IMPROVING TENANTS' LIVES THROUGH AFFORDABLE RENTAL HOUSING:
QUALITY-OF-LIFE IMPACTS OF FIVE CAPITALS
BY DEVELOPER AND LOCATION

by:

Richard Koenig

A DISSERTATION SUBMITTED TO
THE SCHOOL OF COMMUNITY ECONOMIC DEVELOPMENT
OF SOUTHERN NEW HAMPSHIRE UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY IN COMMUNITY ECONOMIC DEVELOPMENT

I certify that I have read this dissertation and that, in my opinion, it is fully adequate in scope and quality as a dissertation for the degree of Doctor of Philosophy.

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DEDICATION

Dedicated to those who struggle to make a better life.

ACKNOWLEDGEMENTS

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ABSTRACT

IMPROVING TENANTS' LIVES THROUGH AFFORDABLE RENTAL HOUSING: QUALITY-OF-LIFE IMPACTS OF FIVE CAPITALS BY DEVELOPER AND LOCATION

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Affordable housing is asked to address a broad spectrum of *physical* and *social* needs and to achieve goals ranging from shelter to family improvement. The U.S. spends millions of dollars annually developing, financing, and operating affordable rental housing for low income households. However, there is no policy for what government-subsidized housing should accomplish for residents and little understanding of potential tenant outcomes. The lack of a comprehensive theory of affordable housing means that policies are made, funds spent, and units developed without goals anchored on sound theory. What then should be expected as the return on affordable housing investments, particularly given the discontinuity between its basic physical goal (decent shelter) and expanded social expectations (self-sufficiency)? Should only direct *standard-of-living impacts* (safety net outcomes like better and cheaper housing) be expected or should a deeper set of *quality-of-life* outcomes be expected?

The study explores whether quality-of-life improves for tenants who move to affordable rental housing. It offers a framework for measuring quality-of-life changes based on five capitals: financial, physical, social, human, and personal. The study is grounded in theories of affordable housing: place-based, personal life, and professionals' experiences. To answer the research questions, a survey was conducted with tenants at four affordable developments in the Chicago suburbs, all privately-owned rental housing financed through the Low Income Housing Tax Credit and HOME programs. Two nonprofit and two for-profit developments were selected based on area desirability. A quality-of-life index was created comprised of the five capital indices which included subjective and objective questions.

The study found that quality-of-life improved for tenants overall compared to their previous housing. However, not all comparison groups or capitals improved equally or as predicted. Physical, Social and Personal Capital increased while Human Capital had no change and Financial Capital actually decreased. The five capital indices were very effective at providing insight into why differences existed within and between groups.

I. Introduction

Affordable housing is a fundamental community economic development strategy which is asked to address a broad spectrum of *physical* and *social* needs and to achieve goals ranging from shelter to family economics to neighborhood revitalization. It is variously described as providing a decent home for lower income households, improving residents' economic condition and quality-of-life, alleviating poverty, revitalizing deteriorated communities, and improving the quality of neighborhood and community life. Government funding is made available for 'bricks and sticks' but there is an expectation that decent housing will also improve *wealth and health*. Originally designed as a construction program to provide shelter and stimulate the economy, affordable housing is now part of America's social safety net.

The original goals of affordable housing were more limited. Over the past eighty years, various public housing and affordable housing programs were created to address physical needs such as housing shortages, clearing "slums," spurring the construction industry, and creating economic stimulus through home building. Without discounting the harm done to citizens and communities through these programs in the name of redevelopment, affordable housing programs have typically been about creating units. The first national housing goal was stated in the Housing Act of 1949 which called for "a decent home and a suitable living environment for every American family" (United States Housing Act of 1949, Public Law 81-171, 1949, p. 1). But the Act, and its subsequent affirmations, did not say what that home should accomplish for those families. There has been an

assumption by policy makers (and advocates) that housing was enough; that somehow better shelter would lead to better lives.

There is little question that creating affordable housing takes tremendous investments in time, effort, and public funding: the U.S. spends millions of dollars each year developing, financing, and operating affordable rental housing for low income households, and developers take years putting together each deal. But what should we expect as the returns to our affordable housing investments? Particularly given the discontinuity between its basic physical goal (decent shelter) and a more expanded set of social expectations (personal and community improvement), what outcomes should be expected? Is the goal to provide shelter for lower-income households and revitalize run-down buildings and neglected communities, or is it also to help people out of poverty (e.g., improve the economic condition of resident families), enhance household quality-of-life, and improve the quality of neighborhood and community life? That is, should we only expect direct *standard-of-living impacts* (safety net outcomes like better and cheaper housing), or should we also expect a deeper set of direct and indirect *quality-of-life* outcomes that may range from poverty alleviation to community restoration to empowerment to social capital and civil society? If we should expect a deeper set of quality-of-life outcomes, a second set of discontinuity questions arises: are our affordable housing program investments necessary and sufficient to result in these expanded set of quality-of-life outcomes? Or are we adding deeper quality-of-life expectations and goals to programs that are only equipped to target a narrower set of standard-of-living impacts? To begin answering these policy questions, an understanding of potential outcomes is

needed. This research will offer an outline of quality-of-life measures and seek to understand factors that influence how quality-of-life changes.

As federal dollars tighten, safety net and social welfare programs (including affordable housing) are being critically examined and expected to do more with less. Various federal welfare programs have already begun to limit benefits and require movement towards self-sufficiency and measurable results. In this climate of decreasing funding and increasing expectations, "just" providing housing does not seem to be enough. Now, the "…core question is whether the traditional goal of decent, affordable housing should continue to be viewed as an end in itself, or also —or instead—as a means to economic independence" (Newman & Harkness, 2006, p. 1). That is, is it enough to provide shelter or *must affordable housing do more*? Should tenants' lives be expected to *measurably improve*? The pressure to do more with less, and expect measurable results, may drive program goals beyond safety-net standard-of-living impacts like shelter or building improvement. But fewer resources and policy ambiguity may not provide the program investments necessary and sufficient to yield measurable results in a deeper set of direct and indirect quality-of-life goals. Instead, it may result in a second tier of discontinuity, and in the erosion or drift of program goals. Adding a deeper set of direct and indirect quality-of-life and community restoration goals to programs designed to target narrower impacts would be aided by enhanced goal clarity and greater understanding of potential outcomes.

Affordable housing goals are unclear partially due to the absence of a comprehensive theory of affordable housing. There is not even agreement as to its ultimate goals, which is essential for theory building: for example, whether housing is a *right* (Bratt, Stone, and Hartman, 2006). In fact, there is no universal definition of "affordable housing," which includes a broad spectrum of housing types (from emergency shelter to rental housing to homeownership) and serves a wide spectrum of people (including seniors, families and persons with disabilities). Researchers and practitioners certainly have working hypotheses based on studies and experience, but these are incomplete for explaining why affordable housing should encourage quality-of-life changes, let alone what set of characteristics most effectively correlate to tenant quality-of-life successes. Some partial theories are borrowed from other disciplines or are adapted from related areas, such as theories of (urban) poverty or welfare dependence. These theories are often based on macro/structural versus individual/agency arguments; effectively, does the system dictate who people become or are individuals solely responsible for their destiny (for a discussion of competing theories see Layder [1994] or Giddens [1995]). Other ideas come out of practice from professionals who have first-hand knowledge working in the field, but lack empirical studies to substantiate their results. These pieces are brought together in this research to advance a more comprehensive housing theory.

As an alternative to the agency/structure impasse and other competing ideas, partial theories applicable to affordable housing can be divided into three broad categories: place, personal and professional. Because a house is tied to ground where it is built, much housing research is *place-based*. There is extensive research that shows "location

matters-for economic returns, quality-of-life, and many other reasons" (Briggs, 2005, p. 17). Geography is broadly significant for urban poverty theories such as the Culture of Poverty (Lewis, 1966; Wilson, 1987) and residential segregation and discrimination (Massey & Denton, 1993), and narrowly important for neighborhood theories based on networks and attachment (Figuera-McDonough, 2001) and neighborhood effects (Curley, 2005) such as social capital (Coleman, 1988). But many studies of public housing residents are inconclusive about why geography matters, finding instead that a tenant's motivation and history of work experience are more important in determining outcomes (Anthony, 2005; Joseph, et al., 2007; Kleit & Rohe, 2005).

It follows that housing theory needs to account for tenants' *personal* life experiences, history, culture, life-cycle, and motivation. Tenants move to affordable housing for a nicer apartment or for lower rent, but some move even when the new neighborhood is worse than the old (Buron, Nolden, Heintzi & Stewart, 2000). Many low income tenants do not think about their future in terms of housing needs: few families see affordable housing as the opportunity to improve their family's economic condition. While some households are grateful to have an affordable home because it is nicer or cheaper, there is no evidence that they look at it as a stepping stone to a better life, as opposed to homebuyers who see ownership as an investment in the future (Stegman, 2007).

Less formal *professional* explanations derive from the working experiences of policy makers, housing developers, and property managers. They include the ideas that nonprofit developers are preferable to for-profit developers, and that social services or

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case managers can overcome place or personal limitations. These practitioners bring their own biases, motivations, and beliefs to bear in creating and sustaining affordable housing. Research has shown that nonprofits typically develop affordable housing for neighborhood improvement goals, while for-profits typically do it for traditional profit-oriented real estate objectives (Buron, et al., 2000). Many developers set their own standards and provide supports to help improve tenants' lives beyond the roof over their head (Vidal, 1992). For-profit developers typically build housing for the roof value with little or no expectations for residents. Conversely many nonprofits have explicit self-sufficiency goals for residents and provide case managers to help tenants achieve those goals (Bratt, Keyes, Schwartz & Vidal, 1995). Many nonprofits provide their own property management in order to offer additional services to their tenants (Briggs & Mueller, 1997).

Another critical element in developing theory is empirical research. Although important research has been conducted on many aspects of affordable (and market rate) housing, there is a lack of structured, comprehensive research on housing's standard-of-living and quality-of-life impacts on tenants. "Although individual case studies may document various strategies for combining funding sources and subsidy mechanisms to get affordable housing built, few studies rigorously assess the impact of these efforts on households or neighborhoods" (Katz, Turner, Brown, Cunningham & Sawyer, 2003, p. 36). Valuable research has focused on how housing (not necessarily affordable) affects a variety of issues, including child welfare (Harkness & Newman, 2006), employment (Harkness & Newman, 2007), mobility (Basolo & Nguyen, 2005; Briggs, 1998), self-

sufficiency (Bratt & Keyes, 1998; Van Ryzin, Ronda & Muzzio, 2001) and social capital (Clampet-Lundquist, 2003; Saegert & Winkel, 1998; Temkin & Rohe, 1998).

However there is a fundamental lack of consensus on basic standards and definitions. For example: what is success (e.g., getting decent housing versus no longer being poor, that is, standard-of-living versus quality-of-life); improvement (e.g., how much is enough); measurement (e.g., short-term versus long-term); causes of poverty (e.g., structure versus agency); and causes for success or improvement (e.g., building location, manager or tenant attitude). Much of the research on housing for poor families has been about neighborhood development and nonprofits that develop units (Vidal, 1995; Schwartz, 1997), while success in affordable housing is typically defined in terms of developing units, not necessarily helping families (Rohe, 2001; Stoecker, 1997). This study offers a definition of household quality-of-life and suggests indicators for measuring quality-of-life changes. It also seeks to understand causes for quality-of-life changes of affordable housing tenants.

The lack of a comprehensive theory of affordable housing means that policies get made, funds get spent, and units get developed without goals that are anchored on a sound theory. There are many examples. Much of the public housing stock is being replaced with *mixed-income* developments under the HOPE VI Program, despite a lack of evidence supporting the benefits of mixing people of different income levels (Curley, 2005; Joseph, Chaskin & Webber, 2007; Popkin, Cunningham & Burt, 2005). The U.S. does not have a policy for what government-subsidized housing should accomplish for

occupants and there is no agreement among developers or policy makers on the outcomes

for tenants living in affordable units. Tenants are rarely offered any expectations about

what should happen to them while they live in affordable housing other than paying their

rent on time. There is no clear consensus on the social versus physical goals of

affordable housing, and standard-of-living or quality-of-life impacts. Limited attention

has been paid in terms of what benefits (standard-of-living) should accrue to the people

who live in such homes, while housing's role as a poverty-alleviation strategy (i.e.,

reducing the impact of poverty by reducing a major cost of living) remains unclear. By

researching which factors influence quality-of-life changes, this study will address one

piece of a comprehensive theory and will conclude by suggesting potential affordable

housing benefits and goals.

The goal of most poverty alleviation strategies is to reduce poverty by increasing income

or, some argue, wealth (Sherradan, 1991). Wealth is often defined in terms of capital or

assets. Yet there are many types of assets beyond the traditional financial assets such as

disposable income and savings. Housing is a physical asset and can be measured

objectively and subjectively in terms of quality, location, and type. Other types of *capital*

that have come into vogue include social capital, human capital and personal capital

(Coleman, 1998; Putnam, 1995; Sen, 2000). Independently, various components of each

of these capitals have been researched related to housing. For example, living in housing

that is affordable has been associated with improved school performance (Lubell &

Brennan, 2007) and improved health of young children (Lubell, Crain & Cohen, 2007);

high levels of social capital have been associated with increased neighborhood safety

(Saegert, Winkle & Swartz, 2002); while motivation has been shown to lead to successful economic self-sufficiency for public housing tenants (Kleit & Rohe, 2005). All of these studies are approached from the researchers' field of interest. This makes the results difficult to compare and combine into a comprehensive theory. It would be helpful to have a structured way to classify these studies and their results.

Fortunately, these five capitals (financial, physical, social, personal and human) have been combined within the Sustainable Livelihoods Framework ("SLF") (Department for International Development, 1999; Murray & Ferguson, 1991; Toronto Enterprise Fund, 2004; Toye & Infanti, 2004). Originally developed to involve poor people in developing countries in a participatory process of self-improvement (Chambers, 1984; Chambers, 1994), the SLF can be adapted to provide a structured way to measure change on a spectrum from the individual to the world, and from household improvement to community revitalization. The SLF can take into account depth of change, for example, from standard-of-living to quality-of-life, as well as breadth of change, both physical and social. The complete Sustainable Livelihoods Framework shows the interconnections between policies, institutions, assets, strategies, and outcomes. It is a flexible tool that can be used by researchers, practitioners and the public. It can measure change over the short-term, medium-term and long-term. The heart of the SLF is the Livelihoods Assets pentagon which has as its corners five capitals. Each of the capitals includes variables that are commonly understood and routinely measured by researchers. Because of its use of common variables, applicability to small and large scales, designed adaptability, easily understood visual reporting, independence of each capital component, and

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comprehensive scope, this research will adapt the Livelihood Assets pentagon of the Sustainable Livelihoods Framework as a tool to organize quality-of-life measurements to understand the impact of affordable housing on tenants' lives.

The preceding contradictions between theory and practice, and the discontinuities between goals and expectations, plus the growing pressures to do more with less, raise important research questions for affordable housing. How *does* affordable housing improve lives? What *variables* lead to improvements (intended or not)? How do we define and measure this *improvement*? This study will begin to address these questions, despite the deficiencies in affordable housing theory, by examining standard-of-living and quality-of-life dependent variables measured by operationalized objective and subjective indicators that are organized into five capitals of the Sustainable Livelihoods Framework. Using comparison groups derived from housing theory paradigms of place and professional experience, this research seeks to clarify which indicators are associated with tenant improvement, both standard-of-living and quality-of-life, over the medium-term, by comparing tenants' previous housing to their current housing situation. This research hypothesizes that professional factors and personal factors will override place factors; that is, the lives of tenants who live in affordable housing will *improve* more on indicators within five capitals when the developer and manager is a nonprofit or when the tenant is prepared to take advantage of the opportunity for improvement, while project location will not make a significant difference.

For purposes of this research "affordable housing" will be defined as privately-owned, government-subsidized rental housing, financed through the Low Income Housing Tax Credit (LIHTC) program and the federal HOME Program. The LIHTC program is relevant because it is the federal government's principal funding source for rental housing, is a market-based approach, has broad political and advocate support, and finances a majority of affordable rental units developed annually, while the HOME Program provides low interest loans and grants for all types of affordable developments. To answer the research questions about quality-of-life improvements, interviews will be conducted with existing tenants of affordable properties developed by both nonprofit and for-profit agencies in locations throughout the suburbs of Chicago.

This research is important because the need for more affordable units will continue to grow as construction costs increase, older affordable housing units are lost because of expiring contracts, government funding stagnates, and tenants stay living in units as long as possible. It is therefore important to understand and measure how affordable housing changes tenants' lives in order to improve housing policies, development goals and management systems. As a strand in the poverty safety-net, affordable housing needs a comprehensive theory. Defining and positioning subjective and objective quality-of-life indicators within five capitals of a single comprehensive model will potentially lead to more directed research in the future, suggest achievable policies and measurable objectives for policy makers, and offer tangible goals for practitioners and tenants. This study will contribute to this theory by exploring the relationship of affordable housing to improvements in tenant quality-of-life.

II. Literature Review

This literature reviews starts with relevant definitions needed to study affordable housing and provides a brief history of U.S. affordable housing programs. It then identifies possible housing outcomes, highlights three housing theory paradigms, and defines potential housing improvements benefits, including quality-of-life. It concludes with an explanation of the Sustainable Livelihoods Framework and its relevance to this work.

A. Definitions

Affordable housing in the broadest sense is decent housing that serves lower income households at below market rates. Sometimes called "subsidized," "assisted," "work force," or "attainable," affordable housing lacks a strict definition (Bratt, et al., 2006, p. 41) but can be considered a spectrum of housing types (Figure 1), from homelessness at one end to homeownership at the other. Affordable housing serves a broad spectrum of people at the lower end of the income spectrum. Households can move along this spectrum usually one step at a time, the goal for many being *market homeownership*. A major barrier to discussing affordable housing in research and in policy is the lack of a universal definition. Some argue that if someone can afford to pay their housing costs, their home is affordable to them. The standard rule of thumb is that households should spend no more than 30% of their gross income for housing costs, whether rent and utilities, or mortgage, taxes, insurance, and utilities (Hartman, 1998; Stone, 1993). Households that pay a higher percentage of their incomes for housing have less money available for other necessities such as food, clothing, health care or education.

Figure 1: Affordable Housing Spectrum

| Homeless Shelter | Public Housing | Rental Subsidy | Affordable Rental | Market Rental | Subsidized Ownership | Market Ownership |
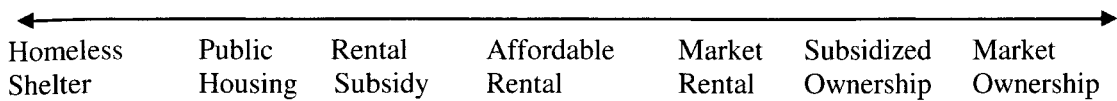
A general definition for *affordable housing* is units that are occupied by lower income households, the price of which is reduced through direct or indirect government funding (Temali, 2002). This definition is incomplete since it excludes rental subsidies that can be used to pay for decent units anywhere, and mortgage insurance that helps moderate-income households secure mortgages or mortgage insurance. In addition, some developers provide affordable housing without government subsidy. Due to the notoriety of large-scale federal housing projects, affordable housing is often confused with public housing and the stereotypes of gang-infested inner-city housing projects, many of which have been torn down after having been proven unviable.

The main source of funding for housing typically considered affordable is the U.S. Department of Housing and Urban Development (HUD). HUD provides definitions of who is eligible for affordable housing based on income limits, and units that are eligible based on rent and value limits. Therefore, for HUD affordable housing is units that are reserved for households that earn less then 80% (or 60%) of the area median income (ami), with some units targeted for lower incomes (50% ami). There is an entire industry around creating affordable housing with federal, state and local funding programs, professionals such as attorneys, architects, bankers and accountants who specialize in affordable deals, local and national trade associations and lobby groups, large and small developers in nearly every corner of the U.S.

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One way to get a handle on what is affordable housing is to provide examples. From a physical standpoint, affordable housing types include rental apartments and owned homes. It includes single-family houses, mid-size buildings, and huge developments. Affordable housing can serve families with children, seniors, single individuals, and people with disabilities. It can offer housing to people who are homeless and people who just cannot quite afford what is available on the market. Figure 1 shows the spectrum of housing types based broadly on the income of households who occupy the units and the desirability of residency, starting with lower income and less desirable on the left to higher income and more desirable on the right. Affordable housing development can include new construction, rehabilitation, or remodeling. It can address individual homes and entire city blocks. Affordable housing programs can include homebuyer counseling, mortgage foreclosure prevention, and home sharing programs. The housing can be government funded or privately financed and the scale can be thousand of dollars or multi-millions. The building can be subsidized or the tenant can be subsidized. Affordable housing can be developed by for-profit developers, municipalities, or nonprofit community development corporations (CDCs). Developments can be built in distressed inner-city neighborhoods, small rural towns, and exclusive suburbs. Some developments are 100% low income and others are mixed-income with households from income levels across the spectrum. All the above can be included in any combination.

For purposes of this research, affordable housing will be considered *Affordable Rental* in the middle of the spectrum (Figure 1) because these units are: (1) privately developed by both nonprofit and for-profit developers, (2) funded through widely-accepted sources,

and (3) the low rents charged are within reach of a large segment of the low-income population. Since very few studies have been done specifically on this type of housing, much of the previous research presented here covers related public housing programs.

In addition, this definition will be further refined within the research methodology to focus on multi-family rental housing developed and financed primarily through the Low Income Housing Tax Credit (LIHTC) program and the federal HOME Investment Partnerships Program (HOME). The LIHTC program is funded under Section 42 of the IRS code and was created in the Tax Reform Act of 1986 (Tax Reform Act of 1986, Public Law 99-514) because "An incentive was needed for such housing to be built because rental income and other returns from investment in low-income housing would generally not be sufficient to cover the costs of developing and maintaining such properties" (United States General Accounting Office, 1997, p. 2). The HOME Program was created under Title II (HOME Investment Partnerships Act) of the National Affordable Housing Act of 1990 (Cranston-Gonzalez National Affordable Housing Act of 1990).

The LIHTC is important because it provides valuable equity to reduce expensive loan financing, thereby reducing both operating costs and rents. Since the first units were developed in 1987, over 25,000 developments with more than 1.4 million apartments have been created via the LIHTC throughout the U.S. (Abt, 2007; Bratt et al., 2006) The program is relevant because eligible households must earn less than the thresholds set for low income (less than 60% area median income). The program is administered by state

agencies that determine priorities for funding based on local housing needs. There is great demand for these tax credits evidenced by the fact that these agencies are only able to fund about one out of every three applications submitted each year due to insufficient funding (Bratt, 2006). Although Husock (1997) criticizes the program for inefficiency, LIHTC covers about 60% of total development costs which average over $200,000 per unit, meaning that large amounts of funds are needed to develop a small number of units (Guggenheim, 2003).

The LIHTC program is also important because it is the primary federal funding source to develop affordable rental units (Bratt, 2006; Cummings & DiPasquale, 1999). The program has been operating over twenty years, so it has a measurable track record (Buron, et al., 2000). On average, nearly 100,000 affordable units are produced across the county each year, or approximately 6% of all multifamily housing units nationwide (Abt Associates, 2007; Joint Center on Housing Studies, 2005). These units are located in 1300-1400 developments annually, of which about 2/3 are new construction and 1/3 rehabilitation (Buron, et al., 2000). Over the past ten years, LIHTC developments have been located in central cities (44%), suburbs (31%), and rural areas (25%). Properties are disbursed throughout the country: Northeast (14%), Midwest (22%), South (41%), and West (23%). LIHTC developments provide housing to renters earning less than 60% of the local area median income (ami), with significant portions rented by families earning less than 50% ami (44%) and even 30% ami (20%). About 44% of LIHTC units nationwide are rented by minority households (Abt Associates, 2007).

The LIHTC program has broad political support as a market-based mechanism for assisting the poor since it can "be billed as tax relief for conservatives, an efficiency measure for moderates, or as a way to empower local activists with federal resources for liberals" (Erickson, 2006, p. 192). However, the LIHTC "legacy is mixed. The greatest weakness was that it did not solve the housing problem for low-income Americans...The program had the same problem of fairness that earlier housing programs generated; only a fraction of eligible tenants got subsidized apartments. And apartments in the new program were often targeted to the working poor, not the neediest cases. Those who were lucky enough to get an apartment enjoyed a product that was above the market in terms of its construction quality and amenities" (Erickson, 2006, p. 195).

Regardless of its positive or negative results, the LIHTC is by no means the only federal housing program. The HOME Program provides grant and low interest loan financing for affordable developments. It can be used in conjunction with the LIHTC, combined with other subsidies, or as the sole source of funding. HOME is a block grant that is allocated by formula and administered by states, counties, municipalities, and consortiums of municipal governments. The HOME Program is not a traditional federal categorical housing program requiring a specific housing activity. Instead, the HOME Program provides states and local governments with the flexibility to decide what kind of housing assistance, or mix of housing assistance, is most appropriate to meet their housing needs. To understand the impact of these federal program and the reasons for confusing definitions, historical perspective is needed.

B. Historical Perspective

The history of affordable housing policy in the U.S. is a story of money, politics, and community activism. It has been about units, not the people who live in them. Since the 1930s, the U.S. federal government has been involved in providing funding to develop and pay for housing using both demand-side and supply-side approaches. The demand-side includes home ownership assistance and rent vouchers. The supply-side includes financing the creation and operations of public housing and privately developed rental housing. These policy approaches provide the context for the current housing situation.

U.S. policy has long favored homeownership (Stegman, 2007). In order to facilitate the American Dream of homeownership, the Federal Housing Act of 1934 created mortgage insurance followed by the Title II of the Federal Housing Act of 1949, which encouraged banks to make long-term mortgages to buyers. The mortgage interest deduction via the IRS tax code reduces the tax burden of owners by billions of dollars each year for families who are able to buy a home (Bratt, et al., 2006)[1]. Ownership is touted as having benefits over renting, including improved citizen participation, and is the primary source of wealth for many U.S. households (Stegman, 2007). In fact, ownership of land is proposed by some as the primary means of increasing wealth, especially among those who are poor (DeSoto, 2000).

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[1] The mortgage interest deduction goes only to homeowners, most of whom are in the upper two-fifths of the income scale. The $84 billion deducted in 2004 was over 3 times the entire HUD budget including construction and rental assistance programs (Bratt, et al., 2006, pp. 11, 106-111).

The other demand-side program has been known variously as Section 8 rental assistance or the Housing Choice Voucher. Rental assistance payments supplement the income of poor households to cover a portion of the rent of an apartment. Some vouchers are project-based, which means rental assistance is available to a household as long as they live in a particular unit (Basolo, 2005). Other vouchers are tenant-based, meaning that households with vouchers are allowed to rent units anywhere they can find an apartment. In 1999, most vouchers were converted to tenant-based. In addition, many public housing residents received vouchers so they could move out of public housing and into mixed-income communities.

On the supply side, the federal government has developed and owned public housing for over seventy-five years. Originally planned to provide temporary housing for working families, the history of public housing is full of recriminations and failures (Lang & Sohmer, 2000; Popkin, Cunningham & Burt, 2005). Tens of thousands of public housing units were built during the Urban Renewal program and minority families were crowded into sections of the inner city (Halpern, 1995). The public housing program was 'reinvented' in 1995 and replaced with the HOPE VI program, which develops mixed-income housing developed by private developers (Popkin, Cunningham & Burt, 2005).

There is also a long history of private developers building and owning rental housing for low income households, starting with slum clearance in the 1940s through many construction programs such as sections 202, 221d3, 236, the Low Income Housing Tax Credit, and the HOME program. Table 1 shows a simplified version of the major themes

in federal government affordable housing assistance grouped by decade. Most of these

programs were not designed to help lower income households, but were created to fuel

the construction industry and "clearly designed to benefit private development"

(Mollenkopf, 1983, p. 78).

Table 1: Federal Government Affordable Housing Stages

1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
Public Housing; FHA	Ownership; "Decent" goal	Production	HUD created	CDC growth	Funding cuts	Consolidation, Local control	Stagnation/ Collapse

An important milestone in government involvement in affordable housing was the

Housing Act of 1949. It famously called for "a decent home and suitable living

environment for every American family" (United States Housing Act of 1949, Public

Law 81-171, 1949, p. 1). The Act had three separate titles that addressed urban

redevelopment, homeownership, and public housing, respectively. Although much has

been written about the contradictions and mixed legacy of the Act (Halpern, 1995; Lang

& Sohmer, 2000; Mollenkopf, 1983; von Hoffmann, 2000), at a minimum it "did succeed

in making federal intervention a permanent part of government policy" (Mollenkopf,

1983, p. 79) and "helped create a permanent place for urban housing and redevelopment

in federal policy even as lawmakers retreated from the means it prescribed to achieve

these goals" (von Hoffman, 2000, p. 300).

More than fifty years after its passage, there are many lessons to be learned from an Act

described as "a shotgun wedding between enemy lobbying groups" (von Hoffman, 2000,

p. 299). While millions of (white) families benefited from the ability to buy homes (by

abandoning cities for the suburbs), millions of poor (minority) families were

immeasurably hurt by the same legislation; poor minority households were abandoned

within cities undergoing redevelopment since "urban renewal tended to displace the most

vulnerable families in a neighborhood, who then had to struggle with little support to

build a new life for themselves" (Halpern, 1995, p. 69).

For affordable housing viability, the lesson that "urban renewal dramatically

demonstrated the limits of physical solutions to social problems" (Lang & Sohmer, 2000,

p. 296) is important because just building affordable housing is still often seen as enough

to help poor families.

> "Title III of the Housing Act of 1949, however, had a fatal flaw: a naïve reliance
> on physical dwellings to carry out social goals. The planners and developers of
> postwar public housing, whatever its architecture, inherited from earlier
> generations a faith in the influence of physical environment on individual values.
> Some believed, without examining the belief, that decent dwellings would impart
> middle-class standards of behavior to lower-class people. Others assumed that
> poor people would be grateful to live in new homes that were a great
> improvement over their old ones and would improve themselves correspondingly"
> (von Hoffman, 2000, p. 312).

Aside from the political controversies, Title III of the Housing Act of 1949 was a

production program to build homes following the war (Orlebeke, 2000). It did not

mention helping low-income households, and production often led to demolishing homes

that were affordable to poor families. As a housing production program, the 1949 Act

was described as "a commitment without a timetable and without adequate means of

accomplishment" (Orlebeke, 2000 p. 492).

The U.S. Department of Housing and Urban Development was created in 1965, and the Housing Act of 1968 reasserted the 1949 housing goals since "the supply of the Nation's housing is not increasing rapidly enough to meet the national housing goal" (Orlebeke, 2000, p. 494). Congress set a goal of solving the housing problem in ten years, similar to the second Bush administration's goal of eliminating homelessness in ten years. As described by Orlebeke (2000), production of affordable units started to take off once a federal agency was in charge, although this was done in fits and starts as politics changed. There was constant fighting within HUD and Congress over production versus subsidy goals. Funding programs were typically production based: the more units built the better. It often did not matter if the units were livable, as long as the developers and builders got paid. Then funding would be cut off and no more units would be built until the politics changed again. "Each program that is the hero becomes the villain to the next generation of policy makers" (Orlebeke, 2000, p. 508). Most units were produced by large for-profit developers with political connections and there were plenty of bad developments (Orlebeke, 2000). Many different types of programs were created, and removed, by HUD in response to specific housing needs.

Using federal housing money to help *low-income* households was not even mentioned as a goal until 1971, and then it was actually used as a reason to cut off production. Nixon's Third Annual Report on National Housing Goals (President's Third Annual Report on National Housing Goals, 1971) stated that federal funding levels "cannot help the very poor" and "it will be difficult to continue favoring a select few in the population" so the recommendation was to stop trying (p. 23). The report even addressed "relating

community growth, development and services to the housing needs of citizens of all income levels" (p. 24) but did not suggest how that would be achieved. While seemingly admirable changes, these criticisms actually led to twenty years of floundering production and experimentation with rental assistance vouchers and block grant programs culminating with President Reagan. Reagan set out to dismantle HUD and severely gutted federal funding for affordable housing programs (Bratt et al., 2006, p. 116; or Mollenkopf, 1983, p. 282).

The history of the nonprofit organizations that create affordable housing in the U.S. also shows that they were focused on housing production. Prior to the 1960s, nonprofit housing developers worked almost solely on creating units (Bratt, et al., 2006, p. 340). Working on social issues and improving distressed communities came later (Jacobs, 1961). The type of organization today considered a community development corporation (CDC) started in 1966 after a visit to a distressed neighborhood in New York City called Bedford-Stuyvesant by then Senator Robert Kennedy (Bratt, et al., 2007, p. 341; Stoecker, 1997, p. 2). Community Action Agencies became a main component of President Johnson's War on Poverty and, as Stoecker (1997) explains, the 100 or so CDCs created in the 1960s were involved primarily in economic development and job creation, although they also created some housing units.

In the 1970s, hundreds of new CDCs were created that focused on fighting housing discrimination, such as red-lining, in which banks cut off poor areas from loans, and urban renewal programs where cities displaced poor families from deteriorated

neighborhoods (Rae, 2003). The number and scope of these CDCs expanded, in part, due to the Gray Areas program of the Ford Foundation, which provided operating funds (Bratt, et al., 2007, p. 341). Another wave of CDCs was created in the 1980s in response to the Reagan administration cutting funding for neighborhood improvement. Social and economic conditions across the nation made the resolution of the housing problems of many low income families practically impossible. These emerging nonprofits were left to fight for declining money from HUD in competition with larger experienced developers.

Keyes, Schwartz, Vidal & Bratt (1996) point out that "community development corporations and other nonprofit organizations are increasingly responsible for producing and managing low income housing in urban America" (p. 1). In her seminal study of the work of community development corporations, Vidal (1995) explored the potential of CDCs nationwide to successfully develop affordable units in the process of community development. Vidal (1995) found that CDCs had great potential to expand their community development efforts and that foresight has come true. Despite their often precarious existence, the number of community development corporations continues to increase, from 500 in 1975 to 2200 in 1995 (Lemann, 1996, p. 24). By 2000 over 3000 CDCs of all types and sizes existed around the U.S. (Bratt, et al., p. 341). About one-third of the affordable housing that gets developed in the U.S. is done by these nonprofit community development corporations (Buron, et al., 2000; Vidal, 1992). But what is known about the outcomes of these efforts?

Creating affordable housing takes tremendous investments in time, effort, and public

funding. Developers, both for-profit and nonprofit, take years putting together each deal

and assembling a team of lawyers, lenders, grantors, managers, architects, and

contractors. The federal government spends billions of dollars annually developing,

financing, and operating affordable housing for low income households (Joint Center for

Housing Studies, 2003). Over the past decade, HUD's budget has been just over 1% of

the overall U.S. federal budget; HUD's budget authority in 2000 was $24.324 billion (in

Bratt, 2006, p. 110, Budget of the United States Government, Table 5.2) and $36.150

billion in 2008 (U.S. Department of Housing and Urban Development, 2008). The

LIHTC program budget for developing affordable rental housing was $3.278 billion in

2000; this was less than 3% the value of subsidies going to homeowners through the

federal income tax mortgage interest deduction allowance (Bratt, 2006).

Still, the number and percentage of units that are affordable to low income households is

steadily decreasing. National housing data has shown for years that the stock of

affordable housing is diminishing, with production levels insufficient to meet the needs

of lower-income households (Nelson, Vandenbroucke, Lubell, Shroder & Rieger, 2003;

Joint Center for Housing Studies, 2003). According to the Millennial Housing

Commission, "it would take annual production of more than 250,000 units for more than

20 years to close the gap" of demand nationally for housing by extremely low-income

households (Joint Center for Housing Studies, 2003, p. 2).

Until the housing crisis which began in 2007, housing prices throughout the United States had been quickly escalating beyond the means of low income households for years, while declining numbers of families were able to afford the median priced house in their area (Bratt, et al., 2006; Joint Center for Housing Studies, 2008). Lower income families are hit hardest by these escalating costs:

> "Overall, federal housing policy is placing severe pressure on people in need of affordable housing, on developments that rely on financial assistance, and on sponsors of affordable housing that depend on federal funding to close the gap between the costs of producing and managing affordable housing and the amount tenants can pay. The less affordable housing and rental assistance are available, the harder it will be for households to stabilize their lives and move toward self-sufficiency. Some will have to spend more income on housing, leaving less money for other necessities. For others, the inability to find *any* home at a price they can afford can result in inadequate or temporary housing, or even homelessness" (Bratt & Keyes, 1997, p. 811, *emphasis in the original*).

Based on 2006 HUD data, over 5 million U.S. renters had *worst case housing needs*, defined as renters who do not receive a housing subsidy, have incomes below 50% of local median area income, and pay 50% or more of household income toward housing, or live in substandard housing (Joint Center for Housing Studies, 2003). In addition, 3.5 million people experience homelessness during any given year and 6 million homeowners pay more than 50% of their income for housing (Bratt, Stone & Hartman, 2006). These figures may increase as data becomes available on the current foreclosure crisis.

Prior to economic recovery acts in 2008 and 2009, government funding levels for housing had stayed the same or decreased each year for the past decade when all subsidy programs were constantly under threat of being unfunded (Nelson, et al., 2003; Bratt, et al., 2006, p. 107). In addition, HUD's commitment to affordable rental housing is often questionable based on political leadership. For example, in a 2004 speech by then HUD Secretary Alphonso Jackson said "he doesn't want to talk about housing the poor because 'being poor is a state of mind, not a condition.'" (Bratt, et al., 2006, p. 11). However, history shows that past and current public policies only address the physical conditions and not the state of mind.

New affordable housing is of high quality and contradicts the tragedy of public housing: private affordable rental housing is now the model for redevelopment of public housing; tenants pay rents that are below market; and many neighborhoods are being redeveloped in a positive manner (Vidal, 1992; von Hoffman, 2000). Despite the successes of modern private affordable housing, and whether one believes in moving beyond physical to social goals, there is undoubtedly growing pressure for affordable housing to do more with less. Affordable housing goals have been expanding as many people involved with affordable housing, from nonprofit and for-profit developers to government funding agencies to politicians, expect broader outcomes.

> "Proponents of this reorientation of housing assistance from a focus on
> bricks and mortar to a broadened concern about *self-sufficiency* effects
> argue that performance measures emphasizing housing outcomes, such as
> the number of dwellings meeting housing codes or that are affordable to
> low-income households, be supplemented by such outcomes as labor force

participation, earnings, and lack of dependence on welfare." (Newman & Harkness, 2002, p. 1, *emphasis added*).

Many other federal welfare programs are under similar pressures. For example, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 was the cornerstone of Clinton's welfare reform policies; it replaced the long-standing Aid for Families with Dependent Children (AFDC) program with Temporary Assistance for Needy Families (TANF), which limits benefits to recipients and "specifies self-sufficiency as the goal of welfare reform" (Daugherty, 2001, p. 662). Similarly, the purpose of the Quality Housing and Work Responsibility Act of 1998 (QHWRA, 1998) was to "promote homes that are affordable to low-income families in safe and healthy environments, and thereby contribute to the supply of affordable housing" (Section 502(b)). In other housing programs, to "promote participant self-sufficiency, Congress has authorized a number of initiatives within U.S. Department of Housing and Urban Development (HUD) housing programs such as Project Self-Sufficiency (1984), Operation Bootstrap (1989), the Family Self-Sufficiency (FSS) program (1991), and Welfare to Work vouchers (1999)" plus HUD's Moving to Opportunity (MTO) demonstration program (Olson, Tyler, King & Carrillo, 2005, p. 2). The Clinton Administration introduced its *Blueprint for Reinvention* for HUD (Cisneros, 1995) which led to the HOPE VI program and to the redevelopment of public housing into mixed-income communities.

Government funding has been made available for *bricks and sticks* but as the federal budget tightens and growing numbers of lower income households are unable to afford

housing in their communities, there has been an increasing expectation that decent housing will also improve *wealth and health*, that is, help households earn or save more money and increase their physical and emotional health. Since affordable housing is the default alternative to lower income households slipping down the housing spectrum into public housing, or worse, homelessness, affordable housing has in effect become part of America's social safety net.

C. Affordable Housing Outcomes

Within the world of affordable housing research and practice, *success* has been based on producing units and staying in existence. HUD collects data on developments built, types of units, developers, locations, and rent levels, but currently does not collect *any* data on *tenants*. Developers measure their success by how many units they develop (Rohe, Quercia & Levy, 2001), not how many people they help. The idea of improving people's lives often gets lost in the process and the struggle for funding and production. For example, Rohe, et al. (2001) looked at nonprofit performance in creating affordable housing, and measured affordable housing development success by asking "Have the developments remained financially sound? Have they been well maintained? Have they continued to serve the intended clientele? Have the residents been satisfied with the housing?" (p. 2). Stoecker's (1997) literature review showed that CDC success is usually rated in terms of "staying in existence, achieving their major objectives, and achieving those objectives efficiently" (p. 3). Stoecker says that "indicators of community development such as *quality-of-life*, community stability, resident health and happiness

and personal empowerment are *rarely cited*" (Stoecker, 1997, p. 2, *emphasis added*). This research seeks to address this lacking community development component. However, in order to do so clear definitions and outcomes are needed.

Many potential housing program outcomes are suggested in the literature and stated above including standard-of-living, self-sufficiency, poverty alleviation and quality-of-life. Research shows that these terms do not have strict definitions, are often used indiscriminately and are sometimes used interchangeably. The following section does not seek to provide consensus on these terms but rather to identify which terms are, and are not, useful for measuring potential affordable housing outcomes.

1. Standard-of-Living

Standard-of-living is the basic measure of household or national well-being. It is generally the "level of material comfort" experienced by households individually or in a geographic area. The concept originally arose as a means to measure the economic health or economic welfare of a nation through gross national product (GNP), income per capita or gross domestic product (GDP) (Liu, 1975, and Sirgy, Michalos, Ferriss, Easterlin, Patrick, & Pavot, 2006). The broad measure of national standard-of-living was narrowed to individual families by measuring household income: "Measures of the conditions of living of families have been a concern of American sociologists since about 1918... Socioeconomic status, level-of-living, and social status were labels applied to composite measures of families' living conditions" (Sirgy, et al., 2006, p. 367).

In terms of housing, standard-of-living refers to external conditions (Schalock, 2004) and physical aspects (Sirgy, et al., 2006) of the housing units in which people live. Standard-of-living is a tangible, measurable indicator: GNP, household income, physical condition of housing. Therefore standard-of-living impacts include outcomes like better and cheaper housing which are safety net concerns. Decent affordable housing may provide standard-of-living improvements since it is the alternative to unsuitable, deteriorated, overcrowded housing, or no roof at all.

2. Self-sufficiency

Many federal programs reference *self-sufficiency* as the ultimate goal for the program. It is even the name of one federal program, Family Self-Sufficiency. However, self-sufficiency is far from a universally-agreed goal for welfare programs, let alone housing. Self-sufficiency does not have a generally accepted definition, with options ranging from helping someone help themselves to needing no government assistance of any kind as shown below. For some, self-sufficiency is a path, while for others it is the destination. One definition of self-sufficiency is "strategies (which) are aimed at reducing or eliminating the need for participants to stay on public welfare programs or to receive other kinds of assistance. They include initiatives that enhance an individual's capabilities as well as those efforts that are more directly and explicitly aimed at enabling individuals to increase their incomes" (Bratt & Keyes, 1998, p. 799). It can also be far less inclusive and simply mean no more public welfare (Bratt & Keyes, 1998).

In terms of the federal government being involved with funding housing development and housing subsidies, "The purpose of all these different forms of housing subsidies is, first and foremost, to help poor people afford decent rental housing, and local authorities are, by and large, achieving that mission. So why bother with matters of work and self-sufficiency, which are traditionally the responsibility of other government systems? There are at least three reasons: (1) to reach many of the nation's work-capable poor in need of employment support, (2) to counter possible negative work influences associated with housing assistance, and (3) to increase access to a limited supply of housing assistance by cycling recipients through the system more rapidly" (Riccio, 2006, pp. 3-4). However, the welfare system and affordable housing programs are completely separate and uncoordinated (Bratt, et al., 2006). Some programs provide direct cash assistance to families while other programs indirectly benefit families by reducing costs of living. Affordable housing programs are in effect part of the safety net with homeless shelters, public housing and affordable housing keeping people off the streets despite their poverty.

Many housing advocates convincingly argue that true self-sufficiency may be an unrealistic goal. People are expected to be self-reliant and lift themselves up by their own bootstraps (Patterson, 2000), but self-sufficiency places a value judgment on people as better or worse so "is an unsuitable, and largely unattainable, goal for social welfare legislation" (Daugherty, 2001, p. 663). Some believe that self-sufficiency does not mean no food stamps, school lunches, Medicaid, EITC, rental assistance or public housing but "moving in the direction of achieving greater economic mobility and financial stability"

(Shlay, 1993, p. 459). For example, "On the path to self-sufficiency, participants often continue to need various types of assistance. Health care and day care, substance abuse programs, youth and after-school programs, and legal counsel are key types of services that households require even if they are well on their way to developing personal responsibility and are working on developing skills and improving their level of education." (Bratt & Keyes, 1998, p. 816)

When interviewing affordable housing practitioners about their self-sufficiency programs and working definition of self-sufficiency, Bratt & Keyes (1998) found that:

> "Many people felt that the term self-sufficiency evokes an image of 'rugged individualism,' which is no more or less applicable to low-income people than to the rest of society. Self-sufficiency implies that people will, at some point, no longer require any outside supports. These interviewees argued that no one in our society is truly self-sufficient. Virtually everyone receives some form of special assistance, because of low incomes (means-tested) or through one of our many entitlement programs that are available either to anyone, regardless of income, or to certain groups, such as veterans, the elderly, and homeowners. Thus, the goal of self-sufficiency is contrary to the way most U.S. citizens actually live" (p. 800).

Therefore, Bratt, et al., (2006, Chapter 18) recommend seeking *economic independence* instead of self-sufficiency.

Another problem with using self-sufficiency as the standard for community economic development is that it only applies to individuals; a neighborhood or community would not be encouraged to achieve self-sufficiency, so the applicability of the term is limited

for broader measurements of household and community improvement. Self-sufficiency can be an incomplete and confusing goal for welfare, and affordable housing, programs.

3. Poverty Alleviation

A related issue is poverty alleviation. Poverty impacts the lives of millions of people in the U.S. and throughout the world. The effects of poverty include poor nutrition, poor health and substandard housing (Danziger & Havemen, 2001). Where one lives typically reflects one's level of wealth (Briggs, 2005) and poverty often results in substandard or unaffordable housing. Welfare programs seek to provide a safety net for those at the lower end of the income spectrum.

Inherent in the idea of affordable housing is that people who will live in affordable units have lower incomes. While some may not earn less than the national poverty level, most households in affordable rental housing are comparatively poor. There are technical income thresholds that households need to be below in order to be eligible and the practical rule of thumb that a household should not spend too much income on housing. Affordable housing therefore encompasses a swath of households earning between $10,000 and $40,000 per year. Although the official poverty line is at the lower end, affordable housing in general provides low cost options for those near the poverty level. But such assistance seems inadequate if it helps people "move from being substantially below the poverty level to being less substantially under the poverty level. Thus 'better off' translates into a marginal increase in income, not better off in any qualitative sense

and certainly not in terms of economic or broader definitions self-sufficiency" (Daugherty & Barber, 2001, p. 670).

If affordable housing development is a valid strategy, it seems to be a strategy to reduce poverty by reducing a major cost of living and thereby reducing the impact of poverty. "At best, affordable housing can provide a platform on which poor households can stabilize their lives, obtain more education or training, find work, and build savings" (Katz, et al., 2003, p. 34). Affordable housing does not address the root causes of poverty; rather, affordable housing addresses the symptom of poverty, i.e. not having enough money, that is, "housing *development* enables available income to go farther" (Bratt & Keyes 1998, p. 802, *emphasis in the original*), not create new income.

4. Quality-of-Life

Instead of self-sufficiency, and beyond standard-of-living, yet not as ambitious as ending poverty, improved *quality-of-life* may be a more realistic (and acceptable, yet difficult) goal for affordable housing programs. Although quality-of-life may sound less independent or "boot-strappy" than self-sufficiency, it would be difficult to argue that people should not want a better quality-of-life for their family (or neighborhood or town).

However, quality-of-life is a very complex issue and difficult to define despite the concept having been around for centuries. In fact, "Quality of Life —QOL- is a new name for an old notion. It is a subjective name for the 'well being' of people and the environment in which they live. For any individual, QOL expresses that set of 'wants'

which after being supplied, when taken together, makes the individual happy or satisfied" (Liu, 1975, p. 1). The roots of the idea of quality-of-life have been traced back to Plato and Aristotle (see both Sirgy, Michalos, Ferriss, Easterlin, Patrick & Pavot, 2006, and Joyce, Hickey, McGee & O'Boyle, 2003). Yet, even with this long history, "Despite its widespread use, there is little consensus over definitions of quality-of-life and there are variations in terminology that include subjective quality of life (Cummins), life satisfaction (Diener), happiness (Shin), and well-being (Andrews), and often these terms are used interchangeably." (Bramston, Pretty & Chipuer, 2002, p. 261).

Quality-of-life is a multidimensional concept which allows for flexibility but also confusion. Quality-of-life has been defined by and used for research in academic fields as varied as sociology, economics, psychology, health, marketing, organizational psychology and management (see Sirgy, Michalos, Ferriss, Easterlin, Patrick & Pavot, 2006). By "volume of research contributions, health-related QOL studies exceed all other topics" (Sirgy, et al., p. 370). Depending on the field of interest, many variables are possible and "any attempt to identify levels of human well-being or quality of life— especially in a geographic context —requires that researchers specify criteria that are capable of measurement" (Mulligan & Burke, 2002, p. 2). Even within specific fields, there is confusion among terms. For example, in the health field "Health status, functional status, well-being, QOL, and health-related QOL are concepts that are often used interchangeably" (Sirgy, et al., p. 401). A problem created by lack of clarity in definitions is that in some studies, self-sufficiency is synonymous with quality-of-life. Causality can also be difficult to discern: better housing leads to increased employment,

which leads to increased earnings, which makes someone more productive in society, and therefore results in a higher quality-of-life for not only the person, but also their building and entire neighborhood (Bloom, Riccio & Verma, 2005; Brazley & Gilderbloom, 2007).

Still, quality-of-life is extremely useful because it is multidimensional and interdisciplinary. For community economic development purposes it can be applied to many social levels such as individuals, neighborhoods, cities or even nations (see Sen, 2000, or The Economist Intelligence Unit, 2005). Social scientists analyzed quality-of-life standards in the 1960's by comparing developing countries and developed countries, and by ranking states on various standard-of-living indicators nationally within the U.S. (Mulligan & Burke, 2002). In these studies, quality-of-life was simply measured as per capita income (i.e., standard-of-living). As researchers increased their understanding of the factors that influenced quality-of-life, they gradually expanded the standard-of-living indicators to include income, education, occupation, and the state of housing (Mulligan & Burke, 2002). In the international context, economic development tools were recommended for developing countries to increase incomes and thereby quality-of-life and "discussions of the 'goals of development' often emphasized poverty reduction instead of income enhancement" (Mulligan & Burke, 2002, p. 2).

Table 2 shows examples of quality-of-life variables from various authors, in different fields, during different decades, and across the spectrum from the individual, to the local community, to the nation, and internationally. For example, the Schedule for the Evaluation of Individual Quality of Life (SEIQoL) is used by psychologists for

individuals (Joyce, 2003). Similarly, economists measure national quality-of-life regularly for developed and developing countries (The Economic Intelligence Unit, 2005). For comparison purposes, the variables for each of the examples in Table 2 were grouped by similarity of category.

There is remarkable similarity of variables among the studies despite their differences in scope, field, and research focus. Based on Schalock's literature reviews, this consistency is not surprising. After reviewing sixteen studies on quality-of-life and analyzing the domains covered, Schalock (2004) found that "The vast majority (74.4%) of these indicators related to eight core QOL domains: interpersonal relations, social inclusion, personal development, physical well being, self-determination, material well-being, emotional well-being, and rights." (p. 205). In addition, Schalock's review of over ten thousand abstracts and articles about quality-of-life identified three indicators for each of the eight domains (p. 206) which suggests a relatively small, common list of variables for future study.

All eight studies in Table 2 include an economic component, typically income or employment to earn income. Six of the eight address housing, either shelter or living conditions of residents. Personal security is covered in seven studies as is an educational component and all studies include social participation. Both individual studies and international studies include freedoms/rights and several studies address health issues. While some of the variables in these eight examples of quality-of-life studies do differ, the indicators measured are similar enough to provide common threads for this research.

Table 2: Sample Quality-of-Life Indicators

Joyce (2003) SEIQoL	Schalock (2004)	Nandi & Harris (1999)	Bloom, Riccio & Verma (2005)	Mulligan & Burke (2002)	Liu (1975)	The Economist Intelligence Unit (2005)
Individual	*Individual*	*Community*	*Community*	*Nation*	*Nation*	*International*
Ecological	Material Well-Being	Employment	Economic & Material Well-Being	Income, Wealth & Employment	Economic Status	GDP Per Person & Unemploymen Rate
Physical	Physical Well-being	Shelter	Residential Satisfaction	Living Environment	Living Conditions	
Affective		Security	Personal Safety	Social Disorganization	Government Functioning	Political Stability/ Security
Cognitive	Personal Development	Education	Child Well-Being	Education	Education	Gender Equality
Social	Social Inclusion, Interpersonal Relations	Recreation	Social Capital	Alienation, Participation	Equality	Community Life In Orgs
	Emotional Well-Being	Health			Health & Welfare	Life-Expectancy
Religion	Rights, Self-Determination				Individual Status	Political Freedom
		Nutrition			Agricultural Production	Climate
		Transportation				
		Energy			Technological Development	Family Life, Divorce Rate

As used today, quality-of-life includes both subjective (self-assessed) and objective (external measures) indicators (Nandi & Harris 1999, Helliwell, 2006, Sirgy, et al., 2006, Schalock, 2004). That is, "subjective quality-of-life is about feeling good and being satisfied with things in general. Objective quality-of-life is about fulfilling the societal and cultural demands for material wealth, social status and physical well-being" (Nandi & Harris, 1999, p. 196). "Subjective well-being" is also defined as happiness while objective indicators are synonymous with standard-of-living social indicators (Sirgy, et al., 2006). Although some studies have shown low correlations between objective and subjective indicators (e.g., Cummins, 1996 and Hensel, Rose, Stenfert-Kroese & Banks-Smith 2002), most current research explicitly includes both subjective and objective indicators. For housing research, "Housing well-being has been measured traditionally using reflective and formative indicators" (Grzeskowiak, Sirgy, Lee & Claiborne, 2006, p. 503), that is, both subjective and objective variables.

Quality-of-life issues that have been researched related specifically to affordable housing include: tenant satisfaction (Paris & Kangari, 2005), nutrition (Meyers, et al., 2005), and neighborhood perceptions (Brooks, Zugazaga, Wolk & Adams, 2005). Case studies have explored one or a few families in depth: e.g. 'brown' kids in 'white' suburbs (Briggs, 1998), single mothers (Clampet-Lundquist, 2003), and social capital (Saegert & Winkel, 1998). Unfortunately, few housing studies that explore quality-of-life spell out their indicators explicitly in their results (see, for example, Joseph, Chaskin & Webber, 2007, or Anthony, 2005) making it difficult to assess their applicability because of incomplete presentation and definition.

Not only is quality-of-life multi-disciplinary, but "Most researchers in the field have come to accept that subjective quality-of-life is multidimensional, comprising a number of domains which people weight differently according to how important each is in their life" (Bramston, et al., 2002, pp. 261-262). This detail is lost when discussing variables, for example those in Table 3, meaning that how each variable is operationalized is extremely important. Most indicators could be asked in either a subjective or objective way. In addition, variables that may be important indicators to researchers may not be important to those being researched, which makes analyzing the results even more complicated. For example, the SEIQoL asks subjects to rank items by their importance. Someone may feel that only having money would improve their quality-of-life while someone else might want good health, a decent job, a nice house and lots of friends. But "how does one compare the value of being secure with the value of being in good health, and with the value of feeling secure or feeling healthy?" (Sirgy, et al., 2006, p. 352). To overcome this problem, a number of both subjective and objective questions that measure the same domain need to be included.

Table 3: Summary of Affordable Housing Outcomes

Measure	Range of Possible Housing Goals
Standard-of-Living	Decent, safe and sanitary units
Self-Sufficiency	Reduce or eliminate need for public welfare
Poverty Alleviation	Income above the poverty level or smaller percent of income spent on housing
Quality-of-Life	Subjective and objective well-being

Again, how the indicators are operationalized is important. Various studies have found different indicators to be significant indicators of quality-of-life. For example, Schalock

(2004) found the following to be significant: "personal characteristics: health status, adaptive behaviour index, and maladaptive/challenging behaviour index; environmental variables: perceived social support, type of current residential setting, number of household activities participated in, earnings, and integrated activities; and care provider characteristics: worker stress score, satisfaction working with the client, and job satisfaction" (p. 209). Nandi & Harris (1999) determined that "the following structural and emotional concerns have been deemed pertinent for assessing quality-of-life: Family values, worries, fears and concerns, crime, neighborhood satisfaction, satisfaction with apartment, public transportation, health, friendship, social interaction, political participation, employment, satisfying aspects of life, and goals" (p. 196). Bloom, Riccio & Verma (2005) found sixteen indicators, including many which were composites of indices, from "percentage of respondents saying they were employed at the time of the survey interview" to "percentage of children ever in trouble with the police" (pp. 133-134). Appropriate survey questions and indicators are therefore not universal, but rather contextual. In addition, quality-of-life variables are often indices created by combining several measures as noted above. This means that care needs to be taken when comparing across indices, not just looking at the numbers, but at the outcome patterns and effects.

In summary, quality-of-life is a complex, multidimensional issue that can be measured by a host of variables depending on the research context. Although there are common themes among quality-of-life studies, variables are operationalized in a variety of ways and research results are varied as to which factors predict outcomes. In addition, quality-

of-life not only includes both subjective and objective components, but whether a variable is objective or subjective is determined by how the research question is asked. For example, "How much money do you earn?" versus "Do you earn enough money to afford your needs?" or "How many times have you gone to the doctor this year?" versus "Do you feel healthy?" More research is needed to determine which variables are predictors of quality-of-life changes but many variables are possible.

5. Outcomes Summary

Based on the four housing outcome options summarized in Table 3, should we only expect direct standard-of-living impacts (safety net outcomes like better and cheaper housing) from affordable housing, or should we also expect a deeper set of direct and indirect quality-of-life outcomes? Are self-sufficiency or poverty alleviation achievable via a housing program? If we should expect a deeper set of quality-of-life outcomes, a second set of discontinuity questions arises. Are our affordable housing program investments necessary and sufficient to result in these expanded set of quality-of-life outcomes? Or are we adding deeper quality-of-life expectations and goals to programs that are only equipped to target a narrower set of standard-of-living impacts? To begin answering these deeper policy questions, this research seeks to understand the factors that influence whether tenants' quality-of-life changes, and if so, how their quality-of-life changes.

D. Housing Theory Paradigms

The affordable housing goals discussed above are unclear partially due to the absence of a comprehensive theory of affordable housing. There is little agreement as to affordable housing's ultimate goals, let alone goals for tenant improvement such as standard-of-living, quality-of-life, self-sufficiency, or poverty alleviation. For example, affordable housing advocates cannot agree on whether housing is a "right" (Bratt, et al., 2006). Researchers and practitioners certainly have working hypotheses based on studies and experience, but these hypotheses are incomplete for explaining why affordable housing should encourage quality-of-life changes, and what set of characteristics most effectively correlate to tenant quality-of-life successes. Some partial theories are borrowed from other disciplines or are adapted from related areas, such as theories of (urban) poverty or welfare dependency (e.g., Lewis, 1966; Wilson 1987).

Social change theories are often based on macro/structural versus individual/agency arguments; that is, does the system dictate who people become, or is the individual solely responsible for their destiny? (Layder, 1994). Other ideas emerge from practice and professionals who have first-hand knowledge working in the field, but lack empirical studies to substantiate their efforts. As an alternative to the agency/structure debate, partial theories applicable to affordable housing can be divided into three broad categories: place, personal and professional (outlined in Table 4).

Table 4: Housing Theory Paradigms Summary

Paradigm	Sample Domains
Place Theory	Neighborhood differences
	Suburbanization
	Child development
	Housing Programs
	Mixed-income housing
	Poverty Deconcentration
Personal Life Experience	Culture of Poverty
	Rational choice
	Life cycle
	Discrimination
	Social Exclusion
	Inequality
	Self-esteem
Professional Insights	Nonprofit versus For-profit
	Property Management
	Social Services

These three paradigms take into account policies that are currently being implemented and assumptions that are recognized by those in the industry, if not all researchers. Each category has different domains, which have been researched and are reviewed below. All three have not been empirically researched to the same extent. Yet they may provide a way forward for affordable housing theory, by offering alternative explanations of what housing conditions facilitate quality-of-life improvements. While both Place and Personal Experience are generally accepted research domains, this study proposed to incorporate Professional Insights as a component of affordable housing theory.

1. Place Theory

A house or apartment building is obviously tied to the ground where it is built, so much housing research is naturally *location* based. Geography is broadly significant for urban poverty theories such as the Culture of Poverty (Lewis, 1966; Wilson, 1987) and

residential segregation and discrimination (Massey & Denton, 1993), and narrowly

significant for neighborhood theories based on Networks and Attachment (Figuera-

McDonough, 2001) and Neighborhood Effects (Curley, 2005) such as social capital

(Coleman, 1988). Jacobs (1961) established the neighborhood as an important

component of urban life, and Duncan's (2000) case studies showed similar effects in rural

areas. It is common knowledge, and there is supportive research which indicates that

"location matters-for economic returns, quality-of-life, and many other reasons" (Briggs,

2005, p. 17). For our purposes, the question becomes whether place matters for

affordable housing outcomes.

Research on affordable housing has explored the neighborhoods in which developments

are located. Newman & Schnare (1997) evaluated housing programs in terms of

neighborhood quality and found that public housing (not surprisingly) was located in the

worst neighborhoods, while tenant-based rental assistance vouchers tended to be located

in better neighborhoods. Similarly, DiPasquale, Fricke & Garcia-Diaz (2003) conducted

a cost-effective analysis of rental vouchers versus production programs in the affordable

housing literature, and found that vouchers are the most cost effective but also tend to be

located in better neighborhoods with better services. While exploring the geography of

poverty among white households to determine why it increased during the 1980s,

Mulherin (2000) found that areas with more affordable housing tended to have more

white poverty. Sard & Waller (2002) argued that, based on a review of the literature on

the jobs/housing mismatch (where affordable housing and employment opportunity are

far from each other), affordable housing needs to be located near jobs.

A new trend from previous decades is that affordable housing is also moving to the suburbs like moderate-income housing (McClure, 2006; Baldassare, 1992; Berube & Kneebone, 2006), after primarily being located in central cities. Briggs (1998) studied the effects on New York public housing residents of moving to the suburbs, to determine how mobility affected social capital and economic opportunity, and concluded that those who moved had no different ties than those who stayed, and that their incomes were not very different. In one of the few studies on the effects of the LIHTC program, McClure (2006) showed that LIHTC deals started to be developed in the suburbs, and found that buildings located in higher-income suburbs resulted in a deconcentration of poverty for lower income residents. McClure (2006) concluded that LIHTC deals were more effective than rental assistance vouchers in offering better housing opportunities.

In order to estimate the effects of geography on families, researchers have analyzed how neighborhoods affect child development based on national data, and have found powerful effects on IQ, teen birth rates, and dropping out of high school (Brooks-Gunn, Duncan, Klebanov & Sealand, 1993). However, Mayer & Jencks (1989) asked whether kids who grow up in poor neighborhoods are able to succeed, and found in the literature that the effects of geography on poor kids was small and that researchers are not sure why. Similarly, while conducting an extensive review of the literature on how neighborhoods affect families and children throughout their life cycle in order to develop a conceptual framework for why neighborhood matters, Ellen & Turner (1997) found no consensus on why or how.

Recently, several researchers have looked at the effects of specific affordable housing programs, including the housing choice voucher and public housing redevelopment through HOPE VI. In the 2000s to date, these programs started encouraging mobility for tenants. Looking at HUD's *Moving to Opportunity Program* for public housing residents and MTO's impact on income and employment, Ludwig, Duncan & Pinkston (2005) found that participants in Baltimore's MTO program did encourage households to get off and stay off welfare, but did not help them secure jobs. Lewis & Sinha (2007) asked if getting off welfare helped improve household income or the neighborhood, and found that for Illinois families there was no change. Pardee & Gotham (2005) compared the effectiveness of HOPE VI to Section 8 for households in New Orleans, and found no social or economic benefits associated with either program. Ambrose (2005) compared persons who moved out of all 3 HUD voucher programs nationally to determine what household characteristics affected moving-out using hazard rates, and determined that participants vary significantly by program, that location might make a difference, and that the overall economy played a large role in their success. Basolo & Nguyen (2005) asked whether mobility mattered for neighborhood quality, and found that voucher holders who did move (and were white) improved their neighborhood, compared to those who stayed in place (and were not white).

Despite a lack of strong evidence about its benefits, the current policy trend is mixed-income housing and deconcentration. The mix of mixed-income can be based on the building, the Census tract, the neighborhood or the municipality. There are also many ways to define the mix of income levels within a specific affordable building, with some

properties having nominal numbers of non-affordable or market-rate units, and others that consider having both low-income and very low-income households as being mixed. Mixing incomes by neighborhood is also ambiguous with a building containing 100% poor households placed in the middle of a more affluent neighborhood. A more passive form of deconcentration is when households are given rental assistance vouchers and the opportunity to rent an apartment anywhere that will accept their voucher.

From a place perspective, the effects of mixed-income housing have been mixed. For example, much of the public housing stock is being replaced with mixed-income developments under the HOPE VI Program despite the lack of theory supporting the benefits of mixing people of different income levels (Curley, 2005; Joseph, Chaskin & Webber, 2007; Popkin, Cunningham & Burt, 2005). Joseph (2006) asked whether mixed income development is an antidote to urban poverty, and concluded that goals need to be clarified and expectations for success need to be lowered. Vale (2006) countered that good property management was important to mixed-income housing success, and Berube & Kneebone (2006) argued that mixed income housing is the answer to concentrated poverty.

Looking into the record of mixed income housing in alleviating poverty, Smith's (2006) literature review found that the success of mixed income units varied by geography, local demographics, housing market and developer. Kleit (2002) interviewed public housing residents regarding how poverty dispersal through vouchers affected the job search tactics and networks of low-income women who moved out of public housing, and found

that they had to change their tactics from using social networks to formal job placement strategies. But other studies of public housing residents are inconclusive about why geography matters, finding instead that a tenant's motivation and history of work experience are more important to determining outcomes (Anthony, 2005; Joseph, et al., 2007; Kleit & Rohe, 2005).

For this research, the debate is not about advocating or opposing redeveloping poor neighborhoods versus deconcentrating poverty through scattered sites (Ferguson, 2001, p. 417), but whether people who live in government-sponsored affordable housing programs of all types affect, or are affected by, where they live. Both neighborhood redevelopment and deconcentration are necessary, but both need to be done with an understanding of the implications, not in reaction to perceptions.

Table 5: Place Theory Research Summary

Place Subtopic	Studies	Study Conclusions	Relationship between place and affordable housing
Neighborhood differences	Newman & Schnare (1997)	Public housing was located in the worst neighborhoods	Negative
	DiPasquale, Fricke & Garcia-Diaz (2003)	Rental vouchers are more cost effective than production programs but are also in better neighborhoods with better services	Positive
	Mulherin (2000)	Areas with more affordable housing tend to have more white poverty	Positive
	Sard & Waller (2002)	Affordable housing needs to be located near jobs	Negative
Child development	Mayer & Jencks (1989)	Literature review showed geographic effects on the success of poor kids is small	Positive

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	Brooks-Gunn, Duncan, Klebanov & Sealand (1993)	Neighborhoods affect child development in terms of IQ, teen birth rates and dropping out of high school	Positive
	Ellen & Turner (1997)	Literature review on how neighborhoods affect families and children throughout their life cycle showed no consensus on why or how	None
	Galster & Killen (1995)	Geography shapes youth decision-making by varying objective economic opportunities and subjective perceptions based on social networks	Negative
The suburbs	Briggs (1998)	Public housing residents who moved to the suburbs had no different ties than those who stayed and their incomes were not different	None
	McClure (2006)	LIHTC buildings in higher-income suburbs resulted in deconcentrated poverty and were more effective than rental assistance in offering better housing opportunities	Positive
Housing assistance programs	Ludwig, Duncan & Pinkston (2005)	Public housing participants in federal MTO program did get off and stay off welfare but did not secure jobs	Mixed
	Lewis & Sinha (2007)	Getting off welfare had no effect on improving household income or their neighborhood	None
	Pardee & Gotham (2005)	No social or economic benefits associated with either HOPE VI or Section 8	None
	Ambrose (2005)	For persons who moved out of voucher programs, household type did not affect move-out, location might matter but the economy played a major role in success	May be positive
	Basolo & Nguyen (2005)	White voucher holders who moved improved their neighborhood while non-white voucher holders who did not	Mixed

		move did not improve	
Mixed income housing	Joseph (2006)	For mixed income development to reduce urban poverty, goals need to be clarified and success expectations need to be lowered	None
	Curley (2005)	Research reviewed on HOPE VI is inconclusive and mixed at best for improving tenants' lives through deconcentrating public housing.	Mixed
	Vale (2006)	Good property management is key to mixed-income housing success	None
	Berube & Kneebone (2006)	Mixed income housing did deconcentrate poverty	Positive
Poverty deconcentration	Smith's (2006)	Literature review found that success in mixed income housing varied by geography, local demographics, housing market and developer	Mixed
	Kleit (2002)	Former public housing residents had to change job search tactics from using social networks to formal job placement strategies	None
	Anthony (2005)	Perseverance mattered for success in HUD's FSS Program more than housing location or demographics	None
	Joseph, Chaskin & Webber (2007)	Literature review of the effects of mixed income housing were inconclusive	Inconclusive
	Kleit & Rohe (2005)	Motivation and history of work are more important to determining outcomes than geography	None

As summarized in Table 5, research to date on the place impacts of housing on tenants appear to be mixed. While several studies indicated a positive relationship, many studies and literature reviews showed a negative relationship or no relationship at all, and yet

others reflected mixed or inconclusive results. Public housing is located in bad neighborhoods and negatively impacts residents, while affordable housing located in the suburbs tends to be in better neighborhoods with better results. In addition, child development was positively associated with better neighborhoods. Specific housing programs did not appear to affect or be affected by the area in which they were located, yet current policies stress mixing income levels of tenants and deconcentrating poverty. The results of these policies so far seem to be frustratingly inconclusive.

2. Personal Life Experience

Another potential line of housing theory is that tenants' *personal life experiences* may determine outcomes. Who someone is and what has happened to a person in their lifetime needs to be taken into account; for example, their history growing up (positive or negative), experience working (or not), cultural differences, educational opportunities, life-cycle issues related to having children or aging, sense of self worth and self-motivation. These experiences encompass both structural and individual change components and include issues of both external events and internal motivations. Similarly, lack of adequate housing may simply be a lack of money. However, if we are the sum of our experiences, what does that mean for where one lives and one's outcomes within housing? Do demographics override housing type, housing location or supportive services provided?

Personal experiences can include living with/without discrimination or being poor/rich or getting bad/good breaks in life. All experiences make the individual and family, so

whether imposed on the household by society, ingrained in their personality or under the individual's control, experiences need to be taken into account. Again, Culture of Poverty (Lewis, 1966; Wilson, 1987) and Residential Segregation and Discrimination (Massey & Denton, 1993) theories apply because such conditions can create or limit opportunities. Discrimination theories may indicate that households may have *abridged choices* regardless of rational alternatives or life cycle needs (Camayd-Freixas, 1982). For Inequality theories, household income levels determine outcomes (e.g., Stegman, Freeman & Paik, 2007) regardless of opportunities.

In addition, many urban poverty theories take these factors into account separately or in combination. Anthony (2005), Kleit & Rohe (2005) and Joseph, et al. (2007) summarize four urban poverty theories that seek to explain why people should be successful or not when living in affordable housing: 1) Culture of poverty: the longer people live under certain conditions the less likely they are to move out because they do not know any other way; 2) Rational choice: based on their background (skills, education, work experience) people make the best choice for their family about whether to stay or move on; 3) Life cycle: people move from housing situations throughout their lives as family composition changes; and 4) Social exclusion: a person's self-perception and self-esteem determine their ability to succeed regardless of their surroundings.

Using these four urban poverty theories, Kleit & Rohe (2005) analyzed the effectiveness of HUD's Family Self-Sufficiency (FSS) Program. FSS is available for public housing residents who wish to move beyond public housing using savings they earn from

employment and training, so it is a potential poverty alleviation strategy. Using survey data and in-depth life history interviews with six participants in the Charlotte (NC) *Gateway Transitional Families Program* they found few significant predictors of program success; only previous training and good health had any significance. Qualitative analysis revealed that individual motivation and separation from negative influences were positive predictors of success, while family responsibilities and inability to find a job due to lack of a high school diploma were negative. Similarly, Anthony (2005) evaluated variables that predict participant success in FSS. Based on one program in Rockford (IL) that had been operating for many years and had enough graduates to evaluate, using the same four theories, the research showed that race, age, number of children and martial status did not predict successful program completion, but time spent in the program and number of new skills learned did predict success; that is, perseverance, time on task, and some social capital dimensions were key.

Research results on various demographic components has been mixed with characteristics such as race, age, education or presence of children being significant for some studies while perseverance and motivation override these factors in other studies. For example, Zedlewski (2002) found that once families have housing assistance they keep it even without other welfare and that adults with housing assistance but not on other welfare were more likely to be employed. Households with low education, poor health and lack of work experience were less likely to be employed and therefore still receive housing assistance. While housing assistance reduces housing costs and crowding, poor families are still poor. Housing assistance therefore helps families move from welfare to work.

Bahchieva & Hosier (2001) found that households living in public housing tend to leave earlier if they have higher incomes, are very young or very old, single or white. Those in smaller units or in bad neighborhoods also left earlier so, while average stays were increasing, the transitional nature of public housing is not transitional for others.

Welfare reform has also impacted the housing situation of many lower income households. Lewis & Sinha (2007) looked at residential and income mobility as a result of welfare reform legislation (PRWORA and QHWRA) to see if income levels or segregation changed for families. They determined that incomes nearly doubled, but from extremely low to a very low maximum of less than $16,000 per year. Many of those who moved did move to lower poverty areas but they were no less segregated, and overall segregation did not decrease.

Individual motivations and goals can also dictate who tries to move into affordable housing. Looking at why tenants move into LIHTC developments, Abt Associates (Buron, et al., 2000) found that tenants moved for a nicer apartment or for lower rent, but some moved despite the new neighborhood being worse than the old. (They did not analyze why.) While some households are grateful to have an affordable home because it is nicer or cheaper, there is no evidence that they look at it as a stepping-stone to a better life, as opposed to many homebuyers who see ownership as an investment in the future (Stegman, Freeman & Paik, 2007). Stegman, et al. (2007) also found that ownership, race, and attitude were predictors of wealth types and amounts.

Table 6: Personal Life Experience Research Summary

Personal Life Experience Theories	Studies	Study Conclusions	Relationship between personal life experience and affordable housing
Culture of Poverty Rational choice Lifecycle Social Exclusion	Anthony (2005)	In HUD's FSS program perseverance predicted successful program completion. Race, age, number of children and martial status did not predict completion. Time spent in the program and number of new skills learned predicted success.	Perseverance was positive. Race, age, children and marital status were neutral.
Culture of Poverty Rational choice Lifecycle Social Exclusion	Kleit & Rohe (2005)	Previous training and good health had significance in FSS program completion success. Individual motivation and separation from negative influences were positive predictors of success. Having kids, no job or no diploma were negatives.	Job training, good health and motivation were positive. Children, no job and no education were negative.
Social Exclusion	Clampet-Lundquist (2003)	In public housing, those who were willing to develop connections through social capital were more likely to keep their apartments.	Motivation was positive.
Inequality	Stegman, Freeman & Paik (2007)	Found no evidence that renters look at housing as a stepping stone to a better life, as opposed to many homebuyers who see ownership as an investment in the future. Also, ownership, race and attitude were predictors of wealth.	Higher income, ownership, race and attitude were positive.
Concentrated Poverty Discrimination	Lewis & Sinha (2007)	With welfare reform, incomes increased but within limits. The concentration of poverty decreased but racial segregation remained high.	Racial and economic segregation were negative.
Dependency	Rank and Hirschl (2002)	The majority of Americans use welfare programs in the social safety net during their lives despite the stigma.	Welfare was negative.

Inequality Dependency	Zedlewski (2002)	Once families have housing assistance they keep it even without other welfare. Adults with housing assistance but not on other welfare were more likely to be employed. Households with low education, poor health & no work experience were less likely to be employed. Housing assistance reduces housing costs and crowding but poor families are still poor.	Housing assistance was positive.
Life cycle Residential Segregation	Bahchieva & Hosier (2001)	Households living in public housing tend to leave earlier if they have higher incomes, are very young or very old, single or white. Those in smaller units or in bad neighborhoods also leave earlier. Average stays are increasing so it is not transitional for others.	Age, race, income and previous housing were related to public housing tenure.
Lifestyle	Aero (2006)	Residential choice is based on lifestyle indicators including tenure preference, family status and previous housing	Previous housing is related to future housing.

Rank & Hirschl (2002) explored the U.S. safety net of social program sand summarized that the majority of Americans use welfare programs during their lives despite the stigma. However, once people use welfare they tend to use it again indicating a dependency on such programs or familiarity with the system. Clampet-Lundquist's (2003) study of single, minority mothers living in public housing concluded that those who were willing to take the initiative to develop connections through social capital were more likely to keep their apartments. Aero (2006) found that residential housing choice of adults is based on lifestyle indicators including tenure preference, family status, and previous housing. This suggests that the type of housing one lives in as a child influences the type of housing one aspires to as an adult.

As Table 6 shows, the theories and factors involved in determining human behavior are complex. Comprehensively evaluating these issues is clearly beyond the scope of this study. However, housing research on human characteristics seems to indicate that personal life experiences matter beyond other factors. The above studies seem to show that a person's history and internal drive can influence their success in housing programs, location and other factors held constant. Housing theory, therefore, needs to account for these individual differences so demographic indicators which can be measured (e.g., age, race, income, marital status), along with employment experience, presence of children, work history, previous housing, as well as motivation and self-esteem.

3. Professional Practice Insights

Less formal professional practice explanations of housing impacts derive primarily from the working experiences of policy makers, housing developers and property managers. These practitioners bring their own biases, motivations and beliefs to bear in creating and sustaining affordable housing on a daily basis. The fact that affordable housing gets built and remains viable after years of occupancy, implies that practitioners may know what they are doing. Professional theories come from the experiences of those involved in affordable housing and are sometimes so ingrained into the system that few question the assumptions or reasons for their inclusion; for example, that nonprofit developers are preferable to for-profit developers, that property management systems matter — especially nonprofit managers— and that supportive services can overcome place or personal limitations.

a. Nonprofit versus For-profit: There are three types of developers that create affordable housing: public, nonprofit, and for-profit. Although the federal government had been involved in creating public housing since the 1930s, it is now out of the development business and has turned over development to the other two developers. Private for-profit developers have been using public funds to build affordable buildings for decades and continue to build successful developments around the country. As shown above, nonprofit community development corporations have only been on the scene for the past thirty years, and have only been significant housing developers for the past decade, contributing about one-third of the affordable units.

State and federal government housing program administrators show their support for nonprofit housing developers by establishing set-asides for nonprofits within affordable housing finance programs. Keyes, Schwartz, Vidal & Bratt (1996) found that local government agencies are fond of nonprofits because they typically keep units affordable permanently, usually serve the poorest tenants by providing the lowest rents along with supportive services, and are willing to suffer through more than for-profit developers. Politically, "Both conservatives and liberals embraced nonprofits because they were perceived as incorruptible, caring, and efficient" (Erickson, 2006, p. 181). Nonprofits typically have a longer-term vision for a community and are less concerned with the bottom line. "In comparison with for-profits involved with subsidized housing, nonprofits typically focus on more distressed areas and their developments are typically targeted to harder-to-house populations" (Bratt, 2006, p. 5).

A study by HUD of LIHTC developments (Buron, et al., 2000) showed that nonprofits typically develop affordable housing for *neighborhood improvement* goals while for-profit developers typically do it for traditional *profit-oriented real estate objectives.* Developers set their own standards and provide supports to help improve tenants' lives beyond providing a roof over their heads (Vidal, 1992). Experience and friendly discussions with developers has shown that for-profit developers build housing for the roof value with few if any expectations for residents. The *deal* is a decent place to live in exchange for a lower rent: the for-profit developer provides the roof and the tenant pays the rent, nothing more, nothing less. Conversely, many nonprofits provide their own management in order to provide additional services to their tenants (Briggs & Mueller, 1997) or have explicit self-sufficiency goals and provide case managers to help tenants achieve those goals (Bratt, Keyes, Schwartz & Vidal, 1995).

b. Property Management: Once an affordable rental development is completed, exceptional property management is essential to its long-term viability. "Effective housing management is the key to nonprofits' ability to maintain their growing inventory of affordable housing over the long term" (Bratt & Keyes, 1998, p. 1). While it might not seem like a controversial topic compared to getting the deal approved, much has been written about the viability of managing affordable units, especially by nonprofit organizations. Sullivan (1993) described in depth the strategies used by CDCs to go beyond just developing units to include property management, social services, community organizing and advocacy. Bratt, Keyes, Schwartz & Vidal (1995) set out to establish best practices for nonprofits involved in managing the affordable developments

they had created. The researchers explored how nonprofits manage affordable housing and whether or not they should do so, and found that many nonprofits were successful at managing housing in terms of financial success and staying in business (the double-bottom line), but also concluded that there are many potential financial pitfalls that make operating such housing risky. Briggs & Mueller (1997) extended Sullivan's (1993) study to analyze how CDC management affected the lives and attitudes of residents in terms of housing satisfaction, neighborhood safety and community building. They found that success was influenced by local circumstances, it took considerable effect to succeed, CDCs had to overcome mistrust, and that "CDC housing is a 'move-up', especially for the most disadvantaged residents" (p. 7).

Diaz (2004) conducted an extensive literature review of affordable housing property management by comparing self-management to third-party management of nonprofit-owned affordable multifamily housing and concluded that while third party management was more efficient, nonprofit management empowered residents. Good property management, even simple things like quick repairs, leads to improved resident satisfaction (Paris, 2006). Hals' (2002) guide for how nonprofits could secure their supportive housing programs through effective asset management concluded that it takes hard work. Exploring a model for creating social capital at the building level, Saegart & Winkel (1998) found that nonprofit ownership and management of affordable housing negated the need for social capital; i.e., that nonprofit buildings were better in terms of quality and security. However, Brophy & Smith (1997) concluded that just good

management was insufficient, that activities were needed to create opportunities for residents.

c. Supportive Services: Recognizing the need to provide more than the roof and good management, many nonprofits, and housing authorities, started providing supportive services to their tenants in addition to self-management. For affordable housing viability the lesson that "urban renewal dramatically demonstrated the limits of physical solutions to social problems" (Lang & Sohmer, 2000) p. 296) is important because just building affordable housing is often seen as enough to help poor families.

Supportive services and appropriate management are important components that need to be included if affordable housing is to be successful. Research so far shows positive results from these initiatives. For example, HUD created the *Jobs Plus* program, which provided supportive services to help public housing residents find employment. Bloom, et al. (2005) found that the program had a positive effect on residents' ability to find work and earn more money. However, the program was hard to implement, so positive results were linked to positive implementation, and no neighborhood quality-of-life improvements were found. Boston (2005) found increases in employment and earnings for participants who moved to mixed-income sites.

Social services are also part of some HOPE VI redevelopments. When included, residents typically know about the program, use it and like the services provided (Collins, Curley, Clay & Lara, 2005). However, Popkin, Cunningham & Burt (2005) believe that

there are many residents of public housing who are hard-to-house, so housing authorities

need to provide a range of options for tenants, including supportive services. Mercy

Housing conducted a comparison of their developments with resident services and

without (Enterprise Community Partners, 2007) to determine the impact of services on

the performance of properties. They found that properties with services outperformed

those without in terms of vacancy loss, legal fees and bad debt, all of which are

reflections of tenants' ability to pay rent and therefore their stability. Many HUD-

assisted properties that serve seniors have Service Coordinators who provide social

services to residents. Levine & Robinson Johns (2009) found that residents in properties

with Service Coordinators stayed longer and had improved quality-of-life.

Table 7: Professional Practice Insights Research Summary

Professional Practice Insights Subtopic	Studies	Study Conclusions	Relationship between professional insights & affordable housing
Nonprofit versus For-profit	Keyes, Schwartz, Vidal & Bratt (1996)	Local governments like nonprofits because they keep units affordable permanently, serve the poorest tenants with the lowest rents and supportive services, and put-up with more than for-profit developers	Positive
	Erickson (2006)	Both conservatives and liberals embrace nonprofits because they are seen as incorruptible, caring and efficient	Positive
	Bratt (2006)	Nonprofits typically have a longer-term community vision, are less concerned with the bottom line, focus on more distressed areas and target harder-to-house populations	Positive

	Buron, Nolden, Heintzi & Stewart (2000)	Nonprofits typically develop affordable housing for neighborhood improvement goals instead of traditional profit-oriented real estate objectives	Positive
	Vidal (1992)	Nonprofits provide supports to help improve tenants' lives beyond providing a roof over their heads	Positive
	Briggs & Mueller (1997)	Nonprofits do self-management to provide added services to their tenants	Positive
	Bratt, Keyes, Schwartz & Vidal (1995)	Nonprofits have explicit self-sufficiency goals and provide case managers to help tenants achieve goals	Positive
Property Management	Diaz (2004)	Literature review concluded that third party management was more efficient but nonprofit self-management empowered residents	Positive
	Briggs & Mueller (1997)	Nonprofit management success was influenced by local circumstances, took effort to succeed and overcame mistrust	Positive
	Paris (2006)	Good property management improved resident satisfaction	Positive
	Hals (2002)	Supportive housing programs require hard work	Positive
	Saegart & Winkel (1998)	Nonprofit ownership and management of affordable housing negated the need for social capital	Positive
	Brophy & Smith (1997)	Good management was insufficient, activities were needed to create opportunities for residents	Positive
	Vale (2006)	Good property management was key to mixed-income housing success	Positive
Supportive Services	Bloom, et al. (2005)	Jobs Plus Program had a positive effect on residents' ability to find work and earn more money	Positive
	Boston (2005)	Employment and earnings increased for participants who moved to mixed-income sites	Positive

	Collins, Curley, Clay & Lara (2005)	HOPE VI residents typically know about, use and like services provided on-site	Positive
	Popkin, Cunningham & Burt (2005)	Public housing residents are hard-to-house so supportive services are needed	Positive
	Enterprise Community Partners (2007)	Properties with services out-performed those without services in terms of vacancy loss, legal fees and bad debt	Positive
	Levine & Robinson Johns (2008)	Seniors in properties with Service Coordinators stayed longer and had improved quality-of-life	Positive

Based on a review of existing studies, professional practice insights appear to have somewhat more predictive power than the more theoretical place and personal life theories. All the studies reviewed on professional insights indicated positive relationships between professional ideas and affordable housing outcomes in terms of nonprofit developers versus for-profit developers, nonprofit property management and the provision of supportive services to residents of affordable housing. These positive relationships show the wisdom of experience from those who are in the field creating and sustaining affordable units.

E. Housing Improvement Benefits

The goal of many government safety net programs, especially poverty alleviation strategies, is to reduce poverty by increasing income or, some argue, increase wealth (Sherradan, 1991). Wealth is often defined in terms of capital or assets. Yet there are many types of capital beyond traditional financial assets such as disposable income and

savings. Housing is a physical asset that can be measured in terms of value, quality,

location, income potential, type, etc.). Other types of capital that have been studied

include human capital, social capital and personal capital (Coleman, 1998; Putnam, 1995;

Sen, 2000). These five capitals are listed in Table 8 along with sample components of

each.

Table 8: Types of Assets/Capital

Capital	Financial Capital	Physical Capital	Social Capital	Human Capital	Personal Capital
Sample Variables	Disposable income Savings Wages Percent of income spent on housing	Housing condition Feelings of safety Geographic location Perceived access to basic needs Perceived access to social services Car	Sense of social networks Family and friends around Participation in local groups Community life Political participation	Perceived adult health Access to education Employment history New job skills Level of education	Sense of self-esteem/ self-confidence Personal motivation Sense of happiness Satisfaction with property management, housing & neighborhood

Sources: Toye & Infanti (2004); Department for International Development (1999); Toronto Enterprise
Fund (2004)

Independently, various components of each capital have been researched related to

housing. The literature on Social Inclusion (e.g., Toye & Infanti, 2004) explicitly takes

these capitals into account. The effects or variables studied may be different depending

on the target of the research, such as community versus an individual household versus a

nation, yet each type of capital has many components that apply to all levels. The

quality-of-life indicators listed above in Table 2 can all be placed within one of these

capital domains. The following sections more fully define each of the five capitals and provide examples of how each capital has been researched related to affordable housing.

1. Financial Capital

Financial capital is the traditional measure of wealth. Wealth can be measured in terms of the stream of income or pool of savings (Sherradan, 1991). On the household scale, financial capital includes not only earnings, disposable income, and savings, but also economic security including economic literacy and earning power (Eko Nomos, 2004; Toye & Infanti, 2004; Kunz, 2003). On the larger national scale, financial capital includes GDP, national savings and credit/debt, international remittances, pension responsibilities and overall wages (Department for International Development, 1999). Affordable housing seeks to reduce a major cost of living by offering below-market rents to lower-income households. Paying less rent allows a reallocation of disposable income to other essential goods for that resident. It also provides a stable environment from which to earn a living.

As shown in Table 9, within public housing, research has shown that eliminating other welfare benefits while continuing to live in public housing tends to increase labor participation (Painter 2001), and therefore wages. In addition, adults who lived in public housing as children earn more and are more likely to be employed than poor children who did not live in public housing (Newman 2002). Receiving housing assistance may help poor families move towards work and increase their well-being (Zedlewski, 2002). Poor households receiving housing assistance appeared to have no affect on their food

expenditures but may have slowed their income growth (Harkness, 2003). Within public housing, the *Moving to Opportunity* program seemed to encourage participants to get off and stay off welfare, but did not appear to help them to secure jobs (Ludwig, 2005). Under the *Family Self Sufficiency* program in public housing, participants increased their earnings, especially compared to those who did not participate in the program (Olsen, 2005). Looking at the role of housing tenure in determining household wealth, Stegman (1991) found that owners had greater wealth and different kinds of wealth than renters, whose limited wealth was not tied into their home.

Table 9: Financial Capital Research Summary

Financial Capital Subtopic	Studies	Study Conclusions	Relationship between financial capital & affordable housing
Public assistance	Painter (2001)	Eliminating welfare benefits while living in public housing increased labor participation	Positive
	Newman (2002)	Adults who grew up in public housing earned more and were employed more than other poor	Positive
	Zedlewski (2002)	Housing assistance helped poor families obtain work and increase well-being	Positive
	Harkness (2003)	Housing assistance slowed income growth but had no affect on food expenditures	Positive
Housing Programs	Ludwig (2005)	MTO program got and kept participants off welfare but did not help them secure jobs	Positive
	Olsen (2005)	FSS program participants increased earnings	Positive
Wealth	Stegman (1991)	Owners have greater wealth and different kinds of wealth than renters	Positive

2. Physical Capital

Physical capital includes tangible resources, such as housing, but also access to meet needs based on physical location. Housing is therefore a major aspect of physical capital. For the individual, physical capital also includes access to appropriate infrastructure, such as plumbing and utilities, as well as geographic location (Kunz, 2003; Toye & Infanti, 2004). Physical capital also includes access to basic needs, services and entitlements, including food security. It includes stable, affordable housing, personal security, and access to social services and information (Eko Nomos, 2004; Toye & Infanti, 2004). For larger geographic areas, including towns, states and nations, physical capital consists of infrastructure (transportation, secure shelter and buildings, water supply and sanitation, energy, communications), and tools and technology (equipment for production, seed, fertilizer, pesticides, technology) (Department for International Development, 1999). These aspects are relevant for measuring regional change or comparing regions to each other.

At its most basic level, affordable housing should provide a decent living environment. While older public housing failed on this point (Popkin, Cunningham & Burt, 2005), newer privately developed affordable housing has largely succeeded (Bratt, et al., 2006) as shown in Table 10. For example, HUD's study of LIHTC properties in five communities (Buron, et al., 2000) found that most tenants moved to affordable housing for a nicer apartment (37% in nonprofit-developed and 19% in for-profit developed) or a lower rent (26% nonprofit and 31% for-profit). While approximately seventy percent of

tenants rated their LIHTC unit as good or excellent, just over half of residents thought

that their new unit was better than their previous apartment.

Table 10: Physical Capital Research Summary

Physical Capital Subtopic	Studies	Study Conclusions	Relationship between physical capital & affordable housing
Decent housing	Popkin, Cunningham & Burt (2005)	Public housing failed to provide a decent living environment for tenants	Public housing negative
	Bratt, Stone & Hartman (2006)	Newer privately-developed affordable housing has largely succeeded at providing a decent living environment	Positive
	Buron, Nolden, Heintzi & Stewart (2000)	Most LIHTC tenants moved to affordable housing for a nicer apartment or a lower rent	Positive
CDC role	Vidal (1992)	CDCs have the ability to redevelop poor areas by creating housing, commercial and business development	Positive
	Briggs (1997)	CDCs improve housing satisfaction, increase neighborhood safety and build community	Positive
	Bratt (2002)	Decent and safe housing is important for family well-being	Positive

Affordable housing developments built by nonprofit community development

corporations (CDCs) are able to improve the physical environment where they operate.

Vidal (1992) showed that CDCs have the ability to redevelop poor areas by creating

housing, commercial and business development. Briggs (1997) analyzed how CDCs

improve housing satisfaction, increase neighborhood safety and build community, and

presented the importance of decent housing. Bratt's (2002) literature review of the

connections between housing and family well-being stressed the importance of decent

and safe housing in a family's life: "Housing is the foundation of family life, without which all other activities are severely challenged or rendered impossible to carry out" (p. 14); and "Housing is also critical because of the way in which it relates to its occupants, providing sufficient space so that the family is not overcrowded; being affordable; providing opportunities to create a positive sense of self and empowerment; and providing stability and security" (p. 13).

3. Human Capital

Human capital has historically been tied to a person's ability to work, but the definition has expanded as theorists recognized the individuals' ability to invest in themselves (Becker, 1964). Human capital includes education, skills, credential recognition (Kunz, 2003; Toye & Infanti, 2004), plus the ability to work and engage in the economy, including employability, leadership, health, skills and knowledge (Eko Nomos, 2004; Toye & Infanti, 2004). Human capital also exists at the national level in the form of health, nutrition, education, knowledge and skills, capacity to work, and capacity to adapt (Department for International Development, 1999).

Poverty has been shown to negatively affect human capital. Looking at whether kids growing up in poor neighborhoods are able to succeed (i.e., does poverty matter?), Mayer (1989) found in the literature that effects were small and that not enough was known as shown in Table 11. Schmitz (1992) reviewed the literature for factors that limit the success of children who live in public housing and identified crime, violence, fear, isolation, concentrated poverty, poor housing and unprepared schools/teachers --all

variables which limit the growth of human capital. Using national data to study the effects of neighborhood on child development, Brooks (1993) found that neighborhoods had powerful effects on IQ, teen births and high school dropouts --again, decreasing human capital. Shroder (2002) asked whether housing assistance perversely affected self-sufficiency, and concluded from the literature that receiving housing assistance did not affect employment but was correlated with more single parents and negatively impacted the life chances of young boys.

Looking specifically at work and whether living in public housing restricted residents' work behavior, Reingold (1997) concluded that public housing residents did not work any less than other poor households. The *Jobs Plus* program was evaluated to see if an employment program could help public housing residents secure work, earn more money and improve their quality-of-life. Bloom (2005) concluded that *Jobs Plus* had a positive impact when it was run well, however it was very hard to implement properly. FSS was evaluated by Kleit & Rohe (2005) to estimate predictors of success, and found that those who had job experiences, good health and more education were more likely to complete the program.

Table 11: Human Capital Research Summary

Human Capital Subtopic	Studies	Study Conclusions	Relationship between human capital & affordable housing
Poverty	Mayer (1989)	Kids in poor neighborhoods are less likely to succeed	Positive
	Brooks (1993)	Neighborhood impacts IQ, teen births and high school dropouts	Positive

	Schmitz (1992)	Kids in public housing experience crime, violence, fear, isolation, concentrated poverty, poor housing and unprepared schools/teachers, which limit the growth of human capital	Public housing negative
	Shroder (2002)	Housing assistance is correlated with more single parents and negatively impacted life chances but did not affect employment	Positive
Employment	Reingold (1997)	Public housing residents did not work any less than other poor households	Positive
	Bloom (2005)	*Jobs Plus* program helped public housing residents secure work, earn more money and improve quality-of-life, when run well	Positive
	Kleit & Rohe (2005)	FSS program success linked to having job experience, good health and more education	Positive
Education	Lubell, Crain & Cohen (2007)	Children living in affordable housing moved less and changed schools less, moved to better neighborhoods and less crowded conditions, were less likely to be homeless, and had improved health, which helped school attendance and achievement	Positive
	Lubell & Brennan (2007)	Affordable housing freed resources which could be spent on health care and better food; reduced stress and stress-related health problems; led to increased self-esteem, stability, security and control; limited exposure to health hazards; provided stability to deal with health issues; and reduced crowding and associated exposure to health risks	Positive

Two major literature reviews were conducted by the Center for Housing Policy on the

impacts of affordable housing on two important human capital variables: education and

health (Lubell, Crain & Cohen, 2007; Lubell & Brennan, 2007). The review on

education for children concluded that children living in affordable housing moved less, and changed schools less, which helped educational continuity; when moves did happen they were to better neighborhoods; to less crowded conditions, so had more room to concentrate; were less likely to be homeless, which reduces achievement; had improved health due to decent housing (e.g., no lead paint or other hazards), which helped school attendance and achievement (Lubell, Crain & Cohen, 2007) . Affordable housing was also shown to have important positive impacts on children's health since decent affordable housing freed resources which could be spent on health care and better food; reduced stress and stress-related health problems; in the form of homeownership led to increased self-esteem, stability, security and control; limited exposure to health hazards such as allergens and toxins; provided stability for those with health issues to be able to address them efficiently; and reduced crowding and associated exposure to health risks including infectious diseases and mental health (Lubell & Brennan, 2007).

4. Social Capital

Social capital is a relatively new concept which became fashionable and entered mainstream discussions in the 1990s (see, for example, Putnam's [1995] *Bowling Alone*). Social capital was originally conceived as "a resource, available in social structures, that facilitates actors who wish to seek certain goals and as such is neither good nor bad" (Coleman, 1988, p. 96). However it has come to be seen as a tool that can grow or diminish which works through social networks, social trust and social norms (Putnam, 1993). There was much research done during the 1990s on the effects of social capital related to a variety of issues including affordable housing and community economic development as described below.

Table 12: Social Capital Research Summary

Social Capital Subtopic	Studies	Study Conclusions	Relationship between social capital & affordable housing
Users	Keyes, Schwartz, Vidal & Bratt (1996)	Social capital is used by community development organizations to get housing built	Positive
	Saegert, Winkel & Swartz (2002)	Social capital is used by community development organizations to maintain decent buildings	Positive
	Briggs (1998)	Social capital is used by residents of affordable housing to maintain their lives	Positive
	Clampet-Lundquist (2003)	Social capital is used by residents of affordable housing to maintain their lives	Positive
Leverage	DeFillipis (2001)	Social capital misses the impact of power and economic capital	Negative
	Coleman (1988)	Social capital increases physical capital and human capital	Positive
	Servon (2002)	Social capital increases physical capital and human capital	Positive
Connections	Briggs (1998)	Social networks having one employed adult increases housing mobility	Positive
	Bothwell, Gindroz & Lang (1998)	Changing the physical environment via public housing redevelopment can restore community among residents	Positive
	Clampet-Lundquist (2003)	Single mothers in poor neighborhoods use social capital and ingenuity to stay off the street	Positive
	Saegert & Winkle (2003)	Participation in tenant associations leads to less crime in affordable housing	Positive

Table 12 shows that for a person, social capital includes family and friends, community life, political empowerment (Kunz, 2003; Toye & Infanti, 2004), plus the ability to

engage in the community and broader society including social connections, peer support, participation in decision making, and political literacy (Eko Nomos, 2004; Toye & Infanti, 2004). For nations, social capital expands to encompass networks and connections (patronage, neighborhoods, kinship), relations of trust and mutual support, formal and informal groups, common rules and sanctions, collective representation, mechanisms for participation in decision-making, and leadership (Department for International Development, 1999).

Social capital research in the context of affordable housing has shown that social capital is used by community development organizations to get housing built (Keyes, et al., 1996), maintain decent buildings (Saegert, Winkel & Swartz, 2002) and by residents of affordable housing to maintain their lives (Briggs, 1998; Clampet-Lundquist, 2003). Although social capital has been criticized as being wrong since it misses the impact of power and economic capital (DeFillipis, 2001), it has also been shown to increase both physical capital and human capital (Coleman, 1988; Servon, 2002). Briggs (1998) used social capital to review the impact of social networks on resident housing mobility programs, and demonstrated that through networks "adding just one steadily employed adult to an adolescent's circle of significant ties has dramatic effects on perceived access to such leverage" (p. 177). In looking at the redevelopment of public housing Bothwell, Gindroz & Lang (1998) show that changing the physical environment by using traditional neighborhood design techniques can restore community among residents. Clampet-Lundquist (2003) explored how single mothers living in poor neighborhoods use social capital and plain old ingenuity to stay off the streets. Saegert & Winkle (2003) showed

that participation in tenant associations leads to less crime in affordable housing. Vidal (1992) wrote "developing social capital will represent a new responsibility for CDCs" (p. 3).

5. Personal Capital

Personal capital is one's feelings and thoughts about themselves as well as how they act in response to those feelings. On the individual level, personal capital can be the least tangible and most private of the capitals. It is comprised of personal identity including self-esteem, self-confidence, motivation, and other emotional resources (Eko Nomos, 2004; Toye & Infanti, 2004). In addition, Sen (2000) has expanded the concept to include happiness and freedom from discrimination. Since these concepts do not transfer seamlessly to a more macro scale, at the national or international level this resource is called *natural capital*, which encompasses the availability of and access to tangible and intangible resources such as land and food, water and aquatic resources, trees and forest products, and wildlife, in addition to clean air and biodiversity (Department for International Development, 1999). Like personal capital, natural capital is seen as an essential building block for future growth, which occurs naturally but can be manipulated, expanded and diminished. Although these natural resources can be turned into financial capital, their existence and availability influence growth in the other capitals similar to personal capital.

Nandi & Harris (1999) sought to explore the social world of poor black women living in subsidized housing (Section 8) to learn about their social world, constraints, hopes and

fears in order to assess their quality-of-life as summarized in Table 13. Nandi & Harris

(1999) concluded that residents were similar to mainstream women in all respects but that

their housing situation kept them from advancing. The impacts of personal capital on

affordable housing research are often more subtle. As part of the HOPE VI

redevelopment of public housing, Brooks, Zugazaga, Wolk & Adams (2005) evaluated

participants' perceptions after moving from public housing and getting rental vouchers.

They found that residents' perceptions of their well-being improved after moving into

better housing in better neighborhoods under better economic conditions.

Table 13: Personal Capital Research Summary

Personal Capital Subtopic	Studies	Study Conclusions	Relationship between personal capital & affordable housing
Self-esteem	Nandi & Harris (1999)	Female Section 8 residents were similar to mainstream women in all respects but their housing kept them from advancing	Positive
	Brooks, Zugazaga, Wolk & Adams (2005)	Former public housing residents' perceptions of their well-being improved after moving into better housing in better neighborhoods with rental assistance	Positive
Motivation	Anthony (2005)	FSS program success was related to time spent in the program and number of new skills learned but not race, age, number of children and marital status	Positive
	Kleit & Rohe (2005)	FSS program completion success was related to individual motivation and separation from negative influences	Positive

Two studies of HUD's Family Self-Sufficiency Program concluded that positive outcomes were related to personal capital. Anthony (2005) evaluated variables that predicted participant success in FSS and showed that race, age, number of children and marital status did not predict successful program completion, but that time spent in the program and number of new skills learned predicted success. Kleit & Rohe (2005) used survey data and in-depth life history interviews with six participants to analyze the effectiveness of FSS, and found few significant predictors of program success; however qualitative analysis revealed that individual motivation and separation from negative influences were positively correlated with program completion.

F. Sustainable Livelihoods Framework

All five capitals presented above (financial, physical, social, personal and human) have been combined within the Sustainable Livelihoods Framework (Department for International Development, 1999; Murray & Ferguson, 1991; Toronto Enterprise Fund, 2004; Toye & Infanti, 2004). The Sustainable Livelihoods Framework (SLF) was originally developed to involve poor people in developing countries in a participatory process of self-improvement (Chambers, 1984; Chamber, 1994). The SLF is currently used by the Department for International Development as a tool to address worldwide poverty. It provides a structure around which to help the people in a community within a developing country to build solutions for themselves. Research studies of projects using the Framework include diverse issues such as helping women out of in poverty (Murray

& Ferguson, 2001), creating a rural community energy coop (Hinshelwood, 2003), and building lives for homeless people (Toronto Enterprise Fund, 2004).

> "The livelihoods approach is concerned first and foremost with people. It seeks to gain an accurate and realistic understanding of people's strengths (assets or capital endowments) and how they endeavour to convert these into positive livelihood outcomes. The approach is founded on a belief that people require a range of assets to achieve positive livelihood outcomes; no single category of assets on its own is sufficient to yield all the many and varied livelihood outcomes that people seek" (Department for International Development, 1999, p. 5).

The complete Framework, shown in Figure 2, takes into account the *vulnerability context* or external environment in which people live (Department for International Development, 1999). The vulnerability context is comprised of *trends, shocks and seasonality*, which can be positive or negative. The complete Framework also includes *transforming structures and processes* that are the institutions, organizations, policies and legislation which impact peoples' livelihoods. There are also *structures*, both public and private, that account for administration, in addition to *processes* such as policies, legislation, institutions, culture and power relations, which dictate how structures run. Finally, the Framework incorporates *livelihood strategies* that are used in order to achieve *livelihood outcomes*. While similar to Logic Models, the SLF goes further and includes participants in the process of observation, goal setting, and outcomes. The complete Framework shows the interconnections between policies and institutions, livelihood capital assets, livelihood strategies, livelihood outcomes and the vulnerability context (Department for International Development, 1999).

Figure 2: Sustainable Livelihoods Framework
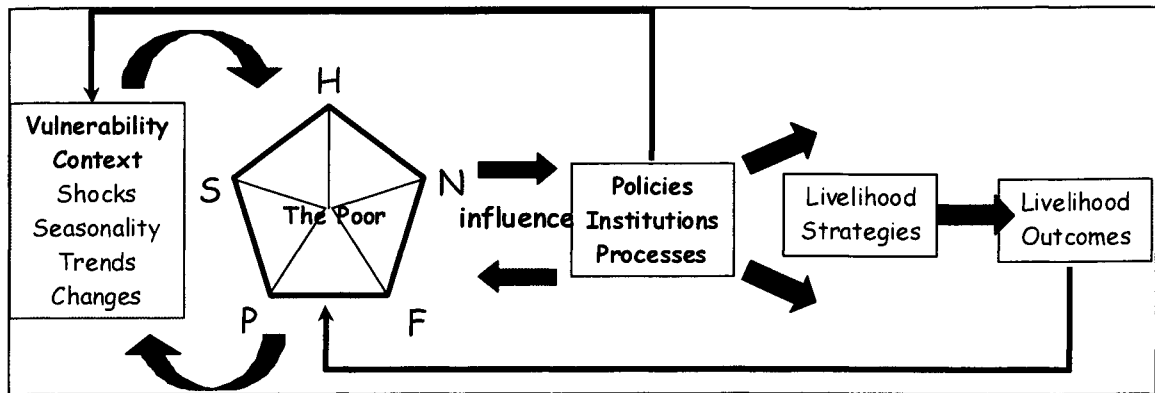
Source: Department for International Development (1999)

The heart of the SLF is the Livelihoods Assets which is comprised of five capitals. As

shown in Figure 3, the Livelihood Assets of the Sustainable Livelihoods Framework is a

pentagon that has as its corners one of the five capitals. Each *capital* is an index created

by adding the values of the individual variables under each capital. Many of these

variables are used in community studies, but the SLF gives a standardized way to

compile and compare the measures. The value of each index is plotted within the

pentagon using a standardized scale. "The pentagon was developed to enable

information about people's assets to be presented visually, thereby bringing to life

important inter-relationships between the various assets" (Department for International

Development, 1999, p. 5). Although one measurement from one person (or group or

building or country) does not provide much information, taking a second measurement

over time or taking measurements from another participant, allow comparisons. The

second measurement can be plotted with the first for a graphical representation of how

each of the capitals changed over time or is different between persons or groups, etc.

Using the visual device of the Livelihoods Assets pentagon, the practitioner can look for

"relationships between assets" to see if some asset can predict certain outcomes, support

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the growth of other assets or be used to replace the need for having other assets: "sequencing" and "substitution" in SLF language (Department for International Development, 1999, p. 6). The Livelihoods Assets of the SLF is therefore a tool, which can be used to organize variables and look for changes or interrelationships, which may suggest possible actions.

Figure 3: Livelihood Assets of the Sustainable Livelihoods Framework
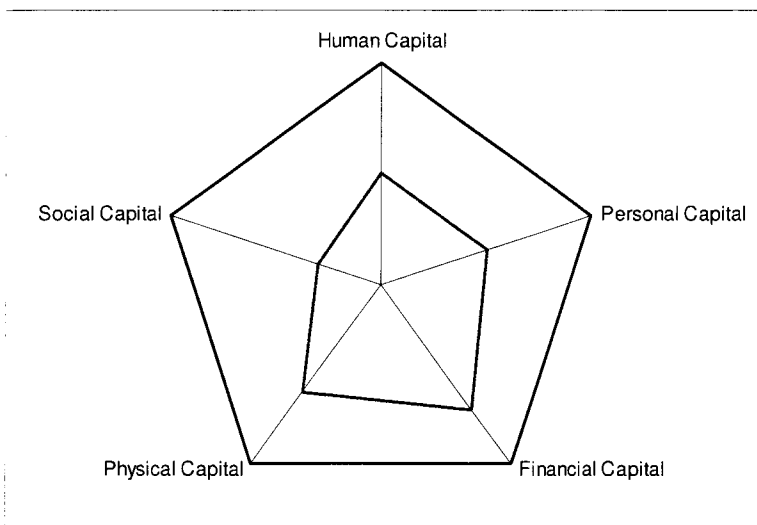
Source: Department for International Development (1999)

The Sustainable Livelihoods Framework is useful because it can be adapted to provide a structured way to measure change components on a spectrum from the individual to the world, from household improvement to community revitalization. It can take into account depth of change (e.g., from standard-of-living to quality-of-life), and breadth (e.g., physical and social). It is a flexible tool that can be used by researchers, practitioners and the public (Eko Nomos, 2004). The Framework can be used to present and organize data on individuals, buildings, communities, municipalities and larger political designations. It can be used to compare and contrast at one point in time or over

different points in time, and measure change over the short-term, medium-term and long-term.

Table 14: Comparison of Sample Quality-of-Life Variables and Capitals

Schalock (2004)	Bloom, Riccio & Verma (2005)		Five Capitals
Material Well-Being	Economic & Material Well-Being	→	Financial Capital: ·Disposable income ·Savings ·Wages ·Percent of income spent on housing
Physical Well-being	Personal Safety	→	Physical Capital: ·Housing condition ·Feelings of safety ·Geographic location ·Perceived access to basic needs ·Perceived access to social services ·Car
Personal Development; Rights, Self-Determination	Residential Satisfaction	→	Human Capital: ·Sense of self-esteem/self-confidence ·Personal motivation ·Sense of happiness ·Satisfaction with property management, housing & neighborhood
Social Inclusion, Interpersonal Relations	Social Capital	→	Social Capital: ·Sense of social networks ·Family and friends around ·Participation in local groups ·Community life ·Political participation
Emotional Well-Being	Child Well-Being	→	Personal Capital: ·Health ·Access to education ·Employment history ·New job skills ·Level of education

The Livelihood Assets is also useful for this research because the capital components are reflected in the quality-of-life variables and vice versa. Table 14 shows how the quality-of-life variables match up with the capital variables using as examples two different

quality-of-life studies mentioned above, Schalock (2004) for individuals and Bloom, Riccio & Verma (2005) for communities. Financial capital, with disposable income and savings variables, corresponds to economic and material well-being variables. Physical capital, which includes housing condition, safety and access to needs corresponds to physical well-being and safety in the studies. Human capital components like self-esteem, motivation and satisfaction correspond to personal development, self-determination and safety. Social capital is exactly social capital but also social inclusion. Finally, Personal capital includes health, which is covered by emotional and child well-being in the studies.

G. Literature Review Summary

Affordable housing is a spectrum of housing types (Figure 1) that lacks a strict definition and a comprehensive theory. Despite decades of federal funding and hundreds of thousands of affordable units being developed, there is no consensus, or plan in most cases, of the goals for affordable housing. Potential outcomes include improved standard-of-living, self-sufficiency, poverty alleviation, or improved quality-of-life (Table 3). Quality-of-life is extremely complex and includes both subjective and objective measures. Based on the existing literature, three possible housing theory paradigms are suggested which may impact quality-of-life changes: place theory, personal life experiences, and professional practice insights (Table 4). As shown in Table 5, the research on place impacts of housing on tenants appears to be mixed at best. The literature on personal life experience shows that history and motivation can influence success in housing programs (Table 6) but study results are inconclusive or contradictory.

Studies on professional practice insights (nonprofit developers, nonprofit management, and supportive services in Table 7) appear to have somewhat more predictive power than the more abstract place and personal experience theories.

The lack of structure for measuring the results of affordable housing or other poverty programs suggests the need for a more structured analysis. Since the goal of most poverty alleviation strategies is to reduce poverty by increasing wealth, five asset domains are suggested for organizing and measuring household changes: financial capital, physical capital, human capital, social capital and personal capital (Table 8). The Sustainable Livelihoods Framework (Figure 2) has at its core the Livelihood Assets pentagon (Figure 3) which includes these five capitals. The components included in the five capitals correspond to the quality-of-life variables typically measured and vice versa. These domains suggest a conceptual framework for measuring the potential impacts of affordable housing on tenant quality-of-life.

III. Conceptual Framework

In order to measure the quality-of-life impacts expected to be achieved from affordable housing based on the literature reviewed, a conceptual framework is needed. This section presents a research framework which incorporates the housing theory paradigms, the capitals, and the quality-of-life variables. The independent variables for both standard-of-living and quality-of-life are then presented along with a summary of the indices created to conduct the research. The section concludes with four research questions to be addressed.

A. Research Framework

Affordable housing is a fundamental community economic development strategy, which is asked to address a broad spectrum of physical and social needs, and to achieve goals ranging from shelter to improved quality-of-life. Affordable rental housing has become part of America's social safety net and millions of dollars are spent each year developing affordable rental housing for low-income households. But the question of what should be expected as the returns on affordable housing investments is rarely asked. Individual impact has been researched piecemeal and there is no comprehensive theory or goal. The purpose of this study is to examine the effects of living in affordable housing on tenants' quality-of-life. This will be done by comparing tenants' quality-of-life in their previous housing to their quality-of-life while currently living in affordable rental housing using the theories suggested. The dependent variable, therefore, will be quality-of-life.

Quality-of-life is a complicated, multidimensional, multidisciplinary concept. Measurements generally include economic, shelter, security, health, and social factors. Quality-of-life is understood to include both subjective and objective components and each type of factor can be measured both subjectively and objectively. In order to consolidate the variety of indicators possible, the Livelihoods Assets pentagon of the Sustainable Livelihoods Framework is used. All quality-of-life variables can be grouped within one of the five capitals of the Framework. The five capitals become indices of the individual variables. The question of why these variables make an impact on housing outcomes is suggested within the partial theories of affordable housing.

As shown in Table 4, theories which might explain affordable housing outcomes start with three broad categories: place, personal experience and professional practice. These theories have been shown to impact a wide variety of variables that comprise quality-of-life measures. Research has shown that there are many variables that may predict household improvement yet these have not been explored in a methodical way. This jumbled mix of variables can be organized into five sets of capitals as shown in Table 8. Each of the capitals can be used to create an index to track changes and look for interrelationships. Variables within the capitals can be addressed in both subjective and objective ways, which is useful since quality-of-life includes both subjective factors and objective factors. The indices, including both subjective and objective components, will be assessed to determine which significantly impact overall quality-of-life. Figure 4 shows the interrelationships between the theories, capital indices of variables and quality-of-life outcomes.

Figure 4: Research Framework
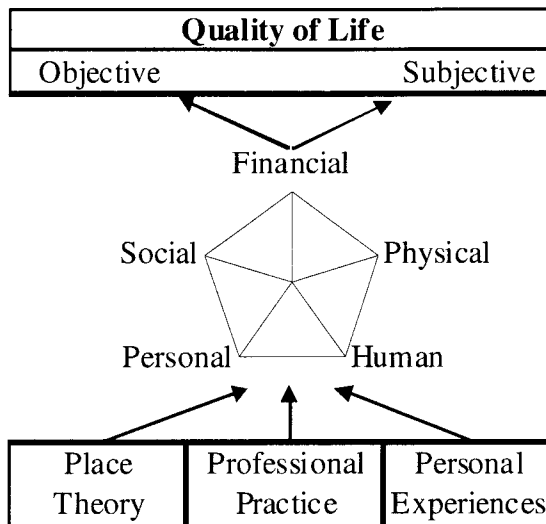
Since every possible quality-of-life variable cannot be asked in a short survey, indicators

need to be chosen which may predict quality-of-life changes. However, there is little data

available on sound predictors. If sufficient data were available, a cluster analysis could be

run to determine which variables were most predictive. A review of the components of

the five capitals as shown in Table 8 reveals that most indicators are standard variables

collected from many surveys but grouped and sorted in a logical, though less common

way. In fact, the only HUD study of LIHTC residents (Buron, et al., 2000) included most

of the financial, physical and social capitals specifically related to affordable housing.

Also, recent property management studies by Paris (2005 and 2006) included many of the

personal capital questions.

Based on these two studies and the literature review above, a list of predictive

independent variables can be compiled to study quality-of-life outcomes. These variables

are grouped by five capital types as shown in Table 15.

Table 15: Quality-of-Life Independent Variables

Capital Index	Objective Variables	Subjective Variables
Financial	Disposable income	Satisfaction with income
	Savings	Satisfaction with savings
	% of income spent on housing	Satisfaction with rent amount
Physical	Building condition	Feelings of building safety
	# persons per bedroom	Perceived access to basic needs
	Access to car/transportation	Opinion of neighborhood safety
Social	Family and friends contact	Sense of social networks
	Participation in local groups	Sense of community life
	Political participation	Feeling near family and friends
Human	Level of education	Sense of access to education
	Employment history	Perceived health
	Work hours	Access to employment
Personal	Motivation: housing	Sense of self-confidence
	Motivation: employment	Feelings of happiness
	Motivation: neighborhood	Housing/management satisfaction

Since quality-of-life is measured by both subjective and objective variables, both types were explicitly included in equal measure, with three objective variables and three subjective variables for each capital. The one exception is that personal subjective has two variables for housing and property management satisfaction. Financial capital is comprised of disposable income, savings, and percent of income spent on housing as objective variables, and satisfaction with income, satisfaction with savings, and satisfaction with rent amount as subjective variables. Physical capital includes objective variables of housing condition, people per bedroom, and access to a car, with subjective variables of feelings of building safety and neighborhood safety, and perceived access to basic needs. Objective variables for social capital are contact with family and friends, participation in local groups, and political participation, while subjective social capital variables are sense of social networks, sense of community life, and perceived health. Human capital includes level of education, employment history, and hours of work per

week as objective variables, and access to education, perceived health, and access to employment as subjective variables. Finally, personal capital includes three types of objective motivation including improving housing, employment and neighborhood, while subjective personal capital variables include self-confidence, sense of happiness, and satisfaction with housing and (property) management.

This grouping of variables creates seventeen indices that will be used in the analysis. The items in the Objective Variables column in Table 15 create an Objective Quality-of-life (OQL) index. Similarly, the Subjective variables create the Subjective Quality-of-life (SQL) index. All the variables combined therefore indicate Quality-of-life (QOL). Using both capital and subjective/objective groupings creates the following indices shown in Table 16: Objective Financial Capital Index, Subjective Financial Capital Index, Objective Physical Capital Index, Subjective Physical Capital Index, Objective Social Capital Index, Subjective Social Capital Index, Objective Human Capital Index, Subjective Human Capital Index, Objective Personal Capital Index, and Subjective Personal Capital Index.

Table 16: Summary of Indices

Capital	Capital Indices	Objective Indices	Subjective Indices
Financial	FCI	OFCI	SFCI
Physical	PhCI	OphCI	SphCi
Social	SCI	OSCI	SSCI
Human	HCI	OHCI	SHCI
Personal	PeCI	OpeCI	SpeCI
	QOL	OQL	SQL

The capital indices and quality-of-life indices will be analyzed to determine which ones impact tenants' quality-of-life and to determine whether grouping variables by the capitals is an effective research tool.

It is also important to remember that this study also seeks to assess whether basic standard-of-living improves for tenants in affordable housing. As noted above, standard-of-living is a more direct, tangible measure of well-being than quality-of-life. Standard-of-living variables therefore include household financial indicators of income and percent of income spent on housing, as well as physical housing components of housing location, number of bedrooms per person, and building conditions, as shown in Table 17. Standard-of-living is used to determine the baseline about whether affordable housing achieves safety net concerns of better and cheaper housing.

Table 17: Standard-of-Living Independent Variables

Standard-of-living
Disposable income
Percent of income spent on housing
Housing location
Bedrooms per person
Building conditions

There is no clear consensus on the social versus physical goals of affordable housing or standard-of-living versus quality-of-life impacts. Limited attention has been paid in terms of what benefits should accrue to the people who live in affordable homes, while housing's role as a poverty-alleviation strategy remains unclear. As shown in Figure 5, standard-of-living is one component of quality-of-life that is part of the larger goal of poverty alleviation.

Figure 5: Potential Affordable Housing Outcomes
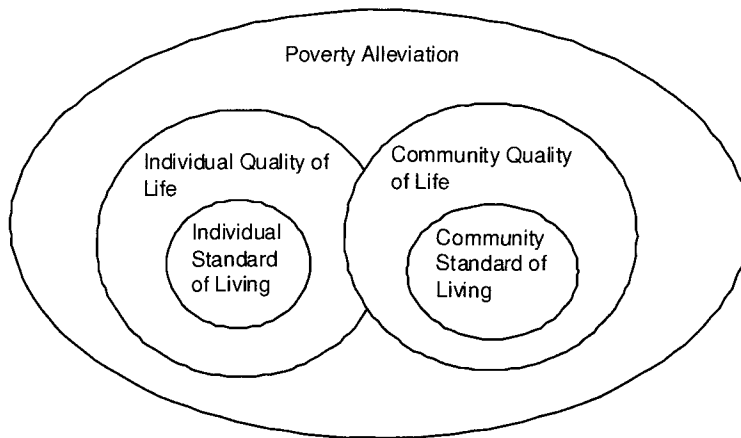
Having an improved standard-of-living is the minimum result that would be expected for someone moving into affordable housing. For a community, an improved standard-of-living could mean fixing deteriorated buildings. The next positive outcome would be improved quality-of-life. This applies both to individual households as well as the community. Ultimately, the question would be whether affordable housing is a component in the alleviation of poverty more globally. By researching which factors influence standard-of-living and quality-of-life changes, this study will attempt to address one piece of a comprehensive theory for affordable housing based on likely outcomes.

B. Research Questions

The essential question for this study is whether affordable housing improves the lives of the tenants who live there. As described above, there is lack of clarity about whether the goals of affordable housing are to provide shelter for lower-income households and thus gradually revitalize neglected communities, or also to help people out of poverty,

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enhance their quality-of-life, and improve the quality of community life. That is, should only direct shelter and standard-of-living impacts (like better and cheaper housing) be expected, or should direct and indirect quality-of-life outcomes (like access to employment, improved community life or greater housing satisfaction) also be expected? If quality-of-life outcomes should be expected and, given the pressure to do more with fewer resources yet expect measurable results, are the affordable housing program investments currently being made both necessary and sufficient to yield quality-of-life outcomes? Since little comprehensive research has been conducted on these issues, how can quality-of-life outcomes be conceptualize and measured?

These questions are framed with the housing theory paradigms of place, personal experience, and professional insights. While both place and personal experience are generally accepted research domains, this study incorporates professional insights as a vital component of affordable housing research and theory. As shown above, professional insights include the importance of nonprofit organizations as housing developers alongside for-profit developers, appropriate property management systems, especially those provided by nonprofits that self-manage, and supportive services provided by nonprofits in addition to their role as property manager. Professional insights suggest that nonprofits play a special role in the creation of affordable housing and are thus worthy of special set-asides. Nonprofits are expected to provide quality-of-life outcomes beyond shelter due to their role as property manager and involvement in the lives of low-income tenants in addition to providing supportive services that can overcome place or personal

limitations. The question therefore becomes whether nonprofits attend to and deliver better quality-of-life outcomes beyond shelter than for-profit developers.

In addition, based on research studies presented, geographic factors that may matter include neighborhood differences, and the deconcentration of poverty. Place-based factors are accounted for by explicitly including areas that are more or less desirable in which to reside, based on measurable variables, to answer whether living in a more desirable geographic area contributes to greater quality-of-life improvements than living in a less desirable neighborhood.

The lack of structured, comprehensive research on housing's standard-of-living and quality-of-life impacts on tenants suggests that a uniform framework would be beneficial. The Sustainable Livelihoods Framework is used to address poverty issues and incorporates many goals associated with affordable housing within five capitals represented by the Livelihood Assets pentagon. Is this new methodology, which is used here to conceptualize and measure quality-of-life, an effective tool for this research?

In this study, subjective and objective data are collected from tenants living in affordable housing to assess changes in their quality-of-life compared to previous housing. Comparison groups are made between nonprofit and for-profit developers to test professional experience paradigms and between more desirable and less desirable areas to examine place effects. The research organizes quality-of-life variables around an adapted version of the Sustainable Livelihoods Framework as a tool to operationalize and

measure quality-of-life outcomes, framed by five capitals. The capitals are explored in-depth to ascertain whether they provide additional insights into quality-of-life changes.

The general research questions are whether affordable housing effectively provides both (a) shelter and other safety-net/standard-of-living benefits for lower-income households and (b) also creates the conditions that enhance quality-of-life for lower-income households. If quality-of-life outcomes also result, (c) what are the core contributors (measured by capitals) to these outcomes (or how do our affordable housing program investments prove insufficient to yield quality-of-life outcomes); and (d) is the structure applied in this research (the capitals in pentagon of the Sustainable Livelihoods Framework) an effective tool to conceptualize and measure quality-of-life outcomes?

Research Question A: Does affordable housing provide standard-of-living benefits for low-income households? Operationally, the aim of this research question is to show whether the standard-of-living of low-income tenants improves as a result of moving to affordable rental housing.

Hypothesis A: Affordable rental housing improves the standard-of-living of low-income tenants.

Research Question B: Does affordable housing enhance the quality-of-life of low-income households? Operationally, the aim of this research question is to show whether

the quality-of-life of low-income tenants improves as a result of moving to and living in affordable rental housing.

Hypothesis B: Affordable housing enhances the quality-of-life of low-income tenants living in affordable housing.

Research Question C: Where quality-of-life outcomes result, what are the contributors to these outcomes? Where quality-of-life outcomes do not result, what are the barriers to these outcomes? Operationally, the aim of this research question is to show what factors matter for improving tenants' lives by exploring five capital areas.

Hypothesis C: Affordable housing enhances the quality-of-life of low-income tenants living in affordable housing across each of five capitals: financial, physical, social, human, and personal.

Finally, a fourth question will be added as an exploratory component. This study proposes to use a tool, the five capitals of the pentagon in the Sustainable Livelihoods Framework, not previously applied to studying quality-of-life or affordable housing. Therefore, the effectiveness of organizing and analyzing quality-of-life indicators using five capitals and the Sustainable Livelihoods Framework will be evaluated.

Exploratory Research Question D: Is the adapted Livelihood Assets pentagon of the Sustainable Livelihoods Framework applied in this research an effective tool to

conceptualize and visualize quality-of-life changes? Operationally, the aim of this research question is to show whether mapping the five capital indices using the asset pentagon effectively presents quality-of-life changes.

Exploratory Hypothesis D: The Livelihoods Assets pentagon is an effective tool for conceptualizing and visualizing quality-of-life outcomes.

IV. Methodology

This section reviews the study design, identifies the participants, and explains the procedures that were followed for implementing the research. It also identifies the instrumentation and explains how the analysis was conducted. It concludes with the limitations to doing this research and explains how reliability was ensured.

A. Design

This study used a mixed-methods proxy pretest quasi-experimental design utilizing surveys and in-depth interviews. To answer the first three research questions, a survey was developed which was used to interview tenants currently living in affordable rental housing. Tenants were asked questions on each variable about their previous housing circumstances and their current housing situation. Both objective indicators (e.g., income, rent, education) and subjective experiences (e.g., self-reporting on happiness, community activities, and housing satisfaction) were covered in the survey which is attached in Appendix A. Using these data, each of the five capital indices was created as summarized in Table 15 and highlighted in Appendix C.

The tenant survey was designed to be approximately twenty minutes long to be primarily administered by telephone. However, due to difficulties getting landlords to participate and tenants to return calls, it was necessary to conduct some in-person interviews and some self-administered surveys in order to complete sufficient surveys. These different collection techniques were not expected to affect the data since questions were multiple

choice and few participants had any questions. During each survey, tenants were asked

for informed consent to participate in the survey and were compensated $20 for their

time.

To obtain baseline information on the housing developments and property management, a

questionnaire was created to conduct in-depth interviews with affordable housing

developers and property managers. They were asked about organizational information,

housing development characteristics, property management structure and supportive

services provided.

As described in Table 4, three primary theories applicable to affordable housing can be

divided into three broad categories: place, personal and professional. Supported by

connections identified in previous research, these categories suggest a research design

based on location of housing developments and type of developer/manager. As

suggested by place-based theories of locational impacts, developments located in

comparably more desirable neighborhoods should have better results compared to those

located in less desirable areas. An area's desirability can be subjective depending on who

is asked but it is possible to use objective data to quantify an area's general desirability.

Characteristics that make a neighborhood more desirable generally include safety, lack of

blight, and access to employment. For this study, an area's desirability will be based on

five generally available demographic indicators including median income levels, poverty

rates, unemployment rate, vacancy rate, and crime statistics as shown in Table 18. These

indicators will be based on the municipality in which the development is located.

Table 18: Area Desirability Factors

Factor	Desirability
Median income level	Higher is better
Poverty rate	Lower is better
Unemployment rate	Lower is better
Vacancy rate	Lower is better
General crime statistics	Lower is better

Secondly, as suggested by professional insights and research linking outcomes to housing development types, nonprofit housing developers that provide their own property management were compared to for-profit housing developers that have for-profit property managers. The third partial theory, personal life experiences, has the weakest linkages identified in previous research and was accounted for in the independent variables.

Research Design:

The following research design was used:

More desirable neighborhood

Tenants in nonprofit developed and self-managed housing   N O^{pre} O^{post}

Tenants in for-profit developed and managed housing   N O^{pre} O^{post}

Less desirable neighborhood

Tenants in nonprofit developed and self-managed housing   N O^{pre} O^{post}

Tenants in for-profit developed and managed housing   N O^{pre} O^{post}

Where:

N = nonrandom assignment

O^{pre} = household situation prior to moving into affordable housing

O^{post} = current household situation while living in affordable housing

B. Participants

Participants in the study were selected using staged random sampling. First, a list of

multi-family rental developments was obtained from the Illinois Housing Development

Authority. Developments were sorted by funding sources, development size, year opened,

county, and population target. This study targets developments located in the suburbs of

the Chicago (Illinois) metropolitan area, excluding the City of Chicago, with about 40-

200 units, placed in service prior to 2006. Developments targeted to seniors-only or

special needs populations were not included in the sample. Using cluster sampling, two

nonprofit and two for-profit sponsored developments were then chosen, taking into

account the desirability of the geographic area. Developers were contacted until two of

each agreed to participate and allow access to their tenants. The desirability of the areas

was confirmed using crime and income statistics. This sorted the developments into the

four categories of the selection matrix shown in Table 19: Nonprofit versus For-profit

developers and managers, and Less desirable versus More desirable neighborhoods.

Table 19: Development Selection Matrix

Developer Type and Area	Nonprofit developer	For-profit developer
Less desirable neighborhood	Nonprofit self-managed	For-profit managed
More desirable neighborhood	Nonprofit self-managed	For-profit managed

Each developer was asked for tenant contact information of current tenants. Thirty

existing households were randomly selected from each list of current tenants using

systematic random sampling with replacement. A sample of about 30 tenants from each

development allowed statistical analyses (e.g. crosstabs) of each cell yet was of a size

manageable for a doctoral dissertation. The selected tenants were asked about their income, rent, housing conditions, education, social interactions, housing and management satisfaction, and other demographic data, using the survey instrument in Appendix A.

C. Procedures

Prior to beginning data collection, the survey instruments were submitted for approval to the University's Internal Review Board. Upon approval to interact with human subjects, the tenant survey instrument was pre-tested. Based on the results of the pre-test, a few necessary modifications were made to the survey.

1. Surveying Managers

The researcher contacted owners from the four developments selected and was typically referred to the property manager for additional information. Owners and managers were interviewed about the history of their organization, types of developments done, and property management systems used, as shown on the questionnaire in Appendix B.

2. Surveying Tenants

Tenant surveys were primarily conducted by telephone by the researcher and two research assistants trained and supervised by the researcher to administer the survey. However, due to difficulties getting landlords to participate and tenants to return calls, it was also necessary to conduct some in-person interviews and have some self-administered surveys in order to complete sufficient surveys. These different collection

techniques were not expected to affect the data since questions were multiple choice and few participants had any questions. The survey was designed to be approximately twenty minutes long. During each survey, tenants were asked for informed consent to participate and all were compensated $20 for their time.

For phone interviews, using contact information provided by property managers, potential participants were sent a letter that informed them that they had been selected to participate in a research study and that they would be contacted. The letter also informed them of the compensation available, their rights, and how to be removed from the sample. The surveyor called the tenant sample during daytime and evening hours. If potential respondents did not answer, phone messages were left when possible. Minimums of five calls were placed if tenants did not answer. When a participant was reached, the surveyor asked for the head of household, whether headed by a man or a woman. Participants were required to give informed consent before participating, as shown on the survey instrument in Appendix A. The informed consent language was read to the participants and their verbal approval noted on the survey form. The surveyor or participant marked responses to all survey questions directly on the survey sheet. Participants were allowed to ask questions but surveyors kept to the survey script as much as possible.

3. Addressing the Research Questions

To answer research question A (Does affordable housing provide standard-of-living benefits for low income households?), existing affordable housing tenants were surveyed

about their previous and current housing situations regarding standard-of-living items as shown in Table 17.

To answer research question B (Does affordable housing enhance the quality-of-life of low income households?), existing affordable housing tenants were surveyed regarding quality-of-life outcomes as shown in Table 15.

To answer research question C (Where quality-of-life outcomes result, what are the contributors to these outcomes? Where quality-of-life outcomes do not result, what are the barriers to these outcomes?), the survey results were analyzed based on five capitals to look for patterns in the data to determine which capital indices were highly correlated with successful or unsuccessful outcomes.

To answer the exploratory research question D (Is the adapted Livelihood Assets pentagon of the Sustainable Livelihoods Framework applied in this research an effective tool to conceptualize and visualize quality-of-life changes?), the results of the previous analyses were reviewed, then indices were plotted and inspected to see if interpretation is straightforward and led to valuable insights or conclusions.

4. Variables and Comparison Groups

The research variables are shown in Table 20. There are two comparison groups (geographic location and developer/manager type). The dependent variable Quality-of-Life is comprised of the five capital indices created using three subjective questions and

three objective questions from the thirty independent variables. These variables also create ten indices divided by subjective and objective questions and two cumulative subjective/objective indices as shown in Table 16. The other dependent variable, which addresses question A, is Standard-of-Living which is comprised of the five indicators in Table 17. In addition, there are intervening variables that are assumed to be constant including cultural norms, building income mix, and general economic conditions. Appendix C shows a matrix of each survey question and how they address each independent variable as well as how they fit into each of the capitals.

Table 20: Research Variables

Comparison Groups	Independent Variables	Dependent Variables
Geographic location: -Less desirable area -More desirable area	5 capital indices	Quality-of-Life
Developer/Management type: -Nonprofit self-managed -For-profit developed and managed	5 indicators	Standard-of-Living

5. Variable Standardization

In order to create the indices, care was taken creating the measurement scales. As shown in Table 21, many of the variables are measured on a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree' or 'excellent' to 'very bad' while a few variables are actual figures (income, savings, percent rent spent on housing, number of bedrooms, number of hours worked). The values of non-scaled variables were standardized into quintiles in order to match the 1-5 scale so the indices could be created. The quintiles were created as follows: Disposable income ($0-7,500; $7,501-12,000; $12,001-19,000;

$19,001-32,000; $32,001+); Savings ($0; $1-500; $501-1,250; $1,251-4,000; $4,000+);

Percent of income spent on housing (0-25%; 25.01-33.33%; 33.34-40%; 40.01%-60%;

60.01%+); People per bedroom (<1, 1, 1.01-1.5, 1.51-2, 2.01+); Hours of work per week

(0; 1-12; 13-29; 30-39; 40+).

Table 21: Quality-of-Life Variable Measurements and Conversions

Capital Index	Variable	Measurement	Conversion
Financial Capital	Disposable income	$ Amount	Quintiles
	Savings	$ Amount	Quintiles
	Percent of income spent on housing	Rent/income	Quintiles
	Satisfaction with income	Scale 1-5	None
	Satisfaction with savings	Scale 1-5	None
	Satisfaction with rent amount	Scale 1-5	None
Physical Capital	Housing location safety	Scale 1-5	None
	# Bedrooms per person	#br/hh size	Quintiles
	Car/transportation	Scale 1-5	None
	Feelings of building safety	Scale 1-5	None
	Perceived access to basic needs	Scale 1-5	None
	Building condition opinion	Scale 1-5	None
Social Capital	Family and friends around	Scale 1-5	None
	Participation in local groups	Scale 1-5	None
	Political participation	#, 1-5	None
	Sense of social networks	Scale 1-5	None
	Sense of community life	Scale 1-5	None
	Near family and friends	Scale 1-5	None
Human Capital	Level of education	Scale 1-5	None
	Employment history	Scale 1-5	None
	Work hours	#	Quintiles
	Access to education	Scale 1-5	None
	Perceived health	Scale 1-5	None
	Access to employment	Scale 1-5	None
Personal Capital	Motivation: housing	Scale 1-5	None
	Motivation: employment	Scale 1-5	None
	Motivation: neighborhood	Scale 1-5	None
	Sense of self-confidence	Scale 1-5	None
	Sense of happiness	Scale 1-5	None
	Housing/management satisfaction	Scales 1-5	None

This standardization generated five capital indices with potential values ranging from 6 to 30 (6 variables, minimum value of 1 and maximum value of 5), standard-of-living scores potentially from 5 to 25, and potential quality-of-life scores from 30-150.

D. Instrumentation

A tenant survey was developed to collect data on tenants' quality-of-life and standard-of-living (Appendix A). This survey was based primarily on the instrument used by Buron, et al. (2000), which was a national study prepared for HUD's Office of Policy Development and Research. That study assessed the economic and social characteristics of Low Income Housing Tax Credit residents and the neighborhoods in which the properties are located. Additional questions were added from Paris (2006) and Paris & Kangari (2005), which were among the studies of property management that went beyond describing property management systems to analyzing tenant impacts and services provided to tenants. These two instruments were selected as guidance because they were created to address the same type of housing, included nearly all the relevant questions, and have been tested in previous research.

The survey instrument was created by matching the variables identified in Table 15 with the questions from Buron, et al. (2000) and Paris (2006). The questions on those surveys were reviewed for relevance to the research questions in this study. Appropriate questions from the sample surveys were plugged into the matrix by sorting how they addressed the variables, whether they were objective or subjective in nature and whether they were pre-

or post-move-in (see Appendix C) to make sure that all identified indicators were sufficiently addressed.

In addition, a developer/manager survey was created for collecting developer agency data plus information on property management and services using the instrument created and used by Bratt, Keyes, Schwartz & Vidal (1995). Their instrument was developed for a national study of community development corporations and the property management services provided. For this research their survey was scaled back to only include questions relevant to this study. As shown in Appendix B this survey collected detailed information on each developer and management organization including their history, properties developed, development types, property management provider and style, and supportive services.

E. Analysis

Once collected, data was entered into SPSS for sorting and reviewed for completeness. Missing data was reviewed regarding extent and type. When possible, tenants were re-contacted to fill-in small gaps in their responses. Surveys that still had a few missing answers were managed through averaging the responses to that question within their respective development. If a survey was missing multiple responses and the participant could not be re-contacted or data filled-in, that survey was eliminated and another participant was selected. Data that could not be otherwise corrected was coded as "missing". Statistical analyses were conducted using SPSS software.

The surveys generated quantitative data that was analyzed using descriptive statistics (e.g., frequency distributions, measures of central tendency, and crosstabs) and inferential statistics (e.g., paired sample t tests, independent t tests, and analysis of variance).

The five capital indices were created using the predetermined variables as shown in Table 16 and standardized as shown in Table 21. The indices are simple arithmetic variables created by summing the values of each indicator as follows:

$$FCI = FO1 + FO2 + FO3 + FS1 + FS2 + FS3$$
$$PhCI = PhO1 + PhO2 + PhO3 + PhS1 + PhS2 + PhS3$$
$$SCI = SoO1 + SoO2 + SoO3 + SoS1 + SoS2 + SoS3$$
$$HCI = HO1 + HO2 + HO3 + HS1 + HS2 + HS3$$
$$PeCI = PeO1 + PeO2 + PeO3 + PeS1 + PeS2 + PeS3$$
$$QOL = FCI + PhCI + SCI + HCI + PeCI$$

Where:
QOL = quality-of-life

FCI = financial capital index
PhCI = physical capital index
SCI = social capital index
HCI = human capital index
PeCI = personal capital index

F = financial capital variable
Ph = physical capital variable
So = social capital variable
H = human capital variable
Pe = personal capital variable

O = variable measured using objective data

S = variable measured using subjective data

FO1 = the first objective financial capital variable

FO2 = the second objective financial capital variable

FO3 = the third objective financial capital variable

FS1 = the first subjective financial capital variable

FS2 = the second subjective financial capital variable

FS3 = the third subjective financial capital variable

PhO1 = the first objective physical capital variable

PhO2 = the second objective physical capital variable

PhO3 = the third objective physical capital variable

PhS1 = the first subjective physical capital variable

PhS2 = the second subjective physical capital variable

PhS3 = the third subjective physical capital variable

SO1 = the first objective social capital variable

SO2 = the second objective social capital variable

SO3 = the third objective social capital variable

SS1 = the first subjective social capital variable

SS2 = the second subjective social capital variable

SS3 = the third subjective social capital variable

HO1 = the first objective human capital variable

HO2 = the second objective human capital variable

HO3 = the third objective human capital variable

HS1 = the first subjective human capital variable

HS2 = the second subjective human capital variable

HS3 = the third subjective human capital variable

PeO1 = the first objective personal capital variable

PeO2 = the second objective personal capital variable

PeO3 = the third objective personal capital variable

PeS1 = the first subjective personal capital variable

PeS2 = the second subjective personal capital variable

PeS3 = the third subjective personal capital variable

In order to analyze research question A (Does affordable housing provide standard-of-living benefits for low income households?), two comparisons are needed: 1) do quality-of-life mean scores change from before to after (pre-test to post-test) living in affordable housing and 2) are the results different among the comparison groups. To test the first part of this question, paired samples t tests were used to determine if there was a significant difference between standard-of-living in previous (pre-test) housing compared to standard-of-living now (post-test) overall. The hypothesis was that standard-of-living scores before living in affordable housing would be lower than standard-of-living after affordable housing. Then standardized post-test scores were generated and analyzed using two-way ANOVA to determine if there were significant differences between developer types and geographic locations on standard-of-living as well as any interaction between them. The hypothesis was that standard-of-living scores of persons living in housing developed by nonprofits would be higher than standard-of-living scores for persons living in housing created by for-profits. In addition, standard-of-living scores of persons living in housing located in more desirable areas would be higher than standard-of-living scores for persons living in housing located in less desirable areas. Furthermore, households who live in affordable housing developed by nonprofits and located in more desirable areas would have the highest standard-of-living scores while

persons in developments created by for-profit developers that are located in less desirable areas would have the lowest standard-of-living scores.

To analyze research question B (Does affordable housing enhance the quality-of-life of low income households?) two comparisons are again needed: 1) do quality-of-life mean scores change from before to after (pre-test to post-test) living in affordable housing and 2) are the results different among the comparison groups. To test the first part of this question, paired samples t tests were used to calculate whether significant differences existed between quality-of-life in previous housing (pre-test) compared to quality-of-life for current residents (post-test). The hypothesis was that quality-of-life scores after living in affordable housing would be significantly higher than quality-of-life before affordable housing. Then standardized post-test mean scores for the comparison groups were generated analyzed using two-way ANOVA to determine if there were significant differences between developer types and locations, as well as any interaction between them. The hypothesis was that quality-of-life scores of persons living in housing developed by nonprofits would be higher than quality-of-life scores for persons living in housing created by for-profits. In addition, quality-of-life scores of persons living in housing located in more desirable areas would be higher than quality-of-life scores for persons living in housing located in less desirable areas. An ANOVA was also run on the four developments to compare differences in quality-of-life which the hypothesis being, households who live in affordable housing developed by nonprofits and located in more desirable areas would have the highest quality-of-life scores while persons in

developments created by for-profit developers that are located in less desirable areas would have the lowest quality-of-life scores.

Next, the two objective and subjective indices were analyzed using paired sample t tests and MANOVA to see if variable types measured different changes in quality-of-life. Paired samples t tests were used to measure whether there was a significant difference between quality-of-life in previous housing compared to quality-of-life for current residents for all groups based on objective and subjective indices. The hypothesis was that quality-of-life scores pre-test (before living in affordable housing) would be significantly lower than quality-of-life scores post-test (after affordable housing) for the objective and subjective indices. Then standardized post-test mean scores for the comparison groups were generated and analyzed using MANOVA to determine if there were significant differences between developer types and locations on quality-of-life, as well as any interactions between them, based on objective and subjective indices. The hypothesis was that both objective and subjective quality-of-life index scores of persons living in housing developed by nonprofits would be higher than objective and subjective quality-of-life index scores for persons living in housing created by for-profits. In addition, objective and subjective quality-of-life index scores of persons living in housing located in more desirable areas would be higher than objective and subjective quality-of-life index scores for persons living in housing located in less desirable areas. Finally, an ANOVA was used to compare the four developments based on the hypothesis that households who live in affordable housing developed by nonprofits and located in more desirable areas would have the highest objective and subjective quality-of-life index

scores while persons in developments created by for-profit developers that are located in less desirable areas would have the lowest objective and subjective quality-of-life index scores.

To analyze research question C, (Where quality-of-life outcomes result, what are the contributors to these outcomes? Where quality-of-life outcomes do not result, what are the barriers to these outcomes?), each of the five capital indices were analyzed to identify which capitals impacted positive or negative quality-of-life results using paired sample t tests to examine pre-test to post-test differences and MANOVA to compare post-test differences between groups[2]. First, paired samples t tests were used to estimate whether there were significant differences between quality-of-life in previous housing compared to quality-of-life for current residents based on each of the five capital indices. The hypothesis was that quality-of-life capital index scores after living in affordable housing would be significantly higher than quality-of-life capital index scores before affordable housing for all five capital indices. Then standardized post-test mean scores by capital for the comparison groups were analyzed using MANOVA to determine if there were significant differences between developer types and locations on quality-of-life based on the five capital indices. The hypothesis was that capital quality-of-life index scores of persons living in housing developed by nonprofits would be higher than capital quality-of-life index scores for persons living in housing created by for-profits. In addition, capital quality-of-life index scores of persons living in housing located in more desirable areas would be higher than capital quality-of-life index scores for persons living in

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[2] Other higher power tests such as Pearsons r and regression analysis because they do not fit the data: total quality-of-life is a sum of the independent variables so correlations are very high and R squared is 100%.

housing located in less desirable areas. In addition, an ANOVA was used to compare the four developments surveyed to test the hypothesis about whether households who live in affordable housing developed by nonprofits and located in more desirable areas would have the highest capital quality-of-life index scores while persons in developments created by for-profit developers that are located in less desirable areas would have the lowest capital quality-of-life index scores.

To analyze the exploratory research question D (Is the adapted Livelihood Assets pentagon of the Sustainable Livelihoods Framework applied in this research an effective tool to conceptualize and visualize quality-of-life changes), the results of pre-test to post-test and standardized post-test analyses were analyzed and graphed by the capitals to identify major trends and to see the visual representation of the results as shown in the sample pentagon in Figure 6.

Figure 6: Sample Livelihoods Assets Pentagon

Quality of Life: John Doe

Financial
Physical
Social
Personal
Human

Prior to move in
After occupancy

116
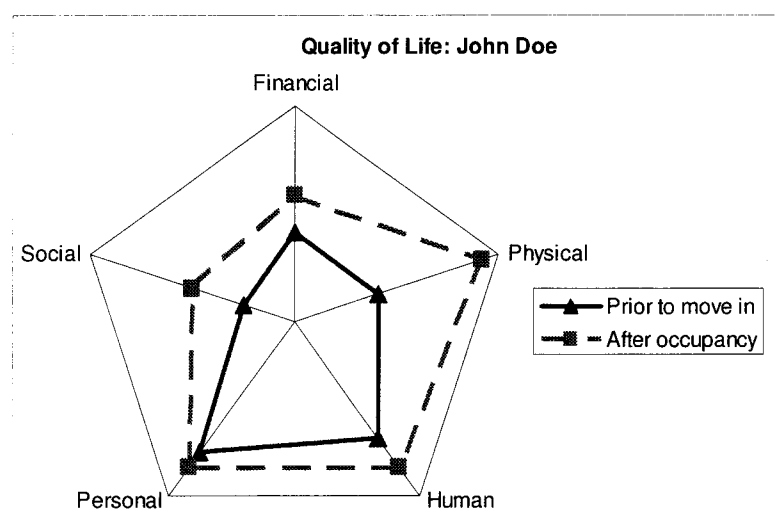
The Livelihood Assets pentagon is expected to clarify to the differences in quality-of-life indicators, which could eventually be used to target improvements in housing service delivery.

E. Reliability/Validity

In order to ensure conclusion validity, appropriate statistical tests were applied based on the data types, including use of inferential statistics such as paired sample t tests, independent sample t tests, ANOVA, and MANOVA, to determine relationships between the variables.

F. Limitations

The first limitation for this study is external validity based on the research scope. Tenant surveys were conducted on four developments in the Chicago area. This limitation will be addressed by using the cluster sampling methodology, which controls for a number of within-group variables that would vary significantly if respondents came from many different developments rather than four. While quasi-experimental, cluster sampling is the best method to address the research questions asked. Further studies will be needed to substantiate any conclusions.

A major limitation to conducting the research at all is that there is no database of information available. No agency requests tenant information for housing types at this

level, and few management firms have management information systems to track tenant data. As a result, primary data needed to be collected from tenants. Therefore, response rates from tenants may be an on-going limitation if they do not wish to participate. Lack of responsiveness and cooperation from owners and managers caused this study to be modified by reducing the number of developments surveyed, as described below, and may indicate different results for tenants in those developments.

The study assumes that tenants of affordable housing make rational choices in their housing situation and that there is an adequate supply of affordable housing available so that tenants who get units are representative of low-income households who are looking for housing. Tenants selected may be 'creamed' from those households on the waiting list so any recommendations about changing housing policy as a poverty reduction strategy may be biased against helping poorer households. In addition, lower income households are faced with few options and a limited supply of housing. As Bratt (2002) explains, "housing and its impacts are difficult to disentangle from the income levels of the residents." (p. 15)

Another limitation is the interconnectedness of housing choices. Where one lives is not just a matter of money but also employment, timing, market conditions and a host of other reasons. This problem is articulated well by Bratt (2002): "research that attempts to ascribe causality to particular housing conditions struggles with the question of how to disentangle the host of variables that may be responsible for observed outcomes. Clearly,

it is never possible to isolate the specific housing condition or to fully control for the characteristics of the occupants" (p. 15).

A quasi-experimental design with comparison groups is used to ensure internal validity. To ensure construct validity an extensive literature review was conducted to determine appropriate research variables, which were selected based on existing surveys. In addition, the survey for this study was generated using instruments developed and tested in other studies, specifically, Buron, Nolden, Heintzi & Stewart (2000), which surveyed tenants in Low Income Housing Tax Credit properties, in addition to Paris (2006), and Paris & Kangari (2005) as described in the Methodology under Section D, Instrumentation. The developer/manager survey was adapted from the instrument created and used by Bratt, Keyes, Schwartz & Vidal (1995).

External validity is an issue for this study since it was conducted in a limited geographic area (Chicago suburbs), on a limited type of housing (affordable developments), and for a limited number of developments (4 sites). The cluster sampling methodology is quasi-experimental but is the best available method to address the issue presented, however, the generalizability of conclusions will only be proven out over time.

To ensure reliability of the quantitative primary data, the surveys were pre-tested, the surveyors thoroughly trained and the data entered double-checked.

H. Significance

This research is important to the policy and practice of creating affordable housing in the United States for several reasons, some budgetary and some practical. Every year hundreds of millions of dollars are spent on affordable housing programs to build buildings, subsidize rents and fund organizations. There is research on developers and units built but little on affordable housing tenants. There is research on public housing tenants, mainly as a result of large-scale public housing redevelopments, but such tenants are different from typical affordable housing tenants in smaller developments and smaller towns. The lack of in-depth research about what happens to tenants of affordable rental housing makes this area of research important when considering policies and practices for how affordable housing developments should be financed, how they should be managed, and rules for tenant eligibility.

This research is also important because the need for more affordable units will continue to grow as construction costs increase, older affordable housing units disappear, government funding stagnates, and tenants hold onto units as long as possible. It is therefore important to understand and measure how affordable housing changes tenants' lives in order to improve housing policies, development goals and management systems. As a strand in the poverty safety net, affordable housing needs a comprehensive theory. Combining five capitals into a single comprehensive model poses a framework that can lead to more directed research, measurable objectives for policy makers, and tangible goals for practitioners and tenants.

This study will also contribute to research methodology by suggesting a consistent framework for researchers to use when studying housing or other social goals. Adapting the existing Sustainable Livelihoods Framework will provide a structured way to measure change on a spectrum from the individual to the world, from household improvement to community revitalization. The SLF can take into account depth of change, for example, from standard-of-living to quality-of-life, and breadth, both physical and social. It will produce a better understanding of the impact of affordable housing on tenant quality-of-life changes . It will suggest policy implications to the current funding system to make the efforts of those involved in affordable housing development more successful. The research will also contribute to affordable housing theory by offering a method for measuring quality-of-life changes. Without clear goals and objectives it will not be possible to know if all the effort to create affordable units is successful.

By knowing what happens to the households who live in the units that take so much effort to build and maintain, policies can be created that could improve lives rather than just getting units built. Funders can understand that families' lives are at stake and may reconsider how affordable housing developments are funded. Investors and lenders might understand that their capital can make a difference but that a few thousand dollars squeezed out of a deal could make the difference in a family's future. Organizations will be able to focus on the real reason for all the efforts, people, not just on the numbers on a page. The lives of some tenants may already improve just as a result of living in an affordable unit, but trying to understand what happens and why can hopefully lead to policies that help all families live better lives.

V. Results

This section reviews the affordable housing developments selected, shows how the 2 x 2 development matrix was arranged, and summarizes demographic data from the tenant surveys. It then presents the standard-of-living score results, and provides the quality-of-life scores for all sites, by developer type, by geographic area, and for each development.

The next sections present the inferential statistical analyses of the research questions. First, research questions related to standard-of-living benefits are addressed for changes within specific developments followed by changes between comparison groups. Next, quality-of-life benefits are analyzed by analyzing changes within developments and then between comparison groups, including subjective and objective indicators. The next section addresses contributors and barriers to quality-of-life outcomes by exploring quality-of-life impacts by each of the capitals. The final section presents the adapted Livelihood Assets pentagons. The focus of this research is tenants and how affordable housing impacts their quality-of-life. Still, the results start with the buildings that provide the context.

A. Housing Developments Surveyed

Four affordable housing developments that serve families in the suburbs of Chicago were selected to survey their tenants. These developments are located in the north and northwest suburban Chicago metropolitan area including northern Cook County, Lake

County, and McHenry County. The four sites are located in four different municipalities and were developed by four different organizations.

The original intention was to collect surveys from eight developments, with two developments from each combination of geographic area and developer type identified in the 2 x 2 matrix shown in Table 19. However, data collection was limited by the participation of project owners and managers. When contacted, some owners and/or managers agreed to provide contact information for residents but never delivered the data despite repeated calls. Even those who cooperated required persistent reminders, which demonstrates the difficulties in collecting primary data. Several owners and managers who were contacted, typically the for-profits, declined to cooperate, citing confidentiality issues or lack of interest. Numerous replacement for-profit developments were contacted but additional complete data sets could not be collected in the target counties. Further developer contact information was requested from the state housing finance authority but they declined to help. The result is still a 2 x 2 matrix with one development in each cell consisting of a significant number of cases for data analysis as presented below.

The nonprofit developments were selected first because there are only a few nonprofits creating affordable rental housing for families in the suburbs of Chicago while there are numerous affordable properties done by for-profit developers. While dozens of nonprofit agencies develop affordable units in the Chicago metropolitan area, many only work within the City of Chicago, and those nonprofits that work in the suburbs tend to focus on senior-only housing or target persons with disabilities; both Chicago and non-family

suburban sites were excluded for this study. Table 22 shows characteristics of the two nonprofit family developments that were surveyed. The names of the developments selected have been changed to protect confidentiality.

Table 22: Nonprofit Developments Surveyed

Development Name	"North Ledge" Apts	"New Mystic" Apts
County	McHenry	Cook
Units in project	120	40
Year developed	2002	1998
Unit mix	1 & 2 bedrooms	1 & 2 bedrooms
Building type	4 three-story brick buildings	3 three-story brick walkups
Staff: office/maintenance	2 / 3	1.5 / 3
Site amenities	Play lot, laundry	Laundry
% Affordable	100%	100%
Average vacancy rate	4%	2%
Development type by this developer	Acquisition and rehabilitation	Acquisition and rehabilitation

"North Ledge" Apartments is located in northwest suburban McHenry County but is owned and managed by a large nonprofit based in Chicago. The agency has developed over 2800 affordable homes while providing their own property management. North Ledge was an existing affordable property that was acquired in 2001 and completed in 2002. There are 120 units in 4 separate three-story brick buildings on a two-acre lot. Amenities include a children's play lot and laundry on-site. The unit mix includes 1 and 2 bedroom units occupied primarily by very low-income households. On average, about 4% of units are vacant at any time. The development has 2 full-time property managers on-site along with three maintenance staff. No supportive services are provided to tenants other than holiday-oriented events. All the units at North Ledge Apartments have project-based Section 8 rental assistance so tenants pay 30% of their income towards rent.

"New Mystic" Apartments was acquired and rehabilitated in 1998. The nonprofit developer works solely in the suburbs and has developed over 200 affordable units. The agency self-manages over 150 apartments for all populations. Located in suburban Cook County, New Mystic Apartments is comprised of three three-story brick buildings on three sites with a total of 40 units, mostly two-bedroom. Tenants have low incomes and many are long-term residents. The typical vacancy rate is about 2%. The agency has 1.5 property management staff located off-site and three maintenance workers that service all properties. The nonprofit does not offer direct supportive services to residents but works with local social service agencies to help tenants obtain needed services.

There are more family developments created by for-profit developers than nonprofits in the Chicago suburbs so the for-profit sites were selected to parallel the nonprofits by geography and type. Table 23 summarizes the two for-profit developments surveyed.

Table 23: For-Profit Developments Surveyed

Development Name	"Fox Moon" Apts	"First Light" Apts
County	Lake	Lake
Units in project	181	168
Year developed	2005	1998
Unit mix	1, 2, 3	1 & 2
Building type	28 two-story townhome walkups	3 three-story elevator
Staff: office/maintenance	3 / 4	1.5 / 3
Site amenities	Club house, Pool	Pool
% Affordable	100%	100%
Average vacancy rate	2%	5%
Development type by this developer	Acquisition and rehabilitation	Acquisition and rehabilitation

"Fox Moon" Apartments is located in north suburban Lake County. The development consists of 181 apartments in clusters of three-story brick buildings on a several acre site. It was originally built as affordable housing in 1981, then acquired and rehabilitated in 2005 by the current owner who has developed and manages over 2000 apartment units. Fox Moon has a mix of 1, 2 and 3 bedroom units with an average vacancy rate of about 2%. Amenities include a central management office with three on-site staff and a clubhouse with furnished community room. In addition, there are playgrounds, outdoor grilling areas, a community garden, and an outdoor swimming pool, all serviced by four maintenance workers. All units at Fox Moon Apartments have project-based Section 8 rental assistance.

"First Light" Apartments is also located in Lake County. The existing development was acquired and rehabilitated in 1998 by an experienced for-profit developer. The property is managed by a separate property management company which manages affordable and non-affordable housing throughout Illinois. The First Light complex is comprised of 168 units located in 3 L-shaped three-story brick elevator buildings on a rolling site. The property has an outdoor swimming pool and picnic area with grills. There are 1.5 office staff on-site and 3 full-time maintenance/janitorial workers. The mix of one and two bedroom units have an average vacancy rate of about 5%.

In summary, the four developments included are comparable across important factors. All four complexes target 100% low income families and are located in the north and northwest suburbs of Chicago. Each of the properties was developed as affordable

housing by the current owner between 1998 and 2005. All were pre-existing buildings that were acquired and rehabilitated with funding from the State of Illinois, including Low Income Housing Tax Credits and/or HOME Program funds. The buildings at all four sites are low-rise, and most are three stories tall. The vacancy rates are all low at 2-5%. Each property includes a mix of one and two bedroom apartments with a few three bedrooms at one complex. For property management, all four developments have 1.5 to 2 office persons (mostly on-site) and each has 2-4 maintenance personnel. None of the sites were developed under revitalization strategies but instead were acquired to provide needed lower rent apartments for working families in their communities.

All developers remain engaged in management. Management of the for-profits is provided by a subsidiary of the developer while the nonprofits provide their own management. None of the developments provide direct supportive services, not even the nonprofits, as anticipated. As a result, the question of whether organizations that offer their own support services may be more likely to engage these services in support of quality-of-life enhancement of residents, cannot be addressed given the difficulty engaging developers, and remains a question to be addressed by future research.

Physically, the main difference between the properties is that both for-profit developments have swimming pools while the nonprofit sites do not. Both for-profit complexes are also larger than the nonprofit developments. One nonprofit and one for-profit each have project-based rental assistance for all units.

B. Development Type Matrix

In order to test the place-based differences hypothesized, 2000 Census data and Illinois crime statistics were reviewed for the municipality of each development. After being selected, the four developments were classified by comparable desirability of the local neighborhood. Using the five desirability indicators identified in Table 18 (i.e., median income levels, poverty rates, unemployment rate, vacancy rate, and crime statistics) each of the developments was ranked and divided into comparatively more desirable and less desirable neighborhoods for the nonprofit or for-profit group.

Table 24 shows the desirability indicator data for the five neighborhood factors for each development and their relative ranking for each of the five variables. As shown in parentheses below each figure, among the nonprofits, New Mystic Apartments ranked first or second in all five categories, while North Ledge Apartments ranked third in every category. This results in New Mystic being classified as being the nonprofit in the More Desirable Neighborhood while North Ledge is classified as being the nonprofit in the Less Desirable Neighborhood. Between the for-profits, Fox Moon Apartments ranked first or second in every category while First Light always ranked fourth. Therefore, Fox Moon is the for-profit in the More Desirable Neighborhood with First Light the for-profit in the Less Desirable Neighborhood. The geographic desirability factors cleanly separate each of the two profit-type groups into "more" and "less" desirable, and allow us to compare profit-type groups by neighborhood desirability.

Table 24: Desirability Factors

Development	Fox Moon Apts	New Mystic Apts	North Ledge Apts	First Light Apts	U.S.
Median income	$75,742 (1)	$57,375 (2)	$48,871 (3)	$42,335 (4)	$41,994
Percent below poverty	3.0% (1)	5.4% (2)	7.2% (3)	13.9% (4)	12.4%
Percent unemployed	1.4% (1)	2.0% (2)	2.5% (3)	4.0% (4)	2.8%
Percent vacant units	2.7% (2)	2.0% (1)	4.3% (3)	5.0% (4)	9.0%
Crime score	222.6 (2)	201.8 (1)	274.4 (4)	255.4 (3)	320.9
Relative ranking	1	2	3	4	

Source: U.S. Census Bureau Census 2000 and City-data.com crime index (higher means more crime, U.S. average = 320.9). Parentheses show relative rank by indicator.

For context, national data is also shown in the last column of Table 24. Three of the municipalities (for Fox Moon, New Mystic, and North Ledge) ranked better than the national average for all five desirability factors; First Light ranked worse on three factors (median income, percent below poverty, percent unemployed) compared to the U.S. but better on vacancy and crime. All four areas had better crime scores than the national average.

Based on the results of the relative placed-based scores and developer type, the 2 x 2 Development Selection Matrix is shown in Table 25 with North Ledge as a nonprofit site in a less desirable area, New Mystic as a nonprofit in a more desirable neighborhood, First Light a for-profit development in a less desirable area, and Fox Moon a for-profit in the more desirable area.

Table 25: Development Selection Matrix

Developer/ Neighborhood	Nonprofit Developer	For-Profit Developer
Less Desirable Neighborhood	North Ledge	First Light
More Desirable Neighborhood	New Mystic	Fox Moon

The results that follow are presented in this format showing developer type as nonprofit or for-profit and neighborhood type as more or less desirable.

C. Tenant Survey Results

The results presented here include surveys completed by 121 tenants living in the four developments selected. There were at least 30 valid surveys completed at each of the four sites as shown in Table 26. Subtotals by developer type equal 60 tenants living in nonprofit buildings and 61 tenants in for-profit buildings. Surveys by geographic area equal 60 tenants living in buildings located in less desirable neighborhoods and 61 tenants in more desirable areas.

Table 26: Number of Tenants Surveyed

	Nonprofit developer	For-profit developer	Subtotals by area
Less desirable neighborhood	North Ledge = 30	First Light = 30	Less = 60
More desirable neighborhood	New Mystic = 30	Fox Moon = 31	More = 61
Subtotals by developer	Nonprofit = 60	For-profit = 61	Total = 121

The racial breakdown overall, by area, by developer type, and within each development is shown in Table 27. Overall, 32% of respondent were White, 40% were Black, 25% were Latino, and 4% were Other. The major racial difference between geographic areas is that in less desirable neighborhoods 25% of tenants were Black and 36% were Latino, while over 53% of tenants in more desirable neighborhoods were Black and only 15% were Latino. Each development had different majority populations with North Ledge over half White (53%), First Light half Latino (50%), and New Mystic over three-quarters Black (77%). Fox Moon is more evenly distributed racially.

Table 27: Respondents' Race

Race	Nonprofit developer	For-profit Developer	Subtotals by area
Less desirable neighborhood	North Ledge: White 53.3% Black 13.3% Other 13.3% Latino 20.0%	First Light: White 13.3% Black 36.7% Other 0.0% Latino 50.0%	Less desirable: White 33.3% Black 25.0% Other 6.7% Latino 35.0%
More desirable neighborhood	New Mystic: White 16.7% Black 76.7% Other 3.3% Latino 3.3%	Fox Moon: White 45.2% Black 32.3% Other 0.0% Latino 22.6%	More desirable: White 31.1% Black 54.1% Other 1.6% Latino 13.1%
Subtotals by developer	Nonprofit: White 35.0% Black 45.0% Other 8.3% Latino 11.7%	For-profit: White 29.5% Black 34.4% Other 0.0% Latino 36.1%	Overall: White 32.2% Black 39.7% Other 4.1% Latino 24.0%

Women comprised 77% of all respondents and men 23% as shown in Table 28. Similarly, nonprofits had 78% females and for-profits 75% female respondents. However, gender varied more widely by geographic areas with 67% female interviewees in less desirable

areas and 87% females in more desirable areas. Within the developments, Fox Moon had 90% female respondents while First Light had just 60% females in the sample.

Table 28: Respondents' Gender

Gender	Nonprofit developer	For-profit developer	Subtotals by area
Less desirable neighborhood	North Ledge: Male 26.7% Female 73.3%	First Light: Male 40.0% Female 60.0%	Less desirable: Male 33.3% Female 66.7%
More desirable neighborhood	New Mystic: Male 16.7% Female 83.3%	Fox Moon: Male 9.7% Female 90.3%	More desirable: Male 13.1% Female 86.9%
Subtotals by developer	Nonprofit: Male 21.7% Female 78.3%	For-profit: Male 24.6% Female 75.4%	Overall: Male 23.1% Female 76.9%

Table 29 shows that educationally, 10% of all respondents did not finish high school, 38% have a high school diploma or GED, 41% either attended a trade school, have some college or earned an associates degree, and 11% have a Bachelor's degree; no one had a Master's degree or higher. There are dramatic differences in education level by geography and development type. In the less desirable neighborhoods, 62% of respondents had a high school diploma or less; whereas the corresponding figure in more desirable neighborhoods is only 35%. In for-profit developments, 56% of respondents had a high school diploma or less, compared to 40% in the nonprofit developments. Between the four developments, North Ledge had by far the largest percentage (20% versus 7%, 7% and 7%) of those who did not finish high school, while New Mystic had by far the highest percentage (23% versus 3%, 10% and 7%) who had graduated from college.

Table 29: Respondents' Education

Education	Nonprofit developer	For-profit developer	Subtotals by area
Less desirable neighborhood	**North Ledge:** Not HS 20.0% HS/GED 40.0% Some college 36.7% Bachelor 3.3%	**First Light:** Not HS 6.7% HS/GED 56.7% Some college 26.7% Bachelor 10.0%	**Less desirable:** Not HS 13.3% HS/GED 48.3% Some college 31.7% Bachelor 6.7%
More desirable neighborhood	**New Mystic:** Not HS 6.7% HS/GED 13.3% Some college 56.7% Bachelor 23.3%	**Fox Moon:** Not HS 6.5% HS/GED 41.9% Some college 45.2% Bachelor 6.5%	**More desirable:** Not HS 6.6% HS/GED 27.9% Some college 50.8% Bachelor 14.8%
Subtotals by developer	**Nonprofit:** Not HS 13.3% HS/GED 26.7% Some college 46.7% Bachelor 13.3%	**For-profit:** Not HS 6.6% HS/GED 49.2% Some college 36.1% Bachelor 8.2%	**Overall:** Not HS 9.9% HS/GED 38.0% Some college 41.3% Bachelor 10.7%

The Age of Head of Household data shows that these family developments tend to serve households that would be considered within childbearing years. Table 30 shows that the mean age of all respondents is 42 with 28% less than 29 years old and 12% over 60 years old. Age breakdowns were similar to overall figures by neighborhood and developer type. However, within developments, the mean age of First Light residents is 36, nearly a decade younger than the mean age of tenants in the other three sites (44, 45 and 43). First Light also had no one over 60 years of age.

Table 30: Respondents' Age of Head of Household

Age	Nonprofit	For-profit	Subtotals by area
Less desirable neighborhood	**North Ledge:** Mean: 43.8 < 29: 30.0% 30-49.9: 30.0 50-59.9: 20.0% 60 +: 20.0%	**First Light:** Mean: 35.5 < 29: 36.7% 30-49.9: 50.0% 50-59.9: 13.3% 60 +: 0.0%	**Less desirable:** Mean: 39.7 < 29: 33.3% 30-49.9: 40.0 50-59.9: 16.7% 60 +: 10.0%
More desirable neighborhood	**New Mystic:** Mean:45.2 < 29: 10.0% 30-49.9: 46.7% 50-59.9: 33.3% 60 +: 10.0%	**Fox Moon:** Mean: 43.0 < 29: 35.5% 30-49.9: 38.8 50-59.9: 6.5% 60 +: 19.4%	**More desirable:** Mean: 44.1 < 29: 23.0% 30-49.9: 42.7% 50-59.9: 19.7% 60 +: 14.8%
Subtotals by developer	**Nonprofit:** Mean: 44.5 < 29: 20.0% 30-49.9: 38.4 50-59.9: 26.7% 60 +: 15.0%	**For-profit:** Mean: 39.3 < 29: 36.1% 30-49.9: 44.3% 50-59.9: 9.8% 60 +: 9.8%	**Overall:** Mean: 41.9 < 29: 28.1% 30-49.9: 41.4 50-59.9: 18.2% 60 +: 12.4%

Household sizes are fairly evenly split overall between single persons (32%), two person households (31%), and three or more persons (37%), as shown in Table 31. However, households in nonprofit developments were more likely to be single, 40%, compared to 25% in for-profit sites. Households in less desirable areas tend to have three or more persons, 47%, compared to 28% in more desirable areas. Household sizes within each of the four developments mirrored their respective development type, not their geography.

Table 31: Respondents' Household Size

Household Size	Nonprofit	For-profit	Subtotals by area
Less desirable neighborhood	**North Ledge:** 1 person: 40.0% 2 persons: 20.0% 3 persons: 30.0% 4+ persons: 10.0%	**First Light:** 1 person: 20.0% 2 persons: 26.7% 3 persons: 36.7% 4+ persons: 16.6%	**Less desirable:** 1 person: 30.0% 2 persons: 23.3% 3 persons: 33.3% 4+ persons: 13.4%
More desirable neighborhood	**New Mystic:** 1 person: 40.0% 2 persons: 33.3% 3 persons: 16.7% 4+ persons: 10.0%	**Fox Moon:** 1 person: 29.0% 2 persons: 41.9% 3 persons: 22.6% 4+ persons: 6.4%	**More desirable:** 1 person: 34.4% 2 persons: 37.7% 3 persons: 19.7% 4+ persons: 8.2%
Subtotals by developer	**Nonprofit:** 1 person: 40.0% 2 persons: 26.7% 3 persons: 23.3% 4+ persons: 10.0%	**For-profit:** 1 person: 24.6% 2 persons: 34.4% 3 persons: 29.5% 4+ persons: 11.5%	**Overall:** 1 person: 32.2% 2 persons: 30.6% 3 persons: 26.4% 4+ persons: 10.7%

Over half of all respondents were single without a partner (56%) while just 12% are currently married, as shown in Table 32. Households living in more desirable neighborhoods were more likely to be single with no partner, 65% versus 44% in less desirable areas. Marital status by development type was similar to overall percentages. North Ledge has a comparatively much higher divorce rate at 37% versus just 7% for First Light. First Light residents had the highest percentage of married families (20%) while Fox Moon had the lowest percentage of married persons (3%).

Table 32: Respondents' Marital Status

Marital Status	Nonprofit developer	For-profit developer	Subtotals by area
Less desirable neighborhood	North Ledge: Single, no partner 33.3% Single w/partner 13.3% Married 13.3% Divorced 36.7% Widowed 3.3%	First Light: Single, no partner 56.7% Single w/partner 16.7% Married 20.0% Divorced 6.7% Widowed 0.0%	Less desirable: Single, no partner 45.0% Single w/partner 15.0% Married 16.7% Divorced 21.7% Widowed 1.7%
More desirable neighborhood	New Mystic: Single, no partner 70.0% Single w/partner 6.7% Married 10.0% Divorced 10.0% Widowed 3.3%	Fox Moon: Single, no partner 63.3% Single w/partner 3.3% Married 3.3% Divorced 23.3% Widowed 6.7%	More desirable: Single, no partner 66.7% Single w/partner 5.0% Married 6.7% Divorced 16.7% Widowed 5.0%
Subtotals by developer	Nonprofit: Single, no partner 51.7% Single w/partner 10.0% Married 11.7% Divorced 23.3% Widowed 3.3%	For-profit: Single, no partner 60.0% Single w/partner 10.0% Married 11.7% Divorced 15.0% Widowed 3.3%	Overall: Single, no partner 55.8% Single w/partner 10.0% Married 11.7% Divorced 19.2% Widowed 3.3%

In order to review income levels, households were separated into categories using the area median income for Chicago metropolitan area since that is how they are qualified to reside in these developments. As shown in Table 33, overall 69% of households would be considered extremely low income, 15% are very low income, 5% are low income, and 12% are moderate income. Income categories were similar for geographic areas and development types, however, specific developments showed large differences. North Ledge and Fox Moon had 97% and 94% extremely low income respondents, respectively, which is not surprising since both developments have project-based rental assistance. Both New Mystic and First Light had relatively high percentages of moderate-income

households, 27% and 20% respectively, while still serving many extremely low income households, 43% and 40% respectively.

Table 33: Respondents' Income Category

Income	Nonprofit	For-profit	Subtotals by area
Less desirable neighborhood	**North Ledge:** Extremely: 96.7% Very low: 3.3% Low income: 0.0% Moderate: 0.0%	**First Light:** Extremely: 40.0% Very low: 33.3% Low income: 6.7% Moderate: 20.0%	**Less desirable:** Extremely low: 68.3% Very low: 18.3% Low income: 3.3% Moderate: 10.0%
More desirable neighborhood	**New Mystic:** Extremely: 43.3% Very low: 16.7% Low income: 13.3% Moderate: 26.7%	**Fox Moon:** Extremely: 93.5% Very low: 6.5% Low income: 0.0% Moderate: 0.0%	**More desirable:** Extremely low: 68.9% Very low: 11.5% Low income: 6.6% Moderate: 13.1%
Subtotals by developer	**Nonprofit:** Extremely: 70.0% Very low: 10.0% Low income: 6.7% Moderate: 13.3%	**For-profit:** Extremely: 67.2% Very low: 19.7% Low income: 3.3% Moderate: 9.8%	**Overall:** Extremely low: 68.6% Very low: 14.9% Low income: 5.0% Moderate: 11.6%

(Income categories calculated based on Chicago PMSA median incomes for two person households in 2009: Extremely Low = 30% AMI, less than $18,090 per year; Very Low = 50% AMI, less than $30,150; Low = 60% AMI, less than $36,180; Moderate ≤100% AMI, greater than $36,180.)

Prior to moving into these affordable developments, half (50%) of all tenants were renters as shown in Table 34. Only 6% were owners and 8% lived in public housing. However, almost one-third of all residents (32%) previously lived with family or friends. Previous housing situation is similarly distributed between geographies and developer types. However, there are notable differences within specific developments: half of the tenants (50%) at North Ledge lived with family and friends, compared to only 17% at New Mystic, 27% at First Light, and 36% at Fox Moon. Very few residents came from public housing (3%-16%) and even fewer were owners (3%-7%). Most of the tenants were previously renters at First Light (67%) and New Mystic (63%).

Table 34: Respondents' Previous Housing

Previous Housing	Nonprofit	For-profit	Subtotals by area
Less desirable neighborhood	**North Ledge:** Owned: 6.7% Rental: 26.6% Public: 10.0% W/Family: 50.0% Other: 6.7%	**First Light:** Owned: 3.3% Rental: 66.7% Public: 3.3% W/Family: 26.7% Other: 0.0%	**Less desirable:** Owned: 5.0% Rental: 46.7% Public: 6.7% W/Family: 38.3% Other: 3.3%
More desirable Neighborhood	**New Mystic:** Owned: 6.7% Rental: 63.3% Public: 3.3% W/Family: 16.7% Other: 10.0%	**Fox Moon:** Owned: 6.5% Rental: 42.0% Public: 16.1% W/Family: 35.5% Other: 0.0%	**More desirable:** Owned: 6.6% Rental: 52.5% Public: 9.8% W/Family: 26.2% Other: 4.9%
Subtotals by developer	**Nonprofit:** Owned: 6.7% Rental: 41.0% Public: 6.7% W/Family: 33.3% Other: 8.4%	**For-profit:** Owned: 4.9% Rental: 54.1 Public: 9.8% W/Family: 31.1% Other: 0%	**Overall:** Owned: 5.8% Rental: 49.6% Public: 8.3% W/Family: 32.2% Other: 4.1%

In summary, the demographics of the tenants who currently live in the four developments represent a wide spectrum of household types. Residents were evenly split racially but three developments had over half of tenants of one race, and each is different. Over three-quarters of all those interviewed were female. Educational attainment varied widely, with over 90% having graduated from high school but only 10% having finished college. Nearly all persons interviewed would be considered within childbearing years with few senior households (senior developments were excluded from the sample). However, First Light residents were a decade younger on average than those at the other sites. Household sizes were split into thirds between single persons, two-person households and those with three or more occupants. Over 80% of respondents were single heads of household with just over 10% married. HUD would classify nearly all residents as being low income, with over 90% of residents at two sites having extremely low incomes. Half of tenants

(50%) were previously renters but a large portion (32%) previously lived with family or friends with very few previous owners or public housing residents.

D. Standard-of-Living Scores

Standard-of-living is a basic measure of a household's well-being. As operationally defined in Table 17, standard-of-living is comprised of household income, percent of income spent on housing, housing location, number of bedrooms per person, and building conditions. To create standard-of-living scores, respondents' answers to each of these five indicators were summed to create a standard-of-living index ranging from five to twenty-five points. A stand-alone score only gives a general sense of the standard-of-living, higher is better while lower is worse, but is useful as a point of comparison. The overall mean standard-of-living score for all tenants prior to moving into these affordable housing developments is 16.05 as shown in Table 35.

Table 35: Standard-of-living Pre-test Means

Standard-of-living	Nonprofit	For-profit	Subtotals by area
Less desirable neighborhood	North Ledge: 15.87 (3.93)	First Light: 16.34 (3.44)	Less desirable: 16.10 (3.67)
More desirable neighborhood	New Mystic: 17.17 (3.58)	Fox Moon: 14.87 (2.94)	More desirable: 16.00 (3.44)
Subtotals by developer	Nonprofit: 16.52 (3.78)	For-profit: 15.59 (3.25)	Overall: 16.05 (3.54)

(Standard Deviations)

Mean standard-of-living scores for tenants prior to moving to the two developments in less desirable neighborhoods were similar (about 16) prior to moving into more desirable

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neighborhoods. Prior to moving into nonprofit buildings, current tenants had a mean standard-of-living score of 16.52 while those moving into for-profit developments had slightly lower prior mean standard-of-living score of 15.60. The mean standard-of-living scores before moving to affordable housing ranged from 14.87 for Fox Moon, 15.87 for North Ledge, 16.35 for First Light, and 17.17 for New Mystic.

Current standard-of-living scores were also calculated for each comparison group as shown in Table 36. The current overall mean standard-of-living score is 17.30. For less desirable areas, the current mean standard-of-living score is 16.65 and for more desirable areas, the current mean standard-of-living score is 17.94. Tenants in nonprofit developments have a mean standard-of-living score of 17.28 while those in for-profit developed housing have a mean standard-of-living score of 17.31. New Mystic has the highest current standard-of-living score at 18.03; Fox Moon's current standard-of-living score is 17.84; First Light has a current mean standard-of-living score of 16.77; and North Ledge has the lowest mean standard-of-living score at 16.53.

Table 36: Standard-of-living Post-test Means

Standard-of-living	Nonprofit	For-profit	Subtotals by area
Less desirable neighborhood	North Ledge: 16.53 (3.22)	First Light: 16.77 (3.18)	Less desirable: 16.65 (3.18)
More desirable neighborhood	New Mystic: 18.03 (3.19)	Fox Moon: 17.84 (2.60)	More desirable: 17.93 (2.88)
Subtotals by developer	Nonprofit: 17.28 (3.27)	For-profit: 17.31 (2.92)	Overall: 17.30 (3.09)

(Standard Deviations)

To summarize, the overall mean standard-of-living score prior to living in affordable housing increased from 16.05 to 17.30 for tenants currently living in affordable housing. In fact, the standard-of-living scores for all project types and for each development increased since moving to affordable housing. The significance of these increases is discussed below.

E. Quality-of-Life Scores

As described above, quality-of-life is a complicated, multidimensional, multidisciplinary concept that can take on many dimensions. For this study, a quality-of-life index was operationalized using five capitals and thirty-one indicators detailed in Table 15. Quality-of-life scores were calculated for all individuals surveyed and for the comparison groups of developer and geography as well as for each development. Quality-of-life scores were also calculated for each group prior to moving to affordable housing (pre) and while living in affordable rental housing (post). The results of the quality-of-life indices are presented below.

The overall mean quality-of-life score for tenants prior to moving into affordable housing was 93.37 as shown in Table 37. For those now living in less desirable neighborhoods, the pre-test mean quality-of-life score is 94.17 compared to 92.50 pre-test for those now living in more desirable neighborhoods. The pre-test mean quality-of-life score for residents now in nonprofit created housing was 95.89 versus a pre-test score of 90.80 for those now living in for-profit affordable housing. Fox Moon had the lowest pre-test

mean quality-of-life score at 87.70 with First Light at 93.99, North Ledge at 94.34, and

New Mystic the highest at 97.45 prior to affordable housing.

Table 37: Quality-of-life Pre-test Means

Quality-of-life	Nonprofit	For-profit	Subtotals by area
Less desirable neighborhood	North Ledge: 94.34 (13.64)	First Light: 93.99 (13.97)	Less desirable: 94.17 (13.69)
More desirable neighborhood	New Mystic: 97.45 (16.51)	Fox Moon: 87.70 (11.99)	More desirable: 92.50 (15.09)
Subtotals by developer	Nonprofit: 95.89 (15.09)	For-profit: 90.80 (13.28)	Overall: 93.372 (14.38)

(Standard Deviations)

The post-test overall mean quality-of-life score increased to 99.13 (Table 38). For more

desirable neighborhoods, the current mean quality-of-life score is 100.82 compared to

97.41 for less desirable neighborhoods. The nonprofit developments have a current mean

quality-of-life score of 96.65 versus a 101.58 current mean quality-of-life score of

residents in for-profit developed housing. North Ledge has the lowest current quality-of-

life score at 92.31, with New Mystic at 100.98, Fox Moon at 100.67, and First Light the

highest current quality-of-life score at 102.52.

Table 38: Quality-of-life Post-test Means

Quality-of-life	Nonprofit	For-profit	Subtotals by area
Less desirable neighborhood	North Ledge: 91.91 (10.45)	First Light: 102.52 (9.60)	Less desirable: 97.21 (11.29)
More desirable neighborhood	New Mystic: 100.98 (12.60)	Fox Moon: 100.67 (7.71)	More desirable: 100.82 (10.32)
Subtotals by developer	Nonprofit: 96.45 (12.35)	For-profit: 101.58 (8.67)	Overall: 99.03 (10.92)

(Standard Deviations)

Quality-of-life scores were calculated using equal numbers of subjective and objective variables. The pre-test means for both subjective and objective scores are shown in Table 39 and broken out for each development, geographic area, and developer type. Overall subjective pre-test scores were 49.80 while subjective pre-test means were 43.35.

Table 39: Quality-of-life Pre-test Means by Subjective/Objective

	Quality-of-life	Nonprofit	For-profit	Subtotals by area
Subjective	Less desirable Neighborhood	North Ledge: 51.22 (9.27)	First Light: 50.25 (9.41)	Less desirable: 50.73 (9.27)
	More desirable Neighborhood	New Mystic: 50.85 (9.96)	Fox Moon: 46.96 (8.65)	More desirable: 48.87 (9.44)
	Subtotals by developer	Nonprofit: 51.03 (9.54)	For-profit: 48.58 (9.11)	Overall: 49.80 (9.37)
	Quality-of-life	Nonprofit	For-profit	Subtotals by area
Objective	Less desirable Neighborhood	North Ledge: 43.12 (7.01)	First Light: 43.75 (6.62)	Less desirable: 43.43 (6.77)
	More desirable Neighborhood	New Mystic: 46.60 (8.62)	Fox Moon: 40.74 (6.72)	More desirable: 43.62 (8.20)
	Subtotals by developer	Nonprofit: 44.86 (7.99)	For-profit: 42.22 (6.79)	Overall: 43.53 (7.49)

(Standard Deviations)

For each of the comparison groups, the subjective and objective post-test means are

shown in Table 40. The subjective quality-of-life score after living in affordable housing

is 53.56 while the post-test objective mean is 45.47.

Table 40: Quality-of-life Post-test Means by Subjective/Objective

	Quality-of-life	Nonprofit	For-profit	Subtotals by area
Subjective	**Less desirable neighborhood**	**North Ledge:** 52.99 (6.85)	**First Light:** 54.32 (5.69)	**Less desirable:** 53.65 (6.28)
	More desirable neighborhood	**New Mystic:** 51.42 (7.34)	**Fox Moon:** 55.47 (5.56)	**More desirable:** 53.48 (6.76)
	Subtotals by developer	**Nonprofit:** 52.20 (7.08)	**For-profit:** 54.90 (5.60)	**Overall:** 53.56 (6.50)
Objective		**Nonprofit**	**For-profit**	**Subtotals by area**
	Less desirable neighborhood	**North Ledge:** 38.93 (5.89)	**First Light:** 48.20 (6.04)	**Less desirable:** 43.56 (7.43)
	More desirable neighborhood	**New Mystic:** 49.57 (7.24)	**Fox Moon:** 45.19 (5.80)	**More desirable:** 47.34 (6.86)
	Subtotals by developer	**Nonprofit:** 44.25 (8.36)	**For-profit:** 46.67 (6.06)	**Overall:** 45.47 (7.36)

(Standard Deviations)

Quality-of-life scores were also calculated for each of the five capital indices to create

quality-of-life capital indices for both pre-test and post-test affordable housing shown in

Table 41. The lowest quality-of-life scores pre-test and post-test were Financial Capital at

15.08 and post-test of 14.29. Physical Capital had the highest pre-test and post-test scores

of 21.71 and 23.37. Social Capital had a pre-test score of 18.58 and post-test of 19.97.

Human Capital changed from 20.84 to 21.11 and Personal Capital increased from 17.11

to 20.29.

Table 41: Quality-of-life Pre-test and Post-test Means by Capital

	Pre-test	Post-test
Financial Capital	15.08 (4.03)	14.29 (3.95)
Physical Capital	21.71 (4.19)	23.37 (2.86)
Social Capital	18.58 (4.57)	19.97 (3.35)
Human Capital	20.84 (4.58)	21.11 (4.30)
Personal Capital	17.11 (3.51)	20.29 (2.92)

(Standard Deviations)

Table 42 presents both pre-test and post-test quality-of-life scores divided by nonprofit and for-profit developments for each of the five capitals.

Table 42: Quality-of-life Pre-test and Post-test Means by Capital & Developer Type

Quality-of-life	Nonprofit Pre-test	Nonprofit Post-test	For-profit Pre-test	For-profit Post-test
Financial Capital	15.50 (4.35)	14.19 (3.68)	14.67 (3.68)	14.39 (4.23)
Physical Capital	22.12 (4.36)	22.83 (2.83)	21.32 (4.02)	23.90 (2.81)
Social Capital	19.30 (4.44)	19.08 (3.73)	17.88 (4.63)	20.85 (2.69)
Human Capital	21.41 (4.45)	20.54 (4.86)	20.37 (4.68)	21.87 (3.56)
Personal Capital	17.66 (3.30)	20.01 (3.22)	16.56 (3.64)	20.57 (2.58)

(Standard Deviations)

Quality-of-life scores by geographic area are shown in Table 43 divided by each of the five capitals. The significance of differences between these scores is discussed below.

Table 43: Quality-of-life Pre-test & Post-test Means by Capital & Area

Quality-of-life	Less Desirable Pre-test	Less Desirable Post-test	More Desirable Pre-test	More Desirable Post-test
Financial Capital	15.92 (4.30)	14.39 (3.76)	14.26 (3.59)	14.19 (4.17)
Physical Capital	21.49 (4.21)	22.88 (2.82)	21.93 (4.20)	23.85 (2.84)
Social Capital	18.52 (4.55)	19.31 (3.34)	18.65 (4.64)	20.62 (3.26)
Human Capital	21.31 (3.84)	20.59 (4.46)	20.47 (5.20)	21.82 (4.07)
Personal Capital	17.03 (3.41)	20.25 (2.79)	17.18 (3.63)	20.34 (3.06)

(Standard Deviations)

In summary, overall quality-of-life scores increased from 93.37 to 99.13 for tenants who moved affordable housing compared to their previous housing. While all other comparative quality-of-life scores increased, the score for one development, North Ledge, decreased from 94.34 to 92.31. Overall quality-of-life scores for each of the five capitals also increased from pre-test to post-test affordable housing. The significance of these changes is discussed below.

F. Affordable Housing Standard-Of-Living Benefits

Does affordable housing provide standard-of-living benefits for low income households? To answer research question A, this section analyzes standard-of-living changes in two ways: within development types and between comparison groups. First, standard-of-living pre-test mean scores are compared to standard-of-living post-test mean scores overall, by developer, by area, and by development. Then, standardized post-test scores

are analyzed to determine main effects and simple main effects between the comparison groups.

1. Standard-of-living Changes Within Developments

To analyze standard-of-living changes within development types, paired samples t tests were used to check for significance between standard-of-living in previous housing compared to current standard-of-living. The hypothesis was that standard-of-living scores before living in affordable housing would be lower than standard-of-living after affordable housing.

The paired samples t test for overall standard-of-living showed a significant difference ($p < .0001$) after moving to affordable housing; that is, between where people lived before moving to affordable housing (16.05) compared to current standard-of-living in affordable housing (17.30), as shown in Table 44.

Table 44: Standard-of-living Pre-test versus Post-test Means Overall

	Pre-test	**Post-test**	**Statistics**
Standard-of-living***	16.05 (3.54)	17.330 (3.09)	t = 3.634 (p < .0001)

*** Significant at $p < .001$ or better

For tenants living in nonprofit developments (Table 45), although mean standard-of-living scores increased from 16.52 to 17.28, the change was not significant pre-test to post-test ($p = .134$). However, in for-profit developments, standard-of-living scores increased from 15.60 to 17.31, which is very significant ($p < .0001$).

Table 45: Standard-of-living Pre-test versus Post-test Means by Developer

Standard-of-living	Pre-test	Post-test	Statistics
Nonprofit	16.52 (3.78)	17.28 (3.27)	t = 1.520 (p = .134)
For-profit***	15.60 (3.25)	17.31 (2.92)	t = 3.719 (p < .0001)

*** Significant at p < .001 or better

Table 46 shows that standard-of-living scores for tenants in less desirable areas did not change significantly (p = .274) from 16.11 pre-test to 16.65 post-test. However, the standard-of-living for tenants in more desirable areas did increase significantly (p < .0001), from 16.00 pre-test to 17.93 post-test.

Table 46: Standard-of-living Pre-test versus Post-test Means by Area

Standard-of-living	Pre-test	Post-test	Statistics
Less desirable	16.11 (3.67)	16.65 (3.18)	t = 1.105 (p = .274)
More desirable***	16.00 (3.44)	17.93 (2.88)	t = 4.196 (p < .0001)

*** Significant at p < .001 or better

Within each of the four development sites, the standard-of-living scores increased significantly for only one property, Fox Moon, as shown in Table 47. Mean standard-of-living scores at the other three sites increased but not significantly (at the p < .05 level or better). Mean standard-of-living scores for tenants at Fox Moon increased from 14.87 to 17.84 (p < .0001).

Table 47: Standard-of-living Pre-test versus Post-test Means by Development

Standard-of-living	Pre-test	Post-test	Statistics
North Ledge	15.87 (3.93)	16.53 (3.22)	t = 0.833 (p = .411)
New Mystic	17.17 (3.58)	18.03 (3.19)	t = 1.379 (p = .178)
First Light	16.345 (3.44)	16.77 (3.18)	t = 0.715 (p = .480)
Fox Moon***	14.87 (2.94)	17.84 (2.60)	t = 4.724 (p < .0001)

*** Significant at $p < .001$ or better

The hypothesis that affordable housing provides standard-of-living benefits for low-income households is supported by the data since the overall mean increased pre-test to post-test. However, as Table 47 indicates, a single development (Fox Moon) accounts for the increase in post-test versus pre-test scores for all developments, for for-profit developments, and for desirable areas. The implications of this are discussed below.

2. Standard-of-living Changes Between Groups

In order to determine whether differences between comparison groups resulted in different standard-of-living outcomes, pre-tests and post-tests need to be analyzed. First, pre-test mean scores were analyzed using a two-way ANOVA to measure whether tenants started with similar initial standard-of-living scores, as shown in Table 48.

Table 48: Standard-of-living Pre-test Two-way ANOVA

Source	F score	Significance
Developer type	2.081	.152
Geography	0.016	.898
Developer/Geography*	4.748	.031
R^2 = .056		

* Significant at $p < .05$

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For the main effects of developer types, pre-test scores were not significantly different (p = .152), with nonprofit mean scores at 16.65 and for-profits at 15.60. Similarly for geographic areas, pre-test standard-of-living scores for less desirable (16.11) versus more desirable (16.00) areas were not significantly different (p = .898). However, there was an interaction effect. Within the four developments, pre-test standard-of-living scores ranged from 14.87 at Fox Moon to 17.17 at New Mystic as shown in Table 47. The two-way ANOVA shows that the simple main effect of developer type over geography is significantly different (p = .03). However, the one-way ANOVA for developments indicates that the pre-test mean scores were not significantly different for tenants at the four sites (p = .081). Based on these results, tenants' pre-test affordable housing standard-of-living scores were not significantly different for either of the comparison groups or development sites.

Post-test scores were standardized by subtracting pre-test scores for each person from their post-test scores, as shown in Table 49. Overall, the mean standard-of-living change from pre-test to post-test was 1.24 (with a standard deviation 3.78).

Table 49: Standard-of-living Standardized Post-test Means

Standard-of-living standardized means	Nonprofit	For-profit	Area marginals
Less desirable neighborhood	0.67 (4.38)	0.42 (3.31)	0.54 (3.85)
More desirable neighborhood	0.87 (3.44)	2.97 (3.50)	1.93 (3.60)
Developer marginals	0.77 (3.91)	1.71 (3.62)	1.24 (3.78)

(Standard Deviations)

The standardized mean standard-of-living scores were then analyzed using two-way

ANOVA to determine if there were significant post-test differences or interaction effects

between developer types and locations on standard-of-living means, as shown in Table

50. Only geography showed a significant main effect on standard-of-living changes.

Table 50: Standard-of-living Standardized Post-test Two-way ANOVA

Source	F score	Significance
Developer type	1.919	.169
Geography*	4.213	.042
Developer/Geography	3.076	.082
$R^2 = .074$		

* Significant at $p < .05$

The first hypothesis was that standard-of-living scores of persons living in housing

developed by nonprofits would be higher than standard-of-living scores for persons living

in housing created by for-profits. The ANOVA shows that the main effect of developer

type is not significant ($p = .169$) for post-test standard-of-living scores (nonprofit = 0.77

and for-profit = 1.69).

The next hypothesis was that standard-of-living scores of persons living in housing

located in desirable areas would be higher than standard-of-living scores for persons

living in housing located in less desirable areas. For geographic areas, the two-way

ANOVA indicates that the main effects of geography are significant at $p < .05$ ($p = .042$)

with more desirable areas achieving higher standard-of-living (1.92 versus 0.54).

In addition, the two-way ANOVA showed that there was no significant interaction effect (p = .082) for developer type over geography. The results of the main effects and simple main effects are reflected in Figure 7.

Figure 7: Standardized Standard-of-Living Marginal Means
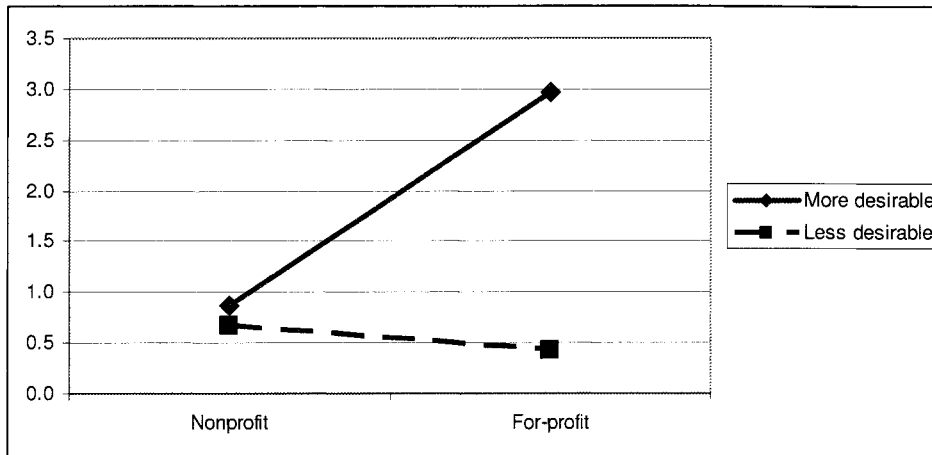
The third hypothesis for post-test standard-of-living scores was that households who live in affordable housing developed by nonprofits and located in desirable areas would have the highest standard-of-living scores while persons living in developments created by for-profit developers that are located in less desirable areas will have the lowest standard-of-living scores.

Table 51: Standard-of-living Standardized Post-test Means by Development

Standard-of-living	Nonprofit	For-profit
Less desirable Neighborhood	North Ledge: 0.67 (4.38)	First Light: 0.42 (3.31)
More desirable Neighborhood	New Mystic: 0.87 (3.44)	Fox Moon: 2.97 (3.50)

F = 3.118, p = .029

The ANOVA by developments in Table 51 showed that there is a significant difference (p < .03) between standardized post-test standard-of-living scores for the four development sites. The range of 0.42 to 2.97 for standardized post-test standard-of-living score changes is shown to be significantly different between the four properties. However, this analysis rejects the hypothesis of higher standard-of-living with nonprofits in more desirable areas versus for-profit sites in less desirable areas.

G. Affordable Housing Quality-Of-Life Benefits

Does affordable housing enhance the quality-of-life of low-income households? This section analyzes research question B in two ways: within development types and between comparison groups. First, quality-of-life pre-test mean scores are compared to quality-of-life post-test mean scores overall, by developer, by area, and by development. Then, standardized post-test scores are analyzed to determine main effects and simple main effects between the comparison groups. The same analyses are all then run for subjective and objective quality-of-life indicators.

1. Quality-of-life Changes Within Developments

In order to determine whether there are significant differences within comparison groups, quality-of-life in previous housing was compared to quality-of-life for current residents using paired samples t tests. The hypothesis was that quality-of-life before living in affordable housing would be significantly lower than quality-of-life after living in affordable housing.

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Again, for the overall data set, affordable housing enhanced the quality-of-life of low-income households; that is, the paired samples t test from pre-test to post-test showed that quality-of-life significantly improved (p < .0001) for those who moved into affordable housing. Quality-of-life mean scores increased from 93.3740 to 99.1320 as shown in Table 52.

Table 52: Quality-of-life Means Pre-test versus Post-test Means Overall

	Pre-test	Post-test	Statistics
Quality-of-life***	93.37 (14.38)	99.13 (10.91)	t = 4.222 (p < .0001)

*** Significant at p < .001 or better

Between the two developer types, quality-of-life improved significantly for tenants in for-profit developments but not in nonprofit developments, as seen in Table 53. Quality-of-life scores of for-profit tenants significantly increased from 90.80 pre-test to 101.58 post-test (p < .0001). Nonprofit quality-of-life scores increased from 95.99 to 96.65 which is not stable enough to achieve statistical significance (p = .732).

Table 53: Quality-of-life Means Pre-test versus Post-test by Means Developer

	Pre-test	Post-test	Statistics
Nonprofit	95.99 (15.08)	96.65 (12.37)	t = 0.344 (p = .732)
For-profit***	90.80 (13.28)	101.58 (8.70)	t = 6.170 (p < .0001)

*** Significant at p < .001 or better

Geographic areas both showed significant increases in quality-of-life scores (Table 54). Tenants who moved into developments in less desirable areas significantly increased their quality-of-life scores from 94.27 pre-test to 97.41 (p < .02). Likewise, for the

buildings in more desirable areas, quality-of-life significantly increased from 92.50 to

100.82 (p < .001).

Table 54: Quality-of-life Means Pre-test versus Post-test Means by Area

	Pre-test	Post-test	Statistics
Less desirable*	94.27 (13.69)	97.41 (11.30)	t = 2.619 (p < .011)
More desirable***	92.50 (15.09)	100.82 (10.32)	t = 3.434 (p < .001)

* Significant at p < .05; ** significant at p < .01; *** significant at p < .001 or better

Between the four developments, quality-of-life improved for two sites but not the other

two, as shown in Table 55. Quality-of-life scores for North Ledge actually declined from

94.54 pre-test to 92.31 post-test but this is not statistically significant (p = .456).

Table 55: Quality-of-life Means Pre-test versus Post-test Means by Development

	Pre-test	Post-test	Statistics
North Ledge	94.54 (13.64)	92.31 (10.67)	t = -0.756 (p = .456)
New Mystic	97.45 (16.51)	100.98 (12.60)	t = 1.524 (p = .138)
First Light**	93.99 (13.970)	102.52 (9.60)	t = 3.284 (p < .003)
Fox Moon***	87.70 (11.99)	100.67 (7.71)	t = 5.585 (p < .0001)

* Significant at p < .05; ** significant at p < .01; *** significant at p < .001 or better

At New Mystic, quality-of-life increased from 97.45 pre-test to 100.98 post-test but the

increase was not significant (p = .138). First Light had a significant quality-of-life score

increase from 93.99 to 102.52 (p < .003). Fox Moon had the largest statistically

significant increase from 87.70 to 100.67 (p < .0001).

2. Quality-of-life Changes Between Groups

In order to determine whether differences between comparison groups resulted in different quality-of-life post-test outcomes, pre-test scores were compared to post-test scores. Since all tenants start with different pre-test scores, post-test scores were standardized. First, pre-test mean scores were analyzed using a two-way ANOVA to measure whether tenants started with similar initial quality-of-life scores, as shown in Table 56.

Table 56: Quality-of-life Pre-test Means Two-way ANOVA

Source	F score	Significance
Developer type	3.871	.051
Geography	0.384	.538
Developer/Geography	3.355	.070
$R^2 = .062$		

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$ or better

For both developer types and geographic areas, pre-test quality-of-life was not significantly different. Table 56 shows that nonprofit (95.99) and for-profit (90.80) quality-of-life scores were marginally but not significantly different ($p = .051$). Similarly, quality-of-life scores for tenants in less desirable areas were 94.27 compared to 92.50 for those in more desirable areas, as seen in Table 55. The pre-test quality-of-life scores by geography were not significant ($p = .538$). In addition, there appeared to be no interaction effect between geography and developer type ($p = .07$). Based on these results, tenants' pre-test affordable housing quality-of-life scores were not significantly different for the comparison groups.

Next, quality-of-life post-test scores were standardized by subtracting pre-test scores from post-test scores for each person. The results are shown in Table 57. Overall, the mean quality-of-life change was 5.76.

Table 57: Quality-of-life Standardized Post-test Means

Quality-of-life	Nonprofit	For-profit	Area marginals
Less desirable Neighborhood	North Ledge -2.23 (16.15)	First Light 8.53 (14.22)	Less 3.15 (16.03)
More desirable neighborhood	New Mystic 3.53 (12.70)	Fox Moon 12.96 (12.92)	More 8.33 (13.56)
Developer marginals	Nonprofit 0.65 (14.69)	For-Profit 10.74 (13.64)	Overall 5.76 (15.00)

(Standard Deviations)

The standardized mean quality-of-life scores were then analyzed using two-way ANOVA to determine if there were significant post-test differences or interaction effects between developer types and locations, as shown in Table 58.

Table 58: Quality-of-Life Standardized Post-test Means Two-way ANOVA

Source	F score	Significance
Developer type***	15.592	.000
Geography*	3.982	.048
Developer/Geography	0.067	.796
$R^2 = .144$		

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$ or better

The first hypothesis was that quality-of-life scores of persons living in housing developed by nonprofit organizations would be higher than quality-of-life scores for persons living in housing created by for-profit developers. The two-way ANOVA showed that there is a significant main effect difference for developer types ($p < .0001$). However, the

difference is the opposite direction of that predicted; nonprofit quality-of-life mean

increases (0.65) were actually lower than for-profit quality-of-life scores (10.74). The

hypothesis of nonprofit organizations providing higher quality-of-life is not supported.

The next hypothesis was that quality-of-life scores of persons living in housing located in

more desirable areas would be higher than quality-of-life scores for persons living in

housing located in less desirable areas. The two-way ANOVA for geographic areas

shows a significant main effect ($p < .05$) for tenants living in less desirable versus more

desirable areas. The hypothesis of differences in quality-of-life by geography is

supported.

In addition, the two-way ANOVA for standardized quality-of-life showed that there was

no significant interaction effect ($p = .796$) for developer type over geography. As shown

in Figure 8, developer and geography QOL both change markedly but in the same

direction, so there is no interaction effect.

Figure 8: Standardized Quality-of-Life Marginal Means
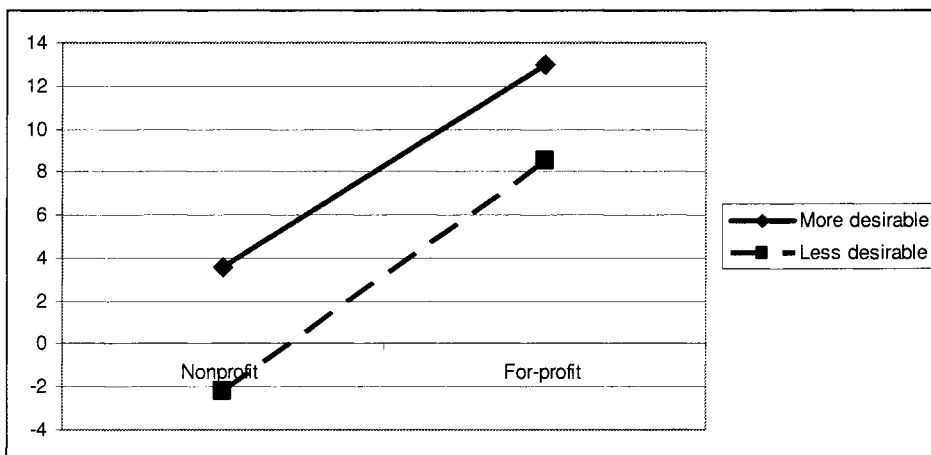
The third hypothesis was that households who live in affordable housing developed by nonprofits and located in desirable areas would have the highest quality-of-life scores while persons in developments created by for-profit developers that are located in less desirable areas will have the lowest quality-of-life scores.

Table 59: Quality-of-life Standardized Post-test Means ANOVA by Development

Quality-of-life	Nonprofit	For-profit
Less desirable neighborhood	North Ledge: -2.23 (16.15)	First Light: 8.53 (14.22)
More desirable neighborhood	New Mystic: 3.53 (12.70)	Fox Moon: 12.96 (12.92)

F = 6.582, (p < .0001)

The one-way ANOVA for the standardized mean quality-of-life scores for the four developments showed that there is a significant difference (p < .0001) in tenant standardized post-test quality-of-life scores between the four sites (Table 59). Review of the post-test hoc post-test quality-of-life scores in Table 60 indicates that the standardized mean post-test score for North Ledge is significantly different from both Fox Moon and First Light using the Scheffe Post Hoc test.

Table 60: Quality-of-life Standardized Means Post-test ANOVA Scheffe Post Hoc

	Respondent's Current Development	Respondent's Current Housing	Mean Difference	Std. Error	Sig.
Quality-of-life differences	New Mystic	North Ledge	5.76167	3.62879	.474
		Fox Moon	-9.42876	3.59941	.082
		First Light	5.76167	3.62879	.597
	North Ledge	New Mystic	-5.76167	3.62879	.474
		Fox Moon***	-15.19043	3.59941	.001
		First Light*	-10.75333	3.62879	.037
	Fox Moon	New Mystic	9.42876	3.59941	.082
		North Ledge***	15.19043	3.59941	.001
		First Light	4.43710	3.59941	.679
	First Light	New Mystic	4.99167	3.62879	.597
		North Ledge*	10.75333	3.62879	.037
		Fox Moon	-4.43710	3.59941	.679

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$ or better

The third hypothesis of nonprofit housing in desirable areas having the highest quality-of-life returns is not supported.

3. Objective and Subjective Quality-of-Life Within Developments

Next, the objective and subjective quality-of-life indices were analyzed using paired samples t tests for pre-test to post-test comparisons and two-way ANOVAs for standardized post-test scores to review changes in quality-of-life mean scores, depending on whether the data questions were objective or subjective.

First, a paired samples t test was used on the objective and subjective indices to determine whether there was a significant difference between quality-of-life in previous housing compared to quality-of-life for current residents based on objective and subjective measures. The hypothesis was that quality-of-life scores before living in

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affordable housing would be significantly lower than quality-of-life scores after

affordable housing for both the objective and subjective indices.

This hypothesis is supported. The paired samples t tests for both the subjective and the

objective measures of quality-of-life in previous housing are significantly lower than

quality-of-life for current residents. Subjective quality-of-life improved significantly

(from 49.80 to 53.56; $p < .0001$) while Objective quality-of-life also increased

significantly (from 43.53 to 45.47; $p < .006$) as shown in Table 61.

Table 61: Quality-of-life Pre-test versus Post-test Means by Subjective/Objective Overall

Quality-of-life	Pre-test	Post-test	Statistics
Subjective***	49.80 (9.37)	53.56 (6.50)	t = 4.034 (p < .0001)
Objective**	43.53 (7.49)	45.47 (7.36)	t = 2.797 (p < .006)

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$ or better

Next, paired sample t tests were run on pre-test quality-of-life objective and subjective

indices for developers and areas. Table 62 shows the results for developers. Tenants who

now live in nonprofit developments did not significantly improve their quality-of-life on

either subjective ($p = .362$) or objective ($p = .616$) measures. However, tenants now

living in for-profit developments improved their quality-of-life on both subjective and

objective measures. At for-profit sites, subjective quality-of-life significantly increased

(from 48.58 to 54.90; $p < .0001$) and objective quality-of-life also increased significantly

(from 42.22 to 46.67; $p < .0001$).

Table 62: Quality-of-life Pre-test versus Post-test Means by Subjective/Objective by Developer

Quality-of-life	Developer	Pre-test	Post-test	Statistics
Subjective	Nonprofit	51.03 (9.54)	52.20 (7.08)	t = 0.919 (p = .362)
	For-profit***	48.58 (9.11)	54.90 (5.603)	t = 4.873 (p < .0001)
Objective	Nonprofit	44.86 (7.99)	44.25 (8.36)	t = -0.505 (p = .616)
	For-profit***	42.22 (6.79)	46.67 (6.06)	t = 5.367 (p < .0001)

* Significant at p < .05; ** significant at p < .01; *** significant at p < .001 or better

Comparing geographic areas by subjective and objective indices shows improved quality-of-life for three of the four categories, as shown in Table 63. Tenants now living in more desirable areas significantly increased both their subjective quality-of-life (from 48.87 to 53. 48; p < .001) and objective quality-of-life (from 43.62 to 47.34; p < .0001). For tenants now in less desirable areas, subjective quality-of-life improved significantly (from 50.73 to 53.65; p < .03), however their objective quality-of-life did not change (p = .835).

Table 63: Quality-of-life Pre vs. Post-test Means by Subjective/Objective & Area

Quality-of-life	Area	Pre-test	Post-test	Statistics
Subjective	Less desirable*	50.73 (9.27)	53.65 (6.28)	t = 2.236 (p < .029)
	More desirable***	48.87 (9.44)	53.48 (6.76)	t = 3.440 (p < .001)
Objective	Less desirable	43.43 (6.77)	43.56 (7.43)	t = 0.210 (p = .835)
	More desirable***	43.62 (8.20)	47.34 (6.86)	t = 4.694 (p < .0001)

* Significant at p < .05; ** significant at p < .01; *** significant at p < .001 or better

Within the developments, on the subjective quality-of-life indices, two developments, North Ledge (p = .373) and New Mystic (p = .733), did not show significant differences from pre-test to post-test affordable housing, as shown in Table 64. First Light (p < .03) and Fox Moon (p < .0001) showed significant improvement in subjective quality-of-life from pre-test to post-test affordable housing.

Table 64: Quality-of-life Pre-test versus Post-test Means by Subjective/Objective by Development

Quality-of-life	Development	Pre-test	Post-test	Statistics
Subjective	North Ledge	51.22 (9.27)	52.99 (6.85)	t = 0.905 (p = .373)
	New Mystic	50.85 (9.96)	51.42 (7.34)	t = 0.344 (p = .733)
	First Light*	50.25 (9.41)	54.32 (5.69)	t = 2.339 (p < .026)
	Fox Moon***	46.96 (8.65)	55.47 (5.56)	t = 4.563 (p < .0001)
Objective	North Ledge*	43.12 (7.00)	39.93 (5.89)	t = -2.712 (p < .011)
	New Mystic*	46.60 (8.62)	49.57 (7.24)	t = 2.702 (p < .011)
	First Light***	43.75 (6.62)	48.20 (6.04)	t = 3.642 (p < .001)
	Fox Moon***	40.74 (6.72)	45.19 (5.80)	t = 3.890 (p < .001)

* Significant at p < .05; ** significant at p < .01; *** significant at p < .001 or better

On the objective quality-of-life index, all developments showed significant change. However, tenants at North Ledge had a significant decrease in objective quality-of-life (from 43.32 to 39.33; p < .02), while the other three sites showed significant improvement.

4. Objective and Subjective Quality-of-Life Between Groups

The objective and subjective quality-of-life indices were then analyzed using MANOVA to determine if the comparison groups started at similar objective and subjective quality-of-life scores. After standardizing post-test quality-of-life scores by subtracting pre-test scores for each tenant from post-test scores and obtaining means, MANOVA was used to determine if significant differences existed between post-test group outcomes.

Table 65: Quality-of-life Pre-test Means MANOVA by Subjective/Objective

Source	Dependent variable	F score	Significance
Developer type	Subjective	2.054	.155
	Objective	3.900	.051
Geography	Subjective	1.161	.284
	Objective	0.032	.858
Developer/Geography	Subjective	0.736	.393
	Objective*	5.992	.016
	Subjective	$R^2 = .033$	
	Objective	$R^2 = .079$	

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$ or better

Based on the MANOVA in Table 65, developer type did not show significant main effect differences for either subjective ($p = .155$) or objective ($p = .051$) measures for pre-test means. Geographic areas also did not show significant main effect differences for current tenants' previous housing situations for either subjective ($p = .284$) or objective ($p = .858$) quality-of-life measures. Although there was no interactive effect between developer type and geography for the subjective index ($p = .393$), there did appear to be an interactive effect for previous housing for the objective index ($p < .02$).

Next, in order to compare post-test quality-of-life scores, pre-test quality-of-life scores were subtracted from quality-of-life post-test scores to create comparable post-test

quality-of-life scores. Table 66 shows the standardized quality-of-life post-test means by the objective and subjective indices for the marginals and the cells.

Table 66: Quality-of-life Standardized Post-test Means by Objective/Subjective

Quality-of-life	Area	Nonprofit	For-profit	Area marginals
Subjective	Less desirable	North Ledge: 1.77 (10.69)	First Light: 4.07 (9.53)	Less desirable: 2.92 (10.11)
	More desirable	New Mystic: 0.57 (9.02)	Fox Moon: 8.51 (10.38)	More desirable: 4.60 (10.45)
	Developer marginals	Nonprofit 1.17 (9.82)	For-profit 6.33 (10.14)	Overall: 3.77 (10.28)
Objective	Less desirable	North Ledge: -3.99 (8.07)	First Light: 4.45 (6.70)	Less desirable: 0.23 (8.49)
	More desirable	New Mystic:* 2.97 (6.01)	Fox Moon:* 4.45 (6.37)	More desirable: 3.72 (6.19)
	Developer marginals	Nonprofit -0.51 (7.88)	For-profit 4.45 (6.48)	Overall: 1.99 (7.60)

A MANOVA was then run using the standardized post-test quality-of-life scores with developer and geography as the independent variables and subjective quality-of-life and objective quality-of-life as the dependent variables. Table 67 shows the main effects and simple main effects of the analysis. The objective index was always highly significant while the subjective index was only significant for developer type.

Table 67: Quality-of-life Standardized Post-test MANOVA by Subjective/Objective

Source	Dependent Variable	F score	Significance
Developer type	**Subjective****	8.052	.005
	Objective***	15.999	.000
Geography	**Subjective**	.805	.372
	Objective**	7.853	.006
Developer/Geography	**Subjective**	2.435	.121
	Objective**	7.861	.006
	Subjective	$R^2 = .089$	
	Objective	$R^2 = .213$	

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$ or better

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The first hypothesis was that both objective and subjective quality-of-life index scores of persons living in housing developed by nonprofits organizations would be higher than those for persons living in housing created by for-profit developers. The main effect of developer type is significant for both subjective quality-of-life ($p < .005$) and objective quality-of-life ($p < .0001$). However, the standardized means in Table 66 show that the difference is in the opposite direction than predicted, with the subjective quality-of-life index of for-profits (6.29) higher than nonprofits (1.17), while the objective quality-of-life index of for-profits (4.45) is higher than for nonprofits (-0.51). Neither hypothesis was supported for developer type.

The next hypothesis was that objective and subjective quality-of-life index scores of persons living in housing located in desirable areas would be higher than objective and subjective quality-of-life index scores for persons living in housing located in less desirable areas. The main effect in the MANOVA for the subjective quality-of-life index by geographic areas shows no significant difference ($p = .372$) between more and less desirable areas in Table 67. However, the objective index main effect shows that the objective quality-of-life score of those living in more desirable areas (3.71) is significantly higher ($p < .006$) than the objective quality-of-life score for tenants in less desirable areas (0.23) so the hypothesis is partially supported.

Figure 9: Standardized Subjective Quality-of-Life Marginal Means
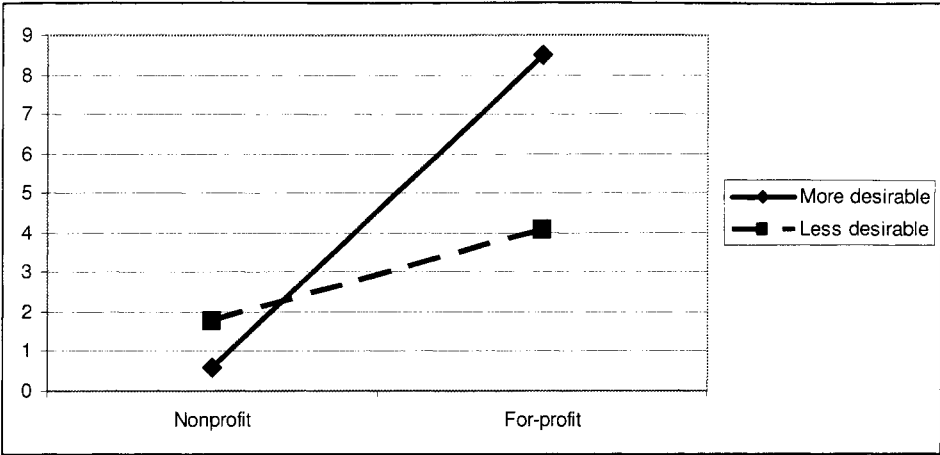
The MANOVA for subjective and objective standardized post-test quality-of-life also

indicates an interactive effect for the objective index (p < .006) while the subjective index

does not show an interactive effect (p = .121). Figure 9 shows that the marginal means for

the subjective indicators are only affected by developer, while Figure 10 shows two

significant main effects and simple main effect.

Figure 10: Standardized Objective Quality-of-Life Marginal Means
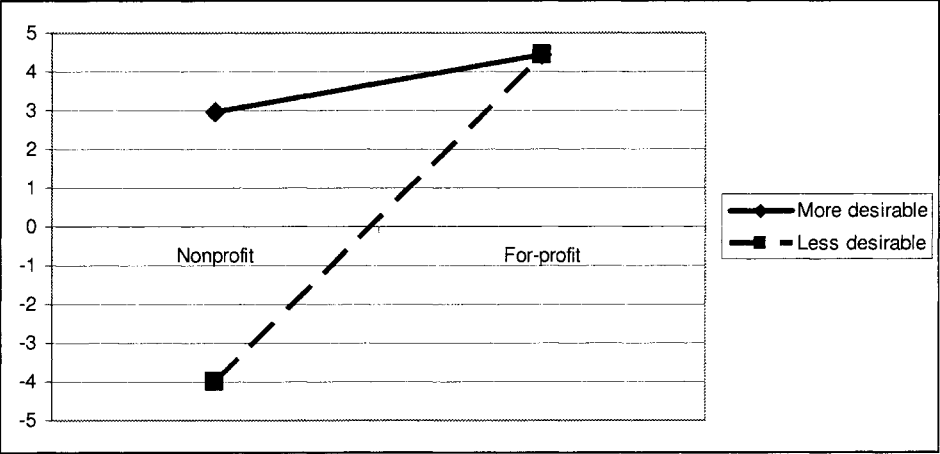
The third hypothesis for objective and subjective quality-of-life indices was that households who live in affordable housing developed by nonprofits and located in desirable areas would have the highest objective and subjective quality-of-life index scores, while persons in developments created by for-profit developers that are located in less desirable areas will have the lowest objective and subjective quality-of-life index scores. To analyze this hypothesis, two one-way ANOVAs were run, shown in Table 68.

Table 68: Quality-of-life Standardized Post-test Means ANOVA by Objective/Subjective by Development

Quality-of-life	Area	Nonprofit	For-profit	Significance
Subjective	**Less desirable**	**North Ledge*** 1.77 (10.69)	**First Light** 4.07 (9.53)	F = 3.810 (p < .012)
	More desirable	**New Mystic** 0.57 (9.02)	**Fox Moon** 8.51 (10.38)	
Objective	**Less desirable**	**North Ledge*** -3.99 (8.07)	**First Light** 4.45 (6.70)	F = 10.529 (p < .0001)
	More desirable	**New Mystic** 2.97 (6.01)	**Fox Moon** 4.45 (6.37)	

*Statistically significant at p < .05

The ANOVA for standardized subjective quality-of-life by development shows a significant difference (p < .02) for the four sites. Post hoc analysis indicates that North Ledge has a significantly lower standardized subjective quality of life mean score. There is also a significant difference between the four developments on the standardized objective quality-of-life index (p < .0001). Post hoc analysis indicates that tenants at North Ledge again have a significantly lower standardized objective quality-of-life index

than the other three sites (-3.99 compared to 2.97 and higher). This hypothesis is not supported.

H. Contributors and Barriers to Quality-Of-Life Outcomes

Where quality-of-life outcomes result, what are the contributors to these outcomes? Where quality-of-life outcomes do not result, what are the barriers to these outcomes? To analyze research questions C, the five capitals of the Sustainable Livelihoods Framework are applied to the analysis of the pre-test to post-test quality-of-life changes as well as to the standardized post-test differences between the comparison groups. The goal is to identify which capitals impacted positive or negative quality-of-life results.

1. Capital Quality-of-life Changes Within Developments

In this section, each of the five capital indices is analyzed to see if quality-of-life improved within developments. First, paired sample t tests were used to determine whether there is a significant difference between quality-of-life in previous housing compared to quality-of-life for current residents based on the five capital indices. The hypothesis was that quality-of-life capital index scores after living in affordable housing would be significantly higher than quality-of-life capital index scores before affordable housing for all five capital indices.

The results of the paired samples t tests on the capitals for the entire survey are shown in Table 69, and yield mixed outcomes. Financial Capital is significantly different from pre-

test to post-test (p < .05), however, it is in the opposite direction than predicted; the pre-test quality-of-life scores are higher than the post-test quality-of-life scores (15.08 pre-test versus 14.29 post-test). It appears that Financial Capital decreased for tenants moving to affordable housing.

The Physical Capital index increased from 21.71 to 23.37 (p < .0001), the Social Capital index increased from 18.58 to 19.97 (p < .001), and the Personal Capital index increased from 17.11 to 20.29 (p < .0001); all significantly higher for residents' current housing than for their previous housing situations. Human Capital did not indicate a significant change (p = .527) in quality-of-life pre-test (20.84) versus post-test (21.11).

Table 69: Quality-of-life Pre-test versus Post-test Means by Capital

	Pre-test	Post-test	Significance
Financial Capital*	15.08 (4.03)	14.29 (3.95)	t = -2.054 (p < .042)
Physical Capital*	21.71 (4.19)	23.37 (2.86)	t = 3.777 (p < .0001)
Social Capital*	18.58 (4.57)	19.97 (3.35)	t = 3.359 (p < .001)
Human Capital	20.84 (4.58)	21.11 (4.30)	t = 0.635 (p = .527)
Personal Capital	17.11 (3.51)	20.29 (2.92)	t = 8.039 (p < .0001)

* Significant at p < .05; *** significant at p < .001 or better

Next, developer types were analyzed by capital before and after moving to affordable housing, as shown in Table 70. Tenants who moved into a for-profit developed building experienced significant increases in four of the five capitals: Physical, Social, Human, and Personal; only Financial Capital did not show a significant increase for tenants at for-profit sites. Tenants who moved into nonprofit developments only significantly increased

their Personal Capital but their Financial Capital actually decreased; the other three

capitals (Physical, Social, Human) did not change markedly for tenants at nonprofit sites.

Table 70: Quality-of-life Pre-test versus Post-test Means by Capital by Developer

Capital	Developer	Pre-test	Post-test	Significance
Financial Capital	Nonprofit*	15.50 (4.35)	14.19 (3.68)	t = -2.236 (p < .029)
	For-profit	14.67 (3.68)	14.39 (4.23)	t = -0.571 (p = .570)
Physical Capital	Nonprofit	22.12 (4.36)	22.83 (2.83)	t = 1.170 (p = .247)
	For-profit***	21.32 (4.02)	23.90 (2.81)	t = 4.198 (p < .0001)
Social Capital	Nonprofit	19.30 (4.44)	19.08 (3.73)	t = -0.403 (p = .688)
	For-profit***	17.88 (4.63)	20.85 (2.69)	t = 5.367 (p < .0001)
Human Capital	Nonprofit	21.31 (4.47)	20.34 (4.84)	t = -1.343 (p = .185)
	For-profit**	20.37 (4.68)	21.87 (3.56)	t = 2.950 (p < .005)
Personal Capital	Nonprofit***	17.66 (3.30)	20.01 (3.22)	t = 4.076 (p < .0001)
	For-profit***	16.56 (3.64)	20.57 (2.58)	t = 7.586 (p < .0001)

* Significant at p < .05; ** significant at p < .01; *** significant at p < .001 or better

Table 71 shows the five capitals pre-test and post-test for less desirable and more

desirable areas. Tenants who moved to buildings in more desirable areas showed a

significant increase in four of five capitals: Physical, Social, Human, and Personal; their

Financial Capital did not show a significant change. For tenants who moved to

affordable housing in less desirable areas, their Physical and Personal Capital increased

but their Financial Capital actually decreased; Social and Human Capital did not change

markedly for tenants in less desirable areas.

Table 71: Quality-of-life Pre vs. Post-test Means by Capital by Area

Capital	Area	Pre-test	Post-test	Significance
Financial Capital	**Less desirable****	15.92 (4.31)	14.39 (3.76)	t = -2.811 (p < .007)
	More desirable	14.26 (3.59)	14.19 (4.17)	t = -0.134 (p = .894)
Physical Capital	**Less desirable***	21.49 (4.21)	22.88 (2.82)	t = 2.245 (p < .029)
	More desirable**	21.93 (4.20)	23.85 (2.85)	t = 3.057 (p < .003)
Social Capital	**Less desirable**	18.52 (4.55)	19.31 (3.34)	t = 1.251 (p = .216)
	More desirable**	18.65 (4.64)	20.62 (3.26)	t = 3.760 (p < .0001)
Human Capital	**Less desirable**	21.31 (3.86)	20.39 (4.44)	t = -1.121 (p = .267)
	More desirable*	20.47 (5.20)	21.82 (4.07)	t = 2.563 (p < .013)
Personal Capital	**Less desirable*****	17.03 (3.41)	20.25 (2.80)	t = 5.683 (p < .0001)
	More desirable***	17.18 (3.63)	20.34 (3.06)	t = 5.639 (p < .0001)

* Significant at p < .05; ** significant at p < .01; *** significant at p < .001 or better

Each of the developments was then analyzed using paired sample t tests to determine whether there was a significant difference between quality-of-life in previous housing compared to quality-of-life for current residents based on the five capital indices. The results are shown in Table 72 by development. Financial Capital did not change significantly for three groups but actually decreased for North Ledge tenants. Physical Capital increased for those at Fox Moon but did not change significantly for three sites. Social Capital increased significantly for tenants at First Light and Fox Moon but not the other two sites. Human Capital increased significantly for First Light but actually decreased for North Ledge. Tenants at all four developments experienced a significant increase in Personal Capital after moving to affordable housing.

Table 72: Quality-of-life Pre-test versus Post-test Means by Capital by Development

		Pre-test	Post-test	Significance
Financial Capital	**North Ledge****	15.70 (4.62)	13.44 (2.38)	t = -2.818 (p < .009)
	New Mystic	15.30 (4.12)	14.93 (4.56)	t = -.439 (p = .664)
	First Light	16.14 (4.03)	15.33 (4.60)	t = -1.106 (p = .278)
	Fox Moon	13.26 (2.70)	13.47 (3.69)	t = .306 (p = .762)
Physical Capital	**North Ledge**	21.50 (4.45)	23.13 (2.85)	t = 1.729 (p = .095)
	New Mystic	22.73 (4.24)	22.53 (2.84)	t = -.265 (p = .793)
	First Light	21.48 (4.03)	22.63 (2.82)	t = 1.409 (p = .169)
	Fox Moon***	21.16 (4.08)	25.13 (2.23)	t = 4.637 (p < .0001)
Social Capital	**North Ledge**	19.23 (4.01)	17.99 (3.29)	t = -1.536 (p = .135)
	New Mystic	19.37 (4.91)	20.17 (3.87)	t = 1.145 (p = .262)
	First Light**	17.80 (5.00)	20.63 (2.88)	t = 3.356 (p < .002)
	Fox Moon***	17.95 (4.32)	21.06 (2.53)	t = 4.231 (p < .0001)
Human Capital	**North Ledge****	20.93 (3.84)	17.67 (4.59)	t = -2.833 (p < .008)
	New Mystic	21.90 (5.01)	23.01 (3.80)	t = 1.675 (p = .105)
	First Light*	21.69 (3.87)	23.10 (2.51)	t = 2.354 (p < .026)
	Fox Moon	19.09 (5.08)	20.67 (4.04)	t = 1.922 (p = .064)
Personal Capital	**North Ledge****	17.18 (3.26)	19.68 (3.06)	t = 2.891 (p < .007)
	New Mystic**	18.15 (3.32)	20.34 (3.39)	t = 2.832 (p < .008)
	First Light***	16.89 (3.60)	20.82 (2.41)	t = 5.451 (p < .0001)
	Fox Moon***	16.24 (3.72)	20.33 (2.75)	t = 5.221 (p < .0001)

* Significant at p < .05; ** significant at p < .01; *** significant at p < .001 or better

The alternative view from the development standpoint is that tenants at North Ledge increased their Personal Capital but decreased their Financial and Human Capital. Tenants at New Mystic had an increase only in their Personal Capital. At First Light, Social, Human, and Personal Capitals increased significantly. Fox Moon also experienced three out of five capital improvements with Physical, Social, and Personal Capital increasing significantly pre-test to post-test affordable housing.

2. Capital Quality-of-life Changes Between Groups

The five capitals were then analyzed pre-test to post-test to determine whether there were differences between comparison groups. To do so, pre-test means were reviewed, quality-of-life scores were standardized, and mean differences were compared pre-test to post-test. First, quality-of-life prior to moving into affordable housing by each capital was calculated to see if tenants in certain developments came from significantly different housing situations. Based on the MANOVA analysis shown in Table 73, tenants generally came from not significantly different housing quality-of-life situations. The exceptions are the main effect of geography in Financial Capital ($p < .03$) and the simple main effect of developer over area within Human Capital ($p < .03$). Otherwise, none of the effects were shown to be significant for pre-test quality-of-life.

Table 73: Quality-of-life Pre-test Means MANOVA by Capital

Dependent Variable	Source	F Score	Significance
Financial Capital	Developer Type	1.266	.263
	Geography*	5.281	.023
	Developer/Geography	3.018	.085
	$R^2 = .077$		
Physical Capital	Developer Type	1.089	.299
	Geography	0.361	.549
	Developer/Geography	1.027	.313
	$R^2 = .021$		
Social Capital	Developer Type	2.923	.090
	Geography	0.030	.863
	Developer/Geography	0.000	.990
	$R^2 = .025$		
Human Capital	Developer Type	1.270	.260
	Geography	0.764	.384
	Developer/Geography*	5.330	.023
	$R^2 = .060$		
Personal Capital	Developer Type	3.012	.085
	Geography	0.065	.799
	Developer/Geography	1.624	.205
	$R^2 = .039$		

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$ or better

Next, standardized post-test quality-of-life scores for the comparison groups were computed by subtracting the pre-test score for each person from their post-test score. Group means were then calculated for these comparisons. Table 74 shows the standardized quality-of-life means by capital.

Table 74: Quality-of-life Standardized Post-test Means by Capital

Quality-of-life	Area	Nonprofit	For-profit	Area marginals
Financial Capital	Less desirable	-2.26 (4.39)	-0.80 (3.98)	-1.53 (4.22)
	More desirable	-0.37 (4.57)	0.21 (3.87)	-0.08 (4.21)
	Developer marginals	-1.31 (4.54)	-0.30 (3.93)	-0.80 (4.26)
Physical Capital	Less desirable	1.63 (5.15)	1.16 (4.50)	1.39 (4.80)
	More desirable	-0.20 (4.13)	3.97 (4.76)	1.88 (4.90)
	Developer marginals	0.71 (4.72)	2.56 (4.81)	1.64 (4.84)
Social Capital	Less desirable	-1.24 (4.42)	2.83 (4.62)	0.80 (4.93)
	More desirable	0.80 (3.83)	3.11 (4.09)	1.96 (4.10)
	Developer marginals	-0.22 (4.23)	2.97 (4.33)	1.38 (4.55)
Human Capital	Less desirable	-2.85 (5.52)	1.41 (3.28)	-0.72 (4.99)
	More desirable	1.11 (3.62)	1.58 (4.59)	1.35 (4.11)
	Developer marginals	-0.87 (5.04)	1.50 (3.97)	0.31 (4.67)
Personal Capital	Less desirable	2.49 (4.73)	3.93 (3.95)	3.21 (4.38)
	More desirable	2.19 (4.24)	4.09 (4.36)	3.14 (4.37)
	Developer marginals	2.34 (4.46)	4.01 (4.13)	3.18 (4.36)

The main effects and simple main effects were then calculated for the capitals using

MANOVA, shown in Table 75, to determine if there were significant differences between

groups for quality-of-life based on the five capital indices.

Table 75: Quality-of-life Standardized Post-test Means MANOVA by Capital

Dependent Variable	Source	F Score	Significance
Financial Capital	Developer type	1.763	.187
	Geography	3.602	.060
	Developer/Geo	.326	.569
	$R^2 = .046$		
Physical Capital	Developer type*	4.776	.031
	Geography	.338	.562
	Developer/Geo**	7.513	.007
	$R^2 = .075$		
Social Capital	Developer type***	17.045	.000
	Geography	2.245	.137
	Developer/Geo	1.301	.256
	$R^2 = .128$		
Human Capital	Developer type**	9.011	.003
	Geography**	6.853	.010
	Developer/Geo*	5.748	.018
	$R^2 = .134$		
Personal Capital	Developer type*	4.470	.037
	Geography	.008	.928
	Developer/Geo	.086	.770
	$R^2 = .013$		

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$ or better
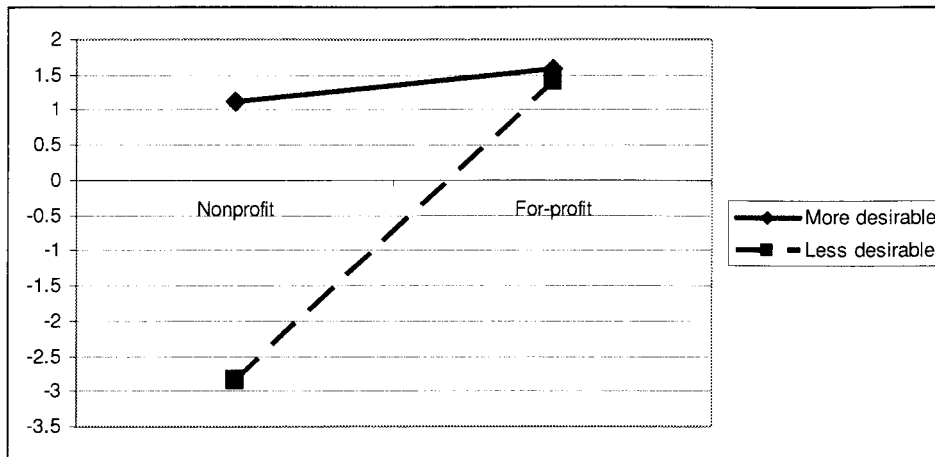
The first hypothesis was that the capital quality-of-life index of persons living in housing developed by nonprofits would be higher than the capital quality-of-life index for persons living in housing created by for-profits. The MANOVA in Table 75 shows mixed results. Financial Capital showed no significant main effects or simple main effects. Physical Capital showed significant main effects for developer ($p < .04$) and Table 74 shows that the mean quality-of-life for the for-profit sites was higher than the nonprofit sites so does not satisfy the hypothesis. The interaction effect between developer and area of Physical Capital is shown in Figure 11 with Physical Capital quality-of-life lower by area at higher Physical Capital quality-of-life for-profit sites.

Figure 11: Standardized Post-test Physical Capital Marginal Means
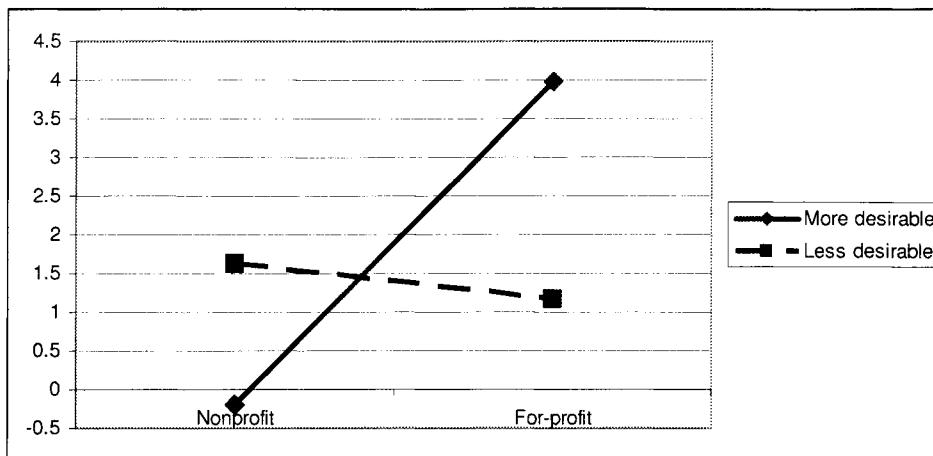
Both Social Capital and Personal Capital showed significant main effects for developer type ($p < .0001$ and $p < .05$, respectively) but no area effect or interaction effect. The only capital to show significant primary effects and an interaction effect was Human Capital, with residents of for-profit developments having higher quality-of-life than those in nonprofit sites, and more desirable areas higher than less desirable areas. There was also an interactive effect between developer type and geography since Human Capital did not increase as much in more desirable areas compared to less desirable areas for developer types, shown in Figure 12. Therefore, the developer type hypothesis is not confirmed.

Figure 12: Standardized Post-test Human Capital Marginal Means

The next hypothesis was that capital quality-of-life index scores of persons living in

housing located in desirable areas would be higher than the capital quality-of-life index

scores for persons living in housing located in less desirable areas. The MANOVA for

capitals in Table 75 indicates that only Human Capital had a significant main effect

difference (p < .05) with more desirable areas having higher Social Capital quality-of-life

indicators. The other four capitals do not show a significant difference, again not

supporting the hypothesis of higher quality-of-life by capital (Financial, Physical, Social

or Personal) in more desirable areas.

The third capital-related quality-of-life hypothesis was that households who live in

affordable housing developed by nonprofits and located in desirable areas would have the

highest capital quality-of-life index, while persons in developments created by for-profit

developers that are located in less desirable areas will have the lowest capital quality-of-

life index. The MANOVA showed that there were significant interaction effects for

Physical (p < .007) and Human Capital (p < .02) of developer type over geography.

A MANOVA was run on the capital quality-of-life indices for the four developments to determine if there were differences in the capitals by development. It showed significant differences between the four developments for Physical Capital, Social Capital, and Human Capital, but no significant differences for Financial Capital or Personal Capital. These data are shown in Table 76.

Table 76: Quality-of-life Standardized Post-test Means by Capital by Development MANOVA

Dependent Variable	Nonprofit	For-profit	Significance
Financial Capital	**North Ledge** -2.26	**First Light** -0.80	$F = 1.901$ (p = .133) $R^2 = .046$
	New Mystic -0.37	**Fox Moon** 0.21	
Physical Capital**	**North Ledge** 1.63	**First Light** 1.16	$F = 4.258$ (p < .007) $R^2 = .098$
	New Mystic -0.20	**Fox Moon*** 3.97	
Social Capital***	**North Ledge*** -1.24	**First Light** 2.83	$F = 6.863$ (p < .0001) $R^2 = .150$
	New Mystic 0.80	**Fox Moon** 3.11	
Human Capital***	**North Ledge*** -2.85	**First Light** 1.41	$F = 7.174$ (p < .0001) $R^2 = .155$
	New Mystic 1.11	**Fox Moon** 1.58	
Personal Capital	**North Ledge** 2.50	**First Light** 3.93	$F = 1.524$ (p = .212) $R^2 = .038$
	New Mystic 2.19	**Fox Moon** 4.09	

* Significant at p < .05; ** significant at p < .01; *** significant at p < .001 or better

Based on the post hoc tests, Physical Capital ended higher for Fox Moon than other developments. Both Social Capital and Human Capital are significantly lower for North Ledge Apartments than the other sites. The hypothesis results are therefore mixed for quality-of-life impacts by the five capitals.

I. Adapted Livelihood Assets Pentagon

To analyze the exploratory research question D, "Is the adapted Livelihood Assets pentagon of the Sustainable Livelihoods Framework applied in this research an effective tool to conceptualize and visualize quality-of-life changes?" the results of previous pre-test and post-test analyses were reviewed for effectiveness in highlighting relevant factors and then plotted by capitals to visually represent the analysis.

Figure 13 shows a graphic representation of the same pre-test and post-test capital indexes for all developments as shown in Table 69. At a glance, it is clear that the solid "post" line is outside the dashed "pre" line for most factors. The end points for post-test Physical, Social and Personal Capital are clearly outside the corresponding pre-test score points. Financial Capital is clearly moving in a different direction from the other points with the pre-test score being outside the post-test score. The magnitude and significance of the effect cannot be assessed from the pentagon graph, but significance is indicated by asterisks, so those differences are easily identifiable.

Figure 13: Quality-of-life by Capital: All Pre-test and Post-test
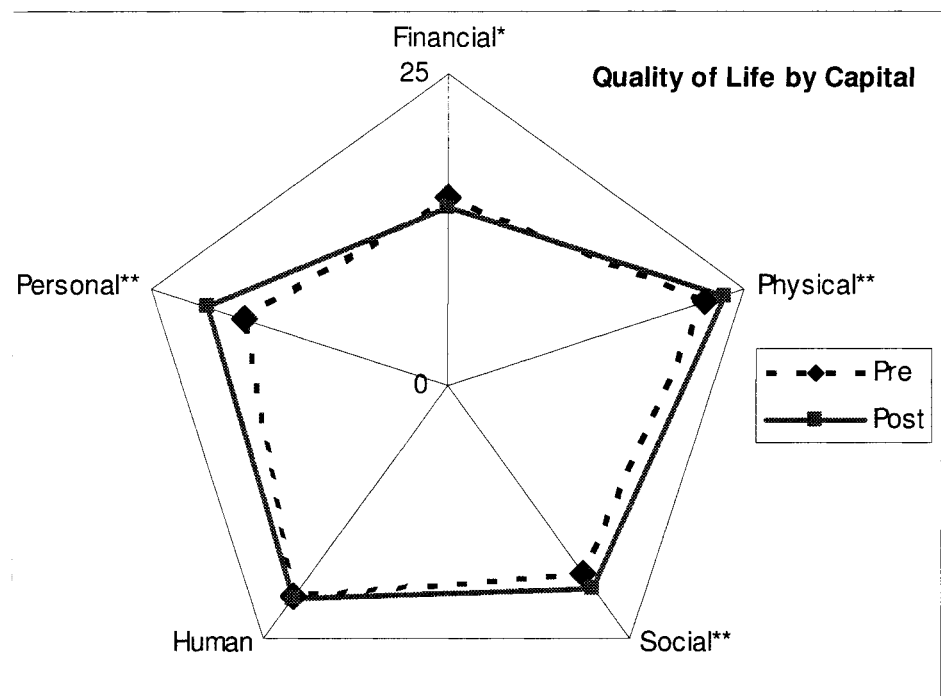
* Significant at p < .05; ** significant at p < .0001

The Livelihoods Assets pentagon for developer type is shown in Figure 14, which reflects the data in Table 70. The dashed line indicating for-profit projects is clearly outside the solid line showing nonprofit factors except for Financial Capital. Financial Capital is also represented to have the smallest impact, with Physical Capital having the largest capital score for both developer types.
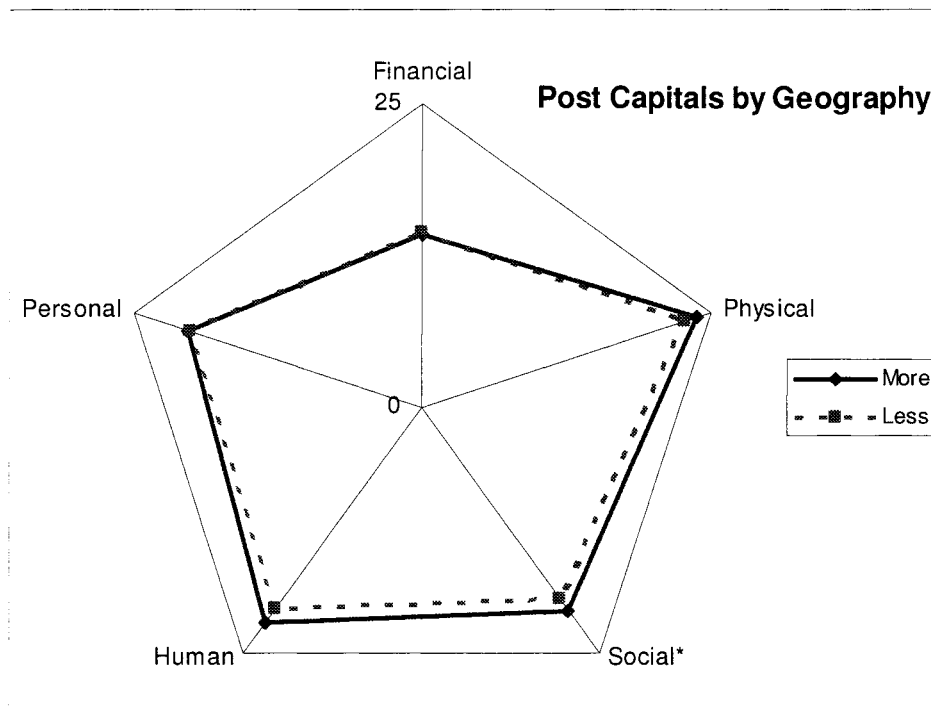
Figure 14: Quality-of-life by Capitals Post-test by Developer
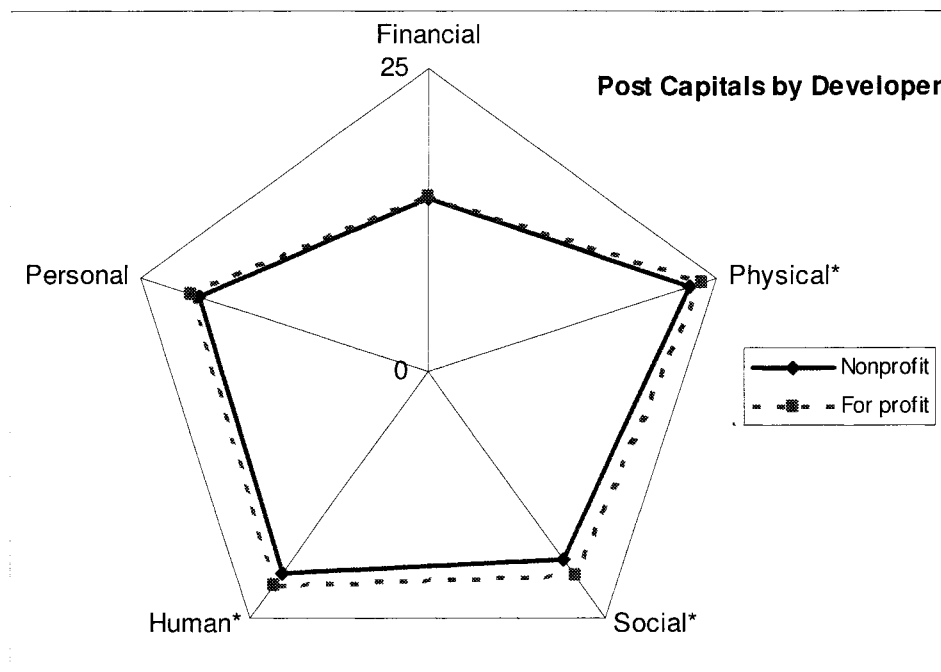
* Significant at p < .05

Geographic impacts of the capitals are graphed in Figure 15 using the data from Table 71. The nearly overlapping lines for "more" and "less" indicate that only Social Capital is different by geographic area.

Figure 15: Quality-of-life by Capitals Post-test by Geography

* Significant at p < .05

The capital indices shown in Table 72 are reflected in Figure 16, Post-test Quality-of-life

Scores for all developments. The graph shows that scores for North Ledge fall inside the

values for all capitals compared to the other developments, which overlap somewhat.

Figure 16 also shows that Human Capital has large differences by development with the

data points spaced out but Personal Capital scores show little difference and all meet at

the same point.

Figure 16: Quality-of-life Capitals: All Developments Post
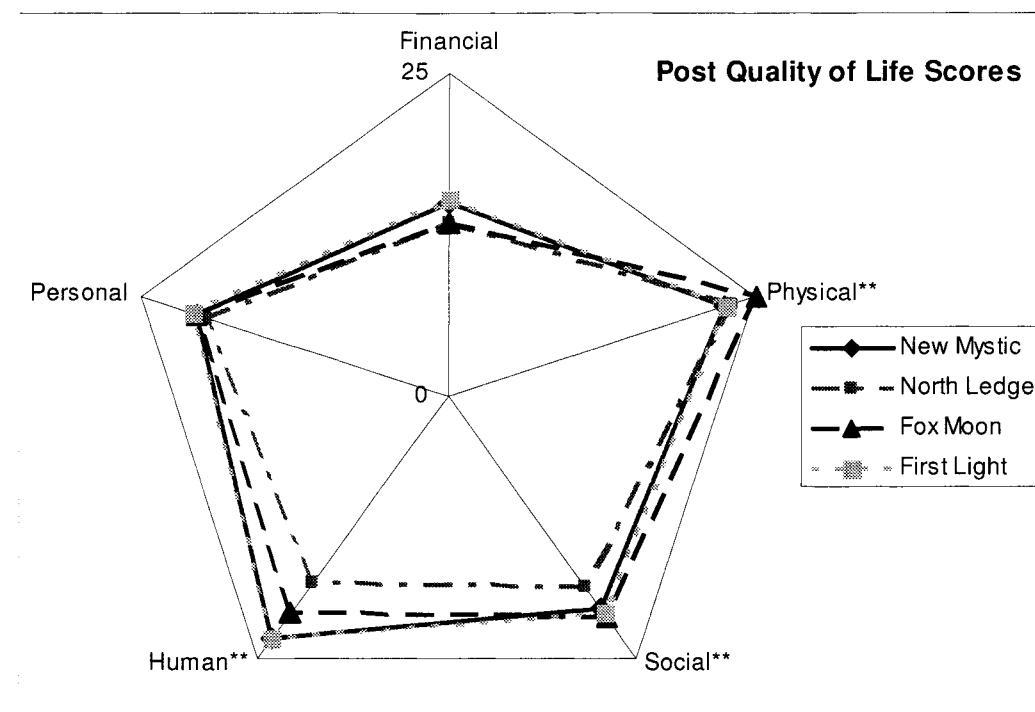
** Significant at p < .0001

Looking at the least improved and the most improved developments provide another

example of the value of the pentagon. Figure 17 shows the quality-of-life capitals for

North Ledge, which had mixed results and two capitals actually decreased. The pre-test

and post-test lines connecting the scores intersect, which means that some scores

increased while others decreased. Asterisks indicate that human (up), personal (up), and

financial (down) changed significantly pre-test to post-test.

Figure 17: Quality-of-life by Capitals: North Ledge
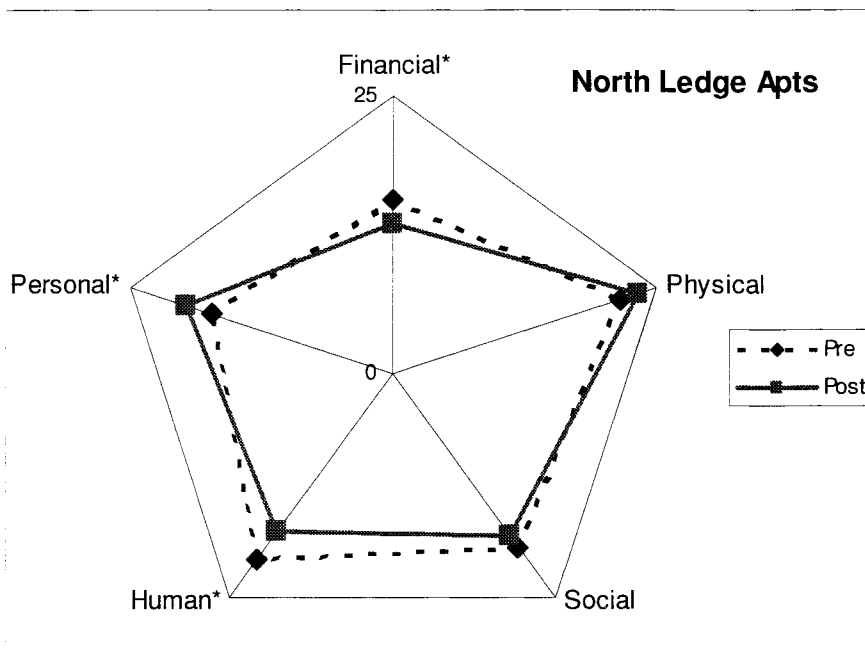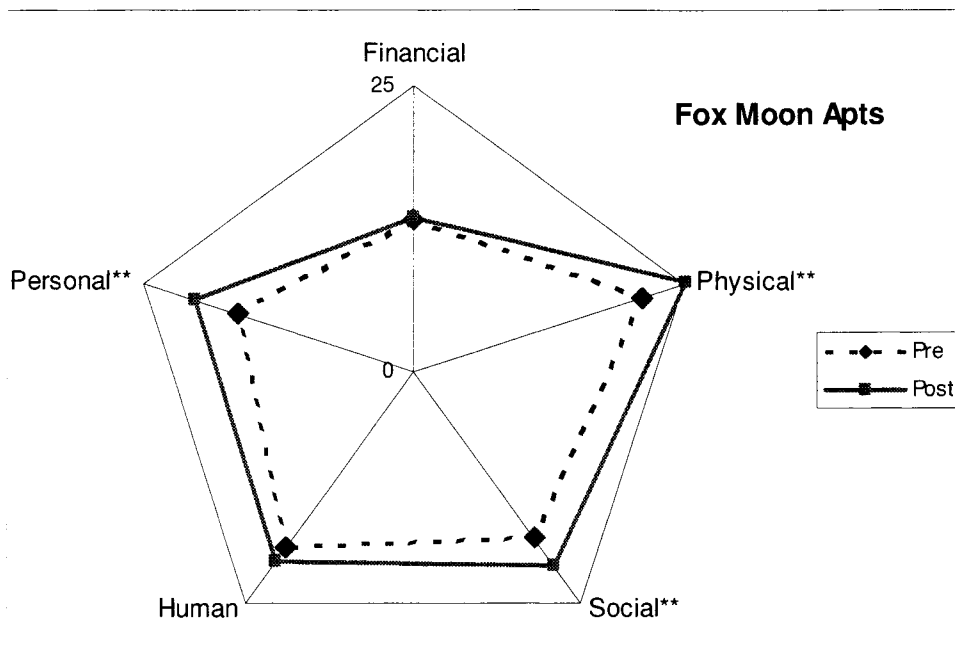

* Significant at p < .01

Compare Figure 17 to Figure 18, which shows quality-of-life capitals for Fox Moon where three capitals significantly increased. In Figure 18 the post-test markers for physical, personal, and social are far beyond the pre-test scores and the double asterisks highlight the significance of these differences at the .001 level. Financial Capital did not change but, overall, the post-test lines are outside the pre-test lines. The relative placement of the five markers also shows the importance of each capital. For example, Physical Capital is almost outside the pentagon border while Financial Capital is in the middle of the pentagon. Visually comparing Fox Moon to North Ledge in Figure 17 shows that Physical Capital is also important for North Ledge, although not as highly scored at for Fox Moon. Financial Capital falls in the middle for both developments, indicating an area of quality-of-life that could be improved.

Figure 18: Quality-of-life by Capitals: Fox Moon

** Significant at p < .0001

It is possible to create these Livelihood Asset pentagons for any level of analysis desired: the entire data set, specific comparison groups, and individual tenants, as well as pre-test only, post-test only, and pre-test to post. For example, Figure 19 shows the tenant with the largest increase in their quality-of-life from pre-test to post-test affordable housing. The pentagon shows that four of five capitals had very large increases while Human Capital actually did not improve. Comparing this tenant to the overall dataset in Figure 13 highlights that this tenant's Physical, Social and Personal Capitals were all similar to the mean scores for the group and, in fact, their Human Capital was not as high. However, this tenant's Financial Capital increased well beyond the others' Financial Capital.

Figure 19: Quality-of-life by Capitals: Most Improved Tenant
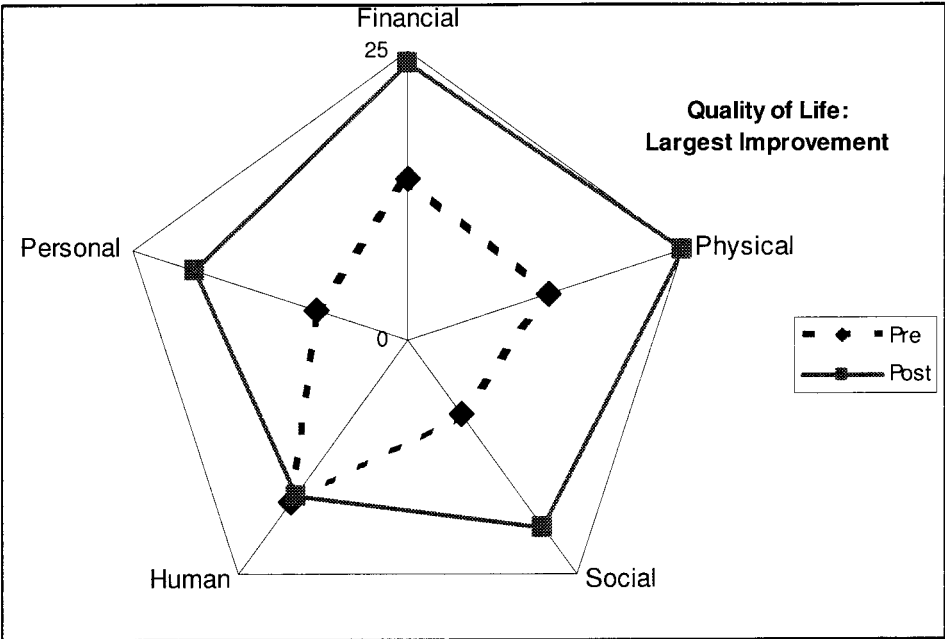
The impact of the Sustainable Livelihoods Assets pentagon is further discussed below.

VI. Discussion

Based on the preceding analyses, does affordable housing improve tenants' standard-of-living? Does it improve their quality-of-life? If so, do the five capitals provide a means to determine in what areas improvement or decline occurred? This section will review the preceding findings and discuss their implications. The final section provides conclusions and recommendations for future research.

A. Standard-of-Living Findings

Prior to considering quality-of-life changes, the more basic concept of standard-of-living was reviewed through Hypothesis A: affordable rental housing improves the standard-of-living of low-income tenants. Based on the standard-of-living index created, hypothesis A was supported: tenants' standard-of-living did improve for the developments surveyed. Overall standard-of-living scores increased significantly for tenants who moved into affordable housing compared to their previous housing. This implies that at the most basic level, affordable housing is doing its essential job of providing a safety net outcome for those who are able to get an apartment.

However, standard-of-living did not improve equally for all comparison groups. Pre-test standard-of-living scores did not appear to be significantly different overall, by developer type, by geography, or by development so it appears that the differences in post-test indices may be largely due to the effects of accessing affordable housing. Among developer types, post-test scores were not significantly different. However, pre-test to

post-test standard-of-living scores increased significantly for tenants at for-profit developments but did not change for those moving to nonprofit developments. Therefore the hypothesis that standard-of-living scores of persons living in housing developed by nonprofits would be higher than standard-of-living scores for persons living in housing created by for-profits was not supported. A review of the five standard-of-living variables by developer type revealed that persons who moved to for-profit developments started in worse neighborhoods than those at nonprofits but ended similarly satisfied with the neighborhood. For-profit tenants also ended more satisfied with their building conditions than nonprofit tenants. A more detailed look at tenant origins would be necessary to estimate whether previous circumstances impacted current outlook. The result that both nonprofit and for-profit sites ended with essentially equivalent standard-of-living scores means that they are both meeting basic standard-of-living goals.

Current standard-of-living was higher for tenants living in more desirable areas than in less desirable areas and increased pre-test to post-test in more desirable areas but did not improve for those now living in less desirable areas. The hypothesis that standard-of-living scores of persons living in housing located in more desirable areas would be higher than standard-of-living scores for persons living in housing located in less desirable areas was therefore supported by the data. This is not a surprising result since one of the five factors, neighborhood, is geographic in nature. However, for geographic comparison groups, standard-of-living scores actually started the same, with tenants in more desirable areas ending with higher standard-of-living scores. Still, higher scores in more desirable areas were not just the result of neighborhood or condition changes; tenants at sites in

more desirable areas actually increased on all five standard-of-living variables. This could be the result of having access to more income opportunities but also lower rents and a larger apartment.

Of the four developments surveyed, only one site had higher standard-of-living scores pre-test to post-test affordable housing while the other three developments did not show a significant change. Not surprisingly, that one site was done by a for-profit in a more desirable area. There were significant differences in post-test standard-of-living between the four sites, with the for-profit development in the more desirable area scoring highest. The hypothesis that households who live in affordable housing developed by nonprofits and located in more desirable areas would have the highest standard-of-living scores while persons in developments created by for-profit developers that are located in less desirable areas would have the lowest standard-of-living scores was also not supported. The developments that were selected for the study were comparable in many ways but differences in size or amenities may have impacted standard-of-living differences in unforeseen ways. Size, age, or amenities may matter to overall standard-of-living scores.

The lack of substantial support for the hypothesis may be due to lack of sensitivity of the index or the size of the data set. There were variations in the mean standard-of-living scores for the comparison groups but significant differences only appeared in the larger data set, not within each development. There was a wide range in the responses as shown by large standard deviation. Perhaps a larger sample within a development, or sampling several similar developments for each condition, would have yielded stable effects.

Additional analysis is needed to better understand the causes of improved standard-of-living for tenants in affordable housing.

B. Quality-of-Life Findings

The answer to the essential question for this study of whether affordable housing improves tenant quality-of-life appears to be "yes". Hypothesis B, that affordable housing enhances the quality-of-life of low-income tenants in affordable housing, is primarily supported. But unanticipated differences between developer types and within specific developments do not completely sustain the hypothesis despite general quality-of-life improvements.

Overall, quality-of-life clearly improved for tenants who moved into affordable housing compared to their previous housing. This is good news for those who work so hard to create these units and for the funding agencies who expend millions of dollars on their creation. The range of success and reasons for improvement, however, are complicated. Prior to moving to affordable housing, quality-of-life mean scores were not significantly different between all comparison categories so improvements in quality-of-life may be attributable to the result of moving to affordable housing.

Considering changes within groups, quality-of-life improved significantly for tenants living in both more desirable and less desirable areas, as well as for those living in for-profit developments. However, quality-of-life did not sufficiently change for those in

nonprofit developments. The nonprofit quality-of-life score did increase but not as much as the for-profits or enough to yield stable findings.

Within the four developments surveyed, two did not increase quality-of-life from pre-test to post-test affordable housing while two did. New Mystic's mean quality-of-life increased slightly pre-test to post-test but not significantly, and North Ledge was slightly lower but not significantly so. Since these were both of the nonprofits surveyed, they effectively cancelled each other out and this lack of increased quality-of-life outcomes appear whenever developer type is tested. Some of the lack of significant increase for New Mystic may be due to it starting with high quality-of-life --the highest pre-test quality-of-life score-- yet with a post-test score the same as the two for-profit sites. Historical or other events at New Mystic could have yielded these results and derailed the aggregate performance for nonprofits. A quick look at the demographics of North Ledge tenants shows that they are significantly different from the tenants at the other three properties in an important way: fully half came from living with family and friends. In addition, nearly all tenants at North Ledge were extremely low income and a large percentage did not finish high school. These younger tenants may have different expectations and experiences about their housing situation. As will be seen later in the capital analysis, the availability of rental assistance may also have reduced their necessity to be employed.

For changes in quality-of-life between comparison groups, the analysis showed differences between both developer types and areas. However, developer differences

were not in the direction predicted; tenant quality-of-life at for-profit sites was higher than at nonprofits. This may be a result of tenant differences, the lack of supportive services often provided by nonprofit developers, or physical characteristics that make the developments different, for example, swimming pools. Also, there was no interaction affect between developer type and geographic area since both changed substantially and in the same direction. The significant difference between area types is questionable since it was just under the .05 threshold. When the same analysis is run as independent samples t tests, the level of significance is just above the cutoff of .05. One reason for this questionability may be that "more" and "less" desirable were not different enough; recall that only one area was worse than the national average on any factors. It is also possible that there are other factors at work not measured in this study that link desirability and quality-of-life or, conversely, that desirability is less important than affordability itself.

Among the four sites, one development, North Ledge Apartments, had a significantly lower standardized quality-of-life score than the other three sites. Since North Ledge is a nonprofit site in a less desirable area, the lower score for this site influences these comparison groups throughout. North Ledge's tenant composition and capital changes provide a possible rationale for this unexpected result as explained below.

Both subjective quality-of-life and objective quality-of-life scores increased from previous to current housing overall which generally supports the hypothesis. However, nonprofit developments did not improve on either the subjective or objective indices while for-profit developments improved on both. In addition, between group tests of

standardized results showed that nonprofits and for-profits were different, with for-profit sites again having higher scores, the opposite of that predicted. Still, this result is questionable since pre-test and post-test scores for subjective and objective measures were not significantly different between nonprofits and for-profits yet for-profit scores increased more. This could be the result of improvements in one development being cancelled out by declines in the other, which occurred in the nonprofit group. In addition, both subjective and objective pre-test scores for nonprofits were greater than for-profits so tenants may have higher expectations moving to a nonprofit development.

Results of the subjective and objective indices by geographic area were also mixed. Subjective quality-of-life increased in both more and less desirable areas while objective quality-of-life only increased in more desirable neighborhoods but not in less desirable areas. For objective measures to be lower, less desirable areas may actually have less access to services, jobs, family and other factors, which would be anticipated. Again, tenant expectations may have played a role in the subjective index increase. It is also a positive result for developers that objective indices can improve even in less desirable areas; this may be the best housing in the area. Pre-test scores showed no difference for area but standardized post-test scores indicate that only objective quality-of-life is different with more desirable areas scoring higher on objective measures, a predictable result. The similarity of subjective measures may indicate that tenant attitudes about their quality-of-life can improve regardless of the geographic location of the property.

All four developments increased objective quality-of-life scores pre-test to post-test and the two for-profits increased subjective quality-of-life scores. However, standardized post-test subjective quality-of-life scores did show a significant difference in one development, North Ledge. This result flows back through the analyses and negates any positive changes in the other nonprofit site and the less desirable area. Once again, the tenant composition of North Ledge appears to negatively affect the results.

C. Capital Quality-of-Life Findings

An important component of this research is the inclusion of the five types of capital into the analysis of quality-of-life. The five capitals built into the Sustainable Livelihoods Framework provide a structured way to identify and isolate components that contribute to quality-of-life. This section expands the quality-of-life analysis by exploring each of the five capitals and their contributions to quality-of-life scores in order to identify which components added to or subtracted from changes in quality-of-life scores. Recall from Table 15 the quality-of-life independent variables:

Financial Capital	Objective	Disposable income; savings; % income on housing
	Subjective	Satisfaction with income, savings, rent
Physical Capital	Objective	Building condition; persons/bedroom; car
	Subjective	Perceived building & neighborhood safety, access to needs
Social Capital	Objective	Family/friends contact; participation; voting
	Subjective	Sense of social networks, community life, family around
Human Capital	Objective	Education; employment; work hours
	Subjective	Perceived access to education, health & employment
Personal Capital	Objective	Motivation: housing, employment, neighborhood
	Subjective	Confidence; happiness; satisfaction

The impact of the five capitals on quality-of-life is predicted in Hypothesis C: affordable housing enhances the quality-of-life of low-income tenants living in affordable housing across each of the five capitals: financial, physical, social, human, and personal. This is partially supported by the results, and review of each capital is insightful as to when and why.

Overall, the results largely support the hypothesis when comparing pre-test to post-test quality-of-life scores for improvements based on the five capitals. As reflected in Table 77, measures of Physical Capital, Social Capital, and Personal Capital increased significantly, Human Capital did not change, and Financial Capital was actually lower. The hypothesis is not fully supported that quality-of-life capital index scores before living in affordable housing would be significantly lower than quality-of-life capital index scores after affordable housing for all five capital indices.

Table 77: Quality-of-life Changes Pre-test to Post-test Overall

Capital	Change	
Financial Capital	Decreased	↓
Physical Capital	Increased	↑
Social Capital	Increased	↑
Human Capital	No change	⇔
Personal Capital	Increased	↑

The fact that Financial Capital decreased, and was the capital with the lowest score, is a surprising result because affordable housing is often described as an income issue; if people had more money they could afford better housing. Financial Capital was operationally defined as disposable income, savings and percent of income spent on housing as objective variables and satisfaction with income, satisfaction with savings,

and satisfaction with rent amount as subjective variables. The three objective variables were all exact figures that were calculated into quintiles so approximately twenty percent of all tenants should get a score of 1-5. However, additional analysis confirms that there was no significant change pre-test to post-test overall in tenant income, savings, rent levels, or percent income spent on housing. A review of the frequencies shows that 75% of tenants had zero savings both before and after. If one of the keys to affordable housing is changing how limited income is spent, the Financial Capital variable shows room for focus and significant improvement.

Although Human Capital did not show significant improvement, the overall score of Human Capital was among the highest. Based on demographic results in Table 29, education levels vary widely as do employment histories. The implication of a constant score is that affordable housing did not lead to increased employment or educational attainment; people kept what they had when they arrived. However, their satisfaction with certain factors of the housing may have been diminished if they came into the housing with high expectations. The availability of supportive employment and educational services for tenants may have changed these outcomes, as affordable housing in and of itself does not address employment or educational needs.

Increased Physical Capital means that tenants' overall housing conditions improved, which is a significant finding. One of the rationales for affordable housing is that it improves the physical condition of buildings. All four of the properties surveyed were existing properties that were fairly recently acquired and rehabilitated to make them

affordable, not new construction. The implication is that the work done on these buildings was useful in creating a good living environment. Affordable housing is constantly monitored by funding agencies who try to ensure that the buildings stay in good physical condition, and this finding seems to show that conditions are better than previous housing. Based on these results, tenants moved to better buildings, were less crowded, and felt that they were safer than their previous housing.

Social Capital also improved significantly, which means that tenants had better access to networks, felt connected to their community, participated in community life, and interacted with others. This is a positive result for advocates of promoting Social Capital as a means to improve the lives of low-income households.

Personal Capital showed the largest score increase for tenants overall. Tenants appear to be happier, more satisfied and more motivated in this housing than in their previous housing. Improved satisfaction and happiness are rarely considered a reason for building affordable housing but this result shows that they improved the most so should possibly be considered.

A review of developer types pre-test to post-test provides additional insight into overall changes in the capitals. As shown in Table 78 and previously in Figure 14, tenants living in nonprofit developments improved their Financial and Personal Capital while those at for-profits improved all but Financial Capital. That for-profit sites showed improvement on more factors is surprising because nonprofits were expected to be more involved with

tenants. However, neither of the nonprofits surveyed provided traditional supportive

services to tenants through their property manager roles, so less impact should be

expected from supportive services. A less surprising result is that Financial Capital did

not improve at for-profit sites since most of these developments have higher rents and

therefore typically higher income tenants to start. Even the impact of one for-profit

development and one nonprofit having Section 8 rental assistance did not help improve

Financial Capital for either.

Table 78: Quality-of-life Pre-test to Post-test by Capital and Developer

Capital	Developer	Change	
Financial Capital	Nonprofit	Decreased	↓
	For-profit	No change	⇔
Physical Capital	Nonprofit	No change	⇔
	For-profit	Increased	↑
Social Capital	Nonprofit	No change	⇔
	For-profit	Increased	↑
Human Capital	Nonprofit	No change	⇔
	For-profit	Increased	↑
Personal Capital	Nonprofit	Increased	↑
	For-profit	Increased	↑

Pre-test quality-of-life scores by developer showed no differences in any capitals between

those that ended up at nonprofit developments versus for-profit sites, so most tenants

apparently started from similar housing backgrounds. Comparing post-test quality-of-life

in nonprofit to for-profit developments by capital in Table 78 shows significant

differences for Physical, Social and Human Capitals, which were slightly higher in for-

profit sites than nonprofit sites. The hypothesis is not supported that capital quality-of-life

indices of persons living in housing developed by nonprofits would be higher than capital

quality-of-life indices for persons living in housing created by for-profits. Again,

nonprofits are often expected to do more with less but the results suggest that more is not happening at nonprofit sites. The lack of supportive services at these two sites leaves this an open issue.

Considering the impact of location on pre-test to post-test analysis shown previously in Table 75 and Figure 15 indicates that tenants in more desirable areas increased all but their Financial Capital while those in less desirable areas still improved their Financial, Physical and Personal Capital (Table 79). This may support place-based theories that areas of less desirability have fewer job opportunities (Human Capital) and connections for tenants (Social Capital). However, it also means that the hypothesis is not completely supported that capital quality-of-life index scores of persons living in housing located in more desirable areas is higher than capital quality-of-life index scores for persons living in housing located in less desirable areas. The lack of increase in Financial Capital again, this time by area, raises interesting questions.

Table 79: Quality-of-life Pre-test to Post-test by Capital and Area

Capital	Area	Change	
Financial Capital	Less desirable	Decrease	⬇
	More desirable	No change	⇔
Physical Capital	Less desirable	Increase	⬆
	More desirable	Increase	⬆
Social Capital	Less desirable	No change	⇔
	More desirable	Increase	⬆
Human Capital	Less desirable	No change	⇔
	More desirable	Increase	⬆
Personal Capital	Less desirable	Increase	⬆
	More desirable	Increase	⬆

Between the four developments, Table 80 shows that the results of capital changes were very mixed, with many capitals not changing pre-test to post-test at all or only changing for one or two sites. This breakdown shows why overall Financial Capital decreased; it did not change on average for tenants at three sites, but residents at North Ledge appear to have worse Financial Capital than before. This is true despite North Ledge tenants all having rental assistance. Of the six variables for Financial Capital, only two changed pre-test to post-test; both income and savings declined significantly for North Ledge. This corresponds with North Ledge tenants having the lowest incomes (without rental assistance), the lowest education rates, highest divorce rates, and having half previously living with family (parents, friends or divorce).

Likewise, Physical Capital increased overall because three sites stayed the same but tenants at Fox Moon improved. This could be the result of Fox Moon being the newest development, having a townhome building design, having the most amenities like a club house and swimming pool, or because it is near a major amusement park. First Light also had a pool but it is a more traditional apartment building. New Mystic is the smallest site but it did not score any worse than the other two sites that did not improve Physical Capital.

Social Capital increased significantly at the two for-profit sites, but did not change for the nonprofits which impacted the cumulative results above. Additional analysis of the individual components of Social Capital reveals that tenants at North Ledge felt less connected, are less likely to visit family and friends or be satisfied with access to family

and friends. This correlates with Table 34 which shows that half of North Ledge residents previously lived with family members. There was also a difference in voting records which was similar by area desirability; people in more desirable places tended to vote more often.

Human Capital had the most varied results with one increase, one decrease, and two no changes, which resulted in the overall significant change noted previously. Primary differences among the six components of Human Capital include contrary feelings about access to education with First Light (lowest) and Fox Moon (highest) at the extremes, and access to jobs with North Ledge substantially lower than the other three. In addition, employment and work hours were distinctly different with tenants at the two subsidized rental properties, Fox Moon and North Ledge, less likely to be employed and working the fewest hours.

The one unanimous result was a significant increase in Personal Capital for tenants at all four developments. Since Personal Capital includes satisfaction with one's housing, motivation to improve one's life, happiness, and self-confidence, moving to affordable housing may improve some of the intangible measures associated with improved housing conditions.

Table 80: Quality-of-life Pre-test to Post-test by Capital and Development

Capital	Development	Change	
Financial Capital	North Ledge	Decreased	⬇
	New Mystic	No change	⇔
	First Light	No change	⇔
	Fox Moon	No change	⇔
Physical Capital	North Ledge	No change	⇔
	New Mystic	No change	⇔
	First Light	No change	⇔
	Fox Moon	Increased	⬆
Social Capital	North Ledge	No change	⇔
	New Mystic	No change	⇔
	First Light	Increased	⬆
	Fox Moon	Increased	⬆
Human Capital	North Ledge	Decreased	⬇
	New Mystic	No change	⇔
	First Light	Increased	⬆
	Fox Moon	No change	⇔
Personal Capital	North Ledge	Increased	⬆
	New Mystic	Increased	⬆
	First Light	Increased	⬆
	Fox Moon	Increased	⬆

Table 81 shows the capital breakdowns within each of the four developments. The apartment complex with the most varied results was North Ledge which increased Personal Capital but decreased Financial and Human Capitals. This makes logical sense when looking at tenant demographics: half of North Ledge tenants previously lived with family and friends (Table 34), they have the lowest education levels (Table 29), and they have the lowest incomes (Table 33) and no rental assistance, so it is not surprising if they are financially slightly worse off or less connected (Human Capital). Conversely, North Ledge tenants appear to be more satisfied and happier with greater Personal Capital.

Tenants at New Mystic had the least change in their capitals with only Personal Capital improving; all other factors appeared to stay about the same. Demographics show that New Mystic tenants tended to be better educated, older, and relatively wealthier than other tenants at the other sites so they may be more mature or financially stable.

Table 81: Quality-of-life Pre-test to Post-test by Development and Capital

Development	Capital	Change	
North Ledge	Financial	Decreased	↓
	Physical	No change	⇔
	Social	No change	⇔
	Human	Decreased	↓
	Personal	Increase	↑
New Mystic	Financial	No change	⇔
	Physical	No change	⇔
	Social	No change	⇔
	Human	No change	⇔
	Personal	Increase	↑
First Light	Financial	No change	⇔
	Physical	No change	⇔
	Social	Increase	↑
	Human	Increase	↑
	Personal	Increase	↑
Fox Moon	Financial	No change	⇔
	Physical	Increase	↑
	Social	Increase	↑
	Human	No change	⇔
	Personal	Increase	↑

Tenants at both First Light and Fox Moon improved on three capitals but not the same three which makes it difficult to identify a trend: both properties have amenities such as swimming pools but Physical Capital did not increase for both; First Light is in a less desirable area but employment factors increased while Social Capital increased for both areas. First Light tenants were a full decade younger, on average, than the other three sites, which may have contributed to their Human Capital increase as they moved into

better jobs. In addition, neither for-profit site increased Financial Capital despite Fox

Moon tenants receiving Section 8 rental assistance.

Prior to affordable housing, the only capital that was different between the four sites was

Financial Capital with Fox Moon tenants starting out lower than those at the other three

developments. However, residents at Fox Moon did not improve their Financial Capital,

just like at the other three sites. Comparing tenants living at the four developments

currently, Financial Capital and Personal Capital showed no differences in quality-of-life

despite Financial Capital decreasing for North Ledge and Personal Capital increasing for

everyone.

In comparing post-test scores for all four developments, Fox Moon tenants showed

higher Physical Capital, which is not surprising since they were the only ones to increase

their Physical Capital pre-test to post-test. North Ledge tenants recorded lower Social

Capital and Human Capital post-test than the other sites, which is not surprising since

they had the only decrease in Human Capital. These results suggest that the hypothesis is

not supported that households who live in affordable housing developed by nonprofits

and located in more desirable areas would have the highest capital quality-of-life indices

compared to for-profits in less desirable areas. There are many factors at work here and

the two-way ANOVAs showed that there are few intervening variables to cause these

effects. Specific developments have results which make sense based on tenant

demographics and site characteristics.

D. Livelihood Assets Pentagon Findings

The above results show the increased level of analysis available due to use of the five capitals. The capitals show important differences between developer types, geographic areas, and even specific projects. Use of the Sustainable Livelihoods Framework was added as an exploratory component because it had not been previously applied to studying quality-of-life or affordable housing.

For those interested in improving tenants' quality-of-life, the five capitals indicate areas that can be targeted for improvement or factors that have made a difference. For example, if data were collected before and after moving to affordable housing on the variables that comprise the capitals, the results could be used to target specific interventions for the overall development or even specific individuals. If Human Capital is low, job training programs may be useful. If Physical Capital is low it may indicate that repairs or security measures are needed.

The value of using the capitals is also demonstrated by the details provided on increases or decreases in capital values. For example, Table 58, Quality-of-life Standardized Post-test Means Two-way ANOVA, shows that developer types matter for different tenant quality-of-life scores but does not show why. However, Table 70 and Figure 14 show that Physical Capital, Social Capital, and Human Capital are the significant components.

Figures 13-19 show how the pentagon can be used to graphically display the results of the quality-of-life scores. These figures show differences at a glance compared to their corresponding data tables. Plus, the ability to indicate significance makes the results clearly identifiable.

The increased depth of analysis provided through use of the capitals seems to support exploratory hypothesis D that the Livelihoods Assets pentagon is an effective tool for conceptualizing and visualizing quality-of-life outcomes.

E. Conclusion and Recommendations

This study found that both standard-of-living and quality-of-life measurably improved for tenants who moved into affordable rental housing. This is an exciting finding for the theory, policy, and practice of affordable housing development. Although quality-of-life improvement is currently not a stated goal of affordable housing, it is significant to recognize that all the efforts of developers, funders, and managers can make a positive impact on the lives of low income renters. The study also shows that the introduction of the five capitals and Sustainable Livelihoods Framework into affordable housing research is an effective tool for conceptualizing and measuring quality-of-life. It was useful for providing insight into why quality-of-life changed and into the differences between groups while at the same time suggesting how to improve the methodology and the limits of the tools used. Although promising outcomes were found, the results also indicate that much more study is needed to better understand the impacts of affordable housing on

people's lives and to work towards a comprehensive theory of affordable housing. This study therefore becomes a pilot project for future research on affordable housing while still suggesting how current policies can be modified to benefit tenants and developers.

The first conclusion is that affordable housing does appear to provide safety net outcomes as evidenced by standard-of-living improving for those surveyed. This basic threshold of improvement lends credence to the notion that affordable housing acts as a social safety net in the U.S., although it does not answer how or why. Affordable housing does not always serve the poorest families but it does appear to be an improvement from previous housing situations for those fortunate enough to obtain a unit. There is still a critical shortage affordable housing for low income households so the safety net has holes that need to be filled by creating more units. This study seems to confirm that the units which are completed do add value to peoples' lives.

It also appears that a deeper set of direct and indirect quality-of-life outcomes can be expected from affordable housing based on the improvements shown. Quality-of-life scores increased overall and within many capital categories, while final quality-of-life scores were similar between most comparison groups thereby indicating widespread benefits. The increased level of expectations placed on affordable housing to go beyond shelter does appear to have been achieved at these sites, that is, affordable housing program investments seem to be sufficient to result in expanded quality-of-life outcomes for tenants.

However, there were some unexpected results within the analysis of the five capitals. For example, Financial Capital actually decreased on average. The fact that Financial Capital decreased, and was the capital with the lowest score, is a surprising result because affordable housing is often described as an income issue; if people had more money they could afford more housing. Even with rental assistance, some tenants had reduced Financial Capital. Lower rents may therefore not mean that people are better off financially. Tenants may spend just as much money as before moving to affordable housing but now consume more goods other than housing. It would be valuable for future research to investigate how low income families spend their money and how funds become reallocated upon moving to affordable housing.

The study answered the basic questions about whether quality-of-life improved for tenants as a result of their move to affordable housing, but some basic future research questions were raised in relation to the quality-of-life model. First, quality-of-life scores should be calculated for other developments to establish a baseline for what is typical and what is possible. For example, based on the quality-of-life scale created, what is a "good" quality-of-life score; i.e., is 100 out of 150 a high or low score? How high is good or how low is bad? Also, when improved scores were found here, the changes were all numerically small (one to two points) yet statistically significant. How much increase is enough for tenants to see a noticeable difference? What quality-of-life score should developments strive to achieve?

Future research should also include longitudinal studies that follow tenants from prior to move-in, through their affordable housing tenure, to move-out to other housing. The benefits of living in affordable housing may be long-term, so data collected over time is needed from tenants. Future work should also address changes in quality-of-life during residents' tenure in affordable housing to estimate medium term effects during occupancy. A longitudinal study of long-term impacts after moving out of affordable housing would be of great significance. In addition, tenant quality-of-life changes in affordable housing should be compared to quality-of-life for tenants living in market rate rental housing to round out the results.

In terms of methodology, this study shows the usefulness of structuring research and data collection around the five capitals. Being able to drill down to individual capitals provided valuable insights in the analysis. For example, if only traditional Financial Capital had been used, no benefit would have been shown to have accrued. Even adding Physical Capital for living in newly rehabilitated buildings would not have shown overwhelming results. The structure of the Sustainable Livelihoods Framework placed the results in a context which can be used in future studies. Each of the five capitals has multiple components beyond those incorporated here that can be included and analyzed to determine which variables have predictive power. Future research, as well as the studies summarized above, can be plugged into the Framework and standardized for comparison. The strength of the Framework is shown to be its ability to be adapted to provide a structured way to measure change on a spectrum from the individual to a

building, or to a community, as well as for depth and breadth, from household improvement to community revitalization.

The research results also highlighted some limitations with the quality-of-life index. This index is an aggregate of potentially relevant factors identified and justified within previous research literature. However, the literature did not indicate how the quality-of-life index should be created or how the variables should be weighted, so logical factors were included which were all weighted equally. It may be determined in the future that some factors have more (or less) predictive power than others and should therefore be weighted differently. Had it been possible, it would have been useful to have run a factor analysis on the variables and indices to determine their predictive power. However this was not possible because tenant data is not collected. The most directly comparable study of affordable housing (Buron, et al., 2000) included most of the variables incorporated here but the researcher and HUD were contacted and that data no longer exists. This study therefore becomes a baseline for future research on tenant quality-of-life impacts.

The smaller sample size also raises an issue because small sample sizes can create artifacts in the data. Since additional data sets could not be collected in a reasonable amount of time for a reasonable cost, the study was scaled back. It is possible that including twice as many developments would have changed the results. For example, with a large sample size, it could be determined whether North Ledge was an anomaly or a typical site. Based on the tenant characteristics highlighted above, it is likely that this is an atypical affordable family development for suburban communities. A larger data set

would have included fewer developments with project based rental assistance and therefore much higher income tenants. The location of the suburbs also impacted the results since there are not many affordable family developments in the Chicago suburbs; there tend to be family developments in Chicago and senior developments in the suburbs. In the future, comparing Chicago to the suburbs, or other large cities to their suburbs, could reflect differences in tenants as well as housing sites.

This study therefore shows the need for, and value of, collecting tenant data beyond income levels. HUD and other funders should consider collecting data such as the variables presented here in order to better estimate the impact of living in affordable developments. This study would have been expanded to other suburban family developments but lack of cooperation from owners and managers limited sample size. The results would likely have been similar as the two for-profits sites included which would have resulted in more confidence in the results. Without built-in facilitation of data collection, it may not be possible to assess tenant impacts, quality-of-life or otherwise. This study used a questionnaire specifically designed to create the quality-of-life index within strict confines. These data are not available on a regular basis but show the value in collecting expanded tenant information in order to review outcomes. It would benefit future studies to have a larger data set with weighted variables, a larger budget, greater geographic scope, and better access to developments.

Also, the quantitative nature of this study using scales to create indices meant the analysis relied on impersonal statistics. Crunching the numbers shows statistically that

improvements occurred but misses some of the qualitative potential of the same questions. Future researchers could interview tenants to understand more about the subjective measures included and why tenants scored certain factors as they did. Other issues that arose could be explored such as: how does moving away from home impact future plans or how do families survive with no savings? The lack of personal savings was shocking; over 90% of families essentially had no money in the bank and lived paycheck to paycheck. It would also be relevant to ask how tenants would explain in their own words what moving into these developments means to them. For example, one tenant commented that moving into her home literally saved her life because she had no other housing options. There was no variable to account for that sentiment. Many tenants commented on whether they planned to buy a home, so future housing goals would be an interesting topic for future researchers to explore.

A comprehensive housing theory was addressed in this study by researching which factors influence quality-of-life changes. It showed that quality-of-life does improve in many ways and that the five capitals provide a good structure for future analysis. The partial theories behind this study (place, personal, and professional) have been researched to different degrees so combining them in one place was useful. Place-based theories were addressed here through categorizing developments into more and less desirable areas to live. The results of the capital analyses differed somewhat with previous research which indicated that place matters; there was no place difference for quality-of-life in general and almost no difference among the capitals. The contradiction from previous results may mean that the areas were not different enough. Additional research on the

spectrum of more desirable to less desirable may indicate how different areas need to be in order to give significant results.

Personal life experiences were addressed through demographics but were not included in the comparison analysis, yet time and again results were explained by tenant differences within the developments. For example, New Mystic tenants had higher quality-of-life scores and tended to be better educated, older, and relatively wealthier while North Ledge tenants with much lower quality-of-life scores previously lived with their family, were less educated, and had the lowest income levels. Few conclusions can be reached about the validity of personal life theory and much more research on their impact on the capitals is needed.

The less formal professional explanations of tenant change showed the most interesting, and yet contrary, results. With little previous research as comparison, tenants living in nonprofit developments were hypothesized to perform better. However, the results were in favor of the for-profit sites; final quality-of-life scores were slightly, but significantly, higher for three of the five capitals. In addition, those who moved into for-profit developments had slightly greater increases in four capitals while those going into nonprofits sites increased on only one capital and decreased on another.

It was hypothesized that professional factors and personal factors would override place factors; that is, the lives of tenants who live in affordable housing would improve more on indicators within all five capitals when the developer and manager is a nonprofit or

when the tenant is prepared to take advantage of the opportunity for improvement, while project location would not make a significant difference. Although for-profits came through stronger than nonprofits, it was important that developer type showed significant changes while location was much less important. It appears that the working experiences of housing professionals have merit but not exactly as expected.

What are the implications of this study for nonprofit affordable housing developers? Many programs have set-asides for nonprofits, however, this study indicated that while tenants at nonprofit sites improved their quality-of-life overall, they did not improve as much as those in for-profit developed housing. However, as the data showed, most of the negative results came from one development. This development may be an anomaly but with no comparison data, it is impossible to tell.

This means that much more research is needed on the differences between nonprofit and for-profit developers. Anecdotally, they appear to have different approaches and goals. All developers create affordable housing to make money but nonprofits and for-profits tend to go about that in a different way. Nonprofits often attempt to develop properties that for-profits would not either because of site or funding difficulties, economies of scale, length of time to get approval or community buy-in. Many nonprofits attempt projects that for-profits would not because they are smaller and therefore make less money for the same amount of time and effort. Nonprofits also tend to serve households with lower income levels with targets for extremely low income tenants versus tenants at the top of the income categories as for-profits. Nonprofits often have more of a

community goal and therefore the bottom line is less of an issue. This lack of focus on the bottom line can lead to other problems so nonprofits need to fundraise and take on other non-development activities that for-profits do not. Nonprofits may supplement their development activities with economic development or housing counseling work. Stereo-typically, for-profit developers do the easy deals while non-profits do the hard projects.

In the largest sense, there is little difference between nonprofits and for-profits in terms of size, sophistication, skills, or experience; there are large national nonprofits and for-profits as well as incredibly small one-three person nonprofits and for-profits. There are examples of incredibly experienced nonprofits that have done massive developments and tiny for-profits that have done one or two deals. For this study, one nonprofit was very large and one was very small and all four developers have successfully done multiple affordable projects. The results are complicated to interpret because the smallest developer with the least experience and smallest site did not fair the worst in terms of quality-of-life improvement. The main differences between developments seemed to have more to do with the demographics of those who lived there. The developments may have had physical differences (pools, elevators) but the site with younger, less educated, unemployed tenants who had not lived on their own, experienced the least quality-of-life improvements. Future research on a larger dataset or national scope could provide insights into whether this is typical or not.

It would be incorrect to conclude that nonprofits should not continue to develop affordable housing because quality-of-life improvement was not greater than for-profits

overall. Quality-of-life did increase at nonprofit sites for most capitals. The additional

value of nonprofits may be in their willingness to develop properties that for-profits

would not or rent to lower income populations that are not typically served by for-profits.

Future research needs to explore differences between for-profit and nonprofit

developments and developers and weight factors accordingly. Future studies should

consider how developments created by nonprofits and for-profits differ: do tenants come

from different housing situations; are developments physically different; is the

development process different; do nonprofits select more difficult to develop sites?

It was anticipated that nonprofits would provide supportive services to their tenants and

therefore result in higher quality-of-life. That was not the case with either of the

nonprofits selected for this study. Supportive services were not able to be tested for

relevance since neither nonprofit actively provides services beyond property

management. Supportive services are arguably an important component of many

affordable developments so their scope and impact needs to be explicitly reviewed. Many

nonprofits are too busy working on the next deal or raising funds to keep the doors open.

The issue becomes how to allocate scarce resources. Buildings have to be managed.

Rents have to be collected and bills have to be paid. The next deal has to get put

together. Money has to be raised to pay staff. No one funds nonprofits to help tenants

increase tenant quality-of-life. Without the ability to provide services to tenants that are

poorer and struggling, less resource rich developments cannot be expected to overcome

other shortfalls. Future research needs to explore what types of social services are

provided by nonprofits and for-profits alike, and which services increase capitals more, individually and collectively.

For policy purposes, this study does not attempt to say which type of developer is better or which area type is preferable for development. Certain projects may provide external benefits from getting built such as community improvement. Both nonprofits and for-profits showed some quality-of-life improvements, as did both less desirable and more desirable areas. Additional funding is needed for supportive services, such as those provided by senior service coordinators, who could assess quality-of-life needs and target interventions based on capital deficiencies. Since it is known that tenant quality-of-life does increase, policies for funding supportive services and targeting deficient capitals can be implemented by funders and developers rather than just making sure units get built. Funders need to understand that families' lives are at stake and reconsider squeezing a few thousand dollars squeezed out of a deal that could be used to improve a family's life. Developers can focus on housing people, not just numbers on a page.

In practice, it is important for affordable housing developers to understand the potential impact of living in their development on tenants. Considering the concept of quality-of-life may change how developments are structured and lead to more substantial improvements. Developers need to set tenant goals beyond paying rent, such as increasing income or even improving capitals that were weak, so that they can move on and allow other tenants a chance for improvement. Funders need to require the collection

of tenant data beyond incomes so that outcomes can be tracked and improvements can be targeted.

It is unlikely that any of the four developers presented here set out to improve personal capital, yet this study show that they did. They contributed to overall improvement in standard-of-living and quality-of-life for those they serve that reaches well beyond basic shelter and made the world a better place.

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AFFORDABLE RENTAL HOUSING QUALITY OF LIFE SURVEY

Interviewer: _____

Respondent's Name: _____

Phone #: _____   Apt: _____

Address: _____   City: _____

Development Name: _____

Call Date: _____   Call Date: _____

Call Date: _____   Call Date: _____

[INTERVIEWER READ THE FOLLOWING]

Hello, may I speak with (_____NAME)
My name is _____.

You should have received a letter in the mail about a survey of your current housing and that we would be contacting you. As explained in the letter, the survey will take about 30 minutes and you will receive $20 for participating.

Is now a good time?

[IF "NO"]: Could we schedule a time that would be more convenient for you:

Reschedule time: _____   Reschedule time: _____

Reschedule time: _____   Reschedule time: _____

Should I call you back at this number or is there a better phone number to reach you?

Phone #: SAME / _____

[IF "YES"]: Thank you. I just want to confirm that you still live in the same building. Is your address still (READ ABOVE DEVELOPMENT ADDRESS)? YES / NO

    [IF NOT, END THE INTERVIEW.]
    Since you have moved out of the building, you are not eligible to participate. Thank you for your time.

[IF CONFIRMED, START INTERVIEW.]

Before I read you the list of questions, let me get your consent to participate.

You are being asked to participate in a research study of affordable rental housing. The purpose of this study is to measure how someone's housing affects their quality of life. The results will be used to write a doctoral dissertation.

If you agree to participate you will be asked a mix of multiple choice and open-ended questions about your current and previous housing situation. It should take about 30 minutes.

You will be asked some personal questions but everything you tell us will be confidential and used only for statistical purposes. No personal information will be included in the final report and you cannot be identified in any way. You can choose whether or not to participate and you may refuse to answer any questions.

Everyone who completes a survey will be given $20 for their time. In addition, you will be entered into a drawing for one of two $100 gift certificates.

Do you understand that you are being asked to complete a survey, that your information will be confidential, that your participation is entirely voluntary, and that you will be paid $20 to participate?

RESPONDENT AGREES / DISAGREES.

Do you have any questions before we start?

[IF "YES" MAKE A NOTE OF THEIR QUESTIONS AND ANSWER THEM IF YOU CAN, OTHERWISE CONTINUE.]

[IF "NO"]: Okay, let's begin.

[Time Interview Started: _____]

I'm going to start by asking you some questions about where you currently live.

1. Overall, how would you rate your satisfaction with the apartment where you currently live? Would you say that it is...

An excellent place to live	A good place to live	A fair place to live	A poor place to live	A very bad place to live
5	4	3	2	1

2. How would you rate the overall physical condition of the building:

Excellent	Good	Fair	Poor	Deteriorated
5	4	3	2	1

3. How would you rate the building's security and safety:

Excellent	Good	Fair	Poor	Very bad
5	4	3	2	1

4. Overall, how would you rate your current neighborhood as a place to live? Is it...

Excellent	Good	Fair	Poor	Very bad
5	4	3	2	1

Q. I am going to ask you to rate your current neighborhood based on several areas. Would you say that the neighborhood is excellent, good, fair, poor or very bad in terms of

	Excellent	Good	Fair	Poor	Very Bad
5. Having access to good quality schools	5	4	3	2	1
6. Having access to services you need	5	4	3	2	1
7. Being close to friends and relatives	5	4	3	2	1
8. Being close to job opportunities	5	4	3	2	1
9. Being safe	5	4	3	2	1

Q. Please tell me how much you agree or disagree with the following statements about your neighborhood:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
10. People are willing to help their neighbors	5	4	3	2	1
11. I feel like I am part of my neighborhood	5	4	3	2	1

12. Overall how satisfied are you with the management of your building?

Very Satisfied 5	Somewhat Satisfied 4	Neither satisfied nor dissatisfied 3	Somewhat Dissatisfied 2	Very Dissatisfied 1

13. Does the property management company offer services to tenants such as counselors, case workers, classes, outings, etc?

YES......1	NO........2

      [IF YES] OTHERWISE SKIP TO Q 15
      14. What types of services do you use, if any? _____
            [CASE MANAGEMENT____]
            [HOUSING COUNSELORS____]
            [CLASSES____]

Now I'm going to ask you questions about your apartment.

15. How many bedrooms does your unit have?   ____ bedrooms

16. When did you move into your current building; what year and month?

Month: _____	Year: _____

      [IF UNSURE, **PROBE** FOR MOVE-IN DATE, i.e. HOW MANY YEARS, WHAT TIME OF YEAR]

17. Including yourself, how many adults 18 years old or older live in your apartment: [MOST NIGHTS, MOST OF THE YEAR, OR ON THE LEASE]	
18. How many persons in the apartment are children 17 or younger:	
[19. TOTAL]	

20. Do you currently receive any government rental assistance such as Section 8?

YES......1	NO........2

21. How much do you currently pay each month for rent? $_____ rent per month

22. On average, how much do you currently pay each month for utilities like electricity, gas, and water: $_____ per month
      [IF NOT KNOWN, PROMPT: $50, $100, $150, $200?]

23. Thinking about how much rent you pay compared to your household income, would you say that paying rent is...

Very hard to pay 1	Somewhat hard to pay 2	About right 3	Somewhat easy to pay 4	Very easy to pay 5

24. Are you interested in buying a home someday?

| YES......1 | NO........2 | MISSING...9 |

[IF NO]

25. Why not? _____

[NOT ENOUGH INCOME____]
[DON'T WANT TO KEEP UP____]
[NEVER THOUGHT ABOUT IT____]

[IF YES]

26. While you have lived here, have you taken any of the following steps to prepare to buy a home: [READ EACH]

Started saving money	Yes 1	No 2
Looked at houses for sale	Yes 1	No 2
Took a home buyer class	Yes 1	No 2
Talked to a lender	Yes 1	No 2
[TOTAL]		

Now, I'm going to ask you some questions about how you spend your time.

27. How often do you volunteer your time in the community such as at church, at a child's school, with a nonprofit, on a board, or other group such as club, sporting event, or art show?

Just about everyday 5	A few times a week 4	Several times a month 3	Several times a year 2	Twice a year or less 1

28. How often do you visit friends or relatives in person or have them come visit you:

Just about everyday 5	A few times a week 4	Several times a month 3	Several times a year 2	Twice a year or less 1

29. Thinking back to when you lived in your previous apartment how often did you vote in elections?

Always 5	Usually 4	Sometimes 3	Rarely 2	Never 1

30. While you have been living here, I am going to ask whether you have attended a job training program, a trade school or college? Would you say that you:

Were not interested 1	Meant to start 2	Began saving for 3	Started but not finished 4	Completed or graduated 5

[IF 3, 4, 5, PROBE FOR TYPE]

Type_____

31. While living in this apartment how would you describe your employment history?

Always employed 5	Mostly employed 4	Sometimes employed 3	Rarely employed 2	Never employed 1

[IF EMPLOYED AT ALL] OTHERWISE SKIP IT Q 33

32.   About how many hours do you work for pay in the average week? _____

33.   Does anyone else in your household currently work for pay?

YES......1	NO........2

34. I am now going to ask about your household income. That is, how much is your total paycheck plus any public benefits like social security. Please include income from all members of your household. You can give me a figure or I can read a list of categories and you can tell me which category you fall into. I can read the list yearly or monthly.

Annual	[MARK OR CIRCLE #]	Monthly	Weekly
$0-5,000	1	$0-416	$0-96
$5,001-10,000	2	$417-833	496-192
$10,001-15,000	3	$834-1,250	$193-288
$15,001-20,000	4	$1,251-1,666	$289-384
$20,001-25,000	5	$1,667-2,083	$385-480
$25,001-30,000	6	$2,084-2,500	$481-576
$30,001-35,000	7	$2,501-2,916	$577-673
$35,001-40,000	8	$2,917-3,333	$674-769
$40,001-45,000	9	$3,334-3,750	$770-865
$45,001-50,000	10	$3,751-4,166	$866-961
$50,001-55,000	11	$4,167-4,583	$962-1,057
$55,001-60,000	12	$4,584-5,000	$1,058-1,153
$60,001-65,000	13	$5,001-5,416	$1,154-1,250
$65,001-70,000	14	$5,417-5,833	$1,250-1,346
	[WRITE IN IF OTHER]		

[PROBE IF THEY ARE NOT SURE. TAKE NOTES IF NEEDED. YOU CAN ASK MONTHLY, HOURLY OR WEEKLY. CONFIRM THE MATH WITH THEM]

35. Thinking about how much <u>income</u> you have now and your household's current <u>expenses</u>, would you say you have...

Much more than enough 5	A little more than enough 4	Just enough 3	A little less than enough 2	Much less than enough 1

36. Approximately how much money do you have in savings or investments? You can give me a figure or I can read a list of categories and you can tell me which category you fall into within $500.

Amount	[MARK OR CIRCLE #]
$0-500	1
$501-1,000	2
$1,001-1,500	3
$1,501-2,000	4
$2,001-2,500	5
$2,501-3,000	6
$3,001-3,500	7
$3,501-4,000	8
$4,001-4,500	9
$4,501-5,000	10
$5,001-5,500	11
$5,501-6,000	12
	[WRITE IN IF OTHER]

37. Thinking about how much savings you have in the bank and your future plans, would you say that you have...

Much more than enough 5	More than enough 4	Just enough 3	Less than enough 2	Much less than enough 1

38. Do you have a car?

YES......1	NO........2

39. What is your principal means of transportation:

Your own reliable car 5	Your own unreliable car 4	A friend's car or public transportation 3	Your bicycle 2	Walking 1

The next few questions are about how you feel.

40. How has your health been during the past year?

Excellent 5	Good 4	Fair 3	Poor 2	Very bad 1

41. All things considered, would you say you are:

Very happy 5	Happy 4	Neither happy nor unhappy 3	Unhappy 2	Very unhappy 1

42. All in all, how satisfied do you feel about life right now? Are you:

Completely satisfied 5	Fairly satisfied 4	Neither satisfied nor dissatisfied 3	Somewhat dissatisfied 2	Very dissatisfied 1

[SECTION B: PRIOR HOUSING SITUATION]

Now I would like to ask you some questions about the place you lived right before you moved to your current apartment.

43. Which of the following best describes your living situation before you moved to your **current** apartment?

Owned the home 1	Private rental housing 2	Affordable rental housing 3	Public housing 4	With friends or family 5	In a homeless shelter 6	Other 7 [PROBE]

Q. We would like to look up census data for your previous housing; could you give us the zip code of your previous place? [WRITE ALL IF THEY GIVE IT OTHERWISE JUST ZIP]

44. House Number and Street Name:		
45. City:	46. State:	47. Zip:

48. How many bedrooms did your **previous** place have? _____ bedrooms

49. When did you move-in there?

Month: _____	Year: _____

    [IF UNSURE, PROBE FOR MOVE-IN DATE, i.e. HOW MANY YEARS, WHAT TIME OF YEAR]

50. Including yourself, how many adults 18 or older lived in that apartment: [MOST NIGHTS, MOST OF THE YEAR, OR ON THE LEASE]	
51. How many were children age 17 or younger:	_____
[52. TOTAL]	

53. Approximately how much was your monthly rent when you **moved out** to come to your current apartment:	$_____

    [IF NOT KNOWN, PROMPT: $500, $600, $700, $800]

54. On average, at your previous apartment, how much did you pay each month for utilities like electricity, gas, water: $_____ per month
　　　[IF NOT KNOWN, PROMPT: $50, $100, $150, $200?]

55. Thinking about how much your rent was compared to your household income then, would you say that paying rent at your previous housing was...

Very hard to pay 5	Somewhat hard to pay 4	About right 3	Somewhat easy to pay 2	Very easy to pay 1

56. Overall, how would satisfied were you with the apartment where you used to live? Was it...

An excellent place to live 5	A good place to live 4	A fair place to live 3	A poor place to live 2	A very bad place to live 1

57. How would you rate the overall physical condition of the building where you used to live?

Excellent 5	Good 4	Fair 3	Poor 2	Deteriorated 1

58. How would you rate your previous building's security and safety:

Excellent 5	Good 4	Fair 3	Poor 2	Very bad 1

59. Overall, how would you rate your previous neighborhood as a place to live? Is it...

Excellent 5	Good 4	Fair 3	Poor 2	Very bad 1

Q. I am going to ask you to rate your previous neighborhood based on several areas. Would you say that your old neighborhood was excellent, good, fair, poor or very bad in terms of:

	Excellent	Good	Fair	Poor	Very Bad
60. Having access to good quality schools	5	4	3	2	1
61. Having access to services you need	5	4	3	2	1
62. Being close to friends and relatives	5	4	3	2	1
63. Being close to job opportunities	5	4	3	2	1
64. Being safe	5	4	3	2	1

Q. Please tell me how much you agree or disagree with the following statements about your old neighborhood:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
65. People were willing to help their neighbors	5	4	3	2	1
66. I felt like I was part of the neighborhood	5	4	3	2	1

Thinking back to your previous housing:

67. Overall how satisfied were you with that building management?

Very Satisfied 5	Somewhat Satisfied 4	Neither satisfied nor dissatisfied 3	Somewhat Dissatisfied 2	Very Dissatisfied 1

68. Thinking back to when you lived in your previous apartment about how often did you volunteer your time in the community such as at church, at a child's school, with a nonprofit, on a board, or other group such as club, sporting event, or art show?

Just about everyday 5	A few times a week 4	Several times a month 3	Several times a year 2	Twice a year or less 1

69. When you lived in your previous apartment about how often did you visit friends or relatives in person or have them come visit you:

Just about everyday 5	A few times a week 4	Several times a month 3	Several times a year 2	Twice a year or less 1

70. Thinking back to when you lived in your previous apartment how often did you vote in elections?

Always 5	Usually 4	Sometimes 3	Rarely 2	Never 1

71. When you were living in your previous home, how would you describe whether you attended job training, a trade school or college?

Not interested 1	Meant to start 2	Began saving for 3	Started but not finished 4	Completed 5

72. Thinking back to the year before you moved from your previous apartment, what was your employment status?

Always employed 5	Mostly employed 4	Sometimes employed 3	Rarely employed 2	Never employed 1

[IF EMPLOYED AT ALL]

73.   Back then, how many hours did you work for pay in the average week? _____

74.   Did anyone else in your household work for pay then?

YES......1	NO........2

75. I am now going to ask about your previous household income while living in your last home. That is, how much was your total paycheck plus any public benefits like social security. Please include income from all members of your household. You can give me a figure or I can read the list of categories again and you can tell me which category you fell into.

Annual	[MARK OR CIRCLE #]	Monthly	Weekly
$0-5,000	1	$0-416	$0-96
$5,001-10,000	2	$417-833	496-192
$10,001-15,000	3	$834-1,250	$193-288
$15,001-20,000	4	$1,251-1,666	$289-384
$20,001-25,000	5	$1,667-2,083	$385-480
$25,001-30,000	6	$2,084-2,500	$481-576
$30,001-35,000	7	$2,501-2,916	$577-673
$35,001-40,000	8	$2,917-3,333	$674-769
$40,001-45,000	9	$3,334-3,750	$770-865
$45,001-50,000	10	$3,751-4,166	$866-961
$50,001-55,000	11	$4,167-4,583	$962-1,057
$55,001-60,000	12	$4,584-5,000	$1,058-1,153
$60,001-65,000	13	$5,001-5,416	$1,154-1,250
$65,001-70,000	14	$5,417-5,833	$1,250-1,346
	[WRITE IN IF OTHER]		

[PROBE IF THEY ARE NOT SURE. TAKE NOTES IF NEEDED. YOU CAN ASK HOURLY OR WEEKLY THEN CONFIRM THE MATH]

76. Thinking about how much income you had then and your household's expenses then, would you say you had...

Much more than enough 5	A little more than enough 4	Just enough 3	A little less than enough 2	Much less than enough 1

77. Thinking back to before you moved here, approximately how much money did you have in savings or investments? You can give me a figure or I can read a list of categories and you can tell me which category you fall into within $500.

Amount	[MARK OR CIRCLE #]
$0-500	1
$501-1,000	2
$1,001-1,500	3
$1,501-2,000	4
$2,001-2,500	5
$2,501-3,000	6
$3,001-3,500	7
$3,501-4,000	8
$4,001-4,500	9
$4,501-5,000	10
$5,001-5,500	11
$5,501-6,000	12
	[WRITE IN IF OTHER]

78. Thinking about how much savings you had in the bank then and your future plans, would you say that you had...

Much more than enough 5	More than enough 4	Just enough 3	Less than enough 2	Much less than enough 1

79. Did you have a car when you lived at your previous apartment?

YES......1	NO........2

80. What was your primary mode of transportation then:

Your own reliable car 5	Your own unreliable car 4	A friend's car or public transportation 3	Your bicycle 2	Walking 1

81. Thinking back to your previous apartment how would you describe your health while you were living there?

Excellent 5	Good 4	Fair 3	Poor 2	Very bad 1

82. Thinking about your old apartment would you say that in the year prior to moving you were:

Very happy 5	Happy 4	Neither happy nor unhappy 3	Unhappy 2	Very unhappy 1

83. All in all, how did you feel about life back then? Were you:

Completely satisfied 5	Fairly satisfied 4	Neither satisfied nor dissatisfied 3	Somewhat dissatisfied 2	Very dissatisfied 1

[SECTION C: HOUSEHOLD INFORMATION]

Let's finish with some questions about you.

84.   What is your date of birth?   _____/_____/_____

85. What is your gender:	Male 1	Female 2

86.   Which of the following best describes your current marital status?

Single, not living with partner 1	Single, living with partner 2	Married 3	Divorce or separated 4	Widowed 5

87.   What is your highest level of education?

No High School degree 1	High School degree/GED 2	Trade school, some college or associates degree 3	Bachelor degree 4	Masters degree or higher 5

88.   Would you describe your ethnicity as Hispanic or Latino?

YES......1	NO........2

89.   How would you describe your race?

White or Caucasian 1	Black or African American 2	Native American or Alaskan Native 3	Asian or Asian American 4	Native Hawaiian or Pacific Islander 5	Other 6

This is the end. Thank you for completing the survey.

As we said earlier, we would like to pay you $20.00 for taking the time to answer these questions. Would you like the check sent to your home address or somewhere else:
        HOME / ELSE / REFUSED

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[IF ELSE] Please give me the address where we should send the check.

Name _____

Number and Street _____ Apt # _____

City _____ State _____ Zip _____

Would you like be entered into the drawing for one of the two $100 gift certificates?
YES / NO

Thanks again for taking the time to participate in our survey. The $20 check will arrive in about 2 weeks. We will let you know if you have won the drawing within 6 months. Have a good day.

[TIME INTERVIEW ENDED: _____]

INTERVIEW PROTOCOL FOR OWNERS AND MANAGERS

Nonprofit director
Nonprofit manager
For-profit owner
For-profit manager

Introduction
I am working on my doctoral dissertation and am studying the ability of affordable
housing to impact the quality of life of tenants who live there. The goal is to determine
which characteristics contribute to tenant success so that we can advocate for policies that
improve tenants' lives. An essential part of the research is to learn how managers carry
out their various responsibilities. Therefore I have a series of questions relating to
property ownership, development, management functions and supportive services.

Personal background
What is your current position? How many years have you been in that job? How many
years with the company? How many years in management?
What education, certifications and training do you have?

Organizational background
What is your organization's mission?
What is your organization's history?
What other activities is the organization involved in?
How many people work here? What is the total operating budget?

Property characteristics
What is the size of the building? Unit mix? Amenities? Parking?
When was the property developed? Describe: acquisition, rehab, occupancy, new
construction. Total development costs? Total rehab/construction costs? What funding
sources were used?

Structure of management operations
How many properties are managed by the management company? Total units?
How is the management operation organized? Who reports to whom? Org. chart. Who is
on-site?
What management functions are staffed at the property (maintenance, leasing, social
services)? How many people are in each position? If no management is on-site, how
often does the site manager visit the property? How often does the owner come by?
What management functions are located at the office of the management company? How
many?
Do you contract out for any management functions: maintenance, security, bookkeeping,
social services, tenant selection?

Relationship with property owner
Is the management company a separate entity from the property developer/owner?
Third party
How long has the company managed the property? Was it the original manager?
Is there a management contract?
When was the management company hired during the development process?
Third party for nonprofit
How often does the nonprofit director visit the property? To what extent does the director get involved with management decisions or actions? How often?
How is the relationship between the owner and management?
Self manage
To what degree are management functions separated from other activities of the organization?
Does the organization provide management through a subsidiary? A separate division?
Has it always structured its management operations this way? Has it ever used outside managers? How did it make the decision to self-manage?

Resident characteristics
What percent of tenants have children?
What percent of tenants are: White, African American, Latino, Asian, Native American?
What percent have special needs?
What percent were homeless?
What percent were referred by social service agencies?
What percent receive services by social service agencies?
What are the income requirements? What are the actual income levels?
What is the typical vacancy rate?

Tenant selection
How much tenant turnover is there? What are the major reasons: job change, death, eviction, buy home, family change
What is the tenant screening process?

Community building
Does the project have a tenant/resident council?
How well do tenants get along with each other?
How does management communicate with tenants: newsletter, office hours, ad hoc?
Is there a social service coordinator on staff? What are his/her duties?
Detail all social services offered by the agency. What social services are offered on-site (child care, counseling, education)? What social services are provided off-site? How are services funded?
How often does management refer residents to social service agencies? What services are most often involved in such referrals?
Describe any formal contracts for social services with local agencies.
Describe any informal relationships for social services with local nonprofits.
Does management provide programming such as parties, activities, outings?

Neighborhood characteristics
How do residents compare to residents in the surrounding neighborhood (income, race, employment, rent/owner)?
Is this a difficult neighborhood in which to manage property? How does the neighborhood create management issues? How is this neighborhood treated by city agencies: police, trash, streets, schools?
Are there any major security issues? Are residents involved in security?

Asset Management
How often are units inspected? Are there any special maintenance problems?
How are the maintenance staff? How is their relationship with tenants? What is the turnover?
Is there a written set of house rules?
Are there any recurring problems with certain rules?
How often are tenants evicted?
How are rents collected? How often are tenants delinquent on their rent?
What are the property's most serious problems faced by management?

AFFORDABLE RENTAL HOUSING QUALITY OF LIFE SURVEY

Interviewer: _____

Company Name: _____

Respondent's Name: _____

Phone #: _____

Address: _____   City: _____

Development Name: _____

Interview Date: _____   Interview Date: _____

INFORMED CONSENT

Purpose: You are being asked to participate in a research study of affordable rental housing. The purpose of this study is to measure how someone's housing affects their quality of life. The results of this study will be use to write a doctoral dissertation.

Study Procedures: If you agree to participate you will be asked a mix of multiple choice and open-ended questions about your current and previous housing situation. It should take about 30 minutes.

Confidentiality: You will be asked some personal questions but everything you tell us will be confidential and used only for statistical purposes. No personal information will be included in the final report and you cannot be identified in any way. There are no anticipated risks for participating. You can choose whether or not to participate and you may refuse to answer any questions and still participate.

Questions: Questions about this study should be directed to Richard Koenig at 847-508-0418 or by email at richard.koenig@snhu.edu. He is the principal investigator for the study and a doctoral student in Community Economic Development at Southern New Hampshire University.

Consent:
- I have read the above information about the study and understand that I am being asked to complete a survey.
- I understand the researcher will maintain the confidentiality of my name and information.
- I understand that my consent to participate is entirely voluntary.
- I certify that I have read and fully understand the purpose of this research project and its risks and benefits for me as stated above.

APPENDIX C
Survey Matrix

Question	Financial	Physical	Social	Human	Personal
1. Overall, how would you rate your satisfaction with the apartment where you currently live?					4
2. How would you rate the overall physical condition of the building		1			
3. How would you rate the building's security and safety:		2			
4. Overall, how would you rate your current neighborhood as a place to live? Is it...					5
5. Having access to good quality schools				2	
6. Having access to services		5			
7. Being close to friends and relatives			2		
8. Being close to job opportunities				6	
9. Being safe (neighborhood)		2			
10. People are willing to help their neighbors			4		
11. I feel like I am part of my neighborhood			1		
12. Overall how satisfied are you with the management of your building?					3
13. Does the property management company offer services					
14. What types of services do you use					
15. How many bedrooms does your current apartment have		1			
16. When did you move into your current building; what year and month?					
17. Including yourself, how many adults 18 or older live in your apartment:					
18. How many in the apartment are children 17 or younger:					
19. TOTAL					
20. Do you currently receive any government rental assistance such as Section 8?					
21. How much do you currently pay each month for rent?	5				
22. On average, how much do you currently pay each month for utilities					
23. Thinking about how much rent you pay compared to your household income, would you say that paying rent is...	4				
24. Are you interested in buying a home someday?					
25. Why not?					
26. Have you taken any of the following steps to prepare to buy a					

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home					
27. About how often do you volunteer your time in the community such as at church, at a child's school, with a nonprofit, on a board, or other group such as club, sporting event, or art show?			3		
28. About how often do you visit friends or relatives in person or have them come visit you			2		
29. Of the last 4 elections, in how many did you vote?			5		
30. While you have been living here, have you attended job training, a trade school or college?					6
31. While living in this apartment how would you describe your employment history				4	
32. About how many hours do you work for pay in the average week?				4	
33. Does anyone else in your household currently work for pay?					
34. What is your total household income?	1				
35. Thinking about how much income you have now and your household's current expenses, would you say you have	4				
36. Approximately how much money do you have in savings or investments?	2				
37. Thinking about how much savings you have in the bank and your future plans, would you say that you have	4				
38. Do you have a car		6			
39. What is your primary mode of transportation					
40. How has your health been during the past year				1	
41. All things considered, would you say you are happy					2
42. All in all, how do you feel about life right now					1
43. Which of the following best describes your living situation before you moved to your **current** apartment					
44. address					
45. city					
46. state					
47. zip					
48. How many bedrooms did your **previous** place have? _____ bedrooms		1			
49. When did you move-in there?					

50. Including yourself, how many adults 18 or older lived in that apartment:					
51. How many were children age 17 or younger:					
52. TOTAL					
53. Approximately how much was your rent when you moved out to come to your current apartment:	5				
54. On average, how much did you pay then each month for utilities					
55. Thinking about the income you had when you were living at your **previous** place and the rent you had to pay, would you say the rent was	4				
56. Overall, how would you rate your satisfaction with the apartment where you used to live?			`		4
57. The overall physical condition of the building		1			
58. Building security and safety		2			
59. Overall, how would you rate your **previous** neighborhood as a place to live					5
60. Having access to good quality schools				2	
61. Having access to services you need like stores		4			
62. Being close to friends and relatives			2		
63. Being close to job opportunities				4	
64. Being safe		2			
65. People were willing to help their neighbors			1		
66. I felt like I was part of the neighborhood			1		
67. Overall how satisfied were you with that building management?					3
68. Thinking back to when you lived in your previous apartment about how often did you volunteer your time in the community			4		
69. When you lived in your previous apartment about how often did you visit friends or relatives in person or have them come visit you			5		
70. Thinking back to when you lived in your previous apartment how many elections did you vote in the years before you left			5		
71. Did you attend job training, a trade school or college while at your previous housing				5	6

Question					
72. At your previous house, how would you describe your employment history				4	
73. About how many hours do you work for pay in the average week				4	
74. Did anyone else in your household work for pay then?					
75. Thinking back to your previous apartment, what was your total household disposable income	1				
76. Thinking about how much income you had then and your household's expenses then, would you say you had	4				
77. Thinking back to when you moved in to your current apartment, about how much did you have in savings or investments then	2				
78. Thinking about how much savings you had in the bank then and your future plans, would you say that you had	4				
79. Did you have a car when you lived at your previous apartment?		6			
80. What was your primary mode of transportation then:					
81. Thinking back to your previous apartment how would you describe your health while you were living there				1	
82. Thinking about your old apartment would you say that in the year prior to moving you were: happy					2
83. All in all, how did you feel about life right then? Were you satisfied					1
84. What is your birth date					
85. What is your gender					
86. Which of the following best describes your current marital status					
87. What is the highest level of education you have achieved				5	
88. Would you describe your ethnicity as Latino					
89. How would you describe your race					
Count	12	12	12	12	12
1	disposable	conditions	network	health	Selfesteem
2	savings	safety	friends	schools	Happiness
3	wages	location	participation	skills	Manage
4	burden	basic needs	community	employable	Hsg
5	costs	services	political	education	Neighborhd
6		car			