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AGE POPULATION: AN EXAMINATION OF
THE ROLE OF PLACE, MIGRATION, AND
SOCIOECONOMIC STATUS IN SHAPING
HAPPY AND HEALTHY OLDER
AMERICANS

Megan Henly

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WELL-BEING AS A MEASURE OF INEQUALITY AMONG THE RETIREMENT-
AGE POPULATION: AN EXAMINATION OF THE ROLE OF PLACE,
MIGRATION, AND SOCIOECONOMIC STATUS IN SHAPING HAPPY AND
HEALTHY OLDER AMERICANS

BY

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DISSERTATION

Submitted to the University of New Hampshire

in Partial Fulfillment of

the Requirements for the Degree of

Doctor of Philosophy

in

Sociology

December 2015

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DEDICATION

For Josh, my number one.

ACKNOWLEDGEMENTS

I moved to New Hampshire from Maryland so that I could return to school to earn my PhD and maybe have a change of scenery as well. I didn't really know what to expect, but I couldn't have picked a better locale or a more inspiring group of mentors, instructors, colleagues, and friends.

First, I wish to thank the University of New Hampshire Colleges of Liberal Arts and of Health & Human Services for offering me five years of year-round funding in the form of the Community, Health, and Environment Fellowship. Not only was the financial support appreciated, but it provided me an opportunity to engage in cross-disciplinary research on a variety of topics. The Carsey School of Public Policy (formerly the Carsey Institute) also provided support to travel to the American Sociological Association annual meeting and to the University of Michigan Summer Institute where I had a chance to learn from the survey methodologists who work on the Health and Retirement Study. The UNH Graduate School and the UNH Sociology Department also provided travel awards so that I could attend the Eastern Sociological Society annual meetings during my tenure as a student.

Thanks to all of the faculty members across campus I have had a chance to work with, including Michele Dillon, Cliff Brown, Jean Elson, Larry Hamilton, Mil Duncan, Sally Ward, Rebecca Glauber, Kristin Smith, Michael Kalinowski, Malcom Smith, Curt Grimm, Beth Mattingly, and particularly my advisor, Tom Safford. Tom provided me with a variety of interesting projects to work on over the last four years. I am lucky to have an advisor who has not only provided me with professional guidance and a candid peek into the tenure process, but also continued financial support to assure that I did have an opportunity to finish this dissertation and graduate. He was also extremely flexible with my ever-changing deadlines and he never let me think I should quit. Tom's encouragement played a major role in me seeing this project to completion.

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I am fortunate to have shared my time here with so many other smart, fun, and funny students, especially those in my cohort: Jess Carson, Genevieve Cox, Jennifer Esala, May Lutz, Angela Mitiguy, Jessica Ulrich-Schad, Jennifer Vanderminden, and Desiree Wiesen-Martin. I have loved sharing in your major milestones – both professional and personal. A big thanks to Anne Shattuck who was writing her dissertation at the same pace (and using the same data!). She made sure to check in on me regularly in the end to ensure I wasn't left behind when deadlines approached.

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I would like to offer a thank you to the UNH Parking Services and town of Durham for installing credit card readers in lieu of quarter-eating parking meters just when I couldn't find any more change in my house to pay for parking. Thanks also to whoever determined that the Sociology Department should reside in Horton and

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Finally, thanks to Joanna for teaching me what it really means to be flexible; to Nate for claiming me for his best friend; and to Sam for *always* smiling. Most of all, thanks to Josh for making me dinner every day and for being my number one.

ABSTRACT

WELL-BEING AS A MEASURE OF INEQUALITY AMONG THE RETIREMENT-AGE POPULATION: AN EXAMINATION OF THE ROLE OF PLACE, MIGRATION, AND SOCIOECONOMIC STATUS IN SHAPING HAPPY AND HEALTHY OLDER AMERICANS

by

Megan Henly

University of New Hampshire, December 2015

The proportion of the U.S. population comprised of seniors – those aged 65 and older – is projected to increase from 13% presently to 20% by 2030. With this demographic change, it is important to consider how older residents are faring, which older residents do best, and what communities are doing to support this population. Rather than examining income or wealth as a dependent variable, I predict two measures of well-being among older U.S. residents– one subjective and one objective. By linking survey data of the 50 and older population from the 2010 Health and Retirement Study (HRS) to a variety of county-level statistics from several government databases, this dissertation characterizes each respondent’s community with respect to its demographics, economic structure, natural environment, social norms, and presence of community institutions. I examine the

impact of individual and community characteristics, as well as whether someone had migrated within the last four years, on predicting well-being.

My findings suggest that certain community variables may influence well-being – namely that social institutions may need to be tailored to support the needs of older residents and that counties we think of as privileged counties (with respect to the racial and socioeconomic make-up of its residents) may need to do more to serve older residents. In sum though, these county characteristics have a very minimal impact in predicting the well-being of older residents. The predictors that seemed to matter more were those of the individuals aged 50 and over themselves: their demographic characteristics, employment status, health, and social connectedness all mattered with respect to understanding which individuals were doing well. Whether someone had moved to a new county in the last four years did not appear to offer value to predicting well-being in a causal manner.

CHAPTER 1 - INTRODUCTION

The proportion of the U.S. population comprised of seniors – those age 65 and older – is projected to increase substantially over the next decade. Prior to 1980, less than 10% of the population was 65 or older. By 2010, the proportion had grown to 13%. Within the next five years, that proportion is expected to reach 16%, eventually leveling off around 20% around the year 2030 (Ortman, Velkoff et al. 2014). As we approach a time in which one in five people is of retirement age, it is important to consider how older Americans are faring and what communities are doing to support this population.

Because seniors vary widely with respect to their income and wealth, some clearly have the financial means to migrate, while others do not. This dissertation will examine the impact of *place*¹ on this subpopulation, while also considering *wealth* and financial means to migrate. While previous research on “neighborhood effects” has revealed much about the impact of place and of migration on life outcomes for urban youth (Sampson, Morenoff et al. 2002); (Sampson 2008);

¹ Some researchers use the term *space* to differentiate physical location from other social, emotional, and cultural dimensions. In this paper, I use the term *place* to encompass the physical and environmental aspects as well as the social ties, cultural amenities, and other aspects of people’s communities that are relevant to our understanding of what makes for a desirable or undesirable place to live (Lobao, L. M., G. Hooks, et al. (2007). The sociology of spatial inequality, SUNY Press.

(Ludwig, Liebman et al. 2008); (Clampet-Lundquist and Massey 2008); (Pebley and Sastry 2004), little attention has been paid to the effect of place on older Americans. Using data from the University of Michigan Health and Retirement Study (HRS), I utilize multi-level models to consider how place characteristics, migration history, and individual characteristics work together to shape well-being during retirement and pre-retirement among those aged 50 and older. The multi-level nature of this analysis identifies the role of place after holding constant individual-level factors. In addition to offering a unique contribution that merges demographic analysis with the social stratification literature, this project could be beneficial to policy makers by identifying community attributes that have the most potential benefits to retirees.

“Retirement” means different things to different people. To the upper class, it may mean second home ownership and global travel. For the working class, retirement may be reducing the number of hours worked once Social Security benefits become available. The middle class goals may fall somewhere in between. Given that there are different opportunities available to retirees depending on their income and, particularly, their wealth (Keister and Moller 2000), this research will examine whether migration decisions and place of residence play a role in quality of life for the non-institutionalized population of those aged 50 and over.

Despite the large number of baby boomers reaching retirement age in recent years, little attention has been given to how community characteristics impact life satisfaction of this group, independent of individual-level factors. Those aged 60 in

2012 will be the first to have worked their entire careers after 1973, the year which marked the beginning of the growth in economic inequality in the U.S. (e.g., (Wilson 2000);(Levy 1999);(Danziger and Gottschalk 1995); (Weinberg 1996) notes that the U.S. Census Bureau puts the year at 1968). Over the last four decades, the resulting disparity in economic outcomes for Americans has resulted in a bifurcation of the classes, shrinking the size of a middle class and exacerbating the distances between the affluent and the poor. This, in tandem with the absolute size of the age cohort now approaching retirement, makes retirement one life stage to pay special attention to in the field of stratification.

To address these issues, the analysis presented here answers the following three questions:

1. *What is the role of geographic place in predicting the well-being of retirement-age Americans?* With this research aim, I want to understand how community-level characteristics help to shape positive (or negative) outcomes for older Americans, independently of individual-level characteristics. What types of communities have happier and healthier retirees?

2. *What role does migration play in retiree well-being?* I shall describe the role of migration in this model by investigating whether migration benefits retirees and determining whether the community traits sought by retirees are actually beneficial to them. Are movers happier than non-movers, all things considered? What difference does it make where a retiree goes?

3. *What individual-level characteristics predict retiree well-being?* As a by-product of my models aimed at answering question 1, I will be able to identify the characteristics of retirees themselves (economic, demographic, and familial factors) that are correlated with positive well-being after retirement. This chapter outlines how I will measure these relationships.

By analyzing data on older U.S. residents within different types of communities, this research will have two important consequences. First, it will disentangle place-specific demographic effects from individual-level effects on the well-being of older citizens. Second, it will permit a better understanding of the long-term, cumulative effects of wealth and income inequality by examining those exiting the workforce at a sensitive time in history.

This research project undertakes a non-economic approach to measuring well-being. By drawing on a body of literature dating back to Max Weber, I operationalize well-being as both a subjective self-report of overall life satisfaction and a more objective observation of individual health (based on a count of serious health conditions and of instrumental activities of daily living with which one needs assistance). While this approach does not ignore the role of financial well-being, it focuses on what Weber terms “the value-rational” approach. The chapter that follows summarizes the relevant literature on this topic.

CHAPTER 2

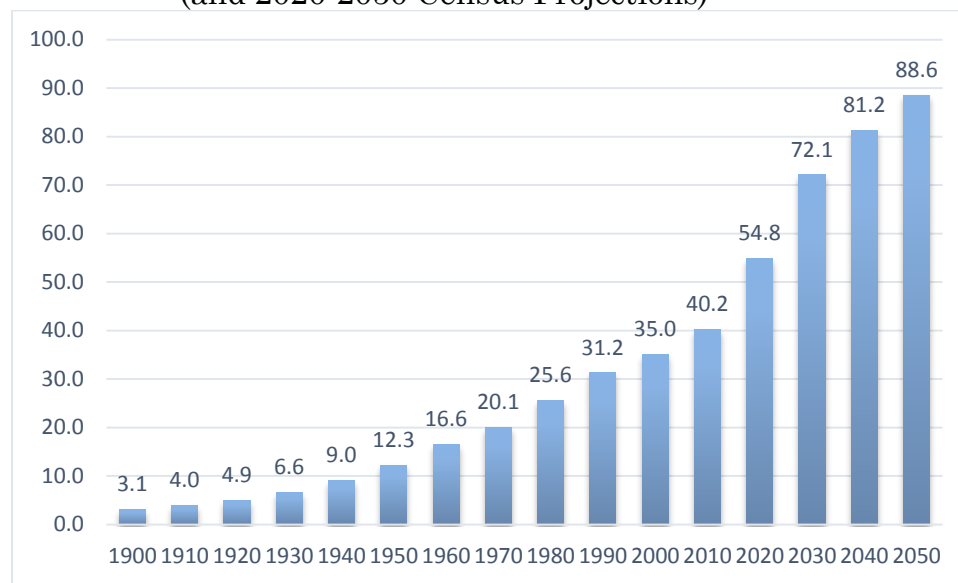
LITERATURE REVIEW

Three bodies of sociological research help inform this project. The first subject area summarizes demographic trends, particularly as they relate to migration and the older population. It demonstrates the importance of examining older Americans as a population worth studying separately, due in part to their growing numbers and in part because existing research may not be generalizable to this group. The second body of literature I examine is quality of life research, an important subjective measure of inequality. I highlight the main predictors of quality of life worth exploring at the individual- and community-level. Finally, I integrate all of this work into a larger discussion on inequality, opening a discussion for alternatives to economic-based measures of inequality. By applying the literature on socio-economic inequality to research examining the effect of migration motivations and patterns, I plan to fill in the gap that omits analysis of older Americans at the intersection of these fields.

PART 1: Demographic Trends and the Senior Population

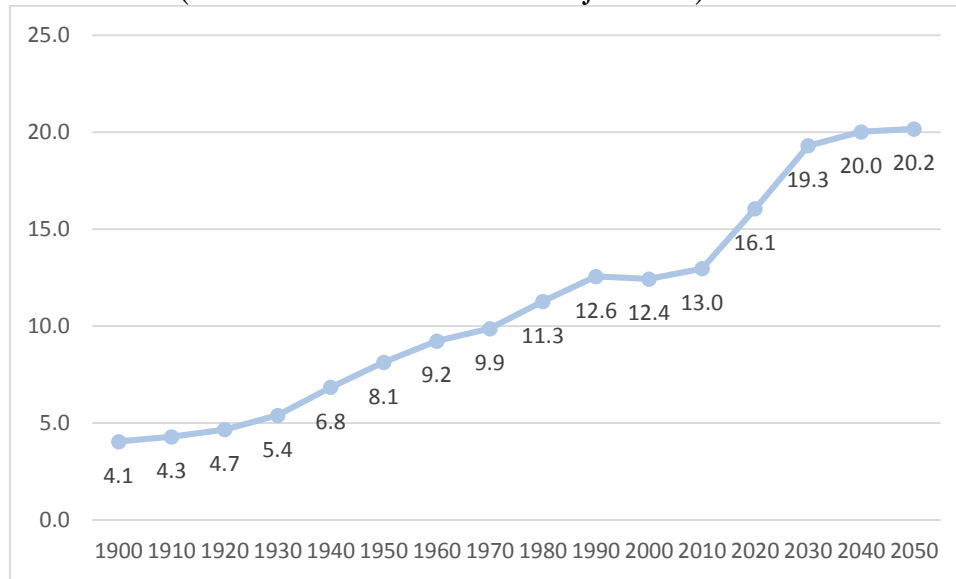
The Baby Boom generation – those born between 1946 and 1964 – are aged 51 to 69 in the year 2015. Due in part to increasing longevity, but largely to the size of the Baby Boom cohort, the number of senior citizens is expected to grow rapidly in the next twenty years (see Figure 2.1; (Administration on Aging 2011)).

Figure 2.1. Number of U.S. Residents aged 65 or older, 1900-2010 (and 2020-2050 Census Projections)



The U.S. Census Bureau population count from 2010 indicates that there are over 40 million senior citizens in the U.S., or 13.3% of the total population (Ortman, Velkoff et al. 2014). By the close of this decade, that number will have grown to almost 56 million residents over age 65 – a 39% increase in the size of this age group, or 16.8% of all residents. One projection predicts that by 2030, the 65 and older will comprise more than 20 percent of the total U.S. population.

Figure 2.2. Percent of total U.S. Resident Population Aged 65 or older, 1900-2010 (and 2020-2050 Census Projections)



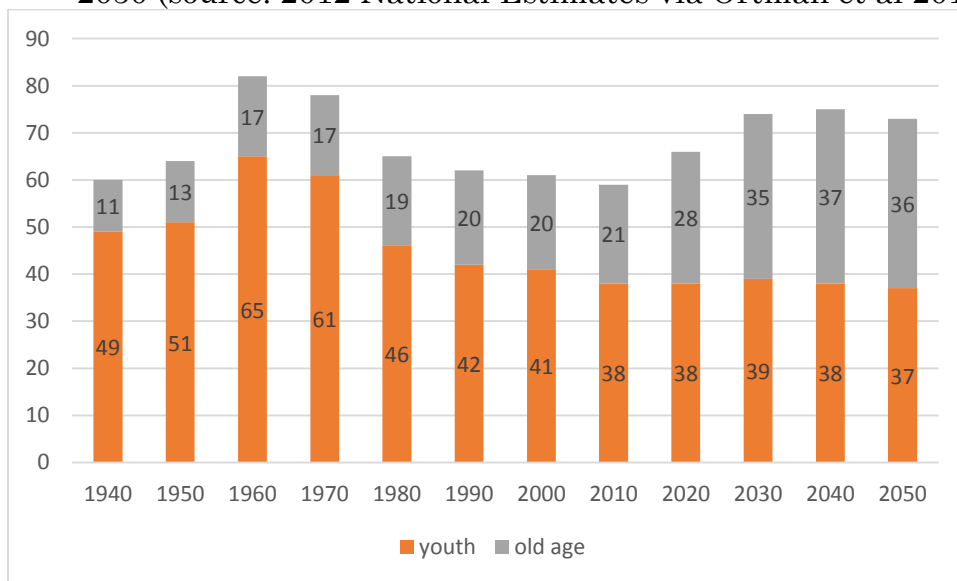
Source: Data from *Profile of Older Americans*, U.S. Administration on Aging using U.S. Census Bureau data and projections http://www.aoa.gov/aoaroot/aging_statistics/Profile/index.aspx

Why does this demographic trend matter? These projected increases will have an impact on the dependency ratio, or the ratio of dependents (children under 18 and adults 65 and over) to the working age (18-64) population (Ortman, Velkoff et al. 2014). The projected impact of our aging population on the dependency ratio is substantial, but it is not without precedent (see Figure 2.3). During the Baby Boom, the American dependency ratio reached a high of 82 dependents per 100 working age adults (Ibid). As those children reached adulthood, they skewed the dependency ratio in the other direction, resulting in more workers to support the nonworking age population. We are currently at the low point in the dependency ratio, just as the bulk those Baby Boomers are on the verge of retirement age. In 2010, the dependency ratio was just 59 dependents per 100 working-age adults. Since the dependency ratio high in the 1960s and 1970s, we have seen the number

of old age dependents creep up (from 17:100 during those years to 21:100 presently) and the number of youth dependents fall dramatically (from 65 at the height of the Baby Boom to 38 presently). The youth dependency rate is projected to remain relatively stagnant, while the old age dependents are projected to climb to the mid-30s per 100 working adults in the next 25 to 35 years (Ibid).

The resulting impact of this shift will be apparent over the next decade. Again, the overall dependency ratio is not projected to break any records; however, this shift from majority youth-dependent to equal components youth and old age will result in different types of demand for public resources, which may strain budgets for services for all dependents.

Figure 2.3. Dependency ratio for U.S. Population, 1940-2010 and projected 2020-2050 (source: 2012 National Estimates via Ortman et al 2014)



The geographic distribution of older residents will not be uniform. Some regions will be more affected than others by an increase in demand for resources

needed by older residents. What is worth investigating is how some will be more effective at providing these needed resources to older residents.

There is a good deal of variation in the distribution of older residents – just 4% of Chattahoochee County, Georgia’s 2013 population was over age 65 while 52% was in Sumter County, Florida (U.S. Census Bureau 2015). This concentration of older residents is a result of three different demographic phenomena: aging in place, younger resident out-migration, and retirement-age in-migration. Aging in place can occur when a population sees very little in-migration, low birth rates, and an increase in life expectancy. By contrast, when counties experience growth in the over 65 population due to migration, it may be a result of younger people moving out or as a result of retirees moving in. The Economic Research Service at the U.S. Department of Agriculture (USDA) identifies specific counties that are popular as “retirement destination counties” by categorizing counties that experienced a growth of at least 15% in the 60 and older population as a result of net immigration (U.S. Department of Agriculture 2008). This categorization can result intentionally as the result of planned communities for older adults or accidentally as areas evolve into popular retirement destinations (Brown and Glasgow 2008). To better understand these processes, the following section summarizes the patterns in the residence preferences of older Americans, with a particular focus on the impact of migration.

1.1 Where older residents live

With the growth in the older population, demographic researchers are taking note of where these older Americans reside, whether they are moving, where they are moving, and the resulting impact on communities with many retirees (Brown and Glasgow 2008). To answer each of these questions in brief: although most older Americans reside in urban places, they are disproportionately represented in nonmetropolitan (nonmetro) communities (Brown and Glasgow 2008; U.S. Department of Agriculture 2008) they are moving, but at rates only half that of the general population (Werner 2011); there are a number of “retirement destination communities” in nonmetro areas (characterized by a growth of at least 15% in the number of residents aged 60 or over between two censuses) (U.S. Department of Agriculture 2008), but just 4% of older Americans move out of state in a given year (Brown and Glasgow 2008); the impact on these communities is both positive (increasing commitment of retirees to volunteer work) and negative (increasing stress on public services and fewer working people to provide these services).

Retirement destination communities are characterized by a growth in the proportion of their residents who are aged 60 or over. While some research has examined the impact of older residents on their communities (Brown and Glasgow 2008), what does the literature say about the impact of the community on older residents? Previous research has addressed this question by asking older residents what they value about their communities and about their intent to move. Such research may be a good proxy for understanding retiree preferences with respect to

community characteristics and is worth summarizing here; however, such descriptive studies do not establish whether there is a link between these community characteristics and outcomes for retirees (such as well-being). This is an area my research plans to address.

1.2 Migration trends among older Americans

It is worth noting that a substantial body of research has focused on migration patterns as a whole, not just retiree migration which constitutes a small (but growing) number of migrants. For instance, while many parts of nonmetropolitan (nonmetro) America are losing population, recreation counties and those known for their natural beauty have been growing in population. These areas are particularly attractive to retirees.

Age is an important issue for migration trends because changes to the age structure have ramifications on the potential for population growth, particularly in nonmetropolitan communities where small changes in population can have a bigger impact. Nonmetro areas see high rates of out-migration for 20 to 29 year olds (Johnson and Cromartie 2006) and high in-migration rates for retirees flocking to amenity regions (Glasgow and Brown 2006). However, the influx of older residents is typically followed by younger migrants who come for employment opportunities resulting from the services required by older residents. This tends to balance out the impact of older migrants, as previous studies comparing newcomers and oldtimers found that a substantially smaller portion of new residents were over age

50 (11%) compared to those who had lived in the area for more than a decade (52%) (Graber 1974).

Overall, in-migration to non-metro counties in the US has slowed substantially from 2000 to 2010, especially since the onset of the Great Recession. However, there is appreciable variation in the extent of growth among nonmetro areas. Amenity-rich nonmetro counties saw strong population growth (13.4%), and recreational counties were close behind (10.7% growth). The majority of retirement destination counties (84%) gained population between 2000 and 2010. Keep in mind that this growth is much slower than it was during the last decade, which is interesting because the older population is growing and the number of retirees is on the rise (Werner 2011).

To understand why people move, it is helpful to consider that migration can be thought of as a function of motivating and facilitating factors (Moss 2006). Motivating factors include economic pushes and pulls, urban sprawl, and quality of life issues. Economic opportunities in nonmetro counties have been dwindling (Glasmeier and Salant 2006; University of California-Davis 2008), so this may not be a strong motivating force pulling in-migration to most nonmetro places today. Jobs are also less of a concern to the 50 and over population. Non-economic motivators, such as a clean environment and high quality of life are the primary pull factors for many (Emmet Jones, Mark Fly et al. 2003; Hjort and Malmberg 2006), particularly those nearing retirement. Brown & Glasgow's research on retirement destination counties (2010) showed that the natural environment and

the community's attributes were the primary reasons given for leaving a previous residence as well as for selecting a new destination.

Facilitating factors also help explain migration trends, particularly as they relate to nonmetropolitan amenity in-migration. For instance, discretionary wealth and time provide the means for retirees to relocate. Technological improvements are also facilitating factors that decrease the isolation of nonmetro areas (Moss 2006); when homes are accessible by paved roads, and high-speed internet access connects them to the outside world, life in remote towns seems more appealing.

Migration trends and geographic preferences among retirees differ from those of the general population. Natural amenity-rich nonmetropolitan communities are popular relocation spots among retirees ((Johnson 1999; McGranahan 1999; Johnson 2006; Gosnell and Abrams 2011; Krannich, Luloff et al. 2011) when they do migrate (though only a small minority does move). Aside from the aesthetic appeal of their destination communities, it is not clear whether a happier, healthier, more fulfilling life is achieved by post-retirement migration. In addition to considering the role of state tax codes (Conway and Houtenville 2001; Schmidt and Sevak 2006), weather, safety, natural beauty, proximity to family (Keenan 2010), access to medical, social, and cultural resources, and other community characteristics cited as important by retirees in opinion polls (Haas and Serow 1993; Haas and Serow 2002; Longino, Perzynski et al. 2002), this research will measure how each of these characteristics plays a role in creating a community that is supportive (or otherwise) of older citizens.

With respect to amenity-rich nonmetro communities that are popular among retirees (Johnson 1999; McGranahan 1999; Johnson 2006; Gosnell and Abrams 2011; Krannich, Luloff et al. 2011), researchers have examined push and pull factors by asking migrants what they value about their communities. Seniors state a variety of factors related to having someone reliable nearby in case of an emergency. Shaw (2005) refers to this as a “social safety net” and Wethington & Kessler (1986) talk about “anticipated support” – both refer to the idea that a medical emergency may arise which requires having a friend or relative who is geographically close. In this respect, neighbors matter. Since retirees are more likely to have maintained residence in a single community, they are more likely to have these close social ties. Aside from an anticipated emergency, seniors report proximity to family, and a personal history with the community as factors in determining where to live (Longino, Perzynski et al. 2002).

Other than “low cost of living”, these are all really reasons that are non-economic, non-instrumental pull factors. Seniors say they are looking for communities where they have family, people they can count on in an emergency, shared culture, and a sense of belonging (whether this describes their current community or their ideal one). Nice weather and natural amenities are also great, but are also non-instrumental reasons. And while tax incentives are often cited as a reason why people plan to move, migration research demonstrates that tax benefits do not yield increased migration from seniors (Conway and Houtenville 2001).

Though migration intentions do not always translate into actual migration, they can be a useful starting point. Two theoretical frameworks are appropriate when examining this older age group. First is the push-pull model described above where one can imagine certain community/individual attributes either pushing people away from their homes (e.g., crime, distance from family) or pulling them towards new places (e.g., nice weather, low cost of living). A second framework appropriate here is a lifecourse model, where residential preferences are driven by particular needs associated with the retirement stage of life.

Litwak and Longino (1987) are the most cited researchers who assert that a lifecourse perspective is most appropriate to studying this specific age group. They suggest there are three types of moves, which tend to happen sequentially: first, migration after retirement to an amenity-rich place for leisure; second, a move driven by health concerns; third, a move into a nursing home.

Johnson's work (2012; Johnson 2013) examines Litwak & Longino's typology in more detail. Among her findings, she notes that the county of destination and of origin is particularly important to consider when studying retirement-age migration. While the trend of amenity-seeking first move, assistance-seeking second move holds up overall, there are often other issues worth noting. She examined self-rated health as a predictor of type of migration, since Litwak & Longino (1987) assert that health concerns motivate a certain type of move. Perhaps because nonmetro counties are less likely to have institutional resources (such as respite care or adult day care, for instance) that support aging households, Johnson

(2012) found that “young-old” adults with with lower self-rated health in nonmetro counties have a higher risk of migrating to other nonmetro counties (compared to migrating to metro counties), whereas self-assessed less healthy residents in metro counties have greater odds of metro-metro migration than of metro-nonmetro migration.

Calvo, Halverstick, and Zhivan (2009) seem to combine the lifecourse and push-pull frameworks by examining the extent to which older Americans have different limitations or motivations for migrating: whether it is wealth, disability, employment status, home ownership status, or the death of a spouse. They differentiate between “those who affirmatively plan to move and those who react to changing circumstances” (p.2) when considering migration among those in this age group.

While the earlier research summarized above reveals some preferences among retirees, what individuals value about where they live depends greatly on what attributes they can utilize. While demographers talk of *motivating* and *facilitating* factors in shaping migration decisions (see above), others (e.g., (Walters 2000; Walters 2002) use the terms *intention* and *enabling attributes* to describe a similar process. The newer terms turn the focus of attention on the individual (rather than the community) and force us to consider who utilizes which community attribute and why. While intention attributes are those place characteristics an individual intends to use regardless of status (e.g., low crime rate, nice weather), enabling attributes are the amenities “available only to those individuals with the

requisite enabling attributes such as income, occupation, specialized skills/equipment or willingness to pay” (Walters 2000). Some enabling attributes are available to affluent residents (e.g., expensive cultural commodities such as fine dining or theater) while others are available to those at the other end of the socio-economic spectrum (e.g., doctors who accept Medicare, reliable public transportation, or other public welfare benefits). Any of these place amenities could be a draw to a potential migrant, but the migrant’s background determines the desirability of such amenities. This is partly why a discussion about previous research on stratification and inequality is also relevant to this discussion.

1.3 Trends in economic inequality among older Americans

The aging of the U.S. population is coinciding with growing economic inequality. In 1967, The U.S. Census Bureau began calculating the Gini coefficient of household income inequality, a measure that theoretically ranges from 0 (perfect income equality) to 1 (complete inequality). The lowest recorded Gini coefficient was in 1968 at 0.386. By the mid-1990’s, it ranked at about 0.45 (Bee 2012).²

I mention these trends together not because older Americans are more likely to be poorer than younger Americans (in fact, the opposite is true; see discussion later in this chapter), but because growth in the gap between the poor and the

² The U.S. Census Bureau does not recommend comparing pre-1993 Gini coefficients with post-1993 coefficients due to changes in data collection of the Current Population Survey. However, I note that the post-1993 coefficients show little variation. (DeNavas-Walt, C., R. W. Cleveland, et al. (2003). "Income in the United States: 2002 (Current Population Reports P60-221)." Washington, DC: US Government Printing Office.

affluent can have important implications for understanding disparity in a variety of measures after Americans exit the labor force. For this reason, I provide background summarizing the main issues in the stratification literature (see page 38) as well as discuss literature on quality of life (below).

PART 2: Quality of Life as a Measure of Inequality

Stratification researchers utilize a variety of measures to examine inequality, but many of these focus on objective economic measures. While economic advantages offer access to social, political, and cultural resources, examining the economic status of retirees can be complicated. In addition to the methodological difficulties associated with assessing income and wealth in any population (e.g., social desirability, recall error, missing data, etc.), researchers of retirees are dealing with a complicated mix of people who may be unemployed both voluntarily and involuntarily; who may be living off of accrued wealth or whose expenses may be paid by a child or family member; and those who may value health over wealth due to advanced age. Finally, financial well-being in retirement is a function of pre-retirement social class (and the lifestyle a retiree wants to maintain) and cost of living where they reside. For instance, a comprehensive measure of assets (including pension and 401(k) savings, real estate values, and stocks) totaling \$1 million might suggest that a retirement-age person is financially secure [noting that the average wealth for 65 and older households was \$170,516 in (U.S. Census Bureau 2013)]. However, depending on the lifestyle needs of some upper-class

professionals, this may not rank as sufficient wealth to retire. By contrast, an issue for some middle- and working-class retirees is the cost of housing. While a mortgage-free home with a high value might put someone's wealth in a comfortable range from a researcher's perspective, that asset is likely not going to be cashed in during their residence there and may come with high expenses (taxes, maintenance, etc.). For reasons like these, comparing wealth among older Americans is perhaps not the most straight-forward measure of well-being. While financial satisfaction is important to understanding how older Americans are faring, the complicated and uneven nature of describing and comparing what wealth means to retirees makes other measures of well-being more meaningful for population – particularly overall life satisfaction.

Throughout this research project, I tend to use the terms *life satisfaction* or *quality of life*. Other researchers also use *well-being* and even *happiness* interchangeably to refer to the same construct. In this section, I examine the literature on these topics as they relate to my target population and to the covariates in my research model. Note that measuring these concepts can be problematic, and they are not always interchangeable. For instance, *happiness* has been evaluated by other researchers (e.g., (George 1992)) and found to vary distinctly from subjective well-being. Campbell et al. (1976) found that younger adults reported being happier than elderly adults, yet older adults reported greater life satisfaction than the younger ones. For this reason, I have limited the research

that solely evaluates “happiness” to the handful of studies that are pertinent to the discussion.

2.1 Approaches to measuring quality of life

One issue with the constructs I am studying is their inherently subjective nature. “Quality” implies subjectivity, so researchers may either ask people to assess their quality of life on a scale or may attempt to infer a subject’s quality of life through objective measures that are available (Stewart and King 1994). For this reason, the measures observed vary across studies, though one widely-cited standard for this measure is the World Health Organization’s Quality of Life Questionnaire (WHO-QOL) (World Health Organization 2004). This instrument consists of 26 questions that ask respondents to indicate their response using a 5-point Likert scale. The first item asks simply “How would you rate your quality of life?” with response options ranging from “Very poor (1)”, “Poor (2)”, “Neither Poor nor Good (3)”, “Good (4)”, and “Very Good (5)”. From there, the instrument progresses through a series of questions asking about respondent health (generally and specifically); satisfaction with his physical environment, physical appearance, financial situation, ability to work, and personal relationships; and an item related to depressive symptoms. While each of these questions is used in formulating rating scales in a series of four domains, the single question “How would you rate your quality of life?” can be taken as a general measure on its own.

I offer this WHO summary as the most direct path to studying or measuring quality of life. However, *quality of life*, *well-being*, and *life satisfaction* are all dispositions or personal attributes that have been given attention in social science research, often with a broad public interest in the findings (Shulevitz 2013). Previous research has focused on various components of these constructs, including wealth, social isolation, mental and physical health, race, and age. Below I will summarize the work on each of these topics as they relate to quality of life.

2.2 Research on Quality of life: Individual factors

2.2.1 Quality of life and race. Before considering the link between race and quality of life, it is first worth noting how it is inherently tied to socioeconomic status as well. When Smith (1995) examined assets of middle-aged households, he found that on average Blacks and Hispanics in this age group (retirement and pre-retirement) had no liquid assets. This is an important finding for researchers interested in retirement, since the impact from saving during early adulthood and middle age has such a big effect on financial well-being during old age. Smith attributes this racial disparity in wealth to differences in income over the life course, propensity and ability to save, and inter-generational transfer of wealth through inheritance, (which is most common among non-Hispanic whites). Kiyak and Hooyman (1994) also highlight the historical issues relevant to understanding the current cohort of older Americans. They alert researchers to examine structural

conditions unique to the history of the cohort under study when attempting to explain why differences in economic status by race are observed.

Not only are wealth and race correlated with one another, they are also both independently related to quality of life. With respect to race, Thomas and Hughes have repeatedly shown (1986; Hughes and Thomas 1998) that Blacks have a lower level of subjective well-being than whites in the United States. This has held true from 1972 up until the time of their most recent study. Their research indicates that racial disparity in quality of life cannot be explained by differences in socioeconomic status; the reported levels of life satisfaction among upper- and middle-class Blacks have not increased any more than they have for other Blacks.

2.2.2 Quality of life and age. My research project already focuses on a somewhat limited age group by examining only those who are at least 50 years old. However, the 50 and over group encompasses a much wider range of physical and mental capabilities than any other adult age group. With age progression comes a potential increase in the incidence of health problems. Therefore, it is useful to consider research on quality of life that specifically addresses older populations since most research examines all adults and these findings may not be as relevant to a more narrow age group.

Stewart and King (1994) offer a manner of conceptualizing quality of life specifically with respect to older populations. They suggest that a variety of measures may be appropriate and that due to the inherently subjective nature of this concept, that the best selected measure may vary by researcher. When selecting

a measure, Stewart and King indicate that the researcher should consider the domain of life (e.g., physical functioning, cognitive functioning, ability to perform usual activities, and many others), the content area (e.g., to what aspect of the domain does this measure pertain – are we measuring ability to walk a specific distance or hand dexterity if assessing physical functioning?), and the response distribution (e.g., self-evaluation or level of well-being assessed on a pre-determined scale). Stewart and King’s conceptual framework is helpful for considering how an individual’s well-being may vary depending upon the domain and on how that domain is assessed.

Previous research examining the relationship between age and well-being generally shows that older people report higher well-being than young people (Frey and Stutzer 2002); however, it is not clear if the relationship is linear if analysis were restricted to only those over age 50. These findings differ from what we might expect, perhaps because life expectations change as people age (Campbell, Converse et al. 1976) or because major psychological impacts (such as the death of a spouse) negatively impact younger people more than older people (Stroebe and Stroebe 1987).

2.2.3 Quality of life and health status. When considering age’s impact on quality of life – however quality of life is measured – we must also consider health status. Age and health are related, though it is health that tends to have the greater impact on promoting (or diminishing) quality of life (Frey and Stutzer 2002).

Quality of life and health status may seem indistinguishable from one another, however previous research has shown that these are two distinct constructs (Smith, Avis et al. 1999). By evaluating patients' responses on a variety of instruments that evaluate quality of life, Smith et al (1999) found that the effect of mental health impacted one's ranking of quality of life more so than one's physical functioning. However, when asked about perceived health, physical functioning was more strongly correlated with this rating than mental health was. Because quality of life and health status have the opposite effect on predicting self-rated health, it follows that they are distinct constructs and that one could be used as predictor for the other.

2.2.4 Quality of life and social connectedness. Recent research suggests that social isolation and loneliness are not interchangeable terms, though they are related. While social isolation may be operationalized as abstaining (voluntarily or otherwise) from any community activities, loneliness is a psychological condition characterized by “feeling left out”, “starved for company”, and “unhappy being so withdrawn” (Russell, Peplau et al. 1978). So while the former may be viewed as being withdrawn from one's community, the latter may be viewed as the perception of how withdrawn one is from his community (regardless of how involved he is).

In an AARP survey of Americans over age 45, researchers found that those who could be characterized as psychologically lonely (according to the UCLA Loneliness Scale also used in (Russell, Peplau et al. 1978) were less likely to participate in activities such as volunteering, going to church, or attending

community gatherings centered on shared interests (Wilson and Moulton 2010). Therefore, it appears as though there is a relationship between level of social activity and the psychological effect of being withdrawn from social activities.

Why does this matter when examining quality of life? Research in psychology and medicine have found that emotional isolation puts people at a higher risk for mortality and may aggravate existing physical problems such as “Alzheimer’s, obesity, diabetes, high blood pressure, heart disease, neurodegenerative diseases, and even cancer” (Shulevitz 2013). Given that older Americans are more at-risk for these illnesses, it appears that loneliness may be an important factor in examining quality of life, particularly as we understand the physical component to well-being.

With respect to any subjective measure of life satisfaction, Kahn (1994) suggests that social support may be more important to well-being for some older people than for others. He cites the importance of the buffering hypothesis which refers to the need for social support during times of major stress or life transitions. For this reason, older people experiencing the death of a life partner or lifelong friend, retirement, or involuntary relocation may be particularly impacted by social support (or lack of social support).

2.2.5 Quality of life and employment status. Karl Marx thought of one’s ability to be creative and productive as integral to human nature, as constituting what he terms our *species being*. Participation in the process is what separates man from other animals (Marx and Engels 1970). Along these lines, in contemporary

America the answer to the question “What do you do for a living?” is an important one. While it often describes one’s passions and abilities, offering peers an opportunity to identify shared connections, it also serves as important identifier of social class. Previous research suggests this is even more true as Americans age. Among those aged 45 and older, 58% reported that “work gives them a sense of identity”, significantly higher than the 52% of adult workers under 45 indicating the same sentiment. In addition, only 39% of the age 45 and older workers thought of their work as “just what you do”, while 45% of the younger works agreed with that sentiment (Riffkin 2014).

It follows that employment status can impact quality of life. On the one hand, loss of a job (either voluntarily through retirement or involuntarily) can take away the status that goes with doing one’s former job (Henry 1971). On the other hand, people may find satisfaction with things other than the identity of “worker” (Atchley 1993).

If we examine the impact of *voluntary* unemployment through retirement on quality of life, previous research on this topic has been mixed, finding both positive (Charles 2002) and negative (Szinovacz and Davey 2004; Dave, Rashad et al. 2006) effects between retirement status and quality of life. Consistently positive effects are found in England (Hyde, Ferrie et al. 2004; Johnston and Lee 2009), Finland (Salokangas and Joukamaa 1991), and throughout Europe (Fonseca, Kapteyn et al. 2014).

The difficulty with studying this topic stems from how individuals self-select into these categories. That is, those with lower quality of life (due to depression or physical impairment) are more likely to choose retirement, resulting in a pool of retirees with low self-reported well-being. Charles (2002) gets around this problem by examining the subjective well-being of retirees longitudinally rather than making cross-sectional comparisons with working individuals. In using this method, he finds a slight increase in subjective well-being (using measures of depression and loneliness) causally associated with retirement.

Behncke (2012) also attempted to address the problem of causal ordering between retirement status and well-being by comparing retirees in the English Longitudinal Study of Ageing (or ELSA, the English counterpart to the U.S. Health and Retirement Study) to people who remain in the workforce and have otherwise similar characteristics in a longitudinal analysis. She found that retirement did increase both self-reports of poor health as well as objective measures of poor health, including diagnosis of a chronic condition and difficulty with activities of daily living. This research along with those using a similar approach suggests that retirement does trigger a decline in health, perhaps because of the disruption in routine.

2.2.6 Quality of life and wealth. One of the earlier attempts to examine quality of life and the impact of both wealth and place was investigated by economist Richard Easterlin (1974). He asserted that he was the first to examine the relationship between wealth and happiness empirically. He did this two ways:

by considering *individual* wealth and happiness, and by considering the wealth of a nation (operationalized as a nation's Gross Domestic Product (GDP)) and the average reported happiness of its citizens. After examining data on 19 countries from surveys between 1946 and 1970, he found that there *was* an association between wealth and happiness within nations: those with higher reported incomes were more likely to report being very happy. However, the citizens of wealthier nations did not report higher happiness levels than citizens of less wealthy nations. This discrepancy has since been referred to as the Easterlin paradox (Clark, Frijters et al. 2008) and Easterlin himself suggests that it seems as though wealth is relative and that those in less well-off nations may consider their economic statuses relative to their neighbors rather than relative to the world.

As Easterlin summarizes in his paper (1974), when survey respondents in 1960 had been asked broadly what would make them either the most happy or the most unhappy (in an open-ended format), the most widely cited reasons among Americans were economic (65%). Interestingly, citizens of the United States ranked second to lowest (among one dozen nations) in citing economic reasons as important. Ninety percent or more of the residents of other nations (e.g., Dominican Republic, Nigeria, Panama) reported economic reasons as important. From this research, it appears as though wealth is an important predictor of happiness and a measure that should be incorporated into any analysis attempting to determine what makes people happy. However, it is not clear if the Easterlin Paradox – which shows that those in poorer countries are overall just as happy as those in more wealthy

countries – would pan out at a smaller level of geographic study (e.g., county-level within a state). That is, do those poorer American counties interpret their personal economic success relative to those in their immediate surroundings, or is wealth understood in a greater cultural context (e.g., with respect to broader American standards)? Incorporating community-level measures of wealth in a study examining well-being may be a way of understanding this phenomenon.

Turning to research on households and individuals, the most detailed and prominent study examining the relationship between income and well-being finds that money does make a positive impact on well-being, up to a point. Once household income reaches \$75,000, income's effect on predicting well-being is negligible (Kahneman and Deaton 2010). Considering the relationship between health and wealth is particularly important among the older population. The saying "money can't buy happiness" is both relevant and entirely wrong at the same time when we consider the relevance of this study on older Americans. On the one hand having extra wealth in the face of declining health and life satisfaction does no good; older people cannot necessarily improve their well-being by buying more luxury items. On the other hand, in the face of limited income and resources for years to come, retirees may limit their spending – not only on non-essentials that may make them happier but also on investments to their health which may have a direct impact on their physical well-being and longevity (Scholz and Seshadri 2011). In fact, when researchers have examined the relationship between socioeconomic status and number of chronic health conditions by age (Robert and House 1994),

there is a strong negative correlation: the upper class always has fewer health conditions than other classes within each age category and the lower class always has more health conditions within each age category.

In sum, the literature on wealth and well-being shows that it is generally true that those with greater economic well-being (measured as either income (Easterlin 1974; Diener, Sandvik et al. 1993) or wealth (Headey and Wooden 2004) also report greater overall well-being (measured as overall happiness (Easterlin 1974; Hagerty 2000) or life satisfaction (Lachman and Weaver 1998; Diener and Oishi 2000); however, the effect is small (Diener and Biswas-Diener 2002) - smaller than most people would predict (Aknin, Norton et al. 2009), and does have a ceiling effect (Cummins 2000).

2.3 Research on Quality of life: Community factors

While this research on class, income, and wealth inequality demonstrates patterns at the individual-level, it is also worth noting the extent to which communities are affected. Residents of communities tend to be homogeneous with respect to class: poor people tend to live in poor neighborhoods and affluent people in affluent neighborhoods. What role does community play in shaping or reinforcing these class divisions?

2.3.1 Role of economy in shaping a beneficial community. Dreier, Mollenkopf, and Swanstrom (Dreier, Mollenkopf et al. 2004) summarize economic trends from the last fifty years and point out that economic disparity began growing

rapidly in the 1970s. The authors say that “economic inequality is bad, but growing economic segregation makes it worse” (p.18). They make this case by showing summary statistics for several towns and explaining how life is different in the different types of communities. They rebuke explanations for this that are rooted in rational choice and free market arguments by showing a complete history of policies related to housing, taxes, and subsidies that benefit the affluent and big businesses. These policies demonstrate that there is no true “free market” and that the decisions people make about where to live are not based on wanting to live in a homogeneous community (at least not totally due to this), but rather result from selecting from the options available to them. Mortgage interest deductions, Federal Housing Administration guidelines, and public housing availability are examples. For instance, interest deductions provide large tax incentives to homeowners that get larger the more one spends on a mortgage. Therefore, the most affluent homeowners reap the largest benefits and potential tax dollars must be derived from another source to fund the needs of the community.

Beyond the economy, the community’s effects can extend to its residents in other manners. Blank’s research (2004) addresses the dimensions in which local characteristics matter, particularly with respect to understanding how to make policy decisions related to poverty. Her organization scheme results in the following dimensions: the natural environment; local economic structure; presence of community institutions; social norms and cultural environment; and demographics of the community. Further, Blank envisions a body of research that takes these

characteristics and examines their roles in determining which place-specific characteristics matter the most when understanding poverty and its policy implications. I have summarized the literature on the effects of economy on citizens above. Below I turn to research examining the bio-physical, institutional, cultural, and demographic characteristics of the community and how these impact individuals.

2.3.2 Role of bio-physical variables in shaping a beneficial community. Beyond the social and economic characteristics of place, bio-physical variables can affect a community's economy, impacting the demographics and the quality of life for its residents. Whereas proximity to water was once necessary for commerce, advances in transportation and shifts in the economy have made physical attributes of place less essential to the economy. With these shifts, people were free to move away from cities such as Boston and toward more mild climates (Glaeser 2005). This history demonstrates how the natural environment of a community can influence its residents in tangible economic ways. With respect to quality of life measures though, the environment can also clearly have an impact. In Brown & Glasgow's 2008 study, 20% of retirees who had relocated had cited the importance of the natural environment in drawing them to their new location. It can be a methodological challenge to capture the role of natural scenery such as mountains and waterfront in contributing to a positive impact on well-being.

2.3.3 Role of institutional variables in shaping a beneficial community. Institutions and community organizations such as police and fire

forces, schools, churches, youth groups, and many others operate to meet the needs of the community. Each may serve a different manifest function, as stated in each organization's mission statement. Yet these organizations also may collectively have the latent functions of "creat[ing] and enforce[ing] a framework of rules about appropriate individual behavior, enforcing property rights and civil conduct codes as well as reinforcing social norms ...The presence of public sector institutions and community institutions is a sign of organization and order within a community." (Blank 2004), p.12).

2.3.4 Role of cultural variables in shaping a beneficial community.

When Glasgow and Brown surveyed recent retirees to understand their migration motivations (2008), they frequently heard about the importance of community attributes in drawing people to a new location. When people mention "small town atmosphere" or "slower pace of life" (p. 107), the concept they are trying to convey may not be obvious. However, there seems to be a draw to a certain type of community that offers a slow-paced culture. While a slow-paced, small-town culture may be a draw for some retirees (and certainly fits the stereotype of life in retirement), this may not be true for all retirees. In fact, Glasgow & Brown's research took place in retirement-destination communities, so the draw for those residents would obviously not be "fast-paced life."

The community characteristics that likely matter most depends upon the culture of the retiree. White middle-class retirees often are drawn to a slow-paced small town (Brown and Glasgow 2008). Those of other races, social classes, and

cultures may be drawn to other types of places. Regardless of what the type of place is, research does demonstrate that people can benefit from living in a community where they feel connected to the neighbors with whom they share similar interests (Riger and Lavrakas 1981). Identifying the shared characteristics that matter may be difficult.

In order to try to identify which social characteristics were important for shaping well-being, Farrell et al. (2004) operationalized "sense of community" by asking residents in several neighborhoods about who they considered their neighbors to be (physical boundaries of community), how similar their neighbors were to themselves, how willing neighbors are to help, what influence they have over neighbors, how safe their neighborhood is, whether they feel social acceptance by neighbors, and whether they share history with neighbors. Of these variables, it appears that knowing your neighbors matters for reasons of social connectedness, but also that living with people who are like you or who share your interests is important for feeling that the local culture matches a resident's own sense of self.

2.3.5 Role of demographic make-up of community members. Singh (Singh 2003) identified community-level demographic correlates of poor health. Using U.S. Census data, he identifies correlates of high mortality rates. The demographic factors he identifies as most useful in understanding why some communities have residents with higher mortality and poorer health include the percentage of the population with less than a 9th grade education, median income, unemployment rate, poverty rate, and cost of housing.

While Singh's research was focused on health and mortality, Glaeser, Gottlieb, and Ziv (2014) examined the impact of demographic change on the self-reported well-being of its residents in U.S. metropolitan areas. They found that residents in areas experiencing population decline had lower levels of well-being compared to residents in growing metro areas. These lower patterns of well-being held up regardless of whether the resident was a recent migrant or a longer term resident. This suggests that population trends may be a useful characteristic to explain individual well-being.

Because this variety of community-level factors (demographic, economic, institutional, bio-physical, and cultural) has been demonstrated to have a relationship to individual well-being, it is also worth considering whether moving to a new community for various amenities has an impact on the well-being of older Americans. For this reason, I turn the discussion to the impact of migration on quality of life.

2.3.6 Research on neighborhood effects and impact of migration on QOL. There have been several studies examining the impact of place of residence on individual well-being, most prominently the Moving-To-Opportunity (MTO) studies which evaluated the effect of moving young families out of high-poverty urban neighborhoods (Sampson, Morenoff et al. 2002; Pebley and Sastry 2004; Clampet-Lundquist and Massey 2008; Ludwig, Liebman et al. 2008; Sampson 2008).

Burkhauser, Butrica, and Wasylenko (1995) considered that much of the attention given to migration propensity by economic status of the neighborhood was focused primarily on family households with young children. While this line of research is important for understanding life outcomes of youth, it is not necessarily applicable to understanding older households which may also be impacted by local economic structure. Because of this, Burkhauser et al. (1995) paid special attention to age when examining migration propensity and community characteristics. They found that not only were elderly residents less likely to migrate than younger residents, but also that elderly residents in “distressed” neighborhoods were less likely to migrate than elderly residents in more affluent neighborhoods. When they did move, they were often moving to other distressed neighborhoods. While Burkhauser et al. did not examine the impact of local economic structure on the lives of residents, they did set the stage for considering the role of moving and migration in understanding well-being.

Bradley & Van Willigen (2010) took a different approach to this topic, considering the impact of migration on well-being among the older population. They concluded that the reasons behind migration likely play a large role in predicting whether a move results in depression. Among the 50 and over population, older migrants were more likely to be depressed after a move than younger migrants.

Considering these findings within the context of the demographic trends summarized in section 1 (which show that 3.3% of the 65 and older population moved between 2013 and 2014), we can think about the ways in which older

Americans could benefit from a move. As earlier research has shown (Litwak and Longino 1987; Johnson 2012; Johnson 2013), the reasons retirees move are generally due to life course events. Most of the research on how migration impacts well-being relate to the impacts on households with children or at least households with workers (Magdol 2002), issues that are not relevant to older households (the exception being Longino and Bradley (2006)). For this reason, an examination of the impact of migration on older residents warrants further investigation.

2.4 Research on the role of place and space

Who we are and where we live are uniquely intertwined. We are likely to live near people who are similar to us, ethnically, educationally, and politically. We are shaped by our surroundings and we also influence our surroundings. Upper- and middle-class people tend to be more likely to think of places as interchangeable. For example, one good neighborhood in Colorado could replace a good neighborhood in Texas if there is a draw – either economic (in the form of a new job), socio-emotional (in the form of family/friends, or shared political climate), or recreational (in the form of physical amenities or creative outlets). By contrast, lower income families are less likely to migrate outside of their home community, largely due to financial limitations. For this reason, I now turn to a discussion of economic inequality and how it relates to the study of well-being.

PART 3: Trends in Inequality and Alternative Measures of Inequality

3.1 Historical trends in Inequality

An examination of differences in income and wealth between the upper and lower classes indicates a trend showing that inequality is growing and has been growing steadily since around the mid-1970s. By comparing similarly-situated workers of the 1990s to their counterparts in the past, wages have declined for all but the upper most income groups (Morris and Western 1999). In fact, the lower the wage earner, the less his earnings are worth compared to the past. For instance, those whose hourly wages are in the first decile of all wages in 1996 had incomes equal to just 87% of comparable 1973 wages. Losses for all but the highest paid workers are smaller, but their incomes still fall below previous levels.

While income inequality is large, wealth inequality is even larger. Wealth ownership in the U.S. has long been concentrated in the hands of a small minority of the population (Conley 1999; Morris and Western 1999; Keister and Moller 2000). This is an important aspect to measure, as access to wealth provides advantages that income alone does not. Wealth provides its owners with financial security, social prestige, a buffer during emergencies, political influence, and the ability to create more wealth. In the 1990s, the top 1% of wealth owners owned nearly 40% of net wealth and 50% of financial assets in the US. This marked the greatest disparity in family wealth of any industrialized nation (Keister and Moller 2000).

3.1.1 Economic Inequality and Seniors. Those entering retirement age in 2010 and beyond have largely only known conditions where economic inequality is

growing wider (that is, the bulk of their careers have transpired after 1973). Keister & Moller (2000) point out that retirees in particular often have the most wealth (compared to any other age group) due to their ability to accumulate assets over time. Taking the above research into context, it is important to consider how seniors have fared in the U.S. over time. The over 65 poverty rate was higher than the national average prior to the implementation of Social Security. As a result of Social Security benefits, the elderly poverty rate has not been higher than the national average since the 1970s (Iceland 2006). That said, economic inequality is still an issue for this age group because financial assets accumulate over time. The result is that some seniors live at the bottom of the economic scale (though, because of Social Security, usually above the poverty line) while others live at the top of the economic scale. (Note that the average age of Forbes 100 richest Americans is just over 65 (Kroll 2012)). For an age group comprised of people just as likely to be out of the work force as in the work force, wealth is a more sensitive measure of economic status than income.

3.2 Alternative measures of inequality

Measuring inequality is a messy and imperfect business. Which outcomes matter most? Income-based measures of inequality can be misleading because households can draw from wealth in order to make purchases. This discrepancy also makes poverty rates – which are calculated based on income and household size – inaccurate with respect to understanding the well-being of an individual or household. Measures of consumption are a useful way around this problem (Hurd

and Rohwedder 2006), though these are methodologically challenging (Downes-LeGuin and Achmad 1993), may be uneven over the course of months or years as large expenses related to both health and luxury arise, and consumption may not offer the best insight to well-being.

Social science disciplines have established myriad ways of operationalizing unequal outcomes: in economics, by examining consumption patterns and income (Hurd and Rohwedder 2006); in social psychology, by examining differences by gender, race, and other characteristics (though not class status) without much consideration given to hierarchy or unequal outcomes (Hollander and Howard 2000); in political science, by measuring political participation (Schlozman, Page et al. 2004); and in sociology, in varying manners. The next section outlines the ways in which sociologists have operationalized and explained inequality.

Despite the focus away from subjective well-being, it is useful to consider as background what the progression of sociological theory says about the topic of inequality. In part, this presentation is useful because of the manner in which “class” is operationalized differently by different theorists; in addition, this discussion matches the progression of public policy on the topic of well-being – particularly in Europe. While policy makers and world leaders have historically turned to Gross Domestic Product (GDP) as a measure of prosperity, there has been a movement to incorporate additional measures that could reflect quality of life for citizens. The Commission on the Measurement of Economic Performance and Social Progress – an international group of academic researchers organized by the French

Government – is one such attempt to understand the relationship between economic and social measures of a nation’s people (Layard 2006).

3.3 Classical approaches to understanding inequality

In a classical sociological approach, inequality could take several forms. From a Marxist standpoint, inequality would be measured as purely economic. Marx thought that society viewed the worth of individuals by the going rate for their labor power. Because he observed that access to capital determines social standing and political power, all inequality in society is rooted in access to capital in such a perspective.

By contrast, a Weberian standpoint views inequality as determined by a combination of economic class, social status, and political power and is associated primarily with consumption behavior or “styles of life.” In building from a Weberian tradition, the discussion below summarizes the work of contemporary social theorists who incorporate measures beyond income in understanding inequality.

3.4 Contemporary approaches to understanding inequality.

Pakulski & Waters (1996) suggest that although classes could be easily divided by economic status at the time of Marx’s writing, during most of the 20th century boundaries were demarcated according to political power. Such an “organized-class society” would still be largely bifurcated: elite political and corporate leaders regulate the economic and cultural spheres through state

coercion, while those without access to influence constitute the lower class.

However, such divisions are not rooted solely in the economy.

The strength of Pakulski and Waters' theory is that it recognizes the experiences of Americans in everyday society where stark class differences may not be as apparent as they were in Marx's time. The typical citizen does not see a clear division between the proletariat and bourgeoisie. This may partially be a byproduct of our homogeneous social life. Weber acknowledged that it is inter-class community participation that breeds intra-class organizing. Another reason why there is no clear class division for most is that a substantial proportion of the population – from those earning \$30,000 to those earning \$130,000 – see themselves as middle class. The growth of small businesses and the redistribution of property are among the factors contributing to a middle class, separating control of capital from ownership of capital (Dahrendorf 1959; Pakulski and Waters 1996). However, many people are still categorized according to the type of work that they do (Hauser and Warren 1997). Though judgments on an individual are still made based on job title, today there is room for differentiation according to technical skill or management rank. To Neo-Marxists, these divisions are still just class divisions.

If we take a functionalist approach, we again have to consider more than just the role of income/wealth in shaping the stratification order. Parsons identified “socially significant respects in which (people) are differently valued” (1940) and noted that role pluralism can complicate social ranking (people can rank low professionally but relatively high socially, for instance). While he examined wealth

(as Marx did) and authority and power (as Weber did), he also incorporated aspects such as personal qualities that society values, such as being attractive, thin, and tall.

These contemporary social theorists build upon a Weberian tradition of incorporating measures beyond capital in assessing patterns of social stratification. It is in this tradition that I propose examining the use of non-economic well-being indicators as measures of inequality among the older population.

PART 4: Literature Review Synthesis

When sociologists mention “inequality”, this tends to refer to economic disparity – the difference between the wealthy and the poor, or the wealthy and the middle class. In these instances, “class” is really a term referring to one’s economic position relative to others’. A focus on well-being (e.g., subjective self-reports and objective health status) would not be in opposition to a focus on economic well-being because of how these characteristics are related. They are intertwined in that financial security has been shown to have a positive relationship to quality of life or happiness (see (Diener and Biswas-Diener 2002)) for a review of the literature). Economic well-being is also relative. People tend to report their economic security relative to their neighbors. A person in the bottom quartile of all incomes in the U.S. may feel they are just as well off as those living around them, so any hardship/disparity perceived by the researcher may not be perceived the same way by that individual. When cross-national comparisons are made, average self-rated

happiness is similar across nations without regard to the average income or GDP (Easterlin 1974). For this reason, quality of life and financial well-being could be considered similar and complementary measures.

The previous research summarized here demonstrates several important trends. First, economic inequality is growing and has been since the mid-1970s. Second, Americans tend to be residentially segregated by class status, and such economic segregation has proved detrimental to the well-being of youth and young workers. Third, beyond this body of research there are other impacts of community – both negative and positive – on individuals, suggesting that place of residence has an important role in shaping the well-being of people. Fourth, demographic trends indicate that the older population is growing – both in number and in its proportion of the total population. More Americans are reaching retirement age, and though historically this age group has been less likely to migrate compared to other ages, because of their large numbers, any changes could have substantial impacts on communities. Finally, building upon a Weberian approach, there is a recognized need to incorporate measures other than income and wealth to understand how people are faring.

These trends taken together suggest that understanding how place impacts senior citizens is an important area of research. However, research to date has been primarily limited to topics such as seniors' assessments of their communities (Schieman, Pearlin et al. 2006), what seniors value in a new community (Haas and Serow 1993; Haas and Serow 2002; Longino, Perzynski et al. 2002), and the impacts

of seniors on their communities (Vellekoop Baldock 1999). Research is needed to see how well-being outcomes for seniors vary across different types of places. That is the area to which this research project will contribute.

CHAPTER 3 – METHODS

This chapter describes how I obtained data and operationalized concepts in order to understand the relationship between community characteristics, individual migration status, and demographic characteristics of the 50 and over population.

PART 1: Data

1.1 Overview

This study utilizes several data sources, the primary source being the Health and Retirement Study (HRS), a nationally-representative longitudinal data set from 1992 to 2010 of individuals who are over age 50 at the time of entry into the study, and their spouses. A restricted version of this data set provides geographic data to the county level on interviewees through the year 2010. I match county-level characteristics culled from a variety of external sources outlined in Table 3.1 for each of the counties represented in the HRS file. These additional data allow me to characterize each respondent's community to evaluate the effect of each of the place-based measures relative to individual-level measures.

1.2 The Health and Retirement Study

The HRS is a biennial, nationally-representative survey conducted of U.S. residents aged 50 and older and their spouses. The study originated in 1992 as part

of a joint project between the University of Michigan and the National Institute on Aging as a way to observe the transition between work and retirement. In its inaugural year, the HRS included those aged 51-61. Over the years it has undergone some changes, most notably in 1998 by merging with a stratified sample of Americans aged 70 and over from the 1993 and 1995 longitudinal Survey of Asset and Health Dynamics among the Oldest Old (AHEAD). In addition, each six years, a new cohort has been added to refresh the sample, as a new group of Americans enters this age group of interest. In 2010, the sample refreshment included U.S. residents born between 1954 and 1959. With the inclusion of the original AHEAD sample, follow-up with those sampled in the HRS between 1992 and 2008, and the 2010 sample additions, the 2010 HRS is inclusive of everyone aged 51 and older and includes 22,034 individuals.

Participants were selected using a multi-stage probability sampling method, using the University of Michigan Survey Research Center 84-strata national sampling frame. During the first stage, U.S. counties were selected with probabilities in proportion to size as primary sampling units (PSUs). In the second stage, area segments (the secondary sampling units) were selected within each PSU. At this point, all housing units³ were enumerated within each sampled secondary sampling unit (SSU). The third sampling stage was a systematic sample of housing units (more specifically, “household financial units” as HRS

³ Housing units exclude institutions such as nursing homes. However, should a sampled person move to a nursing home after their first wave, a proxy interview is conducted.

documentation refers to them)⁴. When the third stage samples were contacted, interviewers determine whether there is an age-eligible individual (i.e., someone aged 51 or older) living in the housing unit. In 1992, those born between 1931 and 1941 were age-eligible. An impressive 99.6% of all households were screened to determine if an age-eligible person was present. If more than one age-eligible member was present, then one is selected at random in the fourth and final sampling stage. If the age-eligible person sampled was married, then his or her spouse was also interviewed throughout the HRS waves, regardless of the spouse's age.

In addition to the procedures outlined above, the sample includes an oversample of several subgroups in order to allow for sufficient analytical power when studying racial/ethnic minorities and residents of Florida. This is arranged during the second stage by oversampling those area segments with higher than average representation of African-Americans, Hispanics, and segments in Florida.

Sample members (and their spouses) are recontacted for inclusion in subsequent waves every two years. If a sample member has divorced, his or her ex-spouse remains in the sample. If a sample member remarries, his or her new spouse is included in the new wave. If a sample member dies, an exit interview is attempted by proxy (typically the widow/widower) to report financial information of use to the study. The only manner in which a sample member is excluded in future

⁴ Note that housing units typically consist of just a single household financial unit. If there is more than one unrelated household financial unit in a single housing unit, and both (all) consist of an age-eligible member, then a single age-eligible member is selected at random.

waves is if he or she dies and an exit interview has already been collected in an earlier wave *or* if a person asks to never be contacted again (between 1992 and 2008, about 5.5% of the approximately 31,000 people included in the study to date were one of these hard refusals).

Despite the complex sampling process, the HRS has an impressive response rate, both at the first wave and throughout the study. Initially, the response rates for the third stage (households) was 82.1% and for the fourth stage (individuals) was 81.6% in 1992, resulting in a sample of 12,652 interviews that year. Attrition due to nonresponse is very low when looking at participation of cases across waves. When we compare across cohorts, note that follow-up response rates for individuals included in earlier waves were between 90 and 96% between 1994 and 2010. The HRS survey production team keeps attrition and nonresponse to admirably low levels. The 2010 sample consists of 22,034 total respondents residing in 15,280 households.

1.3 Weighting

The HRS survey production team has calculated weights that adjust for unequal probability of selection and for response rate bias by race and geography, with poststratification matched to the most recent (at the time) decennial Census. Weights are assigned to both the individuals and to households so that users may analyze at either of these two levels. The analysis presented here relies on individuals, as the outcome of interest is personal health or personal well-being.

The Person-level Analysis Weight (MWGTR for 2010) accounts for selection of the household, the respondent selection, and the person-level poststratification (by age/race/sex).

Beyond this probability weight, there are also necessary adjustments for complex sample design. Although the sample design does not impact the calculated point estimates, it does tend to cause higher variance in these estimates than one might expect under a simple random sample (or SRS, the sampling method most variance estimates assume during computation). For the analysis presented here, Stata ‘SURVEY’ (svy) procedures are applied to all numbers (except when noted as unweighted in order to describe the sample) and adjust variance estimates for the complex sample design using a Taylor Linearization method by identifying the strata (STRATUM) and primary sampling unit (SECU) measures (Leacock 2006).

1.4 Survey questionnaire

The questionnaire itself includes a wide variety of topics ranging from health and wellness to income and assets – and most recently, biological measures. Data on work histories, family structure, housing, health status and cognition are included for all survey respondents in each wave. Additional modules may be administered from time to time. The questionnaire content used for the present analysis is outlined in Table 3.2. I rely on a number of individual-level measures that encompass a range of demographic characteristics, as well as several health measures which are discussed in detail later in this chapter. The bulk of the questions were administered face-to-face; however, a self-administered “leave

behind” questionnaire (SAQ) is also regularly administered. This analysis utilizes items from the SAQ here, particularly the dependent variable that asks respondents to assess whether they are satisfied with life.

Note that the SAQ had no pure proxy component. That is, there was no effort to seek answers out of a proxy if a sampled person was unable to complete the survey, as most of these questions are personal and subjective (such as personal assessments about well-being). However, the SAQ does have a final question which asks “Were the questions in this booklet answered by the person whose name is written on the front cover?” Approximately 1-2% of returned SAQ’s were completed by a scribe in the event that the sampled person was visually impaired or unable to write. This means that a proxy was not used to determine the sample person’s well-being; rather, the scribe simply recorded a sample person’s response for him or her (Smith, Fisher et al. 2013).

1.5 My HRS file construction

The complexities of this longitudinal survey required the use of four steps to construct my study’s data set. The present analysis focuses on responses to the 2010 wave of the HRS data, the most recent year for which county-level geographic data are available as of December 2014. Because I need information on residential mobility over time, I had to obtain several variables on place of residence dating back to the two previous waves (2008 and 2006). This required merging the 2010 public use data set first to the 2008 data file (step 1), then to the 2006 data file (step 2) (see Figure 3.1). Due to the need for migration history, only 2010 cases who had

previously participated in 2006 and 2008 are retained. Once the variables from earlier waves were acquired, the data were merged to the HRS tracker file (step 3). The HRS tracker file is created by the University of Michigan and is updated with each new wave of the HRS to provide probability weights necessary for analysis. For step 4, I merged the existing file to the longitudinal file constructed by the RAND Corporation because it contains cleaned data on wealth and health in a user-friendly format. A diagram outlining this process (and showing where cases are lost due to missing data) is shown in Figure 3.1. The number of year 2010 cases available after this merging process is 14,248.

Figure 3.1. File Construction for Analysis: Part 1. Construction of Public Use File

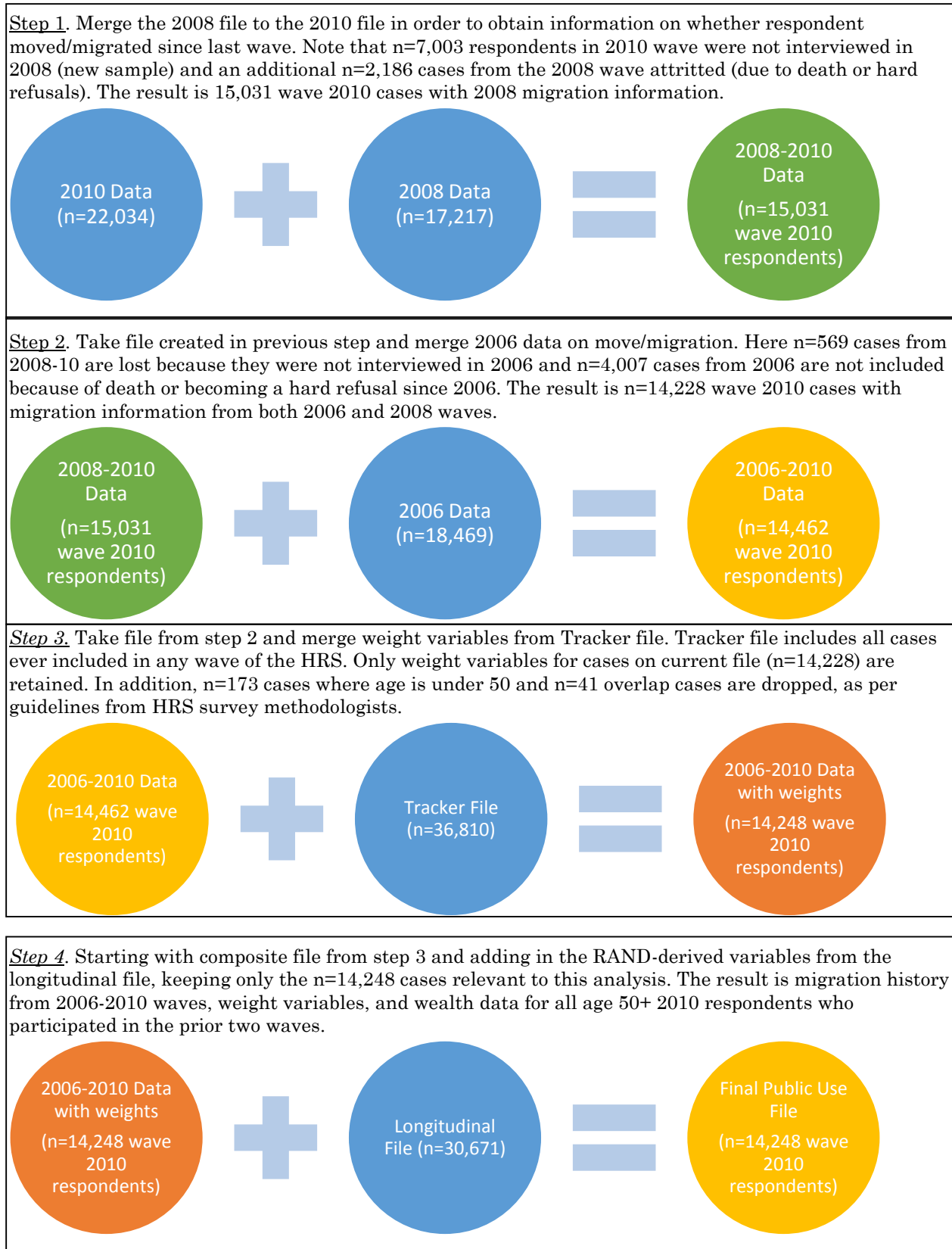


Table 3.1. List of County Characteristics and their Data Sources

Variable description	Source	How measured:
<i>Natural environment characteristics:</i>		
Amenity score	U.S. Dept. of Agriculture, Economic Research Service	Amenity ranking based on climate (average temperatures in winter and summer and humidity in summer), topography, and proximity to water. Computed value indicates the county's deviation from the mean score
<i>Local economic structure characteristics:</i>		
Rural-urban continuum code (2013 codes), 1-3 metro, 4-9 nonmetro	U.S. Dept. of Agriculture, Economic Research Service	Revised 2013 Coding scheme based on 2010 Census data; 9-level classification of counties based on Census Bureau's metro/non-metro designation, location, and urban size
Economic dependence, 1998-2000	U.S. Dept. of Agriculture, Economic Research Service	2000 Coding scheme based on 1998-2000 data, where 1=farm dependent, 2=mining dependent, 3=manufacturing dependent, 4=government dependent, 5=services dependent, 6=nonspecialized
Unemployment rate, 2010	Bureau of Labor Statistics, Local Area Unemployment Statistics 2010	Number of unemployed people in the county 16 years and older as a percent of the total labor force
<i>Demographic characteristics of the community members:</i>		
Poverty rate, 2010	U.S. Census Bureau, Small Area Income and Poverty Estimates	Percent of all residents under the poverty line, 2010. Small area estimates are derived from a variety of Census Bureau sources, including 2010 Census population totals and American Community Survey data
Percent non-Hispanic White, 2010	U.S. Census Bureau, 2010 Census of Population	Percent of county population White and not Hispanic on April 1, 2010

Obesity rate, 2010 (percentage)	Centers for Disease Control, Behavioral Risk Factor Surveillance System (BRFSS), 3 year estimates (2009-2011)	Percent of adult residents who are obese. Obesity rate obtained from self reports of height and weight. If Body Mass Index (weight in kg / height in meters) was 30 or greater, a person was considered obese.
Net Migration, 2000 to 2010	Applied Population Laboratory, University of Wisconsin-Madison, Net Migration Patterns for US Counties	Change in county population between April 1, 2000 to April 1, 2010 due to net migration. Number is calculated as a percentage of the initial population.

Presence of community institutions:

Health Professional Shortage Area (HPSA) - yes/no, recoded from hpsacode10	Area Health Resources Files (AHRF), Health Resources & Services Administration, Dept of Health & Human Resources	A county is considered to be a HPSA if 3 criteria are met: "(A) the area is a rational area for the delivery of primary medical services; (B) Either 1. The area has a population to FTE PCP ratio of at least 3500:1 or 2. The area has a population to FTE PCP ratio of less than 3500:1 but greater than 3000:1 and has unusually high needs for PCP services or insufficient capacity of existing PCP; (C) Primary medical care professionals in contiguous areas are overutilized, excessively distant or inaccessible to the population under consideration."
Number of church congregations of any religious affiliation	Association of Religious Data Archives, Association of Statisticians of American Religious Bodies (ASARB)	Count of number of churches within each U.S. County, 2010
Creative class counties, 2000	U.S. Dept. of Agriculture, Economic Research Service	Creative class counties are the top 25% of counties in terms of employment of those in creative occupations (defined as those "developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions.")

Social norms

Indicator of whether county residents vote strongly democratic, strongly republican, or other in 2008 Presidential election	University of Delaware Geography Department (John Mackenzie)	If at least 60% of population voted for either McCain or Obama, it is coded as “strongly politically homogeneous”
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1.5 Other Data Sources

In addition to responses to survey questions, the file I am analyzing also incorporates the sources outlined in Table 3.1, which are external to the HRS. This table shows a set of variables that describe characteristics of U.S. counties, including regional demographics, the economy, presence of social institutions, and more. Because my analysis requires linking this dataset to respondents, I had to request and receive access to the HRS Cross-Wave Geographic Information (Detail) restricted data set (HRSXGEO10). This data are delivered to researchers who wish to utilize the geographic information for research purposes and who meet certain criteria to ensure that access to the data is restricted to approved purposes only. The HRS Restricted data set contains data on the county of residence for all survey participants at the respondent-level dating back to 1992 and continuing through 2010. County of residence is recorded using five-digit Federal Information Processing Standard (FIPS) codes. FIPS codes are a government standard established by the U.S. Department of Commerce for the purpose of creating unique identifiers for states and counties (or county equivalents) (National Institute of

Standards and Technology 2013). Two states – Louisiana and Alaska – do not have counties, but rather parishes and boroughs, respectively, which serve as county-level equivalents in this analysis. Washington, DC and four other independent cities also have a FIPS code, as they are not contained within the border of any county. For simplicity, I will refer to any county equivalent in the U.S. that has a FIPS code as a county.

The first two digits of the FIPS code identify the state and the final three digits identify the county. FIPS codes are also available for the data I collected from various sources, as most government agencies and scientific researchers use these when making comparisons by counties (see Table 3.1 for a full list of variables).

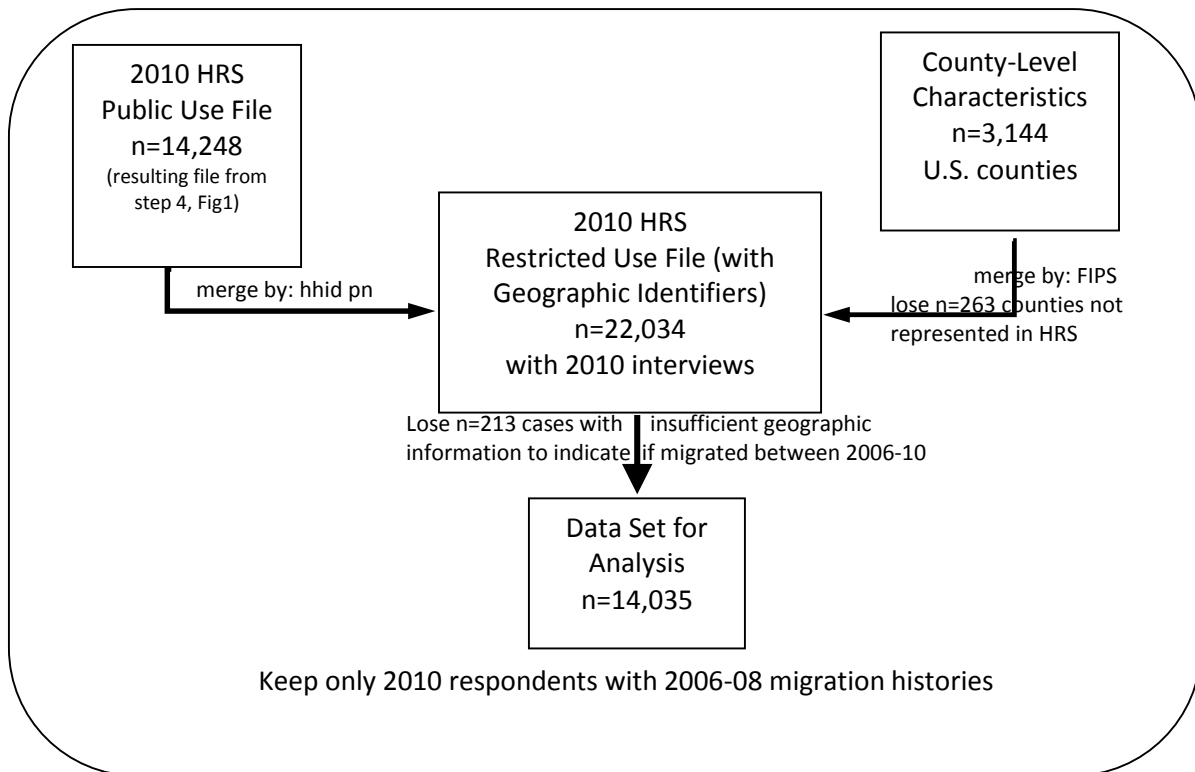
In order to construct my file for analysis, I merged the Restricted HRS file to my county-level characteristics file (n=3,144 counties) by using FIPS codes (See Figure 3.2). I then merged this to the public use file (from Figure 3.1) by using household and person identifiers (HHID and PN, respectively). Note that n=213 cases in my file (2010 cases with 2008 and 2006 migration histories) did not have information on geographic location of the respondent. The result is a file with 14,035 cases available for analysis, containing the public use variables (responses to survey items), the geographic information from the restricted dataset (FIPS code for county of residence in 2006, 2008, and 2010), and county characteristics from my culled sources. Creation of this dataset and all resulting analyses were performed exclusively on a secure, offline desktop computer, in compliance with the user

agreement with the University of Michigan. None of the subsequent analyses identifies specific counties or communities; rather, the focus is on *types of counties*.

1.6 A Note about Merging

Due to the sampling design of the HRS, not every one of the 3,144 U.S. counties (and county-equivalents) is represented. In the subsequent tables that describe the county-level variables I use, I show averages and distributions for each relevant variable separately for all U.S. counties and for HRS counties.

Figure 3.2. File Construction for Analysis: Part 2: Merging Geographic Indicators to Restricted Use Data set



PART 2: Analysis

Subsequent chapters use multilevel regression analysis to determine how people in different types of counties report being satisfied with their lives. While a variety of person-level characteristics (demographic, economic, etc.) is included in the models, I pay particular attention to how these individual-level characteristics matter in different ways depending on the county in which the person resides. There are two types of characteristics in these models: the first includes characteristics of individuals over age 50 and the other includes characteristics of the counties in which those individuals reside. This method is described in detail after presenting the variables in my model. Preliminary descriptive analyses were performed using the Stata/SE for Windows version 12.1 statistical package and the regression models presented use version 14.1 of this software.

In later pages, I outline the individual-level and county-level characteristics that I use to predict differences in life satisfaction and number of health conditions (similar to Cotter's study (2002) using community- and individual-level characteristics to predict household poverty). Below, I list the county- and person-level characteristics used as predictors after first describing how I operationalize the outcome measures.

2.1 Dependent Variables/Outcome Measures

The construct I seek to predict is *life satisfaction* or *well-being*, which could potentially be measured various ways. I rely on two measures here: (1) the

respondents' assessments of their own life satisfaction on a five-point scale (MB000, reverse coded), and (2) a health measure incorporating a count of serious health conditions and a count of instrumental activities of daily living (IADLs) with which one needs assistance. These two measures offer a balance between a subjective self-assessment and an objective observation of individual health status. While one person may be in poor health and relatively satisfied with his life (although an outsider may view his situation as bleak), another may have relatively good health and be dissatisfied with life. I conduct two sets of models: one for each dependent variable. I summarize the models using these dependent variables separately in subsequent chapters and then synthesize these findings in chapter 6.

2.1.1 Life Satisfaction. To measure life satisfaction, I utilize the response to a single HRS survey question. Participants are asked to complete a paper questionnaire on their own (after the initial face-to-face survey) and mail it back to the University of Michigan Survey Center. This module has a variety of questions about social participation, well-being, and respondent personality traits. The question that I shall focus on as my first dependent variable is: *"Please say how much you agree or disagree with the following statements: I am satisfied with my life."* It then continues: *"Are you completely satisfied, very satisfied, somewhat satisfied, not very satisfied, or not at all satisfied."* For ease of analysis, I reverse code this variable so that higher values are associated with higher levels of satisfaction and vice versa. The weighted response distribution is shown in Table 3.2. Models examining this dependent variable can be found in chapter 4. Note that

1096 cases have missing data for this variable, n=1017 of which were because proxy interviews were conducted with spouses or close relatives who could not be relied upon to provide a subjective assessment of the sample person's well-being.

Table 3.2. Weighted response distribution for life satisfaction variable (MB000) in 2010 HRS

Response	Relative frequency
Not at all satisfied	1.2%
Not very satisfied	3.6%
Somewhat satisfied	24.9%
Very satisfied	46.9%
Completely satisfied	23.4%
<i>Total respondents</i>	<i>13,152</i>

2.1.2. Composite measure of health status. My second dependent variable is a count of two measures: the number of serious health issues the respondent reported and the number of IADLs he or she needs assistance with on a regular basis. To start, I included 9 possible health conditions (arthritis, high blood pressure, heart condition, diabetes, psychiatric or emotional problems, cancer, lung disease, stroke, and Alzheimer's/dementia) and created a count variable that measured how many of these conditions each person reported having. Item nonresponse varied from item to item, with a high of 37 missing to a low of 11. Most of the item nonresponse does not correspond to other conditions with item nonresponse. As a result, 108 cases were missing a response on at least one of these conditions and were dropped from the analysis of this variable as a result. The number of chronic conditions ranged from 0 to 8 (no respondent had all 9

conditions), with a weighted mean of 2.14 (std error=0.015) and Median of 2.

Twelve percent had none of these serious health problems. Table 3.3 outlines the weighted percentage of respondents who reported having each of these conditions and Table 3.4 shows the weighted percentage by number of health conditions.

Table 3.3. Percentage of HRS respondents reporting each of 9 major health issues, 2010 weighted

Health issue	Percent reporting condition in 2010
Arthritis	61.6
High Blood Pressure	59.6
Heart condition	25.1
Diabetes	21.6
Psychiatric issue	18.9
Cancer (excluding skin)	15.9
Lung disease	10.5
Stroke	6.5
Alzheimer's or Dementia ⁵	2.0
<i>Number of observations</i>	<i>14,108</i>

The second component of this health variable incorporates the physical and mental capacity of older people with respect to their ability to live independently. Health professionals and researchers examine the extent to which older people are able to live independently based on the amount of assistance they require going about their daily tasks. I shall use the instrumental activities of daily living

⁵ In 2010, the survey captures Alzheimer's separately from dementia. However, in preceding years, these were captured together in one "memory-related disease" category. There is a relatively low incidence of each (0.8% and 1.3% respectively) and individuals who reported having Alzheimer's were not asked if they had dementia, so I am collapsing these into a single category because they are related.

(IADLs) as an indicator of physical disability that makes it difficult for an individual to manage a household. Difficulty or inability to prepare meals, shop for groceries, make phone calls, take medications, or manage money without assistance are IADLs. Thus, my measure ranges from a low of 0 to a high of 5. These items have a high level of internal consistency ($\alpha=0.80$). The majority of the sample (86.0%) does not need assistance with any IADL; but that among those who do, the average number of tasks they require assistance with is 1.9 (weighted mean). This IADL count was computed by RAND (R10IADLZA). Table 3.4 shows the number of serious health conditions, number of IADLs the weighted sample reported needing assistance with, and the distribution of my dependent variable, which includes both of these counts combined together.

Table 3.4. Percentage of HRS respondents by health status, 2010 weighted

	Number of health conditions %	Number of IADLs need assistance with %	Combined count %
None	12.2	86.0	11.7
1	23.4	7.3	22.2
2	26.6	3.1	24.8
3	21.4	1.5	19.7
4	10.8	1.1	11.2
5	4.3	0.9	5.1
6	1.2	-	2.5
7	0.2 ⁶	-	1.6
8	-	-	0.7
9	-	-	0.4
10 or more	-	-	0.1
<i>Number of respondents</i>	<i>13,809</i>	<i>14,011</i>	<i>13,585</i>

⁶ For the individual measure of count of health conditions, the count is top-coded at 7 to maintain adequate cell size. It is not collapsed when used for calculating column three (the composite health measure).

2.2 Independent Variables/Predictor Measures

There are two types of predictor measures in my models: those that are characteristics of the county in which the respondent resides (place effects) and those that are characteristics of the respondent (individual-level measures). A description of each of these types of measures follows.

2.2.1 County-level characteristics County-level predictors include those outlined in Table 3.1. These measures have been culled from a variety of federal data collection agencies, including the U.S. Census Bureau, the U.S. Department of Agriculture, the Centers for Disease Control, and the U.S. Department of Health and Human Resources. Each respondent's county has a value for each characteristic listed⁷. All characteristics have been selected to represent counties at the time of (or the time immediately preceding) the survey responses to the 2010 HRS. Some characteristics are largely fixed (e.g., at the extreme end, the topography of the land, which is a component of the amenity scale), while some may vary substantially (e.g., the unemployment rate). Most characteristics can be considered dynamic in some way, falling between these two extremes.

I have organized these county characteristics in a manner such that they represent the dimensions that Rebecca Blank (2004) highlights when she argues that local characteristics matter in the discussion about poverty and policy. The organization scheme results in the following dimensions: the natural environment;

⁷ With the exception of 12 counties for which information on community institutions was unavailable.

local economic structure; presence of community institutions; social norms and cultural environment; and demographics of the community. Further, Blank envisions a body of research that takes these characteristics and examines their roles in determining which place-specific characteristics matter the most when understanding poverty and its policy implications.

Table 3.5. Averages (and standard errors) for county characteristics⁸

County Characteristic	All U.S. Counties Unweighted Averages	HRS Counties Unweighted Averages
Amenity score	0.056 (.041)	0.532 (.082)
Nonmetropolitan (Rural), 2013	61.6%	35.02%
Economic dependence, 1998-2000	69.8% (.008) specialized	70.3% (.015) specialized
Unemployment rate, 2010	9.39% (.060)	9.65% (.090)
Poverty rate, 2010	16.76% (0.11)	15.73% (.18)
Obesity rate, 2010	30.55% (0.076)	29.40% (.15)
Percent non-Hispanic White, 2010	78.29% (0.35)	74.38% (.62)
Net migration, 2000-2010	2.78% (0.20)	6.72% (.41)
Health Professional Shortage Area (HPSA)	82.14% (0.67)	79.34% (.013)
Ratio of church congregations of any religious affiliation to people	576.18 (6.54)	836.46 (14.17)
Creative class counties, 2000	25.04% (.77)	51.81% (1.61)
Indicator of whether county residents vote strongly democratic, strongly republican, or other in 2008 Presidential election	10.8% strong Democrat; 45% strong Republican	15% strong Democrat; 33% strong Republican
<i>Number</i>	<i>3,144 counties</i>	<i>969 Counties</i>

⁸ Several of these county characteristics utilize data from the 2000 Census because that is the most recent year for which these categories were considered. The USDA indicates that it intends to update some of these figures in late 2015, but these updates were not available as of October 2015. The natural amenities ranking was developed in 1999, but relies on physical characteristics of the region which are largely stable over time.

Although my analysis is not on poverty in retirement, it addresses an issue that has relevance to inequality and public policy, and Blank's framework serves as a useful background for organizing county characteristics for consideration. The measures selected to embody each of these dimensions are similar to the specific ones Blank outlines, although some components are of relevance to the 50 and over population of interest here. Based on Blank's typification, below I outline the five dimensions and describe the components of each dimension. Averages for each component are displayed in Table 3.5 separately for all counties and for counties represented in the HRS. Note that for several of these measures (most notably the under-representation of non-metro counties), the HRS counties included differ from the U.S. average. While this is largely a function of the complex sample design and weights applied in subsequent analysis do help to compensate, caution should be used in considering whether a county-level analysis of the HRS data may have an urban bias.

2.2.1.1 - Dimension 1: The natural environment. Perhaps the most common thing Americans associate with migration after retirement, is moving some place warm. Stereotypical notions of tanned older Floridians permeate our collective ideas of what retirement should be like. What impact might the natural environment have on making for a good retirement outcome? The measure I include is the USDA amenity scale (McGranahan 1999). Specifically, it includes a measure of winter weather (measured as January high temperatures and number of January days with sun); a measure of temperate summers (using a measure that

examines the residual of regressing the high temperatures in July on the high temperatures in January to examine how different summer and winter temperatures are compared to what we would expect the difference to be based on a simple regression); a measure of humidity (July measurements, with lower averages preferred); topographical variation (more than one type of land formation is ranked as being varied); and water area (measured relative to the total area of a county, with the natural logarithm taken to account for extreme values associated with being along a coast). Because each of these components has a different scale, they have been standardized to center upon a mean of zero and a standard deviation of one. The standardized measures were then summed to create the composite amenity scale (McGranahan 1999). This transformation process was performed by the USDA and released on their website for each FIPS code in the continental United States.

2.2.1.2 - Dimension 2: Local economic structure. I have three indicators that describe each community's economic structure: the type of business that most characterizes the local economy, the unemployment rate, and the amount of urban influence present. Because two of these measures are categorical, I do not use a standardized scale, but rather a count of number of economic disadvantages. Counties may have a value of 0, 1, 2, or 3, using a sum of the measures outlined as follows.

Economic Dependence Measure. A community's economic structure may influence its investment in education and training. It may be affected by changing

economic phenomena in the local, national, and global economy, which in turn affect local jobs and potentially migration rates, particularly for the working-age population and young families. These issues may impact a community's identity and therefore are important to recognize in any model addressing community characteristics. Table 3.6 displays the percentage of counties identified as having their local economies dependent upon five main areas: farming, mining, manufacturing, government, and service. Thirty percent of counties are diversified enough to not be considered dependent in any single area. Those counties that are not specialized count one point towards this economic disadvantage scale.

Table 3.6. Percentage of U.S. Counties within Each Category of Economic Dependence (Data from 2004)⁹

Type of Economy	U.S. %	HRS county %
Farming	14.0	2.9
Mining	4.1	0.8
Manufacturing	28.8	29.3
Government	12.1	14.5
Services	10.8	22.7
Nonspecialized	30.2	29.8
<i>Number of counties</i>	3141	968

Unemployment rate. The second economic characteristic included is the unemployment rate in 2010. This year was a time of somewhat high unemployment, with a national average of 9.17%. However, the number varies substantially by county, with a low of 1.6% and a high of 29.9% during this period.

⁹ Note that 2004 is the most recent year for which these data are available. The USDA plans to update in late 2015.

Those in the top quartile with respect to high unemployment had an average of at least 11.2% of working-age adults unemployed in 2010. These counties have a count of 1 added to their economic disadvantage measure.

Urbanicity. The third economic measure used here is the urban/rural identifier. If a county is coded by the USDA 2013 rural-urban continuum code as nonmetro (rural), then it has a count of 1 added to this composite measure.

2.2.1.3 - Dimension 3: Demographics of advantage. Understanding how the demographics of a community influence an individual's experience is important. For instance, a person with low socio-economic status living in an affluent community may fare better than a person of the same financial background in a poorer community. Consequently, this study includes measures of a county's residents' demographics, incorporating four aspects of advantage/disadvantage: with respect to health, economics, race, and/or population decline.

For these final three dimensions (social norms, demographics, and social institutions), I standardize their components and sum them. For this measure, using data from 2010, I incorporate the following statistics: the percentage of the population that is non-Hispanic white, the percentage who are obese, the percentage living below the poverty line, and the net migration rate for the decade ending in 2010. Each statistic has been standardized so that the values are centered with a mean of 0 and a variance of 1. This approach utilizes the same technique the U.S. Department of Agriculture used in creating the amenity scale.

Race. Because areas with a high concentration of minorities may be this way as a result of historical and contemporary efforts to segregate neighborhoods, including a measure of the racial make-up of an area may provide context to understand how a history of disadvantage could play a role in the well-being of seniors. This is measured by noting the percentage of a county's population that is white, standardized.

Net Migration. Including a measure of population loss/growth could provide insight to desirability of an area. Those counties experiencing population loss may be at a disadvantage not otherwise included using the other measures described here. The net migration rate is calculated for the period of time between the 2000 and 2010 censuses and is a measure of the difference of people moving out and moving in. Therefore, it may be positive or negative, where positive values indicate that the population is growing through immigration and negative values indicate the population is shrinking through emigration.

Poverty. Poverty is a measure of economic disadvantage. Even if a resident is not himself living below the poverty line, if many in the community are, this may provide us with a picture of community resources. Because my composite measure examines positive demographic attributes (or attributes of advantage), once this statistic is standardized, it is reverse coded so that higher values indicate lower poverty rates.

Obesity. Health measures for a community are important because they may indicate either a greater demand for or neglect of health care institutions.

Percentage of adults who are obese was standardized to be centered on 0 and also reverse coded as poverty was so that these four components together are taken as measures of demographic advantage.

2.2.1.4 - Dimension 4: Presence of community institutions. Blank (2004) argues that community institutions are helpful because they work to support formal governmental institutions and they also “indicate a willingness among residents to work with each other on common goals” (p. 12). In this spirit, the second dimension counts each county’s ratio of churches to residents; ratio of primary care physicians to residents; and proportion of employees employed in the arts. Again, each of these statistics is standardized to be centered on 0 with a variance of 1 and then summed to create the composite measure because each component of this dimension uses a different scale of measurement.

Churches. The most ubiquitous type of community institution in most communities is the church. Taking into consideration every type of religious organization, there is an average of 110 religious institutions in each county, with an average 47,915 members (or approximately half of the county population, on average), according to a census of religious institutions carried out by the Association of Statisticians of American Religious Bodies (ASARB) in 2009-2011 (Grammich, Hadaway et al. 2012).

Certainly other community institutions would be useful here, since lack of religiosity does not preclude someone from community engagement. However, data on other types of institutions are hard to come by and the church congregation data

from the ASARB should serve as a useful standard for understanding community engagement as a whole.

Arts and recreation accessibility. Measuring whether a community has amenities that meet residents' needs for creative outlets is a challenging task. Regional or cultural differences may dictate what qualifies as creatively satisfying. While an art gallery or book store may be fulfilling to some people, a race track or dance studio may better meet the needs of others. To this end, I include a measure of the proportion of employed residents who work in the arts, a subcategory in the U.S. Department of Agriculture (USDA) Economic Research Service's creative class typology, which includes people in creative occupations (defined as those "developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions") (U.S. Department of Agriculture 2008). This broad measure of what counts as "creative" should help to override any bias a researcher might have as to what types of creative outlets should be counted were I to measure places rather than people for this indicator. While it may not encompass every type of arts, it should not be biased towards some types over others. Focusing on employees rather than counting galleries or other arts centers is also more methodologically feasible; it would be much easier to undercount arts outlets than it is to count workers.

Health accessibility. In addition to accessibility to cultural and recreational outlets, access to health care is essential. I am including a ratio here of number of primary care physicians (PCP) in 2010 relative to the 2010 county population.

While residents may certainly travel across county lines to find health care, this continuous measure will provide a rough estimate of health care availability or shortages in an area, which are particularly vital to an aging subpopulation.

2.2.1.5 - Dimension 5: Social norms and the cultural environment.

This component of community is important but is often overlooked in discussions of inequality. I argue that it is particularly important to older residents based on analysis of data in the State of New Hampshire that demonstrates that those aged 55 and older are significantly more likely to cite reasons related to the social atmosphere or culture, politics, lifestyle characteristics of the community in determining why they want to stay in the state (Henly 2012). Overall, these value-rational reasons for wanting to live in New Hampshire were ranked higher than economic reasons among those aged 55 and older *and* the older residents ranked these reasons with a greater plurality than younger residents did. For this reason, I have an interest in incorporating objective measures that can capture these aspects of communities. To that end, this dimension incorporates a measure of political affiliation that is missing from the other four dimensions.

Because the political climate of a community may shape its desirability to a resident or relate to general satisfaction with where one lives, I am including a “blue state/red state”-type measure to this dimension of the cultural environment using county-level data. Historically, this dichotomy is based on the voting history of the county as a whole: Red states are those who voted for the Republican candidate for U.S. President in 3 or 4 of the elections between 2000 and 2012. Blue

states are those voting for the Democratic candidate each time during the same time frame. In total 24 states are red (48%), 21 are blue (42%) and five are swing states which voted republican half the time and democratic the other half (Starr 2014).

While this state-level analysis is important for political purposes where the Electoral College takes all the votes for the state regardless of how opposing political pockets exist within the state, a county-level component should be a useful measure to the present study (MacKenzie 2012). Analysis of the 2008 presidential election¹⁰ shows that 867 counties had a majority of voters voting for Obama and 2244 voting for McCain. Of these counties, I note that many favor their candidate of choice heavily. That is, Obama received at least 60% of all votes in 39% (n=336) of the Obama-voting counties and McCain received at least 60% of all votes in 45% (n=1406) of the counties favoring him. The measure included here is percentage of votes for McCain in the 2008 election. In this case, very strong negative or positive values will indicate strong political solidarity (positive indicating Republican solidarity, negative indicating Democratic solidarity). Values are standardized so that the mean is centered on zero with a variance of 1.

2.2.2 Individual-level characteristics

All of my measures on individuals come directly from the HRS. A list of characteristics, along with averages/distributions, can be found in Table 3.7 and 3.8.

¹⁰ 2008 is the election closest to the period for which the HRS data were collected and should be considered the most appropriate indicator of political climate.

While most of these measures are taken directly from responses to the survey interview, several are obtained from the self-administered leave behind questionnaire, and some are derived from multiple survey questions.

Individual-level characteristics include an array of measures from the HRS survey, including economic characteristics (measures of wealth and employment status), health measures (Body Mass Index (BMI) and self-reported health status), social networks (marital status, proximity of family and friends, and participation in social activities), geographic mobility patterns (whether individual has migrated and whether the migration was to or from an urban or nonurban county), as well as standard sociological demographic controls (for gender, age, race/ethnicity, and education). These predictor measures will be useful in identifying the role of economic advantage on retirement-age well-being, after holding constant the role of place.

2.2.2.1 - Demographic controls. As with any social science analysis, I include several standard demographic variables to serve as controls. Some of these have been tested specifically in the literature relating to well-being (e.g., race and gender) while age makes sense to investigate because, all else equal, I would expect fifty year olds to be in better health than eighty year olds in my sample. The weighted proportions from the HRS dataset show that there are 56.7% women (due to higher mortality among men at all ages), 84.9% white, non-Hispanic and 6% Hispanic, and with an average age of 68.3 years. Over one-quarter (27.2%) have at least a college degree and 13.7% have less than a high school degree or GED. Aside

from age, each one of these demographic controls is dichotomized in my models (as female (vs. male), white, non-Hispanic (vs. all other race categories), Hispanic (vs. non-Hispanic), and as college-educated (vs. less than college educated)). The relationships between these characteristics and well-being are described in chapter 4.

2.2.2.2 - Geographic mobility measures. One of the key measures of interest is whether the respondent has moved. The idea here is to determine if those who moved during their retirement years are making a move that is beneficial to their overall well-being. Previous research indicates that retirees may move for assistance-seeking reasons or for amenity reasons (Litwak and Longino 1987; Johnson 2012). This does present a problem of ordering though: if someone's motivation for moving is to be closer to family or health professionals due to deteriorating health (assistance-seeking migrants), then the outcome I wish to measure (well-being) may show that moving has a negative impact on well-being. That is, retirees in ill health may be moving so that they can be closer to doctors or family members, their well-being may be declining as a result of their declining health, and the impact of a change in residence may not be observable (maybe the move actually helped and maybe it hurt). This analysis will not be able to separate the assistance-seeking migrants from the amenity-seeking migrants but will only be able to speak to the effect of geographic mobility overall.

Table 3.7. List of individual-level demographic and geographic variables

Characteristic	Weighted Percentage
<i>Employment status:</i>	
<i>Working for pay</i>	38.2%
<i>Not working for pay</i>	61.8%
<i>Gender</i>	
<i>Male</i>	43.3%
<i>Female</i>	56.7%
<i>Race/Ethnicity</i>	
<i>White, non-Hispanic</i>	84.9%
<i>Black, non-Hispanic</i>	7.4%
<i>Other, non-Hispanic</i>	1.7%
<i>Hispanic</i>	6.0%
<i>Migrant measure:</i>	
<i>Migrated across county lines between 2008 and 2010 interviews</i>	3.1%
<i>Migrated across county lines between 2006 and 2008 interviews</i>	3.4%
<i>Migrated between both 2006-08 and 2008-10 waves</i>	0.5%
<i>Total moved between 2006 and 2010</i>	6.6%
<i>Type of Residential Mobility:</i>	
<i>Metro-metro mover</i>	62.1%
<i>Metro-nonmetro mover</i>	14.5%
<i>Nonmetro-nonmetro mover</i>	6.1%
<i>Nonmetro-metro mover</i>	17.3%

Having migrated is operationalized by examining several data points using the method Johnson (2012) applied when examining post-retirement migration. Respondents are coded as migrants if they meet the following criteria: (1) When asked if he or she had moved since the prior wave, respondent reported yes; (2) Date of move recorded occurred between survey interview dates; and (3) FIPS code changed between waves, indicating that the move occurred across county lines and therefore qualifies as migration according the U.S. Census Bureau guidelines. Of

note, in 2010, the U.S. Census Bureau made updates to several FIPS codes (U.S. Census Bureau 2015). Because of these changes, a person may have remained in the same residence but have a new FIPS code. The HRS restricted file has FIPS codes using both the 2000 and the 2010 FIPS identifiers. Because I am comparing to earlier waves which utilize the 2000 FIPS coding, I rely on the 2000 FIPS coding scheme in 2010 as well. This affects only 8 cases in my dataset for which their 2010 FIPS codes differ due to the reclassification.

Because only a small proportion of older Americans migrate, I have combined the responses from these two earlier waves (2008 and 2006) to create a larger pool of migrants in order to have more statistical power during data analysis. In sum, $n=997$ people (or 6.6% of the weighted sample) had migrated across county lines during this time frame. Note that some ($n=59$) had migrated between both the 2006 and 2008 waves and the 2008 and 2010 waves. In these instances, their 2008 and 2010 residence locations are compared (most recent move).

Among the migrants, I have coded them for the type of place they have moved to and moved from: either metropolitan or nonmetropolitan areas, by matching FIPS code for county of residence before and after a move to the 2013 rural-urban continuum codes designated by the U.S. Department of Agriculture (2008). Each migrant is labeled as either a metro-metro mover, a metro-nonmetro mover, or a nonmetro-nonmetro mover. As shown in Table 3.7, most of the migration was made *to* metropolitan areas: 62.1% of migrants moved from one metro county to another, while 17.3% of migrants moved from a nonmetro county to a metro one. One in five

migrants moved to a nonmetropolitan county, and most of those were from another metropolitan county.

2.2.2.3 - Economic characteristics. The first economic measure included here is employment status, which can be a tricky measure among the retirement-age population. I rely here on reports of whether the respondent is currently working for pay (variable MJ020; 38.2% were working).

In order to assess the role of individual's socioeconomic status, I use wealth variables from the household record. It should be noted that self-reports of pensions, home value, savings, etc. may suffer from measurement error due to respondent misreporting. Other researchers interested in studying wealth using the HRS have linked the HRS person identifiers (available on a restricted-use data set) to Social Security or other administrative records (Cunningham, Engelhardt et al. 2007). This study is interested in wealth of HRS participants relative to others in the sample rather than in terms of actual dollar amounts. For this reason, some recall error or misreporting of what type of funds are held on the part of the respondent are not as consequential here, assuming that errors occur at random and do not suggest bias in a single direction.

A second criticism of self-reports of assets and wealth is that they are at a higher risk of nonresponse error compared to other survey items. The HRS addresses this by first asking for actual dollar values for pensions and other financial items and then, if a value is unknown or not provided, the interview proceeds with asking for the highest and lowest possible values that bracket the

unstated figure. With this method, the HRS has reduced item nonresponse on the financial asset questions by 75% (Smith 1995). An imputation algorithm is then used to impute most missing cases remaining. I used the household identification code to match the household file on wealth data to the respondent's individual record (see figure 2 and earlier discussion for details). Then I extracted the variable on the household's net worth (H10ATOTB) to use as my measure of the respondent's wealth. Net wealth is derived by summing the value of all assets (houses, stocks, IRA's) less the sum of all debts (mortgages, home loans, other debts) at the household level. The weighted average for this variable is \$535,230.40. This figure includes the 6.7% of people who have zero or negative assets. Because of the strong positive skew for this variable (approximately one-half of one percent have negative assets greater than \$100,000 while the top 10% have wealth greater than \$1.08 million and the top 0.5% have more than \$5.4 million in assets), I have standardized this measure by centering the distribution on zero with a standard deviation of 1. This transformation of the data will allow me to avoid violating the assumption of normality in regression analysis. My interpretation will require that I compare the wealth of older Americans relative to other older Americans.

2.2.2.4 - Health measures. I include two measures related to the health of older Americans. The first is a direct measure of self-rated health. Self-rated health is frequently used as a reliable predictor of morbidity. The HRS uses a five-point scale for respondents to rank their own health. The weighted percentages show that 10.8% report health as "excellent", 34.1% report "very good", 31.5% as

“good”, 17.2% as “fair”, and 6.4% reported being in “poor” health in 2010. The survey question (MC001) is worded “Would you say your health is excellent, very good, good, fair, or poor?” I have reverse coded this measure so that higher values indicate higher levels of self-rated health (1=Poor; 2=Fair; 3=Good; 4=Very Good; 5=Excellent).

My second health measure is a measure of Body Mass Index (BMI), which is derived from the recorded height measurements (MC142 and MC141) and weight (MC139) by using the formula $((\text{weight in pounds} / (\text{height in inches})^2) * 703.06957964)$. Body weight was not collected for n=186 respondents in 2010. However, reported weight was available in 2008 for all but 56 of these missing cases. I use 2008 when 2010 weight is missing. In addition, body height is not re-collected for study participants every year, so 2006 or 2008 height is used when not available on the 2010 survey file. In total BMI data could be collected for n=14,148 cases (Wei and Wu 2014).

Given the increasing importance placed on the impact of obesity on the health of Americans, this measure is relevant to the outcome of this study. One-third (33.2%) of adults aged 50 and older are obese (BMI \geq 30), according to the HRS. Just 27.9% are of normal weight, with the rest categorized as overweight but not obese (37.5%) or underweight (1.4%).

2.2.2.5 - Social connectedness. The final domain of individual-level characteristics relates to the strength of their social networks. Having a strong local network of friends and relatives can be important for two main reasons: First, as

people move out of the labor force, they may find their main source of social activities is missing. Finding suitable social activities elsewhere may help with that loss. Secondly, older Americans often anticipate needing to call on someone in a health-related emergency (Wethington and Kessler 1986). These anticipated problems require someone be geographically close by.

I include two categories of social support: one relating to relationships with people and one related to activities. In the former category, I include a measure of how long the individual has been married (equal to zero for currently unmarried/divorced/widowed respondents). On average, 62.8% of Americans over age 50 are currently married. The average length of marriage (R10MCURLN) was 37.3 years for those currently married. In addition, I include indicators for living near relatives (25.9%) or good friends (65.2%). Relatives nearby (MF174) and good friends nearby (MF175) are single yes/no variables taken directly from the survey.

In addition to the measure of social networks, I also have one measure how often the individual socializes. Here I rank the responses to the question “*How often do you get together with [people in or near the facility/any of your neighbors] just to chat or for a social visit?*” as never/almost never, annually/less than monthly, monthly, more than monthly, weekly, or daily. These categories are derived from two variables, MF176 which indicates the frequency of visits (number) and MF177 which records the unit of measurement (e.g., each day, week, month, etc.). The response distributions are displayed in Table 3.8.

Table 3.8. Percentage of Americans aged 50+ by how often they report socializing with neighbors, 2010 weighted

Frequency of socialization	Weighted percentage
Never/almost never	23.0
Annually/less than monthly	5.0
Monthly	10.6
More than monthly/less than weekly	8.3
Weekly	42.8
Daily	10.3
<i>Number of respondents</i>	<i>13,469</i>

PART 3. ANALYTIC PLAN

Using these variables described above, in the chapters that follow I use cross-sectional multilevel regression models to predict self-rated life satisfaction (chapter 4) and number of serious health conditions (chapter 5). I utilize a backwards stepwise approach where non-significant coefficients are dropped one at a time until all independent person-level variables offer a statistically significant impact on explaining the variance in the dependent variable. I then introduce county-level variables.

Multilevel modeling (MLM) is sometimes referred to as hierarchical linear modeling, mixed effects modeling, or structural equation modeling. These types of models are useful when the analyst believes that the context of the phenomenon under study matters; that is, when some higher-level construct (in this instance, type of place) may be influencing a lower-level construct (the individual-level characteristics in my models) (Luke 2004).

My justification for using MLM is both theoretical and empirical. Because I hypothesize that there are differences in well-being by type of place, and that individual experiences may differ within types of places, I wish to nest my analysis of individual characteristics within types of counties. By incorporating county-level variables at a higher level than individual-level characteristics, I avoid the ecological fallacy, where group-level observations are assumed to hold for individuals within a group (Freedman 2001). For each of my two proposed models, I examine all of the individual and community characteristics as fixed effects, and place of residence (FIPS code) as a random effect. These random effects are included because I expect that well-being within types of places may be correlated. This is the basis for my theoretical justification for using this analytical approach.

In terms of empirical evidence, I have examined simple fixed effects models, looking at just my two dependent variables (*lifesat* and *numcond*) and five dimensions as predictor variables (in 10 separate models, 5 for life-satisfaction and 5 for illness count). The intraclass coefficient (ICC), or proportion of the variance in life satisfaction (*lifesat*) and number of health conditions (*numcond*) explained (separately) by type of place, is sufficient, though moderate (just under 20% in one case) to somewhat high (up to 31%). Table 3.9 lists the ICC for each of my five dimensions, by DV. This suggests that a MLM is an appropriate analytical approach, as a MLM will account for this correlation within type of place. It will also reveal the nature of the relationship between these county-level dimensions and the impact on older resident life satisfaction and health.

Table 3.9. Intraclass coefficients for fixed effects models predicting each of my two dependent variables, by county dimension

Dimension	ICC for DV1: Self-report of life satisfaction	ICC for DV2: Objective health status
1. Environmental	0.2961	0.28926
2. Economic	0.2269	0.19867
3. Demographic	0.3025	0.28845
4. Social institution	0.2850	0.25185
5. Social norms	0.3098	0.21115

The analysis is set up in the manner described because I am interested in understanding what it is about a county that matters with respect to outcomes for older U.S. residents. In this respect, it is not that a hypothetical difference in life satisfaction between residents of Rockingham County, New Hampshire¹¹, and New Castle County, Delaware, that would be useful to know so much as what it is about Rockingham County that is (relatively) beneficial or about New Castle County that is (relatively) detrimental. For this reason, identifying counties that share a characteristic (either demographic, institutional, normative, economic, or environmental) and grouping these counties together offers results that can tell us what types of county characteristics really matter (rather than what individual counties are “best” or “worst”). That is, I am interested in identifying what types of county characteristics impact well-being rather than identifying which counties have high or low well-being.

¹¹ These two counties are selected to make a hypothetical example. Their use should not be taken as evidence that these particular counties are even represented in the file. They have been selected because they represent the current residence and birthplace (respectively) of the author.

The first set of multilevel models examines the effects of county-level dimensions on predicting older adult life satisfaction, net of those individuals' demographic characteristics (chapter 4). By analyzing county-level dimensions, we can observe how each dimension (economic, demographic, social norms, presence of institutions, and natural environment) works to promote well-being in as people approach retirement and which dimensions do not. The same process is repeated to examine the effects of county-level dimensions on the health status of older individuals (chapter 5).

PART 4. LIMITATIONS

This research project is designed to evaluate the extent to which place helps shape life outcomes. I do face the challenge of demonstrating that the causal order of my models is valid. People largely have a great deal of freedom in determining where they live and those most concerned about improving their quality of life may flock to locations that they expect will make them happier. I rely on existing literature on this topic to defend the conclusions drawn from the causal order implied by the model.

Also related to causal ordering, I will have to consider the amount of geographic mobility taking place in each county. If a county were to experience a somewhat large increase in migration (particularly of older residents), then new residents may contribute to what makes a community a “good” or a “bad” place. My county-level measures of how much migration occurred does help to control for this.

I examine whether this measure makes an impact in order to evaluate whether this poses a problem to the conclusions I draw from the models.

The second challenge I face is the extent to which the geographic units analyzed are specific enough to differentiate “good” places from “bad” places (with respect to a given characteristic). My analysis of “community” characteristics takes place at the county-level due to constraints in obtaining data at a more specific level (e.g., zip codes). Counties (and even zip codes in some instances) can be variable with respect to the community characteristics I am analyzing (e.g., some zip codes/blocks/neighborhoods may be quite desirable and others less so). Even if counties or zip codes are relatively precise of a measure of unique geographic location, they may not match the symbolic boundaries that residents use to demarcate communities from one another (Lamont and Molnar 2002). Brown & Glasgow (2008) faced the same challenge in designing a study of retirement communities and ultimately settled on analyzing counties because:

their boundaries are relatively stable over time and that a large amount of socio-economic and demographic data, including age-specific net migration rates, are available at the county level. Moreover, counties serve as a prime building block for the nation’s system of statistical geography, and they raise revenue and provide essential services and functions. Therefore, even though counties may not be genuine communities in the sociological sense, and while we understand that retirement communities are embedded within larger counties, we contend that much can be learned about the community-level aspects of rural retirement migration by examining the phenomenon at the county-level. (p. 25)

PART 5. CONCLUSION

This chapter summarizes the analytic approach in which I merge data on county-level characteristics to the 2010 wave of the Health and Retirement Survey in order to assess the role that county-level characteristics play on shaping the well-being of retirement-age Americans relative to the impact of individual-level characteristics. The subsequent chapters present this analysis and discussion.

CHAPTER 4

RESULTS: PREDICTING THE SUBJECTIVE MEASURE OF WELL-BEING

1 Overview

The construct I wish to study is well-being among the retirement-age population. I approach this using two measures: a self-assessment of one's own overall life satisfaction and a count of serious health conditions. The latter, more objective measure is examined in chapter 5. The present chapter focuses on life satisfaction.

The analysis presented here examines self-reports of life satisfaction for people aged 50 and over (recorded on an ordinal 5-point scale) by using two types – or *levels* – of information to predict them: person-level characteristics reported in the 2010 wave of the Health and Retirement Survey, and county-level dimensions I constructed based on methods described in detail in chapter 3. This chapter summarizes my model construction and results and displays diagnostic information to support the validity of this method. A discussion of these results follows in chapter 6.

2 Dependent variable: Self-reported life satisfaction

The HRS asks a number of questions that relate to well-being. Based on a review of the literature on well-being, I examine a variable in the 2010 wave that

asks “Please think about your life-as-a-whole. How satisfied are you with it? Are you completely satisfied, very satisfied, somewhat satisfied, not very satisfied, or not at all satisfied?” (MB000). I reverse-coded this variable so that higher values are associated with higher levels of well-being. I call this reverse-coded variable *lifesat* for simplicity. Note that proxy interviews were not utilized for this question due to its subjective nature, reducing the number of cases by 1017 (plus an additional 79 cases were missing due to item nonresponse).

Table 4.1. Percentage reporting how satisfied they are with their lives, 2010 weighted

Life satisfaction	Weighted Percent
Not at all satisfied	1.3%
Not very satisfied	3.7%
Somewhat satisfied	25.4%
Very satisfied	45.0%
Completely satisfied	24.6%
<i>Number of observations</i>	<i>13,152</i>

On the whole, the 50 and older population reports being satisfied with their lives. Approximately 70% report being “very” or “completely” satisfied with their lives, while only 5% indicated they were “not very” or “not at all” satisfied with their lives. Note that the middle category is mildly positive rather than neutral, which is the case with many Likert-type scales. One quarter of older Americans fit into this middle response category of being “somewhat satisfied” with life. My interest here lies in understanding the individual-level and community-level factors that may be associated with higher ratings of life satisfaction.

3 Model Construction

Ordinary Least Squares (OLS) regression is the best linear unbiased estimator if the errors are independent and identically-distributed (known as i.i.d. normal) (Hamilton 2012). However, the dependent variable *lifesat* is an ordinal Likert-scale (see Table 4.1), therefore its errors cannot be i.i.d. normal. For this reason, ordered logistic regression is an appropriate method of analysis when investigating *lifesat* as a dependent variable.

Rather than present coefficients from these ordered logistic regression models, I display odds ratios for ease on interpretation. Odds ratios are the exponentiated value of the coefficient, or $e(\beta)$.

I show a progression of six models in order to describe the effects of individual-level characteristics within the context of counties fully. First I show a null model, which includes only county-level random effects to predict level of life satisfaction. Second, I examine only individual-level fixed effects to identify the variables that offer a statistically significant improvement in explaining variance in life satisfaction. Third, I examine only county-level fixed effects. Finally, I incorporate all of the above into a multilevel model that shows the ways in which county and individual factors together influence life satisfaction, while also accounting for variability at the county-level.

Because I hypothesize that place of residence (county) may introduce an additional source of variability beyond the individual-level and county-level fixed effects controlled for in my models, the multilevel approach is warranted.

4 Progression of models: Null model (Model 0)

Evaluating a hypothesis using a multilevel model generally means considering each model's impact on variance. If additional predictors also offer a significant increase in the amount of explained variance in my dependent variable, *life satisfaction*, then the additional predictors are deemed useful.

Before introducing any explanatory variables, I present an intercept-only model (H0) in Table 4.2. This allows us to see whether subjective well-being (operationalized by level of life satisfaction) varies by U.S. county. Based on the likelihood ratio test, it appears it is worth pursuing. The likelihood-ratio test compares the random-intercept variance to zero. This null hypothesis is rejected ($\chi^2=43.96, p<0.001$), which indicates that there is a statistically significant difference between counties. The models that follow now examine how that between-county variance is affected once individual-level and county-level controls are added.

Table 4.2. Null model examining county-level differences in reported level of life-satisfaction

	Estimate	(Std. Error)	Odds Ratio
Intercept (/cut1)	-4.33***	(.077)	0.01
(/cut2)	-2.96***	(.052)	0.05
(/cut3)	-0.83***	(.024)	0.44
(/cut4)	1.15***	(.024)	3.16
Random intercept (variance in life satisfaction between counties)	0.050	(.011)	
-2 Log likelihood	31969.4		
Number of cases	13009		

*** p<0.001

5 Introducing fixed effects: person-level characteristics (Model 1 and Model 2)

From this point, I add to the null model (M0) by including the person-level variables I identified as theoretically relevant predictors in my methods chapter, while also accounting for a random intercept for county of residence. I use a single ordered logistic regression model to predict *lifesat* and then drop person-level variables, one at a time, by size of the calculated t-value (smallest to largest, for all of those with an associated probability that the coefficient equals zero that is greater than 0.05). Results of these full and reduced models are found in Table 4.3.

My full model includes *gender* (male=0, female=1); *age* in 2010 (continuous, ranging 50 to 109 with an average of 68 years); *race* (0=non-white, 1=white); *ethnicity* (0=non-Hispanic, 1=Hispanic); *education* (0=less than college educated, 1=college educated); *type of migration* (metro to metro, metro to nonmetro, nonmetro to metro, or nonmetro to nonmetro all included as dummy variables where the referent category is those who have not migrated); *employment status* (dichotomous variable where 1=working for pay); *net worth*, standardized (with an unstandardized mean of \$535,230); *self-reported health status* (an ordinal variable where 1=Poor, 2=Fair, 3=Good, 4=Very Good, and 5=Excellent); *Body Mass Index* (or BMI) in 2010 (ranging from 13.1 to 75 with a mean of 28.2); *length of current marriage* (0 for those who are not married and up to 75 years, with an average of 23 years); *whether relatives live nearby* (0=no, 1=yes), or *good friends live nearby* (0=no, 1=yes); and *number of social visits* one makes (an ordinal scale, where 0=Never or almost never, 1=annually/less than monthly, 2=monthly, 3=more than monthly, 4=weekly, 5=daily). Distributions for each of these variables and more detail on

question wording and operationalization for derived items can be found in Chapter 3.

Table 4.3. Full and reduced ordered logistic regression models for individual characteristics predicting self-reported level of life satisfaction in 2010

	Full Model (Model 1)		Reduced Model (Model 2)	
	Odds Ratio	P> t	Odds Ratio	P> t
Demographic Characteristics:				
Gender=Female	0.096		-	
Age in years	1.023	***	1.024	***
Race=White, non-Hispanic	0.793	***	0.811	***
Ethnicity=Hispanic	0.942		-	
Education=College	0.884	**	0.889	**
Employed	0.913	*	0.915	*
Total net worth (stdzd.)	1.094	***	1.094	***
Migration type:				
Metro-metro	1.039		-	
Metro-nonmetro	1.184		-	
Nonmetro-metro	1.163		-	
Nonmetro-nonmetro	1.097		-	
Health Characteristics				
Self-reported health	1.976	***	1.972	***
BMI in 2010	1.009	**	1.001	**
Social ties Characteristics:				
Length of current marriage	1.012	***	1.012	***
Relatives live nearby	1.035		-	
Good friends live nearby	1.025	***	1.245	***
Frequency of social visits	1.055	***	1.056	***
Intercept (coefficients)				
/cut1	-0.273		-0.220	
/cut2	1.130	**	1.185	***
/cut3	3.490	***	3.544	***
/cut4	5.727	***	5.780	***
Random Effects:				
FIPS	0.041 (.012)		0.041 (.012)	
<i>Number of cases</i>	<i>11,946</i>			

*p<0.05 ** p<0.10 ***p<0.001

Using the backwards stepwise method described above, I dropped (in this order) whether relatives live nearby, type of migration (all 4 dichotomized variables), ethnicity, and gender. As a result, what remains is a more parsimonious model, as the amount of variance in *lifesat* explained by the predictors listed (measured as an adjusted R²) is basically unchanged after removing those predictors which have no significant impact in predicting the level of life satisfaction one has. Approximately 17% of the variance in self-reported life satisfaction among the 50 and older population can be explained by the variables remaining in my model.

The reduced model (M2) shows some findings that were expected and some that were unanticipated. For instance, being white or college educated is associated with a decreased odds in the reporting a higher level of life satisfaction (compared with non-whites or non-college educated): 20% lower for white, non-Hispanics compared to others and 10% lower for college educated compared to those with lower levels of education. These findings are contrary to expectations of advantage.

However, some findings are expected. For instance, higher self-reported health has a very strong impact on raising the odds (by 97%) of a higher rating of life satisfaction. Similarly, each additional year of age is associated with a 2% increased odds in higher life satisfaction. In addition to health and age, the social ties variables performed in the direction we might expect: longer marriages, more friends nearby, and more social visits are all associated with an increased odds of a higher level of life satisfaction.

Labor force characteristics suggest that those who work for pay have lower odds of higher life satisfaction, approximately 10% on average. In an analysis not shown, I also compared different categories of not working and found that those who identify as homemakers or as retirees are more likely to have higher life satisfaction compared to employed people, but that those who report being unemployed have lower levels of life satisfaction (36% decreased odds in higher levels of life satisfaction) compared to employed people. It appears that not working has a positive relationship to life satisfaction, but whether that employment status is voluntary or not matters a good deal.

The bottom portion of Table 4.3 shows that there is still variability that is not modeled, as shown by a non-zero variance (0.012). This indicates that the inclusion of additional predictors could prove useful (Luke 2004). From here, I investigate the effect of incorporating county-level predictors.

6 Introducing county-level dimensions (Model 3)

The next model (M3) presented in Table 4.4 includes five community-level covariates (my defined community dimensions outlined in chapter 3) as well as incorporating between-county heterogeneity by using a random intercept for each county through multilevel modeling.

Although I hypothesized that each of these five derived dimensions would offer a contribution toward explaining the variance in the level of life satisfaction among those aged 50 and older within a geographic area, the model shows that only two of the dimensions are statistically significant: the social institutions dimension

($p < 0.01$) and the demographics of advantage dimension ($p < 0.01$). Without accounting for individual level covariates, it appears that for every one standardized unit increase in a county's social institutions, there is an associated decrease in self-reported life satisfaction by a factor of 4%. By contrast, with a one-unit increase in demographic advantages, life satisfaction is predicted to increase by a modest factor of 2%. Recall that demographic advantages include standardized measures of the percentage of the population that is white, non-Hispanic; that is not obese; that is not in poverty; and a measure of net migration. The social institutions dimension is a measure of the presence of churches, arts and recreation options, and health care practitioners.

Table 4.4. Odds Ratios for county characteristics as fixed effects and county as random effect predicting life satisfaction in 2010

<i>Dimension:</i>	Odds Ratio	P> t
Institutional	0.962	*
Demographic	1.022	*
Environmental	0.993	
Economic	1.024	
Social norms	0.960	
Random intercept: FIPS	0.036(.011)	
Number of cases	12,756	
-2LL	31308.3	
LR Test vs. Poisson Model	21.49***	

7 Model 4: Modeling community dimensions and individual characteristics together in a multilevel approach

While Table 4.3 shows the relevance of individual characteristics (M2) and Table 4.4 shows the relevance of county-level characteristics (M3) in predicting life satisfaction, Table 4.5 incorporates all of the relevant factors into a single multilevel

model (M4). In this final model, I retain variables that are of theoretical relevance and/or statistical relevance.

Table 4.5. Final multilevel model (M4) predicting self-reported life satisfaction in 2010, including individual and county characteristic fixed effects and county as random effect.

	Model 4	
	Odds Ratio	P> t
<i>Demographic Characteristics:</i>		
Age in years	1.024	***
Race=White, non-Hispanic	0.785	***
Education=College	0.907	*
Employed	0.907	*
Total net worth (standardized)	1.111	***
<i>Health Characteristics</i>		
Self-reported health	1.977	***
BMI in 2010	1.009	**
<i>Social ties Characteristics:</i>		
Length of current marriage	1.011	***
Good friends live nearby	1.234	***
Number of social visits	1.056	***
<i>Community dimensions:</i>		
Institutional	0.940	***
Demographics	0.990	
Environmental	0.995	
Economic	1.001	
Norms	0.949	
Intercept (coefficients)		
/cut1	-0.392	
/cut2	1.003	**
/cut3	3.363	***
/cut4	5.600	***
Random Intercept: FIPS (coefficient)		
Number of cases	0.017 (.009)	
-2LL	11,719	
	26586.09	

Model 4's coefficients largely indicate the same patterns from the earlier models, with a few small exceptions. There was an impact on the community dimensions when controlling for individual level factors. For instance, the demographics of disadvantage dimension – which had a small positive effect when

examining community dimensions alone – now has a slight negative impact on self-reported life satisfaction. None of the other community factors are statistically significant predictors after introducing individual characteristics into the model. Environmental and economic community dimensions have no predictive power; my institutional dimension no longer has an impact on life satisfaction.

What remains the same with this model is the effect of individual-level demographic characteristics (a positive impact of being older and more affluent; a negative impact of being white relative to non-white or college educated relative to those with lower levels of education) and employment status (being employed has a negative effect). Health characteristics also still matter: self-reported health is a strong predictor of higher life satisfaction and with each one-point increase in BMI there is a 1% increased odds in having a higher self-rated life satisfaction. Social ties characteristics also still matter: with each year increase in length of marriage, there is a 0.9% increased odds in a higher self-rated life satisfaction. Having good friends nearby results in a 23% increased odds of higher life satisfaction, and each increase in the number of social visits results in a 5% increased odds of higher life satisfaction.

8 Model Diagnostics

In order to assess whether this model progression marked an improvement in understanding life satisfaction, I performed a likelihood ratio test to compare M4 to earlier models. A likelihood ratio test compares two models by testing the hypothesis that the additional parameters in M4 are equal to zero (Agresti and

Finlay 1997). In this respect, it is a way of assessing whether there is an improvement of model fit.

Table 4.6 displays the results of the likelihood-ratio test and shows a statistically significant improvement in model fit of M4 over each of the earlier models (M0, M2, and M3). M4 will now be referred to as the final model and referenced in subsequent discussion.

Table 4.6. Likelihood-ratio test outcomes comparing M4 to earlier models.

Model Comparison	Chi2	P<t
M4 to M2	566.55	***
M4 to M3	4725.66	***
M4 to M0	5385.64	***

*** p<0.05

The subsequent chapter summarizes the models used to predict the second measure of well-being as well as further discussion of model diagnostics. Following that is a discussion of the results in Chapter 6.

CHAPTER 5

RESULTS: PREDICTING OBJECTIVE WELL-BEING MEASURE

1 Overview

The analysis presented here focuses on predicting the objective well-being of people aged 50 and over by using two components of health status as a dependent variable: number of serious health conditions and number of instrumental activities of daily living (IADLs) with which one needs assistance. Again I utilize person-level characteristics reported in the 2010 wave of the Health and Retirement Study and county-level dimensions I constructed based on methods described in detail in chapter 3 as my independent variables. This chapter summarizes my model construction and results and displays diagnostic information to support the validity of this method. A discussion of these results follows in chapter 6.

Just as the preceding chapter outlines the model construction predicting *lifesat*, here I outline the procedures used to predict my second dependent variable. Because the independent variables are largely the same, what follows is a slightly abbreviated description. Full details can be found in chapters 3 and 4.

2 Dependent variable: Objective health status

While chapter 4 offered a subjective measure of life satisfaction (self-reported life satisfaction), this dependent variable was selected to be a more objective

measure. This measure is a composite that includes both count of the number of reported health conditions in 2010 and the number of instrumental activities of daily living with which one needs assistance. The percentage reporting each of the nine possible conditions is listed in Chapter 3.

Although life satisfaction includes a wide array of potential aspects of which health is only one, health status is arguably one area that is most objective. Those in poorer health generally report lower well-being and lower life satisfaction. I expanded my count of serious health conditions to a wide array of conditions, rather than to just those with the highest mortality (heart disease, cancer, and stroke). The rationale behind this decision is that I am interested in tapping into the construct of objective well-being and that “mild” conditions such as depression and arthritis, which may not be included in studies of likelihood of mortality, can be chronic and can negatively impact one’s life. These other health conditions also may be more likely to be triggered by an external or environmental stressor; for instance, previous longitudinal research has shown how ill health follows an exit from the labor force into retirement (Behncke 2012). If health conditions may be triggered by a personal life event, then characteristics of the surrounding area may also increase the likelihood that older Americans experience one of these health conditions. The focus of this chapter is to identify which community-level characteristics matter and how individual-level characteristics matter within different types of communities.

The nine possible conditions include arthritis, high blood pressure, heart condition, diabetes, psychiatric or emotional problems, cancer, lung disease, stroke, and Alzheimer's/dementia. HRS respondents were asked to report whether "a doctor [has] ever told you that you have" each condition, therefore these are based on self-reports and not on clinical records. A total of $n=439$ cases had missing data for at least one of the items in this list and are dropped from the analysis, assuming to be missing at random¹².

In addition to the number of diagnosed health problems HRS reported having, I have added to this count the number of instrumental activities of daily living with which each respondent reported needing assistance. The activities include grocery shopping, preparing meals, managing money, making telephone calls, using a calculator, using a microwave, and driving. The number of activities requiring assistance was summed with the number of health conditions to create the new objective health measure. Table 5.1 shows the distribution of the dependent variable. The weighted average number of health issues was 2.4 with a median of 2.

By combining these two measures into a single count, I have created a measure that assesses health in terms of diagnosed ailments and in terms of everyday challenges. Taken together, these constitute a measure that could assess someone's well-being using an objective standard. By comparing results from this measure to the results to the previous chapter, I am able to describe a more complete picture of how older adults are faring.

¹² An analysis (not shown) of missing cases by migration status and by county-level dimension does not show any significant differences, which does indicate that *numhlthcond* is missing at random.

Table 5.1. Percentage of HRS respondents by health status, 2010 weighted

	Health status count %
None	11.7
1	22.2
2	24.8
3	19.7
4	11.2
5	5.1
6	2.5
7	1.6
8	0.7
9	0.4
10 or more	0.1
<i>Number of respondents</i>	13,585

3 Model Construction

Because my dependent variable is a count variable, a Poisson distribution is more appropriate than strict linear methods. Poisson distribution is a maximum likelihood estimator, using the count of an incident divided by the number of times an incident could have occurred as an incident rate, or r . Statistical packages such as Stata report coefficients as the log of r as a linear function of any predictor variables (Hamilton 2012). Negative coefficients indicate that the number of health conditions decrease as x increases in value and positive coefficients indicate that number of health conditions increase as x increases, all else equal. For ease of interpretation, the coefficients for the subsequent models have been transformed to $e(\beta)$, or the exponentiated value of each coefficient, which may be read as an odds ratio (or, strictly speaking, and incidence rate ratio).

Below I show the results of six different models, demonstrating the utility of a multilevel approach where county of residence is modeled as a random effect. Because I hypothesize that place of residence may introduce an additional source of variability beyond the individual-level and county-level fixed effects controlled for in my models, the multilevel approach is warranted.

My models evolve in the following way: First I introduce the null model, including only county-level random effects to predict health well-being. Second, I show a full and reduced model of individual-level fixed effects to settle on the theoretically-relevant individual-level characteristics that also offer statistical contributions to the model. Third, I model the effect of only my community-level dimensions. Finally, I incorporate all of steps one to three into a final multilevel model to consider the role of community and individual factors together, while also accounting for variability at the county-level.

4 Procession of models: Null model (Model 0)

Evaluating a hypothesis using a multilevel model generally means considering each model's impact on variance. If additional predictors also offer a significant increase in the amount of variation explained in my dependent variable, *health well-being*, then the additional predictors are deemed useful.

Before introducing any explanatory variables, I present an intercept-only model (H0) in Table 5.3, often referred to as the null model or the unconditional means model (Singer 1998). This model shows the average number of serious health conditions per county. This allows us to see whether objective well-being (health

status) varies by U.S. county. The coefficient of 0.84 indicates that the average number of health conditions across all counties is $e^{(0.84)}$, or 2.3.

Table 5.3. Null model examining county-level differences in objective health

	Estimate	(Std. Error)	Incidence Rate Ratio
Intercept (Average number of Health conditions)	0.975***	(.010)	2.31
Random intercept (variance in number of health conditions between counties)	0.022	(.003)	
-2 Log likelihood	52794.25***		

***Note: LR Chisquare test indicates a statistically significant improvement ($p < 0.001$)

The likelihood-ratio test compares the random-intercept variance to zero. This null hypothesis is rejected ($\text{Chibar}^2 = 267.18$, $p < 0.001$), which indicates that there is a statistically significant difference between counties. The models that follow now examine how that between-county variance is affected once individual-level and county-level controls are added.

5 Introducing fixed effects: person-level characteristics (Model 1 and Model 2)

The next models (M1, M2) add to the null model (M0) by including all of the theoretically relevant person-level independent variables I outline in my methods chapter in a single Poisson regression model predicting objective health well-being. In these next models, I drop predictor variables, one at a time, by size of the calculated t-value (smallest to largest, for all of those with an associated probability that the coefficient equals zero that is greater than 0.05). Table 5.4 shows my full

and reduced model using only these person-level characteristics and also accounting for a random intercept for county of residence.

The full model (M1) contains the same predictors as for my other dependent variable (see Chapter 4). Using the backwards stepwise method described above, I dropped (in this order): race, frequency of socializing, and education. Note that two of the remaining coefficients in the reduced model are not statistically significant: metro to metro migrant, and nonmetro to metro migrant (both relative to those who did not migrate). However, these items will remain in the model so that the referent category (the category that is excluded from the model for comparison purposes when using a categorical variable) is unchanged. For this reason these few non-significant predictors remain in the reduced model.

As a result, what remains is a more parsimonious model, as the amount of variance in the dependent variable explained by the predictors listed (measured as an adjusted R^2) is basically unchanged after removing those predictors which have no significant impact in predicting the number of health issues one has.

Approximately 30% of the variance in number of health issues reported in the 50 and older population can be explained by the variables remaining in my model.

The incidence rates ratios show several significant findings. Women have a 51% increased odds in number of health issues relative to men. As we might expect, each additional year of age has an increased odds in a higher number of health issues (1.6% increased odds for each year of age). Other health issues are also relevant: Each additional point increase in BMI is associated with a 1.6% increased

odds in having an additional health issue and for each increase in value of self-reported health, there is an 24% decrease in odds of having an additional health issue.

Table 5.4. Full and reduced Poisson models for individual characteristics predicting objective health measure in 2010.

	Full Model (Model 1)		Reduced Model (Model 2)	
	Incidence Rate Ratio	P> t	Incidence Rate Ratio	P> t
Demographic Characteristics:				
Gender=Female	1.040	***	1.519	***
Age in years	1.015	***	1.016	***
Race=White	1.001		-	
Ethnicity=Hispanic	0.952	*	0.948	*
Education=College	0.970	*	-	
Employment status	0.797	***	0.797	***
Total net worth (stdzd.)	0.973	**	0.970	**
Migration type:				
Metro-metro	1.010		1.009	
Metro-nonmetro	1.146	*	1.142	*
Nonmetro-metro	1.066		1.065	
Nonmetro-nonmetro	1.223	*	1.226	*
Health Characteristics				
Self-reported health	0.760	***	0.759	***
BMI in 2010	1.016	***	1.016	***
Social ties Characteristics:				
Length of current marriage	0.999	*	0.999	*
Relatives live nearby	1.045	***	1.046	***
Good friends live nearby	0.975	*	0.971	*
Frequency of social visits	0.997		-	
Intercept (coefficient)	0.295 (.071)	***	0.281 (.068)	*
Random Effects:				
FIPS	0.0012 (.0007)		0.0011(.0007)	
<i>Number of cases</i>	<i>12,460</i>			

*p<0.05 ** p<0.10 ***p<0.001

Employment status matters as well: those not working for pay have a significantly increased odds (20% higher) in having an additional serious health problem (compared to employed people over age 50). When examining migration

status, it appears the only significant differences are between those who moved from a metro county to a nonmetro one and those who moved from a nonmetro county to a different nonmetro county (both comparisons relative to non-movers). Among these movers, there is an 14% and 23% increased odds (respectively) of there being an additional health issue.

The random effects portion in Table 5.4 is useful for understanding what Luke describes as “un-modeled variability” (p. 26). A non-zero variance here (0.0006) suggests that adding additional predictors may be warranted. Next I incorporate county-level predictors in order to evaluate their impact on the variance explained.

6 Introducing county-level dimensions (Model 3)

The reduced model in Table 5.4 shows the individual-level characteristics that can help predict the number of health issues for adults 50 and older. It is now useful to examine how different community characteristics may help to shape well-being outcomes for these older adults. Here I introduce a new model (M3) that includes five community-level covariates (my defined community dimensions explained in chapter 3) as well as incorporates between-county heterogeneity by using a random intercept for each county through multilevel modeling.

Although I hypothesized that each of these five derived dimensions would offer a contribution toward explaining the variance in number of health issues among those aged 50 and older within a geographic area, the model shows that only two of the dimensions are statistically significant: the demographic advantage

dimension ($p < 0.01$) and the presence of social institutions dimension ($p < 0.05$).

Without accounting for individual level covariates, it appears that for every one standardized unit increase in a county's demographic advantages, the number of health conditions is expected to decrease by a factor of 0.98 (UCLA: Statistical Consulting Group). Recall that demographic advantages include standardized measures of the percentage of the population that is white, non-Hispanic; that is not obese; that is not in poverty; and a measure of net migration. In addition, for every one standardized unit increase in a county's institutional dimension, there is an associated decrease in the number of health conditions by 1.2%. I operationalize this institutional dimension as a measure of health care facilities, arts accessibility, and religious institutions.

Table 5.5. Incidence rate ratios for county characteristics as fixed effects and county as random effect predicting health status in 2010 (M3)

<i>Dimension:</i>	Incidence Rate Ratio	P> t
Institutional	0.988	*
Demographic	0.980	***
Environmental	0.998	
Economic	1.003	
Social norms	0.976	
Intercept (Coefficient (std err))	1.026 (.022)	***
Random intercept: FIPS	0.017 (.004)	
Number of cases	13,169	

LR Test vs. Poisson Model: 54.21***

7 Model 4: Modeling community dimensions and individual characteristics together in a multilevel approach

The tables above have shown the effects of individual characteristics (M2) and of county-level characteristics (M3). Table 5.6 expands upon these results by including all of these relevant predictors together into a single multilevel model (M4). Note that I have retained all statistically and/or theoretically relevant control variables from the earlier tables.

The final model (M4) incorporating all statistically significant individual-level characteristics from M2 and all community level dimensions from M3 confirms several earlier findings. All of the demographic, employment, and health characteristics of individuals continue to have a statistically significant impact on predicting the number of serious health problems a person has. Women (relative to men), older adults (relative to younger adults over age 50), non-Hispanics (relative to Hispanics), those not working for pay, those with less wealth, those with lower self-rated health, those with higher BMI, those with shorter marriages, who have family near, and those who do not have friends near, all have increased odds of having worse health (measured as more number of health conditions and/or requiring assistance with additional IADLs). The social ties characteristics (having family nearby) are likely an effect of poor health, rather than a cause of this dependent variable. Similarly, the effect of migration status – which earlier showed a significant effect only among those who had moved to nonmetro counties – remains, but is also likely an outcome rather than a cause of poorer health. I discuss this further in the final chapter.

Looking at the community dimension variables, the impact of living in a community with demographic advantages or with more social institutions (from M3) is lost once I control for individual-level characteristics. It appears as though demographic advantages of individuals outweigh those of their communities.

Table 5.6. Final multilevel model (M4) predicting number of health issues in 2010, including individual, county variables as fixed effects and county as random effect.

	Model 4	
	Incidence Rate Ratio	P> t
<i>Demographic Characteristics:</i>		
Gender=Female	1.040	***
Age in years	1.016	***
Ethnicity=Hispanic	0.949	*
Employed	0.797	***
Total net worth (standardized)	0.971	**
<i>Migration type (referent for all: did not migrate)</i>		
Metro-metro	1.011	
Metro-nonmetro	1.132	*
Nonmetro-metro	1.063	
Nonmetro-nonmetro	1.214	*
<i>Health Characteristics</i>		
Self-reported health	0.759	***
BMI in 2010	1.016	***
<i>Social ties Characteristics:</i>		
Length of current marriage	0.999	*
Relatives live nearby	1.044	***
Good friends live nearby	0.966	**
<i>Community dimensions:</i>		
Institutional	0.996	
Demographics	0.997	
Environmental	0.997	
Economic	0.994	
Norms	0.988	
Intercept (coefficient)	0.316 (.071)	
Random Intercept: FIPS (coefficient)	0.001 (.0006)	
Number of cases	12,347	
-2LL	42853.84	

LR Test vs. Poisson Model: 3.59*

8 Analysis diagnostics

To examine correlation between the independent variables, I examined a pairwise correlation matrix that calculated correlation coefficients between each pair of independent variables. These coefficients are generally extremely small (<0.15 , and typically much smaller). In a few instances, the coefficients reach values greater than 0.15, in instances we might expect. For instance, the correlation coefficient for gender and homemaker status is 0.233; for age and retirement status it is 0.4667; for age and BMI it is -0.2271; for age and number of IADLs it is 0.2813; for disabled and self-reported health status it is -0.3006; for disabled and number of IADLs it is 0.3002; and for self-reported health and number of IADLs it is -0.3568. In these instances, the correlation is small to moderate between my predictor variables. However, each of these variables still offers a unique contribution toward the final model so the slight correlation between them is acknowledged as I consider the implications of the coefficients in understanding what they say about the objective well-being of older Americans.

9 Weighting issues

Within this analysis of chapters 4 and 5, it is worth mentioning the role of and effect of weights. There are two types of weights to consider applying for any analysis of the Health and Retirement Study: one is the probability weight which adjusts for unequal probabilities of selection (in 2010, the weight name is MWGTR and the Stata command option to make this weight adjustment is PWEIGHT=MWGTR). This one is essential to any inferential data analysis that

seeks to make inferences about the target population of those aged 50 and over in the U.S. Applying probability weights will impact any statistics calculated, although in most cases they have only a small impact on these estimates.

The second type of weight makes adjustments for complex sample design. These include identifying the strata and primary sampling units (PSUs) used for sampling. Because the complex sampling design may impact estimates that assume simple random sampling, these adjustments account for intra-cluster homogeneity and inter-strata heterogeneity. Making adjustments for complex sample design will not impact point estimates such as the coefficients in my models. However, these survey weights will impact the standard error. Table 5.7 displays the simple reduced fixed effects model under three scenarios: unweighted; with probability weights applied, assuming a simple random sample; and with making adjustments for the unequal probabilities of selection *and* complex sample design. The effect of the complex sample design on the weights is also displayed as the design effect (DEFF).

Table 5.7 confirms that applying probability weights does impact the coefficients slightly. The difference between a probability weighted sample and a survey weighted sample does not impact the coefficients at all, though it does have an impact on the standard errors of these coefficients, as we would expect based on sampling theory (Kish 1965). However, the impact of the survey design on these standard errors is very slight – we only see differences if we examine the standard errors to four or five decimal places.

When analyzing survey data resulting from a multi-stage design such as the Health and Retirement Study, examination of design effects will show the impact of the complex design on the standard error of each survey estimate. The design effect is a measure of the squared ratio of the complex sample standard error to the standard error obtained assuming a simple random sample survey design.

As observed in Table 5.7, all but one of the coefficient's design effects are greater than 1, indicating that the effect from clustering (which tends to increase $deff$) was greater than the effect from stratification (which tends to increase $deff$) (Kish 1965). The exception here is among those who migrated from nonmetro county to a different nonmetro county; here, it seems those who made a move like this and who were in the same cluster were different enough from one another (at least with respect to number of serious health conditions) compared to people who did not migrate from one nonmetro county to another. Design effects become large when there is a great deal of homogeneity within each cluster and heterogeneity among clusters. All of these design effects are quite small, suggesting a minimal impact from clustering of like individuals and indicating that the linearized standard error calculated under the complex variance estimation is only slightly larger than the robust standard error calculated under a probability-weighted simple random sample variance estimation. Therefore, I proceed with analysis of this dataset making adjustments of standard errors by applying the "SVY:" prefix to all commands. This procedure makes the Taylor-linearized adjustments to variance necessary when analyzing data where clustering occurred during sampling.

Table 5.7. A comparison of coefficient and standard error values across different weighting scenarios

	Unweighted		Survey design weighted	Probability Weighted		Effect of survey weighting	
	Coeff.	Std. Error	Linearized Std. Error	Wtd. Coeff.	Robust Std. Error	Pr < t	Design Effect
<i>Demographic:</i>							
Gender	0.04	0.0128	0.0100	0.04	0.0131	**	0.786
Age	0.01	0.0007	0.0006	0.01	0.0008	***	0.769
Race	0.04	0.0160	0.0109	0.04	0.0169	*	0.681
Hispanic	-0.12	0.0209	0.0212	-0.12	0.0236	***	1.015
Education	-0.03	0.0161	0.0122	-0.04	0.0164	*	0.757
Total net worth	-0.02	0.0073	0.0066	-0.02	0.0080	*	0.901
<i>Migration:</i>							
Metro-metro	0.00	0.0296	0.0255	0.03	0.0312		0.863
Metro-nonmetro	0.11	0.0615	0.0533	0.13	0.0520	*	0.866
Nonmetro-metro	0.03	0.0564	0.0434	0.07	0.0461		0.770
Nonmetro-nonmetro	0.16	0.0762	0.0721	0.15	0.0876		0.946
<i>Employment:</i>							
Disabled	0.31	0.0238	0.0213	0.30	0.0243	***	0.897
Homemaker	0.13	0.0269	0.0220	0.14	0.0279	***	0.817
Unemployed	0.06	0.0377	0.0291	0.04	0.0402		0.774
Retired	0.19	0.0180	0.0134	0.20	0.0185	***	0.747
<i>Health:</i>							
Self-reported health	-0.20	0.0062	0.0050	-0.22	0.0064	***	0.811
BMI in 2010	0.02	0.0009	0.0008	0.02	0.0010	***	0.811
<i>Social ties:</i>							
Length of current marriage	0.00	0.0003	0.0002	0.00	0.0003		0.719
Relatives live nearby	0.02	0.0131	0.0113	0.01	0.0131	*	0.863
Good friends live nearby	0.01	0.0139	0.0113	0.00	0.0142		0.811
Frequency of social visits	0.00	0.0036	0.0023	0.00	0.0036		0.652

CHAPTER 6

FINDINGS AND CONCLUSION

1 Overview

The preceding chapters summarized previous research related to aging and well-being and the role of place; outlined the methodology I used for examining how these issues are related within the context of developing a more complete understanding of inequality in the retirement-age years; and described the findings of multi-level models examining two dependent variables – one subjective and one objective – that describe well-being. This present chapter discusses my findings within the context of the existing literature on these topics. I start by summarizing the effect of individual-level characteristics and then turn to the role community plays.

2 Subjective well-being: self-reports of life satisfaction

As described in Chapter 2, there is a breadth of research on well-being utilizing a wide range of measurement options. The subjective measure I selected for analysis here relied on a five-point scale for assessing overall life satisfaction. In my final model examining the predictive power of both individual-level and county-level characteristics, I observed several important findings. For instance, with an increase in age comes increased odds of a higher level of reported life satisfaction.

This controls for retirement status and health measures, so it seems as though one of two things is happening: Either older adults seek out more satisfying opportunities such as travel, hobbies, and religion; or adults adjust their expectations as they age so that they are more likely to be satisfied if they see themselves as well-off relative to their same-age peers. This is consistent with earlier research examining age and well-being.

Contrary to earlier research on race and life satisfaction, my findings show that whites have a decreased odds of reporting a higher life satisfaction relative to non-whites. In addition, those with a college education are less likely to report higher life satisfaction relative to the less educated. Because my model controls for wealth (which has a modest positive impact on life satisfaction but it often strongly tied to both race and education), this may be a matter of white college-educated adults having a harder time adjusting to a time in their lives when their identity as workers become less central to their daily lives. Racial minorities and those with lower levels of education may be less likely to have jobs that they will miss.

This finding may also be attributable to differences in expectations across different racial groups and social classes. Given the historic inequality in wealth accumulation between the white and non-white populations, perhaps being middle class and black means being satisfied with having a retirement plan whereas being middle class and white means aspiring for higher levels of wealth, second home ownership, and travel. Regardless of the reason behind this finding, the fact that the direction of the observed relationship is contrary to previous research on this

topic, this is evidence for studying older Americans separately from the general population in order to uncover such phenomena. Future research should consider whether volunteering or job classification prior to retirement help to mediate the effect I observe.

Employment status appears to have a strong impact on life satisfaction. People who are working for pay have a decreased odds in having a higher life satisfaction. It's not just being out of the workforce that matters though, but being *voluntarily* out of the workforce that matters. Unemployed people aged 50 and older have a 35% decreased odds in a higher life satisfaction relative to those who are working. Being employed has a more positive impact on well-being than being unemployed, but being retired (or a homemaker) is the best. This follows what I would expect based on previous research on this topic.

Self-reported health would intuitively seem to have a strong impact on predicting life satisfaction and my findings support this. Earlier research indicates that these constructs are distinct from one another, so it is important to consider how they are related. It also helps to include self-reported health in this model as a control to understand the effect of age on well-being. In addition, I examined one objective measures of health: body mass index (BMI). So long as it doesn't impact health, higher BMI improves life satisfaction. This may be due to a trend of higher rates of obesity in the U.S.; that is, being overweight is not unusual or stigmatized. It is also likely the case that having a higher BMI may be protective in older age.

Carrying additional weight (relative to height) can be an asset to older people when they do face serious health challenges that may cause them to quickly drop weight.

Being socially connected appears to have a significant impact on explaining life satisfaction as well. Longer marriages and increased frequency of social visits is associated with higher levels of life satisfaction. Having good friends living nearby also increases odds of higher life satisfaction - one of the strongest predictors in my models. This suggests that having close relationships (both geographically and emotionally) with other adults has a strong bearing on how satisfied the 50 and older crowd is. Notably, having family nearby is not indicative of higher life satisfaction. This is likely due to people living near family out of health necessity rather than out of desire or pleasure. The potential positive effect on life satisfaction is masked due to this reason.

3 Objective well-being: counts of health issues

Several demographic factors have a statistically significant impact on predicting number of health issues: Being female (relative to male), being older (relative to younger), being non-Hispanic (relative to Hispanic), and having less net wealth are all associated with an increased odds in more serious health problems. Age has perhaps the simple biological explanation here: with age comes a higher susceptibility to illness and more time to collect these possible diagnoses. These other demographic categories likely have a relationship to social inequalities related to health care access.

Employment status was related to this objective measure of well-being, but in a slightly different manner than it was to self-rated life satisfaction. In the context of number of health issues, the direction of the relationship is not clear. Workers are less likely to have worse health than those not working. It is possible that having serious health issues leads people out of the work force rather than the direction my model specifies the relationship. That said, previous research has been able to measure the effect of leaving the workforce and has found that the transition has a negative impact on health and well-being (Behncke 2012). Similarly, higher self-rated health and lower BMI are associated with fewer serious health problems. Again, it is not known what the direction of these relationships is but it is important to retain them in the model since they are useful controls for understanding the impact of other factors as they may influence number of health conditions. For this reason, I acknowledge these relationships but do not dwell on them due to the ambiguity of their causal directions.

4 The role of community in shaping well-being

Aside from these individual-level characteristics – which are important in understanding well-being – I turn now to a discussion of county characteristics. I was primarily interested in understanding how the qualities and characteristics of the county in which older people reside influence well-being. A starting point in understanding the impact of county characteristics was examining how variables measured at the county level might predict an individual's well-being. This is useful for understanding how place characteristics might relate to retiree well-being in the

absence of information about the individuals themselves. These early models show consistency across my two dependent variables: both my demographics of advantage dimension and my institutional dimension have significant predictive power of self-reported life satisfaction *and* number of serious health conditions. However, once I introduce individual-level controls, the community-level context only holds up for the self-reported life satisfaction measure. This is somewhat reassuring in the sense that there are not worse health outcomes associated with certain types of places; it does suggest that people over age 50 are happier in certain types of places though. In order to understand this a bit more, I describe the findings from my final model predicting self-reported life satisfaction.

After accounting for demographic, health, and social connected characteristics of the individual, most of my community dimensions are not relevant to understanding subjective well-being. Interestingly, the impact was in the opposite direction than I had originally hypothesized. An increase in my institutional dimension (operationalized as a standardized measure of the per capital number of churches, arts and recreational opportunities, and health care providers) resulted in lower levels of self-reported life satisfaction (a 5% decreased odds in a higher level of life satisfaction for every one standardized unit increase in this dimension). Why might higher levels of institutional support result in lower levels of subjective well-being? It might be that these particular community dimensions are not well-suited to understanding how individuals assess their own life satisfaction. That is, I would expect having more social institutions might have

a positive impact on some aspect of a person's life, but not one that is observable and not controlled for by also accounting for health status (for instance). The fact that there is a statistically significant (albeit small) *negative* impact is still puzzling. In future research, investigators should consider alternative measures of institutional supports to attempt to identify the institutions that matter most to older U.S. residents.

While investigative models that considered only county-level characteristics did seem to suggest that county-level dimensions had strong predictive power over well-being, once I controlled for person-level characteristics, some of these effects were no longer statistically significant. This suggests that certain types of communities do have 50 and older residents with higher life satisfaction, but that if we are interested in understanding all of the components that matter, that individual characteristics should also be taken into account.

5 The (non) role of migration

The final component of these models that I hypothesized would be useful to examine was the role of migration in understanding well-being. I expected that there would be a difference between those who migrated and those who did not, since those relocating were presumably in search of something to improve their well-being (either objective well-being through migration to better health care or subjective through migration to natural amenities or family). However, my models found only significant differences for those migrating to nonmetropolitan counties when examining objective health well-being. I suspect this is likely due to two

factors: First, as the life course perspective of understanding migration helps us to understand (Litwak and Longino 1987; Longino, Perzynski et al. 2002), my category of migrants will have included both amenity-seeking migrants and assistance-seeking migrants (Johnson 2012). The former category may have a higher self-rated life satisfaction than the latter, but by aggregating them together in a cross-sectional analysis, I am unable to disentangle any benefit of migration. I am able only to identify that those who migrate to rural areas are less likely to have higher self-reported life satisfaction. My data are unable to reveal whether these are likely to be amenity-seeking or assistance-seeking migrants. Being able to distinguish between these would be particularly useful in this case, as both types of migrants tend to end up in nonmetropolitan communities.

If I consider these findings not just from a life-course perspective, but also a push-pull perspective of understanding migration (Walters 2002; Moss 2006), these results hint at another story. Specifically, they suggest that people who migrate to rural places do so for a “pull” that may not result in a higher level of life satisfaction. Whether this reason is health-related (in line with the life-course perspective), or to be closer to family and/or natural amenities (pulls) or away from a faster pace of life or crime (pushes), the result on the balance is a lower overall rating of life satisfaction.

These findings within the context of other neighborhood-effects research encourage us to consider how results vary by subgroups. Sampson (2008) characterizes the results of the moving-to-opportunity (MTO) studies (which

permitted an experimental design of neighborhood effects that avoided the problem of self-selection) as mixed, rather than largely non-existent as previous research may have characterized it (Clampet-Lundquist and Massey 2008). Observed results in these earlier studies were slight, as mine are. Future analysis should disaggregate young retirees from the oldest old in order to assess what community-level factors do matter and to which people. Just as the low-income families in the MTO were heterogeneous, so too are older Americans.

6 Reconciling the findings from the objective measure with findings from the subjective measure

In chapter 1 I argue that understanding well-being is an important component to obtaining a full picture of inequality among retirement-age Americans. In chapter 2 I summarize the literature on the topic of well-being and in chapter 3, I settle on two ways of operationalizing this concept. The subsequent chapters find results that are largely consistent across the two measures, but that do diverge from one another in a few respects (see Table 6.1). Why is there a difference in these measures?

Aside from the one difference that has a purely biological explanation (self-rated life satisfaction is higher for older people but number of serious health conditions is also higher for older people), most of these differences are up for discussion. For instance, college educated people are likely to have fewer health challenges, but have lower self-rated life satisfaction. Perhaps people with more education are more knowledgeable about health care options, something that is

important with the advancement of age and may serve to prevent against certain health conditions. They may be less likely to be satisfied with their lives if they are comparing themselves to other highly educated people.

Table 6.1. The highest rates of well-being are among the following groups. (summarized findings from final regression models.)

	<i>Demographic Factors</i>	<i>Health Factors</i>	<i>Social Connectedness Factors</i>	<i>Community Dimensions</i>
<i>With respect to self-reported life satisfaction (subjective measure)</i>	<i>Older people Non-whites Non college-educated Wealthier Those not working</i>	<i>Those with higher self-rated health Those with higher BMI</i>	<i>Those married longer Those who have good friends nearby Those who socialize more frequently</i>	<i>Those living in communities with fewer social institutions Those living in counties with lower levels of demographic advantage</i>
<i>With respect to number of health issues (objective measure)</i>	<i>Men Younger people Hispanics College educated Wealthier Those working</i>	<i>Those with higher self-rated health Those with lower BMI</i>	<i>Those married longer Those with friends nearby Those with relatives who do not live nearby</i>	-

With respect to work status, here the direction of the relationship between employment and well-being is not clear. While it follows that a voluntary exit from the labor force is likely a factor that contributes to higher self-reported life satisfaction (as the first row in Table 6.1 shows), the fact that those out of the labor force have more serious health problems (even after controlling for age and other factors) suggests that there may be an issue with temporal ordering. That is, it is

possible that a health issue contributed to a person's decision to retire. In this comparison, these measures of subjective and objective well-being do not match. Beyond this item though, both measures correlate closely with respect to the impact of social connections, health, and other demographic characteristics.

7 Other Considerations

One issue worth mentioning in a summary of these findings is the role of the economic climate in shaping retirement-age Americans' well-being. This analysis was of data collected in 2010, taking into account migration events occurring since 2006. This period of time also encompasses what economists have referred to as the "Great Recession" of the mid-2000s. Recent research on the role of the Great Recession suggests that this economic climate may have three specific impacts on retirement-age Americans. First, it may influence whether people *put off* retirement; secondly (and alternately), the economic climate may encourage employers to force older workers into *early* retirement; and thirdly it may be slowing migration due to homeowners inability to sell the house in their community of origin. These are all factors which may impact someone's willingness to migrate and may impact where someone migrates. Earlier research comparing 2008 and 2010 HRS data to pre-recession years has demonstrated a decrease in household spending, a decrease in housing value among those who own homes, and an increase of older workers who plan to continue working (Hurd and Rohwedder 2006; Hurd and Rohwedder 2006). Community-level characteristics that incorporate

changes in housing value in this time period will be useful, but overall the conclusions drawn from analysis of 2010 data may not be appropriate to generalize to future (or past) retirees.

8 Synthesis

This research project examined the role of place in shaping well-being of people over age 50. I examined two dependent variables to measure well-being: subjective well-being (operationalized as self-reported life satisfaction) and objective well-being (operationalized as number of serious health conditions). I included county-level dimensions and individual-level characteristics while including a random intercept for county of residence in order to measure the impact of place variables relative to variables describing characteristics of individuals over age 50.

I found that two of my five county-level measures were useful predictors of well-being if I examine these alone, without any additional controls. However, once I introduced individual-level demographic, health, and social connectedness measures into my models, I found that the two county-level measures that were useful at understanding well-being now only matter with respect to self-reported life satisfaction. This suggests that certain community variables may influence well-being – namely that social institutions may need to be tailored to support the needs of older residents and that counties we think of as privileged counties (with respect to the racial and socioeconomic makeup of its residents) may need to do more to serve older residents. In sum though, these county characteristics have a very

minimal impact in predicting the well-being of older residents. These associated coefficients were statistically significant but very small. The predictors that seemed to matter more were those of the individuals over age 50 themselves: demographics, employment status, health, and social connectedness all mattered in understanding which individuals were doing well. And in the end, whether someone had moved to a new county in the last four years didn't seem to matter at all with respect to well-being. Where people live does appear to slightly influence well-being; but the real key to understanding this concept is the characteristics of the people themselves.

These findings are useful for considering how unequal outcomes over the life course manifest in later life. Sociological research has largely focused on understanding economic inequality, but this study examines differences in well-being. Although income and wealth inequality are essential components to being able to understand how people are faring, I argue that other measures offer utility, particularly with respect to older people. How do people rate their lives? How happy are people with "life-as-a-whole" (as the Health and Retirement Study measures)? By examining subjective measures such as these and comparing them to objective measures – whether it is a health measure as I have used or some traditional economic measure – analysts can offer a more comprehensive picture of differences across groups. As more attention is paid to the growing population of older adult in the U.S. in the coming years, researchers should consider issues that are important to them. This may include satisfaction with health and health care, having access to

community support systems, and other non-economic (or indirectly economic) measures of well-being.

9 Future Research

These findings invite a few thoughts on ways to better understand the relationship between place, migration, and well-being during the retirement (and pre-retirement) years. First, while I would argue that the two measures of well-being I utilized were good selections, I think this analysis would also benefit by measuring a change in well-being longitudinally. Overall well-being matters a good deal, but in order to capture the effect of community characteristics – particularly as they relate to migration activity – a change in time measure could reveal more information about this interaction. If there is an improvement in well-being associated with either migration or a certain community characteristic, then this is information that could be beneficial to understanding the impact of communities on older Americans. Such analysis would be useful to contextualize previous research on health status (Johnson 2012) in understanding how a first move after retirement impacts subjective well-being (presumably positively), whether a second move to be closer to family has a negative impact on well-being, and if a final move into an institutional setting has a negative impact net of all other influences on one's self-reported life satisfaction.

Second, community-level measures of inequality could be useful for understanding the ways in which place of residence contributes to higher or lower levels of well-being. The county-level measures I used here noted aggregate

measures. Perhaps including a measure of economic (and other forms of) inequality at the county-level could reveal more about well-being. In cross-country comparisons, nations with lower levels of economic inequality have healthier residents (Wilkinson and Pickett 2010). Perhaps the same pattern holds within narrower geographic (and political) delineations.

Third, the findings on the impact of institutional supports should be investigated further. Perhaps having more sources of institutional support do not have significant predictive power over individual well-being, but studying individual components of institutional resources is warranted. My comprehensive measure follows that recommended by Blank (2004), but an examination of the *individual* effects of churches, the arts, and other organizations may be the best way to study the effect of institutions for this age group.

Finally, this area of research would benefit by a qualitative component to contextualize these findings. My explanation for why the significant county-level dimensions appeared in the direction they did would be best investigated by talking to members of this target population who live in communities at the high and low extremes of demographic advantage and social institution strengths. Data from a qualitative component could also provide information to refine the models, perhaps incorporating additional independent variables that were not identified during my review of the literature. Brown and Glasgow's (2008) statistical analyses of retirees benefits greatly from their accompanying qualitative work; however, their research focuses exclusively on retirement destination counties. This narrow focus is useful

for understanding how upper- and middle-class retirees fare, but may not be representative of the experiences of those who must “age in place” due to family, health, or financial reasons.

10 Conclusion and Public Policy Recommendations

These potential analyses proposed above, along with the results presented in this dissertation, should be particularly relevant to policy makers and town planners over the next two decades, as the proportion of retirement-age residents is expected to climb to 1 in 5. Because this is an average, we can expect some geographic pockets to have an even higher concentration of older residents. Local administrators should take note of how their older population compares to the general U.S. population by observing the extent to which pre-retirement residents may be aging in place, how much growth in retirees is expected through in-migration, and the extent to which the local population may age due to out-migration of younger residents.

Along with these demographic trends, results from this research project could help policy planners to identify manners in which they can offer support to older residents. Because cultural preferences and opportunities and social norms may vary by region, it may be worth considering the extent to which an individual community’s offerings may fit within the defined parameters used in this study and whether these offerings hold any benefit to older residents in particular.

In conclusion, I also expect that my focus on subjective outcomes could be useful as a way for communities to assess the well-being of their residents. While

local governments may tout the number of people reached by public services, a more useful tool may be the extent to which such services are received (that is positively or negatively) by the intended beneficiaries. As the mixed findings on my institutional support dimension show, more services does not necessarily translate to more satisfied residents.

Just as I suggest that older Americans are a diverse group, it follows that communities are diverse as well. A community-specific plan would do best to use this research as a model to identify the resident-specific and area-specific factors that best predict what makes for happier and healthier residents as they exit the labor force but remain engaged participants in their communities.

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IRB #: 5504

Study: Population Trends After Retirement: Place Effects and Inequality Among Seniors

Review Level: Expedited

Approval Expiration Date: 04-Jul-2016

The Institutional Review Board for the Protection of Human Subjects in Research (IRB) has reviewed and approved your request for time extension for this study. Approval for this study expires on the date indicated above. At the end of the approval period you will be asked to submit a report with regard to the involvement of human subjects. If your study is still active, you may apply for extension of IRB approval through this office.

Researchers who conduct studies involving human subjects have responsibilities as outlined in the document, *Responsibilities of Directors of Research Studies Involving Human Subjects*. This document is available at <http://unh.edu/research/irb-application-resources> or from me.

If you have questions or concerns about your study or this approval, please feel free to contact me at 603-862-2003 or Julie.simpson@unh.edu. Please refer to the IRB # above in all correspondence related to this study. The IRB wishes you success with your research.

For the IRB,



Julie F. Simpson
Director



cc: File
Safford, Thomas