

**THE IMPACT OF COMMUNITY LAND TRUSTS ON GENTRIFICATION**

A Dissertation

by

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## **ABSTRACT**

Gentrification is a shift in an urban community toward wealthier residents or businesses and increasing property values, at the expense of displacement of the poorer residents of the community. This is one of the most widely used concepts in urban planning and development, and has been practically evident in many cities around the world for the past several decades. However, poorer residents who are unable to pay increased rents in a gentrified community may be driven out. A more serious problem than displacement is the removal of affordable housing from the community's building stock.

In this sense, the Community Land Trust (CLT) can be a good way to address negative effects of gentrification. CLTs arose from the concept that land is not a private good but a public asset. The fundamental principle of CLTs is that a community owns and leases lands through a long-term ground lease to individual residents who own their homes located on the land. CLTs are used in the U.S. mainly to provide long-term owner-occupied housing for low income households, and are rapidly disseminated in the U.S. This research aims to assess the impacts of CLTs on gentrification to practically answer the question; "Do CLTs really counteract the negative effects on community caused by gentrification?"

A mixed method research, which uses both quantitative and qualitative methods, is a fundamental structure to get a more holistic view about the research question. The

relationship between CLTs and gentrification is examined through a cross-sectional comparison and a logistic regression in the quantitative approach; how the findings of the quantitative approach are fit for the practical situation is reviewed by the qualitative approach. Findings show that CLTs have a negative relationship with gentrification and suggest that CLTs can address the problems caused by gentrification.

The results of this study offer policy guidelines to the city governments having a plan to introduce CLTs in their jurisdiction, and help community leaders and/or residents know how to improve and stabilize their neighborhoods.

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# **1. INTRODUCTION**

## **1.1 Statement of the Problem**

Gentrification is one of the most widely discussed issues in urban planning and development, and has been a practically evident global phenomenon for several decades. Although there has been significant debate about the definition and characteristics of gentrification, most scholars agree that gentrification is the reinvestment of capital toward an urban center, one seemingly positive result of which is the rehabilitation of neighborhoods from deterioration (Smith, 1979; Smith & LeFaivre, 1984; Smith & Williams, 1986; Glass, 1964). Some scholars, for example, regard gentrification as a positive process such as a renovation, ‘upgrading’ of dwellings (Rose, 1984), and a reversal in major trends toward decline and disinvestments in inner-city neighborhoods (Freeman, 2005). However, more scholars argue that gentrification has more dark sides than bright sides. They define gentrification as the displacement of the working-class by the upper-middle class (Glass, 1964; Nelson, 1988a; Hartman, 1979; Sumka, 1979; Smith, 1979; Smith & LeFaivre, 1984; Smith & Williams, 1986; Rose, 1984; Freeman, 2005; Atkinson, 2000). Because of an increase in housing costs and a displacement of existing populations, some residents of gentrifying neighborhoods resist gentrification. A more serious problem than displacement for them is the removal of affordable housing from the city’s building stock. The great decrease of affordable units can cause a diminishing of housing opportunities for low-income households in gentrified neighborhoods.

Solutions aimed at reducing the less desirable effects of gentrification have focused primarily on the combined efforts of interested parties such as governments, communities, and residents. Local governments, for example, can use housing policy such as rent regulation and measures to stop speculation in urban centers (Wily & Hammel, 2010). Local governments with nonprofit organizations can provide additional affordable housing units into gentrifying areas, and create new job opportunities with business sector like the Chamber of Commerce for incumbent residents. For instance, individual development accounts (IDAs) and programs are used as a way of asset building to increase homeownership of existing population, and Section 8 housing units can retain affordability in urban central area. Community Development Corporations (CDCs) and city government together can provide more affordable housing units (Levy, Comey & Padilla, 2006). However, providing one-time affordable housing units and just dividing land from speculative market are not enough (Davis, 2010). Thus, shared equity homeownership model such as limited equity housing cooperatives (LEHCs), community land trusts (CLTs), and mutual housing associations (MHAs), which mainly use deed restriction and/or ground lease, is necessary (Lees, 2008).

The CLT, a relatively new housing model in the U.S., is one of the methods to address negative effects of gentrification. The CLT model is used in the U.S. mainly to provide long-term owner-occupied housing for low-income households. Since the first CLT, New Communities, Inc. was founded in 1969, CLTs have consistently spread out across the U.S. Today, there are over 240 CLTs in 45 states and the District of Columbia, and other countries have begun to adopt not only the model, but also the concept (Davis,

2010). While most CLTs are non-profit organizations, increasingly, state and city governments have started CLTs as part of their broader housing programs.

CLTs arose from the concept that land is not a private good but a public asset. Based on this concept, the fundamental principle of CLTs is that a community owns and leases land to individual residents who buy an improved structure on the land from CLTs. Typically CLTs acquire land through donation or purchase and lease it through a long-term ground lease to the residents who own their homes located on that land. Moreover, CLTs impose restrictions on resale prices of their units to preserve affordability, and serve as the long-term steward of the land and any improvement on their land (Davis, 2007; Curtin & Bocarsly, 2008; Davis & Jacobus, 2008; Gray, 2008; Davis, 2010).

## **1.2 Significance of this Study**

Although gentrification is a popular concept and a widespread process, empirical research about the relationship between gentrification and housing programs is rare or, if anything, has focused on a certain aspect of gentrification. Many scholars focus on whether gentrification and displacement exist, or on discussion of theoretical issues. The rest of studies are limited to a few practical examples of gentrification in typical American metropolitan cities such as New York and Boston. However, there is no study focused on the relationship between CLTs and gentrification, and there are also few quantitative studies about CLTs or its impacts so far. Therefore, this research seeks to address this lacking evaluation of CLTs' effects on gentrification.

Although there are a variety of documents that show the benefits of CLTs, few researchers have examined the practical impacts of CLTs on their communities. In addition, even fewer studies focus on the relationship between a specific situation and CLTs. However, in a contemporary post-industrial society, both CLTs and gentrification are co-existing, and those two would be overlapped in many cases. The housing units provided by CLTs in gentrified neighborhoods might affect neighborhoods in some way or other. To investigate the relationship between recently rising CLTs and extensively preexisting gentrified neighborhoods is also beneficial to evaluate the effectiveness of CLTs. This study is one of the first empirical studies about the relationship between CLTs and gentrification. In addition, the results of this study might be a significant cornerstone for evaluating the CLT model.

### **1.3 Research Question and Objectives**

Generally speaking, the CLT model is an effective tool for providing affordable housing, stabilizing neighborhoods, and building community assets (Davis, 2010). These three benefits of CLTs and the negative effects of gentrification are apparently related to each other, thus CLTs could be an effective model to address the problems of gentrification. In other words, CLTs could counteract gentrification in three ways: 1) counteract the displacement, 2) facilitate the increase of affordability, and 3) stabilize the speculative increase of property values in gentrified neighborhoods.

Then, do CLTs really counteract the negative effects of on neighborhoods caused by gentrification? Starting from this question, this study aims to assess the impacts of CLTs on gentrification in practice.

#### **1.4 Mixed Approach**

Although a few researchers and practitioners have studied on CLTs with working hypotheses based on literature and experience, those hypotheses were not directly related to the CLTs' impacts on neighborhoods. Moreover, there are few quantitative studies about CLTs so far, thus this study seeks to address lacking quantitative evaluation of CLTs' effects on their neighborhoods.

For the quantitative approach, a comparative cross-sectional study based on the comparison of two group means is employed with the support of the binomial logistic regression analysis. However, although several scholars try to define the CLT model neatly using some features, the diversity of CLTs' structure and operating system makes it difficult to evaluate each CLT under a specific set of criteria. At this point, the findings from the quantitative approach should be complemented by a qualitative approach, which allows us to get more practical and holistic information.

Since the histories of CLTs are relatively short and the number of units provided by CLTs is still small, it is premature to make a judgment about the effectiveness of CLT itself. The most important role of CLTs, to provide long-term affordable housing to residents, cannot be assessed within such a short period, so the problem of CLTs' short history establishes the need to consider a mixed approach. In addition, comparative

study would be one of the effective ways to examine the impacts of CLTs on neighborhoods. The evidences from this research using the mixed method could reveal the actual impacts of CLTs on gentrification from the holistic viewpoint.



## **2. LITERATURE REVIEW**

In this section, theory and practice about both gentrification and CLTs will be described, and the evidence for selecting indices for investigation will be provided through those descriptions.

### **2.1 Gentrification**

#### *2.1.1 Origin of gentrification*

The term ‘gentrification’, first identified by British sociologist Ruth Glass in the “East End of London” (1964), originated in the 1960s in Britain. She introduced the term to describe the invasion of new middle class, urban rehabilitation of built environment, and the subsequent displacement of the working class in London Islington. However, the glaring phenomenon of gentrification began in postwar modern capitalist cities such as Boston, London, Washington D.C., and New York City in the 1950s (Lees et al., 2008). At that time, urban decline or decay were irreversible and inevitable trends despite federal and local programs to revitalize existing urban areas (Nelson, 1988a). Deterioration and distress in urban neighborhoods created “slums” and “blighted areas” in urban cores, thus many of the middle- and upper-income households moved out to suburban communities. This urban process is called suburbanization (Jackson, 1985). Urban decline and neighborhood deterioration in the American cities after the Second World War caused suburbanization, and spreading suburbanization facilitated the advent of gentrification. The initial sign of revitalization appeared in the 1950s, intensified in

the 1960s, and gentrification became a widespread phenomenon in the 1970s in many older cities of America (Smith, 1979).

### *2.1.2 Classical gentrification*

The early stage models of gentrification were predominantly developed in the 1970s and 1980s, and gentrification was widely understood as a housing filtering process (Clay, 1979; Smith, 1979; Lees et al., 2008: 30-34; Naegler, 2012: 30). After the previous residents of convenient inner-city locations moved out toward suburban areas in which have high quality houses and amenities because their buildings decayed, lower income people came into the inner-city neighborhoods instead. When focusing on geographic change, this process was named suburbanization, but was also considered filtering down in the housing market. This classical explanation of gentrification described the causes and process of suburbanization and gentrification as shown below:

In the early 20<sup>th</sup> century, the American suburbs were vacant or slums in most places, but revolutions in modern transportation gave people open access to suburbs. The development of train and car raised the amount of available land for development away from the city center (Jackson, 1985). A principle from the heart of the economic theory states that, as the distance from the city center increases, the marginal cost of transportation slowly rises and the land price quickly falls. As a result, the middle- and upper-class households moved out to suburbs because of more affordable housing costs and less expensive marginal commute costs. Because land was less expensive in suburbs than in cities, they preferred suburbs with lower population densities and lower

transportation costs. In particular, inexpensive and suitable land for building and high wages of the upper middle class stimulated rapid suburbanization. Therefore, many quality single family homes were constructed in suburbs, and only the middle and upper class could attain suburban houses. The construction of new houses in the suburbs and the development of urban transportation encouraged lots of American families to move away from the cities to new residences on the periphery with new services of schools, sewers, utilities, police, and fire departments.

The construction of new houses in the suburbs was a major cause of the decline of the inner-city areas. The upper and middle income families looked for good schools, private space, and personal safety for their family, and the improvement of transportation was so favorable as to make the suburbs accessible to them. Therefore, the housing market of the inner-city was deprived of purchasing power and new investment. Abandonment resulted from drastically insufficient demand and precipitous decline in property values. Those inner-city areas, vacated by upper- and middle-income households, were populated to a lesser degree by Blacks and often physically deteriorated with older housing stock. Most old houses became excluded from services such as electricity, water and/or sewage, and this deterioration led to a vicious cycle of dilapidation.

Federal public housing policy was another major cause of the deterioration of the inner-city in some ways. First, lots of suburbs in the U.S. did not have public housing agencies and did not apply for federal funding for public housing. As a result, low-income housing units did not increase in suburban areas, which have cheaper and more

open land, but increased in the city centers. Second, housing authorities were generally composed of wealthier people, and they did not want a reduction in real estate values. Thus, their policy tended to concentrate public housing in the inner-city rather than in the suburban areas. Third, only neighborhoods with a number of deteriorated units could get assistance for public housing, so suburbs did not have many opportunities to receive such help. Therefore, after the Second World War, the polarization of large American metropolitan areas became so obvious that downtown areas were identified with poverty and danger rather than with attraction and preference (Jackson, 1985).

The inner-city areas to be gentrified were deteriorated and occupied by lower income, often elderly, households. These residential areas were located close to the central business district, and often had dilapidated outer appearance. Numerous houses were abandoned, and shabbily built environment was a common feature of those areas (Beauregard, 1986: 37-38). Moreover, there were dark sides of urbanization such as the slums, the crime, and the anomie in the inner-city areas as well. The ghettos, which are featured as residential segregation, underemployment, substandard housing, disrupted family life, inferior education, and disease, came out in some inner-city areas. The crime such as violence from poor school and decline in marriage also spread out with other negative social effects, and those who were able to leave moved to a better neighborhood on suburbs. McDonald (2007: 222-223) argues that a downhill of a central city involves in the negative social and economic features, and they reinforce each other. The downhill of a part of a central city is caused mainly by a variety of external factors like deindustrialization since 1950s and/or constructing a highway. This situation led again to

suburbanization of both jobs and people with decent income, rising incomes for the middle class that hastened a move to the suburbs.

As a whole, since 1950, many suburban areas absorbed the migrants from the inner-city areas, and their population increased rapidly. The loss in inner-city population caused a decrease in jobs, consumer demand, and a viable tax base to the city governments. Moreover, decline in inner-city area were closely related to a fall in the price of structures and caused to a loss of white middle-class who can be a source of consumer demand, commercial growth, neighborhood stability, and the tax base (Clay, 1979). In this condition, numerous poor black people remained there, and cheaper housing price attracted more poor people in inner-city area. More construction of expressway facilitated the process. The loss of middle class, mostly white households in inner-city area caused to decline again, and this vicious circle repeated in many major cities, which experienced a net loss in white population and net growth in poorer black population.

When the suburbanization and urban center decline were widespread, most suburbanites were anti-urban or, at least, had a fear of cities (Lang, Hughes, & Danielsen, 1997). However, the first group of new comers moved to inner-city because of a demand for cheaper living space and cultural diversity. As more young couples had two full-time wage jobs, they didn't need to live near the job of household's head anymore. They were free to choose locations for different reasons, including being near activity centers, seeking more recreational opportunities, or looking for a cheaper housing costs.

Therefore, they moved into previously distressed urban centers and renovated properties for their own use (Palen & London, 1984).

These early gentrifiers who previously had left inner-city neighborhoods also moved back because of their desire for cultural diversity. According to Clay (1979: 13-15, 19-20), many of them were design professionals or artists who had the skill, time, and ability to undertake extensive rehabilitation. In addition, younger people and/or whites dominated the gentrified neighborhoods. Most gentrifiers were wealthier than the working class who lived in inner-city neighborhoods, and wanted high quality living spaces. Since those financially better-off gentrifiers were willing and able to pay more, rent and land price inflation in their neighborhoods followed. Then, infrastructures and buildings once again fit for the needs of them, and this improved neighborhoods' outer appearance and image attracted more wealthy people into urban centers. In addition, the development of urban entertainment and retail centers draw suburbanites back to the city as well. New groups with even more economic resources than the early gentrifiers came in, and the previous process was repeated. This cycle shows that gentrification is self-enhancing because the different consumer demands of two plainly conceptualized groups make it and decide when the action will occur (Naegler 2012: 30-31). However, in the midst of this process, the displacement of the working class residents who had lived there began to occur.

With regard to classical gentrification theory, gentrification came to be considered as a middle class invasion to the inner-city neighborhood where was in many cases formerly characterized by their leaving. Most gentrifiers were of a higher

educational and economic status, and they embraced cultural diversity. Gentrifiers' invasion caused the displacement of the working class from the inner-city neighborhoods. However, the infrastructure and buildings in inner-city area were renovated, and thus the neighborhoods become attractive to other gentrifiers.

In sum, the main characteristics of this classical gentrification include the inflation of rents and land prices, and the changes in streetscape, building appearance, the population composition, cultural and retail infrastructure, the transformation of rented apartments into owner-occupied dwellings, a changing public perception, as well as the increased privatization of public space (Naegler, 2012:31; Lees et al, 2008: 30-34).

### *2.1.3 Consumption-side theory*

In several decades of research on gentrification, two theories, consumption-side theory and production-side theory, have emerged as primary approaches to gentrification. Each theory has its own explanation about the cause and process of gentrification.

From the perspective of consumption-side theory, gentrification is fundamentally a process of class transformation in urban space. Therefore, researchers on the side of consumption theory focus on the invasion and succession of a neighborhood already occupied by one social class, which is displaced by a higher class. At least, there has been wide agreement that class should be a basis for gentrification research (Hamnett, 1991; Wyly & Hammel, 1991; Lees et al, 2008). Butler (2007) and Hamnett (2002)

related gentrification with the appearance of the new middle class who are formed by national and international economic change. Ley (1996) emphasized the role of the creative class who are mainly artists and regards them as “special members of the middle class”. Moreover, some scholars regarded gentrification as an invasion (moving in) of ‘yuppies’ (Short, 1989: 174), in spite of some criticisms about a link between yuppies and gentrification (Smith, 1996: 104; Beauregard, 1990: 856-857), or ‘middle class gentrifiers’ (Naegler, 2012).

Several scholars regarded gentrification as the social and spatial reflection of changing middle class consumer demands in terms of cultural values and residential preferences in the transition from an industrial to a postindustrial society (Hamnett, 2003a: 2402; Lees et al., 2008: 89-90; Naegler, 2012: 31-32; Krase, 2012). In particular, Ley (1996) regarded post-industrialization as a driving force behind the gentrification process, and Hamnett (1991) focused on professionalization. They pointed out industrial and occupational structure change in contemporary post-industrial cities (Lees et al., 2008; Naegler, 2012), which means the decrease of employment in manufacturing industry and the increase in the service based industry. This change was related to the mass transition from manual working class to white-collar professionals, managers and technical workers in the financial, business, cultural, and service industries. Other contributing factors included changes in life style, demographic and occupational class, and housing market structure in inner city areas (Hamnett, 2003a: 2402). Thus, this change of urban economy is associated with the character and location of work, occupational class structure, life styles and the structure of the housing market.



Therefore, in consumption side theory, gentrification is defined as a middle-class movement into the urban core causing poor residents to leave. As a result, the transformation of class composition in gentrified area causes changes in cultural orientation and preferences. This definition focuses more on the displacement of the working class by middle- and upper-income professional households (Beauregard, 1986; Ley, 1996; Redfern, 2003; Lee et al., 2008; Brown-Saracino, 2009). In other words, consumption-side theory focuses more on a gentrifying ‘agent’ than on gentrified houses. People, including “gentry” or “gentrifiers”, are allocated across the housing stock (Redfern, 2003).

However, while much of the literature supported the production of new middle-class gentrifiers and the cause of gentrification, some criticisms were raised (Lees et al., 2008). The excessive emphasis on middle-class gentrifiers who are the beneficiary group in gentrified neighborhoods shifted attention away from the negative effects of gentrification. In the same way, excessive emphasis on the change to a post-industrial industry forced researchers to ignore current industrial land use and the remaining working class in gentrified neighborhoods (Curran, 2004). In addition, the consumption-side theory cannot correctly account for the resistance to gentrification, which actually occurred in many major cities, because standardization of diverse gentrifiers in a few groups to a few groups oversimplified the complexity of gentrification. Therefore, this theory cannot identify who is the target of the resistance.

#### *2.1.4 Production-side theory*

From the perspective of production-side theory, although one of the most widely used concepts, gentrification cannot be the only reason for the process of upper-status groups replacing lower-status groups in inner-city neighborhoods that had previously experienced decline. In contrast to consumption-side theory, which is more focused on cultural orientation and preferences, the process of gentrification is caused by the changing industrial structure from an industrial to a post-industrial economy in production-side theory.

In this sense, gentrification is originated by economic factors rather than by social and cultural factors, which are generated by consumer choices and house filtering. In other words, although gentrification is caused by diverse and complex factors, the capital based on capitalist property markets plays the most crucial role in gentrification process (Smith, 1996:51-53; Lees et al., 2008: 73; Naegler, 2012: 34). Thus, Smith (1979) defines gentrification as a back-to-the city movement of capital rather than people, and introduced the economic perspective to gentrification research fields. The move-in of young, wealthy, professional, upper- and middle-class groups into the urban core increased new investments in distressed urban areas, and thus old neighborhoods were replaced by new houses and roads. That is, gentrification is a visible urban process because the built environment and structures obviously change into new urban properties in the process.

One of the most influential explanations in production-side theory is Neil Smith's rent gap theory (Lees et al., 2008). Smith (1979: 545) pointed out 'rent gap', the

disparity between an actual rent – or a capitalized ground rent - and a potential ground rent level, as a major cause of gentrification. The potential ground rent is the maximum rent from the assumption of optimal, highest and best land use, and thus, almost always increases steadily over time in normal conditions of real estate markets. In addition, the potential rent reflects the most profitable condition of using land and its surrounding structures (Lees et al., 2008: 53; Naegler, 2012: 35). On the other hand, the capitalized ground rent is the actual rent for present land use, becoming smaller as time goes on due to increasing costs of repair and maintenance. That is, the value of structures is decreased with aging and deterioration (Lees et al., 2008: 53). Therefore, the rent gap is highly important in terms of the profitability of reinvestment in inner-city structures (Smith, 1996: 62-65; Naegler, 2012: 35).

Private agents want to gain the maximum profit from their investment in modern capitalist market. Similarly, in the real estate market, profit-oriented landowners, developers and investors try to capitalize the potential ground rent as far as possible in order to maximize their profit. Although technology development or changes of consumer preference could slow down the devaluation of structures on the land, it is almost impossible to fully capitalize the potential ground rent because a physical decay of buildings is always ongoing. As a result, the gap between the potential ground rent and the capitalized ground rent will become larger, and thus, the disinvestment in the building is the most likely outcome (Smith, 1979). The results of that disinvestment could be under-maintenance, decay and abandonment of structures in many inner-city neighborhoods. In this condition, as a form of collective social action, capital flows to

where the profit is greatest, and thus, moves to suburbs because of continual depreciation of inner-city properties which leads to an extension of the rent gap.

In American history, the depreciation of capital in inner-city neighborhoods along with suburbanization and withdrawal of capital produced the rent gap, and then, when the rent gap grew enough, capital flowed back into the inner-city neighborhoods. This cycle is the nature of gentrification and can be captured with the present land use. The key issue of rent gap theory is the structure of the land and property market and its financing (Hamnett, 2003a).

When capital investment moves into the place that has an enough rent gap to get more profits, redevelopment in inner-city areas might be initiated in order to challenge the profit available elsewhere. This reinvestment leads to the rehabilitation of structures or improvements on the land, so the sale price will be increased and more profit can be available (Smith, 1996: 67-70). Where the rent gap is greatest and the largest profits to developers or investors are available, gentrification can be initiated in a given neighborhood by several different actors in the land and housing market (Smith, 1979). As gentrification proceeds in a given neighborhood, the rent gap will become smaller due to capitalization of the potential ground rent, and another cycle of depreciation and reinvestment will be initiated (Smith, 1996: 67-70). In addition, the 'rent gap' is not generated by individual consumers' decisions, but by collective social action at the neighborhood level.

However, the rent gap theory is also criticized due to the existence of many exceptional examples in the world. Furthermore, the theory focuses only on production

side, and ignores the role of reproduction and consumption in gentrification. The idealistic character of the theory is another criticism (Beauregard, 1986:39).

As illustrated in the previous two sub-sections, two principal approaches for explaining gentrification found in a variety of literature were consumption-side and production-side approach. Compared to consumption-side theory, production-side theory is more economic rather than cultural. In sum, gentrification has a variety of aspects and it is hard to define it according to one perspective.

#### *2.1.5 Evolving perspectives for gentrification*

Based on two major approaches, which were described in the previous sub-sections, a variety of explanations to define gentrification have been developed as time goes on. During the economic crisis of the early 1990s, some scholars insisted that a new ‘post-gentrification era’ was emerging, which means the end of gentrification process around the world (Badcock, 1995; Lees & Bondi, 1995; Bourne, 1993). However, after the global recession in the late 1990s ended, growing interests in the reappraisal of gentrification caused diverse derivatives (Lees, 2000).

The resistance to gentrification is one of the derivatives. In this sense, gentrification does not only relate to the space change caused by economic reasons and/or demographic change, but also to a danger to identity, lifestyle, and status, inducing a resistance from incumbent residents (Redfern, 2003: 2361; Naegler, 2012: 42). The resistances in many cities around the world eventually emerged out of gentrification’s inherent threat to identity of incumbent residents and exclusion. The

identity is the feeling of belonging to a place, and subjectively experienced belonging to a certain group, and gentrification always constitutes a *struggle over identity*, which is enacted both on physical and non-physical level (Redfern, 2003; Ley, 2003: 2533; Naegler, 2012: 41). According to Redfern (2003), the battle for identity seems to be eventually won by gentrifiers who have either higher economic or cultural resources.

‘Rural gentrification’ is shown in several studies from the U.K. and the U.S. (Darling, 2005; Ghose, 2004). While gentrification is widely viewed as an urban phenomenon, similar dynamics also can be found in nonurban nature. According to Darling (2005), rural gentrification includes changes in class structure, housing stock composition, and capital accumulation in agriculture and rural industry. These characteristics are closely related to urban phenomenon except occurring in suburban or exurban areas. Smith & Philips (2001) paid attention to the demand of rural gentrifiers for green space, and termed the process ‘greentrification’. In addition, Smith & Graves (2005) studied gentrification in the mid-sized city, and asserted that gentrification is different by scale and context, and not only occurs in metropolitan cities but also occurs across national borders. However, such gentrifiers also had many similar characteristics and reasons to move into rural gentrified areas with urban gentrifiers. Therefore, rural gentrification provides strong grounds for this research that gentrification can occur anywhere regardless of urbanization of the area.

‘New-build gentrification’ is suggested by some cases from Vancouver, Canada, and Newcastle and London in the U.K. (Lees et al., 2008). Although most scholars agree with new-build gentrification, how to see the new-build development on empty land is a

debatable issue in terms of identifying ‘new-build gentrification’. Many researchers consider new build development as gentrification because a new build development causes displacement, albeit indirect and/or sociocultural, in-movers are the urban new middle classes, and capital is reinvested in disinvested areas. However, a few oppose them because no incumbent resident means no displacement happening, no restoration of old houses by individuals exists, and ultimately, new build development is a different version of urban living (Davidson & Lees, 2005).

‘Super-gentrification’ is another form of evolving concept explaining gentrification. This is a gentrification that occurs in neighborhoods that have already been gentrified, and ‘super’ means a higher level as well. A gentry in this gentrification is mainly composed of financial engineers who are globally connected, and a higher financial and economical investment come into neighborhoods (Lees et al., 2008). Thus, ‘financification’ is another title of this gentrification, and such gentrification can be found in a few global metropolitan cities like London and New York (Lees, 2003).

Contemporary gentrification is largely affected by neoliberalism and globalization. Because of the dominant influence of neoliberalism, which favors unimpeded trade and is characterized as deregulation, commercialization, privatization, public-private partnership, and the downsizing of governments’ role in social welfare and/or markets (Smith, 2002), the role of government has been transformed to attract new investments in their jurisdictions in the midst of harsh economic competition among cities or states. Many city governments see gentrification as a positive one and more focus on supporting capital market flow rather than addressing problems from

gentrification. In addition, globalization reveals the importance of ‘a geography of gentrification’, which means the process is different in different places, and this concept works on a number of different levels (Lees et al., 2008). The context, time, and space become critical factors to see gentrification correctly, and gentrifiers are seen to be the carriers of global capital flow. Contemporary gentrification is a global phenomenon, and a number of different geographical contexts in which gentrification has been occurring should be considered for a more exact understanding of it.

The recent evolving perspectives for gentrification shows the trend of broad and more open definition of gentrification and the transformation toward a variety of views on how to see the processes and causes of gentrification. Moreover, today gentrification is not an exclusive possession of North America, Europe, or Oceania, but rather is much broader phenomenon around the world. Therefore, both more broad perspective and more specific investigation depending on location are needed to understand current gentrification better.

#### *2.1.6 Definition of gentrification*

The previous explanations of gentrification, which include classical, production-side, and consumption-side approach, still have meaningful contributions to understand gentrification better (Lees et al., 2008: 192). The causes of gentrification led to a fierce debate between proponents of supply-side such as Neil Smith and those of demand-side



such as David Ley (Bailey & Robertson, 1997: 563)<sup>1</sup>. The proponents of supply-side explored gentrification as a result of capitalism, and focused on a process of flow of capital, which is mainly about developers, landlords, and investment from the perspective of class (Smith, 1979; Smith & LeFavre, 1984). However, according to the proponents of demand-side, from 1970s to the early 1980s, numerous empirical assessments and case studies of gentrification focusing on changes in the built environment over time had failed to explain how gentrification occurs (Beauregard, 1986: 37). They criticized supply-side theorists, and explained gentrification focusing on the forces that created the gentry and led to gentrification (Ley, 1996; Redfern, 2003). Clay (1979: 6) argued that gentrification is the resettlement of professional and upper middle class home owners in city neighborhoods, so revitalized population change is more important than physical change in gentrification.

However, dominant debate for gentrification since the early 1990s was associated with the inquiry into a synthesis between consumption and production-side explanation (Lees, 2000; Hamnett, 1991; Ley, 1996). These two sides of explanations have to be seen as complementary rather than conflicting because they tried to explain the same phenomenon in different ways. Whereas the production-side theory assists to understand how physical changes in gentrified areas occurred using the logic of 'rent gap', the consumption-side theory focuses on the gentrifiers and their cultural attributes. For instance, Wyly & Hammel (1999) observed the resurgence of gentrification after

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<sup>1</sup> Supply versus demand, economics versus culture and/or production versus consumption refer to the same meaning (Lees, 2000).

economic recession, and considered both class turnover and capital reinvestment as main traits of gentrification.

The perspectives for gentrifiers can be debatable as well. First gentrifiers did not need schools, and desired to live in the city close to their jobs and live an urban life style, supported local retail shops and services, therefore they contributed to local tax base. They were considered urban pioneers who take on the risk of deteriorated inner-city space for themselves and regenerate it by their own assets and ability (Beuregard, 1986: 36). They are typically nontraditional households that are couples with later marriages, fewer children per family, gay couples, childless marriages, non-married couples, and singles (Lang et al., 1997). They are urban and professional managerial group, but several scholars did not like them with saying that gentrification cater to new middle class (Lees, 2000; Smith, 1996; Carpenter & Lees, 1995). Although diverse arguments for gentrifiers have been existed, one prominent identifier of gentrification is a rise of gentrifiers who have more educational attainment and income (Redfern 2003).

Gentrification is basically identified as ‘fit for purpose’ in defining, describing, and understanding the changing associations between people and places in a series of situations across the world (Butler, 2007). Whereas neighborhood revitalization is a similar concept, it has to be identified by comparing gentrification to make the concept of gentrification clear. Neighborhood revitalization involves social mobility without spatial mobility (Palen & London, 1984) and the two distinct processes of “incumbent upgrading” and “gentrification” (Clay, 1979). Furthermore, many scholars have defined gentrification with variation as they needed. Smith (1979) argued that gentrification is a

back to the city movement, and one of capital rather than people from the perspective of production-side theory. Davidson (2011) framed gentrification as a class-based process which includes macro social change for individuals and social groups, identity and community (re)construction, and class conflict and displacement. Nevarez (2012) said that gentrification is an improvement of derelict and abandoned areas including housing stocks and public spaces, and mainly happens in the inner city.

There have been many disagreements about the concept of gentrification. Beauregard (1986) considered the gentrification as a chaotic and complex phenomenon, and said that there was no single theory of a variant gentrification process. Rose (1984) and Davidson (2011) also thought that gentrification is ‘fuzzy’ and ‘chaotic’, and it can have a complex use. Moreover, Davidson (2011) insisted that there is an ontological disagreement over what gentrification is. Freeman (2005) considered gentrification as a positive one. He insisted that gentrification induces poverty deconcentration, lower turnover rates, and greater residential satisfaction and hence less motivation to move; in addition, there is no evidence of causal relationship between gentrification and displacement.

Although there are a variety of debates and definitions, there are common themes as well. Several scholars thought of the characteristics of gentrification as a converting of a working class area into middle-class neighborhoods (Smith, 1979; Smith & Williams, 1986) and the replacement of lower income residents of a neighborhood with inhabitants of a higher income and socioeconomic standing (Rose, 1984). Others pointed out that it could be considered a rehabilitation of the housing stock of working-class

inner-city neighborhoods (Smith, 1979; Smith & LeFaivre, 1984; Smith & Williams, 1986; Glass, 1964), and a renovation and ‘upgrading’ of dwellings (Rose, 1984). The common features in these different definitions are a reversal in major trends toward decline and disinvestments in inner-city neighborhoods (Freeman, 2005), a downward filtering of neighborhoods and housing stock (Nelson, 1988a), and displacement (Hartman, 1979; Sumka, 1979; Smith & LeFaivre, 1984; Atkinson, 2000). Furthermore, according to many scholars, it is not just a physical phenomenon or a spatial restructuring, but also a social, cultural, political, economic, and institutional one (Lees et al., 2008; Smith & LeFaivre, 1984; Smith & Williams, 1986; Bourne, 1993; Zukin, 1987). In addition, it is an international phenomenon occurring simultaneously in many cities during a specific period of capitalism (Smith & LeFaivre, 1984), and this phenomenon was replicated among different global cities due to general economic and cultural patterns of globalization (Nevarez, 2012).

All in all, the above debate on definition of gentrification shows the need for a broader and more open definition. Clark (2005) argued for a broader definition of gentrification than narrow, which render the concept genuinely chaotic, and suggested ‘elastic yet targeted’ definition for gentrification. Because of its highly diverse dynamics around the world, it is better to more focusing on actual phases and impacts of gentrification with less definitional deliberation (Lees et al., 2008).

The operational definition of gentrification in this study comes from common and fundamental characteristics that have been discussed actively up to date. The definition of gentrification in this research is as follows: Although one of the major

features of gentrification is a capital reinvestment toward an urban core, gentrification is a changing class of residents from working-class to upper-middle class in that area that could cause the displacement of the existing working-class. Obviously, gentrification has its own positive effects like improved landscape, but displacement of incumbent residents is a prominent drawback. Although it is very hard to define who are gentrifiers and where gentrification occurs because of different time, space and context of contemporary gentrification, even rough definitions for them are needed to frame gentrification for the study. Gentrifiers who move into the area are composed of diverse groups including those have professional jobs, artists, and mainly wealthier people than previous residents, and gentrification can be occurred at any place regardless of whether in urban area or not with a variety of distinct forms.

### *2.1.7 Neighborhood effects of gentrification*

Lang (1982) suggested that many of the costs and benefits associated with gentrification can only be interpreted in relation to the viewpoints of the particular stakeholder involved. For example, rises in property values may be good for owners but bad for renters who are usually poorer households trying to purchase houses in the area. In addition, higher property value can cause too large burden of property tax to poorer home-owners in the area as well. Likewise, gentrification of one neighborhood can also have price-shadowing<sup>2</sup> effects and/or other policy effects on surrounding neighborhoods.

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<sup>2</sup> increasing rents and prices in adjacent areas

Shaw (2000) found that gentrification in one area accelerated the decline of each adjacent poor area's reputation.

Atkinson (2004) attempted to identify the range of costs and benefits associated with the process through a systematic review of literature published in English on gentrification. Table 2-1 shows the findings of the identified research outputs summarized according to an analysis of the costs and benefits of gentrification.

**Table 2-1. Summary on neighborhood impacts of gentrification**

Positive	Negative
	<b>Displacement through rent/price increases</b>
Stabilization of declining areas	Community resentment and conflict
	Secondary psychological costs of displacement
Increased property values	<b>Loss of affordable housing</b>
	<b>Unsustainable speculative property price increases</b>
	Increased cost and changes to local services
Reduced vacancy rates	Homelessness
Increased local fiscal revenues	Greater draw on local spending through lobbying by middle-class groups
Encouragement and increased viability of further development	Commercial/industrial displacement
Reduction of suburban sprawl	Displacement and housing demand pressures on surrounding poor areas
Rehabilitation of property both with & without state sponsorship	Under-occupancy and population loss to gentrified areas
Increased social mix	Loss of social diversity (from socially disparate to rich ghettos)

Source: Restructured from Atkinson (2004)

One of the common phenomena of gentrification is the moving-in of gentry accompanied by a public investment of funds and the moving-out of the working class from a traditional central city area (Brown-Saracino, 2009; Hamnett, 2003b). Gentry are typically young, professional and wealthy people, and they bring money into city center when they move in. Beside their own money, local governments try to improve infrastructure for development of the declined city center or from demand of newly moved gentry. Therefore, gentrification is supported by public investment preceding or following the moving-in of the gentry. Furthermore, from the viewpoint of the consumption-side theory, Freeman & Braconi (2004) simply defined gentrification as a dramatic shift in demographic composition toward better educated and more affluent residents. Most notably, gentrification breeds rising housing costs and infrastructure transformations inside cities geared toward gentry (Brown-Saracino, 2009; Powell & Spencer, 2002).

The first major negative effect is the displacement of incumbent residents, which rendered a fierce debate among researchers. For some researchers like Freeman (2005), displacement does not exist or is not the problem from gentrification. Moreover, some researchers pointed out the difficulty in measuring displacement (Atkinson, 2000; Newman & Wyly, 2006). On the other hand, more researchers asserted that gentrification causes direct displacement, and moreover, gentrification is characterized as displacement and injustice (Smith, 1996). Even though there is not necessarily agreement on the severity and extent of displacement (Sumka, 1979), displacement is

undoubtedly existing in gentrified neighborhoods (Clay, 1979: 31-32; Slater, 2006; Angotti, 2012).

Gentrification forces many longtime residents and businesses to be displaced because of skyrocketing land prices and rents. The newcomers are much wealthier and more powerful people, and monetary investments to improve physical environment are followed them. Thus, displacement causes several subsequent effects such as the destruction of the community and the loss of place or the precious spirit of the neighborhood (Betancur, 2002; Abu-Lughod, 1994). It also imposes dislocations and conflicts on communities, and the real tragedy of gentrification is not just displacement *per se*, but community disintegration caused by wiping out the collective memory of places (Smith, 1996; Rose, 1996; Betancur, 2011; Angotti, 2012). Other criticisms mention the disappearance of small businesses and changes in established neighborhood identities (Brown-Saracino, 2004). Critics think that those drawbacks make gentrification efforts a poor strategy for urban revitalization. Thus, Angotti (2012) said, “Gentrification is not place-making but place-taking.”

The second major negative effect of gentrification is loss of affordable housing. Some researchers considered this negative effect as an important issue. Zukin (1987) argued that the general problem of gentrification is housing rather than displacement. Moreover, Betancur (2002; 2011) insisted that the most traumatic aspect is perhaps the disappearance of affordable housing units that is crucial for low-income, immigrant, and minority communities without any compensation.



Unsustainable speculative property price increase is the third primary negative effect of gentrification. Quite simply, in gentrified neighborhoods, rich people move in, and poor people move out, then rents go up (Lees et al., 2008). Rich people are more capable of institutional resistance in neighborhoods with speculative boom. Thus, actually in the process of gentrification, all neighborhoods are subject to potential threats from the rent increase process (Logan & Molotch, 1987). Even researchers who have positive attitudes toward gentrification point out the inflation of housing prices in gentrifying neighborhoods as a chief drawback of gentrification, while not admitting displacement and loss of affordable housing as problems (Freeman, 2005).

#### *2.1.8 Strategies for negative effects of gentrification*

In response to the negative effects of gentrification, some researchers suggested strategies to reduce such an effects. Even though three main drawbacks of gentrification are explored, strategies to reduce them are essentially intertwined together. In other words, in order to prevent displacement of incumbent residents, both providing affordable housing and building community assets are needed together. Thus, most following strategies are all about three main problems of gentrification.

The first option to be able to use is finding solutions to deal with housing affordability. In this strategy, more affordable housing need to be produced and provided into gentrified neighborhoods. Whereas the roles of governments, nonprofit organizations, and community-based organizations are all necessary, the role of government is the most important from the perspective of policy makers. Governments

should motivate entities to build affordable housing using inclusionary zoning regulations. Retaining affordable housing is also an important strategy to mitigate displacement of residents. It includes assisting residents with home improvement and targeting policy on rental units (Levy et al., 2012). Other methods are to extend rent control, anti-speculation taxes, eviction controls, and an adequate financing of public housing to support low income housing (Bernt, 2012). The role of planners and policy makers are also emphasized, and increased public intervention to address displacement is needed (Freeman, 2005; Henig, 1980). However, different from generally expected, social mix is not only impossible way to use but also not a solution for gentrification (Bridge et al., 2012).

The second option is building community assets. Community assets refer to not only physical assets like monetary resources and public infrastructure but also nonphysical assets like sense of belonging and quality of network among community residents (Green & Haines, 2002; Kretzmann & McKnight, 1993). It is important to increase individual's assets in order to increase ability to address housing and other needs, thus individual development accounts (IDAs) and programs to increase homeownership are needed. Also local government involvement and leadership is critical to do the programs, and community involvement, for example, residents' participation and democratic process of decision making, is important to build community assets as well (Levy et al., 2012). Providing more market-rate housing is another strategy for more housing options in neighborhoods, and maximizing public

assets and education for residents are also needed to make community stronger (Kennedy & Loenard, 2001).

Although local governments or communities have to develop a holistic approach including solutions for employment and earnings of their residents to addressing gentrification, Defilippis (2004) suggested several alternative strategies in housing market. Those are Limited-Equity Housing Co-operatives, Mutual Housing Associations, and CLTs. These are non-profit housing that the housing units have been excluded from market and are owned collectively. He argues that the housing units can be protected from disinvestment or depreciation because they are no longer market goods, thus it is possible to reduce displacement and loss of affordable housing caused from gentrification. Furthermore, in particular, CLTs can assist build community assets by its own character that facilitates residents' participation in decision making process and increases home ownership. In sum, researchers suggested production and preservation of affordable housing, community asset building, and government intervention as main tools to reduce drawbacks of gentrification, and CLTs were recommended as one of the main strategies.

## **2.2 Community Land Trusts**

### *2.2.1 Background of CLTs*

Affordable housing is a conventional and multifaceted issue. Housing policy in the U.S. has been mainly focused on the issue, and federal, state, and local governments have eagerly tried to address the problem over times. Since low-income housing is an

undeniably high level of necessity, enormous funds have been spent in the form of subsidies to provide and maintain affordable housing units so far. However, most cases have shown that those subsidies were not retained in neighborhoods for a long time.

CLTs can provide a solution for a dearth of sustainable subsidy retention. The most common legal mechanism used by CLTs is the ground lease model with deed restriction approach. CLT homes that are either acquired with the land or built by the CLT organization require that the homeowner live in the home as their primary residence. In this mechanism, the land is owned by the community and leased for private use, and a leaseholder –a private user and owner occupied resident- owns the buildings on the land with resale restriction. Thus, a leaseholder takes the appreciation of building price albeit it is restricted, and this is a form of sharing their appreciation via resale price limits, while the appreciation of land price reverts to the community.

This process enables subsidy retention or subsidy recapture in neighborhoods, and thus initial subsidy becomes permanently locked in neighborhoods. Furthermore, more CLTs have focused on the role as stewards rather than developers. Therefore, CLTs can provide houses that are affordable for generations to come with subsidy retention.

Since the first CLT, New Communities, Inc. was established in 1969, the number of CLTs across the country grew modestly for two decades. During that period, a number of CLTs were established by private activists or organizations (Curtin & Bocarsly, 2008). From the 1980s, even though CLTs are dependent on the cycle of the real estate market, an increasing number of CLTs was initiated or supported by local and

state governments. First and foremost, numerous city and county governments become more interested in CLTs because municipalities are granting great subsidies to low-income households in order to maintain housing affordability in their jurisdiction. Furthermore, more municipal officials want to make sure that affordable homes will not be lost as a result of inclusionary zoning, incentive zoning, and other similar programs.<sup>3</sup>

CLTs had initially been successfully started only in rural settings. The first inner-city CLT was the Community Land Cooperative of Cincinnati (CLCC), which was founded in 1980. This inner-city CLT was started to combat gentrification by removing land from a speculative market in a low-income, African-American neighborhood in Cincinnati (Curtin & Bocarsly, 2008; Davis, 2010). In addition, while 30 years ago, even 20 years ago, almost all CLTs worked in a single neighborhood or in a single small town, today we have CLTs that span multiple neighborhoods, an entire city, or an entire county or metropolitan region.

### *2.2.2 Definition of the CLT model*

A variety of sources including academic literature and internet documents provide the information about CLTs in the United States. Several academic documents give a general overview of a CLT model, but lots of those documents include the authors' own definition of CLT model and insufficient discussion. In other words, there

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<sup>3</sup> National Study of Community Land Trusts (2007), which has analyzed the results of a survey carried out in 2006 of 186 CLTs known to exist at that time, shows that the support of local governments and municipalities plays a growing role in the formation of CLTs recently.

is an analysis of CLTs' concepts in some of the academic literature about housing, but nowhere in peer-reviewed articles is there synthesis of the CLT literature (Gray, 2008).

Defining the CLT model is important because its impact can change depending on the definitions or the purposes of CLT model. Despite the various definitions of CLT model across the U.S., they can't compare to the amount of discussion about gentrification among scholars. Thus, it is difficult to define CLTs across the U.S. in a few words.

However, in 1992 Congress developed a definition that has five provisions including regulation of the organization's membership and board of directors.<sup>4</sup> This definition describes CLT as a non-profit organization established to acquire land, to transfer ownership of homes to the lessees, and to retain the price of affordable homes. Thus, typically a CLT is a non-profit, tax-exempt 501(c)(3) corporation that is created to preserve land for the benefit of the community and low-income households (Curtin & Bocarsly, 2008). However, some CLTs are programs of local governments or other nonprofit organizations, and recently, more CLTs have been established in relation to municipal support (Curtin & Bocarsly, 2008; Davis & Jacobus, 2008).

The basic approach of every CLT model is as follows: leasing the land, selling the structural improvements, regulating their occupancy and use, and capping the price for which this owner-occupied housing may be resold. In other words, the CLT owns the land, while individuals or families usually own the buildings, which are usually homes.

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<sup>4</sup> U.S. Congress created an official definition of a CLT on October 5, 1992. See Appendix 1.

The CLT leases the land to the homeowner, usually renewable for 99 years, allowing members and their descendants to live there as long as they wish (Davis, 2010).

The main purpose of CLTs is to provide long-term affordability to people. In addition, CLTs have many common aspects with other strategies for providing affordable housing. A major role of the CLT model is related to the housing function, and CLTs are mainly serving moderate and low-income families. These two features make the CLT model attractive to many local governments as a good strategy for providing affordable housing in their neighborhoods. In addition, the sub-prime mortgage crisis in the U.S. that surfaced as a much bigger global financial and economic crisis in 2008 also highlights the importance of having measures of long-term housing affordability (Abeysinghe & Gu, 2011). Therefore, many researchers think at least that the most critical function of CLT is to preserve housing affordability (Curtin, 2008; Angotti, 2007; Gray, 2008; Towey, 2009; Paterson & Dunn, 2009; Hubbard, 2009).

However, there are a number of diverse CLTs across the country. This diversity of CLTs' structure and operating system makes it difficult to describe each CLT under a specific set of criteria. It was reported at the 2006 National CLT Network meeting that only 70% of CLTs met the federal definition<sup>5</sup> of a CLT. For instance, while some CLTs are programs within other nonprofit organizations, others are supported by local governments. In this situation, Davis (2007) suggests ten key features of the classic CLT model as follows:

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<sup>5</sup> See Appendix 1. Federal Definition of a Community Land Trusts (1992)

1. *Nonprofit, tax-exempt corporation.*
2. *Dual ownership.*
3. *Leased land.*
4. *Perpetual affordability.*
5. *Perpetual responsibility.*
  - *CLT has responsibility for managing and repairing their structures.*
6. *Open, place-based membership.*
7. *Community control.*
8. *Tripartite governance.*
  - *The board of directors of CLT has three parts, each with an equal number of seats. One-third represents CLT residents,; one-third represents the residents of the surrounding community who do not lease CLT land; and one-third is made up of public officials, local funders, nonprofit providers of housing or social services, and other individuals presumed to speak for the public interest.*
9. *Expansionist program.*
10. *Flexible development.*
  - *Many CLTs do development with their own staff, while others delegate this responsibility to partners. Some focus on a single type and tenure of housing.*

Considering the above discussion and the common features in the basic CLT model, the operational definition of the CLT model for this study is as follows: They are not sponsored by a for-profit organization and are dual owned. The CLT owns the land, while individuals or families usually own the buildings or rarely pay rents for the buildings, which are usually homes. The CLT leases the land to the homeowner, usually renewable for 99 years, allowing members and their descendants to live there as long as they wish. The CLT land lease contains a resale restriction by a specific formula for perpetual affordability. They have open and place-based membership, and their board of directors includes residents of CLT units, other community residents, and public representatives for community control by governance.



### *2.2.3 Main benefits of CLTs*

The primary purpose of CLT model is to provide affordable housing to middle- and low-income households for a long time. However, CLTs also have some additional advantages for their own neighborhoods and surrounding areas. There are several general benefits of CLTs are as follows: First, CLTs can preserve affordability in their neighborhoods. What distinguishes the CLT model from other housing models is that it preserves affordability over the long term (99 years) (Curtin, 2008). Second, CLTs help retain community wealth and increase public subsidies value in them. Third, CLTs can enhance residential or neighborhood stability. Fourth, CLTs can expand homeownership, especially low-income accessibility to homeownership. Fifth, CLTs facilitate creation of individual wealth of their residents. Finally, CLTs can enable residential mobility of lower income households.

In addition, the CLT model is one of the shared equity homeownership models, which refer to any program that requires home buyers who get assistance in purchasing their homes to share housing price appreciation for the next home buyers (Rohe & Watson, 2007). Examining different types of shared equity homeownership such as condominiums, limited equity cooperatives, CLTs and price restricted houses holistically may provide additional insights on CLTs' benefits (Rohe et al., 2001). Shared equity homeownership models assist wealth building of their residents and provide stability in their neighborhoods, while preserving affordable housing units on behalf of community (Koschinsky, 1998). Like the basic concept of the CLT model, shared equity homeownership divides the traditional rights for property ownership into two different

rights; the right to own and to use. Two principles such as permanent affordability and long-term stewardship distinguish shared equity properties from other forms of ownership (Temkin et al., 2010; Ehlenz, 2014). Thus, we need to see the performance of the shared equity homeownership models as follows; Affordability, Stability, Wealth, Involvement, Improvement.

Based on the previous discussion, three main benefits of CLTs are suggested as follows: to preserve housing affordability, to stabilize neighborhoods, and to build community assets. The basic concept of CLTs is that land should not be a private possession but a common thing primarily owned by community. The separation in ownership of land and house, allows future buyers to purchase the house only. The trust continues to own the land and lease the land to the next homeowner. In this way, the community is continually able to maintain a stock of affordable housing. This preservation of affordable housing units is the first main benefit of CLTs and also a primary purpose of CLTs at the same time. In addition, when we consider that general market land prices are skyrocketing, several strategies are needed to address the problem. Because land speculation tends to raise property values, removing real estate such as houses, buildings, and lands from the market stabilizes property values. That removal could prevent the economic eviction of the community's poorer residents from displacement.

The second main benefit of CLTs is to stabilize neighborhoods. CLTs can enhance neighborhood stability in terms of both individual and community dimension. Individually, CLTs can increase the length of residency, keep up the condition of units,

and ensure the security of tenure. On the other hand, CLTs can moderate too much speculative investment in gentrifying areas by preserving the affordability of low-cost housing and preventing the displacement of low-income people. In other words, CLTs can serve as a stabilizing factor in gentrifying neighborhoods (Saegert & Benitez, 2005; Davis, 1991; Coalition for Nonprofit Housing & Economic Development, 2004).

The third main benefit of CLTs is to build community assets. If CLTs perform as promised, there should be an active civic engagement with a sense of belonging to their community. In other words, the owner-occupants of CLTs will regularly interact on the basis of residential interests they hold in common. Conditions in the surrounding neighborhood will also improve. Also, CLTs can make a significant contribution toward increasing economic and racial diversity. To promote community diversity, CLTs have been widely used to create and preserve affordable housing units in neighborhoods where people with lower incomes would not otherwise be able to live (Davis, 2006). The CLT model, therefore, is believed to be a good strategy to build community assets.

In addition to the above three benefits, CLT home buyers can get better mortgage loans from banks than their low-income counterparts because CLTs' stewardship lower the risk of foreclosure (Ehlenz, 2014). Even though many benefits of CLTs are suggested, there are few studies with empirical data that support the generally known benefits of the CLT model.

#### *2.2.4 Disadvantages of CLTs*

CLTs are not well known and are not extensively used yet, probably because their concept of community land ownership is so unusual in the U.S. (Greenstein & Sungu-Eryilmaz, 2005). To know the reason of CLTs' unpopularity, general disadvantages of CLTs should be discussed.

First, the reasons why people own home are diverse. There are not only financial reasons for owning a home, but also non-financial reasons, and CLTs do not fulfill some of these desires. For instance, many Americans use homeownership as a wealth generation vehicle and CLTs limit this for their homeowners (Hartman, 2002).

Second, there is a dearth of empirical evidence on CLTs. There are few empirical studies to support the claims of the benefits of CLTs, in spite of the abundant anecdotal literature available on the Internet and the thirty-plus years that the CLT model has been in existence.

Third, sustainable resources are needed to maintain CLTs for a long time. Finding resources to support the management and development of CLTs plus organizing the residents and community around affordable housing and other issues is a difficult, constant, and time-consuming necessity. The resources are not limited to monetary resources, but include people like community leaders and organizers.

Fourth, the CLT model is just small solution to affordable housing, thus communities don't need to focus on CLTs. Whenever a non-profit meets a community needs, the risk of allowing federal officials to ignore their responsibilities follows (Bratt, 1989). Private-sector models cannot become the only providers of affordable housing.

After considering the above disadvantages, the first one could not mainly apply to low-income households not having ability to own houses. To ease the second one is the purpose of this research. About the third one, CLTs can provide affordability for a long time, so the cost-benefit analysis of providing affordable housing continuously might be better than other subsidies that could not ensure the affordability after some time passed. About the fourth one, CLT model is not just for providing affordable houses, but for many other functions such as community asset building, well housing maintenance for a long time, and enhancing neighborhood stability and so forth. One more challenge of CLTs is finding lenders or banks that are willing to work with the partners because usually they don't understand the CLT model. Thus, it is needed to educate financial staffs or institutions about the model and to advertise more. However, despite all these disadvantages, the recent huge increase of CLTs, for instance, more municipalities or local governments introduce and support CLTs in their jurisdictions, prominently lends support to the availability of the model.

#### *2.2.5 Overview of CLTs in the U.S.*

There is no exact comprehensive listing of CLTs in the U.S. However, the number and location of CLT organizations can be roughly speculated by the list of the National Community Land Trust Network, which is a non-profit organization established to support CLT organizations in the U.S. The network is consistently updating the directory of CLTs, albeit not all organization in the directory is CLT organization. According to the directory, as of February 2015, there are 249 CLTs in 46 states,

including corporations and programs, in the U.S. Table 2-2 shows the current distribution of CLTs in the U.S. by state and region.

**Table 2-2. The number of CLTs by state and U.S. region**

U.S. Region	State	CLTs	U.S. Region	State	CLTs	U.S. Region	State	CLTs
Midwest	IA	3	Northeast	NH	4	Southwest	AZ	5
	IL	4		NJ	3		NM	5
	IN	0		NY	17		OK	0
	KS	2		PA	5		TX	9
	MI	8		RI	3	<b>Subtotal</b>	<b>19</b>	
	MN	9		VT	10	West	AK	3
	MO	3	<b>Subtotal</b>	<b>79</b>	CA		21	
	ND	3	Southeast	AL	1		CO	6
	NE	0		AR	0		HI	1
	OH	5		FL	14		ID	1
	SD	1		GA	8		MT	5
WI	2	KY		1	NV		1	
<b>Subtotal</b>	<b>40</b>	LA		6	OR		6	
Northeast	CT	4		MS	3		UT	2
	DC	2		NC	7		WA	18
	DE	1		SC	1	WY	1	
	MA	17		TN	2	<b>Subtotal</b>	<b>65</b>	
	MD	6	VA	3	<b>Total</b>	<b>249</b>		
	ME	7	WV	0				

Source: The national community land trust network website (cltnetwork.org)

Northeast and West regions have a large number of CLTs compared to other regions. Five states like Massachusetts, New York, Florida, California, and Washington have more than 10 CLTs, and five states have no CLTs. Figure 2-1 geographically illustrates the distribution of CLTs in the U.S. as follows:



Source: The 2011 Comprehensive CLT Survey  
**Figure 2-1. The location of CLTs in the U.S.**

There are two national-level CLT surveys conducted by the National Community Land Trust Network so far. The first CLT survey conducted in 2006 and reported in 2007 was a census survey, and the overall response rate was 65%. In other words, 106 CLTs responded to the survey by July 28, 2006. The second survey was conducted in 2011, and 96 CLTs responded by the start of 2011, approximately 40% of the total CLTs. The surveys were sent to all CLTs having available mailing addresses at that time; that is, no sampling was done. According to the 2011 Comprehensive CLT Survey, the total number of housing units in CLTs in the U.S. is unknown. Therefore, those two national surveys are important sources to get more information about CLTs in the U.S., and the 2011 survey provides details on CLTs as follows:

The average number of resale-restricted units is 54.2, and the median number of units is 29.5. 25% have less than 11 units, and 75% have less than 57 units. Only 25% have more than 57 units. The number of national resale-restricted units can be roughly estimated at 7,139. The majority (76%) of CLTs has been established since 1990s, and around 45% were established since 2000s. The service area for CLTs is various: Only 14% serve just their neighborhoods, 16% serve the city, 31% serve the county, 17% serve more than one county, and others serve the MSA (Metropolitan Statistical Area) or states. In other words, the majority of CLTs serve multiple neighborhoods, the city as a whole, the county, or even multiple counties. Average income of households who purchased a CLT home in 2010 was 65% of AMI (Area Median Income), ranging from 22% to 100%. Among those who purchased a CLT unit, first time home buyers are 79%. The operating budget ranges from \$0 to \$3,000,000. The number of parcels ranges from one to 600, and the mean number of parcels held in trust is 38, and median number is 12. The mean size of land is 48 acres, and median size is 4.5 acres. The majority (77%) of CLTs have a ground lease document in place. The duration of CLT's ground lease range from 20 to 99 years, with 99 years being the most frequently used (95%) term. Ground leases are renewable.



### **3. RESEARCH DESIGN**

#### **3.1 Research Gaps**

Gentrification is one of the most widely known processes, and currently a lot of gentrifying or gentrified communities have existed throughout the nation. However, empirical research about the relationship between gentrification and housing models has been scarce or, if anything, has focused on minor details of gentrification. Many scholars focus on whether gentrification and displacement exist, or spend too much time and space discussing theoretical issues. On the other side, many studies are limited to a few practical examples of gentrification in typical American metropolitan cities such as New York and Boston. However, there is currently no academic study focused on the relationship between CLTs and gentrification.

According to the literature review, the CLT model is regarded as an effective tool for providing affordable housing, stabilizing neighborhoods, and building community assets. In particular, CLTs are employed mainly to provide long-term owner-occupied or rental housing for the moderate- and low-income households in the U.S. However, as described above, while a few case studies on CLTs exist, very few quantitative studies on CLTs can be found. Therefore, this research seeks to address this lack of evaluation of CLTs' effects on neighborhoods. Researchers and practitioners certainly have working hypotheses based on studies and experience, but those hypotheses are insufficient for explaining the impact of CLTs.

Although several scholars try to define the CLT model neatly using some features, the diversity of CLTs' structure and operating system makes it difficult to

evaluate each CLT under a specific set of criteria. In addition, since the histories of CLTs are relatively short, it is premature to make a judgment about their effectiveness. In other words, the results from the major role of CLTs—to provide long-term affordable housing to residents—cannot be assessed within such a short period. Therefore, the problem of CLTs’ short history establishes the need to consider different approaches in order to examine the actual impacts of CLTs on neighborhoods.

Few studies examine the practical impacts of CLTs on their communities, although there are a variety of documents that show their benefits. In addition, even fewer studies focus on the relationship between a certain situation and CLTs. However, in a contemporary post-industrial society, both CLTs and gentrification co-exist, and those two overlap in the same place in many cases. The housing units provided by CLTs in gentrified neighborhoods might affect their neighborhoods in some way or other. Thus, the investigation of the relationship between a recently rising system (CLTs) and an extensively existing phenomenon in the U.S. (gentrification) is also beneficial to speculate about the effectiveness of CLTs.

### **3.2 Research Objective and Hypotheses**

Gentrification has been a widespread phenomenon in many cities around the world for several decades and also has many negative effects on neighborhood with a few benefits. On the other hand, the CLT model is a growing initiative of community development and is expected to moderate major negative impacts of gentrification on neighborhood. This study starts from the concern about the impact of CLTs on

gentrification. This study is interested in the impacts of a growing community development model on existing gentrified neighborhoods. In addition, with the rapid expansion of CLTs in the U.S. over the last several decades, we now have the chance to systematically address evaluative questions about the impacts of CLTs.

One of the extensively recognized merits of CLTs is their ability to keep housing price affordable over the long time even in high price and rapidly appreciating markets. CLT homes stabilize surrounding neighborhoods and counteract the displacement and the loss of affordable units that generally occurs in gentrifying neighborhoods. These attributes raise a question about the relationship between CLTs and gentrification as follows: Do CLTs counteract the negative neighborhood effects caused by gentrification?

To answer this research question, the effects of CLTs on gentrification need to be investigated thoroughly. The fundamental objective of this research is to find out the impacts of CLTs on gentrification in practice. In other words, the relationship between CLTs and gentrification is a specific concern of this research. Thus, the objective of this study is as follows: To assess the impacts of CLTs on gentrification.

To discern the impact of CLTs on gentrification, three assumptions that must be met are suggested based on literature and the conceptual basis. The main research hypothesis to be tested is as follows: CLTs will moderate the negative effects of gentrification.

The following sub-research hypotheses are as follows: 1) CLTs will counteract the displacement in gentrified neighborhoods, 2) CLTs will facilitate the increase of

affordability in gentrified neighborhoods, and 3) CLTs will stabilize the speculative increase of property values in gentrified neighborhoods.

### 3.3 Basic Research Framework

The central question posed here is how CLTs counteract gentrification. This of course implies a counterfactual question, that is, how would CLTs affect neighborhoods did not undergo gentrification? Thus, control groups are needed for better comparison. Four categories are established as follows: non-gentrifying neighborhoods and gentrifying neighborhoods, and neighborhoods having CLT units and neighborhoods not having CLT units. The comparison using those four categories can tell us the impacts of CLTs on gentrification more clearly.

Therefore, although this research employs a mixed research method, quantitative and qualitative, basically this research was conducted as a comparative cross-sectional study that compares the relationship between gentrified neighborhood and non-gentrified neighborhood depending on the existence of CLT units. Figure 3-1 shows the conceptual framework of the study as follows:

	NHs With CLT	NHs Without CLT
Gentrified NHs	A	B
Non-gentrified NHs	C	D

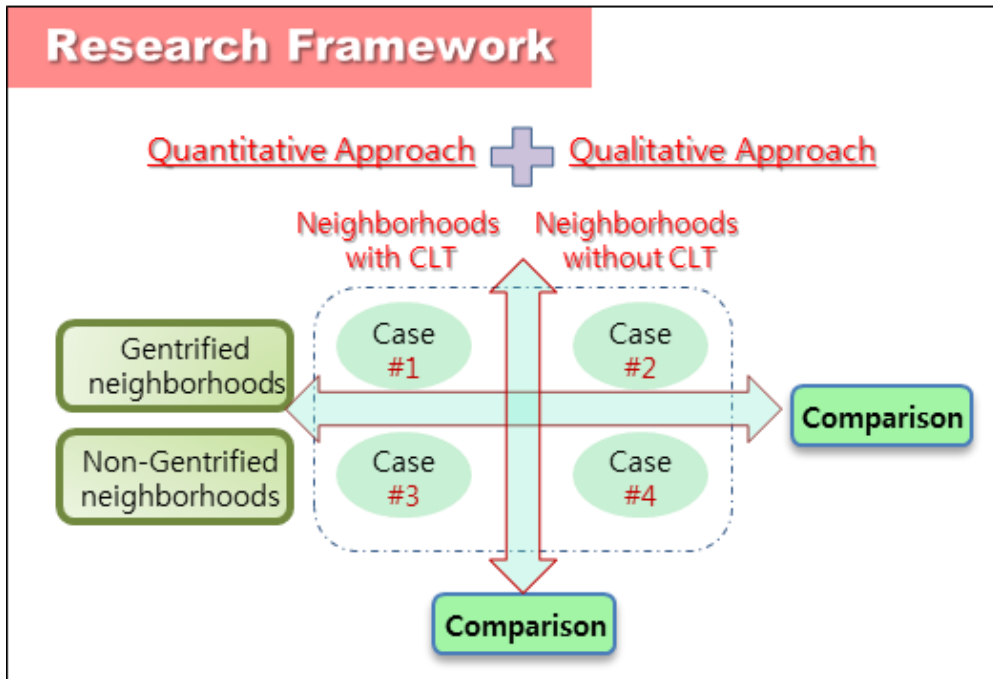
\*NHs: Neighborhoods

**Figure 3-1. Conceptual framework**

This cross-sectional comparison can show the effects of CLTs on gentrification more clearly. Using aggregated data, this research compares those four kinds of neighborhoods by the mean comparison test (t-test) using several independent variables. The comparison between A and B, and C and D show the difference of CLTs' impact on gentrification. On the other hand, the comparison between A and C, and B and D show the impact of gentrification in neighborhoods.

Additionally, this research employs a binomial logistic regression model, which is to predict a binary dependent variable and to measure the relationship between gentrification and CLTs. This additional estimation can bolster the results of the quantitative approach.

In the qualitative approach, based on the results of the quantitative approach, the actual aspects of CLTs in gentrified neighborhoods were investigated by interviewing CLT practitioners. Hence, this study employs a mixed method as a primary method, which is used when both quantitative and qualitative data provide a better understanding of research problem than either type by itself. Thus, the evidence from this research can disclose the actual impacts of CLTs on gentrification from the holistic viewpoint. Figure 3-2 describes the research framework as follows:



**Figure 3-2. Research framework**

### 3.4 Quantitative Approach

#### 3.4.1 Identifying gentrified neighborhood

Identifying gentrified neighborhoods compared to non-gentrified neighborhoods is one of the most important parts in this analysis. The purpose of this literature review is to establish a working definition of gentrification and research indicators, measurements and how they apply to measuring and monitoring gentrification.

Although there are many definitions of gentrification, some common characteristics appear consistently among the different definitions. Several studies have used the characteristics of neighborhoods to explain whether they were gentrified. Table 3-1 shows the criteria of gentrification in previous studies.

**Table 3-1. Criteria of gentrification on previous studies**

Author (Year)	Criteria of Gentrification	Data Source
Kennedy & Leonard (2001)	Displacement Increased Tax Revenues Increased Property Values Deconcentration of Poverty Income mix	No data used (Just guideline)
Freeman & Braconi (2004)	Income Rent Education (College graduate %) Race (White %)	New York City Housing and Vacancy Survey (NYCHVS)
Sullivan (2007)	Owner-occupied units (%) Vacant housing units (%) Median house value (\$) Median rent (\$) Median household income (\$) Poverty (%) College degree (%) White, non-Hispanic(%), Black(%), Hispanic(%), Others(%)	-Face-to-face Survey -U.S. Census data
Levy et al, (2006)	Number of home sales (represent accelerated housing markets) Loan amounts (represent accelerated housing markets) Demographic changes	-Home Mortgage Disclosure Act (HMDA) data -U.S. Census data -telephone interviews
Galster & Peacock (1986)	Decadal changes in: Proportion black Proportion college-educated Real incomes Real property values	U.S. Census data
Freeman (2005)	1. Be located in the central city. 2. Have a median income less than the median (40th percentile) for that metropolitan area. 3. Have a proportion of housing built lower than the proportion found at the median (40th percentile) for the respective metropolitan area. 4. Have a percentage increase in educational attainment greater than the median increase in educational attainment for that metropolitan area. 5. Have an increase in real housing prices during the intercensal period.	Meet 1, 2, 3: potentially gentrifying  Meet 1,2,3,4,5: gentrifying

The selection of variables for identifying gentrification is largely based on the preceding literature review. Using the information obtained from the review of gentrification literature, I can better understand what factors potentially lead to gentrification. The following characteristics about demographic attributes and property values can be used to identify gentrified neighborhoods: Ethnic composition, education level, neighborhood average income, property values, and homeownership types. In addition, the changes over time should be considered as primary criteria to identify neighborhoods whether gentrified or not. Thus, the rate of change was investigated using the U.S. Census data to determine whether gentrification occurs or not in neighborhoods. Therefore, 1980, 1990, 2000 and 2010 U.S. Census data and the American Community Survey data were selectively used to discern gentrified neighborhoods. Thus, a gentrified neighborhood should meet the following quantitative conditions:

(1) The rate of change in median value of single family homes is more than corresponding city-wide median

(2) The rate of change in median income is more than 120% of corresponding city-wide median

(3) The rate of change in percentage college-educated is more than the corresponding city-wide median

(4) The rate of change in percentage white is more than the corresponding city-wide median

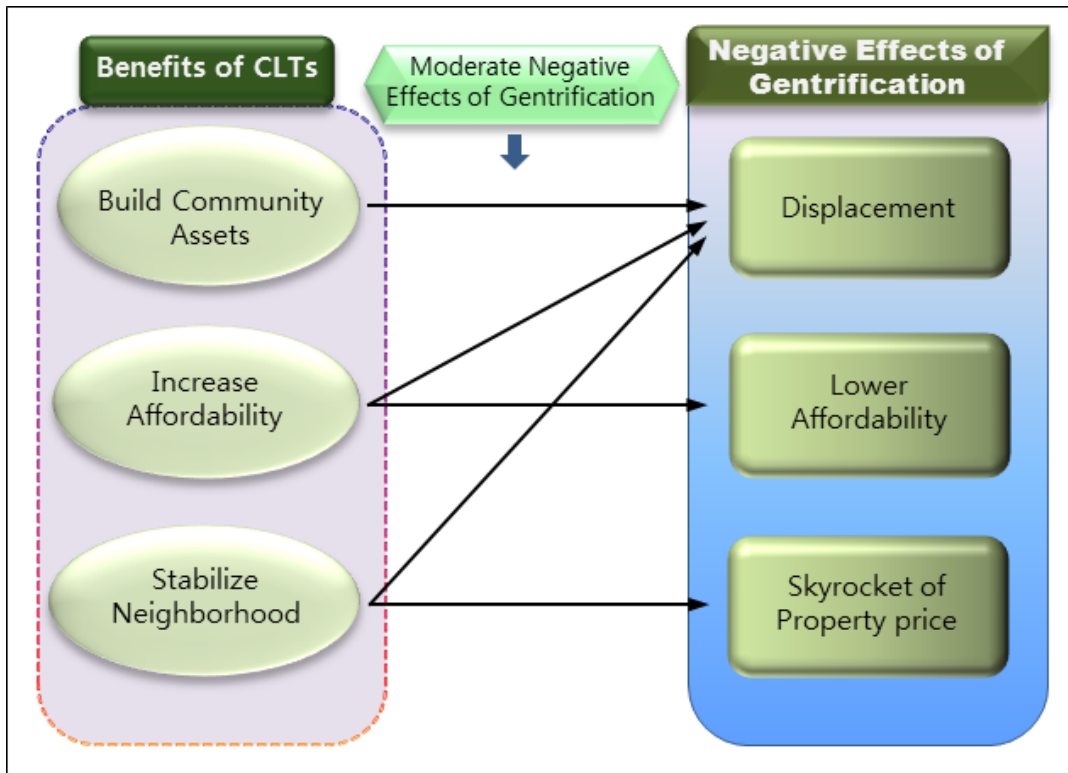
(5) The rate of change in percentage owner-occupied units is more than the corresponding city-wide median



While many studies of gentrification take the central city as their subject, as mentioned in literature review section, some others document the gentrification of rural areas (Bridge, 2003; Phillips, 2004). In addition, several scholars identified rural gentrification in the 1970s associated with the back-to-the-land movement. Many people agree that baby boomers' retirement, increasing rates of second-home ownership, and technologies that make telecommuting possible encouraged the escalation of the gentrification of some small towns (Brown-Saracino 2009, 5). Therefore, the data used in this study included not only urban neighborhoods, but also rural neighborhoods.

#### *3.4.2 Conceptual basis for quantitative comparison*

According to the literature review, gentrification has negative effects on neighborhoods. The major negative effects are displacement of incumbent residents, lower neighborhood affordability, and skyrocketing property values in neighborhoods. Several indices need to be selected for measuring neighborhood impacts of gentrification with respect to major benefits of CLTs, which are providing affordable housing, stabilizing neighborhoods, and building community assets. Figure 3-3 illustrates the correlations between the negative effects of gentrification and the benefits of CLTs as follows:



**Figure 3-3. Correlation between benefits of CLTs and negative effects of gentrification**

The negative neighborhood effects of gentrification are elaborated as follows: First, the displacement caused by gentrification induces demographic composition change (Hamnett, 2003b; Atkinson, 2004) and class conflict in the existing neighborhoods (McDougall, 1981; Brown-Saracino, 2004). Second, lower affordability means the increase of housing prices compared to residents' income. Third, skyrocket of property values includes both the speculative increase of land and improvement (building) price.

Moreover, such effects of gentrification can be connected with the benefits of CLTs as follows: First, gentrification causes displacement of incumbent residents from

their neighborhoods. However, CLTs' benefit of building community assets moderates class conflicts; thus, the length of residence is extended. Moreover, the increased affordable housing counteracts the displacement of low-income people. Second, gentrification decreases the number of affordable housing units in neighborhoods, but CLTs' primary objective is to maintain and increase such housing units. Third, gentrification causes speculative increase in property values in neighborhoods, but CLTs stabilize the skyrocketing prices by preventing speculative investment into their neighborhoods.

The correlations between the negative effects of gentrification and the benefits of CLTs support the main research hypothesis that CLTs will moderate the negative effects of gentrification. The above correlation can be estimated by the comparison between neighborhoods with CLT units and those without CLT units. For more exquisite examination of the relationship, some specific indicators are needed.

### *3.4.3 Unit of analysis*

How to define the neighborhood is an absolutely critical issue in the study of neighborhoods. It is more difficult to understand neighborhoods than cities, states, or firms because mainly neighborhood behavior is neither formal nor just a sum of individual actions. However, it is obvious that neighborhoods are fundamentally social units (Clay, 1979: 5).

Many previous studies on neighborhood impacts have used census tracts or census block groups as the unit of analysis for their research. This shows that there is no

consensus about the exact definition of neighborhood, and furthermore, no general geographical boundary of neighborhood commonly accepted in this field at present. It is an ongoing issue; thus, many quantitative studies alternatively use the geographical unit from the U.S. Census data like census tracts or census block groups.

Based on the previous literature review, the delineation of neighborhood boundary is often a highly political and negotiated process (Chaskin, 1999). However, many researchers (Kasarda, 1993; Hughes, 1990; Gramlich et al., 1992; Galster & Mincy, 1993) are doing analyses of neighborhoods using census tracts in practice (Sawicki & Flynn, 1996). When narrowing down studies on gentrifying neighborhoods, the following table shows the unit of analysis that each study used to define the neighborhood.

**Table 3-2. Definition of neighborhood in previous literature**

Research	Unit of Analysis
Bostic & Martin (2003)	gentrifying <b><u>census tracts</u></b>
Atkinson (2000)	The study of gentrification, often described at a neighborhood level, uses the <b><u>smallest level of census</u></b> data, the enumeration district (ED). → Britain Case
Freeman (2005)	<b><u>census tracts</u></b> identified as central city neighborhoods
Sullivan (2007)	designated neighborhood partly by the city's Office of Neighborhood Involvement (Portland, Oregon) and additionally used <b><u>his own criteria</u></b>
Galster & Booza (2007)	<b><u>census tracts</u></b> for neighborhood income diversity

Based on table 3-2, the census tract has been mainly used as a proxy of a neighborhood in academic field, while some researchers argued that the smallest level of

available census data should be used for analyzing neighborhood impacts. The boundary of neighborhoods is a highly debatable issue and arbitrarily used in some literature. Moreover, gentrification takes place at a variety of spatial scales: gentrification is occurring at the sub city level in numerous census tracts, and not solely in entire cities (Henig, 1980). Therefore, complying with the trend of previous literature, this study employs a census tract as a unit of analysis.

The unit of analysis of this study is determined as a census tract, which is roughly close to approximating what is typically thought of as a neighborhood. Census tracts are generally defined to contain 4,000 people and never cross state or county boundaries. They are relatively homogeneous units with respect to population characteristics, economic status, and living conditions.<sup>1</sup>

The use of numerous census tracts in a quantitative approach can extend the external validity of the findings. Census tracts are the geographic entities, and the variables are compared by the neighborhood type.

#### *3.4.4 Statistical methods*

The cross-sectional comparison between each type of neighborhood to know how CLTs counteract gentrification is the main method of this research. A binomial logistic regression is additionally employed to complement the findings from the cross-sectional comparison.

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<sup>1</sup> Defined by the United States Census Bureau

The comparative cross-sectional study is based on the comparison of two groups; thus, the outputs are rendered by group mean comparison, which is generally called the t-test. The t-test is commonly used for hypothesis testing, and the null hypothesis is that the means of two populations are equal. The alternative hypothesis is that the means of two populations are unequal or one of which mean is larger. When the alternative hypothesis is accepted, the null hypothesis is rejected. The null hypothesis,  $H_0$ , and the alternative hypothesis,  $H_a$ , are described as the following equations:

$$H_0 : \mu_1 = \mu_2$$

$$H_a : \mu_1 \neq \mu_2, \quad H_a : \mu_1 < \text{or} > \mu_2$$

When there is no difference between two group means, the decision is that we fail to reject the null hypothesis. The t-statistic is produced by the comparison, and the value is used for determining the significance of the comparison.

Each type of neighborhood is used to reflect theoretically or experimentally important independent or explanatory variables. The comparison between neighborhood types predicts a difference between the two means of neighborhoods, and the statistical inferences are made possible by the results of the comparison. Only independent variables that are statistically significantly at  $p < 0.05$  are considered to be significant.

In addition, the logistic regression analyses are employed to determine what factor best explains gentrification. When a dependent variable is dichotomous or binary, the logistic regression is used rather than ordinary least squares (OLS). The OLS regressions can easily handle categorical independent variables, but they are not appropriate for categorical dependent variables (Treiman, 2009). Since the dependent

variable of this study is gentrification, which is a binary variable composed of a gentrified neighborhood or a non-gentrified neighborhood, the binomial logistic regression is used.

The logistic regression uses odds, which are the likelihood of a given event occurring, compared to the likelihood of the same event not occurring. The equation in terms of odds is as follows:

$$\frac{P_i}{1 - P_i} = e^{\beta_0 + \beta_1 X_1 + \dots + \beta_k X_k}$$

Where  $P_i$  is the probability that  $y = 1$ , and  $1 - P_i$  indicates the probability that  $y \neq 1$  or in this case 0.  $\beta_k$  represents the impact that  $x_k$  has on the odds of  $P = 1$ . So, an odds value of 1 generally means no impact, less than 1 means it reduces the odds, and larger than 1 means it increases the odds. A logit is the natural logarithm of the odds and is used to get a linear model for the logistic regression. The equation using a logit is as follows:

$$\ln\left(\frac{P_i}{1 - P_i}\right) = \beta_0 + \beta_1 X_1 + \dots + \beta_k X_k$$

For this study, a dummy or indicator variable for gentrification (1= gentrified neighborhood, 0 = otherwise) will be added for a dependent variable. Where  $P_i$  indicates the probability of gentrification,  $X_k$  means the possible factors that can affect gentrification, and the independent variables include the existence of CLT units.

Therefore, a logistic regression using the above equation and variables will be estimated for this study.

### **3.5 Qualitative Approach**

A different CLT, using its own resale formula and operating under various market conditions, might be expected to produce somewhat diverse results. This large variation of CLTs suggests the need to reassess the findings of the quantitative approach, which is conducted by numerical sources. In addition, the samples of the quantitative analysis could be biased and/or could have insufficient information. Therefore, the introduction of the qualitative approach is needed in order to complement and bolster the results of the quantitative analysis.

In addition to the criteria for the quantitative approach, qualitative criteria are also needed. Based on the research hypotheses, the qualitative study focuses on testing the following assumptions of CLTs in gentrified neighborhoods. First, CLTs can counteract the displacement of existing residents in practice. Second, CLTs can facilitate the provision of affordable housing to their neighborhood. Whereas providing affordable housing is one of the fundamental purposes and roles of CLTs, it is important to see whether actually CLTs affect their neighborhoods. Third, CLTs can control the increase in property value of their neighborhoods. While the property values of CLT units cannot be significantly increased like market rate units due to the resale formula of CLT, it is critical to determine how CLTs affect their neighborhoods in terms of lowering property prices.



In this sense, the interviews, for which informed consent was obtained, with CLT practitioners are employed to complement the quantitative approach. It is expected that the interview can investigate substantial condition that could be outside the scope of a quantitative analysis, and more information about the causes of CLTs' impacts on gentrification could be gained.

To examine the aspects that cannot be expressed and analyzed in the form of number, the semi-structured interview is employed for the qualitative approach in this research. The semi-structured interview is used when an interviewer only has one chance to interview someone and when observations about the topic already exist. This interviewing format allows an interviewer to develop relevant and meaningful semi-structured questions based on a keen understanding of the topic. The role of this interview is to make sure that relevant contexts are properly taken into account so that knowledge specific to a particular situation can be produced. In addition, the inclusion of open-ended question provides the opportunity for learning new perspective and understanding of the context (Mason, 2004).

Therefore, in this research, several structured questions that provide the information of both actual condition and background will be developed based on the findings from the quantitative approach. The interviewees of this semi-structured interview will be current CLT practitioners who work in CLT organizations and with stakeholders in the field. Written or spoken communication, including telephone or email interviews with CLT practitioners, will be conducted. In sum, this research

complements the quantitative approach by measuring more precisely CLT practitioners' opinion about the quantitative findings.

## **4. DATA COLLECTION AND SELECTION**

### **4.1 Quantitative Approach**

#### *4.1.1 Process of data collection*

To collect data needed for this research, I asked the executive director or staff of every CLT organization in the U.S. whose information was available in the CLT directory of the National CLT Network for locations of their CLT units and the first year that their CLT units were introduced.

First, I gathered the contact information of every CLT organization that had their own webpages or email addresses. I sent emails to 131 CLTs that I had found the contact information for from April 15, 2014 to July 17, 2014 until I received the data. I waited for responses for two months when some didn't respond, I emailed them again at least three times, and finally, 64 organizations responded to my email. Then, attempts were made to contact 27 CLTs that did not respond to my email by phone, and four CLTs responded additionally.

Finally, while I asked 131 CLTs, I received the responses from 68 CLTs. Through this process, I learned that, in 2014, 22 CLTs among responding organizations have not introduced any units yet. In total, 68 of 131 CLTs responded; thus, the response rate to my request was 51.91%. Table 4-1 shows the descriptions of responses.

**Table 4-1. Descriptions of responses**

Types of respondents		Number of CLT organizations	
Responded CLT	With data	46 CLTs	68 CLTs
	Not yet started (No data)	22 CLTs	
Not responded CLT	Declined	9 CLTs	63 CLTs
	Lack of response	54 CLTs	
Total		131	
Response rate		51.91% (68/131)	

#### 4.1.2 Overall data descriptions

As a whole, the data of the location and the first year that CLT was introduced were received from 68 CLTs in 30 states, and the number of CLT units that those CLTs gave me was 3,709. Most portfolios of responded CLTs are predominantly comprised of owner-occupied and single-family houses, which are main characteristics of typical CLT unit, although not every CLTs informed the type of their units. Table 4-2 shows the distribution of collected data as follows:

**Table 4-2. Overall collected data distribution**

Region	State	CLT Organization		Unit	
		State	Region	State	Region
Midwest	Iowa	1	13 (19.1%)	0	880 (23.7%)
	Minnesota	6		762	
	Missouri	2		26	
	North Dakota	1		2	
	Ohio	1		7	
	Wisconsin	2		83	

**Table 4-2. Continued**

Region	State	CLT Organization		Unit	
		State	Region	State	Region
Northeast	Connecticut	1	13 (19.1%)	102	614 (16.6%)
	DC	1		0	
	Massachusetts	5		189	
	Maine	2		18	
	New Jersey	1		0	
	New York	1		0	
	Vermont	2		251	
	New Hampshire			54	
Southeast	Florida	5	11 (16.2%)	90	317 (8.5%)
	Georgia	1		0	
	Louisiana	3		0	
	North Carolina	1		223	
	Virginia	1		4	
Southwest	New Mexico	1	2 (2.9%)	90	90 (2.4%)
	Texas	1		0	
West	Alaska	1	29 (42.6%)	0	1,808 (48.7%)
	Arizona	1		78	
	California	8		390	
	Colorado	3		401	
	Montana	1		47	
	Oregon	3		219	
	Utah	1		4	
	Washington	10		580	
Wyoming	1	89			
<b>Total</b>	<b>30</b>	<b>68</b>		<b>3,709</b>	

According to the CLT directory of the National CLT Network, currently there are 249 CLTs in the U.S. including corporations and programs. However, not every CLT in the directory is a CLT organization. Some of them are CLT programs in housing projects, and others are affordable housing related programs or organizations and become just network members of the National CLT Network because they are interested in the CLT

model. In addition, during the data collection process, some responded to the recruiting email that they were not CLT organizations or had not built any CLT units yet. Others said that they were just giving mortgage lending support for a few CLT projects or only had resident-owned coops or commercial properties. It was revealed that 13 organizations were not actual CLT among 144 of total contacted organizations. It is reasonable to assume that many organizations that haven't respond or have no contact information in the CLT directory of the National CLT Network might be inactive or inexistent organizations or programs. Therefore, to my knowledge, there are currently less than 238 CLTs in the U.S.

The proportion of sampling can be estimated by the results of recruiting. The number of responded CLT organizations is 68 in 30 states out of the maximum total nationwide number of 238 CLTs in 46 states. Thus, the proportions are at least 28.6% of CLTs and 66.7% of states.

Since there is no published information about the exact number of CLT organizations, the distribution according to the U.S. region is a good alternative in order to examine the quality of sampling. Table 4-3 shows the number of CLTs by state and region based on both the CLT directory of the National CLT Network and the results of recruitment in this research.

**Table 4-3. The number of CLTs by state and U.S. region**

U.S. Region	State	CLTs	U.S. Region	State	CLTs	U.S. Region	State	CLTs
Midwest	IA	2	Northeast	NH	4	Southwest	AZ	5
	IL	4		NJ	3		NM	5
	IN	0		NY	17		OK	0
	KS	1		PA	5		TX	8
	MI	8		RI	3		<b>Subtotal</b>	<b>18</b>
	MN	9		VT	9	West	AK	3
	MO	3		<b>Subtotal</b>	<b>77</b>		CA	19
	ND	3	Southeast	AL	1		CO	5
	NE	0		AR	0		HI	1
	OH	5		FL	14		ID	1
	SD	1		GA	8		MT	5
	WI	2		KY	1		NV	1
<b>Subtotal</b>	<b>38</b>	LA		6	OR		5	
Northeast	CT	4		MS	2		UT	2
	DC	2		NC	6		WA	18
	DE	1		SC	1		WY	1
	MA	16		TN	2	<b>Subtotal</b>	<b>61</b>	
	MD	6		VA	3	<b>Total</b>	<b>238</b>	
	ME	7	WV	0				

Source: Revised from the CLT directory of the National CLT Network according to collected data in this research

According to the above national CLT distribution, the proportion of each region is as follows: Midwest 16.0% (38 CLTs), Northeast 32.4% (77 CLTs), Southeast 18.5% (44 CLTs), Southwest 7.6% (18 CLTs), and West 25.6% (61 CLTs). Based on this national distribution by U.S. region, the sampling distribution of this research shown in table 4-2 can be assessed by comparison. Table 4-4 explains the comparison of the distribution between the national CLT distribution and this research by its proportion to the total CLT number as follows:

**Table 4-4. The proportion of CLT organizations by the U.S. region**

<b>Region</b>	<b>National</b>	<b>This research</b>	<b>Difference</b>
Midwest	16.0%	19.1%	3.1%
Northeast	32.4%	19.1%	-13.3%
Southeast	18.5%	16.2%	-2.3%
Southwest	7.6%	2.9%	-4.7%
West	25.6%	42.6%	17.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0</b>

This research shows 17% more in west region compared to the national distribution and shows 13.3% less in northeast region. However, the distribution of CLT organizations is not the exact distribution of CLT units in the nation and does not indicate CLTs that have housing units now. Moreover, the data of this research comes from the voluntary responses of CLTs, so this might reflect the actual distribution of current active CLT organizations. In addition, although there are some differences between the distributions, the data came from every region, thus the distribution is not much biased. Therefore, this research sample is a reasonable representation of the national CLT distribution.

Although the total number of CLT units in the U.S. is unknown, my sample size is large enough to be analyzed. The 2011 Comprehensive CLT survey (Thaden, 2012), conducted in partnership with the National Community Land Trust Network and the Lincoln Institute of Land Policy, provides the most recent and comprehensive information on CLTs in the United States. According to this survey, excluding start-up CLTs, only 25% of CLTs have more than 57 units, and the median number of units per



each CLT organization was 29.5. This 2011 survey collected the information from 96 out of the 216 organizations as of the end of 2010.

On the other hand, the data of my research shows higher response rate and has more number of units than the 2011 comprehensive CLT survey. The number of recruited CLT organizations is 131, and 68 organizations in 30 states responded. Table 4-5 compares the 2011 comprehensive CLT survey with this research:

**Table 4-5. Comparison between 2011 Comprehensive Survey and this research**

	<b>2011 Comprehensive Survey</b>	<b>This research (2014)</b>
<b>Recruited Organizations</b>	216	131
<b>Respondents (%)</b>	96 (44%)	68 (52%)
<b>Number of units</b>	3,669	3,709

As shown above, in terms of the distribution of both organizations and units, it is possible to argue that this research provides representative data of CLTs in the U.S.

#### *4.1.3 Refining data for the analysis*

This research aims first to assess the impacts of CLTs on gentrification quantitatively; thus, the comparison between before and after CLT units were introduced is conducted in each neighborhood. To measure neighborhood changes with the times for comparison, it is important to generate measurable and testable data. Since the decennial data such as Census data are used to measure neighborhoods' characteristics, the range of the CLT units using in this research is limited to the CLT units that first

introduced before 2009. Table 4-6 shows the distribution of census tracts that CLT units were introduced before 2009:

**Table 4-6. Distribution of census tracts with CLT units before 2009**

Region	State	CLT Organization		Unit		Census Tract	
		State	Region	State	Region	State	Region
Midwest	Minnesota	5	8 (19.5%)	539	610 (24.7%)	122	136 (42.5%)
	Missouri	0		0		0	
	North Dakota	0		0		0	
	Ohio	1		7		5	
	Wisconsin	2		64		9	
Northeast	Connecticut	1	9 (22.0%)	102	486 (19.7%)	1	30 (9.4%)
	Maine	1		6		2	
	Massachusetts	5		144		17	
	Vermont	2		234		10	
	New Hampshire						
Southeast	Florida	5	6 (14.6%)	64	225 (9.1%)	15	24 (7.5%)
	North Carolina	1		161		9	
	Virginia	0		0		0	
Southwest	New Mexico	1	1 (2.4%)	70	70 (2.8%)	1	1 (0.3%)
West	Arizona	0	17 (41.5%)	0	1,078 (43.7%)	0	129 (40.3%)
	California	3		163		13	
	Colorado	3		4		1	
	Montana	1		47		1	
	Oregon	1		364		11	
	Utah	1		131		36	
	Washington	7		280		66	
	Wyoming	1		89		1	
<b>Total</b>	<b>18</b>	<b>41</b>		<b>2,469</b>		<b>320</b>	

As mentioned before, although 131 CLTs were recruited and 68 CLTs in 30 states responded, only 46 CLT organizations in 22 states responded with the information

of 3,709 units. However, the received data included the information of CLT units introduced after 2010; thus, when the range of the CLT units is limited to before 2009, the number of units decreases from 3,709 to 2,469 in 41 CLT organizations. The reason that only 41 CLT organizations out of 46 responding CLT organizations have available census tracts is that this research uses the information of CLT units introduced before 2009 because of the availability of U.S. Census data. Among 46 responded CLT organizations, five introduced the first CLT unit after 2010. The number of CLT units in one census tract ranged from 1 to 102, and the average number of CLT units per CLT organization was 60.22 (2,469 units / 41 organizations).

After the analysis of the above data, a total of 321 census tracts were identified as having CLT units and contained 2,469 CLT units, and the average number of units per census tract was 7.72 (2,469 units/320 tracts). In addition, the average number of census tracts in one CLT organization is 7.80 (320 tracts /41 organizations).

Table 4-6 shows that many CLT units are dispersed in different census tracts. The research design focused on comparing census tracts with CLT units and those without CLT units. In this context, the contrast between two groups is crucial, thus it is better to exclude census tracts that have too small number of CLT units for better research. Since we cannot assume the cluster effects of CLT in this distribution of CLT units, it is meaningless to count census tracts having less than three CLT units. Therefore, the census tracts that included three or more CLT units were regarded as census tracts with CLT in this research. Table 4-7 describes the distribution as follows:

**Table 4-7. Distribution of census tracts with 3+ CLT units before 2009**

Region	State	CLT Organization		Unit		Census Tract	
		State	Region	State	Region	State	Region
Midwest	Minnesota	5	6 (16.7%)	452	509 (22.6%)	58	61 (39.1%)
	Missouri	0		0		0	
	North Dakota	0		0		0	
	Ohio	0		0		0	
	Wisconsin	1		57		3	
Northeast	Connecticut	1	8 (22.2%)	102	467 (20.8%)	1	22 (14.1%)
	Maine	1		5		1	
	Massachusetts	4		126		10	
	Vermont	2		234		10	
	New Hampshire						
Southeast	Florida	4	5 (13.9%)	53	213 (9.5%)	7	15 (9.6%)
	North Carolina	1		161		8	
	Virginia	0		0		0	
Southwest	New Mexico	1	1 (2.8%)	70	70 (3.1%)	1	1 (0.6%)
West	Arizona	0	16 (44.4%)	0	989 (44.0%)	0	57 (36.5%)
	California	3		161		12	
	Colorado	3		364		11	
	Montana	1		47		1	
	Oregon	1		103		13	
	Utah	1		4		1	
	Washington	6		221		18	
	Wyoming	1		89		1	
<b>Total</b>	<b>17</b>	<b>36</b>	<b>2,248</b>	<b>156</b>			

The number of units decreases from 2,469 to 2,248, the number of census tracts decreases from 320 to 156, and the number of organizations decreases from 41 to 36 in 17 states. In other words, 164 census tracts have only one or two CLT units, and five organizations do not have three or more units in one census tract. The number of CLT units in one census tract ranged from three to 102, and the average number of CLT units per CLT organization was 62.44 (2,248 units / 36 organizations).

After the analysis of the above data, a total of 156 census tracts were identified as having CLT units and included 2,248 CLT units, and the average number of units per census tract was 14.41 (2,248 units/156 tracts). In addition, the average number of census tracts in one CLT organization is 4.33 (156 tracts /36 organizations). The census tracts and units are more evenly distributed by region than the previous data including census tracts with one or two CLT units. Each census tracts were matched with decennial data from the U.S. Census and the American Community Survey. Table 4-8 shows this distribution of census tracts by year.

**Table 4-8. Census tracts distribution by year**

<b>First year of CLT unit introduction</b>	<b>Number of census tract with 3+ CLT units</b>
1980-1989	3 (1.9%)
1990-1999	29 (18.6%)
2000-2009	124 (79.5%)
<b>Total</b>	<b>156</b>

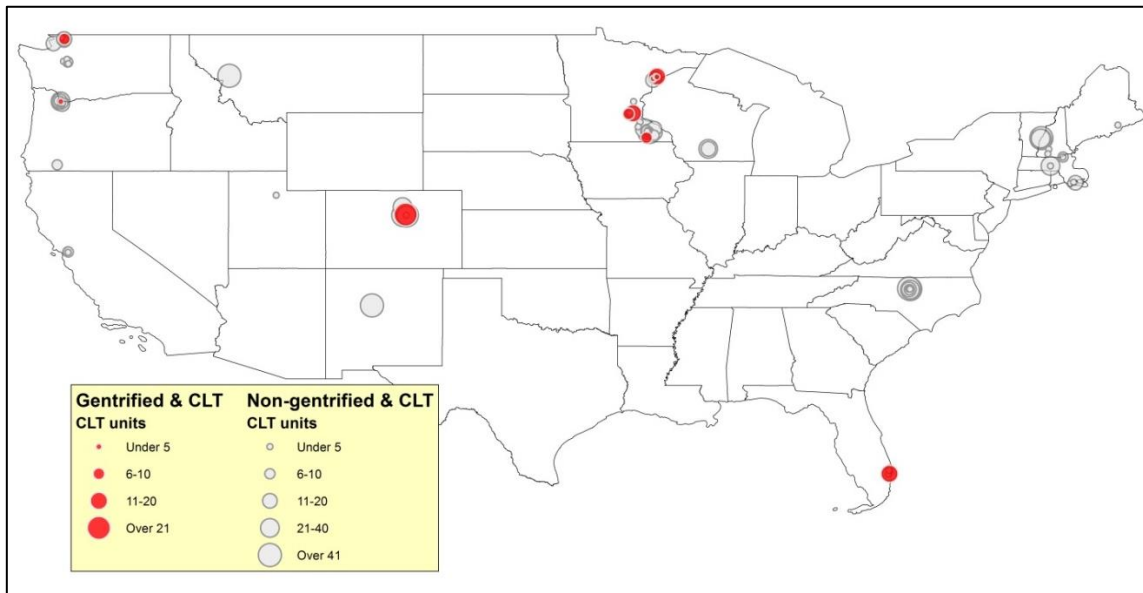
Only the information about CLT units introduced between 2000 and 2009 was used to compare the condition before CLT with effects on neighborhoods after CLTs were introduced. This limited use of data can reduce any unexpected impacts when comparing the changes of different time spans. Moreover, it can ensure maximum homogenous characteristics of the environment such as the national economic and housing market conditions. Above all, the census tract including CLT units introduced between 2000 and 2009 account for the majority of total census tracts (about 80%).

Accordingly, the information of selected census tracts was matched to both 2000 and 2010 U.S. Census and/or American Community Survey data, and this criterion might be able to increase the reliability of pre and post comparison. Table 4-9 shows the final dataset that used in this research.

**Table 4-9. Distribution of census tracts with 3+ CLT units (2000-2009)**

Region	State	CLT Organization		Unit		Census Tract	
		State	Region	State	Region	State	Region
Midwest	Minnesota	5	6 (20.7%)	383	426 (28.1%)	53	55 (44.4%)
	Missouri	0		0		0	
	North Dakota	0		0		0	
	Ohio	0		0		0	
	Wisconsin	1		43		2	
Northeast	Connecticut	0	6 (20.7%)	0	221 (14.6%)	0	14 (11.3%)
	Maine	1		5		1	
	Massachusetts	3		63		7	
	Vermont	2		153		6	
	New Hampshire						
Southeast	Florida	4	5 (17.2%)	53	213 (14.1%)	7	14 (11.3%)
	North Carolina	1		160		7	
	Virginia	0		0		0	
Southwest	New Mexico	1	1 (3.4%)	70	70 (4.6%)	1	1 (0.8%)
West	Arizona	0	11 (37.9%)	0	585 (38.6%)	0	40 (32.3%)
	California	1		20		3	
	Colorado	3		294		7	
	Montana	1		47		1	
	Oregon	1		103		13	
	Utah	1		4		1	
	Washington	4		117		15	
	Wyoming	0		0		0	
<b>Total</b>	<b>15</b>	<b>29</b>		<b>1,515</b>		<b>124</b>	

After data refining process, 124 census tracts with three or more CLT units comprised the final dataset. Also, the distribution of census tracts that have three or more CLT units introduced between 2000 and 2009 is illustrated in figure 4-1 by the number of CLT units that each census tract has:



**Figure 4-1. Distribution of census tracts by the number of CLT units**

#### *4.1.4 Selection of gentrified neighborhoods with CLT*

The appropriateness of selected cases is extremely critical to ensure the reliability of this research that employs the quasi-experimental research design. Because this research compares each type of neighborhood, adequate control groups, which are

comparable neighborhoods with similar characteristics, must be chosen to minimize the impacts of unexpected factors.

To determine whether gentrification occurs or not in a neighborhood, the rate of change was investigated from the dataset established by the U.S. Census and/or the American Community Survey for the information of each census tracts in both 2000 and 2010.

A gentrified neighborhood should meet the following five quantitative conditions:

- (1) The rate of change in median value of single family homes is more than corresponding city-wide median
- (2) The rate of change in median income is more than 120% of corresponding city-wide median
- (3) The rate of change in percentage college-educated is more than the corresponding city-wide median
- (4) The rate of change in percentage white is more than the corresponding city-wide median
- (5) The rate of change in percentage owner-occupied units is more than the corresponding city-wide median

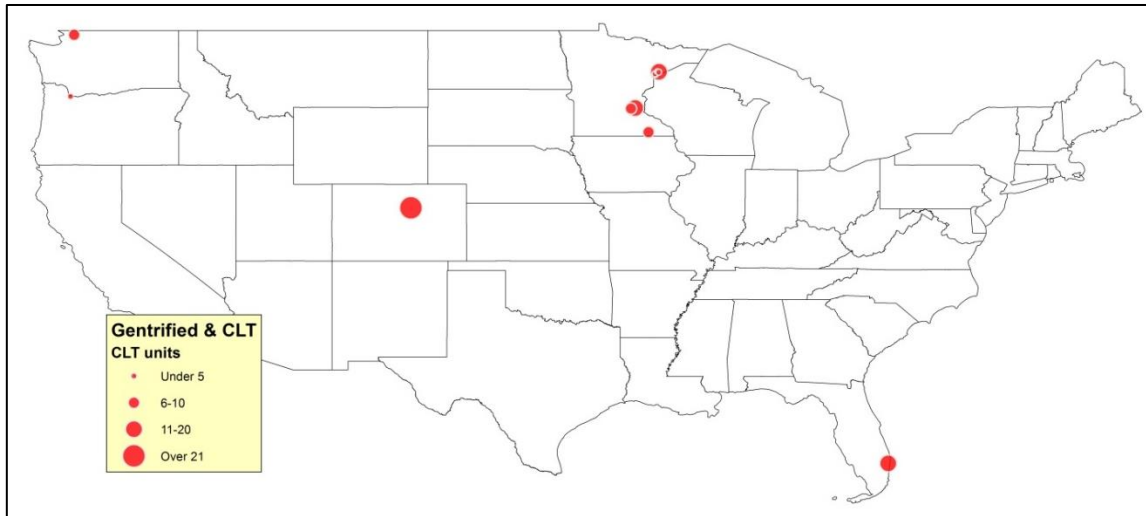
Using the above quantitative criteria, 14 census tracts in nine cities in five states were shown as gentrified neighborhoods between 2000 and 2010 out of 125 census tracts with three or more CLT units. Table 4-10 shows the cities where gentrified tracts with three or more CLT units are located.



**Table 4-10. Gentrified census tracts with 3+ CLT units**

No.	City	State
1	Denver	Colorado
2	Delray Beach	Florida
3	Delray Beach	Florida
4	Duluth	Minnesota
5	Duluth	Minnesota
6	Duluth	Minnesota
7	Duluth	Minnesota
8	Meadow	Minnesota
9	Minneapolis	Minnesota
10	Minnetonka	Minnesota
11	Proctor	Minnesota
12	Portland	Oregon
13	Portland	Oregon
14	Bellingham	Washington

The distribution of gentrified census tracts that have three or more CLT units introduced between 2000 and 2009 is shown at figure 4-2 according to the number of CLT units that each census tract has:



**Figure 4-2. Distribution of gentrified census tracts with CLT by the number of CLT units**

Since 14 gentrified neighborhoods with CLT units out of 124 census tracts with CLT units are selected, automatically remaining 110 census tracts in 15 states are regarded as non-gentrified neighborhoods with CLT units. Table 4-11 shows the distribution of these neighborhoods by state.

**Table 4-11. Distribution of non-gentrified census tracts with 3+ CLT units**

No.	State	Census Tract
1	Minnesota	45
2	Wisconsin	2
3	Maine	1
4	Massachusetts	7
5	Vermont	6
6	New Hampshire	
7	Florida	5
8	North Carolina	7

**Table 4-11. Continued**

No.	State	Census Tract
9	New Mexico	1
10	California	3
11	Colorado	6
12	Montana	1
13	Oregon	11
14	Utah	1
15	Washington	14
<b>Total</b>		<b>110</b>

The distribution of non-gentrified census tracts that have three or more CLT units introduced between 2000 and 2009 is shown at figure 4-3 according to the number of CLT units that each census tract has:



**Figure 4-3. Distribution of non-gentrified census tracts with CLT by the number of CLT units**

#### *4.1.5 Selection criteria for corresponding city-wide areas*

To ensure the reliability of this research, the concept of corresponding city-wide area should be defined appropriately. In general, the census tracts within the same city-wide area indicate that they are in the same housing market, so the analysis involved comparing the gentrified census tracts with CLT and without CLT in the same housing market. Therefore, the corresponding city-wide area means the area that includes selected neighborhoods where CLT units are located. In the meantime, while the definition of city-wide area comes from the traditional definition of gentrification within metropolitan areas, rural gentrification can be considered as well.

Based on the above discussion, three selection criteria were employed to identify corresponding city-wide area. First, the corresponding city-wide areas must encompass the gentrified census tract with CLT units. Second, when there is a specific area in the Census such as “census place”, it is used as a corresponding city-wide area. Even in this case, if the population of a corresponding city-wide area is 10 times or less than the census tract with CLT units, the county was regarded as city-wide areas alternatively. The reason is that a few cities encompass less than five census tracts in their jurisdictions. In this case, the census tract with CLT units takes up a major portion within the city; thus, the comparison of the census tracts with their city-wide area is meaningless. Third, when there is no specific area data in the Census, the county data was also used instead.

#### *4.1.6 Selection of gentrified neighborhoods without CLT*

The basic concept of this neighborhood type is to correspond city-wide area with neighborhoods with CLT units. From this concept of city-wide areas, gentrified neighborhoods without CLT units were selected as follows.

First, according to the above results of 14 gentrified neighborhoods with CLT units, nine cities in five states encompass gentrified census tracts with CLT. Every census tract within nine city-wide areas was selected, and those census tracts were examined to determine whether they were gentrified or not using the same criteria previously used. In this process, census tracts that had one or two CLT units in the dataset were excluded to highlight net impacts of CLTs on neighborhoods.

This exclusion has minimum risks because multiple CLT organizations rarely existed in one city-wide area actually. I know which CLTs did not release their location information to me. There are just a few major CLT organizations which have many units – more than the national median number (29.5) - before 2010. It is possible to recognize their approximate locations through their web sites. Moreover, they are scattered throughout the U.S., so the possibility of overlap is very unlikely.

Within those nine cities that include at least one census tract with three or more CLT units, 498 census tracts were comparable census tracts between 2000 and 2010. Among them, census tracts having at least one CLT unit were excluded from the dataset, and only 388 census tracts had no CLT units at all. Finally, 38 gentrified census tracts without CLT units were found. The selection process and results are shown at table 4-12.

**Table 4-12. Number of gentrified census tracts without CLT**

No.	City	State	Total Comparable Tracts	Comparable Tracts without CLT	Gentrified Tracts
1	Denver (1)	CO	121	116	19
2	Delray Beach (2)	FL	18	14	0
3	Duluth (4)	MN	31	11	2
4	Meadow (1)	MN	10	10	1
5	Minneapolis (1)	MN	113	76	2
6	Minnetonka (1)	MN	14	6	0
7	Proctor (1)	MN	30	30	1
8	Portland (2)	OR	149	123	13
9	Bellingham (1)	WA	12	2	0
			498	388	38

Note : ( ) means the number of gentrified census tract with 3+ CLT units.

For a more precise comparison, another approach is employed to select gentrified census tracts without CLT within the corresponding city-wide area. Since corresponding gentrified census tracts without CLT were selected from only within the city-wide areas that have gentrified census tracts with CLT, other city-wide areas that have CLT units were not considered at all. To reduce this selection bias, every census tract that has over 30 CLT units was selected. According to the 2011 National CLT Survey, the average unit number per CLT organization was 29.5. Therefore, census tracts that include 30 or more CLT units were selected to find more gentrified census tracts without CLT because 30 is a high enough number to be considered as typical neighborhood with CLT. Table 4-13 shows the census tracts that have 30 or more CLT units:

**Table 4-13. Locations of census tracts with 30 or more CLT units**

No.	City	State	CLT unit number
1	Denver	Colorado	80
2	Albuquerque	New Mexico	70
3	Chapel Hill	North Carolina	62
4	Denver	Colorado	62
5	Hanover	New Hampshire	61
6	Rochester	Minnesota	59
7	Los Angeles	California	57
8	Denver	Colorado	54
9	Missoula	Montana	47
10	Chapel Hill	North Carolina	43
11	Longmont	Colorado	32
12	Denver	Colorado	31
13	Lebanon	New Hampshire	30
14	Madison	Wisconsin	30

While 14 census tracts out of 124 census tracts including three or more CLT units have 30 or more CLT units, four census tracts are located at the pre-selected city-wide area (Denver in Colorado). Therefore, 10 census tracts in 9 cities in 8 states were subjects for the second approach.

For selecting gentrified census tracts without CLT, surrounding census tracts adjacent to those 10 census tracts with 30 or more CLT units were examined. This examination aimed to investigate additional city-wide areas in case that the adjacent census tract was gentrified. The subjects of investigation were restricted to only adjacent census tracts in order to get more appropriate cases for comparison.

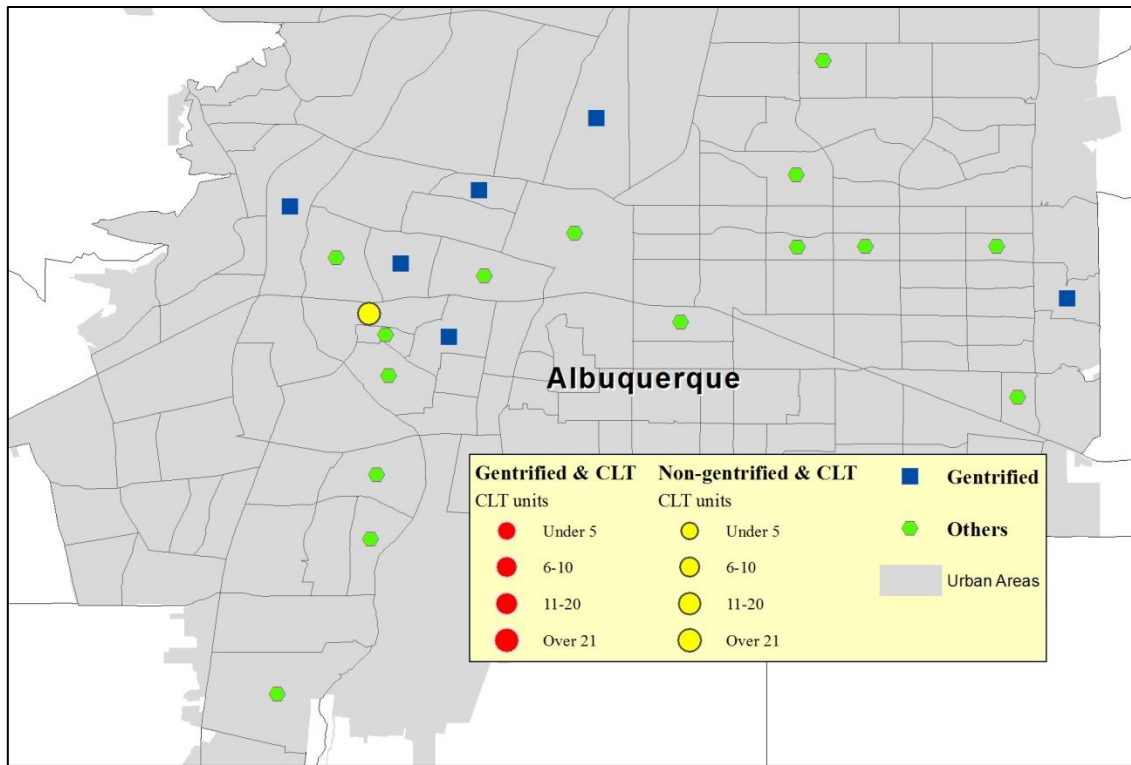
To avoid selection bias, a maximum of four census tracts were selected as subjects of investigation per each census tract with over 30 CLT units. The first four

census tracts which had similar populations with the census tract with over 30 CLT units during the starting year (e.g. 2000) were selected. Population density was not used because the census tracts could include large sized census tracts within an area, and fewer people, which could skew the results. Therefore, census tracts within the same county with the census tract with over 30 CLT units were chosen. In some cases, census tracts in different counties touch with the census tract with over 30 CLT units. Different counties could mean they have dissimilar socio-economic characteristics; therefore, those census tracts were excluded.

There is another exclusion. If the subject census tract has an area of land ten times or larger than the census tract with over 30 CLT units, it was excluded. In many cases, those census tracts are at the border of the entire county or have low population density, which means many socio-economic characteristics could be largely different from the research area.

As a result, only the city of Albuquerque has a gentrified census tract adjacent to the census tract that has 30 or more CLT units. Thus, only one city, Albuquerque in New Mexico, was selected for this research. Figure 4-4 describes the distribution of each type of census tracts in Albuquerque, New Mexico.





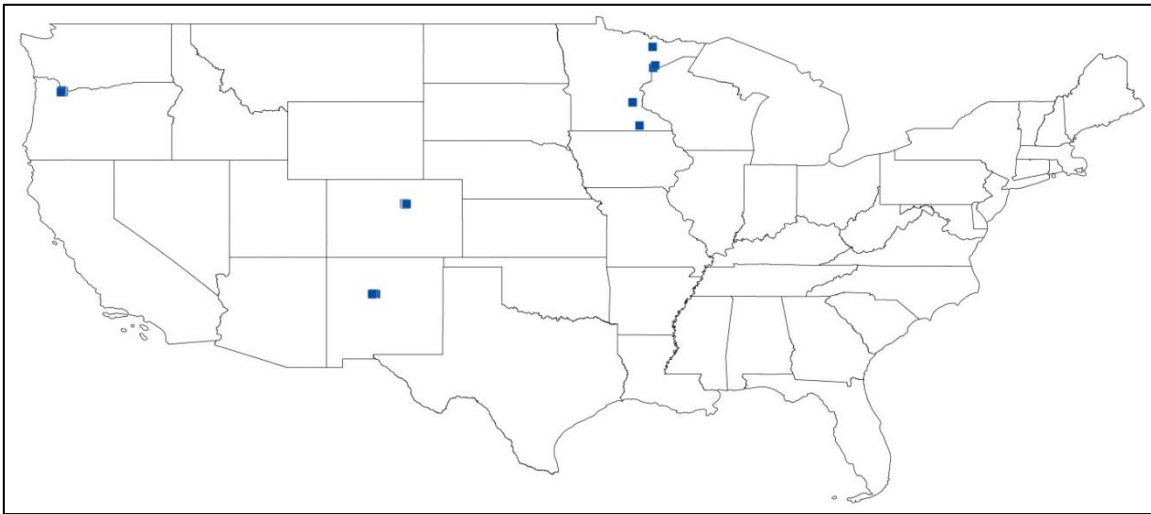
**Figure 4-4. Distribution of each type of census tracts in Albuquerque, NM**

Within Albuquerque, 124 census tracts were known as comparable census tracts between 2000 and 2010. Among them, census tracts having at least one CLT unit were excluded based on the dataset, and still 124 census tracts had no CLT unit at all. According to this process, six gentrified census tracts without CLT units were found in Albuquerque. Table 4-14 shows the result of this selection.

**Table 4-14. Number of gentrified census tracts without CLT in Albuquerque**

City	State	Total Comparable Tracts	Comparable Tracts without CLT	Gentrified Tracts
Albuquerque	NM	124	124	6

Based on the above two stage process, the total number of census tracts selected as gentrified neighborhoods without a CLT unit is 44. The distribution of gentrified census tracts that do not have any CLT unit introduced between 2000 and 2009 is shown at figure 4-5:



**Figure 4-5. Distribution of gentrified census tracts without CLT**

#### *4.1.7 Non-gentrified neighborhoods without CLT*

Selecting corresponding cases is a very important process in a quasi-experimental research design. Non-gentrified neighborhoods without CLT units are corresponding cases to both gentrified neighborhoods and neighborhoods with CLT units in this research. Moreover, this neighborhood type is the most common in the U.S.

among the four types of neighborhoods. Therefore, an elaborate selection with reasonable criteria is critical to conduct this research appropriately.

To reduce unexpected impacts, the corresponding census tracts should be close to the neighborhoods with CLT or, at least, in the same city-wide area. This might ensure the corresponding census tracts are in the same environment with regard to housing market, demographic composition, and so on. Based on this principle, non-gentrified neighborhoods without CLT were selected through a two-step process.

First, census tracts adjacent to those with CLT units were selected. In order to select adjacent census tracts, the previous criteria were used for selecting gentrified census tract without CLT. The adjacent census tracts of 14 gentrified census tracts with CLT were examined, and 17 non-gentrified census tracts without CLT unit were selected. In addition, the adjacent census tracts of 14 non-gentrified census tracts having 30 or more CLT units were investigated, and 35 non-gentrified census tracts without CLT unit were selected. Table 4-15 shows the distribution of selected census tracts as follows:

**Table 4-15. Non-gentrified census tracts without CLT from adjacent tracts**

Source	City	State	Selected tracts	Total
Adjacent to 14 gentrified census tracts with CLT	Denver	CO	3	17 census tracts
	Delray Beach (2)	FL	5	
	Duluth (4)	MN	3	
	Meadow	MN	1	
	Proctor	MN	0	
	Minnetonka	MN	1	
	Minneapolis	MN	2	
	Portland (2)	OR	2	
	Bellingham	WA	0	

**Table 4-15. Continued**

Source	City	State	Selected tracts	Total
Adjacent to 14 non-gentrified census tracts with 30+ CLT	Albuquerque	NM	3	35 census tracts
	Denver (4)	CO	10	
	Chapel Hill (2)	NC	4	
	Hanover	NH	1	
	Rochester	MN	2	
	Los Angeles	CA	2	
	Missoula	MT	4	
	Longmont	CO	4	
	Lebanon	NH	3	
	Madison	WI	2	
<b>Total</b>				<b>52 census tracts</b>

Note: ( ) means the number of census tract

Second, census tracts from the ten city-wide areas, which were used to select gentrified census tracts without CLT, were selected. Since too many non-gentrified census tracts with no CLT unit are in this pool, only 10% of every available census tracts were randomly selected. If the total number of available census tracts was less than 10, one census tract was randomly selected. Table 4-16 shows the distribution of total non-gentrified census tracts without CLT from corresponding city-wide areas.

**Table 4-16. Non-gentrified census tracts without CLT from corresponding city-wide areas**

No.	City	State	Total comparable tracts	Selected tracts
1	Denver	CO	97	12
2	Delray Beach	FL	14	2
3	Duluth	MN	8	1
4	Meadow	MN	9	1

**Table 4-16. Continued**

No.	City	State	Total comparable tracts	Selected tracts
5	Minneapolis	MN	74	8
6	Minnetonka	MN	6	1
7	Proctor	MN	29	3
8	Portland	OR	110	11
9	Bellingham	WA	2	1
10	Albuquerque	NM	120	12
<b>Total</b>			<b>469</b>	<b>52</b>

Based on the previous process, first, 52 census tracts adjacent to those with CLT units were selected as shown in table 4-15. Second, 52 census tracts from city-wide areas that have gentrified census tracts with CLT units were selected as shown in table 4-16.

Table 4-17 shows the total distribution of non-gentrified census tracts without CLT unit.

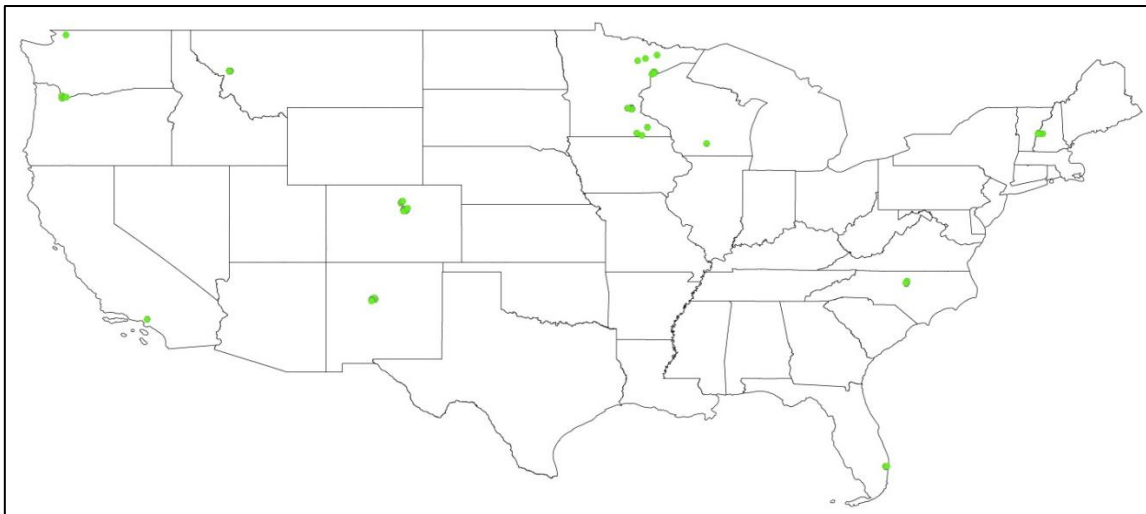
**Table 4-17. Distribution of non-gentrified census tracts without CLT**

No.	City	State	Selected tracts
1	Denver	CO	25
2	Los Angeles	CA	2
3	Longmont	CO	4
4	Delray Beach	FL	7
5	Duluth	MN	4
6	Meadow	MN	2
7	Proctor	MN	3
8	Minnetonka	MN	2
9	Minneapolis	MN	10
10	Rochester	MN	2
11	Missoula	MT	4
12	Chapel Hill	NC	4

**Table 4-17. Continued**

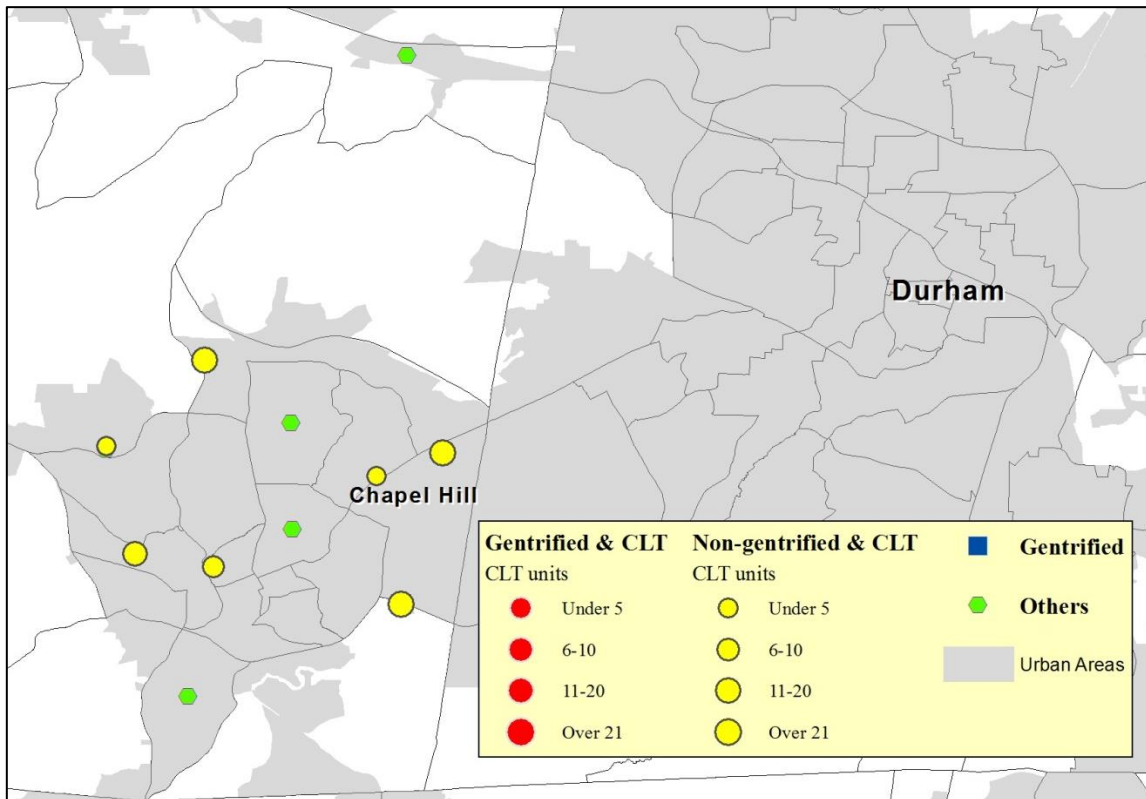
No.	City	State	Selected tracts
13	Hanover	NH	1
14	Lebanon	NH	3
15	Albuquerque	NM	15
16	Portland	OR	13
17	Bellingham	WA	1
18	Madison	WI	2
<b>Total</b>			<b>104</b>

The distribution of non-gentrified census tracts that do not have any CLT unit introduced between 2000 and 2009 is described in figure 4-6 as follows:



**Figure 4-6. Distribution of non-gentrified census tracts without CLT**

For a better understanding, the distribution of non-gentrified census tracts without CLT and corresponding census tracts in the area of Chapel Hill, North Carolina are illustrated in figure 4-7:



**Figure 4-7. Distribution of each type of census tracts in Chapel Hill, NC**

#### 4.1.8 Summary and limitation

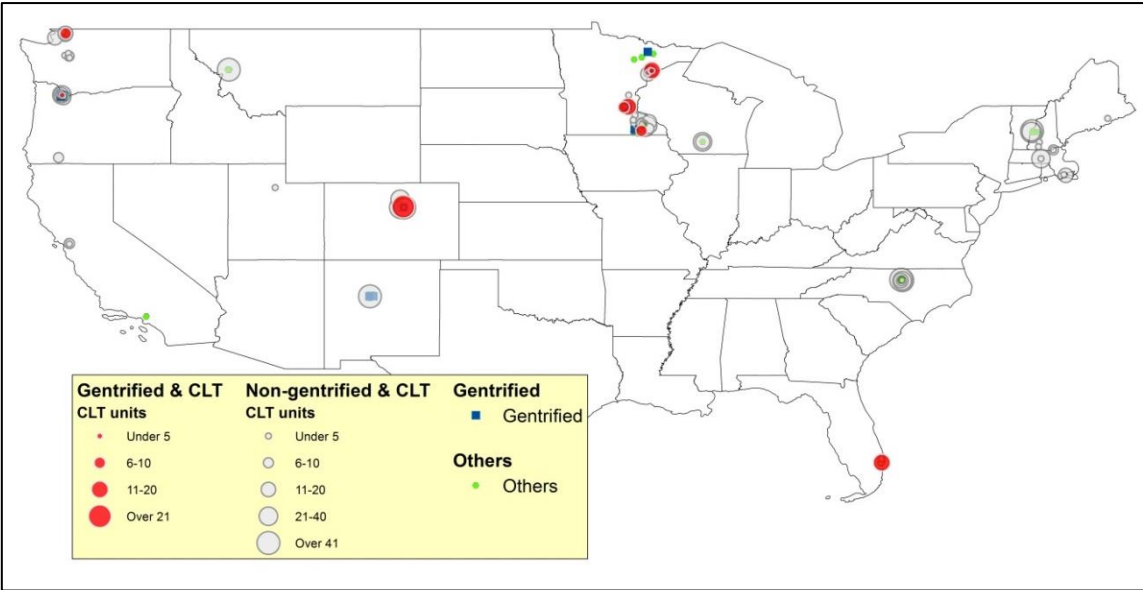
To examine CLTs' impacts on gentrified neighborhoods, the data of the location of CLT units have been collected from 46 CLT organizations in 22 states, and the

neighborhoods from the data have been matched with similar neighborhoods that do not have CLT units within the same housing market. The total number of neighborhoods is 272, and they are categorized into four types for this study as table 4-18 shows:

**Table 4-18. The number of each neighborhood type**

	Neighborhoods With CLT	Neighborhoods Without CLT
Gentrified Neighborhoods	<b>14</b> Neighborhoods	<b>44</b> Neighborhoods
Non-gentrified Neighborhoods	<b>110</b> Neighborhoods	<b>104</b> Neighborhoods

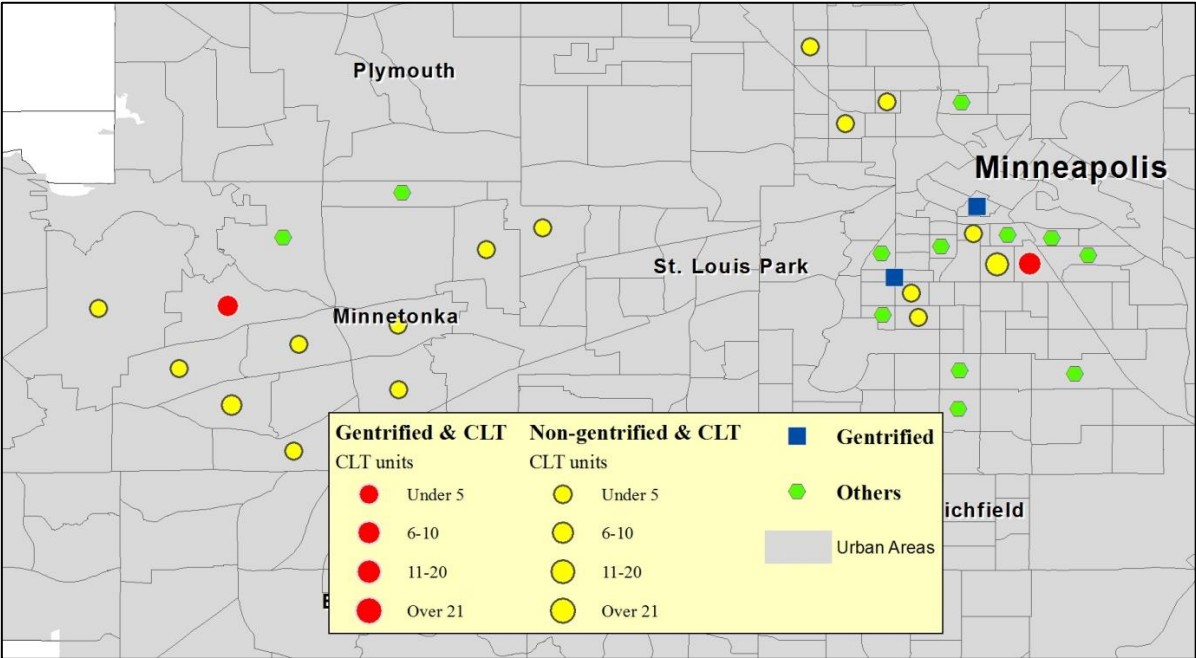
The distribution of these four types of neighborhoods is illustrated in figure 4-8 as follows:



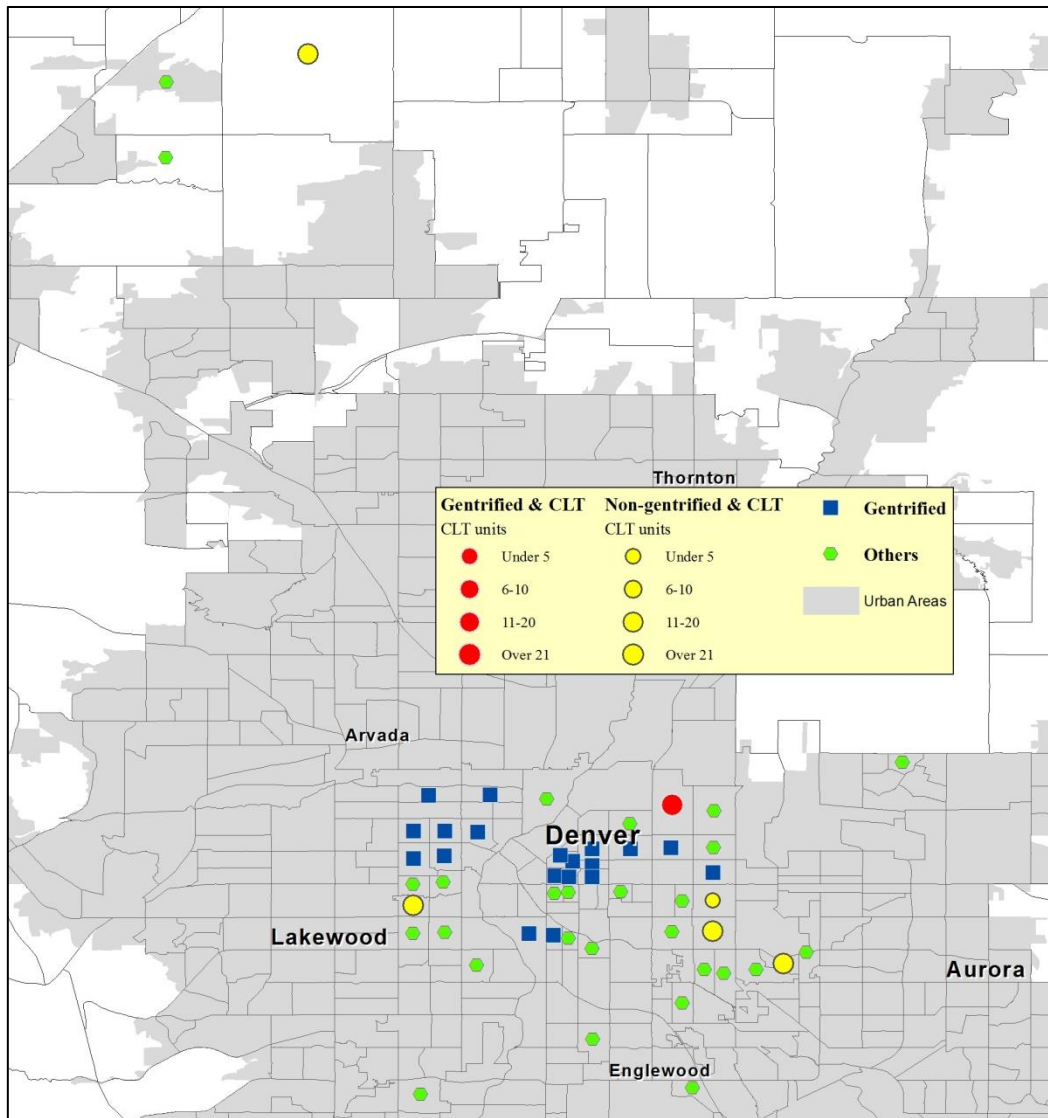
**Figure 4-8. Distribution of census tracts for the analysis**



To describe this distribution more clearly, the following maps show the actual distribution by census tracts. Two cities, Minneapolis in Minnesota and Denver in Colorado that have every type of census tract could show the distribution clearly. Figure 4-9 and 4-10 show the distribution of each type of census tract as follows:



**Figure 4-9. Distribution of each type of census tracts in Minneapolis, MN**



**Figure 4-10. Distribution of each type of census tracts in Denver, CO**

In the meantime, there are a few limitations on selecting data. First, I have selected 44 gentrified census tracts with no CLT units from 10 cities in 6 states in order to get cases corresponding to 14 gentrified census tracts with CLT units. The reason was that only 14 census tracts with CLT units were gentrified, so it was an inevitable process

to ensure the reliability of the comparison. Nonetheless, the limited number of cities in this process is obviously the limitation for generalization. Second, some major CLT organizations in mega city regions were excluded from the analysis because they were widely scattered over their regions or their CLT units were not in the gentrified census tract. This unintended exclusion could cause unexpected bias.

## **4.2 Qualitative Approach**

To complement these limitations and to develop understanding of actual conditions, this study employs in-depth interviewing using semi-structured questions (Marshall & Rossman, 1999).

The major strength of interviewing is the opportunity to learn about what we cannot see and to explore alternative explanations of what we have found in quantitative analysis. Furthermore, through a combination with the quantitative findings, interviewing allows us to understand common characteristics each neighborhood holds (Glesne, 1999).

The selection of study participants is the first step to set the interviewing. Basically, the subjects of interviewing are field experts such as CLT directors. Their direct experiences in the field and practical insight are needed for this study. Therefore, I sent email to the persons whom I contacted to get the CLT information and received it, and most of them are CLT directors. I let participants know that participation is voluntary, of any aspects of the research that might affect their well-being, and that they may freely choose to stop participation at any point in the study by written informed

consent form. I communicated with them by phone and/or email from November 4, 2014 to December 20, 2014, and 11 of them from 11 CLT organizations within 9 states responded. While I do not disclose which neighborhoods were gentrified to participants, 4 CLT organizations have CLT units in gentrified neighborhoods. Table 4-19 shows the distribution of respondents for interviewing.

**Table 4-19. Distribution of respondents for interviewing**

No.	State	Responded CLT experts
1	California	1
2	Colorado	2
3	Florida	2
4	Minnesota	1
5	New Mexico	1
6	North Carolina	1
7	Oregon	1
8	Washington	1
9	Wisconsin	1
Total		11

Next step is to design interview questions that fit the purpose. The questions are developed from the quantitative findings, and the pre-established questions remain unchanged through the interview.

Both to get a holistic view and to generate facts, opinions, and insights, I used an open-ended structured interview that would enable the exploration of many themes but that still could focus on CLTs. In addition, one of the advantages of open-ended question is the potential to recall unexpected data from interviewees.

Three structured questions were used for complementing my quantitative findings. First question is about the findings that support my research hypotheses that are related to CLT's positive effects to counteract gentrification. Second question is about the findings that are contrary to my research hypotheses. The last question is a general question that they can express any aspect of their thoughts related to CLT and gentrification.

However, this method also has some concerns or limitations. First, participants can misunderstand the findings of quantitative approach. Second, there could be possible bias from the desire of participants. For example, every participant is CLT practitioner; thus, they are likely to have more positive perspectives to their model than negative ones.

## 5. FINDINGS

### 5.1 Quantitative Approach

#### *5.1.1 Framework for data analysis*

This study is based on ethnographic and socioeconomic research and conducted in a timeframe of a decade (2000-2010) in the U.S. To examine the impacts of CLTs on gentrification, measurable indices were selected based on the previous literature in Section 3. Table 5-1 shows again the relationship between negative effects of gentrification and benefits of CLTs and how each neighborhood index is related to the impacts of CLTs on gentrification:

**Table 5-1. Theoretical foundation of measurable neighborhood index**

Negative effect of gentrification	Benefits of CLTs	Neighborhood index
Displacement	Build Community Assets	Ethnic composition Middle-class ratio Income level Education level
	Stabilize Neighborhood	Length of residence Age fluctuation
Lower Affordability	Increase Affordability	Affordability Owner-occupied housing rate
Skyrocket of Property Price	Stabilize Neighborhood	Housing price

The above neighborhood indices were analyzed by measurable data from the U.S. Census and the American Community Survey. To match the indices with available data, the measurement methods for each neighborhood index are summarized as follows:

**Table 5-2. Measurement methods for each neighborhood index**

<b>Neighborhood index</b>	<b>Measurement method</b>
Ethnic composition	Proportion of white population
Middle-class ratio	Proportion of households having 80-100% of Area Median Income
Income level	Proportion of median income compared to city-wide area
Education level	Proportion of residents who graduated high school or more
Length of Residence	Proportion of residents who live in the same house compared to city-wide area
Age fluctuation	Amount of change in age distribution between 2000 and 2010 (Index)
Affordability	Proportion of median housing value compared to city-wide area
Owner-occupied housing rate	Proportion of owner-occupied housing units compared to all occupied housing units
Housing Price	Proportion of median housing value compared to national median housing value

Table 5-2 illustrates how to measure each index. The details of each index will be described in the following corresponding subsections. Based on the above measurement methods, table 5-3 shows the statistics from two major public datasets used for decennial comparison.

**Table 5-3. Statistics and dataset for each neighborhood index**

<b>Neighborhood index</b>	<b>Statistics</b>	<b>Dataset</b>
Ethnic composition	Race: proportion of white alone	Census 2000 & 2010
Middle-class ratio	Household Income: Proportion of households having 80-100% of each city-wide median income	Census 2000 & American Community Survey 2006-2010
Income level	Median Household Income	Census 2000 & American Community Survey 2006-2010
Education level	Cumulative Educational Attainment For Population 25 Years And Over: High School Graduate or more	Census 2000 & American Community Survey 2006-2010

**Table 5-3. Continued**

<b>Neighborhood index</b>	<b>Statistics</b>	<b>Dataset</b>
Length of Residence	Residence In 1995 For The Population 5+ Years: Same house in 1995	Census 2000
	Residence 1 Year Ago By Sex In The United States: Same house 1 year ago	American Community Survey 2006-2010
Age fluctuation	Age (Short Version): Total Population: Under 18 years / 18 to 34 years / 35 to 64 years / 65 and over	Census 2000 & 2010
Affordability	Median House Value For All Owner-Occupied Housing Units: Median value	Census 2000 & American Community Survey 2006-2010
Owner-occupied housing rate	Tenure: Occupied Housing Units: Owner Occupied	Census 2000 & American Community Survey 2006-2010
Housing Price	Median House Value For All Owner-Occupied Housing Units: Median value	Census 2000 & American Community Survey 2006-2010

While the length of residence has different statistics between 2000 and 2010 due to the reformation of the Census, this difference is not problematic because the rate of change from 2000 to 2010 was used and those two statistics were compared to city-wide areas. Accordingly, the absolute value of length of residence is not meaningful, but the calculated index is. Other indices used the same statistics between 2000 and 2010 for a correct comparison.

The actual statistical values that were used in this research were investigated for each census tract for both 2000 and 2010. The averages of each type of neighborhood were essentially used to show the characteristics of the neighborhoods. Table 5-4 indicates the averages of the neighborhood indices for building community assets by the type of neighborhood:



**Table 5-4. Average of building community assets index**

Neighborhood	White population ratio (%)		Middle-class ratio (%)		Median income (\$)		Highschool+ ratio (%)	
	2000	2010	2000	2010	2000	2010	2000	2010
Gentrified & CLT	64.21	67.88	12.05	9.94	38,686	52,456	79.11	86.44
CLT	78.03	60.95	13.03	10.43	44,831	54,928	84.62	86.94
Gentrified	69.92	58.46	13.06	8.65	37,645	53,929	81.55	91.49
Other	77.23	57.66	12.44	9.68	44,022	51,949	83.34	86.79

Table 5-5 shows the average values of neighborhood indices related to the benefits of CLTs such as stabilizing neighborhoods and affordability by the type of neighborhood:

**Table 5-5. Average of stabilizing neighborhood and affordability index**

Neighborhood	Long term resident ratio (%)		Owner-occupied housing rate (%)		Median housing value (\$)	
	2000	2010	2000	2010	2000	2010
Gentrified & CLT	56.56	84.02	67.89	67.88	100,014	211,393
CLT	47.74	82.67	63.03	60.95	149,105	271,119
Gentrified	41.47	79.92	56.88	58.46	148,930	287,785
Other	46.57	79.84	60.05	57.66	150,425	259,163

The age distribution is a little bit more complicated. According to a short version of the Census dataset, age distribution was divided into four brackets. To analyze age distribution change, the information about every age bracket was collected. Table 5-6

shows the average values of each age bracket by the type of neighborhood and by year of 2000 and 2010:

**Table 5-6. Averages of age distribution by neighborhood type**

Neighborhood	Population ratio (%)							
	2000				2010			
	0-18	18-34	35-64	65+	0-18	18-34	35-64	65+
Gentrified & CLT	28.08	22.34	36.84	12.79	23.48	24.81	39.25	12.47
CLT	25.15	24.85	37.74	12.32	22.46	25.64	39.25	12.66
Gentrified	20.36	29.17	38.39	12.11	16.60	29.65	41.78	11.54
Other	21.11	27.28	37.79	13.83	19.66	27.53	39.11	13.72

Lastly, only the differences between two groups that are statistically significantly at  $p < 0.05$  are considered to be significant in the following comparisons.

### *5.1.2 Ethnic composition*

The research hypothesis is that CLTs might help increase racial diversity in gentrifying neighborhoods. The proportion of the white population in the total population was used to examine the diversity of race in neighborhoods. Therefore, the ethnic composition was measured by the proportion of the white population in a neighborhood. Table 5-7 shows the averages of white population ratio by neighborhood type and year:

**Table 5-7. Average of white population ratio by neighborhood type**

Neighborhood	White Population Ratio (%)			
	2000	2010	±	t-value
Gentrified & CLT	64.21	69.54	+5.33	-2.03**
CLT	77.88	75.60	-2.28	4.37**
Gentrified	69.92	77.48	+7.56	-7.03**
Other	77.23	76.74	-0.49	0.70

According to the above table 5-7, the white population ratio was not significantly changed in non-gentrified neighborhoods without CLT between 2000 and 2010. However, there is a significant increase in the white population ratio in both gentrified neighborhoods regardless of the presence of CLT units.

Since the variable of the white population ratio had been used to choose gentrified neighborhoods, the significant change in gentrified neighborhoods shouldn't be considered. The important issue is that the white population ratio significantly decreased in only non-gentrified neighborhoods with CLT.

**Table 5-8. Average of white population ratio by CLT**

Neighborhood	White Population Ratio (%)			
	2000	2010	±	t-value
Neighborhoods with CLT	76.30	74.90	-1.40	2.38**
Neighborhoods without CLT	75.10	76.96	+1.86	-2.84**
t-value	-0.44	0.88		

Table 5-8 shows that there is a significant difference in the white population ratio between neighborhoods with CLT and without CLT. While the white population ratio significantly decreased in neighborhoods with CLT, it significantly increased in neighborhoods without CLT. This means that generally CLT has positive effects on the diversity of ethnicity in their neighborhoods. Table 5-9 shows the cross comparison for average of white population ratio.

**Table 5-9. Cross comparison for average of white population ratio**

2000				2010			
	CLT	No CLT	t-value		CLT	No CLT	t-value
<b>Gentrified</b>	64.21	69.92	-0.73	<b>Gentrified</b>	69.54	77.48	-1.29
<b>No Gentrified</b>	77.88	77.23	0.22	<b>No Gentrified</b>	75.60	76.74	-0.44
t-value	-1.91	-2.09**		t-value	-0.94	0.26	

As mentioned above, t-value calculated between gentrified and non-gentrified neighborhoods has no meaning because the variable of the white population ratio has already been used to select gentrified neighborhoods. Thus, there is no result that is statistically significant.

In summary, CLT has positive effects on diverse ethnic composition generally. However, CLT doesn't have any significant effect on diverse ethnic composition in gentrified neighborhoods. CLTs have positive effects on diverse ethnic composition in neighborhoods where they are located.

### 5.1.3 Middle-class ratio

The research hypothesis related to the middle-class ratio is that CLTs might help increase middle-class ratio in gentrifying neighborhoods. The definition of middle class is varied; however, this study focuses on the lower middle-class because it is a target class of CLTs. Generally, the lower middle-class has 80 to 100% of the area median income (AMI). Therefore, the lower middle-class ratio means the proportion of households with incomes 80 to 100% of the AMI. Table 5-10 shows the average of lower middle-class ratio by neighborhood type and year:

**Table 5-10. Average of lower middle-class ratio by neighborhood type**

Neighborhood	Lower middle-class ratio (%)			
	2000	2010	±	t-value
Gentrified & CLT	12.05	9.94	-2.11	1.56
CLT	13.14	10.58	-2.56	4.81**
Gentrified	13.06	8.65	-4.41	6.40**
Other	12.44	9.68	-2.76	6.83**

The lower middle-class ratio was not significantly changed in gentrified neighborhoods with CLT between 2000 and 2010. However, there were significant decreases in gentrified neighborhoods without CLT and both non-gentrified neighborhoods. This result can be interpreted that CLTs have significant effects on the lower middle-class ratio only in gentrified neighborhoods.

**Table 5-11. Average of lower middle-class ratio by gentrification and CLT**

Neighborhood	Lower middle-class Ratio (%)			
	2000	2010	±	t-value
<b>Gentrified neighborhoods</b>	12.82	8.96	-3.86	6.18**
<b>Non-gentrified neighborhoods</b>	12.79	10.13	-2.66	7.98**
t-value	-0.14	1.95		
<b>Neighborhoods with CLT</b>	13.01	10.51	-2.50	5.07**
<b>Neighborhoods without CLT</b>	12.62	9.38	-3.24	9.16**
t-value	-0.44	0.88		

According to table 5-11, the lower middle class ratio in neighborhoods decreased less in neighborhoods with CLT than without CLT. However, the t-test does not show the size of difference between two group means; thus, there is no evidence that CLTs have positive effects on maintaining lower middle-class residents in their neighborhoods. Table 5-12 shows the cross comparison for average of lower middle-class ratio.

**Table 5-12. Cross comparison for average of lower middle-class ratio**

2000				2010			
	CLT	No CLT	t-value		CLT	No CLT	t-value
<b>Gentrified</b>	12.05	13.06	-0.90	<b>Gentrified</b>	9.94	8.65	1.37
<b>No Gentrified</b>	13.14	12.44	1.31	<b>No Gentrified</b>	10.58	9.68	1.67
t-value	-0.93	0.96		t-value	-0.57	-1.57	

According to the above comparison, nothing is statistically significant. This means that statistically there is no difference in averages between any two types of neighborhoods in either year period.

From the results of the analysis, we can learn that the lower middle-class ratio decreased in every type of neighborhoods except gentrified neighborhoods with CLT. CLTs have positive effects on preventing the decrease of the lower middle-class ratio in gentrifying neighborhoods. In addition, generally CLTs have negative effects on decreasing lower middle-class ratio in their neighborhoods. In summary, CLTs prevent decrease of the proportions of lower middle-class residents in gentrified neighborhoods. In other words, CLT can help lower middle-class residents from being displaced from gentrified neighborhoods.

#### *5.1.4 Income level*

The research hypothesis related to the income level is that CLTs might help maintain the income level in gentrifying neighborhoods. Maintaining the income level in gentrifying neighborhoods means that not many low income residents were pushed out from their living spaces. The median income index is the proportion of median income compared to each city-wide area. Even though this is not an actual income but an index compared to the surrounding areas, the variable of median income had been used to select gentrified neighborhoods. Therefore, the results by gentrification shouldn't be compared in the same way it was in the ethnic composition. Table 5-13 shows the averages of median income index by neighborhood type and year:

**Table 5-13. Average of median income index by neighborhood type**

Neighborhood	Median income index			
	2000	2010	±	t-value
Gentrified & CLT	0.98	1.10	+0.12	-8.36**
CLT	0.99	1.00	+0.01	-0.17
Gentrified	0.96	1.16	+0.20	-9.02**
Other	1.09	1.08	-0.01	0.72

There is no meaningful information from the table 5-13. As we can guess, gentrification increases the median income of neighborhoods compared to the citywide areas. The following table compares neighborhoods with CLT and without CLT, but doesn't compare by gentrification due to the above reason.

**Table 5-14. Average of median income index by CLT**

Neighborhood	Median income index			
	2000	2010	±	t-value
Neighborhoods with CLT	0.99	1.01	+0.02	-1.37
Neighborhoods without CLT	1.05	1.10	+0.05	-3.19**
t-value	1.39	1.99**		

According to table 5-14, while the median income index significantly increased in general neighborhoods, there is no significant change in neighborhoods with CLT. This means that CLTs stabilize the income of their neighborhoods compared to surrounding areas despite there are more low-income households in neighborhoods with CLT units. Table 5-15 shows no significant difference by neighborhood type and year:



**Table 5-15. Cross comparison for median income index**

2000				2010			
	CLT	No CLT	t-value		CLT	No CLT	t-value
<b>Gentrified</b>	0.98	0.96	0.18	<b>Gentrified</b>	1.10	1.16	-0.59
<b>No Gentrified</b>	0.99	1.09	-1.90	<b>No Gentrified</b>	1.00	1.08	-1.48
t-value	-0.21	-1.86		t-value	1.19	1.14	

In summary, while gentrification increases income in neighborhoods compared to surrounding areas, CLTs stabilize income level in their neighborhoods. CLTs help maintain income levels in their neighborhoods.

#### *5.1.5 Education level*

The research hypothesis related to the education level is that CLTs help increase the education level of residents in gentrifying neighborhoods. As shown in the previous two neighborhood indices such as the ethnic composition and the income level, the ratio of people who graduated college with bachelor's degree or more has already been used to identify gentrified neighborhoods. However, to measure the education level of residents, the proportion of population who graduated high school or more in each neighborhood was used because CLTs focus on low income residents who are more likely to be less educated. Even though those two are different variables, the proportion of population who graduated high school or more wasn't used for comparing by gentrification. This is because the possible correlation between the high school graduate ratio and the college graduate ratio could exist. Thus, the education level means the

proportion of residents who graduated high school or more. Table 5-16 shows the average of the high school or more graduates ratio by neighborhood type and year:

**Table 5-16. Average of education level by neighborhood type**

Neighborhood	Education (Highschool+) (%)			
	2000	2010	±	t-value
Gentrified & CLT	79.11	86.44	+7.33	-5.44**
CLT	84.30	86.67	+2.37	-2.11**
Gentrified	81.55	91.49	+9.95	-9.54**
Other	83.34	86.79	+3.45	-6.13**

Table 5-16 indicates that the high school graduates ratio is significantly increased in all kind of neighborhoods. Table 5-17 compares neighborhoods with CLT and without CLT and doesn't compare by gentrification due to the above reason.

**Table 5-17. Average of education level by CLT**

Neighborhood	Education (High School Educated +)			
	2000	2010	±	t-value
Neighborhoods with CLT	83.70	86.64	+2.94	-2.90**
Neighborhoods without CLT	82.82	88.16	+5.36	-9.63**
t-value	-0.56	0.96		

Table 5-17 shows that there is no difference between neighborhoods with CLT and without CLT. The education level increased regardless of the presence of CLT units.

**Table 5-18. Cross comparison for education level**

2000				2010			
	CLT	No CLT	t-value		CLT	No CLT	t-value
<b>Gentrified</b>	79.11	81.55	-0.69	<b>Gentrified</b>	86.44	91.49	-2.03**
<b>No Gentrified</b>	84.30	83.34	0.53	<b>No Gentrified</b>	86.67	86.79	-0.06
t-value	-1.54	-0.73		t-value	-0.05	2.48**	

According to table 5-18, the gentrified neighborhoods without CLT shows more increase in high school educated residents than the gentrified neighborhoods with CLT between 2000 and 2010. This result can be interpreted that CLTs have negative effects on high school education rate in gentrified neighborhoods.

In summary, CLTs have negative effects on education level in gentrified neighborhoods. While CLTs have no impact on education level in non-gentrified neighborhoods, CLTs do not help increase the education level of residents in gentrified neighborhoods.

### *5.1.6 Length of residence*

The length of residence is related to one of the benefits of CLTs: stabilizing neighborhoods. The research hypothesis related to the length of residence is that CLTs help increase the length of residence in gentrifying neighborhoods. The length of residence index means the proportion of people who live in the same house compared to

city-wide areas. Table 5-19 shows the length of residence index by neighborhood type and year:

**Table 5-19. Average of length of residence index by neighborhood type**

Neighborhood	Length of Residence Index			
	2000	2010	±	t-value
Gentrified & CLT	1.10	1.06	-0.04	1.43
CLT	0.96	1.00	+0.04	-2.32**
Gentrified	0.90	1.01	+0.11	-2.49**
Other	1.02	1.01	-0.01	0.29

The length of residence index is significantly increased in non-gentrified neighborhoods with CLTs and gentrified neighborhoods without CLTs. Table 5-20 shows the length of residence index by gentrification and CLT:

**Table 5-20. Average of length of residence by gentrification and CLT**

Neighborhood	Length of Residence Index			
	2000	2010	±	t-value
<b>Gentrified neighborhoods</b>	0.95	1.02	+0.07	-2.04**
<b>Non-gentrified neighborhoods</b>	0.99	1.01	+0.02	-1.11
t-value	0.93	-0.74		
<b>Neighborhoods with CLT</b>	0.98	1.01	+0.03	-1.90
<b>Neighborhoods without CLT</b>	0.99	1.01	+0.02	-1.21
t-value	0.20	0.19		

The length of residence is significantly increased in gentrified neighborhoods, while there is no significant difference between 2000 and 2010 in other types of neighborhoods. Table 5-21 shows the cross comparison for length of residence.

**Table 5-21. Cross comparison for length of residence**

2000				2010			
	CLT	No CLT	t-value		CLT	No CLT	t-value
<b>Gentrified</b>	1.10	0.90	2.07**	<b>Gentrified</b>	1.06	1.01	1.38
<b>No Gentrified</b>	0.96	1.02	-1.50	<b>No Gentrified</b>	1.00	1.01	-0.58
t-value	2.24**	-1.98**		t-value	1.75	-0.13	

The results from the cross comparison indicate first that the length of residence index decreased in gentrified neighborhoods with CLT while increasing in gentrified neighborhoods without CLT. Second, the length of residence index decreased in gentrified neighborhoods with CLT while increasing in non-gentrified neighborhoods with CLT. Third, the length of residence index decreased in non-gentrified neighborhoods without CLT while increasing in gentrified without CLT. In sum, the length of residence index increased in both gentrified neighborhoods without CLT and non-gentrified neighborhoods with CLT while decreased in both gentrified neighborhoods with CLT and non-gentrified neighborhoods without CLT. Therefore, we can say that CLTs have negative effects on the length of residence in gentrified neighborhoods, while having positive effects in non-gentrified neighborhoods.

### 5.1.7 Age fluctuation

The age fluctuation is related to one of the benefits of CLTs, stabilizing neighborhoods. The research hypothesis related to the age fluctuation is that CLTs help stabilize the age fluctuation in gentrifying neighborhoods. Thus, the age index was composed, which means the amount of change in age distribution between 2000 and 2010.

There are four age brackets in the Census dataset. Each bracket has its own percentage in a neighborhood, so the age index is calculated by the sum of the percent change in each bracket between 2000 and 2010 data. This index can be shown in table 5-22:

**Table 5-22. Description of the age index formula**

Age Bracket	2000	2010	change
Under 18 years	A0	A1	$(A1-A0)^2$
18 to 34 years	B0	B1	$(B1-B0)^2$
35 to 64 years	C0	C1	$(C1-C0)^2$
65 and over	D0	D1	$(D1-D0)^2$

$$\text{Age Index} = \sqrt{(A1 - A0)^2 + (B1 - B0)^2 + (C1 - C0)^2 + (D1 - D0)^2}$$

According to the function of the age index, the age index has only one value because it considers both the year of 2000 and 2010. Moreover, the absolute value of the

age index has no meaning. The value of the age index can only be used for comparison.

Table 5-23 shows the age index by gentrification and CLT:

**Table 5-23. Average of age index by gentrification and CLT**

Neighborhood	Age Index
	±
Gentrified neighborhoods	7.45
Non-gentrified neighborhoods	5.85
t-value	-3.48**
Neighborhoods with CLT	5.89
Neighborhoods without CLT	6.44
t-value	1.44

This result shows that age distribution was changed more in gentrified neighborhoods than non-gentrified neighborhoods. More age fluctuation is generally expected in gentrified neighborhoods because more people move and/or are displaced in those neighborhoods.

**Table 5-24. Cross comparison between each neighborhood**

	CLT	No CLT	t-value
Gentrified	6.59	7.73	-0.98
No Gentrified	5.79	5.91	-0.30
t-value	0.83	3.52**	

Table 5-24 shows that the only statistically significant difference of change of age distribution between gentrified and non-gentrified neighborhoods is within neighborhoods without CLT. That is, more age distribution change occurred in gentrified neighborhoods without CLT than non-gentrified neighborhoods without CLT. However, there is no difference between gentrified neighborhoods with CLT and non-gentrified neighborhoods with CLT in the age distribution change. In summary, CLTs stabilize abrupt age distribution fluctuation in gentrified neighborhoods.

#### *5.1.8 Affordability*

One of the benefits of CLTs is to increase affordability. The research hypothesis related to affordability is that CLTs help counteract decreased affordability in gentrifying neighborhoods. Affordability is frequently defined in the city under a variety of criteria. The housing value compared to the surrounding area is considered as affordability. Thus, the affordability index is the proportion of median housing value compared to city-wide areas. The following table shows the affordability index by neighborhood type and year. The sign of the actual affordability index was converted to help better understand neighborhood affordability. Therefore, the affordability index values closer to zero indicate more affordable neighborhoods, while more negative affordability index values mean less affordable neighborhoods. Table 5-25 shows the average of affordability index by neighborhood type and year:



**Table 5-25. Average of affordability index by neighborhood type**

Neighborhood	Affordability Index			
	2000	2010	±	t-value
Gentrified & CLT	-0.91	-1.00	-0.09	-4.28**
CLT	-1.00	-1.00	0	-0.11
Gentrified	-1.03	-1.20	-0.17	-7.89**
Other	-1.10	-1.10	0	-0.13

Affordability index is significantly decreased in both gentrified neighborhood with CLT and without CLT. On the other hand, there is no change in non-gentrified neighborhoods. Table 5-26 shows the average of affordability by gentrification and CLT.

**Table 5-26. Average of affordability by gentrification and CLT**

Neighborhood	Affordability Index			
	2000	2010	±	t-value
<b>Gentrified neighborhoods</b>	-1.00	-1.16	-0.16	-8.58**
<b>Non-gentrified neighborhoods</b>	-1.05	-1.05	0	-0.17
t-value	0.95	-1.83		
<b>Neighborhoods with CLT</b>	-1.00	-1.00	0	-0.92
<b>Neighborhoods without CLT</b>	-1.08	-1.13	-0.05	-3.15**
t-value	2.05**	2.73**		

Gentrification has negative effects on the affordability in neighborhoods, and CLTs stabilize the decrease of the affordability in their neighborhoods. Moreover, affordability was significantly decreased in neighborhoods without CLT.

**Table 5-27. Cross comparison for average of affordability**

2000				2010			
	CLT	No CLT	t-value		CLT	No CLT	t-value
<b>Gentrified</b>	-0.91	-1.03	-1.88	<b>Gentrified</b>	-1.00	-1.20	-3.00**
<b>No Gentrified</b>	-1.00	-1.10	-1.88	<b>No Gentrified</b>	-1.00	-1.10	-1.72
t-value	-0.90	-1.13		t-value	0.02	1.43	

According to table 5-27, only statistically significant finding is that affordability was less decreased in gentrified neighborhoods with CLT than without CLT between 2000 and 2010. This finding shows that CLTs stabilize the decrease of affordability in gentrified neighborhoods.

In summary, while gentrification decreases affordability in their neighborhoods, CLTs stabilize affordability in their neighborhoods. CLTs alleviate the decrease of affordability in gentrified neighborhoods.

#### *5.1.9 Owner-occupied housing rate*

The owner-occupied housing rate is related to one of the benefits of CLTs: increasing affordability. The research hypothesis related to the owner-occupied housing rate is that CLTs help stabilize increasing owner-occupied housing rates in gentrifying neighborhoods. The owner-occupied housing rate is the percentage of the owner-occupied housing units in the total occupied housing units. Table 5-28 shows the owner-occupied housing rates by neighborhood type and year:

**Table 5-28. Average of owner-occupied housing rate by neighborhood type**

Neighborhood	Owner-occupied housing rate			
	2000	2010	±	t-value
Gentrified & CLT	67.89	67.88	-0.01	0.01
CLT	62.92	60.70	-2.22	4.03**
Gentrified	56.88	58.46	+1.58	-2.32**
Other	60.05	57.66	-2.39	5.37**

According to the table, CLTs lessened the owner-occupied housing rate in gentrified neighborhoods, which means that rental housing units are more affordable, and increased in proportion or at least didn't reduce their proportions. Table 5-29 compares neighborhoods with CLT and without CLT:

**Table 5-29. Average of owner-occupied housing rate by CLT**

Neighborhood	Owner-occupied housing rate			
	2000	2010	±	t-value
Neighborhoods with CLT	63.49	61.53	-1.97	3.90**
Neighborhoods without CLT	59.13	57.89	-1.24	3.09**
t-value	-1.52	-1.34		

According to the table, CLTs have no effects on the owner-occupied housing rate in their neighborhoods. The neighborhoods shouldn't be compared by gentrification because it has already been used to select gentrified neighborhoods.

**Table 5-30. Cross comparison for average of owner-occupied housing rate**

2000				2010			
	CLT	No CLT	t-value		CLT	No CLT	t-value
<b>Gentrified</b>	67.89	56.88	1.46	<b>Gentrified</b>	67.88	58.46	1.43
<b>No Gentrified</b>	62.92	60.05	0.90	<b>No Gentrified</b>	60.70	57.66	0.99
t-value	0.82	-0.70		t-value	1.22	0.19	

Table 5-30 shows the cross comparison for average of owner-occupied housing rate. This table shows that there is no significant difference between proportions of rental units by neighborhood type. In summary, CLTs retain the proportion of rental units in gentrified neighborhoods. Thus, CLTs lessen the loss of rental units in gentrified neighborhoods.

#### *5.1.10 Housing price*

The housing price is related to another benefit of CLTs: stabilizing neighborhoods. The research hypothesis related to the housing price is that CLTs help stabilize increasing housing prices in gentrifying neighborhoods. To measure housing price change correctly, I compare the actual median housing price of each neighborhood to the national median housing price in the same year. The national median price is \$111,800 in the year 2000 and \$188,400 in the year 2010. Thus the housing price index indicates the proportion of the median housing price to the national median housing price. Table 5-31 shows the housing price index by neighborhood type and year:

**Table 5-31. Average of housing price index by neighborhood type**

Neighborhood	Housing price index			
	2000	2010	±	t-value
Gentrified & CLT	0.90	1.12	+0.22	-3.92**
CLT	1.31	1.43	+0.12	-3.78**
Gentrified	1.33	1.53	+0.20	-5.36**
Other	1.35	1.38	+0.03	-0.96

Only non-gentrified neighborhoods without CLT show no difference in the housing price index between 2000 and 2010, which means that the sampling of this research was not biased in terms of housing prices. In addition, in case of non-gentrified neighborhoods, more median housing value increase in neighborhoods with CLTs than neighborhoods without CLTs was shown between 2000 and 2010. This means that CLTs help increase their neighborhoods' housing prices in non-gentrified neighborhoods.

**Table 5-32. Average of housing price index by gentrification and CLT**

Neighborhood	Housing price index			
	2000	2010	±	t-value
<b>Gentrified neighborhoods</b>	1.23	1.43	+0.20	-6.60**
<b>Non-gentrified neighborhoods</b>	1.33	1.40	+0.07	-3.29**
t-value	1.20	-0.29		
<b>Neighborhoods with CLT</b>	1.27	1.39	+0.12	-4.60**
<b>Neighborhoods without CLT</b>	1.34	1.42	+0.08	-3.11**
t-value	1.06	0.35		

Table 5-32 shows no difference between the changes of housing price index by neighborhood types. In every neighborhood, there were significant increases in the housing price index with no difference between neighborhoods.

**Table 5-33. Cross comparison for average of housing price index**

2000				2010			
	CLT	No CLT	t-value		CLT	No CLT	t-value
<b>Gentrified</b>	0.90	1.33	-3.93**	<b>Gentrified</b>	1.12	1.53	-3.39**
<b>No Gentrified</b>	1.31	1.35	-0.36	<b>No Gentrified</b>	1.43	1.38	0.55
t-value	-2.29**	-0.14		t-value	-1.52	1.46	

Table 5-33 shows that the housing price increased more in gentrified neighborhoods than non-gentrified neighborhoods in the neighborhoods with CLT. This is reasonable because of the fundamental characteristic of gentrification. In the neighborhoods without CLT, there are no differences between gentrified and non-gentrified neighborhoods. In gentrified neighborhoods, the housing price is higher in the neighborhoods without CLT than with CLT. However, CLTs didn't have significant effects on the increase of housing price index. In this sense, it can be presumed that CLTs were introduced in distressed areas from the first time, thus CLTs played a role in alleviating housing prices in gentrified neighborhoods consequently.

In summary, while gentrification facilitates an increase of housing prices, CLTs stabilize the excessive increase of housing prices in gentrified neighborhoods by initially entering into lower housing price neighborhoods.

### 5.1.11 Logistic regression

The collected data also can be analyzed by the binomial logistic regression model, which is a conventional logistic model. The purpose of this analysis is to determine the relationship between gentrification and other possible factors, including CLTs, that can affect gentrification. Thus, the dependent variable is whether gentrification occurs or not between 2000 and 2010, and independent variables are nine factors from the cross-sectional comparison. Only the housing price index was omitted from the independent variables because of collinearity. Table 5-34 shows the results of the logistic regression.

**Table 5-34. Logistic regression analysis predicting the likelihood of gentrification**

	Odds Ratio	Coefficient	z-statistics
White population (%)	0.974**	-0.027**	-2.08
Middle-class household (%)	0.953	-0.048	-1.04
Graduate high school or more (%)	1.051*	0.049*	1.95
Length of residence compared to city-wide area	1.170	0.157	0.09
Affordability index	0.950	-0.052	-0.08
Owner-occupied unit (%)	1.003	0.003	0.27
Income level compared to city-wide area	1.663	0.509	0.66
Age fluctuation between 2000 and 2010	1.147***	0.137***	2.84
CLT = 1	0.301***	-1.202***	-3.28
Constant	0.011*	-4.548*	-1.81
N	272		
LR chi2 (9)	35.36		
Prob > chi2	0.0001		
Pseudo R <sup>2</sup>	0.125		
Log likelihood	-123.27371		

Note: \*p < 0.10 \*\*p < 0.05 \*\*\*p < 0.01.

The total number of neighborhoods used in this analysis is 272, which includes every type of neighborhoods in this study. The LR chi2 tests the null hypothesis that all the independent variables' coefficients are zero, and the statistic is 35.36 with 9 degree of freedom, which is statistically significant as shown in p-value (0.0001). The pseudo  $R^2$  statistic, which means the overall fit of the model, is 0.125.

The odds ratio are interpreted as follows: If a dependent variable and an independent variable are unrelated, the logit coefficient of an independent variable will equal 0, and the odds ratio will therefore equal  $e^0 = 1$ . Hence, the stronger the relationship, the farther the odds ratio will be from 1. The farther the odds ratio is above 1, the more a positive association exists; the farther the odds ratio is below 1, the more a negative association exists.

There are several independent variables that are statistically significant in the analysis. First and foremost, the existence of CLT units is significantly related to gentrification. The odds ratio can be interpreted that, other things are equal, the odds of gentrification are 0.30 times as likely for neighborhoods with CLT units than for neighborhoods without CLT units. In other words, having CLT units, compared to not having CLT units, decreases the odds of gentrification by 69.9%. Second, the white population rate is significantly related to gentrification. That is, when other things are equal, for every percent increase in the white population rate, the odds of gentrification decrease by 2.6%. Third, the degree of age fluctuation is significantly related to gentrification. That is, when other things are equal, for every increase in the age change index, the odds of gentrification increase by 14.7%.



The results from the logistic regression analysis reveal that CLTs have a statistically significant relationship with gentrification in a way that counteracts gentrification. The age fluctuation between 2000 and 2010 also has a statistically significant relationship with gentrification. As generally expected, more age fluctuation was happening in gentrified neighborhoods. The white population rate has a statistically significant relationship with gentrification, but different from the general expectation, a lower rate of white people is shown in gentrified neighborhoods. This could be because the neighborhoods gentrified between 2000 and 2010 had a much lower white population rate in 2000; thus, the white population rate of gentrified neighborhoods in 2010 could be a little bit lower than non-gentrified neighborhoods.

## **5.2 Qualitative Approach**

### *5.2.1 Developing questions*

Based on the previous quantitative findings, structured interviewing was employed as a qualitative support. To do structured interviews, several questions that fit the purpose of this research need to be developed, and the results from the quantitative approach become foundations to construct questions. The quantitative findings were summarized in very brief sentences and divided into two categories such as supportive and controversial in relation to the research hypotheses. The supportive quantitative results are as follows:

1. CLTs have positive effects on diverse ethnic composition in neighborhoods where they are located.
2. CLTs stabilize abrupt age distribution fluctuation in gentrified neighborhoods.
3. CLTs alleviate the decrease of affordability in gentrified neighborhoods.
4. CLTs increase the proportions of low-income residents found in gentrified neighborhoods. In other words, CLT can help low-income residents from being displaced from gentrified neighborhoods.
5. CLTs help maintain income levels in their neighborhoods.
6. CLTs lessen the loss of rental units in gentrified neighborhoods.
7. CLTs stabilize the excessive increase of housing prices.

As described above, the supportive results can be interpreted as CLTs countering the negative effects of gentrification. On the other hand, the controversial quantitative results are as follows:

1. CLTs have negative effects on the length of residence in gentrified neighborhoods, while having positive effects in non-gentrified neighborhoods.
2. CLTs do not help increase the education level of residents in gentrified neighborhoods.

The controversial results indicate that CLTs have complex impacts on gentrification in a few aspects, even though not totally opposite to but different from the research hypotheses.

To interpret these findings adequately, a few simple interview questions, which are easily understandable for general CLT directors were developed. The number of questions is minimized for a higher response rate. The questions begin with the informational and introductory description first, and then the main questions follow.

The first question is about supportive findings as follows:

*According to my analysis, CLTs can help counteract the negative impacts of gentrification (supportive results #1~7). Do you think this is true in your CLT? Are there any results that are inconsistent with your experience?*

The second question is about controversial findings as follows:

*My findings suggest that CLTs may result in greater neighborhood stability (as indicated by length of residence) in non-gentrified neighborhoods, but less stability in gentrifying neighborhoods. Do you think this is true in your CLT? Whether it is true or not, in your perspective, what do you think the reason for that might be?*

The last question has broad range to elicit more comprehensive responses from interviewees. It is expected to get critical insights from CLT directors through this general open-ended question. The question is as follows:

*Do you have any other thoughts about the overall results of my analysis or about your CLT?*

Using these three structured questions, 11 out of 46 CLT directors who were contacted responded through email and/or phone.

### 5.2.2 Data analysis

To relate practice to theory, descriptive data should be summarized and then linked to more general theoretical constructs. In this sense, the summary of responses by table is needed to arrange structured interviews and to analyze qualitative research data. First, responses to supportive findings are summarized in table 5-35 as follows:

**Table 5-35. Summary of responses for supportive findings**

CLT's effect	Responses
General findings	Nine respondents agreed that CLT's generally counteract the negative impacts of gentrification on neighborhoods. One respondent said he didn't know about it, and one respondent did not agree with my general findings.
Diverse ethnic composition	One respondent said that high quality schools were in wealthier neighborhoods (gentrified neighborhoods), and this could be one of the most important reasons in demographic change.
Stabilize age distribution	One respondent gave both supportive and negative answers. He could see the ability of CLTs to stabilize abrupt age distribution fluctuation was true, but the opposite was possible where the predominantly elderly neighborhood in a well-established family neighborhood.
Increase affordability	Four respondents referred to maintain or increase affordability in the neighborhoods with CLT units, as well as CLT unit itself did.
Increase middle-class	Two respondents referred to low and moderate income families and another two said low income people were main targets of CLTs. CLTs prevent displacement of low/moderate income families from gentrifying neighborhoods. On the other hand, one respondent said that lower income families were displaced from a high income community.
Stabilize income level	No respondent specifically referred to income level of neighborhood

**Table 5-35. Continued**

CLT's effect	Responses
Increase middle-class	Two respondents referred to low and moderate income families and another two said low income people were main targets of CLTs. CLTs prevent displacement of low/moderate income families from gentrifying neighborhoods. On the other hand, one respondent said that lower income families were displaced from a high income community.
Stabilize income level	No respondent specifically referred to income level of neighborhood
Increase rental housing rate	Two respondents disagreed with this. One said that he couldn't see how CLTs lessen the loss of rental units within gentrified neighborhoods, and CLTs did not considered rental units. The other said his CLT program in fact increased the loss of rental units, so he said that there were times when CLTs may not lessen the loss of rental units.
Stabilize housing price	Two respondents agreed with this due to the ability of CLTs to restrict the resale price of houses.

As a whole, many respondents agreed with most findings except the rental housing rate, but nobody referred to the neighborhood income level. In addition, some of them confused the effects of CLTs on neighborhood with those of CLT itself. However, many of them suggested reasonable comments to address some complicated and complex findings. On the other hand, some responded to several controversial findings by giving useful suggestions and sensible alternatives. Table 5-36 shows the summary of them.

**Table 5-36. Summary of responses for controversial findings**

CLT's effect	Responses
Reduce length of residence in gentrified neighborhoods	<p>Many respondents suggested alternative explanations about this finding.</p> <ul style="list-style-type: none"> <li>○ Residents who live in gentrified neighborhoods do not have a lot of options in residence, but those who live in non-gentrified neighborhoods have more options.</li> <li>○ Gentrification displaces whole communities - not just homeowners. Churches/businesses/jobs, etc. are all displaced.</li> <li>○ Households move for all sorts of reasons that may be unrelated to a neighborhood.</li> <li>○ A gentrifying neighborhood's cost of buying/renting is increasing at a rate faster than a stabilized neighborhood.</li> <li>○ Two respondents said that the younger household viewed the CLT model as a stepping stone to more conventional homeownership.</li> <li>○ High living cost in gentrified area for CLT residents displaces them.</li> </ul> <hr/> <p>Two respondents said that this was not true in their case, and one said that he couldn't understand this.</p>
Do not increase education level	<p>Two respondents disagreed with this finding. They said that 10 years is a long time, but perhaps not long enough to track resident's educational attainment.</p>

While some of them disagreed with the controversial findings, many respondents gave me a variety of alternative explanations for better interpretation of the findings. These comments from the CLT field enrich my arguments in the next section. Finally, responses to the last general question are summarized in table 5-37 as follows:

**Table 5-37. Summary of responses for general question**

Topic	Responses
General research	<p>Five respondents showed their support for my findings in general question. They thought my results pointed out what most of them in the CLT organizations knew about CLTs.</p>

**Table 5-37. Continued**

Topic	Responses
Role of CLT	CLTs generally support community efforts to create stability and to provide for diversification both economically and culturally. It is the role of community land trusts to enhance the community, hence the reason why land trusts have the word “community” in their name.
Ethnic diversity	CLTs make housing more stable in high cost markets and allow for more diversity. CLT people are finding that ethnic diversity is very hard to obtain and they are working on more methods to do this.
Housing price	With constantly fluctuating housing prices, CLTs can provide some stability for the potential homebuyers.

General responses were provided with respect to several specific topics. In short, CLTs’ functions in stabilizing and diversifying neighborhoods were primarily discussed in the feedback from over 10 experienced CLT practitioners.

## 6. INTERPRETATION

The findings from both quantitative and qualitative approaches are synthesized in this section, and then interpreted thoroughly. The interpretation progresses according to the research framework that illustrates how CLTs have effects on the negative effects of gentrification. As shown in Section 3, three main negative effects of gentrification and the benefits of CLTs that can counteract to those effects are shown in table 6-1:

**Table 6-1. Indices with respect to impacts of CLTs on gentrification**

Negative effect of gentrification	Benefits of CLTs	Neighborhood index
Displacement	Build Community Assets	Ethnic composition Middle-class ratio Income level Education level
	Stabilize Neighborhood	Length of residence Age fluctuation
Lower Affordability	Increase Affordability	Affordability Owner-occupied housing rate
Skyrocket of Property Price	Stabilize Neighborhood	Housing price

The above table also shows the measurable indices corresponding to both the negative effects of gentrification and the benefits of CLTs. Those indices were analyzed quantitatively first, and complemented by qualitative research. In this section, interpretation will be conducted by this logical sequence.



## 6.1 Displacement

Displacement is pointed out as a main negative effect of gentrification by many researchers. The effects of displacement are the destruction of the community, the loss of place, dislocations, and conflicts within communities (Betancur, 2002; Abu-Lughod, 1994; Smith, 1996; Rose, 1996; Betancur, 2011). The research hypothesis is that these drawbacks of displacement caused by gentrification can be balanced out by the benefits of CLTs.

### *6.1.1 Build community assets*

As a counter strategy to displacement caused by gentrification, community assets, which play a key role in decreasing it, can be considered. Building community assets includes not only physical assets but also invisible values such as a sense of belonging to community. Also, it relates to diverse ethnic composition, enough middle-class households, stable income level, and higher education level. According to the hypotheses of this research, CLTs can help build community assets, and both quantitative and qualitative approaches were used to show it.

#### Ethnic composition

The research hypothesis assumes that CLTs can counteract the trend of displacement by ethnic diversification. As mentioned earlier, displacement causes transformation of demographic composition in neighborhoods. The quantitative findings suggest that CLTs have positive effects on ethnic diversity regardless of whether

neighborhoods are gentrified or not. More specifically, in gentrified neighborhoods, CLTs don't have any significant effect on ethnic diversity.

This result shows only that ethnic diversity is a general benefit of CLTs in practice. However, from this evidence, it can be noted that this general benefit of CLTs definitely can help increase ethnic diversity in gentrified neighborhoods as well. If neighborhoods were gentrified, CLTs would not have a strong enough effect on ethnic diversity to reverse the trend of gentrification, which in this case is considered an increase in white population ratio. However, it is possible to say that CLTs have significant effects on increasing ethnic diversity even in gentrified neighborhoods.

#### Middle-class ratio

Building community assets supports the concept that mixed-income residents can live together in a community; it is especially important that the middle- and low-income household ratio is secured in reality. Since CLTs themselves encourage lower middle-class households to live in their own dwelling units, this research assumes that CLTs can reduce the displacement of lower middle-class residents from gentrified areas.

The quantitative analysis indicates that CLTs prevent the decrease of lower middle-class residents' ratio in gentrified neighborhoods. This finding is supported by responses from the experiences of CLT practitioners as follows:

*"Low and moderate income people are the main target of CLT, and CLTs prevent displacement of low/moderate income families from gentrifying neighborhoods."*

From the findings and support, we can suggest with more confidence that CLTs can help lower middle-class residents from being displaced from gentrified neighborhoods.

Moreover, the existence of displacement in practice is supported from a CLT practitioner's response:

*“Our CLT works within a high income community that is also a master planned community ... The high incomes and high costs of housing have ‘priced out’ lower income families and/or families that are first time home buyers.”*

From this statement we can learn that a lot of middle and low income residents were displaced from their community when the gentrifying process proceeded rapidly.

#### Income level

Generally speaking, higher residents' income means more assets in a community. Thus, it is more likely that the increase in income level is needed to build more community assets. However, when displacement happens due to the influx of wealthier people into gentrifying areas, a stabilization of income level is better to maintain existing community assets by preventing displacement of low income residents in those areas.

In this sense, this research assumes that CLTs can stabilize neighborhood income levels in gentrifying neighborhoods. The income level used here is a relative income compared to surrounding city-wide areas.

Although gentrification necessarily raises income levels of neighborhoods, the quantitative finding suggests that CLTs stabilize them regardless of whether the

neighborhood is gentrified or not. However, there is no difference in income level according to the existence of CLT units in gentrified neighborhoods, while there is significant increase in income level in gentrified neighborhoods.

Therefore, while CLTs do not seriously damage the income level of gentrified neighborhoods, they can have at least a small effect on the income level of neighborhoods, even in gentrified neighborhoods.

#### Education level

It is generally accepted that higher education levels are good for building community assets. According to the quantitative analysis, the average education level has been increased in all types of neighborhoods during the last decade. Only gentrified neighborhoods with CLT units show less increase significantly in education level than gentrified neighborhoods without CLT units. This result means that CLTs have negative effects on increasing education levels in gentrified neighborhoods.

However, less increase in the education level can be interpreted as less transformation of the population in gentrified neighborhoods during the last decade. This supports the research hypothesis that CLTs can maintain education levels in gentrified neighborhoods. Thus, we can say that CLTs help prevent displacement of less educated people who might be generally lower income. In this sense, while CLTs have negative effects on building new community assets in terms of higher education level, it has positive effects on maintaining community assets such as a sense of belonging by preventing displacement of residents who had lived there before gentrification.

Nevertheless, since this result seems to be controversial to the research hypothesis, several interviewees disagree with the result that, while CLTs have no impact on education level in non-gentrified neighborhoods, CLTs do not help increase the education level of residents in gentrified neighborhoods. One interviewee supported this perspective as follows:

*“10 years is a long time, but perhaps not long enough to track residents’ educational attainment. Or maybe there are other economic factors at play (people whose ambition to attend college were [sic] disrupted by the recession for example)”*

The above comment might come from the fact that higher education is not a target or a major concern of CLTs. Therefore, CLT practitioners may confuse the quantitative findings as negative ones for CLTs or misunderstand the applicability of the findings to non-gentrified neighborhoods in general. However, the findings are not contrary to the research hypothesis and can only be applied to a limited number of gentrified neighborhoods. Given this mixed finding, the hypothesis that CLTs can increase education level in their neighborhoods cannot be supported as much as other indices.

### *6.1.2 Stabilize neighborhood*

#### Length of residence (Controversial)

Generally, longer length of residence can help stabilize neighborhoods. Therefore, the research hypothesis was that CLTs can help extend length of residence especially in gentrified neighborhoods. However, the quantitative finding was a little bit complicated.

CLTs decrease the length of residence in gentrified neighborhoods, while increasing it in non-gentrified neighborhoods. Another interesting finding is that when we consider neighborhoods regardless of the existence of CLT units, the length of residence is longer in gentrified neighborhoods than non-gentrified neighborhoods.

While several CLT practitioners said that that was not their case or disagreed with the finding, many others put forth alternative ideas to address this controversial result.

First, there may be few or no other options for residence in gentrified neighborhoods. While the length of residence becomes longer when there are fewer options to move, CLTs provide more residence options to the neighborhoods.

*“Residents who live in gentrified neighborhoods do not have a lot of options in residence so they cannot move easily. However, those who live in non-gentrified neighborhoods have more options in residence, so they can move more than those [who] live in gentrified neighborhoods.”*

*“If the housing stock in a neighborhood cannot offer affordable options that can accommodate a wide variety of household sizes, increased turnover will result.”*

Second, there are numerous reasons that people move. That is, high rents or property values are not the sole factor for moving, thus other reasons such as high living costs, change of job place, and family issues can be more influential to people’s decision to move.

*“Gentrification displaces whole communities - not just homeowners. Churches/businesses/jobs, etc. are all displaced. If a family is able to buy their home in*

*a gentrifying neighborhood, but over the course of the next 10 years their friends/family/church/job, etc. are displaced, then they may want to follow their support system, rather than stay in the community... CLTs can assist communities in locking in affordable commercial space as well.”*

*“Households move for all sorts of reasons that may be unrelated to a neighborhood. Life realities as job changes, family composition changes (birth of children which create [sic] a need for a larger unit, divorce, empty nest) , financial hardship all cause a change in residence regardless of the occurrence of gentrification or not.”*

Third, increased rents in gentrified neighborhoods could cause high rates of moving. Therefore, the decrease of length of residence in gentrified neighborhoods with CLT units could be affected mainly by gentrification rather than by CLT units.

*“A gentrifying neighborhood’s cost of buying/renting is increasing at a rate faster than a stabilized neighborhood. It seems to make sense to expect higher turnover of homes as investors and owners sell at substantially higher prices than they paid before the neighborhood turned around.”*

*“Living in a gentrified neighborhood is typically more expensive overall with more expensive grocery stores, restaurants etc. and maybe this isn’t sustainable or desirable for CLT owners. These neighborhoods may become more crowded too, and the general lifestyle changes, and folks may not like this either.”*

*“High living cost in gentrified area for CLT residents displaces them”*

Fourth, in some areas, age could be a factor in moving. In other words, younger people are more likely to move than older people in general. Thus, high mobility in gentrified neighborhoods might be related to the demographic characteristics of new comers. Another assumption is that younger people came to gentrified neighborhoods with CLT units more than gentrified neighborhoods without CLT units, so the mobility could depend on the influx of younger people rather than the existence of CLT units.

*“I have observed here that younger buyers (with or without children) tend to have lower tenures than older buyers ... The younger household views the CLT model as a stepping stone to more conventional homeownership whereas the older residents have perhaps never been able to own a home and are very committed to achieving that goal and remaining there until the end. Another note about younger households is that they are more mobile by nature – jobs transfer them, they work for the military, etc. They are in a less physically stable position because of larger economic forces that may require them to move in pursuit of employment, may be transferred, reassigned or deployed. This is less of an issue for older households.”*

Fifth, CLTs can cause more mobility between classes when CLT owners use it as a stepping stone for better housing opportunity.

*“Maybe the home was sold to someone at the upper end of the allowable income limit who was just using the CLT as a quality starter home before they moved along to a bigger and better home. Maybe their original intentions were to not keep the home longer than a few years. I think that lower income CLT homeowners (those at 60% CMI and below) seem committed to staying for long periods of time since they know that they*



*will not get a quality affordable home that they can afford elsewhere since many of our homes are brand new and even with their equity share they will not find another brand new home for the price of their CLT home for many, many years.”*

Through these abundant qualitative supports, the research hypothesis that CLTs can extend the length of residence in gentrified neighborhoods proved to be false, and the reasons for rejecting the research hypothesis were reasonably explained. All in all, the length of residence cannot be an indicator of the effects that CLTs have on gentrification.

#### Age fluctuation

In order to stabilize neighborhoods, the age composition of the population of a neighborhood should not change rapidly. Moreover, less change in age composition of population can indicate less displacement has occurred in a neighborhood. The change of age composition during the last decade was calculated through an index that is established in this research.

The result shows that the fluctuation of age composition is higher in gentrified neighborhoods with or without CLT units as the research hypothesis expected. When CLT units are located in a neighborhood, there is no difference in the fluctuation of age composition between gentrified and non-gentrified neighborhoods. Further, when there are no CLT units in a neighborhood, age fluctuation is higher in gentrified neighborhoods than non-gentrified neighborhoods. This finding definitely shows that CLTs have a significant effect on the age fluctuation only when neighborhoods are

gentrifying. Thus, it is possible to say that CLTs help prevent residents from being displaced in their neighborhoods.

CLT practitioners were in agreement with the finding on the whole as follows:

*“The greater stability is easily understood since CLT’s by definition remain engaged with their homeowners. We support our homeowners and this should help stabilize non-gentrified neighborhoods.”*

From the above statement, it can be suggested that CLTs can help stabilize neighborhoods even in non-gentrified neighborhoods.

On the other hand, some respondents raised another possibility as follows:

*“The ability of CLTs to stabilize abrupt age distribution fluctuation is true, but the opposite can be true in the predominantly elderly neighborhood, which is a well-established family neighborhood .... A majority of our CLT owners tend to be starter families in a well-established family neighborhood.”*

After considering all findings from quantitative and qualitative approaches, it can be concluded with more confidence that CLTs can help stabilize their neighborhoods especially with regard to the age composition of the population.

## **6.2 Lower Affordability**

Affordability is a primary issue for CLT advocates, and less affordability is one of the main negative effects of gentrification. Typically, gentrification promotes the loss of affordable units in neighborhoods. Therefore, some researchers pointed out that the decrease of affordable units in neighborhoods is a more serious problem than generally

believed (Zukin, 1987; Betancur, 2002). The research hypotheses expect that the benefits of CLTs can resolve this serious problem in gentrified neighborhoods.

### *6.2.1 Affordability*

As mentioned earlier, the major purpose of CLTs is providing affordable housing units to middle- and low-income households, and also the CLT model by itself expands the number of permanently affordable dwelling units within neighborhoods. Therefore, how CLTs affect their neighborhoods in terms of affordability is a critical issue to evaluate the effectiveness of the CLT model, even though that effectiveness has been somewhat proved by the recent rapid increase of CLTs.

The quantitative finding using an affordability index suggests definitely what was expected. Affordability decreases in gentrified neighborhoods and increases in neighborhoods with CLT units. In addition, while gentrified neighborhoods with CLTs show some decrease in affordability, those without CLT units show a greater decrease than those with CLTs. Thus, it is clear that CLTs mediate the decrease of affordability in gentrified neighborhoods.

Many CLT practitioners supported CLTs' impact on increasing affordability in their neighborhoods, but their comments were mainly about the purposes or roles of CLTs. Perhaps this is because increasing affordability is a main function of the CLT model. Thus, most respondents naturally could agree with the findings from quantitative analysis, even though many responses confused CLTs' neighborhood effects with CLTs' own effects. The important point is that CLTs cause affordability to decrease less

regardless of whether it is CLTs' own purpose or CLTs' impact on neighborhoods. Therefore, it can be suggested with more confidence that CLTs can counteract the trend of lower affordability in gentrified neighborhoods.

### *6.2.2 Owner-occupied housing rate*

Fundamentally, the CLT model intends to increase homeownership to build community assets by leasing land and selling houses to residents. However, this is only applied specifically to the CLT units themselves, and how CLTs affect their neighborhoods is a different issue. CLTs can provide more options in residence to their neighborhoods, and an increased option provided by CLTs could result in an increase in rental units, which is generally considered as more affordable housing option. Generally, rental units are crucial for low and very low income residents, and it is important to ensure affordable rental units as land prices go up (Levy et al., 2007).

The findings from quantitative analysis suggest that CLTs help retain rental units in gentrified neighborhoods, even though the existence of CLTs does not have a direct impact on the proportion of rental units in neighborhoods. However, from the results, the impacts of CLTs on owner-occupied housing rates would be smaller than expected. In addition, a few CLT practitioners disagreed with the findings as follows:

*“I cannot see how CLTs lessen the loss of rental units within gentrified neighborhoods, and CLTs are not considered rental units.”*

*“My CLT program in fact increases the loss of rental units, so he says that there are times when CLTs may not lessen the loss of rental units.”*

*“In our perspective, CLTs create stability as home owners of CLT properties tend to stay in their homes longer than many non-CLT properties. This occurs in all areas of a community regardless of gentrification. In areas that are undergoing gentrification, CLT home owners provide continuity and can be helpful in maintaining the community with historical information and context. Additionally, because of CLT requirements, home owners tend to occupy their homes rather than lease them.”*

However, as described in the above statements, every respondent confused CLTs’ own characteristics with their neighborhood impacts. In addition, there was no other reference about CLTs’ impact on rental housing units because such units located in the neighborhoods with CLT units were not the focus of the CLT model. Therefore, considering the results of both approaches, it is still possible to say that CLTs can prevent the loss of rental housing units in gentrified neighborhoods.

### **6.3 Skyrocketing Property Prices**

The skyrocketing property prices in gentrified neighborhoods is one of the major negative effects of gentrification and is supported by numerous researchers who focused on the rent gap theory (Smith, 1996; Lees et al., 2008). To put it briefly, where gentrification occurs, wealthier people come in and raise rents for both residential and commercial uses, and the displacement of low income people accompanies this rent increase. Therefore, this research hypothesizes that CLTs can help alleviate an abrupt increase of property value in gentrified neighborhoods by providing affordable options for low income people.

The housing price is one of the most common indicators to show overall property value in neighborhoods. I analyzed it by each type of neighborhood using the housing price index, which is the relative housing price compared to the national average housing price in the same year.

The findings from quantitative analysis indicate that there is no difference in the housing price index depending on both whether the neighborhoods are gentrified and whether the neighborhoods include CLTs. Rather, while gentrification definitely increases housing prices, CLTs can stabilize the excessive increase of housing prices in gentrified neighborhoods. Based on the quantitative analysis, it could be speculated that CLTs were introduced into neighborhoods that already had low housing prices, and those distressed neighborhoods have been gentrified during the last decade.

Many CLT practitioners agreed with the role of CLTs in alleviating the excessive increase in housing prices.

*“I agree with this due to the ability of CLTs to restrict the resale price of homes”*

*“With housing prices constantly fluctuating, CLT provides some stability for the potential homebuyers.”*

*“The ability to restrict the resale price of homes and our mandate to sell to buyers earning 80% or less of Area Median Income means there will always be affordable housing even as the rest of the neighborhood becomes pricier.”*

Although there is still confusion between CLTs’ own impacts and their impacts on neighborhoods, all respondents expressed positive perspectives to the effects of CLTs to mediate excessive increase of housing prices. However, one respondent was

concerned about the significance of CLTs' impacts on neighborhoods in spite of consenting with the quantitative result as follows:

*“CLT can counteract gentrification by stabilizing housing prices and maintain affordability. However, I am concerning that the neighborhood impacts could be small because of few number of CLT units.”*

However, this concern about the small number of CLT units in neighborhoods can be resolved by numerous neighborhood cases that were used in the quantitative analysis. A total of 272 neighborhoods were employed for the analysis in order to guarantee the statistical significance of the results.

Even though CLTs have limited and indirect effects on housing prices in their neighborhoods, there was no counter evidence to its stabilizing effects on neighborhoods. Therefore, we can say that CLTs can help stabilize skyrocketing housing prices in gentrified neighborhoods.

#### **6.4 Summary**

The research findings from both quantitative and qualitative approaches were synthetically interpreted by each index with respect to mitigating negative effects of gentrification. However, each interpretation was compiled into the following table to provide a more comprehensive explanation for CLTs' effects on every index in gentrified neighborhoods and neighborhoods with CLT units. Additionally, Table 6-2 illustrates qualitative supports as well:

**Table 6-2. CLTs’ effects on neighborhoods by index**

CLTs’ effects on...	Gentrified Neighborhood	Qualitative Support	Neighborhood with CLT	Link with CLTs’ benefits
Ethnic diversity	Medium	High	Extra High	Build Community Assets
Maintain middle-class ratio	High	High	Medium	
Stabilize income level	Medium	Medium	High	
Maintain education level	High	None	None	
Increase length of residence	Negative	Agree	High	Stabilize Neighborhood
Decrease age fluctuation	High	High	None	
Stabilize housing price	Medium	High	None	
Increase affordability	High	Extra High	High	Increase Affordability
Decrease owner-occupied housing rate	Medium	None	None	

Table 6-2 first describes the effect of CLTs on gentrification and their neighborhoods by each index, and then shows whether the indicators were qualitatively supported.

Quantitative analysis indicates that CLTs have effects on slowing gentrification except for one indicator: increased length of residence. However, CLTs’ general effects on their neighborhoods are significant in five indicators and insignificant in four indices. This result shows that CLTs’ merits appeared more prominently in gentrifying neighborhoods than in general.



Qualitative analysis indicates that CLT practitioners support seven indices and have no opinion on two indices: maintaining education level and decreasing owner-occupied housing rate. In particular, they agreed with the research hypothesis that CLTs can increase length of residence in their neighborhoods. As a result, they disagreed with the quantitative finding, which indicated a negative effect of CLTs on increasing length of residence in gentrified neighborhoods. However, CLT practitioners offered a variety of alternatives to figure out the reason for the quantitative finding.

The overall interpretation comes from combining the above two approaches. The impacts of CLTs on gentrification are significant on the whole. In particular, it is highly supported that CLTs maintain middle class ratios and increase affordability in gentrifying neighborhoods. CLTs have significant effects on maintaining education level and decreasing age fluctuation in gentrifying neighborhoods. CLTs have less significant impacts on increasing ethnic diversity, stabilizing income level, decreasing owner-occupied housing rates, and stabilizing housing prices in gentrifying neighborhoods. Finally, less length of residence in gentrifying neighborhoods was shown in neighborhoods with CLT units, and this result was interpreted differently based on a variety of alternatives that many CLT practitioners provided.

All in all, only increased length of residence was proved not to support the main research hypothesis, but the rest of them supported it. Moreover, qualitative analysis supports numerous alternative explanations about why housing turnover happens more frequently in gentrified neighborhoods with CLT. Among the benefits of CLTs, both the qualitative analysis and the quantitative analysis support building community assets

more than other two benefits of CLTs: stabilizing neighborhoods and increasing affordability.

The results from the logistic regression analysis provide an interesting insight into the impact of CLTs on gentrification. These results support the quantitative and the qualitative findings of this study. Quantitatively, the logistic regression analysis shows a clear link between CLT and gentrification into a negative direction statistically. This is in fact a robust finding that statistically supports the main research hypothesis: CLTs will moderate the negative effects of gentrification.

In conclusion, CLTs have effects on slowing down gentrification, and most negative effects of gentrification are more or less affected by CLTs' benefits. This conclusion is supported by the following CLT practitioner's comment from the qualitative approach:

*“I believe that any housing program which provides below market pricing targeted to below median incomes will partially counteract impacts of gentrification. I also believe that CLT's do a better job than other methods such as deed restrictions or covenants because CLT's strive to assist home owners before and after they buy the home. The stewardship practices inherent in the CLT model provide stability that comes with pre- and post-purchase counseling and support.”*

## **7. CONCLUSION**

The mixed method of quantitative and qualitative analyses explored by this research highlights the impact of CLTs on their neighborhoods in terms of the gentrifying process. I collected the location information of each CLT unit and information about the first year they were introduced. To get high quality information from simple and clear comparisons, the neighborhoods were categorized into four types and carefully compared using nine indices by the U.S. Census data and telephone or email interviews with CLT practitioners. The nine indices represent the spectrum of CLTs' effects on gentrification and most of them agreed that CLTs can slow down the gentrifying process.

### **7.1 Policy Implication**

The scope of this research is not limited to a handful of CLTs scattered across the country, but comprehensive information was used. Moreover, since CLTs are not yet widely spread out across the country, the corresponding cases that do not have any CLT units at all were selected for more accurate comparison. The comparison was almost not affected by the original condition of neighborhoods and possible problems caused when using a different time frame because this research examined the rate of change between 2000 and 2010. The change between 2000 and 2010 is the most recent information that we can obtain from the U.S. Census data; thus, the findings are timely to use. These are good backgrounds to compare neighborhoods with CLT units to those without them.

Previous research has demonstrated a range of disadvantages of gentrification but just assumed and suggested CLTs' role in mitigating them. In addition, previous research has not evaluated the actual effects of CLTs on gentrifying process. Therefore, this research contributes to planning theory by providing practical evidences for the assumptions of previous research.

The findings also highlight the importance of utilizing the CLT model as the way for alleviating disadvantages of gentrification in neighborhoods. As mentioned in Section 2, previous literature suggested production and preservation of affordable housing, community asset building (Levy et. al, 2012; Kennedy & Leonard, 2001), and government intervention (Levy et. al, 2012; Kennedy & Leonard, 2001; Henig, 1980) as main tools to address gentrified areas. The CLT model itself is one of the best ways to produce affordable housing, to preserve affordability, and to build community asset in neighborhoods. As recently shown in many cases, local or municipal governments can make use of the CLT model. City governments can consider using CLTs as a way of slowing down gentrification, so they can reduce negative effects and pursue a better change with keeping incumbent residents in their dwellings. Furthermore, a community that intends to keep their neighborhood affordable and stable in the midst of the gentrifying process can utilize it as well.

One more lesson to draw from this research relates to subcategories of the benefits of CLTs. That is, CLTs also can be regarded as a way of building community assets in neighborhoods, which relates to strengthening the solidarity of neighborhoods.

Therefore, gentrification can be slowed down in the neighborhoods that have more solidarity.

On a larger scale, the findings of this research suggest CLT's practical effects on neighborhoods in terms of each indicator. Since CLTs have its own function and purpose, the neighborhood effects of CLTs are more likely to be considered as the same with CLT's general objectives for their residents. This confusion conceals the real neighborhood effects of CLTs. However, the neighborhood effects of CLTs were described clearly in my quantitative analysis. CLTs have an extremely high effect on ethnic diversity of neighborhoods, and additionally, have a high effect on affordability increase, neighborhood income level stabilization, and length of residence increase in their neighborhoods. Also, CLTs have a certain level of effects on maintaining middle-class ratio. Thus, any local government that intends to make a better community with more neighborhood stability can consider using the CLT model as a good option. On the other hand, CLTs have no effect on education level, age, owner-occupied housing rate, and housing price in their neighborhoods. Thus, policy makers or community representatives can use the CLT model more efficiently and become more confident in engaging the CLT model in their neighborhoods by becoming aware of the result of this research.

## **7.2 Limitations**

The findings and policy implications of this research are more suggestive than definitive because of the following limitations. Although this research derives many

meaningful findings from the mixed method, and has a robust research design in comparison, still not every CLT was recruited as a sample. The first limitation is sampling bias. I tried to address this through evenly distributing samples by U.S. region, but the possibility of sampling bias still exists. Also, the number of gentrified neighborhoods with CLT units is relatively small, though this cannot reduce statistical significance in my research. Another possible limitation was identifying gentrified neighborhoods; I used a definition of gentrification through quantitative standards from the previous studies. However, to impose an objective definition of gentrification may have some issues itself.

Next, the total numbers of CLT units are low, so drawing a sample of a sufficient size was challenging. So I worked with secondary data sources primarily, and used the sample selection to control for some of the differences. Using census tracts as a unit of analysis, I set up treatment and control groups of census tracts with two treatments—having a CLT, and being gentrified. Nevertheless, the numbers of census tracts in each of the four types were relatively small, but conducting t-tests between and among them allowed us establish statistical significance of the group mean differences. Even though the small number of CLT units in each neighborhood seems to be problematic, it doesn't damage statistical significance of the findings.

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## APPENDIX 1

### FEDERAL DEFINITION OF A COMMUNITY LAND TRUST

Introduced by U.S. Representative Bernie Sanders and signed into law in 1992.

#### **SECTION 212, HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1992**

**H1 1966 CONGRESSIONAL RECORD – HOUSE** *October 5, 1992*

**DEFINITION OF COMMUNITY LAND TRUST** - For purposes of this section, the term “community land trust” means a community housing development organization (except that the requirements under subparagraphs (C) and (D) of section 104(6) shall not apply for purposes of this subsection)-

- (1) that is not sponsored by a for-profit organization;
- (2) that is established to carry out the following activities;
- (3) that-

(A) acquires parcels of land, held in perpetuity, primarily for conveyance under longterm ground leases;

(B) transfers ownership of any structural improvements located on such leased parcels to the lessees; and

(C) retains a preemptive option to purchase any such structural improvement as a price determined by a formula that is designed to ensure that the improvement remains affordable to low- and moderate- income families in perpetuity;

(4) whose corporate membership is open to any adult resident of a particular geographic area specified in the bylaws of the organization; and

- (5) whose board of directors-

(A) includes a majority of members who are elected by the corporate membership; and

(B) is composed of equal numbers of

( i ) lessees pursuant to paragraph (3)(B),

( ii ) corporate members who are not lessees, and

( iii ) any other category of persons described in the bylaws of the organization.

Source: United States Federal Register (1992)

APPENDIX 2

CONTACT LIST FOR QUANTITATIVE APPROACH

No	CLT Organization	Location
1	Anchorage CLT	Anchorage, AK
2	Sitka Community Development Corporation	Sitka, AK
3	Newtown Community Development Corporation	Tempe, AZ
4	Community Homes of Patagonia, Inc.	Patagonia, AZ
5	Pima County Community Land Trust	Tucson, AZ
6	City of Flagstaff CLT Program	Flagstaff, AZ
7	Community Land Trust Association of West Marin (CLAM)	Point Reyes Station, CA
8	Housing Land Trust of Sonoma County	Petaluma, CA
9	Bolinas Community Land Trust (BCLT)	Bolinas, CA
10	Bay Area Community Land Trust (BACLt)	Berkeley, CA
11	Beverly Vermont Community Land Trust (BVCLT)	Los Angeles, CA
12	Humboldt Community Development Land Trust	Arcata, CA
13	Saint Joseph Community Land Trust	South Lake Tahoe, CA
14	Northern California Land Trust (NCLT)	Berkeley, CA
15	Irvine Community Land Trust	Irvine, CA
16	California Community Foundation	Los Angeles, CA
17	San Francisco Community Land Trust (SFCLT)	San Francisco, CA
18	Habitat for Humanity of Southern Santa Barbara County	Goleta, CA
19	T.R.U.S.T. South LA	Los Angeles, CA
20	San Diego Community Land Trust	San Diego, CA
21	Hemet Community Land Trust	Hemet, CA
22	Rocky Mountain Community Land Trust	Colorado Springs, CO
23	Thistle Community Housing	Boulder County, CO
24	Colorado Community Land Trust (CCLT)	Denver, CO
25	Urban Land Conservancy	Denver, CO
26	Litchfield Housing Trust, Inc.	Litchfield, CT
27	Naugatuck Valley Housing Development Corporation	Waterbury, CT
28	City First Homes	Washington, DC
29	South Florida Community Land Trust	Fort Lauderdale, FL
30	Habitat for Humanity of South Palm Beach County	Delray Beach, FL
31	Lee County Housing Development Corp.	Fort Myers, FL
32	BHP CLT	Ft. Lauderdale, FL

33	Florida Low Income Housing Associates	Inverness, FL
34	Coast and Islands CLT	Sanibel Island, FL
35	Hannibal Square CLT	Winter Park, FL
36	Delray Beach Community Land Trust, Inc.	Delray Beach, FL
37	Neighborhood Renaissance	West Palm Beach, FL
38	The Community Land Trust of Palm Beach County, Inc.	West Palm Beach, FL
39	Adopt-a-Family of the Palm Beaches	Lake Worth, FL
40	Housing Partnership, Inc.	Riviera Beach , FL
41	Bright Community Trust	Clearwater, FL
42	Athens Land Trust	Athens, GA
43	Atlanta Land Trust Collaborative (ALTC)	Atlanta, GA
44	Pittsburgh Community Improvement Association	Atlanta, GA
45	Nā Hale O Maui	Wailuku, HI
46	Story County Community Housing Corporation	Ames, IA
47	Community Partners for Affordable Housing	Highland Park, IL
48	Lexington Community Land Trust	Lexington, KC
49	Lawrence Community Housing Trust	Lawrence, KS
50	Lower 9th Ward NENA	New Orleans, LA
51	Crescent City Community Land Trust	New Orleans, LA
52	Northshore Housing Initiative	Covington, LA
53	Jane Place Neighborhood Sustainability Initiative	New Orleans, LA
54	Holyoke Community Land Trust	Holyoke, MA
55	Valley Community Land Trust	Greenfield, MA
56	Andover Community Trust (ACT)	Andover, MA
57	Bread and Roses Housing	Lawrence, MA
58	Island Housing Trust	West Tisbury, MA
59	CLT in the Southern Berkshires	Great Barrington, MA
60	Worcester Common Ground, Inc.	Worcester, MA
61	Dudley Neighbors, Incorporated (DNI)	Roxbury, MA
62	Frederick County Affordable Housing Land Trust	Frederick County, MD
63	Island Housing Trust	Mount Desert, ME
64	Waterville Community Land Trust	Waterville, ME
65	Rondo CLT	St. Paul, MN
66	Two Rivers CLT	Woodbury, MN
67	West Hennepin Affordable Housing Land Trust	Minnetonka, MN
68	The City of Lakes Community Land Trust (CLCLT)	Minneapolis, MN
69	Northern Communities Land Trust (NCLT)	Duluth, MN

70	First Homes Community Land Trust	Rochester, MN
71	Central MN Housing Partnership, Inc.	St. Cloud, MN
72	Homes Within Reach	Minnetonka, MN
73	24:1 COMMUNITY LAND TRUST	St. Louis, MO
74	Springfield Community Land Trust	Springfield, MO
75	North Gulfport CLT	Gulfport, MS
76	North Missoula CDC	Missoula, MT
77	Durham Community Land Trustees, Inc. (DCLT)	Durham, NC
78	Outer Banks CDC	Kill Devil Hills, NC
79	Davidson Housing Coalition	Davidson, NC
80	Community Home Trust	Orange County, NC
81	Grand Forks CLT	Grand Forks, ND
82	Laconia Area CLT	Laconia, NH
83	Contoocook Housing Trust	New Ipswich, NH
84	Essex CLT	Montclair, NJ
85	The Housing Trust	Santa Fe, NM
86	Sawmill Community Land Trust (SCLT)	Albuquerque, NM
87	Albany Community Land Trust	Albany, NY
88	CLT of Schenectady	Schenectady, NY
89	Jubilee Homes of Syracuse, Inc.	SYRACUSE, NY
90	Adirondack Community Housing Trust	Elizabethtown, NY
91	South Country CLT	Brookhaven, NY
92	Cooper Square CLT	New York, NY
93	Yellow Springs Home, Inc	Yellow Springs, OH
94	Community Land Trust of Greater Cleveland	Cleveland, OH
95	Proud Ground	Portland, OR
96	Lincoln Community Land Trust	Corvallis, OR
97	Kôr Community Land Trust	Bend, OR
98	State College CLT	State College, PA
99	Lehigh Valley Community Land Trust (LVCLT)	Bethlehem, PA
100	Dakota Land Trust	Deadwood, SD
101	HomeBase	Austin, TX
102	Guadalupe Neighborhood Development Corporation	Austin, TX
103	Mountainlands Community Housing Trust	Park City, UT
104	Thomas Jefferson CLT	Charlottesville, VA
105	Central Vermont Community Land Trust (CVCLT)	Barre, VT
106	Twin Pines Housing Trust	White River Junction, VT
107	Champlain Housing Trust (CHT)	Burlington, VT

108	Addison County Community Trust	Vergennes, VT
109	Vashon HouseHold	Vashon, WA
110	S.H.A.R.E. Community Land Trust	Leavenworth, WA
111	Homestead CLT	Seattle, WA
112	Housing Resources Board	Bainbridge Island, WA
113	Kulshan CLT	Bellingham, WA
114	Lopez Community Land Trust	Lopez Island, WA
115	Home Trust of Skagit	Burlington, WA
116	Kittitas Yakima Valley CLT	Ellensburg, WA
117	Spokane Community Land Trust	Spokane, WA
118	Kittitas Yakima Valley CLT	Ellensburg, WA
119	OPAL Community Land Trust	Eastsound, WA
120	Saratoga Community Housing	Freeland, WA
121	Coulee Community Land Trust	Westby, WI
122	Madison Area CLT	Madison, WI
123	San Juan Community Home Trust	Friday Harbor, WA
124	Diamond State CLT	(State-wide), DE
125	Franklin County Community Development & Land Trust Corporation	Apalachicola, FL
126	ARCH Community Housing Trust	Ketchum, ID
127	Chicago CLT (CCLT)	Chicago, IL
128	Northwest Montana CLT	Kalispell, MT
129	Community housing land trusts	State-wide, RI
130	Windham & Windsor Housing Trust	Brattleboro, VT
131	Jackson Hole Community Housing Trust	Jackson, WY



### APPENDIX 3

#### CONTACT EMAIL FOR QUANTITATIVE APPROACH

Title: Request for CLT information

Dear *(Name of CLT practitioner)*,

Hello! I am Myungshik, a Ph.D. candidate in the Urban and Regional Science program at Texas A&M University, a research fellow in the Center for Housing & Urban Development, and a research collaborative member of the National Community Land Trust Network.

I am conducting a research study on Community Land Trusts (CLTs) for my dissertation. The purpose of this study is to show how the CLTs affect neighborhood change in the neighborhoods around the CLT units. I will gather data on as many CLTs as possible for my analysis. The findings from this study will help policy makers, land trust boards, and others interested in locating CLTs in their jurisdictions. It can help community leaders and residents know how to maximize the benefits of CLTs.

This study has been approved by my graduate committee, supervised by Dr. Shannon Van Zandt, Director of the Center for Housing & Urban Development. It has also been approved by the Institutional Review Board (IRB) at Texas A&M University to protect privacy of those responding to this request. The information I am requesting will be held in confidence and not disclosed to anyone. The data I collect will be reported in the aggregate, so individual units will not be identifiable. By responding to this email, you are giving consent to participate in this research.

To conduct my research, I need to know both the location of CLT units and when the first resident moved in (or the first year a unit was sold).

Please reply to this email with the following information:

1. Geographic location of units. This will allow me to map the units and determine the census tract location. You can provide me with one or more street addresses that will help me locate the units, or you can give me the tract number if you know it. Addresses will NOT be used to contact residents. [Addresses of CLT units]
2. The year the first resident moved in (or the first built or purchased year as a CLT unit)

For example,

<i>Address</i>	<i>Year</i>
1001 Harvey Rd. College Station, Texas 77840	2001
<i>(Street #, Street name, City, State)</i>	<i>(year)</i>

If there are multiple units at the same address, please let me know the number of units at that address.

Or

<i>Census Tract Numbers</i>	<i>Year</i>
4032	2001
<i>(Census Tract Number)</i>	<i>(year)</i>

If you have any questions or concerns about this research, please call me at [\(000\) 000-0000](tel:(000)000-0000) or e-mail me at [ooo0000@tamu.edu](mailto:ooo0000@tamu.edu).

In addition, I would be happy to provide the proposal of my research if needed. I will do my best to give an answer to your question.

Your response is greatly appreciated!

Thank you very much in advance for your time and assistance.

Sincerely,  
Myungshik Choi

*Ph.D. Candidate, Urban and Regional Science Program,  
Department of Landscape Architecture and Urban Planning  
Research Fellow, Center for Housing & Urban Development  
Texas A&M University  
3137 TAMU  
College Station, TX 77843-3137*

## APPENDIX 4

### CONTACT EMAIL FOR QUALITATIVE APPROACH

Title: The result of CLT research and a few questions

Dear (*Name of CLT practitioner*),

Hello! I am Myungshik, a Ph.D. candidate at Texas A&M University, who contacted you a few months ago. Again, I really appreciate your response.

Thanks to your sincere assistance, I have completed the analysis of my quantitative data. I have attached a brief report on my findings. According to my analysis, your organization has CLT units in neighborhoods that have undergone some gentrification (i.e., an increase in housing costs, ownership rates, etc., according to census or American Community Survey data) between 2000 and 2010. Thus, I would like to ask you a few questions about actual conditions in these neighborhoods.

As I told you at that time, I am conducting a research study to know how the CLTs affect gentrification. This study has been approved by my graduate committee, supervised by Dr. Shannon Van Zandt, Director of the Center for Housing & Urban Development. It has also been approved by the Institutional Review Board (IRB) at Texas A&M University to protect privacy of those responding to this request. Your identity will be held in confidence and not disclosed to anyone. By responding to this email, you are giving consent to participate in this research.

Please respond to the questions either by email (ooo0000@tam.u.edu) or phone (000-000-0000) at your convenience. Your identity will not be disclosed by using a pseudonym when I would refer to your answer.

Questions:

1. According to my analysis, CLTs can help counteract the negative impacts of gentrification (supportive results #1~7). Do you think this is true in your CLT? Are there any results that are inconsistent with your experience?
2. According to my analysis, CLTs help reduce the length of residence in gentrified neighborhoods while increasing it in non-gentrified neighborhoods. Do you think this is true in your CLT? Whether it is true or not, in your perspective, what do you think the reason for that might be?
3. Do you have any other thoughts about the overall results of my analysis or about your CLT?

If you have any questions or concerns about this research, please call me at (000) 000-0000 or e-mail me at ooo0000@tam.u.edu. You can also reach my adviser, Shannon Van Zandt, at 000-000-0000 or [oooooooo@arch.tam.u.edu](mailto:oooooooo@arch.tam.u.edu). Your response is greatly appreciated again!

My next step is to analyze your answer compared to the result from the quantitative data.

I will be happy to provide the preliminary research result upon request.

Thank you very much in advance for your time and assistance.

Sincerely,  
Myungshik Choi

*Ph.D. Candidate, Urban and Regional Science Program,  
Department of Landscape Architecture and Urban Planning  
Research Fellow, Center for Housing & Urban Development  
Texas A&M University  
3137 TAMU  
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## APPENDIX 5

### IRB CONSENT FORM

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**TEXAS A&M UNIVERSITY HUMAN SUBJECTS PROTECTION PROGRAM  
INFORMATION SHEET**

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**Project Title:** The Impact of Community Land Trusts on Gentrification

You are invited to take part in a research study being conducted by Myungshik Choi, a Ph.D. candidate from Texas A&M University. The information in this form is provided to help you decide whether or not to take part. If you decide you do not want to participate, there will be no penalty to you, and you will not lose any benefits you normally would have.

**Why Is This Study Being Done?**

The purpose of this study is to show how the Community Land Trusts (CLTs) affect their neighborhoods.

**Why Am I Being Asked To Give Information For This Study?**

You are being asked to release information about your CLT units for this study because this study will use location information of sample CLT organizations, and your CLT organization is selected as a qualified sample representing other CLTs in the U.S.

**How Many Organizations Will Be Asked To Be In This Study?**

Active CLTs having in the U.S. will be asked to be in. Overall, more than 100 organizations will be invited.

**What Are the Alternatives to being in this study?**

The alternative to being in the study is not to participate.

**What Will I Be Asked To Do In This Study?**

You will be asked to a few questions about CLT's impacts on neighborhoods come from the statistical result of the preliminary research.

**Are There Any Risks To Me?**

The things that you will be doing are no more risks than you would come across in everyday life, because your answer will not be about the private condition of your CLT units, and will not be disclosed by using pseudonym. Although the researchers have tried to avoid risks, you may feel that some information could be private. You do not have to answer anything you do not want to.

**Will There Be Any Costs To Me?**

Aside from your time, there are no costs for taking part in the study.

**Will I Be Paid To Be In This Study?**

You will not be paid for being in this study.

**Will Information From This Study Be Kept Private?**

The records of this study will be kept private. No identifiers linking each CLT unit to this study will be included in any sort of report that might be published. Research records will be stored securely and information about individual CLT unit will be stored in computer files protected with a password.

**TEXAS A&M UNIVERSITY HUMAN SUBJECTS PROTECTION PROGRAM**  
**INFORMATION SHEET**

Information about you will be kept confidential to the extent permitted or required by law. Representatives of regulatory agencies such as the Office of Human Research Protections (OHRP) and entities such as the Texas A&M University Human Subjects Protection Program may access your records to make sure the study is being run correctly and that information is collected properly.

Information about you related to this study will be kept confidential to the extent permitted or required by law.

**Who may I Contact for More Information?**

You may contact the Principal Investigator, Shannon Van Zandt, Ph. D., to tell her about a concern or complaint about this research at 000-000-0000. You may also contact the investigator, Myungshik Choi at 000-000-0000 or 0000000@tamu.edu.

**What if I Change My Mind About Participating?**

This research is voluntary and you have the choice whether or not to be in this research study. You may decide to not begin or to stop participating at any time. If you choose not to be in this study or stop being in the study, there will be no effect on you.

By participating in this study, you are giving permission for the investigator to use the information for research purposes.

Thank you.

Myungshik Choi

## APPENDIX 6

### RESPONSES TO SEMI-STRUCTURED INTERVIEW

#### < Questions >

1. According to my analysis, CLTs can help counteract the negative impacts of gentrification (supportive results #1~7). Do you think this is true in your CLT? Are there any results that are inconsistent with your experience?
2. According to my analysis, CLTs help reduce the length of residence in gentrified neighborhoods while increasing it in non-gentrified neighborhoods. Do you think this is true in your CLT? Whether it is true or not, in your perspective, what do you think the reason for that might be?
3. Do you have any other thoughts about the overall results of my analysis or about your CLT?

#### **Respondent's pseudonym: AM (Denver, CO)**

1. Absolutely I agree with that. CLT can counteract gentrification by stabilizing housing prices and maintain affordability. However, I am concerning that the neighborhood impacts could be small because of few number of CLT units. In many cases, because of not enough number of CLT units, CLT cannot truly have impact on their neighborhoods. So I think CLTs could have limited effects in this sense. I think the Dudley Neighborhood of Boston, the Champlain Housing Trust of Vermont, and the Sawmill CLT in Albuquerque are the most successful CLT with lots of units in their stocks, and they are all in the city areas. They have experienced gentrification or gentrification is obvious in those CLTs.
2. I think residents who live in gentrified neighborhoods do not have a lot of options in residence, so they cannot move easily. However, those who live in non-gentrified neighborhoods have more options in residence, so they can move more than those live in gentrified neighborhoods.
3. The Northeast Park Hill neighborhood where Dahlia Apartment located is not gentrified, while the North Park Hill neighborhood are gentrifying. Rather, I think, in the surrounding area of the Holly shopping center in the Northeast Park Hill, gentrification is happening economically but not yet completed. The Holly shopping center is the first commercial property and located 5 miles away from the rail system, business improvement district, and old airport area. First time we purchased the Dahlia Apartment in 1990s, the apartment was half full. We renovated it, and now operate it,

but the apartment is suffering from the negative reputation from the past. This is current challenge for the apartment. Both Jody and Dahlia apartments are land leased units. We do not only focus on housing field, but on commercial and transit-oriented development (TOD). We were established in 10 years ago, and now invest 24 projects most of them are near corridors between train and bus routes.

I think every CLT has their own circumstances in various history, so differences among regions or areas should be considered.

In fact, high quality schools are in wealthier neighborhoods (gentrified neighborhoods), and this can be one of the most important reasons in demographic change.

Suggestion:

The research focus on non-residential use of CLT is needed.

CLT was originated from rural area (farmland). 4,000 acres of farmland, largest farmland owned by African-American is important case in the first CLT history. Thus, the research on demographic change in rural area through CLT would be interesting topic.

**Respondent's pseudonym: KU (Portland, OR)**

1. Yes, I fully support this analysis. CLT's create permanently affordable homeownership opportunities in gentrifying neighborhoods. The CLT essentially locks in properties in appreciating areas and removes them from the speculative market, reserving them for low/moderate income families forever. Gentrification typically causes increases in housing prices and displacement of low/moderate income families. Often affecting families that have deep roots in the neighborhood being gentrified - CLTs are a true way to protect homes to provide homeownership opportunities in perpetuity. And homeownership is the one true way to allow a family to establish stable roots in a community. It also provides low/moderate income renters in gentrifying neighborhoods the opportunity to move into the stability of homeownership without having to leave their neighborhoods. Too often subsidized rentals in gentrifying neighborhoods are unable to transition families that want to become homeowners into affordable homeownership opportunities without displacement. This can result in families having to choose between staying in their neighborhoods as renters (close to jobs/schools/family/churches) OR buying a home of their own (often times far away from where they are living). CLT's offer choice for families in this situation. CLT homeownership is an essential tool to prevent displacement of low/moderate income families from gentrifying neighborhoods.



2. This is an interesting finding and I would honestly have to evaluate this more closely to figure out the reasons behind this. My initial thoughts on this though are that the CLT homeownership opportunity is not enough to keep gentrifying neighborhoods appealing to these homeowners. Gentrification displaces whole communities - not just homeowners. Churches/businesses/jobs, etc. are all displaced. If a family is able to buy their home in a gentrifying neighborhood, but over the course of the next 10 years their friends/family/church/job, etc. are displaced, then they may want to follow their support system, rather than stay in the community. This is just a guess and speaks to the need for communities to take a holistic approach to combat displacement caused by gentrification. CLTs can assist communities in locking in affordable commercial space as well.
3. I think I shared most of them above. I'm very glad you are doing this research. We are working closely with our City on a plan to deal with displacement in some inner City neighborhoods. We are very vocal about the CLT being a highly effective model to do this, but we aren't getting the support we need locally. A well done research study could help our conversation move forward.

**Respondent's pseudonym: ED (Delray Beach, FL)**

1. We are advocates for gentrification. We do not live in a world of separatism nor want to tolerate NIMBYism. The city of Delray Beach is very diverse and neighborhoods are not limited to one specific culture or race of people.
2. This is not true of the neighborhoods we serve.
3. I would like to know how you were able to measure the education levels of gentrified neighborhoods. Gentrification from my perspective should not have a negative impact on housing in general. It should not matter the ethnicity of my neighbor, what should be at the forefront is that we can all live in this world together regardless of race, color creed and financial status.

**Respondent's pseudonym: JW (Minneapolis, MN)**

1. Absolutely. We see numerous examples of households staying in communities through homeownership at a more affordable cost than the rent they were previously paying in the same neighborhood. Rents that have been on the rise in

those neighborhoods were some of the drivers for the households to find a way (via homeownership) to stay.

2. Interesting. I don't know in our case. As I think about the households assisted through the CLT in our community, I can think about just as many instances/examples that would run contrary to the above comments. If the numbers suggest it, however, I'll probably be more inclined to agree with it.
3. Not at this time.

**Respondent's pseudonym: JH (Denver, CO)**

1. I believe that any housing program which provides below market pricing targeted to below median incomes will partially counteract impacts of gentrification. I also believe that CLTs do a better job than other methods such as deed restrictions or covenants because CLT's strive to assist home owners before and after they buy the home. The stewardship practices inherent in the CLT model provide stability that comes with pre- and post-purchase counseling and support.
2. I have no idea! I am not sure length of residence is a meaningful measure for this topic. Households move for all sorts of reasons that may be unrelated to a neighborhood. Life realities as job changes, family composition changes (birth of children which create a need for a larger unit, divorce, empty nest) , financial hardship all cause a change in residence regardless of the occurrence of gentrification or not. IF the housing stock in a neighborhood cannot offer affordable options that can accommodate a wide variety of household sizes, increased turnover will result.  
By definition, a gentrifying neighborhood's cost of buying/renting is increasing at a rate faster than a stabilized neighborhood. It seems to make sense to expect higher turnover of homes as investors and owners sell at substantially higher prices than they paid before the neighborhood turned around,
3. I cannot give an opinion give to what you wrote without knowing what information you gathered and analyzed to achieve these results. What did you learn from the questions you asked that lead you to these results? I would need to see more background and quantitative analysis of the results of your research to accept these results.

**Respondent's pseudonym: RD (Carrboro, NC)**

1. If a negative impact is that low income people are forced out of a neighborhood when it gentrifies, then yes, CLT's can counteract that trend. Since we sell the home using a 99-year ground lease, and since we strive for permanent affordability, our homeowners are not typically priced out of neighborhoods.
2. The greater stability is easily understood since CLT's by definition remain engaged with their homeowners. We support our homeowners and this should help stabilize non-gentrified neighborhoods. I don't understand why there would be less stability in gentrifying neighborhoods. That doesn't make sense.
3. Most of your conclusions make sense to me, but I don't know what this means: CLTs stabilize abrupt age distribution fluctuation in gentrified neighborhoods.

**Respondent's pseudonym: MA (Irvine, CA)**

1. Our CLT works within a high income community that is also a master planned community. Due to its master planning the issue of gentrification has not occurred. Rather the high incomes and high costs of housing have "priced out" lower income families and/or families that are first time home buyers. The CLT has through its efforts created opportunities for first time home buyers.
2. In our perspective, CLTs create stability as home owners of CLT properties tend to stay in their homes longer than many non-CLT properties. This occurs in all areas of a community regardless of gentrification. In areas that are undergoing gentrification, CLT home owners provide continuity and can be helpful in maintaining the community with historical information and context. Additionally, because of CLT requirements home owners tend to occupy their homes rather than lease them. Note that leasing is not prohibited but leases may not exceed the affordable cost per our agreements. This deters people from considering a CLT home has an investment opportunity.
3. I believe CLTs generally support community efforts to create stability and to provide for diversification both economically and culturally. It is the role of community land trusts to enhance the community, hence the reason why land trusts have the word "community" in their name.

**Respondent's pseudonym: WP (Albuquerque, NM)**

1. Yes, I agree that the CLT model does generally counteract the negative impacts of gentrification. The ability to restrict the resale price of homes and our mandate to sell to buyers earning 80% or less of Area Median Income means there will always be affordable housing even as the rest of the neighborhood becomes pricier.

There are two additional elements worth considering, however. One is the issue of property taxes. This is a topic that is handled differently within every county (as they are the taxing body). We have an arrangement that helps control the cost of high property taxes which I can share if you wish, but I do not know that every CLT enjoys this relationship with their County Assessor. Furthermore, some states (particularly east coast states) have very high property taxes. For us here, older neighborhoods struggling with displacement due to gentrification are really struggling with increasing property tax burdens.

Secondly, there is also the possibility of complications arising because of lenders. Finding lenders who will originate mortgages for leasehold ownership is already a bit challenging. On top of that, affordable housing in a gentrifying area could create problems with lenders pulling back because census tracts may no longer show up as low or moderate income. These products typically target the 80% or less of AMI demographic but if the lender is using this data (census-identified low to moderate income neighborhoods) to identify geographic areas where their lending is most needed, they may deem a gentrifying area as no longer in need. The same goes for lenders who give in low to moderate income areas to get CRA credits.

2. I am not sure why this would be true. I have observed here, for example, that younger buyers (with or without children) tend to have lower tenures than older buyers. I suspect this is because the younger household views the CLT model as a stepping stone to more conventional homeownership whereas the older residents have perhaps never been able to own a home and are very committed to achieving that goal and remaining there until the end. Another note about younger households is that they are more mobile by nature – jobs transfer them, they work for the military, etc. They are in a less physically stable position because of larger economic forces that may require them to move in pursuit of employment, may be transferred, reassigned or deployed. This is less of an issue for older households.

3. I was not sure why the issue of education would not be more impacted by the CLT model as other stats show that stable households, and especially those that own, tend to achieve higher levels of educational attainment. 10 years is a long time, but perhaps not long enough to track this impact. Or maybe there are other economic factors at play (people whose ambition to attend college were disrupted by the recession for example)

**Respondent's pseudonym: JP (Riviera Beach, FL)**

1. CLTs do work to provide a more affordable housing choice in market rate neighborhoods for low income families. The placement of CLT homes can help offset the negative effects of gentrification. I can see how your statement regarding the ability of CLTs to stabilize abrupt age distribution fluctuation is true, but I can see where the opposite can be true. If we have an elderly client interested in buying one of our CLT homes in a predominantly elderly neighborhood we will not prohibit it. Then again, I can only speak for our CLT homes. A majority of our owners tend to be starter families in a well-established family neighborhood. We have not witnessed what you claim to be true. I also cannot see how CLTs lessen the loss of rental units within gentrified neighborhoods. CLTs would not affect the rental units within the neighborhood and are not considered rental units. They are owner occupied units.
2. In my perspective I can see how your findings can be correct. If a neighborhood is well-established with less "turnover" the residents will be more apt to maintain their residence there. Our CLT homes have minimal turnover. The initial residences, with the exception of one unit, are still the current owners.
3. I think for the most part your analysis may be correct. CLTs prove to be a very good means of providing affordable housing, especially for Palm Beach County, Florida. With housing prices constantly fluctuating it provides some stability for the potential homebuyers.

**Respondent's pseudonym: AL (Westby, WI)**

1. I would say that CLT's generally counteract the negative impacts of gentrification on neighborhoods. CLT's have the ability to impact all of those

- areas in a positive way. However, I would say that there are times when they may not lessen the loss of rental units. In our program we purchase foreclosed, blighted, vacant, abandoned, and condemned properties and rehabilitate them or demolish them and build new single family owner occupied homes. Some of these properties we are purchasing may have been rental properties at one point in time. Maybe the landlord lost their tenants and decided they no longer wanted to be a landlord and sold the property. Maybe the landlord went into foreclosure and the tenants had to relocate due to the foreclosure. Those are just few examples but they are instances where I can see how our CLT program would in fact increase the loss of rental units. These rental units were not quality units and probably barely habitable. We also have a very small program so the effect on rental units would be minimal. I do not definitively know that this has happened with any of the properties we have redeveloped but it is a possibility because our area has a lot of single family homes, duplexes, etc. used as rentals.
2. I don't really know if that statement is true or not. I can see many of our CLT homeowners as being long term committed homeowners. We are only 5 years old but we have not yet had a resale. Maybe the home was sold to someone at the upper end of the allowable income limit who was just using the CLT as a quality starter home before they moved along to a bigger and better home. Maybe their original intentions were to not keep the home longer than a few years. I think that lower income CLT homeowners (those at 60% CMI and below) seem committed to staying for long periods of time since they know that they will not get a quality affordable home that they can afford elsewhere since many of our homes are brand new and even with their equity share they will not find another brand new home for the price of their CLT home for many, many years.
  3. None.

**Respondent's pseudonym: PE (Bainbridge Island, WA)**

1. Yes, I think this is generally true according to my experience.
2. I am not sure whether or not it is true (my experience isn't that broad yet) but I think that if it is true it could be because living in a gentrified neighborhood is typically more expensive overall with more expensive grocery stores, restaurants etc.. and maybe this isn't sustainable or desirable for CLT owners. These

neighborhoods may become more crowded too and the general lifestyle changes and folks may not like this either.

3. I think your results point out what most of us in this work know about CLTs. They make housing more stable in high cost markets and allow for more diversity. In my area of the country, we are finding that ethnic diversity is very hard to obtain and we are working on more methods to do this.