employer?**

0	1	2	3	4	5	6	7	8	9	10	

27. Comparing with other places where you previously lived, would you say that in general your quality of life has [SHOW CARD 7]:

Improved	
Stayed the same	
Worsened	
Refuse to answer	
Other - explain	

[CODE: IF UNDECIDED, INTRODUCE 999 IN THE *OTHER* CATEGORY]

<u>Section 3:</u> Acculturation and context of reception

28. Below we will ask you questions regarding the languages you use. Please choose the code that corresponds to your answer. [SELECT ONE OPTION] – [SHOW CARD 8]

Dimension:	Language use	
Code:	1 = almost never; 2 = sometimes; 3 = often; 4 = almost always	
A.	How often do you speak English?	
B.	How often do you speak in English with your friends?	
C.	How often do you think in English?	
D.	How often do you speak Spanish?	
E.	How often do you speak in Spanish with your friends?	
F.	How often do you think in Spanish	

[SHOW CARD 9]

Dimension:	Linguistic proficiency	
Code:	1= very poorly; 2= poorly; 3 = well; 4 = very well	
G.	How well do you speak English?	
H.	How well do you read in English?	
I.	How well do you understand television programs in English?	
J.	How well do you understand radio programs in English?	
K.	How well do you write in English?	
L.	How well do you understand music in English?	
M.	How well do you speak Spanish?	
N.	How well do you read in Spanish?	
O.	How well do you understand television programs in Spanish?	
P.	How well do you understand radio programs in Spanish?	
Q.	How well do you write in Spanish?	
R.	How well do you understand music in Spanish?	

[SHOW CARD 8 AGAIN]

Dimension:	Media	
Code:	1 = almost never; 2 = sometimes; 3 = often; 4 = almost always	
S.	How often do you watch television programs in English?	
T.	How often do you listen to radio programs in English?	
U.	How often do you listen to music in English?	
V.	How often do you watch television programs in Spanish?	
W.	How often do you listen to radio programs in Spanish?	
X.	How often do you listen to music in Spanish?	

Climate and context of reception

29. The next five items are statements with which you may agree or disagree. Using the 1-7 scale on this card [SHOW CARD 10], indicate if you agree or disagree and in what measure with each statement below. Please be honest in your responses. Code: 1→Strongly disagree; 2→Disagree; 3→Disagree more than agree; 4→Neither agree or disagree; 5→Slightly agree; 6→Agree; 7→Strongly agree

A.	In most ways my life is close to my ideal	
B.	The conditions of my life are excellent	
C.	I am satisfied with my life	
D.	So far, I have gotten the important things in my life	
E.	If I could live my life over, I would change almost nothing	

29(a). Below are additional statements regarding your perception of the effect of the community on your well-being; Please answer using the following code: Code: 1→Strongly disagree; 2→Disagree; 3→ Disagree more than agree; 4→Neither agree or disagree; 5→Slightly agree; 6→Agree; 7→Strongly agree; **[SHOW CARD 10]**

A.	I feel valued as a member of this community	
B.	People in this community have been willing to help me	
C.	There are services available for me in the community	
D.	This community values newcomers like me	
E.	This community feels like a cold, uncaring place to me	
F.	I feel uncomfortable living in this community	
G.	I feel accepted in this community	
H.	I feel that I have to change to fit into this community	
I.	The community is an unfriendly place	
J.	There are negative relationships between different ethnic groups in this community	
K.	People in this community don't respect my cultural values	
L.	I don't have any close friends in this community	
M.	People in this community have stereotypes about my culture	
N.	My appearance (or the color of my skin) makes it hard to fit into this community	
O.	Community members have negative attitudes of newcomers to this community	
P.	Community members treat newcomers to this community negatively	
Q.	I have been treated rudely or unfairly because I am a newcomer	
R.	I have been discriminated against in this community as a newcomer	
S.	People in this community expect me to be a certain way because of my race/ethnicity	
T.	People in this community lack respect for newcomers	
U.	I feel pressure to learn English	
V.	I have a hard time understanding others when they speak English	
W.	My language makes it hard to fit into this community	
X.	Since I don't speak English well, people have treated me rudely or unfairly	
Y.	I have been discriminated against in this community because I have difficulty speaking English	
Z.	It bothers me that I speak English with an accent	
A1.	I feel uncomfortable being around people who only speak English	

29(b). Below are other statements regarding your perception with respect to your cultural identity. Please answer using the following code: 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree. **[SHOW CARD 11]**

A.	I spend time trying to find out more about my cultural group, such as its history, traditions, and customs	
B.	I have a strong sense of belonging to my own ethnic group	
C.	I understand pretty well what my ethnic group membership means to me	
D.	I have often done things that will help me understand my ethnic background better	
E.	I often talk to other people in order to learn more about my ethnic group	
F.	I feel a strong attachment towards my own ethnic group	

Section 4: Migration, employment and sending money.

Now we will ask questions regarding how you arrived to this community, your job and your resources, your income and the money that perhaps you send to your family.

30. How long have you lived in this community? Please say how many years and months if possible.

☐ **YEARS** ☐ **MONTHS**

31. [IF DID NOT GROW UP THIS COMMUNITY] From the options presented below, please select the reasons that made you decide to come to this place. Please indicate all of the reasons that motivated you in the order of importance. [SHOW CARDS 12 AND 13]

Codes: 1=not important; 2= little importance; 3= important; 4= very important.

	1	2	3	4
Work available				
To be together with family				
Income (good earnings)				
Welcoming community				
Other - specify				

32. [IF FROM A FOREIGN COUNTRY] From the choices presented below, please select the reasons that made you leave the country where you lived. Please indicate all of the reasons that motivated you in the order of importance. [SHOW CARDS 12 AND 13 AGAIN AND MENTION THAT THERE COULD BE OTHER REASONS; AND IF THERE ARE TO SAY THEM]

Codes: 1=not important; 2= little importance; 3= important; 4= very important.

	1	2	3	4
Work available				
To be together with family				
Income (good earnings)				
Welcoming community				
Other – specify				

33. Do you think that you will stay here to live in this [COMMUNITY]? [SHOW CARD 14]

Yes, you think you will stay in…for some time more	
You don't know still, it depends	
No, you want to return to….	
Yes, you think you want to stay in the U.S., but would like to go to…	
Other – explain	

34. Other than you place of origin, have you lived in other places before coming here?

YES ☐ **NO** ☐ **→IF THE ASNWER IF "NO" GO TO QUESTION (36)**

35. Please tell us the places where you have lived in the U.S. before coming here.[SHOW CARD 15 FOR THE LAST COLUMN]

PLACE	COMMUNITY, STATE OR COUNTRY	PERIOD (YEARS)		WHY DID YOU LEAVE? (Card 15 codes.)
		FROM	TO	

Codes: 1 = No employment; 2 = No friends; 3 = Unwelcoming community; 4 = Racism and/or discrimination; 5 = I did not find my church; 6 = Did not find my religion; 7 = Wanted to be with my family; 8 = Other reason; 9 = Refuse to answer

35(a). [IF COMING FROM ANOTHER COUNTRY] What is the approximate total of expenses of travel, documents and crossing the border that you invested in order to immigrate to the U.S?

☐

35(b). [IF FAMILY THAT COMES FROM ANOTHER COUNTRY] How much did you invest in order to bring your family members to the US?

☐

EMPLOYMENT HISTORY

36. Are you working now?

YES ☐ **NO** ☐ **→ IF THE ANSWER IS "NO" ASK IF HE/SHE HAS WORKED IN THIS COMMUNITY. IF ALSO NO GO TO QUESTION (38b)**

37. Tell me first who you work for, how long you have been at that job, how many hours per week you work, the type or position of work, the hourly pay, what shift, how you found this job [CODES], where you found your job, and what is the salary you earn. [CODES] Please tell us all of the jobs you currently have, and those you have had in this community in the past. [SHOW CARD 16 TO ANSWER HOW YOU FOUND WORK]

Place of work (company)	How long		Hours per week	Job type	Wage per hour	Work shift	How did you find this job	Place of work	Salary	
	Quantit	*							Total income	time

Obs.: "How long at job.": Indicate if they are <u>years, months or weeks</u>.
Salary: b = per day; c = per week; d = per month; e = per year.
Codes for "how did you find this type of jog.": 1 = family member; 2 = friend; 3 = church; 4 = employer; 5 = headhunter; 6 = community center; 7 = TV; 8 = radio; 9 = newspaper; 10 = other

37(a). How much did you invest (spend) in order to get the job that you have now (e.g. include travel expenses to this community, expenditures to acquire working documents and others)?

38. Please tell me how much was your income last year, in American dollars. This number does not need to be exact, an approximation is sufficient.

TYPE OF JOB	HOW MUCH EARNED

38 (a). Considering all your household income sources, how much of it is your contribution to the household? That is, of the money that you earn, how much do you separate for your personal expenses and how much of I do you contribute to the household?

Contribution to the household	For personal expenses

38 (b). Considering all of the members of your household, what is the total income earnings of your household? [WRITE THE APPROXIMATE VALUE AND IF THIS IS ANNUALLY OR MONTHLY]

/

[IF INTERVIEWEE IS EMPLOYED, AFTER THIS QUESTION GO TO QUESTION (41)]

39. [IF WITHOUT WORK] How long have you been unemployed?

Month/Year/N.A.

40. [IF RETIRED] What year did you retire?

YEAR ☐ **N/A** ☐

41. In the last 12 months, how long have you been without work?

☐ /

42. [IF BORN IN ANOTHER COUNTRY] What was your last occupation before leaving your country?

Years [age intervals]	Occupation	Length [1]	Place	How much did you earn[2]

[1] **code: a= weeks; b= months; c= years**
[2] **code: a= per hour; b= per day; c= per week; d= per month; e= per year; f= other**

43. Do you have your own private business (es)?

Yes ☐ **No** ☐ **→IF THE ANSWER IS "NO" GO TO QUESTION (49)**

44. Please tell me what are the three most important activities or services of your business from your household (that generates more income) from July 2007 to June 2008?

Activity 1	
Activity 2	
Activity 3	

45. Since when have you had these businesses (or activity)? Give year and/or month,

Business 1	
Business 2	
Business 3	

46. How did you start this business? CODE: 1 = own initiative; 2 = family decision; 3 = plan with a friend; 4 = "small business: initiative; 5 = other **[SHOW CARD 17]**

☐

47. Please tell us from whom do you get most of the information about the business(es)? Please select from the options below. [SHOW CARD 18]

Source of information	Activity 1	Activity 2	Activity 3
1. Chamber of commerce			
2. Extension officers and programs			
3. Radio			
4. TV.			
5. Newspapers			
6. Community member			
7. Friends			
8. Local organization			
9. Other [Specify]:			

48. Please tell me about other activities that you have engaged in to generate income this year.

A. Activity	B. Occupation/Responsibility

49. During your stay here:

Did you receive any welfare help from the government?		NO	YES (how much during last year?)[1]
Which type?	WIC		
	AFDC		
	SSI		
	General assistance		
	Food Stamps		

[1] **code: a=per month; b= per year; c= other**

50. Besides the jobs that you have mentioned, do you have any other source of income?

YES ☐ **NO** ☐ **→IF THE ANSWER IS "NO" GO TO QUESTION (52)**

51. Please let us know about those other incomes:

A. Source	Code	Quantity/period	Frequency	Estimate of annual income
		/		
		/		

The jobs are [CODE]: 1 = Fixing cars; 2 = Taking care of children; 3 = Cleaning houses; 4 = Helping in construction; 5 = Renting a out a room or house; 6 = Others**. [SHOW CARD 19]**

52. Do you send money to your other family members in your country?

YES ☐ **NO** ☐ **→IF THE ANSWER IS "NO" GO TO QUESTION (57)**

53. Could you give us an estimate of how much and how often in the last 12 months? [SHOW CARD 20]

Frequency	Quantity
Once per month	
Once every two months	
Once every three months	
Twice a year	
Once per year	
Other – specify	

54. Do you use any of these services to send money? [SHOW CARD 21]

Money order (post office)	
Money order (agency or store)	
Informal market carrier	
Family members traveling	
Take it (myself)	
Sending agency (Western Union or others) What agency?	
Bank money orders. What bank?	
Other – specify	

55. How much does it cost to send money? [Per how much?]

56. Who do send money to? [SHOW CARD 22]

[CODE: 1 = parents; 2 = spouse; 3 = children; 4 = siblings; 5 = cousins; 6 = grandparents; 7 = other.**]**

EXTRA INCOME – [REPEAT THE DEFINITION of "HOUSEHOLD" (question 8). IF THERE ARE NO MEMBERS OUTSIDE OF THE HOUSEHOLD, GO TO QUESTION 58]

57. Since July 2007, what paid activities have members of your household who live outside of this community performed? [SHOW CARD 23] [INDICATE THE SEX AND IF THE HEAD OF HOUSEHOLD IS FEMALE OR MALE]

Number of MEMBER and Name							
1	1	2	3	4	5	6	7:
2	1	2	3	4	5	6	7:
3	1	2	3	4	5	6	7:
4	1	2	3	4	5	6	7:

CODES: 1= work in a food processing factory; 2 = work in a farm/ranch; 3 = work in a car shop; 4 = work in a hotel; 5 = work in a restaurant; 6 = work in a manufacturing factory; 7 = other (please specify)

58. Have you had to borrow money the last five years?

Yes ☐ **No** ☐ **→IF THE ANSWER IS "NO" GO TO QUESTI((61)**

59. From what institution and what was the total of your loan? [SHOW CARD 24]:

Selection	Type of institution/relation	Total of loan ($)

60. You got this loan for [SHOW CARD 25]:

For productive activities (transformation, marketing, etc.)	
For family activities (social festivities, education, health, housing, etc.)	
For emergencies	

61. Please tell us consumption any goods that you purchased this year, for example housing, electrical appliances, cars, computers, or other goods? [PLEASE MENTION THE MOST IMPORTANT ONES]

Product	Quantity	Price/Unit	Installments	Credit Card

62. Do you have a bank account?

YES ☐ **NO** ☐ **→IF THE ANSWER IS "NO" GO TO QUESTION (65**

[WRITE THE NAME OF THE BANK] _____

63. What type of account(s) do you have?

Checking s ☐ **Saving** ☐ **Other (Specify)** ☐

64. Now we will ask you questions about the money you saved in the last twelve months, the reason and the amount. From July 2007 – 2008 you had savings for…

Savings for	Yes	No	How much?
Food			
Clothes			
Emergencies			
Children's education			
Vacations			
investments			
Purchase a vehicle			
Purchase a home			
Pay for immigration of family members			
Savings			
Other			

65. Do you have any bank investments or stock market accounts?

YES ☐ **NO** ☐ **→IF THE ANSWER IS "NO" GO TO QUESTION (67)**

66. Please tell us the types and the estimated quantities that you have invested

Investments	Types	Estimated quantities invested

RISKS

The following questions will help us understand how you perceive the possible risks and problems that can affect many families. The risks or concerns are about the political, social and economic conditions in general; and others that are bout the wellbeing of your family and about the community.

67. For each of the risks mentioned below, please tell us how much threat they pose to your family's wellbeing. [SHOW CARD 26]

Codes: 1 = Is not a threat; 2 = Is a minimum threat; 3 = Is a moderate threat; 4 = Is a high threat; 5 = Is an extreme threat; [USE THE CODE if: 777 = Refuse to answer; 888 = Do not know; 999 = Does not apply]

Origin of the threat or danger	Level
1. The US immigration policy	
2. You children get sick	
3. Someone in your family loses a job	
4. An adult member of the household gets sick	

68. How much power do you think you have to influence or control the following events using a scale of 1 to 5. [SHOW CARD 27]

Codes: 1 = I do not have control; 2 = I have very little control; 3 = Not sure if I have any control; 4 = I can control a little; 5 = I can completely control it; [USE THE CODE if: 777 = Refuse to answer; 888 = Do not know; 999 = Does not apply]

Origin of the threat or danger	Level
1. The US immigration policy	
2. You children get sick	
3. Someone in your family looses a job	

Sections 5: Social Capital

Social Groups and Networks

Now w will ask questions regarding the groups of people that get together for activities or to talk/converse, other formal organizations, clubs, associations, which you and other members of your family might belong to. These groups could be associations or clubs formally established.

69. Are you or anyone in your household a member of any recreational/sport associations?

YES ☐ **NO** ☐

70. Are you or any one in your household a member of any informal group of friends that meet occasionally to talk?

YES ☐ **NO** ☐

71. Are you or any one in your household a member of any social/religious organization?

YES ☐ **NO** ☐ **→IF NO PLEASE GO TO QUESTION (73)**

72. According to the following list [SHOW CARD 28], what are the characteristics of the members of each informal group that you belong to.

Codes: 1 = Same church; 2 = Gender; 3 = Same age or age group; 4 = From the same place or of the same race; 5 = Of the same culture; 6 = Speak the same language; 7 = Have the same occupation or job; 8 = Have the same level of education; 9 = Other (please specify)

Group	Characteristics						

73. Are you or any one in your household a member of a group of a formal association such as clubs or a group organized of people who get together regularly?

YES ☐ **NO** ☐ **→IF THE ANSWER IS "NO" GO TO QUESTION (75)**

73 (a). Could you tell us the four most important ones in which you participate?

Group	Function	Why do you participate in this group

74. Regarding members of the groups that you belong to, please say if the majority of the members are of…:

Codes: 1 = Same church; 2 = Gender; 3 = Same age or age group; 4 = From the same place or of the same race; 5 = Of the same culture; 6 = Speak the same language; 7 = Have the same occupation or job; 8 = Have the same level of education; 9 = Other (please specify)

Group	Characteristics						

Trust and Solidarity

75. Who provided you with lodging when you arrived in this community?

Code: 1= Someone from the same country; 2= Friend; 3 = Boss (employer); 4 = Family; 5 = Did not need; 6 = Other: specify.

76. Were there other family members in the same house with you? (Do not count your spouse or children).

YES ☐ **NO** ☐

77. Were there other people of the same country where you are from in the same house with you? (Do not count your spouse or children).

YES ☐ **NO** ☐

78. Next, we are going to ask you some questions about trust. Please use the following code when answering: [SHOW CARD 29] 1 = Trust them not at all; 2 = Trust them only a little; 3 = Trust them some; 4 = Trust them a lot; 777=Refuse to answer; 888=Do not know; 999=Does not apply.

You have trust in:

people in your neighborhood	
people you work with	
people at your church or congregation	
people who work in the stores where you shop	
the police in your local community	
the local media (radio, newspapers)	

If there is a project that benefits or helps others in the community, but does not benefit you directly…:

79. Would you contribute work hours to the project?

Yes ☐ **No** ☐

80. Would you contribute money to the project?

Yes ☐ **No** ☐

81. In the past 12 months have you or any one in your household participated in any activities, in which people came together to do some work for the benefit of the community or church?

YES ☐ **NO** ☐

82. We would like to know more about the social relationships you maintain in the community. In each situation that we ask you, please tell us if the answer is: 1 = Never; 2 = Not likely; 3 = Likely;4 = Highly likely. **[SHOW CARD 29] If it does not apply NA =** 999.

[REGARDING FINANCE] if you need:

I. To find a job for yourself or someone else in your household, what are the probabilities that you would use:

Friends	**Family**	**Church**	**Coworker**	**Employer**	**Ctr. Latino**	**Media**	**Other**

II. To find housing, what are the probabilities that you would use:

Friends	Family	Church	Coworker	Employer	Ctr. Latino	Media	Realtor	Other

III. To buy a car, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	Media	Car seller	Other

IV. If you need money to pay a bill such as utilities, rent or mortgage, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	Bank	Loan Company	Informal Lender	Other

V. To cash a check, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	Bank	Loan Company	Informal Lender	Other

VI. To start a business, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	Bank	Lawyer	Loan Company	Other

VII. To acquire documents to work, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	ICE	Lawyer	Other

In situations of your family's wellbeing, if you need:

VIII. A ride to get somewhere urgently, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	Plc. Transit	Taxi	OATS	Other

IX. To find out how your kids are doing in school, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	School Counselor	School Teacher	Other

X. To learn English, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	Media	School	Other

XI. To acquire a drivers' license, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	City/County Government	Police	License Bureau	Other

XII. To find a dentist, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	Media	Hospital or Clinic	Health Dept	Other

XIII. To find an interpreter, what are the probabilities that you would use:

Friend	Family	Church	Coworker	Employer	Ctr. Latino	Media	School	Hospital	Other

Information and communications

83. Please select, from the list the main sources of information that you use to know about what the government is doing (such as immigration issues, work-related issues, family planning, etc.). SELECT ALL THAT YOU USE [SHOW CARD 31]

CATEGORIES	
Relatives, friends and neighbors	
News Bulletin Board	
Local market and stores	
Local newspapers or newsletters	
National newspapers	
Radio	
Television	
Groups, clubs or associations	
Associates or coworkers	

CATEGORIES	
Political associates	
Community leaders	
Extension agents	
Church	
Internet	
Other	

Social Cohesion and Inclusion

Many times there are differences among the people that live in the same community. For example, differences in wealth, income, social status, ethnic or linguistic background. There can also be differences in religious or political beliefs, or there can be differences due to age or gender of the people.

84. How many times in the past month have you gathered with people who are not of your own household, to have food or drinks, either in their home or in a public establishment?

[ ] **→IF THE ANSWER IS "ZERO" GO TO QUESTION (86)**

85. Were any of these people of different groups? [SHOW CARD 32]

Codes: 1= different origin, race, language; 2=other economic level; 3= other class or social status; 4= other group type

1	2	3	4 (specify) =

86. Now tell us about you personal security. In general, if you are alone in your house, do you feel safe from crime and/or violence?

Code: 1 =very unsafe; 2= Moderately unsafe; 3=Neither safe nor unsafe; 4 =moderately safe; 5= very safe

1	2	3	4	5

Access to institutions, Empowerment and Political Action

87. Do you have a drivers' license?

Yes [ ] **No** [ ]

88. Do you have car insurance?

Yes [ ] **No** [ ]

89. Do you have health insurance?

Yes ☐ **No** ☐

[IN THE FOLLOWING QUESTIONS SHOW THE CARDS WITH THE OPTIONS AND MARK ON THE SCALE THE NUMBER THAT CORRESPONDS. USE THE FOLLOWING CODES IF 777 = Refuse to answer; 888 = Do not know; 999 = Does not apply]

90. Do you feel that you have enough power to make important decisions that change the course of your life? [SHOW CARD 34 WITH THE SCALE]

Code: 1= unable to change; 2=mostly unable to change; 3=neither able nor unable; 4=with some ability to change; 5= totally able to change life;

1	2	3	4	5

91. Do you have trust that the city government does things well? [SHOW CARD 35 WITH THE SCALE]

Code: 1 = Rarely; 2= Sometimes; 3 =Majority of the time; 4= Almost always.

1	2	3	4

92. In the past 12 months, have the people in [COMMUNITY] jointly petitioned government officials or political leaders to get something? [SHOW CARD 36]

Code: 1=Never; 2=Once; 3=A few times (<5); 4=Many times (<5)

1	2	3	4

93. Did you or anyone of your household participate in any joint activity?

Yes ☐ **No** ☐

94. [PLEASE REMIND THE INTERVIEWED THAT ALL OF THEIR ANSWERS ARE CONFIDENTIAL]

Are you:

Citizen ☐ **Legal resident** ☐ **Not applicable** ☐

Other _____

[REMIND THE INTERVIEWED THAT IF THEY WISH TO RECEIVE THE RESULTS OF THE SURVEY TO PLEASE INDICATE TO US YOU TO SEND THEM TO THEM. ON THE CONTACT PAGE, PLEASE MARK THE CORRESPONDING COLUMN AND NOTE WHAT THE PERSON SURVERYED INDICATED]

THANK YOU VERY MUCH FOR YOU PARTICIPATION. DO YOU HAVE A QUESTION OR DO YOU HAVE ANY COMMENTS?

REFERENCES

Agresti, A. (2007). *An introduction to categorical data analysis*. NY: Wiley-Blackwell.

Alderman, H., Chiappori, P. A., Haddad, L., Hoddinott, J., and Kanbur, R. (1995). Unitary versus collective models of the household: is it time to shift the burden of proof? *The World Bank Research Observer*, *10*(1), 1.

Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S., and Wacziarg, R. (2003). Fractionalization. *Journal of Economic Growth*, *8*(2), 155–194.

Amemiya, T. (1978). On a two-step estimation of a multivariate logit model. *Journal of Econometrics*, *8*(1), 13–21.

Arrow, K. J. (2000). Observations on social capital. *Social capital: A multifaceted perspective*, 3–5.

Artz, G. M., Orazem, P. F., and Otto, D. M. (2007). Measuring the impact of meat packing and processing facilities in nonmetropolitan counties: a difference-in-differences approach. *American Journal of Agricultural Economics*, *89*(3), 557–570.

Barrett, C. B., and Reardon, T. (2000). Asset, activity, and income diversification among African agriculturalists: Some practical issues. *Project report to the USAID BASIS CRSP*.

Bayer, P., Ross, S. L., and Topa, G. (2008). Place of work and place of residence: Informal hiring networks and labor market outcomes. *Journal of Political Economy*, *116*(6), 1150–1196.

Becker, G. S. (1965). A Theory of the Allocation of Time. *The economic journal*, *75*(299), 493–517.

Becker, G. S. (1981). Altruism in the Family and Selfishness in the Market Place. *Economica*, *48*(189), 1–15.

Becker, G. S. (1991). *A Treatise on the Family*. Harvard Univ Pr.

Becker, G. S., and Tomes, N. (1976). Child endowments and the quantity and quality of children. *The Journal of Political Economy*, *84*(4), 143–162.

Bemak, F., Chung, R. C., and Pedersen, P. B. (2002). *Counseling Refugees: A Psychosocial Approach to Innovative Multicultural Interventions*. Praeger.

Berry, J. W. (1997). Lead article: Immigration, acculturation, and adaptation. *Applied psychology: An international review*, *46*(1), 5–68.

Berry, J. W., Kim, U., Power, S., Young, M., and Bujaki, M. (1989). Acculturation attitudes in plural societies. *Applied psychology*, *38*(2), 185–206.

Bloch, F., Genicot, G., and Ray, D. (2008). Informal insurance in social networks. *Journal of Economic Theory*, *143*(1), 36–58.

Borjas, G. J. (2001). *Heaven's door: Immigration policy and the American economy*. Princeton Univ Pr.

Bronfenbrenner, U. (1979). Contexts of child rearing. *American Psychologist*, *34*(10), 844–850.

Browning, H. L., Rodriguez, N., Borjas, G. J., and Tienda, M. (1985). *Hispanics in the US Economy*.

Bruni, L., and Porta, P. L. (2005). *Economics and happiness: framing the analysis*. Oxford University Press, USA.

Burt, R. S. (1992). *Structural Holes: The Social Structure of Competion*. Cambridge, MA: Harvard Univ Press.

Calvo-Armengol, A., and Jackson, M. O. (2004). The effects of social networks on employment and inequality. *American Economic Review*, *94*(3), 426–454.

Calvó-Armengol, A. (2004). Job contact networks. *Journal of Economic Theory*, *115*(1), 191–206.

Card, D. (2005). Is the new immigration really so bad? *Economic Journal*, *115*(507), F300–F323.

Cerrutti, M., and Massey, D. S. (2001). On the Auspices of Female Migration from Mexico to the United States. *Demography*, *38*(2), 187-200.

Chambers, R., and Conway, G. R. (1992). *Sustainable rural livelihoods: practical concepts for the 21st century*. Institute of development studies Brighton, UK.

Chambers, R. (1997). Responsible Well-Being: A Personal Agenda for Development. *World Development*, *25*, 1743-1745.

Chiswick, B. R. (1999). Are immigrants favorably self-selected? *The American Economic Review*, *89*(2), 181–185.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American journal of sociology*, *94*(S1), 95.

Cooper, R. T. (2001). Racial ethnic diversity puts new face on middle American census: the upper mid-west and other once homogenous areas. *The Los Angeles Times*. Los Angeles.

Corcoran, M., Datcher, L., and Duncan, G. (1980). Information and influence networks in labor markets. *Five Thousand American Families: Patterns of Economic Progress: Analyses of the First Eleven Years of the Panel*, 1.

Dasgupta, P. (1995). *An inquiry into well-being and destitution*. Oxford University Press, USA.

De Haan, A. (2000). Migrants, livelihoods, and rights: the relevance of migration in development policies.

Deaton, A. (1997). *The analysis of household surveys*. Johns Hopkins Univ. Press.

Di Tella, R., and MacCulloch, R. (2000). *A new explanation for European unemployment based on rational institutions*. Working Paper.

Diener, E., Lucas, R. E., and Oishi, S. (2002). Subjective well-being: The science of happiness and life satisfaction. *Handbook of positive psychology*, 63–73.

Diener, E., and Oishi, S. (2000). Money and happiness: Income and subjective well-being across nations. *Culture and subjective well-being*, 185–218.

Dowling, E. (2000). *Schaum's Outline Introduction to Mathematical Economics* (3rd ed.). NY: McGraw-Hill.

Dozi, P., and Valdivia, C. (2005). Vulnerabilities and Economic Wellbeing of Hispanics in Non-Metro Missouri. *Selected Paper. American Agricultural Economics Association. Long Island, July*, 24–27.

Durlauf, S. N., and Fafchamps, M. (2003). Empirical studies of social capital: a critical survey. World Bank: *Working papers series*.

Dust, A., Orazem, P., and Wohlgemuth, D. (2008). Rural immigrant population growth, 1950-2000: waves or ripples? Iowa State Economic department *General Research Papers*.

Easterlin, R. (2003a). Do aspirations adjust to the level of achievement? A look at the financial and family domains. In *Paper on the European Science Foundation Workshop on Income, Interactions and Subjective Well-Being. OECD working paper series, No. 72.*

Easterlin, R. A. (2003b). Explaining happiness. *Proceedings of the National Academy of Sciences*, *100*(19), 11176 - 11192.

Easterly, W. (1999). Life during growth. *Journal of Economic Growth*, *4*(3), 239–276.

Elliott, J. R. (1999). Social isolation and labor market insulation: Network and neighborhood effects on less-educated urban workers. *Sociological Quarterly*, (3), 199–216.

Ellis, F. (1993). *Peasant economics: farm households and agrarian development*. Cambridge, UK: Cambridge Univ. Press

Ellis, F. (2000). *Rural livelihoods and diversity in developing countries*. Cambridge, MA: Oxford University Press, USA.

Fafchamps, M., and Lund, S. (2003). Risk-sharing networks in rural Philippines. *Journal of Development Economics*, *71*(2), 261–288.

Fafchamps, M., and Minten, B. (2002). Returns to social network capital among traders. *Oxford Economic Papers*, *54*(2), 173.

Falicov, C. J. (2000). *Latino Families in Therapy: A Guide to Multicultural Practice* (1st ed.). The Guilford Press.

Fernandez-Cornejo, J., Hendricks, C., Mishra, A., and USDA, E. (2005). Technology adoption and off-farm household income: the case of herbicide-tolerant soybeans.

Florida, R. (2004). *The rise of the creative class*. Basic Books New York.

Frey, B. S., and Stutzer, A. (2002). What can economists learn from happiness research? *Journal of Economic Literature*, 402–435.

Frey, B. S., and Stutzer, A. (2005a). Beyond outcomes: measuring procedural utility. *Oxford Economic Papers*, *57*(1), 90.

Frey, B. S., and Stutzer, A. (2005b). Happiness Research: State and Prospects. *Review of Social Economy*, *63*(2), 207–229.

Fukuyama, F. (1995). Social Capital and the Global Economy: A Redrawn Map of the World. *Foreign Affairs*, *75*(4).

Furubotn, E. G., and Richter, R. (2005). *Institutions and economic theory: The contribution of the new institutional economics*. Univ of Michigan Pr.

Gasper, D. (2000). Sen's capability approach and Nussbaum's capabilities ethic. *Development: Critical Concepts in the Social Sciences*, 29.

Geertz, C. (1977). *The Interpretation Of Cultures*. Basic Books.

Genicot, G., and Ray, D. (2003). Group formation in risk-sharing arrangements. *The Review of Economic Studies*, *70*(1), 87–113.

Glaeser, E. L., Laibson, D., and Sacerdote, B. (2002). An economic approach to social capital. *The Economic Journal*, *112*(483), 437–458.

Goldberger, A. S. (1991). *A course in econometrics*. Harvard Univ Pr.

Goyal, S., and Vega-Redondo, F. (2005). Network formation and social coordination. *Games and Economic Behavior*, *50*(2), 178–207.

Granovetter, M. (1983). The strength of weak ties: A network theory revisited. *Sociological theory*, *1*, 201–233.

Granovetter, M. S. (1973). The strength of weak ties. *American journal of sociology*, *78*(6), 1360.

Greene, W. H. (2003). *Econometric analysis*. Prentice Hall Upper Saddle River, NJ.

Greenlees, C. S., and Saenz, R. (1999). Determinants of Employment of Recently Arrived Mexican Immigrant Wives. *International Migration Review*, *33*(2), 354-377.

Gronau, R. (1977). Leisure, home production, and work–the theory of the allocation of time revisited. *The Journal of Political Economy*, *85*(6), 1099–1123.

Grootaert, C. (1999). Social capital, household welfare, and poverty in Indonesia. *World*.

Grootaert, C., and Narayan, D. (2004). Local institutions, poverty and household welfare in Bolivia. *World development*, *32*(7), 1179–1198.

Grootaert, C., Oh, G. T., and Swamy, A. (2002). Social capital, household welfare and poverty in Burkina Faso. *Journal of African Economies*, *11*(1), 4.

Gujarati, D. N. (2003). *Basic Econometrics 4th edition McGraw Hill*. New York, NY.

Haddad, L., Hoddinott, J., and Alderman, H. (1997). *Intrahousehold Resource Allocation in Developing Countries: Methods, Models, and Policy*. International Food Policy Research Institute.

Hagan, J. M. (1994). *Deciding to be legal: A Maya community in Houston*. Temple Univ Pr.

Hagan, J. M. (1998). Social networks, gender, and immigrant incorporation: Resources and constraints. *American sociological review*, *63*(1), 55–67.

Hagan, J. M. (2004). Contextualizing immigrant labor market incorporation: Legal, demographic, and economic dimensions. *Work and Occupations*, *31*(4), 407.

Hagan, J. M. (1998). Social Networks, Gender, and Immigrant Incorporation: Resources and Constraints. *American Sociological Review*, *63*(1), 55-67.

Heckathorn, D. D. (2002). Respondent-driven sampling II: deriving valid population estimates from chain-referral samples of hidden populations. *Social Problems*, *49*(1), 11–34.

Heckman, J. J. (1979a). Sample selection bias as a specification error. *Econometrica: Journal of the econometric society*, 153–161.

Heckman, J. J. (1979b). Sample selection bias as a specification error. *Econometrica: Journal of the econometric society*, *47*(1), 153–161.

Helliwell, J. F. (2003). How's life? Combining individual and national variables to explain subjective well-being. *Economic Modelling*, *20*(2), 331–360.

Helliwell, J. F., and Putnam, R. D. (2004). The social context of well-being. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *359*(1449), 1435.

Hondagneu-Sotelo, P. (1992). Overcoming Patriarchal Constraints: The Reconstruction of Gender Relations among Mexican Immigrant Women and Men. *Gender and Society*, *6*(3), 393-415.

Ioannides, Y. M., and Loury, L. D. (2004). Job information networks, neighborhood effects, and inequality. *Journal of Economic Literature*, *42*(4), 1056–1093.

Jackson, M. O. (2005). Allocation rules for network games. *Games and Economic Behavior*, *51*(1), 128–154.

Jackson, M. O. (2007). The study of social networks in economics. *The missing links: Formation and decay of economic networks*. retrieve from: http://www.stanford.edu/~jacksonm/publishedsubject.html on July, 2008

Jackson, M. O., and Watts, A. (2002). The evolution of social and economic networks. *Journal of Economic Theory*, *106*(2), 265–295.

Jackson, M. O., and Wolinsky, A. (1996). A strategic model of social and economic networks. *Journal of economic theory*, *71*(1), 44–74.

Jacobs, J. (1969). The economies of cities. *New York: Random House.*

Janvry, A., and Sadoulet, E. (2001). Income strategies among rural households in Mexico: The role of off-farm activities. *World development*, *29*(3), 467–480.

Kim-Prieto, C., Diener, E., Tamir, M., Scollon, C., and Diener, M. (2005). Integrating the diverse definitions of happiness: A time-sequential framework of subjective well-being. *Journal of Happiness Studies*, *6*(3), 261–300.

Kline, R. B. (2004). *Principles and practice of structural equation modeling*. The Guilford Press.

Korenman, S., and Turner, S. C. (1996). Employment contacts and minority-white wage differences. *INDUSTRIAL RELATIONS-BERKELEY THEN OXFORD-*, *35*, 106–122.

Krugman, P. R., and Obstfeld, M. (2005). *International Economics: Theory And Policy* (7th ed.). Addison Wesley.

Lee, L. F. (1983). Generalized econometric models with selectivity. *Econometrica: Journal of the Econometric Society*, *51*(2), 507–512.

Lin, N. (2001a). Building a network theory of social capital. *Social capital: Theory and research*, 3–29.

Lin, N. (2001b). *Social capital: A theory of social structure and action*. Cambridge University Press Cambridge.

Long, J. S. (1997). *Regression Models for Categorical and Limited Dependent Variables* (1st ed.). Sage Publications, Inc.

MacDonald, J. S., and MacDonald, L. D. (1964). Chain migration ethnic neighborhood formation and social networks. *The Milbank Memorial Fund Quarterly*, *42*(1), 82–97.

Maluccio, J., Haddad, L., and May, J. (1999). *Social capital and income generation in South Africa, 1993-98*. School of Development Studies (incorporating CSDS), University of Natal.

Mankiw, N. G. (2008). *Principles of Macroeconomics* (5th ed.). South-Western College Pub.

Manski, C. F. (2000). Economic analysis of social interactions. *The Journal of Economic Perspectives*, *14*(3), 115–136.

Marın, G., and Gamba, R. J. (1996). A new measurement of acculturation for Hispanics: The Bidimensional Acculturation Scale for Hispanics (BAS). *Hispanic Journal of Behavioral Sciences*, *18*, 297–316.

Martinetti, E. C. (2000). A multidimensional assessment of well-being based on Sen's functioning approach. *Rivista Internazionale di Scienze Sociali*, *2*, 207–239.

Massey, D. S., Alarcon, R., Durand, J., and Gonzalez, H. (1987). *Return to aztlan*. University of California Press.

Massey, D. S., Alarcon, R., Durand, J., and Gonzalez, H. (1990). *Return to Aztlan: The social process of international migration from western Mexico*. Univ of California Pr on Demand.

Menjıvar, C. (2006). Liminal Legality: Salvadoran and Guatemalan Immigrants' Lives in the United States 1. *American journal of sociology*, *111*(4), 999–1037.

Menjivar, C. (1997). Immigrant kinship networks and the impact of the receiving context: Salvadorans in San Francisco in the early 1990s. *Soc. Probs.*, *44*, 104.

Montgomery, J. D. (1991). Social networks and labor-market outcomes: Toward an economic analysis. *The American Economic Review*, *81*(5), 1408–1418.

Mortensen, D. T., and Vishwanath, T. (1994). Personal contacts and earnings: it is who you know! *Labour Economics*, *1*(2), 187–201.

Munshi, K. (2003). Networks in the Modern Economy: Mexican Migrants in the US Labor Market. *Quarterly Journal of Economics*, *118*(2), 549–599.

Murgai, R., Winters, P., Sadoulet, E., and Janvry, A. (2002). Localized and incomplete mutual insurance. *Journal of Development Economics*, *67*(2), 245–274.

Narayan, D., and Pritchett, L. (1999). Cents and sociability: Household income and social capital in rural Tanzania. *Economic Development and Cultural Change*, *47*(4), 871–897.

North, D. C. (1990). *Institutions, institutional change, and economic performance*. Cambridge MA: Cambridge Univ Pr.

Nussbaum, M. C., and Sen, A. K. (1993). *The quality of life*. Cambridge: Oxford University Press, USA.

O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality and Quantity*, *41*(5), 673–690.

Olson, M. (1971). *The logic of collective action: Public goods and the theory of groups*. Cambridge: Harvard Univ Pr.

OSEDA. (2005). Hispanic Population Change in the Midwest. Retrieved from: http://www.oseda.missouri.edu/data_archive.shtml in April, 2007.

Ostrom, E. (1991). *Governing the commons: The evolution of institutions for collective action*. Cambridge UK: Cambridge Univ Pr.

Oswald, A. J. (1997). Happiness and economic performance. *The Economic Journal*, 1815–1831.

Parrado, E. A., and Flippen, C. A. (2005). Migration and gender among Mexican women. *American Sociological Review*, 606–632.

Phinney, J. S., and Ong, A. D. (2007). Conceptualization and measurement of ethnic identity: Current status and future directions. *Journal of Counseling Psychology*, *54*(3), 271–281.

Pindyck, R., and Rubinfeld, D. (2008). *Microeconomics* (7th ed.). Prentice Hall.

Pitt, L., and Vargas, Z. (1999). *Proletarians of the North: A History of Mexican Industrial Workers in Detroit and the Midwest, 1917-1933*. Univ of California Pr.

Pitt, M. M. (1997). Specification and Determination of the Demand for Goods Within the Household. In *Intrahousehold Resource Allocation in Developing Countries: Models, Methods, and Policy* (Lawrence Haddad, John Hoddinott, and Harold Alderman., pp. 19-38). Baltimore and London: The Johns Hopkins University Press.

Portes, A. (1989). Contemporary immigration: Theoretical perspectives on its determinants and modes of incorporation. *International Migration Review*, *23*(3), 606–630.

Portes, A., Guarnizo, L. E., and Haller, W. J. (2002). Transnational entrepreneurs: An alternative form of immigrant economic adaptation. *American sociological review*, *67*(2), 278–298.

Portes, A., and Rumbaut, R. G. (1996). *Immigrant America*. University of California Press.

Portes, A., and Rumbaut, R. G. (2001a). *Legacies: The story of the immigrant second generation*. Univ of California Pr.

Portes, A., and Rumbaut, R. G. (2001b). *Legacies: The story of the immigrant second generation*. Univ of California Pr.

Portes, A., and Rumbaut, R. G. (2006). *Immigrant America: a portrait*. Univ of California Pr.

Portes, A., and Sensenbrenner, J. (1993). Embeddedness and immigration: Notes on the social determinants of economic action. *American journal of sociology*, *98*(6), 1320.

Preston, J. (2010, July 9). Illegal Workers Swept From Jobs in ‘Silent Raids’. *The New York Times*. Retrieved from http://www.nytimes.com/2010/07/10/us/10enforce.html

Putnam, R. D. (2001). *Bowling Alone: The Collapse and Revival of American Community* (1st ed.). Simon and Schuster.

Qizilbash, M. (1996). The concept of well-being. *Discussion Paper Series In Economics And Econometrics*.

Ray, D. (1998). *Development economics*. Citeseer.

Redfield, R., Linton, R., and Herskovits, M. J. (1936). Memorandum for the study of acculturation. *American Anthropologist*, *38*(1), 149–152.

Ruben, R., and Strien, D. (2001). Social capital and household incomes in Nicaragua: the economic role of rural organization and farmers' networks.

Rupasingha, A., Goetz, S. J., and Freshwater, D. (2006). The production of social capital in US counties. *Journal of Socio-Economics*, *35*(1), 83–101.

Sachs, S. (1999, July 5). Pressed by Backlog, US Rethinks Citizenship Test. *New York Times*, 1. New York.

Sadoulet, E., and De Janvry, A. (1995). *Quantitative development policy analysis*. Baltimore and London: The Johns Hopkins University Press.

Sam, D. L., and Berry, J. W. (2006). The scope of acculturation. In *The cambridge handbook of acculturation psychology* (David L. Sam and John W. Berry.). Cambridge, UK: Cambridge Univ Pr.

Sandler, T. (1992). *Collective action: Theory and applications*. Univ of Michigan Pr.

Santos, J. R. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of Extension*, *37*(2), 1–5.

Scanlon, T. (2003). *The difficulty of tolerance: essays in political philosophy*. Cambridge Univ Pr.

Scoones, I. (1998). *Sustainable rural livelihoods: a framework for analysis*. Institute of Development Studies Brighton.

Scoones, I. (1998). *Sustainable rural livelihoods: A Framework for Analysis*. IDS Working paper, London.

Sen, A. (2000). Capability and Weli-Being. *Development: Critical Concepts in the Social Sciences*, 3.

Sen, A. K. (1985). *Commodities and capabilities*. North-Holland Amsterdam.

Sen, A. K. (1987). *Hunger and entitlements*. WIDER Helsinki.

Sen, A. (1975). *Employment, Technology and Development*. Oxford, UK: Clarendon Press.

Singh, I., Squire, L., and Strauss, J. (1998). The basic model: theory, empirical results, and policy conclusions. *Economic Demography*, 337.

Singh, I., Squire,, L., and Strauss, J. (1986). *Agricultural Household Models: Extensions, Applications, and Policy*. Baltimore and London: The Johns Hopkins University Press.

Slikker, M., and Van den Nouweland, A. (2001). *Social and economic networks in cooperative game theory*. Springer.

Smith, S. S. (2000). Mobilizing social resources: Race, ethnic, and gender differences in social capital and persisting wage inequalities. *Sociological Quarterly*, 509–537.

Sobel, J. (2002). Can we trust social capital? *Journal of economic literature*, *40*(1), 139–154.

Strauss, J. (1986). The Theory and Comparative Statics of Agricultural Household Models: A General Approach. In *Agricultural Household Models: Extensions, Applications, and Policy* (pp. 71-91). Baltimore and London: The Johns Hopkins University Press.

Strauss, J., and Thomas, D. (1998). Health, nutrition, and economic development. *Journal of Economic Literature*, *36*(2), 766–817.

Stutzer, A. (2004). The role of income aspirations in individual happiness. *Journal of Economic Behavior and Organization*, *54*(1), 89–109.

Suarez-Orozco, C., and Suarez-Orozco, M. M. (2001). *Children of Immigration*. The Developing Child. Cambridge, Masachussetts: Harvard Univ Pr.

Taylor, J. E., and Yunez-Naude, A. (2000). The returns from schooling in a diversified rural economy. *American Journal of Agricultural Economics*, *82*(2), 287.

Thomas, D. (1997). Incomes, expenditures, and health outcomes: Evidence on intrahousehold resource allocation. *Intrahousehold resource allocation in developing countries: Models, methods, and policy*, 142–64.

Todaro, M. P., and Smith, S. C. (2005). *Economic Development* (9th ed.). Addison Wesley.

Udry, C. (1994). Risk and insurance in a rural credit market: An empirical investigation in Northern Nigeria. *The Review of Economic Studies*, *61*(3), 495–526.

US Census (2007) Income stats, Retr. on Nov 23, 2007 from: www.census.gov/hhes/www/income/incomestats.html#altmeas

Valdivia, C., Dozi, P., Jeanetta, S., Flores, L. Y., Martinez, D., and Dannerbeck, A. (2008). The Impact of Networks and the Context of Reception on Asset Accumulation Strategies of Latino Newcomers in New Settlement Communities of the Midwest. *American Journal of Agricultural Economics*, *90*(5), 1319–1325.

Valdivia, C., and Gilles, J. (2001). Gender and resource management: Households and groups, strategies and transitions. *Agriculture and Human Values*, *18*(1), 5–9.

Valdivia, C., and Dannerbeck, A. (2009). Moving around to get by and try to get ahead: Immigration experiences in new settlement communities of the Midwest. *Professional Development: The International Journal of Continuing Social Work Education, 12(3, p.23 - 47.*

Valdivia, C., and Flores, L.(*in review*) Factors Affecting the Job Satisfaction of Latino/a Immigrants in the Midwest., in *Journal of Career Development*.

Van Ha, N., Kant, S., and MacLaren, V. (2004). The Contribution of Social Capital to Household Welfare in a Paper-Recycling Craft Village in Vietnam. *The Journal of Environment Development*, *13*(4), 371-399. doi:10.1177/1070496504268345

Wacquant, L. J. (1998). Negative social capital: State breakdown and social destitution in America's urban core. *Journal of Housing and the Built Environment*, *13*(1), 25–40.

Wainwright, K., and Chiang, A. (2004). *Fundamental Methods of Mathematical Economics* (4th ed.). McGraw-Hill/Irwin.

Wasserman, S., and Faust, K. (1994). *Social network analysis: Methods and applications*. Cambridge Univ Pr.

Weinberg, B., Reagan, P. B., and Yankow, J. J. (2004). Do neighborhoods affect work behavior? Evidence from the NLSY79. *Journal of Labor Economics*, *22*(4), 891–924.

Winters, P., Davis, B., and Corral, L. (2002). Assets, activities and income generation in rural Mexico: factoring in social and public capital. *Agricultural Economics*, *27*(2), 139–156.

Woolcock, M. (2001). The place of social capital in understanding social and economic outcomes. *Canadian Journal of Policy Research*, *2*(1), 11–17.

Woolcock, M., and Narayan, D. (2000a). Social capital: implications for development theory, research, and policy. *The world bank research observer*, *15*(2), 225.

Woolcock, M., and Narayan, D. (2000b). Social capital: implications for development theory, research, and policy. *The world bank research observer*, *15*(2), 225.

Wooldridge, J. M. (2008). *Introductory econometrics: A modern approach*. NY: South-Western Pub.

VITA

Pedro Valentim Dozi, an Angolan citizen, was born in May 6, 1972 in Kinshasa, in the Democratic Republic of Congo. He attended Africa University in Zimbabwe and graduated in May 2000 with a Bachelor of Science in agriculture and natural resources. Pedro pursued his Masters work at the University of Missouri-Columbia on a Fulbright scholarship from 2002 to 2004 graduating with a M.Sc. in agricultural economics. He returned to the University of Missouri-Columbia in 2005 to start his work on the Ph.D. Degree in agricultural and applied economics. During his doctoral work, Pedro worked as a research assistant and was a Cambio Center research fellow.

Pedro has worked as an agricultural technical adviser in the Angolan National Institute of Coffee providing advice on sustainable agricultural practices. He has also worked as a deputy director of food security and international cooperation in the Angolan Ministry of Agriculture (MINADER). Just before starting his graduate work, Pedro worked has a vulnerability mapping and food security analyst with the World Food Program in Angola. He has also worked as a consultant with the German Development Agency designing small income generating projects in rural areas of Mozambique. Currently, Pedro is on leave from his post in MINADER, while he finishes his appointment as a Mizzou Advantage postdoctoral Fellow.