The purpose of this study is to identify the physical, social and demographic variables related to and associating with place attachment construct on a neighborhood level. Place attachment has proved through literature to relate to the stability, livability and regeneration of neighborhoods. Place attachment as a multi-dimensional construct incorporates several aspects of people-place bonding and many inseparable, mutually defining features. It measures the affective and multidimensional ties that occur between individuals and their meaningful places. Place attachment is nourished through the daily encounter with the environment and neighbors and the affective feelings and beliefs about home and neighborhood. It is assumed through literature that the strength of the connection to a place is determined by this place’s social amenities, residential choices, local social networks, individual needs, and personality styles. Moreover, place attachment research has mostly focused on the social and phenomenological perspectives of attachment. However, it lacks the focus on the relationship between the physical features on the neighborhood built environment and the generation of the sense of attachment. It is hypothesized that attachment to a place is a manifestation of attachment to people and social networks and not to the physical place itself or its features. As a result, the role of place attachment in the planning theory and design practice has been neglected and under-used.

This study is an attempt to discover features in the built environment that relate to nurturing place attachment on a neighborhood level. It is also intended to broaden the understanding of the relationship between a neighborhood’s physical and social environment and place attachment. The study hypothesizes that a group of physical, social, and demographic variables are associated with place attachment on a neighborhood level. Through this case study research project, a correlational approach was adopted and multiple research methods were utilized, including questionnaire, interviews, and GIS.
The study found that the participants’ positive perception of specific physical features is associated with place attachment on a neighborhood level. These physical features are: the neighborhood location in relation to downtown and good schools; the street quality and walkability; the variety of amenities in and around the neighborhood; and parks and playgrounds. In addition, a group of social variables reflecting participants’ social experiences and activities relate to levels of place attachment on a neighborhood level. These social variables are: the number of friends in the neighborhood; residential satisfaction with neighborhood and community; informal meetings with neighbors to discuss neighborhood problems; attending neighborhood events and gatherings; and the neighborhood cultural aspects represented in values such as diversity and tolerance. Age and marital status are the only demographic variables that were found to correlate to the levels of place attachment. Other demographic variables that were proved throughout the literature to relate to place attachment such as homeownership and length of residency did not show a significant association with place attachment through this study.
Physical and Social Factors in Neighborhood Place Attachment: Implications for Design

by
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A dissertation submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the Degree of Doctor of Philosophy

Design

Raleigh, North Carolina

2013

APPROVED BY:

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Celen Pasalar
DEDICATION

This dissertation is dedicated to my parents. I would not have done this without your support, love and encouragement.
She received her bachelor’s degree in Architectural Engineering from Helwan University in Cairo, Egypt in 2000. She is a licensed architect in Egypt, where she has had a 7-year work experience practicing architecture in both the governmental and private sectors. Aliaa was awarded a fellowship from the Ford Foundation to pursue her master’s degree in the USA. Passionate in the field of urban design, she completed her master’s degree in Urban Design from the University of Texas at Austin in 2009. Aliaa was awarded the Dean’s prestigious fellowship from the University of Texas at Austin. She joined North Carolina State University in 2009, and since then she has been involved in teaching many courses and mentoring students. Aliaa received the DELTA IDEA Grant of Innovative Summer Course for summer of 2010 from North Carolina State University. Aliaa is involved in various community outreach activities, such as serving as a key member on the governing committee of the Annual Urban Design Conference in Raleigh for the past two years. She intends to continue her research on neighborhood design and revitalizing central city neighborhoods.
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CHAPTER 1

1 INTRODUCTION
A good, healthy, and successful neighborhood is what designers and planners try feverishly to achieve and reach through their designs. It has been indicated through the literature on what constitutes successful and ‘good’ neighborhoods that a combination of physical and social attributes is indispensible for a healthy community and neighborhood. It has been also indicated that a good neighborhood is a place that comprises values such as active engagement and interaction among its residents supported by various facilities and amenities that encourage people to meet and interact (Brower, 1998, 2011; Keller, 1968). A good neighborhood is also characterized by homogenous long-term residents who are involved in their community issues and problems and work together towards common goals (Brower, 1998, 2011; Keller, 1968).

The study on neighborhoods has focused on either the physical aspects of a place or the social aspects of its people or community. Designers have considered a neighborhood as a building block of settlements that can be used to construct models of good residency places. On the other hand, sociologists and psychologists have focused on the neighbor networking. There have been some attempts to study this integration between people and places or people-place relationships. Fried (2000) states that people-place relationships are developed by the people who use those places and share familial, communal, and ethnic or cultural ties. People-place relationships may extend beyond the home and street to include a wider area where a sense of belonging is established, and where places as well as people are cherished (Fried, 2000). Different models of people-place relationships have been established in the literature, including sense of place, place identity, and place attachment, which is the focus of this research study.
Socio-psychological constructs, such as place attachment, highlight that reciprocal influence between people and places are vital for the health, wellbeing, and livability of neighborhoods, as they motivate action, involvement, devotion, and commitment to place. Place attachment is believed to play a role in enhancing the conditions of neighborhoods and encouraging residents to reside longer and hence participate in redeveloping, improving, and stabilizing their neighborhood. Place attachment has been studied from phenomenological and social perspectives and in relation to certain physical entities such as home, neighborhood, or the city. This study proposes place attachment as a measure of the quality and wellbeing of neighborhoods that involves residents’ relationships to both neighborhood people and places. Unlike sense of community, place attachment has not been studied in relation to particular physical features that can help promote and establish a sense of attachment at a neighborhood level. As a result, the role of place attachment has not maintained a central role in planning or design theory and practice. Considering the multiple benefits of place attachment to the health of communities and neighborhoods, a better understanding of the relationship between place attachment and the physical environment is needed. Investigating the correlation and the association between the physical, social, and demographic attributes of a neighborhood and residents’ levels of place attachment can help design more integrated and cohesive neighborhoods, and guide the revitalization or redevelopment efforts of existing neighborhoods.

Place attachment subsumes components or constructs, such as residential satisfaction and sense of community. Residential satisfaction and sense of community have been used as indicators of a good and healthy neighborhood. Sense of community has been linked to the perception of particular physical features in the built environment. Architects and urban designers consider that loss of sense of community is a consequence of poor neighborhood design. For example, a low density and non-pedestrian oriented neighborhood provides few chances for people to meet, interact, and cooperate, which may affect the sense of community in this neighborhood (Brower, 2011). Therefore, neighborhood design should
have the characteristics that bring people together to meet, interact and form a community. Residential satisfaction is another measure of the neighborhood quality concerning evaluating the difference between the actual and the desired conditions of a dwelling or a neighborhood (Galsetr & Hesser, 1981).

The goal of this research study is to define the key physical, social, and demographic features that are associated with and can predict the sense of place attachment on a neighborhood level. The study involves objective characteristics of residents, their dwellings and their neighborhoods. A questionnaire survey is used to estimate statistically the investigated relationships via multiple regression techniques. Clearly more knowledge about the factors that are strongly related to residents’ attachment to place/neighborhoods would be invaluable in areas of neighborhood and community redevelopment.

The study hypothesized that participants’ positive perceptions of specific physical attributes, such as neighborhood location, walkability, street quality, housing, and parks will be associated with neighborhood place attachment through a regression equation model. The study found that approximately 42% of the variance of place attachment on a neighborhood level could be explained through the participants’ positive perception of certain physical features in their neighborhood. These physical variables include: neighborhood location, especially in relation to downtown, good schools, and medical facilities; variety of destinations to visit and enjoy in the neighborhood and in downtown; neighborhood walkability and street quality; and parks and playgrounds.

The study hypothesis also stated that: “a set of independent social variables and residents’ social activities and experiences in the neighborhood are associated with place attachment on a neighborhood level.” This hypothesis was also confirmed partially, as it was found that 55% of the variance in place attachment on a neighborhood level could be explained by a combination or a set of social explanatory variables. These variables are categorized under four categories: 1) neighborhood cultural aspects or the diversity, acceptance and tolerance in
the neighborhood; 2) residential satisfaction, especially satisfaction with the community and
the neighborhood; 3) neighboring represented only in the number of friends in the
neighborhood; and 4) involvement and participation in the neighborhood.

The study also hypothesized that: “residents’ demographic characteristics, such as: age,
gender, marital status, educational level, and homeownership correlate significantly to levels
of place attachment.” It was detected that only residents’ age and marital status correlate with
levels of place attachment. Several covariates were not significantly associated with sense of
place attachment at the bivariate level (i.e. level of education, gender, length of residence,
and homeownership).

The fourth hypothesis stated that: “a combination of social and physical independent
variables adds significantly to the prediction of and association with place attachment,
achieved through either of the previous regression models (physical or social).” This
hypothesis was confirmed through the study results. It was found that 56% of the variance in
place attachment on a neighborhood level could be explained through a combination of
physical and social variables. This combination of variables includes: the proximate location
of the neighborhood in relation to downtown and good schools; the street quality and
walkability; the park’s connectivity and significance to the neighborhood wellbeing;
satisfaction with the neighborhood and the community; number of friends in the
neighborhood; and informal types of involvement and participation in the neighborhood.

The study suggests that in order to create a well-integrated, successful neighborhood that has
committed and involved residents, it should be served with a variety of amenities and
facilities in and around the neighborhood that are within a walking distance and easy to
access. These amenities should vary between leisure facilities or amenities including cafes,
restaurants, grocery, and shopping and recreational facilities represented in parks, walking
trails, and playgrounds. These amenities are ways to allow and promote informal social
interaction and networking among the residents. The amenities should be distributed in a way that does not disturb the privacy of the residential settings yet is very accessible by walking. Also, it should be a walkable neighborhood that is characterized by rich street greenery and aesthetics, consistent and continuous sidewalks and calm vehicular traffic. A successful neighborhood that has high levels of place attachment should include a park as a destination of green space and various activities. It was proved through the study that the size or the location of the park is not as important as its visibility, accessibility, or how well it is interwoven into the urban fabric. It is important also that the park has an active, interactive and dynamic nature that serves a variety of uses and purposes.

Although housing did not show a correlation or an association with place attachment, it was proved through the subjects’ comments and answers on the open-ended questions to be the second factor of what residents like about their neighborhood. They stressed the importance of providing a variety of housing that varies in price and size and suits different sizes of families and orientations.
CHAPTER 2

2 LITERATURE REVIEW
The following literature review will start with describing what a neighborhood is, neighborhood studies, and proposals for what constitutes a good neighborhood. The second section of the literature will discuss what a place is and how people-place relationships are formed, The third section will review place attachment, in terms of its definition, benefits, levels, research and measures. It also discusses components that place attachment subsumes, such as residential satisfaction and sense of community; their definitions, constructs and related physical and social attributes; and the difference between them and place attachment.

2.1 What is a Neighborhood?
A neighborhood is a geographic area which is perceived as an extension of home and is defined by either or both physical boundaries—streets, railway lines or parks—and symbolic boundaries—historic and social—that make the area viewed as a distinctive unit (Keller, 1968; Brower, 2011, p.6). Lansing and Marans (1970) indicate that the concept of a neighborhood can have various meanings ranging from the residential dwelling and its immediate environments, to the census tract level, to the elementary school district (Lansing & Marans, 1970). Moreover, a neighborhood is “not only in the presence of churches, bars, restaurants, a park and/or a recreation center, but it is also in the continuing presence of residents who are familiar with its local history, conform to local customs, are represented by an active community organization, and have similar values and lifestyles” (Brower, 2011). Low and Altman (1992) state that a neighborhood consists of social components facilitated by physical components. The social components of a neighborhood can be represented in the neighbors’ attitudes and behaviors, whereas the physical components are exemplified in the connecting facilities or places where these attitudes and behaviors are manifested and taking place (Low& Altman, 1992). The physical facilities in a neighborhood are points of connection that form the core settings of informal public life, where the main purpose is socializing, the
mood is playful, and the main activity is pleasurable and entertaining conversations (Brower, 1996). Physical and social aspects of a neighborhood combine to shape the neighborhood identity and character (Keller, 1968).

Brower (1996) states that a good city should contain different types of neighborhoods that can provide a distinctive and different residential experience. A neighborhood should have a distinctive identity or character that distinguishes it from any other neighborhood (Brower, 1996). Each neighborhood should represent a context within which different styles of living and different needs and expectations can be met and acquired (Brower, 1996). A neighborhood’s qualities usually arise from its natural geographic location and the configuration of various activities, usages, and values within its context. They may also vary based on whether the neighborhood enjoys proper access to local facilities and activities such as work, shopping, schooling and recreation (Keller, 1968).

The social and cultural aspects of a neighborhood evolve from the fact that a neighborhood’s residents share the same place; establish relationships with each other; and share activities, experiences, values, and perspectives. These social aspects are believed to give a place a sense of continuity and persistence over time (Keller, 1968). They can also form the base for healthy neighborhoods where there are devoted and invested residents caring for their neighborhoods (Schumaker &Taylor, 1983). In addition, residents’ ability and willingness to address their neighborhood’s local problems, and consequently their commitment to their community places, may influence whether neighborhoods thrive or struggle (Manzo &Perkins, 2006).

Planners and urban designers tend to focus on the physical characteristics of neighborhoods, which they consider primary or key aspects of neighborhood design, as well as neighborhoods’ political and economic dimensions (Keller, 1968). However, there is no strong focus on the personal experiences of places (Manzo &Perkins, 2006; Keller, 1968).
On the other hand, geographers, environmental psychologists and sociologists tend to focus more on the social aspects of a neighborhood and neighbor networking. The physical or spatial arrangement of a neighborhood is not necessarily stressed by geographers or environmental psychologists and is often taken for granted (Keller, 1968). They value the socially constructed meaning of the residential environment more than the physically constructed meaning (Stedman, 2002).

Brower (1996) suggests that the definition of a neighborhood should emerge from the social constructs imposed on physical features. As a result, neighborhoods should be studied from the inside, examining the way they are experienced by their residents, not only based on the way they look from the outside (Brower, 1996). Theories and ideas examining the design of neighborhoods have varied between ideas built on the physical attributes, amenities and spatial proximity and others that are more relevant to the social aspects of a community-based neighborhood.

2.1.1 Neighborhood Studies

Planners think of a neighborhood as the building block of settlements that can be used to construct models of good residency places. Different models reflect different purposes and concepts (Brower, 1996). One of these models that had a big impact on the literature and the practice of designing and planning neighborhoods in the United States is Clearance Perry’s neighborhood unit plan (1929). The “Neighborhood Unit” concept was introduced by Perry in the beginning of the 20th century as an early self-conscious diagrammatic model for designing urban residential environments incorporating innovative social thoughts and physical design to promote the health, safety, and well-being of residents (Keller, 1968). According to the “Neighborhood Unit,” a neighborhood was considered a cell from which the larger city grows, with an objective to focus on the neighborhood’s inner resources and facilities (Keller, 1968). Perry proposed the “Neighborhood Unit” concept to arrange the family-life community (Perry, 1929).
Perry focused on the physical aspects of a neighborhood through defining the main facilities that should be included in a neighborhood. Examples of these facilities are elementary schools, small parks, playgrounds, local shops, good quality architecture, streets, and planting (Perry, 1929). Perry (1929) further identified key neighborhood design and planning principles, such as: size, density, major arterials surrounding and defining the neighborhood, shopping facilities, internal street system, and institutional sites, such as school, churches museums, which are located at the center of the neighborhood to increase the opportunity for social interaction.

Although the “Neighborhood Unit” plan was developed to provide the physical arrangement and the facilities that may encourage people to interact and socialize within their neighborhood, it was criticized heavily for its social implications (Gillette, 1983). The “Neighborhood Unit” plan was attacked by planners—questioning its unplanned consequences—and social scientists questioning its premises (Banergee & Baer, 1984). According to this criticism, the physical aspects of a neighborhood were more developed than the social aspects, and they were also considered as the prime determinant of the residential quality (Banergee & Baer, 1984; Keller, 1968). In addition, “the physical principles of the neighborhood unit did not represent the neighborhood as a dynamic social entity” (Sanoff, 1969, p.14). Sanoff (1969) states that Perry did not consider the neighborhood residents a focus of the social relationships in a neighborhood (p.14). The “Neighborhood Unit” concept was also criticized for promoting exclusion, social and physical land use segregation through supporting the idea of social homogeneity amongst residents, and self-contained or self-absorbed neighborhoods (Silver, 1985; Sanoff, 1969, Banergee & Baer, 1984; Gillette, 1983; Keller, 1968). To conclude, the “Neighborhood Unit” concept lacked the balance and the integration between social and physical aspects of a neighborhood.
2.1.2 Brower’s Good and Community-Based Neighborhood

Brower (1996) defines a “good” neighborhood as an active neighborhood where people know each other, interact informally, and participate in local-level and large society-level organizations. It is a place with its own facilities that can develop a local flavor for the neighborhood. It is a neighborhood where residents are involved in community affairs and take an interest in the common good and working together to solve common problems. It is also a neighborhood or a place where residents are private and go their own ways. Brower indicates that people prefer living in a place where their neighbors mind their own businesses and where they can have privacy without isolation (Brower, 1996, 2011).

Brower (1996) defines three dimensions for a good neighborhood:

1- Ambience: represented in the nature of the neighborhood, in addition to the mix and intensity of land uses and forms of its physical environment. Ambience also involves good maintenance of housing and outdoor spaces, and the absence of disorder deterioration.

2- Engagement and interaction among residents: supported by the presence of facilities and features that foster or inhibit these interactions. Homogeneity and conformity are considered characteristics that can play a role in connecting residents to each other. The perception of safety in the neighborhood is needed for better engagement among people. This safety also relates to the beauty and maintenance of the neighborhood, besides the presence of friendly neighbors.

3- Choicefulness: that can increase the opportunities for residents to choose alternative locations, lifestyles and living arrangements.

Brower (2011), through his book *Neighbors and Neighborhoods*, attempted to identify the neighborhood’s characteristics and dimensions that can generate a community, and they are:
• A neighborhood that attracts people who tend to getting along with one another. According to Brower (1996), people who share the same values and lifestyles are more likely to meet and interact even in the most discouraging environments;

• A neighborhood that has a community organization that promotes collective actions, and offers opportunities for people to come together and work on common concerns and goals;

• A neighborhood that includes facilities or gathering places such as parks, plazas, and stores that bring people together;

• A neighborhood that triggers residents’ collective memory and that reminds them of memories that connect them to their community;

• A neighborhood that has facilities encouraging leisure time use and allowing people to socialize through activities; and

• A neighborhood that accommodates long-term residents, who tend to have a greater financial and social investment in a neighborhood, and who are willing to participate in local events (Brower, 2011).

It has been indicated through the literature on neighborhoods that a good neighborhood is a neighborhood that accommodates long-term residents who tend to invest financially and socially in their neighborhoods. Place attachment as a people-place construct is concerned with the relationship between people and their physical places and what encourages them to commit, bond and reside longer in their neighborhoods, which can have influence on the livability and stability of a neighborhood. It is therefore important to understand how to create and foster this bond to place. A further investigation is needed to identify the
relationship between the perception of particular neighborhood’s physical and social features and what will promote residents to connect, commit and attach and -- as a result -- reside for longer periods. However, it is important first to define a place and the difference between a place and space, and the people-place relationships.

2.2 Place

2.2.1 Place Definition

Many definitions have been introduced to describe or explain what a place is. A place could be a street where one lives, a home, a neighborhood, or a city (Relph, 1976). Reviewed seminal literature suggests that the term place refers to an effective relationship between a person and a particular setting. A place involves values, experiences, and meanings. Generally speaking, places play an important role in influencing people’s behaviors, perspectives, actions, development, and well-being (Tuan, 1977; Relph, 1976; Proshansky et al., 1983; Canter, 1977).

Many geographers, environmental psychologists, sociologists, and phenomenologists have attempted to define what constitutes a place and delineates its features or characteristics (Tuan, 1977; Relph, 1976; Proshansky et al., 1983). Most of the definitions of a place are centered on the notion that a place is not just an independent location or a physical entity; rather, it is an integrated, meaningful, and complex phenomenon of people and experiences (Relph, 1976). There is an intrinsic relationship between people and their physical environment, which Sanoff (1973) describes as follows: “people relate to the everyday physical environment in stable characteristic ways just as they relate to themselves and to others according to enduring patterns” (Sanoff, 1973, p. 133). In parallel, Relph (1976) defines a place as a three-element territory consisting of “social activities and meanings projected onto an entire assembly of buildings and spaces” (Relph, 1976).
Distinctive places are indispensable components of a sensible quality of communal life and the psychological well-being of the users. The frequency of relating to these places affects people’s satisfaction in a place (Relph, 1976; Canter, 1977). On the other hand, placelessness, according to Relph (1976), refers to a setting that does not have any distinctive personality, sense of place, or cultural identity.

Places can be described in terms of their functional orientations evolving within patterned activities of places. The functional meanings of places can be described in terms of the kinds of activities and behaviors that occur within an environment (eating, socializing, parenting, political events), or the composition and organization of occupants. This approach describes environments that reflect the linkages between physical and social structural features of places. The social aspects of a place are defined as the combination of functional, motivational and evaluative meanings conveyed by the physical environment to current or prospective occupants of a place (Stoklos & Shumaker, 1983).

2.2.2 The Difference between Place and Space
Places are viewed not only as behavior-shaping forces, but also as the material and symbolic product of human action that have spatial, locational, and meaningful qualities (Stoklos and Shumaker, 1983; Tuan, 1977). Places can affect people intimately and conceptually; conversely, people’s experiences can play a role in shaping those places (Tuan, 1977). Tuan (1977) argues that a place is recognized and marked by the meanings that people usually attach to it (Tuan, 1977). Therefore, creating a place should extend beyond the geographical location and its physical features to include people’s actual experience at and meaning of that particular physical environment (Sime, 1995). Meanings and experiences are what transform a space into a place; “What begins as undifferentiated space becomes a place as we know it and endow it with value” (Tuan, 1977). In other words, places are spaces given meanings through interactional processes (Milligan, 1998). In summary, places are not mere geographical or physical locations; neither are they experienced as independent entities.
Rather, they are rich, imperceptible territories involving a multitude of meanings, experiences, activities, behaviors and emotional ties imbedded within their features, which create a positive satisfactory experience for the place users (Sime, 1995; Relph, 1976; Canter, 1977).

2.2.3 Place Meaning

From what has been described earlier, there are various factors and components that shape a place and influence people’s experience using that place. The meanings linked to a place can be influenced by users’ cultural background, individual experiences, activities, actions, and interaction with the place (Milligan, 1998; Stoklos & Shumaker, 1983). In the same light, the meaning of a place may be rooted in the physical setting, and the activities that are conducted within that setting (Relph, 1976). Manzo (2005) confirms this perspective indicating that places themselves are not significant but rather it is what can be called experience in places that creates meaning (Manzo, 2005, p.74).

Milligan (1998) states that significant interactions within a place lead to a more meaningful place (Milligan, 1998). Places can have both collective or shared and individual meanings (Milligan, 1998; Stoklos & Shumaker, 1983). Personal meanings of places involve individual impressions of the functional, motivational, and evaluative meanings of those places (Stoklos & Shumaker, 1983). On the other hand, shared meanings of a place refer to the collective meaning that users perceive in that place. The more detected those meanings by the users, the clearer they become (Stoklos & Shumaker, 1983).

Meaning of places can be interpreted in various ways based on the field of study of the interpreters. For example, planners and designers believe that places get their meanings, and hence their sense of place, through the physical built form. Thus, planners and designers aim to create this sense of place through their designs (Milligan, 1998). They believe that the physical form is the determinant and shaper of people’s experiences; and therefore, good
places possess place-making qualities through their physical environment. Designers and planners in their understanding of place ignore the meaning given to a site through the interactions occurring within it. On the other hand, environmental psychologists focus more on the shaping qualities of the place than on how the meaning was established. Place identity and place attachment are two of the qualities of a place on which environmental psychologists focused (Milligan, 1998).

2.2.4 Place Theories

Due to an emerging recognition of how distinctive, well-defined places matter to the lives of the people using them, scholars have focused on developing different theories or models to define what a ‘place’ is and to identify its main components. These theories and models are concerned with explaining the interrelationships among the different constructs of a place as well as their influence on each other and on the people occupying that place.

2.2.4.1 Canter’s Place Theory

Canter (1977) states that a place is not fully identified until we know the physical characteristics; the types of behaviors associated with this place; and the description of people’s conceptions of those behaviors (Canter, 1977). Canter (1977) indicates that there is confusion over thinking of a place as an environmental or architectural object; whereas, a place should be thought of as a use and as an experience, not just an abstract notion or an independent context (Canter, 1977). Canter claims that the experience of a place is a combination of both physical and social components (Canter, 1983). Thus, this relationship among place, activities, and people’s understanding, description, and evaluation of a setting is what gives a place its psychological power to transform from being a location to being a place (Canter, 1977).

Canter’s place theory states that places are the focal points of environmental experiences, which involve personal, social, cultural, and psychological components of person-place
relations (Canter, 1996). Each of those components is reflected in the functional, spatial, and formal aspects of a place (Canter, 1996). In other words, a place, as a medium, facilitates the relationship between a person and a place through its functional, spatial, and psychological aspects. In sum, Canter’s place theory draws attention to the essentially multi-variant nature of people’s experience in a place or a setting, or people-place relationships.

2.3 People Place Relationships

Manzo (2005) argues that those who do not have strong positive and affective bonds to their residences are placeless (Manzo, 2005). Relationships to places can be ways through which people consciously express their worldview and explore their evolving identity. People-place relationships are developed by the people using those places and sharing familial, communal, and ethnic or cultural ties (Fried, 2000). These relationships can also be fostered via active engagement with places and hence creating meanings through engagement or interaction (Manzo, 2003). Bonds between people and places may extend beyond the home and the street to include a wider area where a sense of belonging is established, and where places as well as people are cherished (Fried, 2000). Different models of people-place relationships have been developed and varied in the literature, including sense of place, place dependence, place identity and place attachment.

While all of the previously mentioned people-place models address people’s relationships to places, the exact connection and/or differentiation between these models remain unclear (Manzo, 2003). Some scholars argue that ‘sense of place’ is a broader construct that comprises three dimensions: place dependence, place identity and place attachment (Hummon, 1992; Jorgensen & Stedman, 2001). It is also argued that affective bonds to places can contribute significantly to effective community development and planning efforts as they help inspire action through people’s motivation to seek, stay in, protect and improve their meaningful places (Manzo & Perkins, 2006; Brown, Perkins & Brown, 2002). Therefore, it is essential for those working in community improvement and redevelopment
(whether planners, designers or sociologists) to understand people’s connections to places, and how these connections are fostered (Manzo & Perkins, 2006).

2.4 Place Attachment
Proshansky et al. (1983) assert that the primary function of a place is to engender a sense of ‘belonging’ and ‘attachment.’ Through personal attachment to geographically locatable places, a person acquires a sense of belonging and purpose, which in turn gives meanings to her or his life (Proshansky et al., 1983). This ‘belongingness’ can be defined as a social bond or a feeling of membership and affiliation with a place (Hammit et al., 2004). Place attachment and place identity have emerged as core themes in human geography in relation to residential mobility, community bonds, and gender relations (Mah, 2009).

2.4.1 Definitions of Place Attachment
According to Freid (2000), “The significance of attachment derives from its self-evident meaning with respect to affective ties to local environments.” The construction of attachment theory, as it applies to place-related behaviors, points to the origin and meaning of available close and local relationships to people and to places of relational interaction (Fried, 2000). However, a site should be a place first before an attachment to this site is formed; then that site becomes an object to which individuals are emotionally linked (Milligan, 1998).

According to Low & Altman (1992), place attachment is a complex phenomenon that incorporates several aspects of people-place bonding. It is not composed of independent components or dimensions; rather it has many inseparable, integral and mutually defining features, qualities or properties (Low & Altman, 1992). The word attachment refers to affective emotional relationships. Therefore, place attachment can be identified as the measure of the affective and multidimensional ties that occur between individuals and their meaningful places (Milligan, 1998; Mooney, 2009; Shumaker and Taylor, 1983; Low and
Altman, 1992). Low (1992) elaborates on this definition, indicating that it is the symbolic relationship shaped by the people who give culturally shared emotional and affective meanings to a particular space. Place attachment has been hypothesized within the environmental psychology literature as the relationship between self and place, a form of individual socialization, and a part of a collective identity (Mah, 2009).

Shumaker and Taylor (1983) believe that the strength of connecting to a particular place is determined by this place’s physical and social amenities, residential choices, local social networks, individual needs, and personality styles (Shumaker & Taylor, 1983). The stronger place attachment is, the lower possibility of substituting that place and its amenities with other places (Milligan, 1998). It is claimed that place attachment is nourished through the daily encounter with the environment and neighbors and the affective feelings and beliefs about home and neighborhood (Brown & Perkins, 2002). Attachment is usually formed over time based on the accumulation of the experiences that an individual has in the place (Milligan, 1998). Therefore, place attachment is a dynamic phenomenon; it changes in accordance with changes in people, activities, time, processes, experiences, and places (Manzo, 2003).

Scannell and Gifford (2010) suggest a framework of place attachment that is focused on the notion of ‘person-process-place.’ They indicate that a bond between an individual or a group and a place can vary in terms of degree of specificity and social and physical features of the place. This framework is manifested through affective, cognitive and behavioral psychological processes and involves memories, childhood experiences, family involvement, historical reference, meanings, favored friends, cultural aspects, and aesthetic components (Keller, 1968; Shumaker & Taylor, 1983; Scannell & Gifford, 2010). Milligan states that attachment occurs in a place due to the meaningfulness of the interactions that occur within its boundaries (Milligan, 1998). In addition, culture plays a role in forming attachment to
place, as it links members to place through shared historical experiences, values, and symbols (Scannell & Gifford, 2010).

Place attachment on the individual level can comprise the individual experience that may form the basis for attachment. However, on the group level, attachment involves the symbolic meaning of a place that is shared among community or group members (Low, 1992). Fried (2000) asserts that community attachment encourages greater freedom of behavior, exploration, confidence, and affective responsiveness within the local community (Fried, 2000).

Further, place attachment involves experienced bonds, sometimes occurring and developed over time through the behavioral, affective, and cognitive ties between individuals and/or groups and their socio-physical environment (Low & Altman, 1992). These ties/bonds provide a framework for both “individual and communal aspects of identity and have both stabilizing and dynamic features” (Brown & Perkins, 1992, p. 284). They also encompass cognitive, motivational and behavioral aspects, reflected in values such as the tendency to give favorable evaluations of the dwelling place, reasons for improving it, and reluctance to leave it (Bonaiuto et al. 2003).

2.4.2 Dimensions and Levels of Place Attachment
Riger & Lavraks’s (2006) study investigated the sense of place attachment in ten different neighborhoods. Their survey questionnaire included items that reflected social, economic, and behavioral ties to one’s current neighborhood. These items also served as their operational definition of attachment. This study produced two dimensions of attachment that they labeled: 1) Rootedness or physical attachment; and 2) Bondedness or social involvement. Rootedness is associated with the length of residence, homeownership, and expectations to stay in the same residence, whereas bondedness is associated with the feeling of being part of one’s neighborhood; one’s ability to distinguish between residents and
strangers; and the number of children respondents know in the neighborhood (Riger & Lavraks, 2006 & Shumaker & Taylor, 1983).

Shumaker and Taylor (1983) define three levels of attachment:

A. **Individual Level**: is a system of interlocked attitudes and behaviors that refer to home or household reflecting the intimacy and the strength of the individual’s ties to a particular setting (Shumaker & Taylor, 1983).

B. **Group Level**: operates on the level of small, primarily residential grouping that might be found on blocks or portions of blocks in urban areas. Predictors of this type of attachment are physical or geographic boundaries such as gateways, fencing, entrances, special signs, and land use barriers. Another predictor is the extent to which a group of people values certain functions in a site and the extent the physical configuration of that site allows or permits these functions. Group homogeneity and cohesiveness enhance this level of attachment, as they reduce face-to-face conflicts (Shumaker & Taylor, 1983).

C. **Neighborhood Level**: has two primarily physical predictors of neighborhood attachment: 1) the physical quality of neighborhood houses, lawns, lots, etc., and 2) areas that are physically unique and perceived positively as more valuable areas. In addition, social, cultural, or historical distinctiveness may also help attach people to their neighborhood. A number of other factors might influence attachment at the neighborhood level such as effective local organizations. Attachment at this level can be reflected in the number of people knowing the neighborhood name, who belong and participate in its local organizations, and who feel committed to its well-being. Potential outcomes of neighborhood-level attachment may be represented in the neighborhood being more successful in external confrontations with outside impositions such as proposing different zoning, changing land use, or requesting a service from the city (Schumaker & Taylor, 1983).
2.4.3 Place Attachment Components

Vaske and Williams (2003) have identified place identity and place dependence as factors upon which place attachment can be measured. They studied and evaluated the psychometric properties of place attachment measure designed to capture the extent of emotions and feelings people have for certain places. The study’s questionnaire included items measuring both place dependence and place identity; for example, “this place means a lot to me”, as a place identity measure, and “I would not substitute any other area for doing the type of things I did here,” as a place dependence measure.

2.4.3.1 Place Dependence

Scannell and Gifford (2010) suggest that residents can be attached to certain places that meet their goals, expectations and needs based on their past experiences. Therefore, the users’ perspective of a place can be either focused on the social, or the physical aspects depending on their particular goals and needs of that place. This leads to the concept of place dependence, which is a type of attachment in which individuals value a place for the specific activities that it supports or facilitates (Jorgensen & Stedman, 2001; Moore & Graefe, 1994).

Place dependence is a process by which occupants assess the quality of their current place in terms of the availability of social and physical resources satisfying their needs, and how this place compares to other alternative places (Stokols & Schumaker, 1981). It also involves residents’ ability to assess or evaluate the quality of their residential environment and how well this environment serves certain behaviors and goals (Stokols & Schumaker, 1981; Jorgensen & Stedman, 2001; William & Vaske, 2002). Place dependence relates to how important a place could be to individuals based on its functional values and the opportunities it offers for fulfilling particular goals (Stokols & Shumaker, 1981).
2.4.3.2 Place Identity

Place identity is an individualistic construct of person-place relationships that is relevant to a person’s own feelings and memories of a place (Relph, 1976). Place identity according to William and Vask (2002) refers to the symbolic significance of a place as a source of emotions and relationships that give purpose and meaning to life. Place identity forms the individual’s personal identity in relation to a physical setting through ways of multifaceted patterns of conscious and unconscious ideas, beliefs, preferences, values, goals, feelings, behavioral tendencies, and skills. In addition, it is relevant to the behaviors and experiences that stem from the complex physical setting and that define the day-to-day experiences (Proshansky, 1978; Proshansky et al. 1983). It is believed that place identity is an assemblage of memories, conceptions, interpretations, ideas, and feelings about a particular place (Proshansky et al., 1983).

Place identity is formed of three interrelated components: 1) physical features or appearance, 2) observable activities and functions, 3) and meanings or symbols associated with place (Relph, 1976). While place identity is concerned with the way in which places form identity, place attachment focuses more on the evaluation of places (Moore, 2000). Place identity emerges as a complex cognitive structure that is characterized by a host of attitudes, values, thoughts, beliefs, meanings, and behavior tendencies of individuals (Proshansky et al., 1983). However, place attachment involves the emotional attachment and belonging to a particular place. Place attachment can be considered communal in nature, as it evolves mostly from the interaction among people and between people and their physical places. Place attachment can be considered as a multidimensional construct, envisioned as including a functional dimension (i.e., place dependence) and a symbolic/emotional dimension (i.e., place identity).

2.4.4 Models of Place Attachment

Stedman (2003) suggests two models of place attachment, the meaning-mediated model and experiential model.
1. Meaning-Mediated Model
This model suggests that the meaning of a setting depends on its environmental qualities. In this model, physical features do not predict sense of place directly; however, they influence the symbolic meaning of a place, which in turn is associated with values such as attachment. Stedman (2003) asserts that the physical features of a place have an effect on place attachment that is more complex and only revealed via modeling the indirect effects of symbolic meaning.

2. Experiential Model
Previous behaviors or experiences in the place or the locale may create lenses through which users attribute meanings to places.

2.4.5 Place Attachment Studies
Reviewed seminal literature reveals that place attachment has been studied in relation to social features (Woldoff, 2002), physical features (Stokols & Schumaker, 1981; Bonaiuto et al., 2003), or both (Riger & Lavarkas, 1981). However, the majority of research related to place attachment has focused on the social and phenomenological perspective of attachment. The notion is people are attached to places that facilitate social relationships and group identity. Schumaker & Tylor (1983) argue that social networks and social relations satisfy important or significant human needs; and when these social aspects are incorporated with a geographic location, the importance of this locale or a setting will increase (Schumaker & Tylor, 1983). Marc Fried’s (1963) study of the West End in Boston demonstrated a strong sense of attachment and bondedness to a place or a neighborhood, although that neighborhood was in disrepair and deteriorated. Yet, the attachment to place was emergent from the interpersonal and social interactions among residents.

According to Low & Altman (1992), place attachment is a complex phenomenon that incorporates several aspects of people-place bonding. It is not composed of independent
components; rather, it has many inseparable, integral and mutually important features (Low & Altman, 1992). Although the sense of attachment to places is retrieved in a physical setting, it has been thought that attachment to place is more of a manifestation of attachment to people and social networks and not to the physical place itself or its features. As a result, the roles of place meaning and place attachment have not maintained a vital role in planning theory and practice, which is odd considering the multiple benefits of place attachment to the health of communities and neighborhoods (Mooney, 2009). In the same light, Manzo and Perkins (2006) proposed a holistic, ecological, and interdisciplinary approach to study place attachment. This ecological framework extends beyond those psychological dimensions of community interaction to include physical, political and economic domains. Manzo and Perkins (2006) suggest this framework as a way to explain how place attachment can influence community planning.

2.4.6 Benefits of Place Attachment

Place attachment implies long-term bonds between people and their communities (Brown & Perkins, 1992; Brown et al. 2002). Place attachment has been linked to the promotion of stability, familiarity and security (Brown & Perkins, 2002). The sense of attachment might extend to affect a place’s physical features (Manzo & Perkins, 2006; Brown & Perkins, 2003). According to Manzo and Perkins (2006), neighborhoods either thrive or struggle depending on the ability or the willingness of their residents to address the local problems of the neighborhood. This ability is influenced by people’s emotional and psychological connections and commitments to particular places (Manzo & Perkins, 2006).

It has been hypothesized that people with strong sense of place attachment tend to be more cohesive, enjoy a higher quality of life, and identify more landscape values and special places within their communities (Brown & Perkins, 2002). Some research studies have shown that attached individuals experience a heightened perception of safety, even when their place is situated in a war zone (Billing, 2006). In parallel, place attachment provides a sense of
continuity (Scannell & Gifford, 2010). Fried (1963) suggests that maintaining this sense of continuity for the residents is crucial, especially in the case of dislocation from home.

Place attachment to a neighborhood can be used to foster a partnership approach, as different parties can find common interests in their neighborhood’s health and well-being (Manzo & Perkins, 2006). Place attachment is also considered a reservoir of motivation for neighborhood residents to endure the time consuming and often discouraging work of housing revitalization, and cooperatively participate in improving and revitalizing their neighborhoods (Brown et al., 2002). It has been proven through Brown et al.’s (2002) study of severely distressed, landlord-abandoned housing in Harlem that place attachment was a key factor in improving and revitalizing the neighborhood (Brown et al., 2002). They suggest that if people are attached to their neighborhoods and, thus reside for longer periods, the efforts of revitalization will be more effective and viable (Brown et al., 2002; Brown & Perkins, 1992). Some authors have suggested that people who are attached to a particular place may be more willing than others to donate their time and money on its behalf (Moore & Graefe, 1994).

Attachment is linked to the health and well-being of individuals and communities especially when the social and physical attributes within a particular residential environment correspond to the relevant needs of individuals. If people are attached to a place, they will defend and seek to improve their place. They will also seek preserving, maintaining and improving that setting or place to which they are linked or connected (Shumaker & Taylor, 1983). Research has shown that place attachment can be employed to encourage the use of public spaces such as national parks (Kyle, Graefe & Manning, 2005; Moore & Graefe, 1994; Williams & Stewart, 1998). Place attachment can also be an important factor in fostering an individual’s decision to engage in environmentally responsible behavior (Halpenny, 2006). Place attachment has been neglected as a potential strength in redeveloping declining neighborhoods. Brown, Perkins and Brown (2002) suggest that if place attachment relates to
social and physical indicators of decline, then the efforts directed to reverse decline will require an understanding of place attachment bonds (Brown et al., 2002). Therefore, place attachment deserves serious consideration by practitioners and scholars devoted to improving challenged neighborhoods. Brown, Perkins and Brown (2002) suggest that perhaps because place attachment is strongly rooted in a phenomenological tradition, researchers interested in policy and housing improvement have been slow to incorporate place attachment into neighborhood improvement and activism (Brown et al., 2002).

### 2.4.7 Place Attachment in Research

The aim of studying the construct of place attachment is to understand the way people establish affective bonds with specific places within their residential environment, which can become a part of their place identity (Proshansky et al., 1983; Low & Altman, 1992; Bonnitzer et al., 1999). Attachment to places has been studied by geographers, sociologists, and psychologists, mostly from phenomenological and socio-psychological perspectives. Place attachment used to be of interest to phenomenologists with direct interest in environment and behavior issues, focusing mostly on home and sacred places. This phenomenological perspective of place attachment can be one of the reasons why attachment did not capture the interest of many designers (Low & Altman, 1992).

The physical aspects of the environment that can be associated with providing residents with the sense of attachment were not studied efficiently. Some scholars diminished the importance of the physical features of a built environment to generate sense of place attachment. Hummon (1992) indicates that community attachment is to a lesser extent shaped by the objective features of the built environment and the individual’s subjective perceptions of that environment. Moreover, the quality of a neighborhood and residents’ perceptions of that neighborhood have relatively little impact on the sense of place attachment (Hummon 1992). On the other hand, other scholars stressed the importance of the built environment to
place attachment. For example, Fried (2000) indicated that the physical quality of places might contribute to community attachment.

Some studies have examined the relationships between sense of attachment and the physical environment. Hidalgo and Hernandez (2001), in their study of “Place attachment: conceptual and empirical questions,” aimed at measuring the degree of place attachment in relation to three different spatial levels of arrangement: home, neighborhood, and city. The study was concerned with examining place attachment from social and physical perspectives. Hidalgo and Hernandez stated throughout their study that attachment to a neighborhood was the weakest after attachment to home and city. They indicated that attachment to the city is the strongest in terms of the physical attachment, while house is the strongest in terms of the social attachment. Also, this study suggested that social dimension of place attachment is stronger than the physical dimension. In their inquiry, Hidalgo and Hernandez did not investigate the physical features or characteristics of the neighborhood and their relationship to residents’ sense of attachment. Rather, they were more interested in people’s general feelings and perspectives of their neighborhood.

In Mah’s (2009) study of place attachment to home in two declining post-industrial neighborhoods—Walker, New Castle, UK and Highland, Niagara Falls, USA— it was revealed that home for the residents of the former case study was considered the strength of their community, and something residents had endured through socioeconomic decline. Home for them was something they were proud of and would fight to preserve. They wanted to protect their physical environment represented in their home from being demolished. In the latter case study, homes represented a sense of family and community achievement, “yet they were imbued with a sense of nostalgia for lost social structures of family and work and with long term experience of spatial, social and racial segregation” (Mah, 2009). Mah’s study also pointed out the significance of the quality of the built environment, stating that the close
proximity to heavily contaminated and abandoned industrial sites might act as a strong barrier to community redevelopment, regardless of people’s local attachment (Mah, 2009).

Fried (1963) indicates that forced displacements are among the most serious forms of externally imposed psychosocial disruptions and discontinuities (Fried, 2000). In his classical study of place attachment, Fried (1963) interviewed families that were displaced from the West End, Boston and were forced to find housing in other parts of the city or in the surrounding metropolitan region. The buildings they lived in for a long time were demolished as part of the urban renewal plan of Boston (Fried, 1963). Through his study, Fried (1963) indicated that the forced dislocation was a highly disruptive and disturbing experience to the residents’ sense of continuity. Fried (1963) indicated that losses generally cause/generate displacement of routines, relationships and expectations, and imply changes in the physical environment and spatially oriented actions. Despite the deteriorated conditions of the physical environment of the West End, the social environment was highly satisfactory to the residents, which resulted in characteristics such as social cohesion, friendship networks, and sense of community. Part of the reason for this residential satisfaction was that the residents considered the external physical area an extension of home, which delineated the basis of a sense of belonging (Fried, 1963). Fried suggests that maintaining the sense of continuity for the residents is crucial, especially in the case of dislocation from home. It is important to plan and arrange possible areas for relocation that integrate with the old environment objectives (Fried, 1963).

### 2.4.8 Predictors of Place Attachment

Scales developed for measuring place attachment have provoked significant interest among researchers regarding which measures provide the most valid and reliable assessment of the attachment construct (Hammitt, Kyle, and Oh 2009). Indexes of measuring attachment to a particular place varied between expressing intentions to move from a particular setting (Keller, 1968); expressing sorrow or sadness to leave a place represented by items such as “I
would be unhappy to leave” and “I would be sorry to move out from my house, neighborhood/city without the people I live with” (Hidalgo & Hernandez, 2001); and expressing intentions to remain in a particular place (Riger & Lavrakas, 1981). In addition, factors such as length of residence in the neighborhood and stage in life cycle (Riger & Lavrakas, 1981; Brown et al., 2002; Keller, 1968; Manzo & Perkins, 2006) are among the positive direct and strong predictors of neighborhood attachment (Bonniteu et al., 2002; Kasarda & Janowitz, 1974 cited in Connerly & Marans, 1985).

The age of residents (Keller, 1968) and the feeling of being proud in a particular place (Low & Altman, 1992; Brown & Perkins, 2002) were also considered indicators of attachment. Place attachment is believed to be higher for homeowners (Brown et al., 2002; Riger & Lavrakas, 1981), long-term residents, and non-whites. Also, place attachment is considered higher for individuals who perceive fewer incivilities on their block (Brown et al. 2002). To a lesser extent, neighborhood attachment also tends to be higher for people belonging to lower socio-economic levels. Neighborhood attachment tends also to be higher with age (Bonaiuto, et al., 1999).

The indexes or scales measuring place attachment used to focus mainly on the social aspects and not particularly on the physical aspects of an environment. They were centered on the relationships between residents and their neighbors in terms of how they would feel if they had to leave the place, and the feeling of being proud to live in that place. However, none of those indexes or scales dealt in focus with what specific features or characteristics in the physical built environment influence or relate to the feeling of attachment, connection and commitment to a neighborhood.

The above literature review briefly examined place attachment, its definition, dimensions, related components and benefits or influences on the health of the physical structures and communities. It also illustrated the importance of place attachment in promoting sense of
familiarity, security, and commitment to a place. Since place attachment is nourished through the interaction between people and their places and between people and each other, therefore places designed to accommodate social gatherings and to host different behavioral activities, such as neighborhood outdoor spaces, and communal places, such as streets, can be settings for developing a sense of place attachment.

It can also be concluded that a successful and cohesive neighborhood is a place that comprises people, facilities, and opportunities and that stimulates values such as engagement, interaction and socialization. In other words, a good neighborhood is a place where social and physical features integrate and project a strong sense of community and residential satisfaction. So, what is sense of community and residential satisfaction, and what are the constructs comprising both of them? How do sense of community and residential satisfaction relate to place attachment? What are the physical and social attributes that are believed to be linked to them? The next part of the literature review will answer these questions.

2.5 Sense of Community
Sense of community is experienced on a neighborhood level. Warren (1994) states that a neighborhood can function as an arena for informal interaction among residents. This form of neighborhood sociability is necessary for providing individuals with a sense of social and local belonging, which will form the basis for nurturing their sense of community. Chavis and McMillan (1986) propose a definition for sense of community in a neighborhood that is based on four elements: 1) membership: feeling of belonging and relatedness, 2) influence: sense of mattering, and the ability to make a difference to a group, 3) integration and fulfillment of needs: the feeling that members’ needs will be met by the resources received through membership, and 4) shared emotional connection: the commitment and the belief that members have shared and will share a history, time, common places, and similar experiences (Chavis & McMillan, 1986). Sense of community is a desirable construct that can have a major influence on promoting neighborhood satisfaction and well-being, civic
participation, collective action, and residents’ connectedness to their neighborhoods, which ultimately contributes to resolving local community problems. Therefore, there is a critical value in strengthening the sense of community in a neighborhood for the good of the neighborhood and its residents.

Sense of community relates to the sense of attachment to a neighborhood, which is defined as the capacity of a specific neighborhood or community to influence individuals’ decision to continue residing there (Wilkinson, 2007). Riger and Lavrakas (1981) studied sense of community reflected in the sense of neighborhood attachment and found two factors: bonding and rootedness. Bonding is defined as “the ability to identify neighbors and the feeling of being part of the neighborhood.” Rootedness refers to “years of residency in a neighborhood, and the expected length of residency” (Riger & Lavrakas, 1981 and cited in Chavis and McMillan, 1986). In addition, one of the most important predictors of sense of community is participation in community organizations (Obst, Smith & Zinkiewicz, 2002). In sum, sense of community is important for communities and their members alike. It may help in maintaining bonds among groups and increasing the sense of attachment to a community, which will enable communities to resolve problems through their collective efficacy. Attraction and attachment to a neighborhood is a key measurement instrument for a neighborhood.

Buckner (1988) indicates that a neighborhood that is high in cohesion is one where residents feel a strong sense of community, engage in common and various ways of interacting with other neighbors, and are highly compelled to live in and remain residents of that neighborhood (Buckner, 1988). Building on Buckner’s instrument, Wilkinson (2007) indicates that psychological sense of community can be measured through neighboring activities or residents’ interaction with their neighbors, including items such as the frequency of visiting neighbors in their homes and exchanging favors (Wilkinson, 2007). Researchers and scholars differ in the unit they use for measuring neighboring activities. Some studies use
interaction with next-door neighbors as the item to measure social interaction (Wilkinson, 2007). In contrast, Unger and Wandersman (1983) described the important role of neighboring in *block organization*, which allowed them to have the capacity to compare specific numbers of people known and specific numbers of people with whom the respondent interacted (cited in Wilkinson, 2007). Julian and Nasar (1995) indicate that individuals have been found to define their neighborhood territory at the block level.

Although sense of community is an indispensable part of the essence of community psychology, it tends more to focus on the homogeneity of a community and similarities among groups, as indicated earlier, needed to form friendships and facilitate neighboring activities (Townley et al., 2011; Obst, Smith & Zinkiewicz, 2002). On the other hand, many studies have indicated that neighborhood design plays a major role in promoting and increasing the sense of community in a neighborhood. For example, pedestrian-oriented and mixed-use neighborhoods encourage residents to walk around and therefore have informal or casual interactions with other neighbors (Nasar & Julian, 1995). The neighborhood’s walkability and the outdoor public open spaces such as parks are two of the physical factors believed to relate to sense of community.

### 2.5.1 Walkability

Studies have shown that walkability can promote a sense of community (Joongsub & Kaplan, 2004). Factors that might influence walkability vary between the perceived convenience and proximity to local facilities, aesthetics and greenery, presence of sidewalks, street design and connectivity, and the walking distance proximity to local shops/destinations. On the other hand, walkability might be negatively influenced by fear of crime and insecurity (McMillan & Chavis, 1986). It is also believed that walkable environments facilitate opportunities for residents to meet, interact and engage in their neighborhood, which can foster their sense of community (Leyden, 2003; Lund, 2002; 2003). It was found that the frequency of walking in a positively perceived environment was associated with more unplanned interactions with
neighbors, which in turn can contribute to relationship formation and development (Lund, 2002; 2003). In addition, the presence of mix-use and retail activities near residences can increase the utilitarian and recreational walkability (Nasar & Julian, 1995).

2.5.2 Outdoor Community Places
Many studies have indicated that neighborhood design plays a major role in promoting the sense of community in a neighborhood. The presence of and access to community places can significantly influence social interaction among community members and affect a community’s social capital and social cohesion (Kingsley & Townsend, 2004). Shared outdoor spaces— or common spaces available to a specific group of people, such as community gardens, parks and playgrounds—can help promote casual social interaction and strengthen social networks at the local level (Cooper Marcus, 2003). For instance, Cooper Marcus (2003) indicates that residents involved in greening activities experience strong ties with their neighbors and a great sense of community, ownership and control over their environment. Joongsuk Kim’s study asserts that natural features and open spaces play an important role in encouraging the sense of community, as they foster pedestrianism and increase the possibility of social interactions (Kim & Kaplan, 2004).

2.6 Residential Satisfaction
Numerous studies have used neighborhood satisfaction as an important indicator of perceived neighborhood quality, well-being, and happiness (Eyles and Wilson, 2005 as cited in Amole, 2009). Residential satisfaction is theorized as a multi-dimensional construct that is believed to measures the differences between a house or neighborhood’s actual and desired conditions (Galsetr & Hesser, 1981; Amole, 2009). Galsetr and Hesser (1981) state that there are two sets of objective factors playing a role in the process of residential satisfaction. The first factor is contextual, concerning the physical characteristics of a dwelling and the physical and ecological characteristics of its surrounding neighborhood. The second factor is
compositional, dealing with the characteristics of individual households, particularly the social aspects and stage in life cycle.

Sanoff (1972) states that the framework for studying residential satisfaction is based upon the relationship between certain physical features of an environment and residents’ satisfaction and perception of that environment. Neighborhood satisfaction can be explained through the way in which “man perceives his relation to the spatial environment as well as his relation to his physical surroundings” (Sanoff, 1972). The neighborhood site plan and arrangement may influence the residents’ satisfaction with their neighborhood (Lansing & Marans, 1970). In addition, neighborhood residential satisfaction involves neighboring behaviors, the frequency and quality of personal contact, and the degree to which residents work together towards common goals or neighborhood solidarity. Lansing and Marans (1970) argue that although research emphasizes the impact of social settings on neighborhood satisfaction, the effects of the physical settings have an underlying importance.

The quality of the neighborhood’s physical features correlates to residents’ neighborhood satisfaction. Some factors were designated as predictors or indicators for neighborhood satisfaction, such as the level of maintenance, the adequacy of outdoor spaces for family activities, and the friendliness and the similarity of neighbors, or homogeneity. The facilities in a dwelling or a neighborhood are also important in determining residents’ satisfaction with a place (Lansing & Marans, 1970). It is assumed that social homogeneity will have an indirect impact on satisfaction with and attachment to a neighborhood through facilitating patterns of social interaction (Gans, 1967, as cited in Connerly & Marans, 1985). Perceived homogeneity may promote residents’ sense of comfort in knowing that their neighbors share similar values and characteristics (Connerly & Marans, 1985).
2.6.1 Place Attachment and Residential Satisfaction

While satisfaction has been studied frequently in neighborhood research, other indicators have not been used properly to measure perceived neighborhood quality, such as people’s sense of attachment to place (Connerly & Marans, 1985). Both residential satisfaction and residential attachment aim at clarifying the relationship between people and their residential environment, whether at the level of home, neighborhood, or city (Bonaiuto et al., 2003). Schumaker & Taylor (1983) criticize the literature on satisfaction in particular in that although it provides important information on factors influencing or relating to people’s evaluation of their residential environments, the concept of residential satisfaction remains static. They further explain that residential satisfaction was not explained in terms of the functions it serves or its relationship to factors such as aesthetics, household background, commitment to neighborhood, cohesiveness, intention to relocate, or general health and well-being. On the other hand, attachment to place represents a more dynamic concept. It provides models to understand the psychological meanings of places, and how those meanings can be transformed into bonds between a place and individuals, which may influence community involvement, health, and intentions to relocate (Shumaker & Taylor, 1983).

In the same line, Hunter (1974) argues that emotional involvement in a neighborhood produces a sense of attachment that can exceed any evaluation of a neighborhood. This type of involvement can be projected through various forms of interaction with friends or acquaintances living in the neighborhood (Hunter, 1974 as cited in Connerly & Marans, 1985). The relationship between place attachment and residential satisfaction may not be a covariant relationship. Residents may feel satisfied with their neighborhood but still not very attached, especially if they have not developed emotional ties to a place or its inhabitants. Therefore, Connerly and Marans (1985) suggest that attention should be paid to measuring the impact on attachment factors and its related factors such as social interaction and emotional involvement in the neighborhood issues (Connerly & Marans, 1985).
CHAPTER 3

3 CONCEPTUAL FRAMEWORK
This chapter explains the purpose of the study, the conceptual framework developed, and the associated research questions.

3.1 Purpose of the Study
Based upon the reviewed literature, residents’ interaction with places and the people occupying those places plays a role in generating people-place relationships and ultimately creates attractive communities. The overarching aim of this study is directed towards discovering the patterns and features in the built environment that can generate and nurture people-place relationships, particularly place attachment at a neighborhood level. The objective is to explore the multiple, complex and overlapping factors relating to the subjects’ sense of attachment to their neighborhood. In addition, the study seeks to broaden the understanding of the relationship between a neighborhood’s spatial, physical, and social features and place attachment that can promote the livability, satisfaction, and the stability of a neighborhood. Four inner-city neighborhoods in Durham, NC were selected as case studies constituting the context of the study.

3.2 Conceptual Framework
Studies of the benefits that accrue from place identity and place attachment are manifold in the literature. Previous empirical research has indicated evidence of place attachment’s effects on the vitality and stability of a neighborhood. Place attachment can be considered a catalyst for people’s commitment to and responsibility towards their neighborhoods, which can influence promoting and encouraging the redevelopment efforts in that neighborhood. Place attachment at the scale of a neighborhood may be used to foster a partnership approach, as different parties find common interest in their neighborhood’s health and well-being (Manzo & Perkins, 2006). Positive attachment to a place can also result in a stronger
commitment to and involvement in local formal and informal groups (Shumaker & Taylor, 1983). If people are attached to a place, they will defend and seek to improve their place. Brown and Perkins (1992) suggest that if people are attached to their neighborhoods, and thus reside for longer periods of time, the efforts of revitalization will have the chance to be more effective and viable (Brown & Perkins, 1992).

Place attachment implies long-term bonds between people and their communities (Brown & Perkins, 1992; Brown, Perkins & Brown, 2003). Throughout this bond, place attachment can be linked to the promotion of stability, familiarity and security in a neighborhood (Brown, Perkins & Brown 2003). It may also extend to affect a place’s physical features (Manzo & Perkins, 2006; Brown, Perkins & Brown, 2003). According to Manzo and Perkins (2006), neighborhoods either thrive or struggle depending on the ability or the willingness of their residents to address the local problems of a neighborhood. This ability can be influenced by people’s emotional and psychological connections and commitments to particular places (Manzo & Perkins, 2006). It has been hypothesized that people with strong sense of attachment to place tend to be more cohesive, enjoy a higher quality of life, and identify more landscape values and special places within their communities (Brown, Perkins & Brown, 2003).

Therefore, if place attachment exists and can be activated and directed towards neighborhood improvement, then a better understanding of it as a people-place construct may be important for neighborhood revitalization and for the health of a neighborhood. Additionally, place attachment will be an important factor to consider throughout thinking about and working on improving older inner city neighborhoods, as it can help promote and motivate the redevelopment efforts as well as the stability of their communities.

Although place attachment is associated with physical settings, it has been thought that attachment to a place is actually a manifestation of attachment to people and social networks
occupying that place, and not to the physical place itself (Mooney, 2009). Place attachment has been studied mostly from social and phenomenological perspectives and not necessarily from a physical perspective. Despite the multiple benefits of place attachment, neither designers nor planners have considered it as a significant component that can influence design decisions and/or community participation. As a result, place meaning and place attachment have not sustained a vital role in planning theory and practice (Mooney, 2009), even considering the multiple benefits of place attachment to the health of communities and neighborhoods. Hence, there is a need to address and investigate this connection to places and gauge the physical factors that might relate to nurturing and growing this sense of attachment to place.

The study acknowledges the importance of considering both individual level and environmental level variables (physical and social) in shaping the residents’ sense of attachment. Since place attachment subsumes constructs, such as sense of community, the study assumes that features relating to the sense of community may relate or promote the level of place attachment on a neighborhood level. Brower (2011) indicates that community-generating neighborhoods should have places or facilities that bring people together, such as parks, plazas, and stores, and provide residents with places for leisure and activities and facilitate interaction amongst them. Such community places can promote social interaction and social networking, and thus sense of community (Kingsley & Townsend, 2004). Additionally, studies have shown that walkability can promote the residents’ sense of community (Joongsub & Kaplan, 2004). Therefore, neighborhood walkability and its associated features represented in street quality, the presence of sidewalks, street aesthetics and greenery, and safety may considerably promote sense of community through facilitating opportunities for residents to meet, interact and engage in their neighborhood. This study is interested in investigating the relationship between the residents’ sense of place attachment and their perception of their neighborhood parks and walkability.
It has been assumed through Florida’s (2002) study of creative cities and their urban neighborhoods that neighborhood location and its proximity to downtown play a great role in attracting young and educated professionals to those neighborhoods. Also, this proximate location to downtown amenities is assumed to encourage residents to reside longer. Therefore, and based on the reviewed literature, this study is interested in investigating the relationship between the neighborhood location and residents’ connection to place and sense of place attachment.

Neighborhood social environment and activities, neighboring, and involvement are used as indicators of neighborhood social interaction and neighborhood satisfaction. Also, there is a relationship between perceived residential satisfaction and people’s sense of place attachment. Bonaiuto et al. (1999) claim that perceived residential quality predicts residents’ attachment to their neighborhood. The presence of place attachment in a neighborhood can be extensively linked to residents’ sense of commitment to their neighborhood and interest and concern about the neighborhood’s common problems and needs. It may also include the level of residents’ participation in their neighborhood events, activities, and neighborhood association (Lansing & Marans, 1970; Stedman, 2003). Through this conception and the acknowledgment of the importance of the social dimensions to the well-being of a neighborhood, the study is concerned with exploring the relationship between social interactions and residents’ sense of place attachment. These social patterns are reflected in neighboring activities, interaction with fellow residents, and involvement and participation in the neighborhood.

Brower (2001) states that community-generating neighborhoods attract similar people or people that have similar characteristics. Therefore, it is important for this study to investigate how similar residents are and whether they share common characteristics or backgrounds. Throughout the literature, it has been indicated that length of residence and the feeling of pride to be in a place are probably the most investigated predictors of place attachment. Also,
it has been stated that place attachment is higher for people who own their houses than for those who rent (Brown, Perkins & Brown, 2003; Riger & Lavrakas, 1981). Thus, it is important to examine the association of place attachment with the residents’ personal or demographic characteristics such as age, gender, and level of education. Other relevant variables including residents’ length of residence and homeownership status will be also explored in relation to residents’ levels of place attachment. Florida (2002) suggests through his creative class theory that young and educated residents prefer to stay in urban neighborhoods due to the diversity, tolerance and acceptance in such neighborhoods. Therefore, the study is also keen to investigate the relationship between place attachment and the perceived tolerance and acceptance in the neighborhood, or what this study calls “the cultural aspects of a neighborhood.”

3.3 Research Hypotheses

This is an exploratory study that is intended to expand the understanding of place attachment through looking at the physical and social features that contribute to its development on a neighborhood level. The overall assumption is that the more subjects engage and interact in their neighborhood, and the more they positively perceive its physical features, the more they become attached, connected to, and hence invested in it. The study will investigate the following assumptions: 1) that the sense of place attachment, on a neighborhood level, involves demographic, social and physical factors; and 2) that place attachment relates to and can be predicted by residents’ positive perception of their neighborhood attributes.

This investigation explores from an urban design perspective how the perception of specific physical features, which can stimulate residents’ social interaction, relates to nurturing the sense of attachment on a neighborhood level. The study also hypothesizes that forms of social interaction, such as involvement and participation in the neighborhood and neighboring activities, in addition to the existence and number of friends in this neighborhood or in adjacent neighborhoods relate to and can be associated with levels of
place attachment. Due to the relatively strong relationship between residential satisfaction and attachment, a scale to measure subjects’ satisfaction with their neighborhood is included, which is then compared to the residents’ level of place attachment. The study also investigates the assumption that demographic and personal variables, stage in life cycle, and length of residence relate to place attachment.

**HYP 1:** Participants’ positive perceptions of their neighborhood’s physical attributes will be associated with neighborhood place attachment. In particular, a set of independent/explanatory physical variables (residents’ perception of their neighborhood’s location, walkability, street quality, amenities and destinations, parks, and housing) will show a significant contribution to and association with levels of place attachment through a multiple linear regression equation (model#1).

**HYP 2:** A set of independent/explanatory social variables, represented in residents’ social activities and experiences in the neighborhood correlate to and can predict place attachment on a neighborhood level. Through a multiple linear regression equation (model#2), residents’ neighboring activities, residential satisfaction, involvement and participation in the neighborhood, and length of residence will show a significant association with levels of place attachment.

**HYP 3:** Residents’ demographic characteristics such as age, gender, marital status, educational level, and homeownership will correlate significantly to levels of place attachment.

**HYP 4:** The combination of the social and physical independent explanatory variables adds significantly to the association with place attachment achieved by either of the previous regression models (physical or social). Residents’ positive perception of their neighborhood’s physical features (neighborhood walkability, street quality, amenities and destinations, parks
and housing), and their social activities and experiences (number of friends, neighboring activities, residential satisfaction, involvement and participation and length of residence) combined in a multiple regression equation (model#3) will significantly be associated with higher levels of place attachment. The degree of association or prediction ($R^2$ adjusted) should be higher in regression model #3.

This investigation is designed to explore levels or degrees of place attachment of the residents of four adjacent urban neighborhoods in Durham, NC that have experienced cycles of decline and regeneration. These neighborhoods have shown signs of stability represented by their property values and continued attraction of new residents. Therefore, the study assumes that the residents of these neighborhoods experience comparatively high levels of place attachment towards their neighborhood and community. With proper choice of the variables, the research findings will have higher likelihood to be utilized in design practices and thus to improve human environments (Kuo, 2002). In terms of more general interdisciplinary implication of the study, the results will represent guidelines for orienting policies aimed to regenerating neighborhoods and fostering inhabitants' connection and bond to their own neighborhood.

3.4 Characteristics under Investigation
There are three main domains or categories of characteristics under investigation in this study: physical, social, and demographic characteristics.

3.4.1 Physical Characteristics
The explanatory variables selected under this category can potentially establish a sense of community through promoting various types of activities and interactions. They are design and spatial features that contribute to residents’ experience of and satisfaction with their neighborhood. From these considerations, a neighborhood’s location, walkability, street quality, amenities and destinations (leisure and service amenities), and neighborhood parks
are the main physical variables that this study is investigating to determine their relation to the participants’ levels of place attachment. The physical characteristics under investigation also include the subjects’ perception of their housing features or properties. To sum up, the physical characteristics are studied on three levels, neighborhood, parks and playgrounds, and houses.

![Figure 3.1 Conceptual Framework](image)

1. **Neighborhood:**
   This level of analysis examines the residents’ perception of their neighborhood location and spatial arrangement, in terms of these variables:
   - Proximity to work/study
   - Proximity to downtown area,
   - Neighborhood walkability,
• Street quality index combining the presence of good-quality sidewalks and streets greenery and aesthetics
• Amenities/destinations in the neighborhood
• Amenities/destinations such as shops, restaurants, schools, community centers, churches, or medical facilities.

2. **Parks and Playgrounds:**
This level of analysis explores the residents’ perception of the spatial arrangement and symbolic meaning of their neighborhood park, in terms of its:
• Size
• Location
• Legibility
• Safety
• Significance to the health of the neighborhood
• Role in connecting residents to their fellow residents

3. **Houses**
The variables related to various housing preferences are represented in:
• Affordability
• Size
• Style
• Age
• Lot size
3.4.2 Social Characteristics:
The social features investigated in this study involve neighboring activities, frequent interaction with other neighbors, involvement and participation in the neighborhood, friends in the neighborhood, and residential satisfaction. The investigated variables are related to:
– Involvement and participation in the neighborhood, represented in the frequency of:
  • Engaging in casual/informal discussions regarding neighborhood problems
  • Attending the neighborhood association meetings
  • Participating in the neighborhood social events and gatherings
  • Volunteering in cleaning and maintaining the neighborhood park.
– Neighboring activities, represented in:
  • The frequency of sharing activities with neighbors.
  • The frequency of doing favors for neighbors.
  • The existence of friends in the neighborhood.
  • The number of friends that residents have in their neighborhood and in other adjacent neighborhoods.
  • The number of neighbors that subjects know by first name.
– Residential Satisfaction
  • Satisfaction with the physical environment: neighborhood; house; and neighborhood park
  • Satisfaction with the Social Environment: community

3.4.3 Demographic Characteristics
The study will explore the similarities and differences among the subjects and how these differences or similarities may relate to the subjects’ sense of attachment. The variables under investigation involve residents’:
• Age
• Gender
• Marital status
• Level of education
• Length of residence
CHAPTER 4

4 METHODOLOGY
This chapter focuses on how the research is designed through a detailed review of decisions concerning research methodology, the criteria for selecting case studies, how the data collection instrument was shaped and thought of, and the analysis plan.

4.1 Research Strategy
The intricacy of place attachment phenomenon encourages studying it through different approaches and using various methods. This research study adopts combined designs and multiple methods to collect and analyze data. It is designed as a multiple case study with a correlational approach and both quantitative and qualitative parameters.

4.1.1 Case-Study Research
This investigation is a case study with an empirical inquiry that investigates a contemporary phenomenon within its real-life context, and in which multiple sources of evidence are used (Yin, 1989). Because the research hypotheses are associated with a complex web of interconnected issues in a constantly changing real-world context, this study followed a multiple case study approach with four distinct but similar and adjacent neighborhoods, and multiple embedded units of analysis (Yin, 2009).

This case study inquiry has a comprehensive strategy that encompasses multiple research methods, data collection, and data analysis (Yin, 2003). Yin (2003) describes case study inquiry as healthier and more rigorous, and its results are considered more persuasive (Yin, 2003). Case study research provides capacity to generalizability that stems from replication. The replication adopted by the study under investigation seeks to identify repeating patterns across cases and display these patterns as evidence (Yin, 1989). There are two kinds of replication relevant to case study research, literal and theoretical replication (Stake, 2005).
Literal replication accurately tests on other cases the same outcomes, principles, or predictions established by one case study. On the other hand, theoretical replication tends to produce contrasting results but for predictable reasons (Stake, 2005). The study under investigation adopts a literal replication approach.

The strength of a case-study research is represented in the focus on immersing the case in real-life contexts, whereas its weakness is exemplified in its potential for over-complication and the challenge of comprehensibly integrating many data resources (Groat & Wang, 2002). However, Yin argues that through the use of multiple data sources, case study strategy has the capacity to explain causal links and can generalize to a theory (Yin, 1989, 1994). Case study research may be qualitative, quantitative or a combination of both (Yin, 1989). This study utilizes a combination of both quantitative and qualitative approaches.

According to Patton (2001), purposeful selection follows a theory-based, operational, or theoretical sampling strategy (Patton, 2001). The idea is to select cases according to conceptually oriented criterion and based on their representation of important theoretical constructs (Patton, 2001). Each case, in this sense, is a tool to understand a phenomenon or to refine a theory (Stake, 1995). The case studies of this research inquiry were selected purposefully to provide in-depth and rich information directed to the purpose of the study. Multiple case studies were studied profoundly and jointly in terms of their similarities, differences and variations in order to give insights about the phenomenon under investigation (Yin, 1989; Stake, 1995). The four case studies selected for the purpose of this inquiry share many similarities and slightly vary in some characteristics.

### 4.1.2 Correlational Research Strategy

Since the study is focused on understanding the naturally occurring patterns of people-place relationships (Groat & Wang, 2002), the data gathering techniques were correlational, primarily using a survey instrument. The correlational research is also referred to as survey
research, where the researcher investigates and analyzes the relationship among previously determined variables (Groat & Wang, 2002; Marans, 1987; Crano & Brewer, 1973). This study’s survey included both fixed and open-ended queries concerning general perceptions of the residents towards their neighborhood features, in addition to the reasons that influence or encourage them to reside for longer periods in that neighborhood.

There are two main types of correlational research: relational and causal comparative. The relational approach emphasizes the nature and the analytical power of the co-variant relationship among different variables. It might propose a theory, and through its predictive capacity it can propose design guidelines or recommendations. However, it cannot establish any causal links among the variables under study (Groat & Wang, 2002). The correlational approach adopted by this study emphasizes and identifies the nature and the analytical power of the co-variant relationship between independent and dependent variables (Groat & Wang, 2002).

The study under investigation will involve relational approach. Through employing a questionnaire survey tool for data collection, this investigation is positioned to explore the relationship among the study variables indicated in Chapter Four. Particularly, it will help understand the relationship between the residents’ degree of place attachment on a neighborhood level and their perception of specific physical features in addition to social activities/aspects in their neighborhood. The study also examines the relationship between the residents’ demographic characteristics, their residential satisfaction, and their level of place attachment. The physical, social and demographic characteristics that will be specified in details under the Study Design section are conceptualized as independent variables, while the residents’ level of place attachment is the dependent variable. Each of the independent variables is correlated to the dependent variable—place attachment—to disclose the degree of association or correlation between them. The goal is to understand and identify patterns of relationship and prediction between the dependent and independent variables and hence test
4.1.3 Quantitative VS. Qualitative Approaches

A major difference between quantitative and qualitative or naturalistic inquiry lies in their sampling logic (Miles & Huberman, 1994). Rationalistic inquiry, or quantitative inquiry, follows a large and random sampling logic that derive from statistical probability theory. On the contrary, naturalistic studies usually focus on smaller, purposefully and conveniently selected samples. Although this research study follows a quantitative analysis, the selection of case studies and the study participants followed a naturalistic inquiry approach. That is because the focus of the study was mostly directed to neighborhoods within a close proximity to the downtown area that have experienced cycles of decline and generation. Also, the intention was to survey as many residents as possible. The study adopted both quantitative and qualitative approaches in analyzing the collected data. The qualitative approach was represented in the open-ended questions surveying the residents’ opinions of what they liked and disliked about their neighborhood.

4.2 Study Design

For the purpose of this investigation, the meaning-mediated model of place attachment is adopted, which suggests that the physical environment and its features have an effect on place attachment. However, this effect is complex and only revealed through modeling the indirect symbolic meanings (Stedman, 2003). Therefore, the study will investigate how people perceive their neighborhood’s physical features and how these features might generate certain symbolic meanings and provoke various types of activities and experiences.

The study will be conducted on the neighborhood level of attachment (Schumaker & Taylor, 1983). As suggested by Schumaker and Taylor, there are two main physical predictors of neighborhood attachment: 1) the physical quality of the neighborhood’s houses, lawns, lots, and so forth; and 2) areas that are positively and physically unique, which are perceived as
more valuable areas. In addition, social, cultural, or historical distinctiveness may also help attach people to their neighborhood. A number of other factors might influence attachment at the neighborhood level such as the number of people who belong to and participate in the neighborhood’s local organizations and who feel committed to their neighborhood (Schumaker & Taylor, 1983). The neighborhood as an intermediate level of analysis was chosen for the following reasons: (1) it allows considering both private and public structures, and (2) it serves as a link between “home” and “city” levels in people’s perceptions and actions regarding their residential environment (Bonaiuto & Bonnes, 1996; Bonaiuto, et al., 1999).

4.3 Outcome and Explanatory Variables

4.3.1 Outcome/Dependent Variable (Place Attachment)

The sense of place attachment will be measured based on the assumption that it encompasses both place dependence and place identity constructs. Place dependence involves the process by which occupants assess the quality of their place and the availability of social and physical resources that satisfy their goals and needs (Stokols & Schumaker, 1981). To measure the sense of place identity in a neighborhood, it is important to explore the relationship between its physical aspects (the their accommodated activities and the experiences, in addition to the meanings that residents associate with their features.

The place attachment scale includes items that were drawn from several well-tested psychometric scales measuring place attachment, place identity, and place dependence constructs. The table below shows the items measuring each of the three constructs. As the items on this scale were drawn from previous studies, the internal consistency of the scale was examined using Cronbach’s Alpha. It was found that the Alpha scores were in excess of 0.80 with most of the items scoring above 0.82, indicating a relatively consistent instrument.

Participants were be asked to reveal their agreement level, on a five-point Likert scale, on
nine statements/items, such as the sense of pride to be in place and intention to remain residents of the neighborhood. It also included questions concerning the symbolic meaning of the neighborhood to its residents, and how it compares to other neighborhoods. Since the feeling of similarity to other residents (homogeneity in the neighborhood) is hypothesized to promote the sense of community and consequently the sense of place attachment, the place attachment index included an item concerning the residents’ opinion of how similar they are to other residents in their neighborhood. The overall level of place attachment for each respondent was measured by calculating the average score of their responses to these nine statements.

4.3.2 Explanatory/Independent Variables
The study measured the subjects’ perception of their neighborhood’s physical features, through five-point Likert scales. The following are the independent variables that will be compared and correlated to the subjects’ level of place attachment (the dependent variable) to identify patterns of relationships or predictions.

I. Physical Variables
Since the study assumes that there are certain physical features that can potentially promote interaction and connection to place, the investigated variables under this domain involve design and spatial features that contribute to enriching the subjects’ residential experience and satisfaction. Therefore, this domain is intended to explore the subjects’ perception of specific physical features, such as the neighborhood’s location in relation to work and downtown area, walkability and street design, amenities and services, and the neighborhood park. Also, queries are included under this domain concerning the subjects’ perception of their housing features and properties.

a. Neighborhood proximate location to downtown: Participants were asked to rate the importance of the neighborhood’s location in relation to downtown in their selection of
their neighborhood, using a five-point scale (from 1, not at all important, to 5, very important).

b. **Neighborhood proximate location to work /study**: Participants were asked to rate the importance of the neighborhood’s location in relation to their work and/or study places in their selection of their neighborhood, using a five-point rating scale (from 1, not at all important, to 5, very important).

c. **Neighborhood proximate location to medical facilities**: Participants were asked to rate the importance of the neighborhood’s location in relation to medical facilities in their selection of their neighborhood, using a five-point rating scale (from 1, not at all important, to 5, very important).

d. **Good schools** in the neighborhood: Participants were asked to rate the importance of the existence of good schools in their selection of their current neighborhood, using a five-point rating scale (from 1, not at all important, to 5, very important).

e. **Neighborhood walkability**: Participants were asked to reveal their agreement level on the walkability of their neighborhood, using a five-point Likert scale (from 1, strongly disagree, to 5, strongly agree).

f. **Street quality scale**: Participants were asked to reveal their agreement level on the quality of their neighborhood sidewalks, street greenery, and aesthetics using a five-point Likert scale. The average score of the respondents’ response to these two items (sidewalks quality and streets greenery) will form the street quality scale.

g. **Destinations/amenities in the neighborhood**: Participants were asked to indicate their agreement level on the variety of destinations and places to visit and enjoy in their
neighborhood, using five-point Likert scale (from 1, strongly disagree, to 5, strongly agree).

**h. Destinations in downtown:** Participants were asked to indicate their agreement level on the variety of destinations and amenities in the downtown area, using a five-point Likert scale (from 1, strongly disagree, to 5, strongly agree).

**i. Housing features:** Participants were asked to rate the importance of each of the following individual features in their selection of their houses, using a five-point rating scale. Each of the features stated were treated as an individual variable or a covariate included in the analysis and compared to levels of place attachment. These features/variables are: size, age, style, lot size, and affordability.

**j. Parks and playgrounds:** The perception and quality of the neighborhood park and playgrounds were measured through asking participants to rate the importance of the existence of or proximity to parks and playgrounds in their neighborhood using a five-point rating scale. The study also attempted to understand how subjects perceive and use their neighborhood park. There were questions concerning which park participants usually visit, how frequently they visit that park, and the types of activities they usually engage in.

**k. Park’s physical and symbolic features:** Six individual variables were used to measure subjects’ perception of their neighborhood park. Participants were asked to indicate their agreement level on the quality of the park’s features using a five-point Likert scale. These variables are:
- Park’s satisfying size
- Park’s good location
- Park’s visibility (easy to find)
• Park’s safety
• Park’s significance to the neighborhood health and well being
• Park’s role in connecting residents to their neighbors

II. Neighborhood Social Variables
The study measured the social characteristics and activities in the neighborhood involving residents’ interaction with the neighborhood features as well as their neighbors. This domain investigates the social aspects and social activities associated with living in the neighborhoods under study. Since place attachment at the neighborhood level can be reflected in the portion of people who are familiar with the neighborhood and its inhabitants, there are questions related to residents’ familiarity with their neighbors’ first names, and their sense of security or safety in their neighborhood. Other queries relevant to people-place relationship and sense of community are included, such as: residents’ participation in their neighborhoods social events and gatherings; residents’ commitment to their neighborhood, represented in meeting casually with other neighbors to discuss neighborhood problems and challenges; and residents’ participation in the neighborhood local organization, and also participation in other neighborhood events and activities. The following are the social independent variables correlated and compared to the prediction of levels of place attachment as a dependent variable.

1) Neighborhood cultural aspects: Participants were asked to reveal their agreement level on the importance of the neighborhood cultural aspects, represented in aspects of tolerance and diversity, in their selection of their neighborhood, using a five-point rating scale (from 1, not at all important, to 5, very important).

2) Neighborhood location in relation to friends: Participants were asked to rate the importance of the location of the neighborhood in relation to friends and acquaintances, using a five-point rating scale.
3) Number of friends in the neighborhood: Participants were also asked to select the number of friends they have in their neighborhood from these five categories: one to three, four to six, seven to nine, nine to twelve, or more than twelve friends.

4) Numbers of friends in the adjacent neighborhoods: Participants were also asked to select the number of friends they have in adjacent neighborhoods from these five categories: one to three, four to six, seven to nine, nine to twelve, or more than twelve friends.

5) Number of neighbors known by first name: Participants were asked to select the number of close neighbors that they know by first name, from these five categories: one to three, four to six, seven to nine, ten to twelve, or more than twelve.

III. Involvement and Engagement

The study assumed that involvement and participation in the neighborhood’s events and discussions can promote subjects’ sense of place attachment. This section deals with the frequency of the subjects’ involvement and participation in their neighborhood’s social and informal events and gatherings, including the frequency of meeting with neighbors to discuss neighborhood problems, attending neighborhood association meetings, participating in the social events and gatherings, and volunteering in cleaning and maintaining the park. This section uses a three-point scale, ranging from not often=one to very often=three. This section includes the following individual independent variables/ covariates:

- The frequency of participating in social events and gatherings
- The frequency of volunteering in cleaning and maintaining the neighborhood park
- The frequency of casual informal meetings with neighbors to discuss neighborhood problems
- The frequency of attending the neighborhood association meetings
IV. Neighboring
Participants were asked to reveal the frequency of their neighboring activities in their neighborhoods, in terms of the following individual independent variables:
- Sharing activities with neighbors
- Doing favors for nearby neighbors

V. Neighborhood safety: Participants were asked to reveal their agreement level on their perception of the safety of their neighborhood using a five-point Likert scale (from 1, strongly disagree, to 5, strongly agree).

VI. Residential Satisfaction: Throughout the literature review, the relationship between satisfaction and place attachment was evident. Therefore, the study attempted to investigate this relationship and the assumption that a higher satisfaction with the neighborhood features might promote a higher level of place attachment. This section deals with the subjects’ level of satisfaction with their neighborhood components represented in: 1) satisfaction with the neighborhood in general, 2) satisfaction with the community, 3) satisfaction with the neighborhood park, and 4) satisfaction with the subjects’ houses. This section also uses a five-point likert scale, ranging from strongly disagree=one to strongly agree=five.

VI. Residents’ Demographic Variables: The study collected data concerning the subjects’ individual and demographic profile in order to define individual-level variables. The following measures/variables were collected for the purpose of describing the current sample. They were not included as variables in the regression equation model, but they were treated as covariates and correlated and compared to place attachment construct. These variables are:

- **Age**: Participants were asked to select their age range from four categories: 20-30, 31-40, 41-60, and over 60.
- **Gender**: Participants were asked to select their gender whether male or female.
• **Educational level**: Participants were asked to select their highest level of education completed from five categories: less than high school, high school graduate, some college courses, college graduate, graduate or professional degree.

• **Length of residence**: Participants were asked to select whether they have been residents of the neighborhood for a year or more. Then they were asked to indicate the number of years they have been residents of their current neighborhood.

• **Marital status**: Participants were asked to select whether they are single (divorced, widowed, or never married), married, or living with a partner.

• **Homeownership status**: Participants were asked to indicate whether they own, rent their houses, or other.

The following variables were not included as covariates in the analysis:

• **Household status**: Participants were asked to indicate whether or not there are any children under the age of 12 in their household.

• **House typology**: Participants were asked to indicate whether they live in a single family house, duplex, or an apartment.

**4.4 Identifying the Features that Subjects Like and Dislike in their Neighborhood**

This research inquiry explored qualitatively the factors that cause residents to like their neighborhood and prompt them to stay residents of that neighborhood. This exploration was conducted through open-ended questions inquiring about what the subjects like and dislike in their neighborhoods, or in other words, why they prefer to stay residents of their current neighborhoods. The collected data from the open-ended queries were projected to support the quantitatively collected and analyzed data measuring the subjects’ perception of their neighborhood’s physical and social features.
4.5 Data Collection Instrument

Scales developed to measure place attachment and place identity often included a participant’s intention to remain in the neighborhood, as well as their length of residence, and the feeling of pride to be in place as positive predictors of place attachment (Riger & Lavrakas, 1981; Brown et al., 2002; Keller, 1968; Manzo & Perkins, 2006; Bonaiuto, et al., 1999; Low & Altman, 1992; Brown & Perkins, 2002). Place attachment has shown to be higher for homeowners (Brown et al., 2002; Riger & Lavrakas, 1981), and long-term residents (Bonaiuto, et al., 1999). Additionally, levels of place attachment are often higher for individuals who perceive fewer incivilities on their block (Brown et al. 2002). Other studies focused on measuring place attachment based upon expressing intentions to move out from a particular place as opposed to the feeling of sadness to leave that place.

Early studies on place attachment and its related aspects, such as rootedness and place meaning, depended solely on the phenomenological perspective of the authors, with no empirical evidence (Norberg Schultz, 1980; Tuan, 1977; Relph, 1976). Other studies attempted to identify and discover people’s connections to place and the spatial identity of particular places, using in-depth, open-ended or structured interviews (Fried, 1963; Mah, 2009; Manzo, 2005). For example, in Manzo’s study of “For Better or for Worse: Exploring Multiple Dimensions of Place Meaning,” Manzo used face-to-face interviews including questions exploring participants’ experiences in places that are considered important and meaningful. Each interview was composed of a series of open ended questions covering: 1) the meaning and the importance of different places in the lives of the study participants; 2) the feelings towards and experiences in the participants’ places of residences; and 3) past environmental experiences such as experiences from childhood (Manzo, 2005).

Halpenny (2006) used a survey questionnaire to collect data regarding users’ levels of place attachment to a park, trail, or other natural landscape features. The questionnaire included items to measure components relevant to place attachment, such as place affect, place identity and place dependence (Halpenny, 2006). In Hidalgo and Hernandez’s study (2001)
of “Place Attachment: Conceptual and Empirical Questions,” they tested the degree/level of place attachment to three different spatial levels (house, neighborhood and city), using a survey questionnaire. In their questionnaire, the researchers selected items that can reflect people’s connection to place or to the people occupying that place, such as: “I would be unhappy to leave,” and “I would be sorry to move out from my house/neighborhood/city without the people I live with.” They also asked the participants how much they would be sorry if the people they lived with moved, as well as how much they would be sorry to move out along with the people they lived with (Hidalgo & Hernandez, 2001).

Central to designing a case-study research is to design the data collection protocol upon which the study will be based, which also will help in increasing the reliability of case studies (Yin, 1989). This research study was conducted based on multiple or collective methods of data collection. Each case study was explored individually using three methods of data collection that investigated all of its related aspects and study variables:

1) Questionnaire technique
2) Structured interviews with the members of the Neighborhoods Associations
3) GIS Data

4.5.1 Questionnaire

A questionnaire survey instrument was designed to empirically examine and measure residents’ sense of place attachment in relation to the physical and social environment of their neighborhood, with both quantitative and qualitative parameters. The study questionnaire included a place attachment scale, which is a five-point Likert scale containing items from well-tested psychometric scales and measuring place attachment, place identity, and place dependence constructs. The questionnaire also included queries focused on the residents’ perceptions and agreement level of the quality of their neighborhood’s physical features, such as neighborhood location, walkability, houses, street quality, amenities, and parks; and the related social aspects, in addition to the subjects’ demographic characteristics.
There was a section included in the questionnaire concerning the reasons for which subjects like or prefer their neighborhood. The questionnaire asked the subjects to name three things they like about their neighborhood and three things they dislike. Open-ended questions were utilized for the purpose of this section for these reasons:

1) The researcher does not know all the possible answers to a question,
2) A range of possible answers is so large that the question would become unmanageable to put in multiple-choice format,
3) The researcher wanted to avoid suggesting answers to the respondents,
4) The researcher wanted answers in the subjects’ own words (Sommer & Sommer, 2002).

The questionnaire also included a cover letter introducing the researcher conducting the study, describing why this study was being done, and explaining how the results will be used. It also described approximately how long it would take to fill out the questionnaire. The cover letter announced information about an ‘incentive,’ in the form of a gift card, for two randomly selected respondents. The researcher also included her contact information (email address, mailing address, and phone number) for any inquiries or concerns. As a result, the researcher received several emails and phone calls commenting on the study, and discussing and clarifying some points in the questionnaire.

4.5.2 Structured Interviews

In this type of interview, the questions are formed beforehand and then asked in order and in a specified manner (Sommers & Sommers, 2002). These structured interviews were conducted with members of the board of directors of each neighborhood association. The intention of these interviews was to learn more about their neighborhoods’ potentials, problems and concerns, and also to know more about the history of each neighborhood. The interview guide included open-ended questions, regarding:

1. The type of activities that the neighborhood association organizes in the neighborhood.
2. The number of people involved in these activities.
3. The frequency of the neighborhood association’s meetings and the number of people attending these meetings.

4. The challenges that the neighborhood faces and the efforts of the neighborhood association in responding to these challenges.

5. The goals and achievements of the neighborhood association, and the achievements of the neighborhood association.

Table 4.1: Place attachment Index Items

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
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| Place Attachment  | 1. I pride myself of living in this neighborhood  
|                   | 2. I am quite similar to most people who live here  
|                   | 3. I plan to remain a resident of this neighborhood for a number of years |
| Place Identity    | 4. Living in this neighborhood says a lot about who I am  
|                   | 5. I am very attached to this neighborhood  
|                   | 6. I identify strongly with this neighborhood  
|                   | 7. This neighborhood is very special to me |
| Place Dependence  | 8. This is the best neighborhood for me to live in  
|                   | 9. No other neighborhood can compare to my neighborhood |

4.5.3 GIS Data

Geographic Information systems (GIS) data in the form of streets, parcels, roads, historic buildings, and census data was acquired from the city of Durham, Department of Planning. This data serves as background information to introduce each neighborhood and also to understand the physical and demographic patterns of each neighborhood and the types of
people living there.

4.6 Distribution Methods
The study questionnaire was distributed through two main ways:

4.6.1 In-person Distribution
The researcher distributed paper copies of the questionnaire to randomly selected houses in the neighborhoods, with the request that the questionnaire be filled out and placed in a designated collection box (at the front porch of each neighborhood association president), or returned through the mail to the researcher. With the help of the neighborhood association of Northgate Park, 800 paper copies of the questionnaire were distributed in the neighborhood. The response rate of Northgate Park was 4% (35 complete and returned questionnaires). In Duke Park, the researcher distributed 250 paper copies of the questionnaire, and the response rate was 9.2% (23 complete and returned questionnaires). In Trinity Park Neighborhood, the researcher distributed 200 paper copies of the questionnaire and the response rate was 10.5% (21 complete and returned questionnaires). In Old North Durham Neighborhood, the researcher distributed 50 copies of the questionnaire, and the response rate was 40% (20 complete and returned questionnaires).

4.6.2 Online Distribution
The other way of distributing the questionnaire was through an online survey tool, ‘Qualtrics.’ The neighborhood listserv helped in distributing the word among the neighborhood residents and helped notifying them of both the online and paper copies of the questionnaire beforehand, which aroused interest and encouraged cooperation. A cover letter describing the research, introducing the researcher, explaining how the results would be used, and including the web link to the online copy of the questionnaire was emailed to the neighborhood residents through the neighborhood listserv. This email describing and
introducing the study was forwarded to 300 to 350 households in each neighborhood. The response rates from this method of distribution were as follows:

1. Northgate Park: 24% (85 online questionnaires were completed and submitted)
2. Duke Park: 16% (48 online questionnaires were completed and submitted)
3. Trinity Park: 16% (57 online questionnaires were completed and submitted)
4. Old North Durham: 6% (20 online questionnaires were completed and submitted)

4.7 Analysis Tools

The study utilized various types of quantitative and qualitative data analysis, including:

4.7.1 Descriptive Statistics

Descriptive statistics were used in this study to summarize quantitative data in an understandable and meaningful way (Sommer & Sommer, 2002). Particularly, they were used to describe the personal characteristics of the subjects and their demographic background/information, such as their gender, age, homeownership, activities, length of residence, and means to visit the park. Also, the study utilized descriptive statistics to describe the subjects’ perception of, interactions with, and attachment to their environments at each neighborhood.

4.7.2 Correlational Analysis (Spearman’s)

The study investigated the correlational relationship between the subjects’ degree of place attachment and their perception of their neighborhood physical and social variables indicated in the description of the study. Correlational analysis refers to an association between scores on two variables for the same individuals or cases; the higher the correlation coefficient, the stronger the association between the variables (Grimm & Yarnold, 1995; Sommers & Sommers, 2002; Argesti & Finlay, 2009). Correlational analysis does not imply causation; however, it was used to investigate the relationship between the subjects’ degree/level of place attachment and their perception of each of the physical variables in the neighborhood.
and the associated social variables. Every independent variable was correlated to a dependent variable—place attachment—to reveal the degree of association between them. This analysis was to help reveal which variable(s) was/were associated with a higher degree of place attachment. The Spearman’s Rho correlation between the independent variables and the dependent variable indicates how significant and strong their relationships are. Spearman’s Rho correlation coefficient was conducted between each of several independent variables used in the survey or model and place attachment measure.

4.7.3 Regression Analysis

Multiple regression analysis was used to determine the degree to which a given set of predictors can empirically predict a criterion, as indexed by $R^2$. The study ran different regression models in order to identify which combination of the physical and social variables can predict the residents’ sense of place attachment. In other words, it was used to construct a model of combined explanatory variables that are capable of predicting place attachment on a neighborhood level. Multiple regression models were used to indicate the direction of influence and the explanatory power of the independent variables. The dependent variable is the calculated index of place attachment.

4.7.4 Coding:

The answers of the open-ended questions listed in the study’s questionnaire concerning what the residents like and dislike about their current neighborhood were be categorized or coded into themes representing the preferred physical and social features in the neighborhood. Coding, according to Sommer and Sommer (2002), is the process by which lengthy answers are reduced into specific response categories or themes.
5 CASE STUDIES

This chapter reviews the specified criteria for selecting the case studies or neighborhoods under study. In addition, it includes physical and historical description of each case study. This chapter also includes the results of the semi-structured interviews with the current presidents of three neighborhoods: Trinity Park, Duke Park, and Northgate Park.

5.1 Case Study Selection Criteria

The case studies were purposefully selected to provide in-depth and rich information directed to the purpose of the study. The study selected four older urban neighborhoods in Durham, NC, which were four of the first ring suburbs within a close proximity (one to three miles distance) to downtown Durham. A first selection was made for the city of Durham as the location of the case studies. Durham was selected due to its location in North Carolina and the fact that it included many urban neighborhoods that were flourishing with people and various architectural styles before the 1950s, but suffered cycles of decline since then. The regeneration efforts of the selected case studies/neighborhoods had started in the 1980s and the 1990s. The neighborhoods under study have started showing a considerable level of stability represented by their property values and continued attraction of new residents. Therefore, the study assumes that the residents of these neighborhoods may experience a considerable level of place attachment to their neighborhood.

Three main criteria were used in creating the sampling pool of case studies. The first criterion was selecting current urban neighborhoods. The second criterion was the adjacency of the neighborhoods to the downtown or the central city area. Therefore the four selected case study neighborhoods are within one to three miles from Durham Downtown. The third criterion was the existence of a neighborhood park, as a park is one of the features that this study was interested in investigating in relationship to the sense of place attachment. The
fourth criterion was the diversity of the neighborhood’s residents in terms of their length of residence (that is, people who lived in the neighborhood for long time vs. others who just moved recently), in order to evaluate the neighborhood from both perspectives. It was also important to select neighborhoods that showed a tendency to attract new residents, especially young families or young professionals. It was significant to select neighborhoods that went through cycles of decline and regeneration, and are also diverse in the socio-economic levels of their residents, and their housing typologies. The presence of the neighborhood association was a crucial condition in selecting case studies, as it is a way to facilitate reaching out to the neighborhood residents through a credible and reliable venue. Three neighborhoods were eliminated due to the lack of cooperation and interest of their neighborhood associations. The four case studies selected for the purpose of this study have neighborhood associations, which were willing to participate and cooperate and showed interest in the study and its outcomes.

The four neighborhoods are comparable in age and size. They were built almost at the same time, 1910 to 1920s, or within a few years difference, except for Northgate Park, built in the 1940s. The neighborhoods share somewhat similar features of their housing and streets patterns. In addition, the neighborhoods are adjacent to each other and have a variety of leisure and utilitarian amenities within a close proximity such as schools, medical facilities, churches, restaurants, and shopping centers. The four selected neighborhoods are older urban neighborhoods that are characterized by their compact form, variety of land-uses, average shorter block lengths, more grid-like street patterns, and an easy access to city center. These neighborhoods have a mix of good and poor housing conditions. It was important to select neighborhoods that have neighborhood associations, which are considered in this research tools for collective action. Neighborhood associations also offer opportunities for people to come together and interact and work on common goals and concerns.
5.2 Durham

Durham, Chapel Hill, and Raleigh (or the Research Triangle Area) represent a main vessel for jobs, science and technology in the region, as they are mainly dominated by major industries such as medicine, telecommunication, biotechnologies, and renewable energy. The Research Triangle Area continuously attracts new residents and investments. After decades of decline, the city of Durham has started to gain new residents and businesses. Its current population is 273,392 residents, according to the 2011 U.S. census, with an increase of 2.2% of its population since 2010, which was 267,582 (Wise, 2002; RTP.org).

The City of Durham occupies roughly a rectangle of 296 square miles, bounded by highway 85 to its north and Interstate 40 to the south (Wise, 2002). Durham was established in 1852, when Dr. Bartlett Snipes Durham purchased the land that eventually became Durham from the North Carolina Railroad Company (Robert, Lea & Leary, 1982). Durham’s growth evolved with the increase of the tobacco farming and then the tobacco industry, especially after the Civil War.

The Washington Duke family was associated with the rise of Durham after the Civil War, as they played a major role in Durham’s economy with the tobacco industry and the development of some of Durham’s main neighborhoods and institutions, especially Trinity College (later known by Duke University). By the turn of the 20th century, Duke was the owner of a huge parcel of land adjacent to the northwest boundaries of Durham, which then became the major portion of the North Durham, Duke Park, and Trinity Park neighborhoods. This land was laid out on a grid of streets and blocks of narrow lots intersected with service alleys (City of Durham Inventory, 1981). Shortly after platted the land, Duke started selling lots. Most of the early buyers were located in the south end of the district, convenient to the trolley line on W. Main St. (City of Durham Inventory, 1981).

For the most of the 20th century, Durham retained its position as an industrial city known
internationally for its tobacco and textile products. Downtown Durham was developed over time and became a compact area with diverse historic buildings that date back to and before the beginning of the 20th century. However, beginning in the 1950s, Durham started to lose its economic momentum. Tobacco and textile industries were no longer the economic catalysts of the city. As a result, jobs and residents moved elsewhere, which changed the character of the city (Robert, Lea & Leary 1982; Open Durham, 2012). And despite the architectural and historic importance of that area, downtown Durham has suffered severe decline and neglect.

The four selected case studies/neighborhoods selected for the purpose of this study started as first-ring suburbs in Durham, but now they are absorbed into the urban mass of the city and are considered urban neighborhoods. These neighborhoods also went through cycles of decline—starting in the 1950s— and regeneration—beginning in the 1980s. An influx of young and highly educated people is returning back to occupy the city, selecting these four neighborhoods as their place of residence. The neighborhoods under study vary in their revitalization level and advancement. They also vary in the size of their houses, lots, and green spaces. They are mostly within one to three miles of the central Durham area. However, Northgate Park is the furthest of them, and additionally it is separated from downtown by highway I-80. The neighborhoods under study are Trinity Park, Duke Park, Old North Durham, and Northgate Park.

5.3 Duke Park Neighborhood

With the increasing numbers of privately owned automobiles, the expansion of Trinity College (Duke University), and a growing desire for spacious yards, a wave of suburbs started to take shape further away from central Durham and the trolley lines. These suburbs started as automobile suburbs. Duke Park neighborhood was one of these suburbs. In the 1920s, Duke Park’s early and affluent residents started to establish their homes with a variety of revival styles, including Tudor, classical, and Spanish motifs. A piece of land in the north
end of the district was donated by Brodie Duke to create a public park (Duke Park), by which the neighborhood is known. Although Duke Park neighborhood started as a second ring suburb in Durham, today it has been absorbed into Durham’s central city (City of Durham Inventory, 1981).

Figure 5.1 Duke Park Neighborhood
Similar to many other neighborhoods in Durham, Duke Park has gone through cycles of decline starting in the 1960s and 70s. Dan Read, the current president of Duke Park Neighborhood Association (DPNA), states that he and his family have been living in the neighborhood for about 26 years. Read explains that at the time he and his family moved to Duke Park in the late 1980s, some young people like them were also moving to Duke Park and starting families, allured by the cheap prices of properties and the convenient location of the neighborhood to major destinations, such as churches, work and day care options: “Everything was right here, stores in Northgate, there was a grocery store there. We were really close to everything” (Read, 2012).

Since 1978, the neighborhood association of Duke Park (DPNA) has encouraged and endorsed preservation activities and greater awareness of neighborhood values. In addition, a non-profit corporation, Durham Neighborhood Housing Services, began a program in 1980 to restore pride and confidence to the neighborhood by renovating properties, stimulating reinvestment, and promoting homeownership opportunities in the neighborhood. Read asserts that DPNA represents the neighborhood to the city and to other neighborhoods and keeps the residents of the neighborhood informed with the current issues and events. DPNA organizes various types of social activities, and the members of the Neighborhood Association usually meet every month. They also communicate online through the neighborhood listserv and emails. Duke Park residents, non-DPNA-members, can join the neighborhood associations meetings. The number of attendees of those meetings can reach a number between 20 to 30 people. Read indicates that many residents support what the neighborhood association does, but do not usually attend the meetings.

The neighborhood association and its board organize various activities for the neighborhood residents, including three planting days in the park. The city provides the supplies and trees for these planting days, and the neighborhood provides the volunteers. There are usually 35 to 55 volunteers for each of the planting days. The DPNA also organizes Christmas parties
every year. There are approximately 70 to 80 people attending these parties. Christmas parties are usually held at one of the DPNA members’ house in the first week of December. Other events and parties include Memorial Day, 4th of July, and Candle Light. The biggest of these events is the Memorial Day with 150 people gathered. The July 4th party can attract 30 to 50 people and the Christmas party can draw 60 to 80 people. The Candle Night is on the Sunday two weeks before Christmas, when usually 30 to 40 people buy candles and put them in front of their houses and also in the park.

One of the challenges that the neighborhood faces is that they do not have community buildings. DPNA sometimes uses the church’s community building, if needed. There were some efforts to renovate the bathhouse in the park to be a community building, but this project was delayed due to its high cost and low budget. Another problem is the high percentage of rentals in the neighborhood. The neighborhood association president estimates this percentage to be 55% to 60% of the total properties in the neighborhood. Read believes that rentals in the neighborhood are triggering many concerns because: 1) renters do not usually participate in the neighborhood activities, and 2) it is difficult to have the landlords of the rental properties act towards their problematic tenants. Many of the rentals are managed by management offices outside of Durham and sometimes outside of the State of North Carolina. Therefore, Read thinks that Durham needs a landlord registry that can facilitate identifying and contacting the owners of the challenged properties. The neighborhood association aspires to stabilize the rental population through working with landlords and the community (Read, 2012).

Residents of Duke Park neighborhood worry about occasional crimes, break-ins and short-staffed police. The neighborhood, according to Read, also has some drug dealers and other young people who do not have much prospect in life and die of drugs. The neighborhood is enrolled in a neighborhood watch program, and there is cooperation between the city, the police districts and the neighborhoods called Partners Against Crimes (PAC). They exchange
information about what is going on in the neighborhood to keep the neighborhoods safe. Some other problems in the neighborhood include noise, minor violence, and dogs barking (Read, 2012).

Read (2012) states that the people of Duke Park prefer to be involved in the neighborhood issues and concerns. They prefer that the city consult with them before conducting major work in their neighborhood such as rebuilding sidewalks or cutting trees. The neighborhood newsletter is a good way to keep the neighborhood residents informed, in addition to being a source of income for the neighborhood association; “A lot of people like to advertise, and since DPNA distributes about 700 newsletters in the neighborhood, the newsletter provides a really big source of advertisement revenue” (Read, 2012). Read indicates that another way of keeping the residents informed is the neighborhood listserv, which delivers to about 300 homes. Renters and older residents are not on the neighborhood listserv. The neighborhood association’s overarching aim is to maintain the friendly and easygoing quality of life that many people in the neighborhood enjoy, in the face of congestion and rising home prices (Read, 2012).

Duke Park is mostly a residential neighborhood. Towards the northeast side of the neighborhood, there is a shopping center that includes a grocery store, a gas station and some fast food and Mexican restaurants. In terms of the layout, Duke Park demonstrates a mostly connected grid-like street pattern. There are three north to south major streets going through the neighborhood: Avondale Drive to the east, North Roxboro St in the middle and Washington Street to the west. Duke Park neighborhood accommodates residential units in various types including single-family and multi-family houses (apartments).

Duke Park neighborhood covers an area of 315.4 acres. The total number of lots in Duke Park is 830. Approximately 810 of them are single-family housing units. The mean area of lots in the neighborhood is 19093 square feet or 0.43 acres, while the mean area of a single-
family house building is 1383 square feet. The minimum lot size was 369 square feet and the maximum detected for a large single-family housing unit was 785677 square foot. The average total value of Duke Park lots is $160,304. Duke Park Neighborhood contains 75 blocks and the average area of blocks is 183185 square foot or 4.2 acres. Duke Park (the park) occupies an area of 18 acres, which is approximately 5.7% of the total area of the neighborhood.

5.4 Trinity Park Neighborhood

Trinity Park is considered one of the oldest and most established neighborhoods in Durham. It is one of its earliest and most intact streetcar suburbs, which was promoted by the increasing reliance on automobiles. Trinity Park and other early developments in Durham reflect a pattern of residential development and building types and styles representing the rapid growth and the various economic, political and social factors that shaped Durham in the beginning of the 20th century. Trinity Park has been always linked to Trinity College (Currently Duke University) (City of Durham Inventory, 1981).

The built form of Trinity Park is characterized by its attractive and close-knit houses with their landscaped front yards and service alleys. The streets of Trinity Park have always been distinguished by lined dense trees canopies and eclectic architecture (Robert, Lea & Leary 1982). The street grid of Trinity Park responds more to the nature of the neighborhoods origins rather than the neighborhood topography (City of Durham Inventory, 1981). The development of Trinity Park progressed at a steady and healthy pace throughout the 1920s and 1930s. Trinity Park at its early development was denser closer to the trolley line. Many of its early established dwellings were built by the Duke Land and Improvement Company. By the 1930s, a large number of Durham’s young residents seeking fashionable residences and not yet able to afford their own houses had created a market for stylish apartments. At that time, the Trinity Park District contained the highest number of apartment buildings in the entire city of Durham (City of Durham Inventory, 1981).
Unlike many of Durham’s late 19th century neighborhoods, a smaller portion of Trinity Park’s residents was involved in the dominant tobacco and textile industries. Due to the closeness of Trinity Park neighborhood to Trinity College (Duke University), many of the residents were academicians and/or campus administrators looking for housing conveniently near their work in Trinity College Campus (City of Durham Inventory, 1981). Trinity Park residents also included many young professionals, businessmen, merchants, and medical professionals. These younger residents, at the time, expressed a desire to live in modern,
fashionable houses that coincide with their own recent achievements. Trinity Park is primarily a residential district that also includes several institutional buildings, such as Durham High School campus, as well as one store building and a few office buildings (City of Durham Inventory, 1981). The houses in Trinity Park neighborhood demonstrate a variety of styles, materials and sizes from modest one-story cottages to very sophisticated two and one half story buildings. The majority of houses in Trinity Park were selected from builders’ guides and popular house and garden magazines (City of Durham Inventory, 1981).

The neighborhood suffered forms of decline that began in the 1950s. Many residents moved to newer, more fashionable suburbs, which increased the vacancy rate in Trinity Park houses and the conversion of many houses into smaller apartments responding to the growing demand for off-campus student housing. However, many of the long-time residents remained in the neighborhood. According to Julia Brown, the current president of Trinity Park neighborhood association, in the 1970s, the neighborhood was under severe decline, with the change in zoning allowing commercial uses to encroach from the north end and the south end of the district. Many older properties in the neighborhood, especially around the south end of the neighborhood, were transformed into commercial uses such as doctor’s offices. Student housing became dominant in the area, as many developers acquired lots of older homes and transformed them into rental properties for Duke University’s students. Many of those dwellings were in poor condition and not well maintained (Brown, 2012).

In the late 1970s, Trinity Park neighborhood started to experience a renaissance due to the reversed trend of the suburban living, especially with the rising cost of gasoline and the growing interest in historic preservation and restoration of firmly built homes. Some younger people at that time were attracted to the neighborhood, not because it was Trinity Park but because they found big, older homes in walking distance to many nearby destinations and amenities such as schools and Northgate shopping center. The location of Trinity Park influenced the decision of many people to move to the city to be closer to their work. Brown,
as an early resident of Trinity Park in the 1970s, explains how she used to rely on the city bus system to go to various places in Durham. During that time, Trinity Park residents were still including some professors raising their families, along with other long-term residents of Trinity Park since the 1940s, 50s, and 60s (Brown, 2012).

Brown explains that the neighborhood was in a serious phase of decline, so many residents had a trouble acquiring bank loans to buy their current houses at Trinity Park. Many banks refused to give them loans because of the age and the deteriorated condition of the houses. The concern of many of Trinity Park residents (old and new residents) was that their neighborhood needed serious preservation actions to face the constant decline of its properties. As a result of this concern, there was a movement amongst those residents to establish a neighborhood association to foster the neighborhood preservation efforts and lobby for downzoning. Trinity Park Neighborhood Association was then founded in the mid-1970s. One of the achievements of Trinity Park Neighborhood Association was in 1980, when they purchased a large corner lot slated for development with a multi-family dwelling and converted it to a neighborhood park and playground (Brown, 2012).

Zoning was another big problem in Trinity Park in the 1970s, as explained by Brown. The neighborhood was zoned to permit big houses to be divided into duplexes in order to accommodate more students. One of the triumphs of the neighborhood association is resisting these proposed zoning regulations to maintain the single-family residential use of the neighborhood properties. Currently, except for the existing older apartment buildings, all other dwellings in Trinity Park are single-family homes. Brown thinks that this step to change the zoning helped the improvement of the neighborhood. However, this action did not stop some developers from buying properties, dividing them up, and renting them to students without performing any changes to the physical design of the houses or dividing them into duplexes. The change in zoning, according to Brown, helped enhance the image of the neighborhood and encourage other families to move to Trinity Park. The efforts to restore the
neighborhood continued to grow, increasing the property values in the neighborhood as well
as the number of residents. Currently, many houses have been refurbished and returned to be
owner-occupied, which made the neighborhood once again among Durham’s most popular
and desirable neighborhoods, populated by a broad spectrum of academicians, professionals
and businessmen (Brown, 2012; City of Durham Inventory, 1981).

Julia Brown describes Trinity Park Neighborhood Association as a diverse and active
community, formed of a group of highly educated and professional individuals. The goals of
the neighborhood association include: 1) preserving the neighborhood, 2) preserving the
quality of life, 3) preserving walkability, 4) supporting schools, 5) and working with
governmental officials for the benefit of the neighborhood. The members of Trinity Park
Neighborhood Association meet monthly, on the first Wednesday of each month. Residents’
attendance of the neighborhood association meetings might depend on particular political or
social issues or challenges concerning the neighborhood. More or less attendees can be
attracted based on the type of issues discussed during the meetings. The highest number of
participants can reach 60 to 70 people. The number of residents attending the annual
meetings of the neighborhood association usually varies based on the speaker or the issue
that the neighbors are concerned about.

Residents’ participation in the neighborhood events also differs based on the type of events.
Many younger families appear to be interested in social aspects of living in such a
community. Therefore, there are organized community-building activities such as egg hunts
and Halloween, which is Trinity Park’s biggest event. People come from other
neighborhoods and gather in the park for the parade and costume contest. Brown thinks that
Halloween attracts approximately 400 people every year. Other events, such as the 4th of July
picnic in the park, have been one of the neighborhood’s long time activities. The
neighborhood association also hosts, with the help of a local realtor, the Durham Symphony
to play at Trinity Park. This type of events usually attracts hundreds of people. Another well-
attended event is the house tour that might attract between 400 to 600 people. Another successful event is called ‘Luminarea,’ which is a way to raise funds for charity. Residents usually buy bags and candles to put on the front porches of their houses. Last year the neighborhood association raised almost $700 from this event. “Food Truck Rodeo” was a successful event as well. The Community Building Committee, as part of the neighborhood association body, has been exploring in the past years different kinds of social activities that can generate the most participation by the neighborhood residents. The community of Trinity Park is an active and aware community. Brown describes how the neighborhood was involved in environmental issues such as recycling since its early days in Durham. Many neighborhood residents volunteered and educated their neighbors about recycling and reminded them to put their recycling bins outside (Brown, 2012).

The neighborhood association includes different committees addressing various aspects, such as a planning committee and social committee. The concern of Trinity Park residents and neighborhood association extends beyond their neighborhood boundaries, involving and engaging other neighborhoods. Brown gives an example of this collaborative effort between neighborhoods in the case of busy traffic of Main Street. The neighborhood association tried to stay connected and communicative with other neighborhoods such as Trinity Heights about this matter. One of the neighborhood association members serves as a representative in the inter-neighborhood council concerning Main Street (Brown, 2012).

The neighborhood association is concerned with keeping as many people informed as possible in the neighborhood with the challenges of the neighborhood and the services that the neighborhood association offers. In their efforts to do so, they include at least one article in Spanish in every newsletter to keep the Latino community in Trinity Park informed. One of the main concerns of Trinity Park for a long time is the issue of crime. Brown thinks that residents needed and still need to be proactive about this issue, by keeping their porch lights on and being vigilant about making sure that they do not have big shrubberies around
windows where someone may climb or hide, and also by watching out for other neighbors. They, as a neighborhood association, also try to advise students living in the neighborhood not to walk alone at night and not to leave their houses unlocked. Brown thinks that the neighborhood listserv is another means for watching out for neighbors and the neighborhood in general through reporting any suspicious act or behavior. The neighborhood listserv has played an important role over the years in educating people about safety measures and precautions.

Brown is confident that based on the history and the strength of the neighborhood association that was established over more than 30 years, they could organize any event and educate people about any political issue facing the neighborhood, such as zoning or planning. However, Brown still thinks that the neighborhood is fragile. She hopes that residents of Trinity Park do not forget the main goal of the neighborhood association, which is centered on the neighborhood preservation and the political engagement around issues and activities concerning the neighborhood. Brown thinks that it is important to continue having good rental properties and affordable housing. She also expressed her concerns with the rising prices of the neighborhood properties, which many young families may not afford. She thinks that it is unfortunate that middle class people such as firemen, policemen, and teachers cannot afford living in Trinity Park. Trinity Park as well as Old North Durham and Duke Park emerged mainly with the rise of the city and the closeness to the business district; although they were considered suburbs at the beginning, they are now part of Durham’s urban context (Bashir & Early, 1988).

5.5 Northgate Park Neighborhood
According to OpenDurham.com, the origins of Northgate Park neighborhood are not as well defined as some of other Durham's earlier neighborhoods. The efforts to develop the neighborhood extend back to 1908; however, the neighborhood actually began to develop in the 1940s. JW Hutchins was one of the early owners of the Northgate Park land. He bought a
significant amount of land from NDLC in three separate transactions in May of 1908. After his death in early 1920s, his wife retained ownership of the land until her death in 1934. In 1937, Hutchins' land was sold to OB Wagoner, including the southern portion of the park, as well as later-developed land on the east side of the park. Ian Pond, the neighborhood association president since 2010, confirms the beliefs that Northgate Park was established in the 1940s, as Northgate Park was celebrating its 70th anniversary a few years ago (Open Durham, 2012).

Figure 5.3 Northgate Park Neighborhood
The neighborhood is in close proximity to Durham downtown, within 2.5 miles from Durham center (an approximately 10 minute drive) (Pond, 2012). The neighborhood contains two main parks (Northgate Park and the Dog Park). Since the neighborhood was established in the 40s and 50s of the last century, it has abundance of old trees that give a sense of maturity and permanence to the area. Northgate Park neighborhood covers an area of 420.2 acres. The total number of lots in Northgate Park is 1062. The average area of lots in the neighborhood is 17235 square foot (0.39 acres), while the mean area of a single-family house is 840 square foot. The average value of Northgate Park buildings is $104733. Northgate Park neighborhood contains 63 blocks. Northgate Park (the park) and the Dog Park occupy an area of 34.8 acres, which is approximately 8.28% of the total area of the neighborhood.

According to Pond, Northgate Park feels like a small safe environment because of the range of ages and backgrounds, which also makes the neighborhood a great place for walking and mingling. With the existence of two parks (Northgate Park and Dog Park) in the neighborhood and the abundance of old and mature trees, the neighborhood site design encourages residents to walk. The majority of the houses in the neighborhood were built in the 1940s and 50s, and many of them are rather small with an area of 900 to 1000 square feet, which make them good options for couples or very small families. Because of the relatively small size of houses in Northgate Park, there are not many of them that are suited for bigger families. Pond also believes that the size of houses in Northgate Park neighborhood determines some of the characteristics of who will live there (Pond, 2012).

Some of the neighborhood residents are long-time residents, for more than 30 or 40 years. Many elderly people have been living in Northgate Park for 30, 40, or 50 years. According to Pond, Northgate Park residents are very proud and loving of their neighborhood, and they usually invite others to come and reside in Northgate Park as well. In addition, many of them support their neighborhood by making donations to the neighborhood association every year (Pond, 2012).
The Northgate Park Neighborhood Association (NPNA) has been formed since 1987. Pond asserts that their association is not a homeowner association, nor do they have legal powers, or desires to impose roles on the community. NPNA usually meets once a month. Their annual meeting is in June of each year. The members of the NPNA and interested residents meet approximately 9 times a year. In May of every year, the neighborhood association members search for volunteers to take positions in the neighborhood association. NPNA have had members who held various positions on the board over the years because they are dedicated to helping the community. The goals of Northgate Park Neighborhood Association center on representing the community, and bringing added values back to the community. NPNA engages in issues that might impact their community, communicating those issues from the city or different organizations to the community, and vice versa (Pond, 2012).

NPNA is actively engaged in the neighborhood issues and activities that can potentially improve their community. In 2011, NPNA was engaged in a program for retrofitting houses to improve their environmental aspects and energy consumption. Some local enthusiasts took the initiative to present their retrofitting plans to the residents through NPNA meetings and the listserv, and the result was that many houses were retrofitted. According to Pond, the neighborhood newsletter is another effective way to share information. NPNA tries through issuing the newsletter four times a year to share neighborhood stories and interests, social activities, and advice about avoiding crimes and how to keep a safe home (Pond, 2012).

According to Pond, the average number of people attending the neighborhood association meetings or events depends on the type of the event or “what the neighborhood association is giving away.” Pond asserts that on a regular NPNA meeting, the number of people can be as low as half a dozen, but in the case of hosting a speaker or a visitor from the city, this number can reach 20 to 30 residents. Annual meetings usually gain the highest attendance with a number between 50 to 70 attendees. The annual meetings are organized around a picnic providing food, and nominating and selecting new committee members for NPNA (Pond,
Northgate Park is an active community with many informal social events and many social groups, such as gardening club, potlucks, gardens tours, and yard sales. Halloween is one of the most popular events in Northgate Park. Celebrating Halloween in the neighborhood has started as an effort of some residents living on one block and wanting to gather and celebrate Halloween. It grew later in fame and organization, and became a phenomenal event (Pond, 2012) that is characterized by “fancy dresses and flame dances.” Many residents also create their own Halloween game, and convert their yards into stages to celebrate Halloween. Pond believes that in 2010, the Northgate Park Halloween Party attracted over 1000 people from the neighborhood and other adjacent areas.

The demographics of Northgate Park vary and diversify in age, race, marital status, and sexual orientation. According to Pond, “Northgate Park accepts diversity.” He states that “Durham has a big gay and lesbian community, and so does Northgate Park.” There are many professionals in the neighborhood because of its adjacency to Duke University, the hospitals, and the medical facilities in downtown. Also, the neighborhood has many graduate students due to its adjacency to Duke Campus. The number of young families and individuals moving to the neighborhood is growing. “It seems that there is a real influx of young people over the course of last year.” Pond believes that there are two kinds of people moving to Northgate Park: one will stay in there for the course of their lives, and some others, especially the professional sector will grow their children in the neighborhood and then move (Pond, 2012).

A large portion of the neighborhood housing is rentals. Pond estimates this portion to be 40% of the total properties in the neighborhood. Some of those rental properties have recently been cleared out and sold, making a suitable first home for many young people. Many of the homes in Northgate Park are affordable with the range of $80,000 to $150,000. Pond states
that some of the residents in Northgate Park own more than one house, and the reason in Pond’s opinion is that many residents desire to maintain the quality of the neighborhood. In addition, housing affordability can be the most important factor in driving the decision of many to own more than one house in the neighborhood, besides the small size of houses. According to Pond, well-maintained and responsibly landlord ed rentals are necessary for the health of the neighborhood (Pond, 2012).

5.6 Old North Durham Neighborhood

Old North Durham neighborhood is part of the North Durham-Duke Park district that illustrates the growth of one of Durham’s earliest suburbs (Robert, Lea & Leary 1982). The growing congestion of residential downtown Durham and the correlated popularity of suburban living played a role in encouraging the 1890s emergence of North Durham, which later was occupied with many of Durham’s business and merchant leaders (City of Durham inventory, 1981; Bishir & Earley, 1985). The desirability of suburban living was greatly enhanced by the construction of a north-south trolley line in 1901. Now residents of Old North Durham had to walk only a few blocks to their business district. As North Durham grew, apartments, churches, businesses and a school were constructed (Robert, Lea & Leary, 1982).

North Durham district became an attractive area for settlement after the construction of the north-south trolley line on North Mangum Street. As a result, in 1901 Brodie L. Duke began to subdivide his North Durham farmland and sell it as building lots. The trolley lines provided easy access not only to downtown, but to east and west Durham as well, and thus made suburbanization popular for not only wealthy merchants but for new city residents (Bishir & Earley, 1985; City of Durham inventory, 1981). The area transformed into newly constructed homes occupied by many businessmen and professionals who built large homes especially on Mangum Street (Open Durham, 2012). Early settlers of the district also included merchants, and artisans.
North Durham District contained excellent examples of late nineteenth and early twentieth century architectural styles, several revival styles, and bungalow forms. The district also included many fashionable apartment buildings. Bungalows had gained popularity at the time of establishment of the district and so had the construction of single story gable-roofed homes for laborers (City of Durham inventory, 1981). Houses in the neighborhood were shaded by a mature, dense tree canopy. The district’s street development and grid was mostly oriented to the cardinal directions (City of Durham inventory, 1981).

A small commercial area and abundance of modern apartments define the western edge of the district, while empty lots, modern development, and finally an industrial area define the eastern limit of the district (City of Durham inventory, 1981). The northern boundary of the
district is defined by Duke Park and Interstate 85. Trinity Avenue is the major or primary east/west artery in the district. Today, the North Durham-Duke Park district remains almost entirely residential.

North Durham district remained a pleasant neighborhood for middle class families until the late 1950s. However, Old North Durham neighborhood, similar to many other urban neighborhoods, has experienced transitions over the second half of the twentieth century. Several factors contributed to this decline and also encouraged population flight from central Durham, such as the promotion of suburban settlement, shopping centers, and employment centers. Other reasons including the change of the city’s character, the flee of industries outside of the city, the death of original residents, zoning changes, and the one-way pairing of Mangum and Roxboro streets also contributed to a gradual decline of the Durham neighborhood till mid-1970s. Many of the original and early residents have left the area, and as a consequence many of the larger homes have been divided into multi-family residences (duplexes, triplexes, or quadplex) (City of Durham Inventory, 1981).

Many structures and properties in Old North Durham suffered from a lack of maintenance. Several houses decayed due to absentee landlords; however, very few were demolished. In spite of these changes, much of the neighborhood has remained owner-occupied, and many long-time residents have been showing an increased interest in their properties (Robert, Lea & Leary, 1982; City of Durham inventory, 1981). Private organizations obtained ownership of some of the architectural landmarks in the neighborhood and worked on adapting them for new purposes. The neighborhood has slowly started to revive since the late 1980s till present. Many young families and individuals have moved to the neighborhood, restoring its old houses and updating its single-family house stock with modern conveniences that complement their historical amenities (City of Durham Inventory, 1981, Endangered Durham).
Old North Durham neighborhood covers an area of 338 acres. The total number of single-family housing lots in Old North Durham is 963. The average area of a single-family house in the neighborhood is 1827 square feet. The average property value in Old North Durham buildings is $113,529. Durham Central Park occupies an area of 1.4 acres.
CHAPTER 6

6 FINDINGS
This chapter reports the findings of the survey questionnaire divided by the subsections illustrated in the conceptual framework and relevant to the variables under investigation. The survey questionnaire was utilized to identify and understand the physical and social aspects associated with attachment and connection to place. The chapter starts with a description of each case study and the patterns of perception and reasoning to select the neighborhoods/case studies under study as places of residence. Then the chapter follows with demonstrating subjects’ perception of their neighborhood’s physical and social features. The chapter ends with a collective analysis of the case studies describing the relationship between the subjects’ perception of the physical and social factors and their level of place attachment, through running correlation and regression analyses. The physical features of the neighborhood were studied in terms of the neighborhood’s walkability and the availability of neighborhood parks and playgrounds. The social features were studied in regards to subjects’ involvement in their neighborhood, neighboring, residential satisfaction, and place attachment.

6.1 Trinity Park Neighborhood
Paper copies of the survey were distributed in-person to 250 randomly selected households in Trinity Park neighborhood, in addition to the online distribution of the electronic copy of the survey (Qualtrics copy) through the neighborhood listserv. The response rate from the in-person distribution of the survey was 10.5%, and from the online copy 16%. Overall seventy-eight correct and complete responses were received from Trinity Park neighborhood. The original number of responses was 82, but four surveys were eliminated due to incompleteness.

Of these 78 respondents, 32% were males, and 68% were females. In terms of the marital status of the subjects, 25% of them were singles (divorced, widowed, or never married), and 75% of them were married or living with a partner. Only 33% of the subjects had children
under the age of 12. In terms of the age of the subjects, the subjects varied in their ages between the four indicated categories: 10% are between the ages of 20-30 years old, 25% are in the age range of 31-40, 42% are between 41 to 60 years old, and 23% are over 60. The subjects are very well educated; approximately one quarter of them (26%) are college graduates, and three quarters (73%) are professionals with a graduate degree.

In regards to the subjects’ length of residence in Trinity Park, 91% of the subjects have been living in Trinity Park (TP) for more than one year, and only 9% have been living there for less than a year. In addition, 52% of the subjects have lived in Trinity Park between one and ten years, and 26% have been living in TP between 10 to 20 years. Fewer percentages of the subjects have lived in the neighborhood for more than 20 years: 9% have been living there for 20 to 25 years, and 7% have been in TP for more than 40 years. The average length of residence in Trinity Park is 11.35 and the standard deviation is 12.02. The majority of subjects own their houses (87%), and live in single-family houses (92%), while only four percent live in apartments and another four percent live in duplexes.

Figure 6.1 Length of Residence in Trinity Park Neighborhood
6.1.1 Reasons to Select Trinity Park Neighborhood

The first section of the questionnaire survey was concerned with investigating the subjects’ perception of the reasons, especially the locational and housing features that attracted them to select Trinity Park to be their place of residence. The locational categories were proximity to downtown area, work and school, parks and playgrounds, friends, and medical facilities, and the neighborhood cultural aspects. The housing preferences or categories were house affordability, size, age, style, and lot size.

6.1.1.1 Neighborhood Location and Amenities

Trinity Park’s subjects disclosed their opinion of the importance level of each of the seven statements related to the neighborhood location in their selection of Trinity Park neighborhood, using a five-point Likert scale. ‘Not at all important’ was allowed one point, ‘unimportant’ was equal to two points, ‘neither important nor unimportant’ was allowed three points, ‘important’ was worth four points, and ‘strongly important’ was equal to five points. Two features appeared to be the most important in the subjects’ opinion in their selection of their neighborhood: 1) closeness or proximity to downtown (mean=4.4), and 2) neighborhood cultural aspects (mean=4.2). A large proportion of the subjects (89%) think that it is important/very important that Trinity Park neighborhood is in close proximity to the downtown area. In addition, 83% of them think that it is either important or very important to live in a neighborhood such as Trinity Park that holds cultural aspects. Other features followed in their importance. In descending order they are: closeness to work/study (mean=3.8), the existence of parks and playgrounds (mean=3.5), the neighborhood schools (mean=3.2), closeness to friends (mean=3.3), and closeness to medical facilities (mean=3.0) (Figure 6.2).
Table 6.1 Rating of the Importance of Certain Locational Factors in Selecting Trinity Park Neighborhood

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<th>Unimportant</th>
<th>Neither important nor unimportant</th>
<th>Important</th>
<th>Very important</th>
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<td>11 14%</td>
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<td>30 38%</td>
<td>70 100%</td>
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<td>5 6%</td>
<td>28 36%</td>
<td>41 53%</td>
<td>70 100%</td>
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<td>2 3%</td>
<td>9 12%</td>
<td>28 36%</td>
<td>36 47%</td>
<td>70 100%</td>
</tr>
<tr>
<td>Parks and playgrounds</td>
<td>4 5%</td>
<td>11 14%</td>
<td>17 22%</td>
<td>29 38%</td>
<td>15 20%</td>
<td>70 100%</td>
</tr>
<tr>
<td>Good Schools</td>
<td>9 12%</td>
<td>12 16%</td>
<td>23 30%</td>
<td>21 27%</td>
<td>12 16%</td>
<td>70 100%</td>
</tr>
<tr>
<td>Closeness to Friends</td>
<td>3 4%</td>
<td>13 17%</td>
<td>27 35%</td>
<td>24 31%</td>
<td>11 14%</td>
<td>70 100%</td>
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<td>Medical Facilities</td>
<td>6 8%</td>
<td>20 26%</td>
<td>29 38%</td>
<td>15 19%</td>
<td>7 9%</td>
<td>70 100%</td>
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6.1.1.2 Housing Features and Preferences

In terms of housing selection in Trinity Park and the features that contributed to this decision, the most important feature in the subjects’ opinion was house affordability (mean=4.3), followed by house size (mean=4.2). The majority of the subjects (90%) consider the affordability of their houses either important or very important in their selection of those houses. With a higher percentage, 96% of the subjects consider the size of their houses important/very important in their selection of housing in Trinity Park. Among the remaining three features that subjects were asked to rate, house style was more important (mean=3.8) than house age (mean=3.3), and lot size (mean=3.1) (Figure 6.3).
Figure 6.2 Rating of the Importance of Certain Locational Factors in Selecting Trinity Park Neighborhood

Table 6.2: The Importance of Housing Features in the Selection of Housing in TP

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<td>House Style</td>
<td>3</td>
<td>4%</td>
<td>7</td>
<td>9%</td>
<td>13</td>
<td>17%</td>
</tr>
</tbody>
</table>
6.1.2 Residents’ Perception of their Neighborhood Physical Features

The study hypothesized that certain factors can presumably contribute to establishing a sense of place identity and place attachment on a neighborhood level. Therefore, the second part of the study was more focused on the subjects’ perception of the physical and social features that presumably relate to residents’ connection and attachment to Trinity Park neighborhood. These factors under investigation are perceived neighborhood walkability, parks and playgrounds availability and quality, neighborhood involvement, residential satisfaction, and neighboring.

6.1.3 Neighborhood Walkability, Site Design and Amenities

Subjects were asked whether or not they agree on the following: neighborhood walkability, neighborhood safety, the presence and quality of sidewalks, the streets greenery and aesthetics, and the variety of destinations within Trinity Park and in Durham downtown. A
large proportion of subjects (99%) agreed that their neighborhood is walkable (mean=4.6). Among the listed categories/items, the perceived variety of destinations in downtown area was the most agreed upon item by the subjects (mean=4.7), followed by neighborhood walkability (4.6). There was also agreement among the subjects that the streets of Trinity Park have nice and mature tree covers (mean=4.4), and on the variety of destinations within Trinity Park neighborhood. However, there was less agreement on the availability and quality of the sidewalks in TP (3.2), as well as neighborhood safety (mean=3.8).

Table 6.3 Subjects’ Perception of Trinity Park Neighborhood Location and Amenities

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Neighborhood Walkability</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Sidewalks Quality</td>
<td>4</td>
<td>5%</td>
<td>18</td>
<td>24%</td>
<td>13</td>
<td>17%</td>
</tr>
<tr>
<td>Streets Greenery</td>
<td>1</td>
<td>1%</td>
<td>2</td>
<td>3%</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Neighborhood Safety</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>3%</td>
<td>19</td>
<td>24%</td>
</tr>
<tr>
<td>Variety of Destinations in Downtown</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Variety of Destinations in TP Neighborhood</td>
<td>3</td>
<td>4%</td>
<td>13</td>
<td>17%</td>
<td>27</td>
<td>35%</td>
</tr>
</tbody>
</table>
6.1.4 Parks and Playgrounds

Information about the use of the Neighborhood Park (Trinity Park) and the frequency of visiting the park was gathered from the subjects. Approximately 43% of the subjects indicated that they usually visit Trinity Park; whereas, more than half of them (57%) rarely visit the park. In particular, 32% of the subjects visit the park between 1 to 3 times a month, 8% of them visit the park between 1 to 3 times a week, and only 3% visit the park on a daily basis. The majority of the subjects (91%) walk to the park, while some drive to the park, and only a few bike. In terms of the activities that take place in the neighborhood park, subjects indicated that they mostly go to the park to use the children’s playground area and to attend the events and concerts organized in the park. Other activities such as walking for exercise, walking dogs, farmers’ market, and ‘meeting with friends’ were mentioned by the subjects in lesser frequencies than the first two activities.

![Activities taking place in the Neighborhood Park](image)

Figure 6.4 Activities taking place in the Neighborhood Park
Table 6.4 Subjects’ Perception of Trinity Park Neighborhood Park

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Park’s safety</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>7</td>
<td>10%</td>
</tr>
<tr>
<td>The Park is easy to find</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>3%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Park’s Role in Connecting Neighbors</td>
<td>1</td>
<td>1%</td>
<td>11</td>
<td>16%</td>
<td>26</td>
<td>38%</td>
</tr>
<tr>
<td>Park’s Significance</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>3%</td>
<td>11</td>
<td>16%</td>
</tr>
<tr>
<td>Satisfying size of the Park</td>
<td>2</td>
<td>3%</td>
<td>9</td>
<td>13%</td>
<td>15</td>
<td>22%</td>
</tr>
<tr>
<td>Good Location of the Park</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>12</td>
<td>17%</td>
</tr>
</tbody>
</table>

Figure 6.5 Roads Leading to Trinity Park
When asked about their residential satisfaction, the subjects indicated that their satisfaction with their neighborhood is the highest (mean=4.6), followed by their satisfaction with their houses (mean=4.5) and then satisfaction with the Trinity Park community (4.3). The least satisfaction level was with the neighborhood park (mean=4.0) (fig 6.7).
Table 6.5 TP Participants’ Residential Satisfaction

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Satisfaction with TP Neighborhood</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>1%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Satisfaction with House</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>3%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Satisfaction with TP ‘the park’</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
<td>20</td>
<td>26%</td>
</tr>
<tr>
<td>Satisfaction with TP Community</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>4%</td>
<td>6</td>
<td>8%</td>
</tr>
</tbody>
</table>

Figure 6.8 Subjects’ Residential Satisfaction of TP
6.1.6 Subjects’ Involvement and Participation

In order to measure/evaluate the subjects’ level of involvement in their neighborhood, subjects were asked to indicate the frequency level of their participation in four types of neighborhood activities: 1) Meeting informally with neighbors to discuss neighborhood problems, 2) attending Trinity Park Neighborhood Association meetings, 3) volunteering in cleaning, maintaining, and/or greening the neighborhood park, and 4) participating in the neighborhood social events and gatherings. Subjects were allowed three levels of frequency to select from: not often equals one point, “often” is counted for two points, and “very often” equals three points.

Although the subjects of Trinity Park showed high satisfaction with their neighborhood and community, the frequency of involvement or participation in Trinity Park neighborhood was not comparably high. Only 16% of the subjects indicted that they often attend the neighborhood association meetings. Similarly, only 16% of the subjects often participate in cleaning or maintaining the park. With a higher percentage, 35% of the subjects declared that they often meet with other neighbors to discuss neighborhood problems, and 36% of the subjects asserted that they often attend the events and social gatherings of the neighborhood (Table 6.6).

Table 6.6 Trinity Park Neighborhood Participants’ Involvement and Participation

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Meeting With Neighbors to Discuss Neighborhood Problems</th>
<th>Attending the Neighborhood Association Meetings</th>
<th>Cleaning the Park</th>
<th>Participating In Social Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Often</td>
<td>50 65%</td>
<td>64 84%</td>
<td>64 84%</td>
<td>49 64%</td>
</tr>
<tr>
<td>Often</td>
<td>19 25%</td>
<td>6 8%</td>
<td>10 13%</td>
<td>19 25%</td>
</tr>
<tr>
<td>Very Often</td>
<td>8 10%</td>
<td>6 8%</td>
<td>2 3%</td>
<td>8 11%</td>
</tr>
<tr>
<td>Total</td>
<td>77 100%</td>
<td>76 100%</td>
<td>76 100%</td>
<td>76 100%</td>
</tr>
</tbody>
</table>
6.1.7 Neighboring Activities

The study questionnaire investigated the subjects’ neighboring activities. Subjects were asked about the number of friends they have in their neighborhood and in other adjacent neighborhoods. Approximately 20% indicated that they have between one to three friends in Trinity Park, while 29% have four to six friends. Almost one quarter of the subjects have between seven to twelve friends in Trinity Park, and another quarter have more than 12 friends.

Accordingly, the subjects were asked to indicate the number of friends they have in adjacent neighborhoods, such as Old North Durham, Duke Park or Northgate Park. It was found that 34% of the subjects have one to three friends; 25% have four to six friends; 26% have seven to twelve friends; and 16% have more than 12 friends.

In order to investigate the neighboring relationships between the subjects and their nearby neighbors, subjects were asked to identify the number of neighbors they know by first name. It was found that the majority of the subjects (63%) know more than half of their neighbors, while 23% of them know all or almost all of their neighbors by first names.

Trinity Park subjects were then asked about the frequency of participating in favorite activities with their neighbors, such as walking, running, shopping, etc. Nearly half of the subjects (55%) asserted that they never or rarely share activities with their neighbors. On the other hand, 19% of the subjects indicated that they sometimes join their neighbors in favorite activities, while 24% stated that they always do that. In terms of doing favors for other neighbors, 8% of the subjects never do favors for their neighbors, while 37% rarely do. However, 55% of the subjects are more frequent in doing favors for other neighbors (Table 6.7).
Table 6.7 Trinity Park Neighborhood Participants’ Number of Friends and Acquaintances

<table>
<thead>
<tr>
<th>Number</th>
<th>Number of friends in Trinity Park</th>
<th>Number of Friends in adjacent neighborhoods</th>
<th>Neighbors known by first name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>15</td>
<td>26</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>19%</td>
<td>34%</td>
<td>8%</td>
</tr>
<tr>
<td>4-6</td>
<td>23</td>
<td>19</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>29%</td>
<td>25%</td>
<td>18%</td>
</tr>
<tr>
<td>7-9</td>
<td>10</td>
<td>13%</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>13%</td>
<td>17%</td>
<td>12%</td>
</tr>
<tr>
<td>10-12</td>
<td>10</td>
<td>7</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>13%</td>
<td>9%</td>
<td>40%</td>
</tr>
<tr>
<td>More than 12</td>
<td>20</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>26%</td>
<td>16%</td>
<td>23%</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
<td>77</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

6.1.8 Measuring Subjects’ Level of Place Attachment

Nine statements were given to the respondents in order to measure their place attachment score. Respondents disclosed their agreement level with each of these nine statements, using the five-point Likert scale: strongly disagree, disagree, neither agree nor disagree, agree, strongly agree. For each strongly disagree one point was given, for disagree two points, for neither agree nor disagree three points, for agree four points, for strongly agree five points. The average score of the sum of the nine statements was used to develop the place attachment score.

The subjects of Trinity Park are generally proud residents. The item of “I pride myself on living in Trinity Park” was agreed upon the most by subjects (mean=4.3), followed by “I plan to remain a resident of Trinity Park neighborhood” (mean=4.2). With the same mean score came “Trinity Park is special to me” (mean=4.2), followed by “Trinity Park is the best neighborhood for me to live in” (mean=4.1). The lowest means score was for “I am quite similar to most people who live there” (mean=3.4), and “no other neighborhood can compare to Trinity Park” (mean=3.3) (Fig. xx). The average score of place attachment of Trinity Park subjects is 4.20 with a 0.73 standard deviation.
Table 6.8 Trinity Park Neighborhood Participants’ Place Attachment Index

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>I pride myself of living in Trinity Park</td>
<td>1</td>
<td>1%</td>
<td>0</td>
<td>0%</td>
<td>13</td>
<td>17%</td>
</tr>
<tr>
<td>I am attached to TP</td>
<td>0</td>
<td>0%</td>
<td>5</td>
<td>6%</td>
<td>14</td>
<td>18%</td>
</tr>
<tr>
<td>Plan to remain a Resident of TP</td>
<td>2</td>
<td>3%</td>
<td>2</td>
<td>3%</td>
<td>8</td>
<td>10%</td>
</tr>
<tr>
<td>TP the best neighborhood for me</td>
<td>1</td>
<td>1%</td>
<td>5</td>
<td>6%</td>
<td>14</td>
<td>18%</td>
</tr>
<tr>
<td>TP Special place to me</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
<td>11</td>
<td>14%</td>
</tr>
<tr>
<td>I am similar to people living here</td>
<td>3</td>
<td>4%</td>
<td>11</td>
<td>14%</td>
<td>25</td>
<td>32%</td>
</tr>
<tr>
<td>No other neighborhood compares to TP</td>
<td>5</td>
<td>6%</td>
<td>13</td>
<td>17%</td>
<td>26</td>
<td>33%</td>
</tr>
<tr>
<td>Identify Strongly with TP</td>
<td>2</td>
<td>3%</td>
<td>6</td>
<td>8%</td>
<td>19</td>
<td>25%</td>
</tr>
<tr>
<td>TP says a lot about me</td>
<td>0</td>
<td>0%</td>
<td>17</td>
<td>22%</td>
<td>15</td>
<td>19%</td>
</tr>
</tbody>
</table>
6.1.9 What is Liked about Trinity Park Neighborhood?

Open-ended questions surveyed the subjects’ opinions and perspectives of what they like and dislike about their neighborhood, without the need to suggest certain factors that might bias their answers. Subjects’ comments of what they like were grouped under five main categories: 1) physical and locational factors, 2) social and communal factors, 3) neighborhood amenities, 4) aesthetics and greenery, and 5) neighborhood character. The numbers of times certain words repeated by the subjects and that are relevant to the five main
categories indicated above were used to plot a graph demonstrating which of the factors/features were liked the most.

6.1.9.1 Physical and Locational Factors

a) Proximate Location: Subjects expressed how satisfied they are with the proximate and convenient location of their neighborhood to many different destinations and attractions within their neighborhood, in nearby neighborhoods, and in Durham downtown. They particularly stressed the fact that the neighborhood is on a proximate location to downtown Durham and a variety of restaurants, shops, and other places of interest such as: the Brightleaf, Ninth Street, arts, cultural destinations, and Northgate Mall. They also mentioned that they liked the neighborhood’s closeness to Duke East Campus and major highways. Some subjects mentioned that Trinity Park is close to their work and friends. The figure below shows the number of times these destinations were mentioned by the subjects.

b) Neighborhood Walkability: Walkability is the second most mentioned factor by the subjects. Trinity Park neighborhood was described as a walkable and bike-able neighborhood by many of its residents. The neighborhood walkability was believed to facilitate walking dogs and seeing or meeting with other neighbors. Many subjects indicated that living in Trinity Park affords walking distance journeys to various places such as: Durham downtown, YMCA, restaurants, Durham Performing Arts Center (DPAC), trails, grocery, parks, the Brightleaf area, the Board/Ninth Street area and East Duke Campus, shopping, and cultural attractions (Museums).
e) **Housing:** The diversity of Trinity Park housing stock with its eclectic mix of architectural characters, varying in their age, style, and size was one of the things that the subjects liked and mentioned repeatedly. Houses in Trinity Park were described as older, beautiful and well-maintained houses. The diversity of styles and ages of Trinity Park houses add to “the look and feel of the neighborhood.”
6.1.9.2 Social and Communal Factors

a) Neighbors: The third and fourth most mentioned factors by the subjects were the neighborhood’s neighbors and people. Subjects described their neighbors as good, educated, friendly, committed, progressive thinking, and open-minded neighbors. People of Trinity Park “want and work for a vibrant community,” “share common concerns,” and “have the ability to identify the concerns of the neighborhood and address them.” The people in the neighborhood look after each other and invest in their future in the neighborhood. In their efforts to do so, they created “Seniors Staying,” which is an act to facilitate aging in place. One of the comments stated: “Older and elderly residents act as true leaders, modeling aging in place, fostering a sense of multigenerational community”.

b) Sense of Community: Many subjects agreed that the community of Trinity Park projects a strong sense of community. This community was described as a community that shares good values and that has active citizenry. It is also described as a close-knit supportive community, where people are easy to meet each other.
c) **Diversity:** Trinity Park was agreed to be a diverse neighborhood containing people from different backgrounds coexisting with mutual respect for their differences. The residents also vary in their age groups, their beliefs and family status. The neighborhood was also described as family-friendly and gay-friendly neighborhood.

d) **Friends:** Many subjects declared that they have many friends in Trinity Park neighborhood, and that they like being close to those friends.

6.1.9.3  **Aesthetics and Greenery**

The greenery, aesthetics and the beauty of Trinity Park streets represented in street trees were also a main factor of what subjects liked about their neighborhood. Many of them mentioned the beautiful and mature trees in the neighborhood.

6.1.9.4  **Neighborhood Character**

a) **Built environment:** The urban environment of Trinity Park was favored by many of the subjects, as they consider it one of Durham’s best environments. They indicated that it is quiet, comfortable, and well maintained with pleasant atmosphere, small lots and dynamic built form. Some mentioned that the streets of TP are pleasant and pretty streets.

b) **Safety:** Some subjects like the perception of safety in their neighborhood.

c) **Sense of history:** Trinity Park as one of the oldest neighborhoods in Durham projects a sense of beauty and charm of a lovely historic neighborhood, as seen by its residents.
6.1.9.5 Neighborhood Amenities

a) Events and gatherings: one of the residents stated: “I love Halloween in this neighborhood and that we are a destination for lots of people from within and outside of the neighborhood.” Block parties, community gatherings, and various activities were also examples of events the subjects liked and mentioned.

b) Listserv: Trinity Park’s listserv was described as an active listserv that allows residents to share information and concerns.

c) Watts School: Subjects were also keen to mention that they liked their small, quality neighborhood school–Watts Elementary School.

d) Neighborhood association: The strong neighborhood association of Trinity Park was commended by many subjects.

e) Parks: proximity to playgrounds, parks, gardens, and greenway.

6.1.10 What is Disliked about Trinity Park Neighborhood?

Lack of amenities:

- No grocery stores or retail shopping within walking distance
- Insufficient quality of the neighborhood park
- Lack of more open spaces and community center in the neighborhood

Sidewalks:

- The poor quality of the sidewalks and pavement
- These sidewalks were described as broken, inconsistent, insufficient, and poorly kept
Lack of bike paths and shady sidewalks in the neighborhood
Housing:

- The prices of many houses in the neighborhood are accelerating in a way that many people might not be able to afford, especially middle-income people.
- New houses in the neighborhood do not seem to blend with the historic character of the neighborhood.

Diversity:

- Lack of real diversity in the neighborhood
- Increasing the homogeneity among neighborhood residents on different cultural, racial and economic levels, causing lack of interaction among different segments of the community.
Neighborhood Character:
These are some features that subjects do not like about their neighborhood:

- The number of barking dogs in the neighborhood
- ‘Elitism that comes with living in an expensive neighborhood’
- The perception that this is a place for rich folks
- The density of the neighborhood was expressed in two opposite points of view: one comment mentioned that they do not like the “neighborhood's opposition to and misunderstanding of the advantages of higher density.” Another comment was that they do not like the fact that their neighborhood is “too densely populated.”
- The vacancies in the neighborhood (empty properties)
- The rentals in the neighborhood, especially for Duke’s students
- Gentrification
- Racist remarks and attitudes towards black people walking through the neighborhood and on the listserv
- Lack of participation by the broader array of residents in the neighborhood
- Over-heightened sense of danger in area

Traffic:
- The traffic and noise of speedy cars on some streets such as Duke and Gregson.

Crimes:
- The neighborhood does not feel safe especially at night
- Crimes in the neighborhood, such as burglaries, thefts, gunshots, frequent car and house break-ins, and petty crimes.
Trees:
- Ages of trees; trees are aging and no new ones are being planted
- Trees need to be diversified as many older oaks are at the end of their life span

Zoning:
- Lack of participation by the city to enforce ordinance

Listserv
- Rare argumentative and disrespectful emails in the list serve
- Hostile attitudes on the listserv over political issues

Schools:
- School system and the lack of good schools

6.1.11 Summary
It was identified through the results of Trinity Park that the most important reasons for selecting TP were the proximity to downtown area and the cultural aspects that the neighborhood bears. Subjects in their comments on what they liked about their neighborhood agreed that trinity Park is a diverse neighborhood containing people from different backgrounds. In terms of the selection of housing, the sizes of houses as well as their affordability were the main driving reasons for many subjects to select their homes. Subjects are very satisfied with their neighborhood, community, housing and neighborhood park. Although subjects are very satisfied with their neighborhood and community features, their involvement and participation in their neighborhood are not comparably high. Only one third of the subjects often attend the events and social gatherings of the neighborhood.
In general, Trinity Park residents are proud residents of their neighborhood who plan to remain residents of their neighborhood for a number of years and think that it is special place. The subjects are relatively attached to their neighborhood. The physical features in the neighborhood represented in the proximate location of the neighborhood to various destinations, the neighborhood walkability and the variety of housing alternatives in TP were the most liked features in the neighborhood. Following them are the social and communal features including the people/neighbors of the neighborhood, the neighborhood diversity, sense of community and the existence of friends in TP.

From all the above, the neighborhood location and the variety of possibilities that it affords to its residents, especially being close to downtown amenities and destinations and that it affords walkability to many favorite destinations, are linked to why many subjects like their neighborhood and plan to stay in the neighborhood. Walkability of the neighborhood appeared from the subjects’ comments to be associated with the destinations in and around the neighborhood and the nice atmosphere that streets’ greenery and tree cover provide. Social and communal aspects did not gain the same importance or attention from many subjects, but the existence of friends was a main factor in selecting and staying in the neighborhood. Green and open spaces in the neighborhood, represented in the neighborhood park and the streets’ tree cover, play a role in connecting people to place and to each other.

6.2 Duke Park Neighborhood
Paper copies of the survey were distributed in-person to 250 randomly selected households in Duke Park (DP) neighborhood, in addition to the online distribution of the electronic copy of the survey (Qualtrics copy). The electronic copy of the survey was distributed through the neighborhood listserv to approximately 800 households. The response rate from the in-person distribution of the survey was 9.2% and from the online copy 16%. Seventy-four correct and complete responses have been received from Duke Park neighborhood, including the responses from the online survey tool, Qualtrics, and the collected paper copies of the
questionnaire. The original number of the responses was 78 but four surveys were eliminated due to incompletion.

In terms of the gender and marital status of the subjects, 31% of them were males, while 69% were females; 37% of the subjects were single (divorced, widowed, or never married), whereas 68% were married or living with a partner. Only 35% of the subjects have children under the age of 12 in their household. Subjects varied in their age range between the four suggested categories: 13% of them were between 20 to 30 years old. One quarter of the subjects were between 31 to 40 years old, and almost half of them were in the age range of 41 to 60 years old. Only 12% were over 60 years old. The subjects of Duke Park were very well educated. More than half of the subjects (53%) are professionals with graduate degrees. Forty-two percent of them were college graduates.

The majority of Duke Park subjects (89%) have been living in their current neighborhood for more than one year, whereas only 11% of them have been living there for less than a year. More than half of the subjects (58%) have been living in Duke Park neighborhood between one and ten years. One quarter have lived in Duke Park between 10 and 20 years. Three percent have stayed in DP for 20 to 25 years, and 16% for 25 to 40 years. The average length of residence in Duke Park is 9.95 years with a standard deviation of 8.86. Nearly all of the subjects (89%) own their homes in Duke Park; 94% of them live in single-family houses, 3% live in apartments, while the remaining 3% live in duplexes.

6.2.1 Reasons to Select Duke Park Neighborhood

The questionnaire surveyed the subjects’ perception of the importance level of suggested locational and housing features that drove them to select Duke Park as their place of residence, using in that the five point Likert scale. Strongly unimportant was allowed one point; unimportant was two points; neither important nor unimportant was allowed three points; important was worth four points; and strongly important was allowed five points.
6.2.1.1 Neighborhood Location and Amenities

The most important locational feature for the subjects in their selection of Duke Park Neighborhood was the closeness or proximity to downtown (mean=4.19); followed by the neighborhood cultural aspects (mean=4.01). Closeness to work/study was the third important factor for the subjects (mean=3.78), and then the existence of parks and children playgrounds with a mean=3.74. Closeness to friends and closeness to medical facilities scored less importance than the other factors (mean=3.47, and 3.0 accordingly). The least important factor was the quality of schools (“good schools”) (mean=2.85) (Fig 6.13).

6.2.1.2 Housing Features and Properties

House affordability received the highest mean score (mean=4.63) and consequently the highest importance, compared to the other four housing features listed (house size, lot size, house age, and house style). House size scored second on the level of importance (mean=4.16), followed by house style, which scored a mean of 3.86. The last two features
(house age, and lot size) scored the lowest score on average with means= 3.5 and 3.57 respectively.

Table 6.9 Rating of the Importance of Certain Locational Factors in Selecting Duke Park Neighborhood

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all important</th>
<th>Unimportant</th>
<th>Neither important nor unimportant</th>
<th>Important</th>
<th>Very important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closeness to Work/Study</td>
<td>3 4%</td>
<td>5 6%</td>
<td>18 23%</td>
<td>34 43%</td>
<td>20 25%</td>
<td>8 0 100%</td>
</tr>
<tr>
<td>Closeness to Downtown</td>
<td>1 1%</td>
<td>1 1%</td>
<td>8 10%</td>
<td>42 53%</td>
<td>28 35%</td>
<td>8 0 100%</td>
</tr>
<tr>
<td>Neighborhood Cultural Aspects</td>
<td>1 1%</td>
<td>2 3%</td>
<td>14 18%</td>
<td>38 49%</td>
<td>22 29%</td>
<td>7 7 100%</td>
</tr>
<tr>
<td>Parks and playgrounds</td>
<td>1 1%</td>
<td>6 8%</td>
<td>24 30%</td>
<td>29 37%</td>
<td>19 24%</td>
<td>7 9 100%</td>
</tr>
<tr>
<td>Good Schools</td>
<td>12 15%</td>
<td>13 17%</td>
<td>33 42%</td>
<td>14 18%</td>
<td>6 8%</td>
<td>7 8 100%</td>
</tr>
<tr>
<td>Closeness to Friends</td>
<td>5 7%</td>
<td>6 8%</td>
<td>24 32%</td>
<td>30 39%</td>
<td>11 14%</td>
<td>7 6 100%</td>
</tr>
<tr>
<td>Medical Facilities</td>
<td>5 6%</td>
<td>15 19%</td>
<td>35 45%</td>
<td>21 27%</td>
<td>2 3%</td>
<td>7 8 100%</td>
</tr>
</tbody>
</table>
Figure 6.14 Rating of the Importance of Certain Locational Factors in Selecting Duke Park Neighborhood

Table 6.10 Rating of the Importance of Housing Features in Selecting of Houses in Duke Park Neighborhood

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all important</th>
<th>Unimportant</th>
<th>Neither important nor unimportant</th>
<th>Important</th>
<th>Very Important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>House Size</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>3%</td>
<td>5</td>
<td>6%</td>
</tr>
<tr>
<td>House Affordability</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>House Age</td>
<td>2</td>
<td>3%</td>
<td>6</td>
<td>8%</td>
<td>30</td>
<td>39%</td>
</tr>
<tr>
<td>Lot Size</td>
<td>2</td>
<td>3%</td>
<td>6</td>
<td>8%</td>
<td>26</td>
<td>33%</td>
</tr>
<tr>
<td>House Style</td>
<td>0</td>
<td>0%</td>
<td>6</td>
<td>8%</td>
<td>17</td>
<td>22%</td>
</tr>
</tbody>
</table>
6.2.2 Residents’ Perception of their Neighborhood Physical Features

The study hypothesizes that certain factors can presumably contribute to establishing a sense of place identity and place attachment on a neighborhood level. Therefore, the second part of the study was more focused on the subjects’ perception of the physical and social features that presumably relate to residents’ connection and attachment to Trinity Park neighborhood. These factors under investigation are: perceived neighborhood walkability, parks’ and playgrounds’ availability and quality, neighborhood involvement, residential satisfaction, and neighboring.

6.2.3 Neighborhood Walkability, Site Design, and Amenities

Duke Park’s subjects disclosed their agreement level on each of the five statement listed under this section, which were relevant to evaluating the walkability, quality of sidewalks,
quality of streets tree covers, safety, and amenities of Duke Park neighborhood, using a five point Likert scale. ‘Strongly disagree’ was allowed one point; ‘disagree’ was listed for two points; ‘neither disagree nor agree’ was allowed three points; ‘agree’ was allowed four points; and ‘strongly agree’ was allowed five points.

Duke Park’s subjects agreed that their neighborhood’s streets have old and mature trees, which add to the aesthetics and greenery of the neighborhood. This perception of the streets’ tree cover has received the highest average score among the five features under evaluation (mean=4.52). The subjects’ perception that Downtown Durham has a variety of places to visit and enjoy has received the second highest score amongst the five statements with a mean=4.47, followed by the subjects’ perception of their neighborhood walkability (mean=4.36). Nearly all the subjects (96%) believe that their neighborhood is walkable with a mean score=4.35. The safety of the neighborhood scored slightly higher than the neutral level of agreement with a mean score equal to 3.6. The lowest mean score belonged to the quality of the neighborhood sidewalks (mean=2.88); 42% of the subjects do not agree that the streets of their neighborhood have good sidewalks.

Figure 6.16 Duke Park Neighborhood Walkability and Amenities
Table 6.11 Participants’ Perception of Duke Park Neighborhood Walkability and Amenities

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------------------</td>
<td>----------</td>
<td>-----------------------------</td>
<td>-------</td>
<td>----------------</td>
<td>-------</td>
</tr>
<tr>
<td>Neighborhood Walkability</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>1%</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Sidewalks Quality</td>
<td>8</td>
<td>10%</td>
<td>25</td>
<td>32%</td>
<td>23</td>
<td>29%</td>
</tr>
<tr>
<td>Streets Greenery</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>Neighborhood Safety</td>
<td>1</td>
<td>1%</td>
<td>5</td>
<td>6%</td>
<td>23</td>
<td>29%</td>
</tr>
<tr>
<td>Variety of Destinations in Downtown</td>
<td>1</td>
<td>1%</td>
<td>2</td>
<td>3%</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>Variety of Destinations in DP Neighborhood</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>8%</td>
<td>10</td>
<td>42%</td>
</tr>
</tbody>
</table>

6.2.4 Parks and Playgrounds

Information about the use of the Neighborhood Park (Duke Park) and the frequency of visiting that park was gathered from the subjects. Nearly all of the subjects (91%) visit Duke Park (the park). A high percentage of the subjects (42%) visit the park one to three times a month, while 32% of them visit it one to three times a week. Only 6% of the subjects visit the park on a daily basis. The types of activities in the park that the subjects engage in vary among walking to the park or in the park as a kind of exercising, walking dogs, using the children’s playgrounds, attending events and concerts in the park, and meeting with friends.
Table 6.12 The frequency of visiting Duke Park and the way to go to it

<table>
<thead>
<tr>
<th>Frequency of Visiting the Duke Park</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rarely</td>
<td>16</td>
<td>20%</td>
</tr>
<tr>
<td>1-3 times a month</td>
<td>33</td>
<td>42%</td>
</tr>
<tr>
<td>1-3 times a week</td>
<td>25</td>
<td>32%</td>
</tr>
<tr>
<td>Daily</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>79</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Way to Go to the Park</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>6</td>
<td>8%</td>
</tr>
<tr>
<td>Walk</td>
<td>70</td>
<td>89%</td>
</tr>
<tr>
<td>Bike</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Carpool</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>79</td>
<td>100%</td>
</tr>
</tbody>
</table>

Figure 6.17 Activities Taking Place in Duke Park

The majority of the subjects acknowledged their highly positive perception of their neighborhood park and its features. The safety of the park was the most agreed upon feature
with an average score equal to 4.54, followed by the park legibility (4.48), the park size (4.35), and the park location (4.3). The lowest agreed upon statement/feature was the role of the park in connecting neighbors to each other (mean=3.69).

The park’s size is 750839.147 square feet=17.24 acres, which is 5.4% of the area of Duke Park neighborhood. There are 8 roads/streets leading to Duke Park. The park had some equipment and installments for children’s playgrounds.

Table 6.13 Participants’ Perception of Duke Park

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Park’s safety</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>28</td>
<td>48</td>
<td>79</td>
</tr>
<tr>
<td>The Park is easy to find</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>25</td>
<td>48</td>
<td>78</td>
</tr>
<tr>
<td>Park’s Role in Connecting Neighbors</td>
<td>2</td>
<td>8</td>
<td>21</td>
<td>29</td>
<td>19</td>
<td>79</td>
</tr>
<tr>
<td>Park’s Significance</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>25</td>
<td>48</td>
<td>79</td>
</tr>
<tr>
<td>Satisfying size of the Park</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>40</td>
<td>34</td>
<td>78</td>
</tr>
<tr>
<td>Good Location of the Park</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>37</td>
<td>32</td>
<td>79</td>
</tr>
</tbody>
</table>
Figure 6.18 Roads Leading to Duke Park

Figure 6.19 Duke Park’s Perception
6.2.5 Residential Satisfaction

The subjects of Duke Park neighborhood indicated their satisfaction level with their neighborhood, community, neighborhood park, and housing. Duke Park subjects were slightly more satisfied with their neighborhood (mean=4.32) and community (mean=4.31), than their houses (mean=4.21) and neighborhood park (mean=4.03).

Table 6.14 Residential Satisfaction in Duke Park Neighborhood

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with DP Neighborhood</td>
<td>1</td>
<td>1%</td>
<td>2</td>
<td>3%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with House</td>
<td>2</td>
<td>3%</td>
<td>3</td>
<td>4%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with DP ‘the park’</td>
<td>1</td>
<td>1%</td>
<td>2</td>
<td>3%</td>
<td>9</td>
<td>12%</td>
</tr>
<tr>
<td>Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with DP Community</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
<td>4</td>
<td>5%</td>
</tr>
</tbody>
</table>

6.2.6 Subjects’ Involvement and Participation

In order to measure the subjects’ level of involvement in their neighborhood, subjects were asked to indicate the frequency level of their participation in four types of neighborhood activities: 1) Meeting informally with neighbors to discuss neighborhood problems, 2) attending Duke Park Neighborhood Association meetings, 3) volunteering in cleaning, maintaining, and/or greening the park, and 4) participating in the neighborhood’s social events and gatherings. Subjects were allowed three levels of frequency to select from: not
often was equal to one point, “often” was counted for two points, and “very often” was equal to three points. Subjects’ participation in their neighborhood events and gatherings scored the highest amongst the four types of activities listed (mean=1.68), followed by “meeting informally with neighbors to discuss neighborhood problems with a mean score of 1.46. The majority of the subjects do not often attend the neighborhood association meetings.

![Figure 6.19 Residential Satisfaction in Duke Park Neighborhood](image)

### 6.2.7 Neighboring Activities

Subjects’ neighboring activities were investigated through five main questions. The first three were concerned of the number of friends that the subjects have in Duke Park or adjacent neighborhoods and the number of neighbors that they know by first name. The next two questions inquired about the frequency of participating in favorite activities or doing favors to neighbors.
Table 6.15 The Frequency of Participants’ Involvement And Participation in Duke Park Neighborhood

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Meeting with neighbors to discuss neighborhood problems</th>
<th>Attending the neighborhood association meetings</th>
<th>Cleaning the Park</th>
<th>Participating in social events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Often</td>
<td>41</td>
<td>66</td>
<td>56</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>59%</td>
<td>93%</td>
<td>79%</td>
<td>45%</td>
</tr>
<tr>
<td>Often</td>
<td>24</td>
<td>1</td>
<td>11</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>34%</td>
<td>1%</td>
<td>15%</td>
<td>42%</td>
</tr>
<tr>
<td>Very Often</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>7%</td>
<td>6%</td>
<td>6%</td>
<td>13%</td>
</tr>
<tr>
<td>Total</td>
<td>71</td>
<td>71</td>
<td>71</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 6.16 Number of Friends in Duke Park Neighborhood and in Adjacent Neighborhoods

<table>
<thead>
<tr>
<th>Number</th>
<th>#Friends in DP</th>
<th>#Friends in adjacent neighborhoods</th>
<th>#Neighbors known by first name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>1-3</td>
<td>16</td>
<td>21%</td>
<td>16</td>
</tr>
<tr>
<td>4-6</td>
<td>21</td>
<td>27%</td>
<td>21</td>
</tr>
<tr>
<td>7-9</td>
<td>14</td>
<td>18%</td>
<td>18</td>
</tr>
<tr>
<td>10-12</td>
<td>8</td>
<td>10%</td>
<td>4</td>
</tr>
<tr>
<td>More than 12</td>
<td>19</td>
<td>24%</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
<td>100%</td>
<td>78</td>
</tr>
</tbody>
</table>

Almost half of the subjects (48%) have between one to six friends in Duke Park neighborhoods, while one quarter of them have more than 12 friends. In terms of the number of friends that subjects have in adjacent neighborhoods such as Old North Durham and Trinity Park, also almost half of the subjects have between one to six friends, while 24% of them have more than 12 friends. A big number of the subjects know many of their nearest
neighbors by first name: more than half (56%) of the subjects know seven to twelve neighbors by first name, while 26% of them know more than twelve neighbors’ first name.

The majority of the subjects do not usually participate in favorite activities with their neighbors. More than half of the subjects (60%) indicated that they either ‘never’ or ‘rarely’ participate in a favorite activity with neighbors, while only 18% frequently or always share or participate in activities with their neighbors. On the other hand, almost one third of the subjects indicated that they sometimes do favors for their neighbors, while another third either frequently or always do favors for nearby neighbors.

Table 6.17 Neighboring Activities in Duke Park Neighborhood

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Participating in favorite activities</th>
<th>Doing favors for neighbors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Never</td>
<td>21</td>
<td>28%</td>
</tr>
<tr>
<td>Rarely</td>
<td>24</td>
<td>32%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>17</td>
<td>22%</td>
</tr>
<tr>
<td>Frequently</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Always</td>
<td>11</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>100%</td>
</tr>
</tbody>
</table>

6.2.8 Measuring Subjects’ Level of Place Attachment

Duke Park subjects were asked to disclose their agreement level on nine statements concerning their connection and attraction to their neighborhood, in order to measure their level of place attachment. The subjects of Duke Park are proud residents of their neighborhood (mean=4.14). In addition, they think that their neighborhood is a special place for them (mean=3.92). Many subjects plan to remain residents of Duke Park for a number of
years (mean=3.94), and are attached to their neighborhood (mean=3.93). Subjects agree that they are similar to other residents of Duke Park (mean=3.56), and that Duke Park is the best neighborhood for them (mean=3.7). Not many subjects think that Duke Park cannot be compared to other neighborhoods (mean=2.92). The average score of place attachment among Duke Park subjects was 3.68 with a standard deviation equal to 0.8.

Table 6.18 Duke Park Neighborhood Participants’ Place Attachment Index

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I pride myself of living in DP</td>
<td>2</td>
<td>3%</td>
<td>2</td>
<td>3%</td>
<td>8</td>
<td>11%</td>
</tr>
<tr>
<td>I am attached to DP</td>
<td>2</td>
<td>3%</td>
<td>7</td>
<td>10%</td>
<td>13</td>
<td>18%</td>
</tr>
<tr>
<td>Plan to remain a Resident of DP</td>
<td>5</td>
<td>7%</td>
<td>5</td>
<td>7%</td>
<td>9</td>
<td>13%</td>
</tr>
<tr>
<td>DP the best neighborhood for me</td>
<td>2</td>
<td>3%</td>
<td>5</td>
<td>7%</td>
<td>22</td>
<td>31%</td>
</tr>
<tr>
<td>DP Special place to me</td>
<td>2</td>
<td>3%</td>
<td>3</td>
<td>4%</td>
<td>14</td>
<td>20%</td>
</tr>
<tr>
<td>I am similar to people living here</td>
<td>1</td>
<td>1%</td>
<td>5</td>
<td>7%</td>
<td>29</td>
<td>41%</td>
</tr>
<tr>
<td>No other neighborhood compares to DP</td>
<td>3</td>
<td>4%</td>
<td>23</td>
<td>33%</td>
<td>29</td>
<td>41%</td>
</tr>
<tr>
<td>Identify Strongly with DP</td>
<td>1</td>
<td>1%</td>
<td>8</td>
<td>11%</td>
<td>19</td>
<td>27%</td>
</tr>
<tr>
<td>DP says a lot about me</td>
<td>5</td>
<td>7%</td>
<td>10</td>
<td>14%</td>
<td>20</td>
<td>29%</td>
</tr>
</tbody>
</table>
6.2.9 What is Liked about Duke Park Neighborhood?

Open-ended questions surveyed the subjects’ opinions and perspectives of what they like and dislike about their neighborhood. Subjects’ comments of what they like were grouped under five main categories: 1) physical and locational factors, 2) social and communal factors, 3) neighborhood amenities, 4) aesthetics and greenery, and 5) neighborhood character.

6.2.9.1 Physical Factors

a) Neighborhood Walkability: The site design of Duke Park provides its residents with the opportunity to walk or bike safely to various places. Neighborhood walkability facilitated the opportunity to many subjects to walk to different destinations such as nearby parks (Duke, Northgate, and Trinity Parks), schools and Duke Campus,
downtown restaurants and cafes, and the farmers’ market. The purpose of walking varied in subjects’ comments between ‘recreation, exercise, entertainment and dog walking.’

b) **Housing:** The older houses of Duke Park were commended by the subjects as one of the main features they like about their neighborhood. Subjects also described the houses as beautiful, attractive, affordable older houses with small lot sizes and diverse architectural styles.

c) **Park:** The neighborhood park (Duke Park) and its playgrounds gained much admiration from the residents. The neighborhood park was repeated by many subjects as one of the things they like about their neighborhood.

### 6.2.9.2 Social and Communal Factors

a) **Neighbors:** Many subjects stressed that they know their neighbors, who are great nice, quiet, friendly, supportive, wonderful, wonderful, watchful, liberal with progressive political thinking, and engaged in Durham and neighborhood life. Subjects stated that their neighbors mind their business and understand the concept of helping each other. In addition, Duke Park subjects emphasized the fact that Duke Park residents “look out for each other’s interest and safety,” “care about their neighbors and what happens to them,” “try to be kind to everyone,” “make effort to reach out to each other,” and “try to connect to their neighbors.” Also, there are “lots of people literally and figuratively looking out for each other,” and they “seem to be willing to help each other.” Some subjects like the “higher density of people” in Duke Park, and the diversity of age among the residents.

b) **Sense of Community:** Duke Park induced a strong sense of community, belonging and involvement that are characterized by more personal interaction that many
subjects experience in their neighborhood. Some of the residents praised the community spirit that exists in Duke Park and how the community members support each other.

c) Diversity: The diversity of the neighborhood residents was addressed greatly by the subjects. Duke Park neighborhood was described as an “eclectic environment that is not racially divided.” The residents seem to be diverse in age, race, class, and socio-economics. There are also “many children and people of all ages.”

Figure 6.21 Most Visited Destinations in Duke Park Neighborhood

6.2.9.3 Neighborhood Aesthetics and Greenery

Duke Park neighborhood is favored by many of the subjects due to its aesthetics and beauty, which distinguish its built form. Many subjects stated that there are greenery and “vegetation all around” the neighborhood. Duke Park also has a natural, beautiful setting that has
surprising wildlife such as birds and squirrels in the middle of an urban area. The maturity and beauty of the street trees in Duke Park were one of the things that the subjects also liked about their neighborhood.

![Bar Chart](image)

Figure 6.22 Most Liked Physical Features in Duke Park Neighborhood

### 6.2.9.4 Neighborhood Character

The streets of Duke Park were described as having low traffic and quiet and attractive character. Other features of the neighborhood were also addressed in the subjects’ comments, such as: the spaces between houses, the look of homes and lawns, and the attractive and healthy environment. According to many subjects, Duke Park is marked by its political and social environment that has collective and individual activism. Some subjects perceive safety in their neighborhood regardless of a few petty incidents or break-ins.
6.2.9.5 Neighborhood Amenities

a) Social events: Subjects like the social life and the entertainment activities in their neighborhood represented in various parties and parades, social gatherings.

b) Listserv: Subjects addressed the connectivity that their neighborhood listserv affords and how it promotes engagement. In addition, the listserv keeps the residents “informed of what is going on” in their neighborhood.

![Figure 6.23 Most Liked Social Features in Duke Park](image)

Figure 6.23 Most Liked Social Features in Duke Park

6.2.10 What is disliked about Duke Park Neighborhood?

Crimes:

- Casual crimes in Duke Park neighborhood, such as burglary, theft, break-in, petty crimes, and gun shooting.
- Duke Park neighborhood can be unsafe especially at night.
Lack of Amenities:

• The lack of needed amenities such as public transportation, shops, cafes, grocery stores, restaurants, and public meeting/gathering places within a short walking distance

Schools:

• Poor public school choices in their neighborhood and school districting

Diversity Issues:

• The dissatisfaction with the little true interaction between people of different races
• Lack of more diversity at neighborhood, especially during gatherings, in addition to the racial and class segregation

Listserv Angst:

• Benevolent racism and racial profanity on the listserv

Absentee Landlords:

• The neighborhood suffers lack of care by neglectful landlords, and substandard rental properties
• Many rentals’ landlords do not seem to be invested in their properties

Proximity to I-85:

• The noise coming from I-85
• The highway is splitting the neighborhood

Traffic:

• Speeding cars
• Traffic noise

Street and Sidewalk Conditions:

• Streets and sidewalks are not well-kept and in poor condition
• Inadequacy of sidewalks
Exclusive Neighborhood Identity:

- The strong neighborhood identity of Duke Park can be exclusive
- There is a strong tendency to influence everyone to think the same on social issues

6.2.11 Summary

The most important factors that attracted subjects to select Duke Park Neighborhood are proximity to downtown, the neighborhood’s cultural aspects and closeness to work/study. It appeared from the subjects’ comments that proximity to downtown is associated with the variety of destinations and amenities downtown. The majority of subjects (91%) agree that they perceive a variety of destinations and places to visit and enjoy in downtown Durham. The affordability of housing in Duke Park and the variety of alternative sizes and styles were important factors in selecting housing in Duke Park neighborhood. Subjects agree on the neighborhood walkability, which is associated, as it appeared from the subjects’ comments, with the variety of destinations in downtown, the proximity to downtown, and the streets’ greenery and aesthetics that provide a nice natural setting for walking. The sidewalks in the neighborhood did not gain the same perception or agreement like street trees. Many of the subjects think that their neighborhood lacks sidewalks and the few sidewalks in the neighborhood are in poor condition. The major destinations that subjects are keen to visit in downtown are restaurants, cafes, parks, shopping centers and the farmers’ market. Duke Park (the Park) is perceived positively by the subjects due to its safety, easiness to find, satisfying size and good location. Subjects are very satisfied with their neighborhood in general. Their satisfaction with their neighborhood park, community and housing follow in their rating. In terms of the subjects’ involvement and participation in their neighborhood, participating in social events and gatherings and meeting informally with neighbors to discuss neighborhood problems are the two main forms of involvement/participation that subjects practice in their neighborhood.
Residents of Duke Park are proud residents of their neighborhood; they agree that they are attached or connected to it and that they plan to remain residents of DP for a number of years. They think that Duke Park is a special place for them and that it says a lot about who they are. Through subjects’ comments about what they like about their neighborhood, the physical features of the neighborhood were the most liked features, represented in the proximate location of the neighborhood, neighborhood walkability, affordability and variety of housing alternatives, and the neighborhood park. The social features followed the physical features, reflected in neighbors, neighborhood diversity, sense of community, and neighborhood social events.

6.3 Northgate Park Neighborhood

Paper copies of the survey were distributed in-person to 850 randomly selected households in Northgate Park neighborhood, in addition to the online distribution of the electronic copy of the survey (Qualtrics copy) through the neighborhood listserv. The response rate from the in-person distribution of the survey was 4% and from the online copy 24%. One hundred and fifteen complete responses were received from Northgate Park neighborhood, including the responses from the online survey tool, Qualtrics, and the collected paper copies of the questionnaire. The original number of the responses was 122 but seven surveys were eliminated due to incompleteness.

In terms of the gender of the subjects, three quarters of them were females. The majority of the subjects are married or living with a partner (62%), while 38% are single (divorced, widowed, or never married). Only one quarter of the subjects have children under the age of 12 (elementary school age) in their household. The age of the subjects varies between the four main categories suggested in the survey: 17% of the subjects are in the age range of 20 to 30 years old, 34% are 31 to 40 years old, 33% are 41 to 60 years old, and 17% are over 60. Most of the subjects are very well educated; 44% are college graduates, and 44% are professionals with graduate degrees. The majority of the subjects (95%) live in single-family
houses. Only four percent of the subjects live in duplexes, and one percent in apartments. More than three quarters (79%) of the subjects own their houses in Northgate Park, while only 21% of them rent.

The subjects’ length of residence in Northgate Park varied largely, from one year to 50 years. Northgate Park has many long-term residents in addition to many newly moved residents. The majority of the subjects (61%) have lived in NP between 0 and 10 years, 22% have been living in Northgate Park 10 to 20 years, and 5% of the subjects have lived in Northgate Park for more than 40 years. The average length of residence in Northgate Park is 10.52 years with a standard deviation of 10.41.

![Figure 6.24 Length of Residence in Northgate Park Neighborhood](image)

**6.3.1 Reasons to Select Northgate Park Neighborhood**

The first section of the questionnaire surveyed the subjects’ perception of the importance level of suggested locational and housing features in their selection of Northgate Park to be their place of residence. Using a five point Likert scale, strongly unimportant was allowed
one point; unimportant was two points; neither important nor unimportant was allowed three points; important was worth four points; and strongly important was allowed five points.

6.3.1.1 Neighborhood Location and Amenities
Northgate Park’s subjects disclosed their opinion of the importance level of each of the seven statements, listed under this section, in their selection of Northgate Park neighborhood. Proximity to work/study was rated to be the most important feature by the subjects with a mean score equal to 3.88, followed by proximity to downtown (mean= 3.75). The attraction to the neighborhood due to the cultural aspects that the neighborhood embraces gained the same average score (mean=3.75). The existence of parks and playgrounds in the neighborhood also was one of the major and important factors for many of the subjects while selecting their neighborhood (mean=3.73), followed by the proximity to friends (mean=3.45). The least important factors for many of the subjects in their selection of Northgate Park were the proximity to medical facilities (mean=2.72) and the existence of good schools (mean= 2.86).

6.3.2 Housing Features and Properties
In general, house affordability (mean=4.68) was the most important factor in the subjects’ selection of their houses, followed by house size (mean=3.85). The other listed factors landed in their importance after those two main factors, and were as follows:

- House style (mean=3.634)
- Lot size (mean= 3.46)
- House age (as the least important factor with mean=3.2)
6.3.3 Neighborhood Walkability, Site Design, and Amenities

Northgate Park’s subjects disclosed their agreement level on each of the five statement listed under this section, which were relevant to evaluating the walkability, quality of sidewalks, quality of streets tree covers, safety, and amenities of Duke Park neighborhood, using a five point Likert scale. ‘Strongly disagree’ was allowed one point; ‘disagree’ was listed for two points; ‘neither disagree nor agree’ was allowed three points; ‘agree’ was allowed four points; and ‘strongly agree’ was allowed five points.
Table 6.19 Rating of the Importance of Certain Locational Factors in Selecting Northgate Park Neighborhood

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all important</th>
<th>Unimportant</th>
<th>Neither important nor unimportant</th>
<th>Important</th>
<th>Very important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Closeness to Work/Study</td>
<td>7</td>
<td>6%</td>
<td>10</td>
<td>8%</td>
<td>13</td>
<td>11%</td>
</tr>
<tr>
<td>Closeness to Downtown</td>
<td>5</td>
<td>4%</td>
<td>7</td>
<td>6%</td>
<td>19</td>
<td>16%</td>
</tr>
<tr>
<td>Neighborhood Cultural Aspects</td>
<td>9</td>
<td>8%</td>
<td>7</td>
<td>6%</td>
<td>24</td>
<td>20%</td>
</tr>
<tr>
<td>Parks and playgrounds</td>
<td>9</td>
<td>7%</td>
<td>10</td>
<td>8%</td>
<td>20</td>
<td>17%</td>
</tr>
<tr>
<td>Good Schools</td>
<td>25</td>
<td>21%</td>
<td>24</td>
<td>20%</td>
<td>29</td>
<td>24%</td>
</tr>
<tr>
<td>Closeness to Friends</td>
<td>10</td>
<td>8%</td>
<td>10</td>
<td>8%</td>
<td>42</td>
<td>35%</td>
</tr>
<tr>
<td>Medical Facilities</td>
<td>19</td>
<td>16%</td>
<td>27</td>
<td>22%</td>
<td>45</td>
<td>37%</td>
</tr>
</tbody>
</table>

The subjects have mostly agreed that Northgate Park is a walkable neighborhood (mean=4.33), and that its streets have nice tree cover of old and mature trees (mean=4.36). In terms of the amenities and destinations, the subjects agreed that Downtown Durham has a variety of destinations to visit and enjoy (mean=4.28), in addition to the variety of destinations in and around Northgate Park Neighborhood (Mean=3.74). The safety of the neighborhood has received less agreement from the subjects (mean=3.75). The least item agreed upon was the quality of the sidewalks, with a mean of 2.4. Northgate Park’s subjects have indicated that they perceive their neighborhood as a walkable neighborhood with nice, old, and mature trees, though the sidewalks did not meet many of the residents’ expectations.
Table 6.20 Rating of the Importance of Certain Locational Factors in Selecting Northgate Park Neighborhood

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all important</th>
<th>Unimportant</th>
<th>Neither important nor unimportant</th>
<th>Important</th>
<th>Very Important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>House Size</td>
<td>0</td>
<td>0%</td>
<td>7</td>
<td>6%</td>
<td>21</td>
<td>17%</td>
</tr>
<tr>
<td>House Affordability</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>House Age</td>
<td>5</td>
<td>4%</td>
<td>25</td>
<td>21%</td>
<td>44</td>
<td>36%</td>
</tr>
<tr>
<td>Lot Size</td>
<td>4</td>
<td>3%</td>
<td>15</td>
<td>12%</td>
<td>36</td>
<td>30%</td>
</tr>
<tr>
<td>House Style</td>
<td>3</td>
<td>2%</td>
<td>10</td>
<td>8%</td>
<td>33</td>
<td>27%</td>
</tr>
</tbody>
</table>

Figure 6.26 Rating of the Importance of Housing Features in Selecting of Houses in Northgate Park Neighborhood
6.3.4 Parks and Playgrounds

Information about the use of the neighborhood park (Duke Park) and the frequency of visiting that park was gathered from the subjects. The vast majority of the subjects (91%) indicated that they usually visit Northgate Park, while the remaining 9% visit the dog park. Amongst those subjects, 84% of them walk to their favorite park, while 10% drive, and only 6% bike to the park. Almost one third of the subjects (34%) visit the park one to three times a month, more one third (37%) of them visit the park one to three times a week, while only 22% visit the park on a daily basis.

Table 6.21 Participants’ Perception of Northgate Park Neighborhood Location and Amenities

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Neighborhood Walkability</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>2%</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>Sidewalks Quality</td>
<td>27</td>
<td>23%</td>
<td>48</td>
<td>40%</td>
<td>19</td>
<td>16%</td>
</tr>
<tr>
<td>Streets Greenery</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>2%</td>
<td>6</td>
<td>5%</td>
</tr>
<tr>
<td>Neighborhood Safety</td>
<td>1</td>
<td>1%</td>
<td>7</td>
<td>6%</td>
<td>26</td>
<td>22%</td>
</tr>
<tr>
<td>Variety of Destinations in Downtown</td>
<td>2</td>
<td>2%</td>
<td>4</td>
<td>3%</td>
<td>8</td>
<td>7%</td>
</tr>
<tr>
<td>NP Variety of Destinations</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>5%</td>
<td>9</td>
<td>24%</td>
</tr>
</tbody>
</table>
The activities in which the residents engage in their favorite park vary between walking to the park as a kind of exercise or to walk the dogs. Many people also go to the park to use the children’s playgrounds. Some go to meet with friends, or attend concerts and events such as Halloween or the 4th of July, and a few go to the park to read.
The questionnaire surveyed the different features/items relevant to the subjects’ perception of their neighborhood park, such as its location, size, safety, connectivity, legibility, and significance. Northgate Park’s subjects revealed their agreement level with each of the six statements listed under this scale using the five point Likert scale. “Strongly disagree” was allowed one point, “disagree” is listed for two points, “neither disagree nor agree” was allowed three points, “agree” was allowed four points, and “strongly agree” was allowed five points.

In general, there was a positive perception of Northgate Park (the park). There was an agreement among the subjects that their neighborhood park is a significant part of their neighborhood (mean=4.47), and that it is safe (mean=4.55) and legible or easy to find (mean=4.62). There was also a positive perception that the park is in a good location (mean=4.31), and that its size is satisfying in relation to the number of households in the neighborhood (mean=4.26). The least agreed upon factor/feature was the role of the park in connecting subjects to their neighbors (mean=3.91).
### Table 6.22 Subjects’ Perception of Northgate Park

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Park’s safety</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>1%</td>
<td>6</td>
<td>5%</td>
</tr>
<tr>
<td>The Park is easy to find</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Park’s Role in Connecting Neighbors</td>
<td>3</td>
<td>3%</td>
<td>6</td>
<td>5%</td>
<td>23</td>
<td>19%</td>
</tr>
<tr>
<td>Park’s Significance</td>
<td>1</td>
<td>1%</td>
<td>0</td>
<td>0%</td>
<td>7</td>
<td>6%</td>
</tr>
<tr>
<td>Park’s Satisfying size</td>
<td>1</td>
<td>1%</td>
<td>3</td>
<td>3%</td>
<td>11</td>
<td>9%</td>
</tr>
<tr>
<td>Park’s Good Location</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
<td>6</td>
<td>5%</td>
</tr>
</tbody>
</table>

Figure 6.30: Roads Leading to Northgate Park and the Dog Park
6.3.5 Residential Satisfaction

In terms of the subjects’ satisfaction with their neighborhood and its features, it was found that Northgate Park’s subjects are highly satisfied with their neighborhood and its associated community. However, satisfaction with houses was the least agreed-upon item by the residents after their satisfaction with their neighborhood, community, and neighborhood park. The subjects’ satisfaction with their neighborhood and community are almost on the same level (mean=4.26 and 4.24), followed by their satisfaction with the neighborhood park and their housing (mean=4.09 and 4.06) accordingly.
Table 6.23 Residential Satisfaction in Northgate Park Neighborhood

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Satisfaction with NP Neighborhood</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>12</td>
<td>10%</td>
</tr>
<tr>
<td>Satisfaction with House</td>
<td>0</td>
<td>0%</td>
<td>6</td>
<td>5%</td>
<td>7</td>
<td>6%</td>
</tr>
<tr>
<td>Satisfaction with NP ‘the park’</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>3%</td>
<td>12</td>
<td>11%</td>
</tr>
<tr>
<td>Satisfaction with NP Community</td>
<td>1</td>
<td>1%</td>
<td>2</td>
<td>2%</td>
<td>8</td>
<td>7%</td>
</tr>
</tbody>
</table>

Figure 6.32 Residential Satisfaction in Northgate Park Neighborhood
6.3.6 Residents’ Involvement and Participation in their Neighborhood

In order to measure the subjects’ level of involvement in their neighborhood, they were asked in the questionnaire to disclose their frequency of participating or volunteering in their neighborhood events and gatherings on a three-point rating scale. ‘Not often’ was allowed one point, ‘often’ was worth two points, and ‘very often’ was counted for three points. Despite the high satisfaction with the neighborhood facilities, amenities and community, not many subjects seemed to be involved in their neighborhood, nor did they participate or volunteer in the neighborhood’s events, gatherings or meetings.

In general very few of the subjects often participated or volunteered in the neighborhood events and gatherings. Of the four items included under the involvement scale, participating in the neighborhood social events and gatherings has gained some variety in the subjects’ responses with 58% of the subjects not often participate in those gatherings. More than one third of the subjects (36%) often participate in those gatherings, while only 6% of the subjects regularly participate in the neighborhood events and gatherings. In terms of the other three listed items -- meeting informally with neighbors to discuss neighborhood problems, attending the neighborhood association meetings, and volunteering in cleaning, maintaining, and/or greening the neighborhood park -- the majority of the subjects are not generally active in participating or involving. The table below shows the number and percentage of subjects and their frequency in participating or involving in different types of neighborhood activities.
Table 6.24 Involvement and Participation in Northgate Park Neighborhood

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Meeting with neighbors to discuss neighborhood problems</th>
<th>Attending the neighborhood association meetings</th>
<th>Cleaning the Park</th>
<th>Participating in social events</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Not Often</td>
<td>83</td>
<td>69%</td>
<td>121</td>
<td>93%</td>
</tr>
<tr>
<td>Often</td>
<td>34</td>
<td>28%</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>Very Often</td>
<td>3</td>
<td>3%</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100%</td>
<td>129</td>
<td>100%</td>
</tr>
</tbody>
</table>

6.3.7 Neighboring Activities

The questionnaire surveyed the neighboring activities of the subjects through five main questions; the first three were concerned of identifying the number of friends they have in Northgate Park and in adjacent neighborhoods such as Duke Park, Trinity Park or Old North Durham, in addition to the number of neighbors they know by first name. The next two questions are related to the frequency of sharing favorite activities with neighbors or doing favors for each other.

Almost half of the subjects (54%) indicated that they have one to six friends in Northgate Park Neighborhood, while 22% of them have more than 12 friends. More than half of the subjects (65%) have one to six friends in adjacent neighborhoods, while only 21% of them have more than 12 friends. Almost one third of the subjects (34%) indicated that they know more than half of their neighbors by first name, while 22% of them know all or almost all of their neighbors’ first names. Only 4% do not know any of their nearest neighbors’ first names.
Table 6.25 Number of Friends and Acquaintances in Northgate Park neighborhood

<table>
<thead>
<tr>
<th>Number</th>
<th>Friends in NP</th>
<th>Friends in adjacent neighborhoods</th>
<th>Neighbors known by first name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>1-3</td>
<td>33</td>
<td>28%</td>
<td>42</td>
</tr>
<tr>
<td>4-6</td>
<td>31</td>
<td>26%</td>
<td>34</td>
</tr>
<tr>
<td>7-9</td>
<td>18</td>
<td>15%</td>
<td>6</td>
</tr>
<tr>
<td>10-12</td>
<td>11</td>
<td>9%</td>
<td>11</td>
</tr>
<tr>
<td>More than 12</td>
<td>26</td>
<td>22%</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100%</td>
<td>117</td>
</tr>
</tbody>
</table>

In terms of sharing activities or doing favors, 54% of the subjects demonstrated that they never or rarely share activities with their neighbors, whereas 18% of them always participate in favorite activities with their neighbors. In terms of doing favors for neighbors, 44% of the subjects stated that they sometimes do favors for their neighbors, while only 10% of them always do that.

Table 6.26 Neighboring Activities in Northgate Park Neighborhood

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Participating in favorite activities</th>
<th>Doing favors for neighbors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Never</td>
<td>28</td>
<td>24%</td>
</tr>
<tr>
<td>Rarely</td>
<td>35</td>
<td>30%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>22</td>
<td>19%</td>
</tr>
<tr>
<td>Frequently</td>
<td>11</td>
<td>9%</td>
</tr>
<tr>
<td>Always</td>
<td>21</td>
<td>18%</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100%</td>
</tr>
</tbody>
</table>
6.3.8 Measuring Residents’ Place Attachment

The data on residents’ sense of attachment to place were collected with a 5-point Likert scale. The subjects of Northgate Park (NP) were asked to disclose their agreement level on nine statements concerning their connection and attraction to their neighborhood. The average score of the accumulative of these nine statements was indicative of the level of place attachment. The higher the average score, the stronger the place attachment is. Generally, the subjects of Northgate Park are proud residents (mean=3.96). Many of the subjects plan to remain residents of Northgate Park for a number of years (mean= 3.93). Many of them also think that Northgate Park neighborhood is a special place (mean= 3.86). The other remaining items received lower mean values, such as: “I am attached to Northgate Park Neighborhood” (mean= 3.73), and “Northgate Park is the best neighborhood for me to live in” (mean= 3.67). The subjects did not think “no other neighborhood can compare to Northgate Park neighborhood” (mean= 2.86).

6.3.9 What is Liked about Northgate Park Neighborhood?

When asked about what they like or dislike about their neighborhood, subjects repeatedly mentioned the themes listed below:

6.3.9.1 Physical and Locational Factors

a) Neighborhood Proximate Location: Many subjects have emphasized the proximity of Northgate to various places and destinations such as parks, schools, churches, synagogue, and grocery shopping, and how most of these destinations are within a walking distance of where they live. Also, some of them mentioned the convenient location of the neighborhood that allows subjects easy access to downtown Durham, the farmers market, and greenways. Proximity to work places was also highlighted, in addition to closeness/proximity to food places and good restaurants especially via unconventional methods of transportation such as “biking and walking.” The proximity of the
neighborhood to I-85, museums (The Museum of Life and Science), Ellerbee Creek, hospitals, the library, and shopping centers was also stressed through many comments.

Table 6.27 Northgate Park Participants’ Place Attachment Index

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I pride myself of living in NP</td>
<td>0</td>
<td>3%</td>
<td>25%</td>
<td>60%</td>
<td>27%</td>
<td>115</td>
</tr>
<tr>
<td>I am attached to NP</td>
<td>3</td>
<td>3%</td>
<td>28%</td>
<td>48%</td>
<td>26%</td>
<td>115</td>
</tr>
<tr>
<td>Plan to remain a Resident of NP</td>
<td>3</td>
<td>3%</td>
<td>19%</td>
<td>55%</td>
<td>32%</td>
<td>115</td>
</tr>
<tr>
<td>NP the best neighborhood for me</td>
<td>1</td>
<td>1%</td>
<td>39%</td>
<td>44%</td>
<td>22%</td>
<td>115</td>
</tr>
<tr>
<td>NP Special place to me</td>
<td>3</td>
<td>3%</td>
<td>19%</td>
<td>60%</td>
<td>26%</td>
<td>115</td>
</tr>
<tr>
<td>I am similar to people living here</td>
<td>2</td>
<td>2%</td>
<td>50%</td>
<td>42%</td>
<td>5%</td>
<td>115</td>
</tr>
<tr>
<td>No other neighborhood compares to NP</td>
<td>9</td>
<td>8%</td>
<td>46%</td>
<td>19%</td>
<td>8%</td>
<td>115</td>
</tr>
<tr>
<td>Identify Strongly with NP</td>
<td>3</td>
<td>3%</td>
<td>32%</td>
<td>44%</td>
<td>21%</td>
<td>115</td>
</tr>
<tr>
<td>NP says a lot about me</td>
<td>5</td>
<td>4%</td>
<td>40%</td>
<td>38%</td>
<td>13%</td>
<td>114</td>
</tr>
</tbody>
</table>
b) **Walkability:** Many subjects addressed the walkability of the neighborhood. The neighborhood is marked by the ease of walking and the variety of available walking paths. It also offers easy bike rides to downtown.

c) **Housing:** Many subjects stated that they consider their houses one of the things they like about their neighborhood. Subjects addressed the affordability and age of houses, and the sustainability of their sizes—suitable size for a small family or a couple.

### 6.3.9.2 Social and Communal Factors

a) **Neighbors:** NP subjects described their neighbors as friendly, quite, unpretentious, interesting, informed, caring, nice, funky, creative, progressive and diverse (old and young families, and young professionals). There were comments about how great and tolerant the neighbors are and how they keep an eye out for others in the community.
Neighbors in NP were also described as helpful and supportive of each other, even if they do not know each other. The volunteer ethic of the residents and their sense of engagement in their neighborhood were also noticed by many subjects.

b) Sense of community: Many subjects declared that their neighborhood is known for its sense of community. Additionally, the community of Northgate Park was described as a friendly and involved community. Some subjects think that the neighborhood’s sense of community is nurtured mostly via the neighborhood listserv.

c) Diversity: Many subjects perceived the diversity of Northgate Park in terms of race, sexual orientation, economic conditions, income level, ethnicities, environmental concerns, ages (generational), and years of living in Northgate Park Neighborhood. The neighborhood includes a mix of newly moved and long-time residents. Northgate Park was seen by its residents as a place with a variety of people and cultures.

6.3.9.3 Aesthetics and Greenery

a) Parks: The neighborhood park was one of the most liked items in the neighborhood. Many subjects stated that they use the park regularly. Subjects also demonstrated that they like the beautiful nature inside and around the park, and the easy access that the park provides to the greenway. The walking trails in the park were also admired by many subjects, as they are good venues for walking dogs and exercising.

b) Trees: The Northgate Park neighborhood has many tree-lined streets of large and mature hardwood trees and established gardens that many of the subjects like and appreciate in their neighborhood. The neighborhood in general was described as a mature and flexible neighborhood.
6.3.9.4 Neighborhood Character

The neighborhood was described as with quiet streets. It is a dog-friendly neighborhood; there are pets everywhere. Some subjects perceive the neighborhood as a safe place regardless of a few petty incidents or breaking-ins. Many adjectives were mentioned to describe the neighborhood including: affordable, unpretentious, picturesque, quiet, friendly, dog friendly, dense, promoting privacy, has a fun atmosphere, artsy, and politically progressive. Some subjects were glad that neighborhood is flexible. It is fine to let the grass get high sometimes or if they plant veggies in their front yard instead of the back one. The flexibility of the neighborhood was also exemplified in the possibility of raising chicken and putting clothlines.

6.3.9.5 Neighborhood Amenities

a) The neighborhood listserv: considered one of the important amenities that the neighborhood association provides

b) The Neighborhood Association: with the organized activities and events that the neighborhood association offers

6.3.10 What was disliked about Northgate Park Neighborhood?

Crimes:

• Frequent burglaries, petty crimes, thefts, drifters walking through
• Frequent break-ins and loitering
Neglected and Rundown Properties:
• Absentee rental property owners who do not monitor their tenants’ behavior
• Renters in Northgate Park who pay less attention to their houses and care less about the quality of their neighbors’ lives.

Far to Bike or Walk to Duke Campus:
• Although some subjects indicated that they selected the Northgate Park neighborhood due to its proximity to downtown and work or study places, some of them indicated that it is relatively far to bike or walk to work or to Duke Campus.

Listserv:
• Some racist comments, snootiness and verbal attack, bickering, and petty angry disagreement on the neighborhood listserv, especially to those who have different opinions on politics or religion.

Poor Quality of Sidewalks and Streets Conditions:
• Low quality sidewalks in Northgate Park
• The lack of sidewalks or consistent sidewalks in their neighborhood, which makes it harder to walk to downtown, campus, or grocery stores.
• Many roads in the neighborhood need maintenance and repair.
• The streets also lack streetlights.
• The neighborhood suffers poorly maintained gravel roads, poor drainage and wet soil in low places.
• There is a lack of street curbs for run off water.
Lack of Amenities:
- The west side of the neighborhood lacks grocery stores, coffee shops, bars, restaurants, library, shopping and retail area within a reasonable walking distance.
- The shopping center on the east side of the neighborhood is relatively far and is hard to walk to, as it is separated from the neighborhood by a major road—Roxboro Street.
- Northgate Park lacks more bus stops and bus routes to Duke Campus.

House Sizes:
- Some subjects indicated their dissatisfaction with the sizes of their houses and lots.
- There are not many houses in NP that are bigger than two bedrooms, which makes it harder to find a big enough house for larger families.

Speedy Cars:
- Northgate Park neighborhood needs more speed bumps, as there are many people who drive very fast through the neighborhood.
- The borders of the neighborhood (club, I85, Roxboro) are very busy roads.

Neighborhood School:
- There is no exclusive neighborhood school; the zone of the Club Boulevard Elementary School is not exclusively serving the entire neighborhood.

Lack of Diversity:
- Although some subjects stated that they liked their neighborhood because it is diverse, some subjects think that it’s not racially diverse enough.
6.3.11 Summary

The most important factors that attracted subjects to select Northgate Park Neighborhood are closeness or proximity to work/study, followed by the proximity to downtown and the neighborhood cultural aspects. The least important factor in the subjects’ selection of their neighborhood was the proximity to medical facilities. It appeared from the subjects’ comments that closeness or proximity to downtown was associated with the variety of destinations and amenities in downtown area. The majority of subjects (86%) agreed that they perceive a variety of destinations and places to visit and enjoy in downtown Durham. A high percentage of the subjects (71%) also agreed that there are a variety of destinations in and around Northgate Park neighborhood. The affordability and the ‘sustainable’ size of houses that make them suitable for couples or small families were the two most important factors in selecting housing in NP. Subjects agreed on the neighborhood walkability, which was associated (as it appeared from the subjects’ comments) with the variety of destinations in downtown and NP neighborhood. Also, street greenery and aesthetics played a role in perceiving neighborhood walkability. The sidewalks in the neighborhood did not gain the same perception or agreement on their presence or quality. Many of the subjects thought that their neighborhood lacks sidewalks and that the few sidewalks in the neighborhood are in poor condition. The major destinations that subjects were keen to visit were: downtown destinations, cultural places, creeks and trails, parks, retail and grocery, farmers’ market and restaurants.

Northgate Park (the park) and the dog park were perceived positively by the subjects due to their safety, visibility / easiness to find, satisfying size and good location. Subjects acknowledged the significance of the park to the health and well-being of their neighborhood. Residents of NP were very satisfied with their neighborhood and community. Their satisfaction with their neighborhood park and houses did not gain the same level of agreement. In terms of the subjects’ involvement and participation in their neighborhood, participating in social events and gatherings and meeting informally with neighbors to
discuss neighborhood problems were the two main forms of involvement/participation that subjects practice in their neighborhood.

Residents of Northgate Park are proud residents of their neighborhood. They agreed that they are attached or connected to it and that they plan to remain residents of NP for a number of years. They thought that Northgate Park is a special place for them. Through Northgate Park subjects’ comments about what they like about their neighborhood, the social features of the neighborhood were the most liked features, represented in neighbors, diversity, sense of community, and neighborhood social events. The physical features of the neighborhood followed in their likeness, and the main factors emphasized by the subjects were the proximate location of the neighborhood, neighborhood walkability, affordability and variety of housing alternatives, and the neighborhood park.

6.4 Old North Durham Neighborhood

Paper copies of the survey were distributed to 100 randomly selected households in Old North Durham (OND) neighborhood in addition to the electronic distribution of the survey (Qualtrics copy) through the neighborhood listserv. The response rate from the in-person distribution of the survey was 40%, and from the online copy 6%. Overall thirty-five correct and complete responses were received from Old North Durham neighborhood. The original number of responses was 41, but six surveys were eliminated due to incompletion. In terms of the gender and marital status of the respondents, 83% are females and 17% are males; more than half of the subjects (63%) are married or living with partners and 37% are single (divorced, widowed, or never married). Only one fifth of the subjects have children under the age of 12 living in their household.

Subjects vary in their ages: almost half of the subjects (46%) are in the age range of 41 to 60 years old, while 37% of them were ages 31 to 40. Only three percent are 20 to 30 years old, and 14% are over 60. The subjects of OND are very well educated, as 77% are professionals
with graduate degrees, while 20% are college graduates. The vast majority of the subjects (89%) have been living in Old North Durham for more than a year, and only 11% of them have been living there for just a year or less. In particular, one third of the subjects (31%) have been in Old North Durham for five years or less; 37% of them have been living there 5 to 15 years; 12% of the subjects have lived in OND 15 to 25 years; and 6% of the subjects have been in OND for 35 to 40 years. Almost all of the subjects (97%) live in single-family houses and 86% of them own their houses.

![Length of Residence in Old North Durham Neighborhood](image)

Figure 6.34 Length of Residence in Old North Durham Neighborhood

### 6.4.1 Reasons to Select Old North Durham Neighborhood

The first section of the study was concerned surveying the subjects’ perception of the reasons and features that attracted them to select Trinity Park as their place of residence. This section is investigating the subjects’ perception in terms of two main categories: the neighborhood location and amenities, and housing preferences. The locational categories were proximity to: downtown area, work and school, parks and playgrounds, friends, medical facilities, and the
neighborhood cultural aspects. The housing preferences or categories were house affordability, size, age, style, and lot size.

6.4.1.1 Neighborhood Location and Amenities
Old North Durham’s subjects disclosed their opinion of the importance level of each of the seven statements, listed under this section, in their selection of Old North Durham neighborhood as their place of residence, using a five point Likert scale. “Not at all important” was allowed one point, “unimportant” was equal to two points, “neither important nor unimportant” was allowed three points, “important” was worth four points, and “strongly important” was equal to five points.

Proximity to downtown (mean=4.23), followed by the neighborhood cultural aspects (mean=3.88) and closeness or proximity to work (mean=3.85) were the three features that scored the highest rates among the seven features provided. A large proportion of the subjects (85%) considered closeness to downtown an important/very important feature in their selection of OND. More than three quarters of the subjects (77%) thought the neighborhood cultural aspects were an important/very important reason in their selection of OND. Other reasons/features followed in their importance, such as closeness to friends (mean=3.12) and the existence of parks and playgrounds in the neighborhood (mean=2.67). The least important feature for the subjects in their selection of their neighborhood was the existence of ‘good schools’ in their neighborhood (mean=2.14).

6.4.1.2 Housing Features and Preferences
In terms of the subjects’ selection of their housing alternatives in OND and the features that contributed to this selection, the most important feature appears through the analysis to be house affordability (mean=4.71), followed by house size (mean=4.11) and house style (mean=3.97). A vast majority of the subjects (94%) thought that the affordability of their houses was very important in their selection of housing in OND. The two remaining factors,
lot size and house age, were not as important as the three factors listed earlier (means=3.57 and 3.68 accordingly).

Table 6.28 Rating of the Importance of Certain Locational Factors in Selecting OND Neighborhood

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all important</th>
<th>Unimportant</th>
<th>Neither important nor unimportant</th>
<th>Important</th>
<th>Very important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closeness to Work/Study</td>
<td>3 9%</td>
<td>0 0%</td>
<td>7 21%</td>
<td>13 38%</td>
<td>11 32%</td>
<td>34 100%</td>
</tr>
<tr>
<td>Closeness to Downtown</td>
<td>0 0%</td>
<td>2 6%</td>
<td>3 9%</td>
<td>14 41%</td>
<td>15 44%</td>
<td>34 100%</td>
</tr>
<tr>
<td>Neighborhood Cultural Aspects</td>
<td>0 0%</td>
<td>2 6%</td>
<td>6 18%</td>
<td>20 59%</td>
<td>6 18%</td>
<td>34 100%</td>
</tr>
<tr>
<td>Parks and playgrounds</td>
<td>5 15%</td>
<td>10 29%</td>
<td>11 32%</td>
<td>7 21%</td>
<td>1 3%</td>
<td>34 100%</td>
</tr>
<tr>
<td>Good Schools</td>
<td>12 35%</td>
<td>10 29%</td>
<td>8 24%</td>
<td>3 9%</td>
<td>1 3%</td>
<td>34 100%</td>
</tr>
<tr>
<td>Closeness to Friends</td>
<td>3 9%</td>
<td>7 21%</td>
<td>9 26%</td>
<td>13 38%</td>
<td>2 6%</td>
<td>34 100%</td>
</tr>
<tr>
<td>Medical Facilities</td>
<td>8 24%</td>
<td>6 18%</td>
<td>14 41%</td>
<td>6 18%</td>
<td>0 0%</td>
<td>34 100%</td>
</tr>
</tbody>
</table>
Figure 6.35 Importance of Locational Factors in Selecting OND Neighborhood

Table 6.29 Rating of the Importance of Certain Housing Features in Selecting Houses in OND Neighborhood

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all important</th>
<th>Unimportant</th>
<th>Neither important nor unimportant</th>
<th>Important</th>
<th>Very Important</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>House Size</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>3%</td>
<td>3</td>
<td>9%</td>
</tr>
<tr>
<td>House Affordability</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>House Age</td>
<td>2</td>
<td>6%</td>
<td>2</td>
<td>6%</td>
<td>6</td>
<td>17%</td>
</tr>
<tr>
<td>Lot Size</td>
<td>1</td>
<td>3%</td>
<td>3</td>
<td>9%</td>
<td>9</td>
<td>26%</td>
</tr>
<tr>
<td>House Style</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>9%</td>
<td>5</td>
<td>14%</td>
</tr>
</tbody>
</table>
Residents’ Perception of their Neighborhood Physical Features

The study hypothesizes that certain factors can presumably contribute to establishing a sense of place identity and place attachment on a neighborhood level. Therefore, the second part of the study was more focused on the subjects’ perception of the physical and social features that presumably relate to residents’ connection and attachment to Trinity Park neighborhood. These factors under investigation are: perceived neighborhood walkability, parks’ and playgrounds’ availability and quality, neighborhood involvement, residential satisfaction, and neighboring.

6.4.2 Neighborhood Walkability, Site Design and Amenities

Subjects were asked about their perception of the quality of their neighborhood’s physical features and amenities such as walkability, trees and greenery, sidewalks, and the variety of destinations within the neighborhood and in Downtown Durham. In terms of neighborhood
walkability, there was a general agreement among the subjects (86%) that their neighborhood is walkable (mean=4.22). The sidewalks in the neighborhood did not gain nearly the same level of agreement; 54% of the subjects do not agree that their neighborhood’s sidewalks are good or nice (mean= 2.72). On the other hand, 88% of the subjects think that OND neighborhood has old and mature trees (mean= 4.2). In regards to the variety of destinations, 94% of the subjects agree that Durham downtown has a variety of places to visit and enjoy (mean= 4.41), and 62% of them think that their neighborhood contains a variety of places to go to and enjoy (mean= 3.64). A high percentage of the subjects (85%) think their neighborhood is safe (mean=3.35).

Table 6.30 Participants’ Perception of OND Walkability and Amenities

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Neighborhood Walkability</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>9%</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>Sidewalks Quality</td>
<td>4</td>
<td>12%</td>
<td>14</td>
<td>42%</td>
<td>4</td>
<td>12%</td>
</tr>
<tr>
<td>Streets Greenery</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>3%</td>
<td>3</td>
<td>9%</td>
</tr>
<tr>
<td>Neighborhood Safety</td>
<td>1</td>
<td>3%</td>
<td>4</td>
<td>12%</td>
<td>11</td>
<td>32%</td>
</tr>
<tr>
<td>Variety of Destinations in Downtown</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>Variety of Destinations in OND Neighborhood</td>
<td>0</td>
<td>0%</td>
<td>5</td>
<td>15%</td>
<td>8</td>
<td>24%</td>
</tr>
</tbody>
</table>
6.4.3 Parks and Playgrounds

Subjects were asked about their perception of the park that they usually visit. Information concerning the frequency of visiting that park as well as the activities taking place in the park was also collected. Sixty percent of the subjects indicated that they usually visit Durham Central Park, while 23% visit Trinity Park. In terms of the frequency of visiting their favorite park, more than half of the subjects (54%) visit their favorite park one to three times a month, while 26% of them visit it one to three times a week. Only six percent of the subjects asserted that they always visit their favorite park. In regards to the transportation means that the subjects usually use to go to their park, the majority of the subjects (91%) walk to their favorite park as a sort of exercise, while six percent drive, and three percent bike.
Table 6.31 The frequency of Visiting OND Parks and the Way to go to it

<table>
<thead>
<tr>
<th>Frequency of Visiting the Park</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rarely</td>
<td>5</td>
<td>14%</td>
</tr>
<tr>
<td>1-3 times a month</td>
<td>19</td>
<td>54%</td>
</tr>
<tr>
<td>1-3 times a week</td>
<td>9</td>
<td>26%</td>
</tr>
<tr>
<td>Daily</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>35</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Way to go to the park</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>Walk</td>
<td>32</td>
<td>91%</td>
</tr>
<tr>
<td>Bike</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Carpool</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>35</td>
<td>100%</td>
</tr>
</tbody>
</table>

OND subjects varied in the types of activities they engage into in their park. A large number of subjects visit Durham Central Park to shop at the farmers market. Many subjects visit the park as well to walk their dogs, attend concerts and events, or to exercise. Some of the subjects visit the park with their children so they can use the children’s playground. Few subjects go to the park to meet with friends or read.

Subjects were asked about their perception of their favorite park and its associated features such as whether it is easy to find (legibility), location, size, significance, safety and connectivity. And since the majority of the subjects (60%) indicated that they visit Durham Central Park, this part of the analysis only focus on subjects’ perception of Durham Central Park and its features. In general, OND subjects have positive and high perception of Durham Central Park. When asked about the perceived safety of the park, subjects indicated that the park is a safe place to use during the day (mean=4.61). There was also agreement among the subjects that the park is legible or easy to find (mean=4.42). However, the size of the park and the location of the park did not gain the same level of agreement with means of 3.76 and
3.85 accordingly. More than three-quarters of the subjects (85%) approve that Durham Central Park is a significant element for the health of their neighborhood (mean=4.14), while only 57% of them think that it plays a role in connecting them to other residents of OND (mean= 3.66).

Figure 6.38 Activities Taking Place in OND Parks

6.4.4 Residential Satisfaction

When asked about their residential satisfaction, 88% of the subjects indicated that their satisfaction with OND neighborhood is the highest (mean=4.77), followed by their satisfaction with their houses (mean=4.22) and then satisfaction with the Old North Durham community (4.2). The lowest satisfaction level was with the neighborhood park (mean=3.74) (figure 6.40).
Table 6.32 Participants’ Perception of OND Neighborhood Parks

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n %</td>
<td>N %</td>
<td>n %</td>
<td>n %</td>
<td>n %</td>
<td>n %</td>
</tr>
<tr>
<td>Park’s safety</td>
<td>0 0%</td>
<td>0 0%</td>
<td>1 3%</td>
<td>16 46%</td>
<td>18 51%</td>
<td>35 100%</td>
</tr>
<tr>
<td>The Park is easy to find</td>
<td>0 0%</td>
<td>1 3%</td>
<td>3 9%</td>
<td>13 37%</td>
<td>18 51%</td>
<td>35 100%</td>
</tr>
<tr>
<td>Park’s Role in Connecting Neighbors</td>
<td>0 0%</td>
<td>9 26%</td>
<td>10 29%</td>
<td>11 31%</td>
<td>5 14%</td>
<td>35 100%</td>
</tr>
<tr>
<td>Park’s Significance</td>
<td>0 0%</td>
<td>4 11%</td>
<td>5 14%</td>
<td>17 49%</td>
<td>9 26%</td>
<td>35 100%</td>
</tr>
<tr>
<td>Satisfying size of the Park</td>
<td>1 3%</td>
<td>3 9%</td>
<td>5 14%</td>
<td>19 54%</td>
<td>7 20%</td>
<td>35 100%</td>
</tr>
<tr>
<td>Good Location of the Park</td>
<td>0 0%</td>
<td>1 3%</td>
<td>7 20%</td>
<td>20 57%</td>
<td>7 20%</td>
<td>35 100%</td>
</tr>
</tbody>
</table>

Figure 6.39: Subjects’ Perception of their Neighborhood Park
Table 6.33 Residential Satisfaction in OND Neighborhood

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Satisfaction with OND Neighborhood</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>6%</td>
<td>2</td>
<td>6%</td>
</tr>
<tr>
<td>Satisfaction with House</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>3%</td>
<td>5</td>
<td>14%</td>
</tr>
<tr>
<td>Satisfaction with OND Park</td>
<td>0</td>
<td>0%</td>
<td>5</td>
<td>14%</td>
<td>8</td>
<td>23%</td>
</tr>
<tr>
<td>Satisfaction with OND Community</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>3%</td>
<td>2</td>
<td>6%</td>
</tr>
</tbody>
</table>

![Graph showing residential satisfaction in OND Neighborhood](image)

Figure 6.40 Residential Satisfaction in OND Neighborhood
6.4.5 Residents’ Involvement and Participation in their Neighborhood

Although many of the subjects showed high and positive perception of their community and neighborhood physical features and amenities, only few of them often get involved in their community discussions, meetings or events. Amongst the four sorts of engagement and involvement in the community provided in the questionnaire, “participating in the neighborhood social events and gatherings” and “meeting with neighbors to discuss neighborhood problems” were the two main activities that gained the most frequency by the subjects. Eleven out of the 35 subjects indicated that they often meet with their neighbors to discuss neighborhood problems and similarly eleven OND subjects revealed that they often participate in the neighborhood social events and gatherings.

Table 6.34 Participants’ Involvement and Participation in OND Neighborhood

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Meeting with neighbors to discuss neighborhood problems</th>
<th>Attending the neighborhood association meetings</th>
<th>Cleaning the Park</th>
<th>Participating in social events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Often</td>
<td>22</td>
<td>29</td>
<td>32</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>63%</td>
<td>83%</td>
<td>91%</td>
<td>54%</td>
</tr>
<tr>
<td>Often</td>
<td>11</td>
<td>3</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>31%</td>
<td>9%</td>
<td>6%</td>
<td>31%</td>
</tr>
<tr>
<td>Very Often</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>6%</td>
<td>9%</td>
<td>3%</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

6.4.6 Neighboring Activities

Subjects were asked to identify the number of friends they have in OND neighborhood and in adjacent neighborhoods such as Trinity Park, Duke Park and Northgate Park. Approximately half of the subjects (55%) have one to six friends in Old North Durham neighborhood, and 21% of them have more than 12 friends. In terms of the number of friends in adjacent
neighborhoods, more than half of the subjects (56%) have one to six friends in those neighborhoods, and only one fifth of them have more than 12 friends. Also, the subjects were asked to identify the number of neighbors they know by first name. It was found that 15% of the subjects know all or almost all of their neighbors’ first names, while 35% know more than half of them.

Table 6. 35 Number of Friends and Acquaintances in OND Neighborhood

<table>
<thead>
<tr>
<th>Number</th>
<th>Number of friends in Duke Park</th>
<th>Number of Friends in adjacent neighborhoods</th>
<th>Neighbors known by first name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>9</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>4-6</td>
<td>10</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>7-9</td>
<td>6</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>10-12</td>
<td>2</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>More than 12</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>35</td>
<td>35</td>
</tr>
</tbody>
</table>

In regards to the frequency of subjects’ participation in favorite activities with their nearby neighbors, almost one quarter of the subjects (26%) indicated that they rarely partake in activities with their neighbors, while 38% of them sometimes do, and only 8% of the subjects frequently share activities with their neighbors. Subjects were also asked about the frequency of doing favors for their neighbors. Almost 44% of them said that they rarely do favors for their neighbors, and 32% of them said that they sometimes do.
Table 6.36 Neighboring Activities in OND Neighborhood

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Participating in favorite activities with neighbors</th>
<th>Doing favors for neighbors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Rarely</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Sometimes</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Frequently</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Always</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>35</td>
</tr>
</tbody>
</table>

6.4.7 Measuring Residents’ Place Attachment

Nine statements were given to the respondents in order to measure their place attachment score. These statements are indicated in the table/figure….below. Respondents disclosed their agreement level with each of these nine statements, using a five-point Likert scale: strongly disagree, disagree, neither agree nor disagree, agree, strongly agree. For each strongly disagree one point was given, for disagree two points, for neither agree nor disagree three points, for agree four points, for strongly agree five points. The average score of the sum of the nine statements was used to develop the place attachment score.

The subjects of OND neighborhood were found to be generally proud residents of their neighborhood (mean=4.42) who plan to remain residents of OND for a number of coming years (mean=4). A large number of the subjects declared that they are attached or connected to their neighborhood (mean=4.05). However, not many of them agree that no other neighborhood compares to OND (mean=3.25), or that they are similar to most of the neighborhood residents (mean=3.45). The average score of place attachment of Old North Durham’s subjects is 3.91, with a standard deviation of 0.69.
Table 6.37 OND Participants’ Place Attachment Index

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>I pride myself of living in OND neighborhood</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>4</td>
<td>11%</td>
</tr>
<tr>
<td>I am attached to OND</td>
<td>1</td>
<td>3%</td>
<td>2</td>
<td>6%</td>
<td>4</td>
<td>11%</td>
</tr>
<tr>
<td>Plan to remain a Resident of OND</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td>3%</td>
<td>7</td>
<td>20%</td>
</tr>
<tr>
<td>OND the best neighborhood for me</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>9%</td>
<td>4</td>
<td>11%</td>
</tr>
<tr>
<td>OND Special place to me</td>
<td>1</td>
<td>3%</td>
<td>1</td>
<td>3%</td>
<td>3</td>
<td>9%</td>
</tr>
<tr>
<td>I am similar to people living here</td>
<td>1</td>
<td>3%</td>
<td>2</td>
<td>6%</td>
<td>16</td>
<td>46%</td>
</tr>
<tr>
<td>No other neighborhood compares to OND</td>
<td>1</td>
<td>3%</td>
<td>6</td>
<td>17%</td>
<td>16</td>
<td>46%</td>
</tr>
<tr>
<td>Identify Strongly with OND</td>
<td>1</td>
<td>3%</td>
<td>0</td>
<td>0%</td>
<td>10</td>
<td>29%</td>
</tr>
<tr>
<td>OND says a lot about me</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>12</td>
<td>34%</td>
</tr>
</tbody>
</table>

6.4.8 What is Liked about Old north Durham neighborhood?

Open-ended questions surveyed the subjects’ opinion and perspective of what they like and dislike about their neighborhood. Subjects’ comments of what they like were grouped under five main categories: 1) physical and locational factors, 2) social and communal factors, 3)
neighborhood amenities, 4) aesthetics and greenery, and 5) neighborhood character. A count of the number of times certain words relevant to the main five categories indicated above repeated by the subjects were used to plot a graph demonstrating which of the factors/features were liked the most.

Figure 6.41 Place Attachment Index in OND Neighborhood
6.4.8.1 Physical and Locational Factors

a) Proximate Location

Old North Durham Neighborhood is on a proximate location to many venues and destinations in Durham. This advantageous location was addressed and emphasized by the subjects. Particular destinations were repeatedly mentioned such as downtown Durham, work, restaurants and bars, farmers market, friends, shopping, culture, church, and parks, etc.

![Figure 6.42 Most Visited Destinations in OND Neighborhood](image)

c) Neighborhood Walkability: The walkability of the neighborhood was agreed upon by many of the subjects. Subjects perceived their neighborhood as a walkable neighborhood that provides them with the opportunity to walk to various destinations and places such as work, downtown, restaurants, bars, Durham Central Park, Duke Park, and the farmers’ market.

d) Housing: OND includes many older houses that were built around the beginning of the 20th century and that vary in their architectural styles. Many subjects declared that they
like the historic sense of OND houses and their diversity of age and style: “not cookie cutter.” OND houses were also described as beautiful and well maintained.

![Figure 6.43: Most Liked Physical Features in OND Neighborhood](image)

**6.4.8.2 Social and Communal Factors**

a) **Neighbors:** OND residents value and appreciate their neighbors. Many subjects indicated that they like their neighbors and that they consider them a main factor in making their neighborhood successful. The neighbors in OND were described as friendly, helpful, hospitable, great, caring and watchful. Also, those neighbors seem to “share the same political views,” and usually form “unity for creating a safe neighborhood.” In addition to the description of the nearby neighbors, many subjects asserted that they generally like the people of OND. They described OND people as liberal, friendly, young, helpful, kind, and socio-political engaged.

b) **Sense of community:** OND was described in one the comments as an Internet community, or a community linked through online means such as emails and an
electronic listserv. Some subjects indicated that they like the sense of place and the sense of community that the neighborhood develops and projects.

c) **Diversity:** The diversity of the residents and their racial, and economic backgrounds as well as age were highlighted by many subjects as being a major factor of why they like living in OND. Also, subjects indicated that OND enjoys a sense of tolerance and welcomes diversity of people.

6.4.8.3 **Aesthetics and greenery:**
The aesthetics and greenery of the neighborhood were also admired by many subjects. Subjects stated that they like the many beautiful, mature and old trees and tree-lined streets in OND.

6.4.8.4 **Neighborhood character:**
Subjects perceive their neighborhood character as friendly, beautiful, historic, quiet, and affordable. In addition, subjects value the ongoing revitalization efforts in the neighborhood and think that it adds potentiality to OND.

6.4.8.5 **Neighborhood Amenities (Listserv):**
The neighborhood listserv was cited twice in the subjects’ comments as one of the things they like about their neighborhood.

6.4.9 **What do Subjects Dislike about OND Neighborhoods?**
Some of the reasons for which subjects liked their neighborhood have gained some criticism from other subjects. Subjects’ opinions varied in regards to the following factors:
Schools
• Lack of a good neighborhood school, and good school system

Trees
• Some dying trees in the neighborhood

Crimes
• Complaints about the “ongoing crime issues” in OND
• Occasional thefts and break-ins
• Lack of the feeling of safety and security, especially while walking at night

Neighborhood Character
• Possible gentrification in their neighborhood
• Some signs of economic disparity and lack of unity

Figure 6.44 The Most Liked Social Features
• Lack of privacy
• Some remarks of racism in the neighborhood, such as: “Jim Crow Racism,” “lack of integration with Latino and African Americans who live in lower-income housing,” and “white people do not feel that the minority community, mostly Latino and black, are really part of the neighborhood.”
• The unwatched stray dogs cause some troubles for some subjects

Lack of Maintenance:
• The poorly managed rental properties
• Some parts of the neighborhood are relatively neglected
• The neglect of the neighborhood parks, especially Old North Durham Park
• According to some subjects all the parks in the area need maintenance work

Traffic and Noise
• The traffic on busy streets
• Speedy cars
• Traffic noise

Sidewalks
• There is a lack of good sidewalks. The few sidewalks in OND are low quality, poorly repaired, “cracked and irregular.”

Listserv
• Many ‘unrelated and inappropriate comments’ on the listserv
• “Some discussions can turn to rants with hostility towards neighbors and non-white people”
• “Lots of tensions on the listserv.”
Neighbors
• “The lack of involvement by some neighbors”

Lack of Amenities
• Lack of walking distance amenities in OND neighborhood, such as drugstores, coffee shops, and grocery stores

Infrastructure
• “Poorly kept roads, and sidewalks”
• “Ugly power poles”
• “Insufficient land to garden”

6.4.10 Summary
The most important factors that attracted subjects to select Old North Durham neighborhood to be their place of residence were closeness or proximity to downtown, followed by the proximity to work/study. The neighborhood cultural aspects came in the third place. The least important factor in the subjects’ selection of their neighborhood was the proximity to good schools. It appeared from the subjects’ comments that closeness or proximity to downtown was associated with the variety of destinations and amenities in the downtown area. The majority of subjects (94%) agreed that they perceive a variety of destinations and places to visit and enjoy in downtown Durham. More than half of the subjects (62%) also agreed that there are a variety of destinations in and around Old North Durham neighborhood. The affordability, style and the size of houses in Old North Durham were the most important factors in selecting housing in the neighborhood. Subjects agreed on the neighborhood walkability, which was associated (as it appeared from the subjects’ comments) with the variety of destinations in the downtown area and around the OND neighborhood. Also, street greenery and aesthetics played a role in perceiving the neighborhood’s walkability. The sidewalks in the neighborhood did not gain the same
perception or agreement on their presence or quality. The major destinations that subjects were keen to visit were downtown destinations, restaurants and bars, the farmers’ market, parks, and shopping.

Durham Central Park was perceived positively by OND subjects due to its safety, visibility / easiness to find, size and location. Subjects of OND acknowledged the significance of the park to the health and well-being of their neighborhood. Residents of OND were very satisfied with their neighborhood, community, and houses. Their satisfaction with their neighborhood park (Old North Durham Park) did not gain the same level of agreement or satisfaction. In terms of the subjects’ involvement and participation in their neighborhood, participating in social events and gatherings and meeting informally with neighbors to discuss neighborhood problems were the two main forms of involvement/ participation that subjects practice in their neighborhood.

Residents of Old North Durham were found to be proud of their neighborhood. They agreed that they are attached or connected to OND and that they plan to remain residents of this neighborhood for a number of years. The majority of subjects thought that OND is the best neighborhood for them, and it is a special place for them. A number of subjects believe that OND neighborhood says a lot about who they are. Through OND subjects’ comments about what they like about their neighborhood, the proximate location of the neighborhood to many venues and destinations in the downtown area, the neighborhood walkability, and the variety of housing in OND were the most liked physical factors. The neighborhood character was admired by many subjects and they described it as friendly, beautiful, historic, quiet, and affordable.

6.5 The Relationship between the Perception of the Physical Variables and Place Attachment

The questionnaire responses from the four neighborhoods (case studies) were grouped in one composite analysis. The overall aim was to compare the subjects’ perception of their
neighborhood’s physical and social features to their level of place attachment, in order to investigate whether there is a relationship between them. In other words, the goal was to investigate if the perception of physical variables and/or social variables in the neighborhood relates to and can predict residents’ place attachment. Spearman’s Rho correlational analyses were run to identify whether there is a relationship between subjects’ perception of the physical and social features of their neighborhood and their level of place attachment. The results of these analyses are indicated in tables 6.39 and 6.40. Table 6.39 shows the correlation values and their associated P-values, indicating the significance of the relationship between the physical variables and place attachment. There were positive and significant relationships between all of the variables listed in table# and place attachment. These correlational relationships were significant at the 0.05 level. However, the strength of these relationships differed among variables.

There is a positive and significant correlation detected between the subjects’ perception of the importance of Neighborhood Parks and playgrounds and their level of place attachment. Positive perceptions of features relevant to the neighborhood park were also found to relate significantly to the subjects’ attachment to place. These features are the park’s size, location, connectivity role, significance and safety. However, the strongest relationship was detected between the subjects’ level of place attachment and the perceived role of the park in connecting neighbors to each other with (r= 0.32).
Table 6.38 Physical Variables Correlating to Place Attachment

<table>
<thead>
<tr>
<th>Physical Variables</th>
<th>Place attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variety of Destinations in the neighborhood</td>
<td>$r=0.35$, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Park Connectivity</td>
<td>$r=0.32$, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Neighborhood Walkability</td>
<td>$r=0.30$, P-value=0.0001</td>
</tr>
<tr>
<td>Variety of destinations in Durham downtown</td>
<td>$r=0.26$, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Park location</td>
<td>$r=0.24$, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Street quality Index</td>
<td>$r=0.25$, P-value=0.0001</td>
</tr>
<tr>
<td>The existence of Good Schools in the neighborhood</td>
<td>$r=0.21$, P-value=0.0003</td>
</tr>
<tr>
<td>House Age</td>
<td>$r=0.2$, P-value=0.0002</td>
</tr>
<tr>
<td>Park Safety</td>
<td>$r=0.21$, P-value=0.0003</td>
</tr>
<tr>
<td>Lot Size</td>
<td>$r=0.20$, P-value=0.0005</td>
</tr>
<tr>
<td>House Style</td>
<td>$r=0.19$, P-value=0.0012</td>
</tr>
<tr>
<td>Park Size</td>
<td>$r=0.19$, P-value=0.0012</td>
</tr>
<tr>
<td>Park Significance</td>
<td>$r=0.19$, P-value=0.0013</td>
</tr>
<tr>
<td>Park Legibility</td>
<td>$r=0.19$, P-value=0.0014</td>
</tr>
<tr>
<td>Nearby Medical Facilities</td>
<td>$r=0.18$, P-value=0.002</td>
</tr>
<tr>
<td>Neighborhood proximity to Durham downtown</td>
<td>$r=0.15$, P-value=0.0109</td>
</tr>
<tr>
<td>The existence of parks and playgrounds</td>
<td>$r=0.14$, P-value=0.02</td>
</tr>
<tr>
<td>House Size</td>
<td>$r=0.14$, P-value=0.013</td>
</tr>
</tbody>
</table>

There was also a positive, significant, and relatively strong relationship between the subjects’ level of place attachment and the perceived variety of destinations within the neighborhood and the downtown area. Proximity and convenience to these destinations are also mentioned as something subjects like about their neighborhood. Proximity to other major service amenities such as schools and medical facilities were found to relate to the subjects’ level of place attachment. Another positive and significant relationship is detected between the subjects’ attachment to place and the importance of the neighborhood’s proximate location to the downtown area. With less strong relationship, housing properties—size, age, style, and lot size—were found to relate positively and significantly to place attachment. The perceived
walkability of the neighborhood, or how the neighborhood site design permits and allows pedestrian movement, was detected through the analysis to relate to the subjects’ level of place attachment. With a close level or degree of relationship comes the street quality index—combining the sidewalks’ quality and streets’ greenery. The presence and quality of streets’ sidewalks and tree cover relate positively and significantly to the subjects’ place attachment.

6.6 The Relationship between the Social Variables and Place Attachment

Table 6.40 below shows the relationship between the social variables and the subjects’ level of place attachment. Correlation values and their associated P-values indicating the significance of the relationship between the physical variables and place attachment are presented in table 6.40 below. There were positive and significant relationships between all of the variables listed in the table and place attachment. These correlational relationships were significant at the 0.05 level. However, the strength of these relationships differs among variables.

In terms of subjects’ involvement and participation in their neighborhood’s events and gatherings, the frequency of subjects meeting informally with other neighbors to discuss neighborhood problems was found to relate to the subjects’ place attachment. Subjects’ participation in their neighborhood events also relates positively and significantly to place attachment. With less strong yet positive and significant relationship, the frequency of attending the neighborhood association meetings related to the subjects’ level of place attachment. The number of friends that the subjects have in their neighborhood relates to their connection and attachment to place. There was a relatively weak relationship detected between the level of place attachment and these variables: 1) the number of neighbors that the subjects know by first name; 2) the frequency of subjects sharing favorite activities with their neighbors; 3) and the frequency of subjects doing favors for their neighbors. Subjects’ perception of the cultural aspects that the neighborhood holds, represented in values such as diversity and tolerance, relates positively and significantly to the subjects’ attachment to
place. There is a strong relationship between place attachment and the subjects’ satisfaction with their neighborhood, community, housing and neighborhood park. However, the strongest of these relationships is the subjects’ satisfaction with their neighborhood and community. Agreeing with the literature review, the length of residence in the neighborhood also relates to the subjects’ level of place attachment, positively and significantly.

Table 6.39 Social Variables Correlating to Place Attachment

<table>
<thead>
<tr>
<th>Variable</th>
<th>Place Attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood Satisfaction</td>
<td>r=0.59, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Community Satisfaction</td>
<td>r=0.57, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Number of friends in the neighborhood</td>
<td>r=0.405, P-value&lt;0.0001</td>
</tr>
<tr>
<td>House Satisfaction</td>
<td>r=0.39, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Neighborhood Cultural Aspects</td>
<td>r=0.38, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Participating in the neighborhood events and gatherings</td>
<td>r=0.34, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Meeting Informally with neighbors to discuss neighborhood problems</td>
<td>r=0.34, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Park Satisfaction</td>
<td>r=0.31, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Length of Residence</td>
<td>r=0.30, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Attending the Neighborhood Association Meetings</td>
<td>r=0.19, P-value=0.0013</td>
</tr>
<tr>
<td>Number of neighbors known by first name</td>
<td>r=0.16, P-value=0.005</td>
</tr>
<tr>
<td>The frequency of sharing favorite activities with neighbors</td>
<td>r=0.15, P-value=0.0072</td>
</tr>
<tr>
<td>The frequency of doing favors to neighbors</td>
<td>r=0.15, P-value=0.0087</td>
</tr>
</tbody>
</table>

6.7 The Relationship between Demographic Variables and Place Attachment

There was a correlational relationship detected between place attachment and the age of the subjects and their marital status.
Table 6.41 Demographic variables correlating to place attachment

<table>
<thead>
<tr>
<th>Variable</th>
<th>Place Attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents’ age</td>
<td>r=0.24, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Marital Status</td>
<td>r=0.18, P-value=0.0019</td>
</tr>
</tbody>
</table>

6.8 Regression Model #1: Physical Variables Associating with Place Attachment

Three linear regression models were constructed to identify which of the independent variables can predict subjects’ level of place attachment. The first model utilized only the physical variables as explanatory variables, while place attachment was the dependent variable. The results of the first model are shown in the table below.

It appeared through the analysis that a combination of physical and locational features can predict residents’ place attachment. Locational features included closeness to the downtown area and the perceived variety of amenities and destinations in downtown Durham and within the neighborhood. Additionally, neighborhood walkability seemed to be a significant variable in predicting place attachment. Other variables can predict place attachment on a neighborhood level, such as the existence of a neighborhood park and playgrounds and the positive perception of its related features, such as the significance of the park to the health of the neighborhood. The park is a significant component in predicting place attachment. The role that the park plays in connecting neighbors as well as the perceived safety of the park combined with the park’s significance to the health of the neighborhood were of the variables that predict place attachment. Street quality index was one of predictors of place attachment. This model used a street quality index, which is an average score of the perception of sidewalks and streets greenery. Almost (47%) of the variance in the subjects’ degree of place attachment was shared by this combination of physical variables in table xxx. These results suggest that a good deal of the individual differences (i.e., variance) among residents’ level
of place attachment were caused either by this combination of predictors or by other factors that were casually linked to them.

Table 6.42 Regression model #1: Physical variables Associating with Place Attachment

| Variable                              | B       | Standard of Error | Beta   | t Ratio | Prob>|t| |
|---------------------------------------|---------|-------------------|--------|---------|------|
| Constant                              | -1.1816 | 0.5255            | 0      | -2.25   | 0.0287|
| Park’s role in connecting neighbors   | 0.259   | 0.068             | 0.3803 | 3.77    | 0.0003|
| Variety of destinations in the neighborhood | 0.183   | 0.064             | 0.225  | 2.84    | 0.0054|
| Park’s significance                   | -0.231  | 0.0937            | -0.2649| -2.47   | 0.0153|
| Neighborhood Walkability              | 0.175   | 0.0769            | 0.186  | 2.28    | 0.0247|
| Proximity to Good Schools             | 0.12    | 0.053             | 0.225  | 2.34    | 0.0210|
| Park’s safety                         | 0.176   | 0.0835            | 0.177  | 2.12    | 0.0366|
| Parks and Playgrounds                 | -0.114  | 0.057             | -0.188 | -1.99   | 0.0491|
| Proximity to Medical Facilities       | 0.095   | 0.049             | 0.1522 | 1.94    | 0.0552|
| Variety of Destinations in Durham Downtown | 0.119   | 0.078             | 0.113  | 1.52    | 0.1315|
| Streets Quality                       | 0.0948  | 0.075             | 0.0983 | 1.25    | 0.214 |
| Proximity To Downtown                 | 0.079   | 0.068             | 0.0906 | 1.16    | 0.248 |

<table>
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<tr>
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<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F Ratio</th>
</tr>
</thead>
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<tr>
<td>Model</td>
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<td>27.97</td>
<td>2.542</td>
<td>8.74</td>
</tr>
<tr>
<td>Error</td>
<td>106</td>
<td>30.83</td>
<td>2.2909</td>
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<td>C.Total</td>
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<td>58.806</td>
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</tr>
</tbody>
</table>

R-Square= 0.475
R-Square Adj.=0.42
Root Mean Square Error=0.539

Mean of Response= 3.83
Observations=118
6.9 Regression Model #2: Social Variables Associating with Place Attachment

The second constructed regression model used only the social level of variables as explanatory variables, while place attachment was the dependent variable. And the results were as follows:

Table 6.43 Regression Model #2: Social Variables Associating with Place Attachment

| Variable                        | B     | Standard of Error | Beta  | t Ratio | Prob>|t| |
|---------------------------------|-------|-------------------|-------|---------|------|
| Constant                        | -0.0119 | 0.2236            | 0     | -0.05   | 0.957|
| Neighborhood Cultural Aspects   | 0.148 | 0.033             | 0.194 | 4.46    | <0.0001|
| Satisfaction with the neighborhood | 0.336 | 0.057             | 0.315 | 2.57    | <0.0001|
| Satisfaction with the Community | 0.288 | 0.0543            | 0.289 | 5.31    | <0.0001|
| Number of Friends in the neighborhood | 0.066 | 0.024             | 0.13  | 2.75    | 0.0063|
| Meeting informally with neighbors to discuss neighborhood problems | 0.122 | 0.060             | 0.098 | 2.02    | 0.0443|
| Attending neighborhood events and gatherings | 0.071 | 0.069             | 0.046 | 1.03    | 0.303|

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<thead>
<tr>
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<th>Mean Square</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>8</td>
<td>84.64</td>
<td>10.58</td>
<td>40.501</td>
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<tr>
<td>Error</td>
<td>267</td>
<td>69.75</td>
<td>0.26</td>
<td>Prob&gt;</td>
</tr>
</tbody>
</table>

R-Square= 0.475
R-Square Adj.=0.548
Root Mean Square Error=0.534
Mean of Response= 3.83
Observations=276
It was found through the analysis that a combination of social features can predict residents’ place attachment. The cultural aspects that the neighborhood projects, such as diversity and tolerance, were detected to be one of the predictors of place attachment. Subjects’ involvement in their neighborhood, represented in the frequency of their informal meetings with other neighbors to discuss neighborhood problems and the frequency of attending neighborhood events and gatherings, appeared to be two of the variables that can predict place attachment. According to the regression model #2 above, the number of friends that subjects have in their neighborhood can predict their level of place attachment. In addition, residential satisfaction, particularly satisfaction with neighborhood and community, can also predict place attachment.

Through using social variables in regression model #2, it can be stated that almost 55% of the variance in the subjects’ degree of place attachment was shared by this combination of social variables, appearing in table 6.43. This result suggests that a good deal of the individual differences (i.e., variance) among residents’ level of place attachment were caused either by this combination of predictors or by other factors that were linked to them.

6.10 Regression Model # 3: A Combination of Social and Physical Variables Associating with Place Attachment

A third regression model was run combining the physical and social variables that were found to relate to and predict the subjects’ level of place attachment. The results of this regression model were as follows:

It was found through the analysis that a combination of physical and social features can predict residents’ place attachment. Residential satisfaction, represented in subjects’ satisfaction with their neighborhood and community, were two of the variables predicting place attachment. Similar to regression model 2, the number of friends that the subjects have in their neighborhood relates to and can predict their level of place attachment.
Table 6.44 Regression Model #3: A Combination of Physical and Social Variables Associating with Place Attachment

| Variable                                           | B    | Standard of Error | Beta  | t Ratio | Prob>|t|   |
|---------------------------------------------------|------|-------------------|-------|---------|------|
| Constant                                          | 0.118| 0.288             | 0     | 0.41    | 0.68 |
| Satisfaction with the neighborhood                | 0.3303| 0.058             | 0.312 | 5.67    | <0.0001|
| Satisfaction with the Community                   | 0.268| 0.056             | 0.269 | 4.72    | <0.0001|
| Neighborhood cultural aspects                      | 0.147| 0.037             | 0.190 | 3.89    | 0.0001|
| Number of Friends in the neighborhood              | 0.064| 0.0245            | 0.129 | 2.63    | 0.0092|
| Park’s connectivity                                | 0.106| 0.041             | 0.14  | 2.53    | 0.0118|
| Street Quality                                    | 0.1034| 0.042            | 0.105 | 2.45    | 0.015 |
| Parks and Playgrounds in the neighborhood          | -0.087| 0.035            | -0.124| -2.44   | 0.0155 |
| Frequency of Meeting with neighbors to discuss Neighborhood problems | 0.138| 0.0588            | 0.113 | 2.35    | 0.0193|
| Good Schools                                       | 0.055| 0.029             | 0.093 | 1.85    | 0.0648|
| Park’s significance to the health of the neighborhood | -0.082| 0.053            | -0.085| -1.54   | 0.1245|
| Proximity to downtown area                         | -0.047| 0.0407           | -0.054| -1.18   | 0.2404|

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>11</td>
<td>86.33</td>
<td>7.84</td>
<td>30.389</td>
</tr>
<tr>
<td>Error</td>
<td>262</td>
<td>67.66</td>
<td>0.26</td>
<td>Prob&gt;</td>
</tr>
<tr>
<td>C.Total</td>
<td>274</td>
<td>154.00</td>
<td></td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

R-Square Adj.=0.56                                      Observations=274
Root Mean Square Error=0.542
Also, the frequency of subjects’ informal meetings with other neighbors to discuss neighborhood problems was one of the variables predicting place attachment. The presence of the neighborhood park and its associated features represented in its role in connecting neighbors and the significance to the health of the neighborhood were of the variables that associate place attachment. According to model #3, other physical variables are associated with place attachment, such as the streets’ quality, proximity to downtown and proximity to good schools.

Neighborhood satisfaction and community satisfaction are statistically significant variables associating with and relating to place attachment. A Spearman’s Rho correlational analysis suggested that subjects’ satisfaction with their neighborhood correlated to their perception of neighborhood walkability, streets’ quality, variety of destinations in downtown area and in their neighborhood, proximity or closeness to downtown, and the parks and playgrounds in the neighborhood. Three of these features/variables are included in model #3 among the variables that are associated with place attachment.

In addition, a Spearman’s Rho correlational analysis suggested that community satisfaction correlates positively and significantly with the frequency of meeting informally with neighbors to discuss neighborhood problems, the frequency of participating in neighborhood social events and gatherings, number of friends in the neighborhood, and number of neighbors known by first name. Two of these variables are among the variables associating with place attachment in model #3.
Table 6.45 Physical Variables Correlating to Neighborhood Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>Neighborhood Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood walkability</td>
<td>r=0.4, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Streets’ Quality</td>
<td>r=0.19, P-value=0.0009</td>
</tr>
<tr>
<td>Variety of destinations in downtown</td>
<td>r=0.22, P-value=0.0001</td>
</tr>
<tr>
<td>Closeness to downtown</td>
<td>r=0.17, P-value=0.0042</td>
</tr>
<tr>
<td>Variety of destination in the neighborhood</td>
<td>r=0.19, P-value=0.030</td>
</tr>
<tr>
<td>Parks and playgrounds in the neighborhood</td>
<td>r=0.12, P-value=0.04</td>
</tr>
</tbody>
</table>

Table 6.46 Social Variables Correlating to Community Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>Community Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>The frequency of meeting informally with neighbors to discuss neighborhood problems</td>
<td>r=0.22, P-value=0.0001</td>
</tr>
<tr>
<td>The frequency of participating in the neighborhood events</td>
<td>r=0.29, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Number of friends in the neighborhood</td>
<td>r=0.26, P-value&lt;0.0001</td>
</tr>
<tr>
<td>Number of neighbors known by first name</td>
<td>r=0.16, P-value=0.0056</td>
</tr>
</tbody>
</table>

Using social and physical variables, almost 56% of the variance in the subjects’ degree of place attachment was shared by this combination of social and physical variables, appearing in table 6.46. This result suggests that a good deal of the individual differences (i.e., variance) among residents’ level of place attachment were caused either by this combination of variables or by other factors that were linked to them.
CHAPTER 7

7 CONCLUSION & DISCUSSION

The main purpose of this study was to broaden the understanding of the concept of place attachment on a neighborhood level and to provide empirical knowledge of place attachment that can be utilized to suggest future design guidelines or recommendations. It was hypothesized throughout the study that objective characteristics of residents as well as their dwellings and neighborhoods are involved in producing and projecting a sense of attachment to place on a neighborhood level. Therefore, this study was an attempt to define key physical, social, and demographic features that are associated with and relate to place attachment on a neighborhood level.

Four central city neighborhoods in Durham, NC were investigated through a survey questionnaire exploring their residents’ perception of their neighborhood’s physical and social features. The questionnaire also included an index to measure the participants’ level of place attachment, which was generated from previous scales measuring place identity and place dependence, in addition to items generated from the literature on place attachment. The questionnaire survey also included open-ended questions that were used to confirm and support the quantitatively collected data in a way that does not skew the results or the responses of the participants.

First, the study analyzed the data within cases using descriptive statistics to summarize and present the quantitative data collected in a more meaningful and understandable way. Then, the data gathered from the four case studies or neighborhoods were combined in one composite analysis to test the research hypotheses and assumptions. The study investigated the relationship between participants’ levels of place attachment and their perception of specific physical features in their neighborhood, such as neighborhood location, street walkability, amenities, housing, and parks. Also, it explored the relationship between the
participants’ level of place attachment and their social relationships and experiences in their neighborhood, represented in neighboring activities, residential satisfaction, and involvement. The participants’ demographic information was also studied in relation to the participants’ degree of place attachment.

The study utilized a Spearman’s correlation coefficient as a data reduction technique in order to filter the social and physical independent explanatory variables to only the most significant ones to be compared to levels of place attachment. This method of analysis was used to measure the relationship between the independent variables (physical, social and demographic) and place attachment (dependent variable). Then, multiple regression analyses were conducted to measure the association level between the independent explanatory variables and place attachment. After conducting three regression equation models of three sets of variables -- social, physical, and a combination of physical and social -- a specific group of variables were found to be associated with place attachment.

7.1 Discussion of the Study Hypotheses and Findings
The study hypothesis (1) stated that: “participants’ positive perceptions of specific physical attributes, such as neighborhood location, walkability, street quality, housing, and parks will be associated with neighborhood place attachment through a regression equation model.” This hypothesis was partially confirmed, as it was found that approximately 42% of the variance of place attachment on a neighborhood level could be explained through a group of physical variables. These physical variables include: neighborhood location, especially in relation to downtown, good schools, and medical facilities. They also include the participants’ perception of the variety of amenities and destinations that they can visit and enjoy in both the neighborhood and in downtown. Neighborhood walkability and street quality, represented in sidewalks’ quality and street greenery, were two important factors in influencing place attachment. The park’s safety, significance to the neighborhood well-being, and role in connecting residents to their neighbors are the three main park features
associating with place attachment. Other physical variables did not show significant association with place attachment, including housing features (size, affordability, age, style, and lot size), neighborhood location in relation to work or study, and physical features of the park (size, location, and visibility).

The second hypothesis stated that: “a set of independent social variables and residents’ social activities and experiences in the neighborhood are associated with place attachment on a neighborhood level.” This hypothesis was also confirmed partially, as it was found that 55% of the variance in place attachment on a neighborhood level could be explained by a combination or a set of social explanatory variables. These variables are categorized under four categories: 1) neighborhood cultural aspects – diversity, acceptance and tolerance in the neighborhood; 2) residential satisfaction, especially satisfaction with the community and the neighborhood; 3) neighboring activities, specifically the number of friends participants have in their neighborhood; and 4) involvement and participation in the neighborhood. This last category was reflected in the frequency of participants’ involvement in informal sorts of interaction, such as meeting informally with neighbors to discuss neighborhood problems and attending neighborhood social events and gatherings.

Other social variables did not show significance in predicting or associating with place attachment. And these variables are:

- Number of friends in adjacent neighborhoods
- Number of neighbors known by first name
- Attending the neighborhood association meetings
- Volunteering in cleaning and maintaining the park
- Sharing favorite activities with neighbors
- Doing favors for closest neighbors
- Satisfaction with the neighborhood park
- Satisfaction with housing
Although neighboring was stated throughout the literature to be an important factor in influencing residential satisfaction and connecting people to their place, it did not appear through this study to be significant in predicting place attachment. This may be due to the fact that the new age of technology and communication might have liberated the residents from having to find and interact with friends and acquaintances in their neighborhoods. In addition, the neighborhoods are connected electronically through the neighborhoods’ listserv.

The study’s third hypothesis stated that: “residents’ demographic characteristics, such as age, gender, marital status, educational level, and homeownership, correlate significantly to levels of place attachment.” It was detected that only residents’ age and marital status correlate with levels of place attachment. Several covariates were not significantly associated with the sense of attachment at the bivariate level (i.e. level of education, gender, length of residence, and homeownership). Although it was assumed throughout the literature that place attachment correlates to residents’ length of residence and homeownership, the findings of this study contradicted this assumption. It can be suggested that residents of urban neighborhoods can develop faster connection and belonging to place.

Finally, the study predicted in its fourth hypothesis that: “a combination of social and physical independent variables adds significantly to the prediction of and association with place attachment, achieved through either of the previous regression models (physical or social).” This hypothesis was confirmed through the study results, as it was found that 56% of the variance in place attachment on a neighborhood level could be explained through a combination of physical and social variables. This combination of variables includes:

- Neighborhood location
  - Proximity to Downtown area
  - Proximity to Good Schools
- Street walkability
• Sidewalks quality
• Street greenery
• Neighborhood parks
  – Connectivity
  – Significance to the neighborhood wellbeing
• Neighborhood cultural aspects
• Neighborhood satisfaction
  – Neighborhood
  – Community
• Neighboring
  – Number of friends
• Involvement
  – Meeting informally with neighbors to discuss neighborhood problems
  – Attending neighborhood events and gatherings

7.2 Discussion of the Variables Associating with Place Attachment

7.2.1 Proximity to Downtown

The majority of participants (84%) consider the proximate location of their neighborhood, especially to the downtown area, to be the most important factor in their selection of their current neighborhood. Participants indicated that this proximate location of their neighborhood to downtown allows them the opportunity to visit different destinations and amenities such as restaurants, cafes, shopping places, and the farmers’ market. The short and walkable distance to downtown, besides the streets’ greenery and aesthetics, also facilitate walking to downtown. It can be suggested that it is not the downtown itself that participants connected to, but the variety of amenities, opportunities, and choices that it offers to its nearby residents and visitors. Residents are more connected and attached to a neighborhood that is well served with a variety of amenities and destinations that facilitate the opportunity
to residents to have different experiences and interactions and a variety of choices and lifestyles.

The “CEO of Cities” report, using 2005-2009 American Community Survey data on the migration of talented young adults to cities, stated that neighborhoods within three miles of central business districts have witnessed an increase in their population of college graduates (25-34 year olds) grow by an average of 26%. In the meantime, the outlying neighborhoods saw only a 13% growth rate. Downtown destinations have been for the last decade or so a driver for attracting new residents to move to central city or urban neighborhoods within a close proximity to downtown. The preference of central city neighborhoods could be due to the increase in jobs or employment in downtown, and also due to the desire to be close to the city’s cultural and entertainment amenities. Residents of central city neighborhoods seem to prefer recreational and entertainment destinations that are within a walking distance to their homes. Examples of these destinations are restaurants, shopping, cafes, parks, trails, greenways, farmers’ markets, and cultural destinations such as performing art centers and museums. The findings of this study confirm the claim that residents of urban neighborhoods seek a place with plentiful high-quality amenities and experiences and a variety of lifestyles.

Florida (2002) has stressed the importance of various active and informal street level amenities to attract newcomers and new tenants, in addition to available cultural amenities, recreational outdoor activities, café culture, and the arts (Florida, 2002). The results of this study support this claim that the variety of destinations and amenities is what many of the urban neighborhoods’ residents are looking for, and that is related to why they like these neighborhoods and what encourages them to stay and reside longer in their neighborhoods.

These facilities also allow the opportunity for more interaction and engagement, which was proven through the study’s findings. They are major factors in influencing connections between people and their neighbors as well as their neighborhood places. Through the
results, it can be stated that the closer the neighborhood is to downtown, the more this proximity is considered a major factor in the residents’ selection of their neighborhood and in their preference to reside longer. So destinations not only inside the neighborhood but also within a close proximity to residents, even outside the neighborhood, influence residents’ attachment and connection to place.

7.2.2 Amenities in the Neighborhood
As stated by Brower (1998), a good and attractive neighborhood is one that has a mix and intensity of land uses and forms of the physical environment, in addition to places such as parks, plazas, and stores that bring people together. It is also a neighborhood that has facilities encouraging leisure-time use and allowing people to socialize through activities. The perceived variety of destinations and amenities in the neighborhood, especially shopping and grocery places, parks, and restaurants, correlates positively and significantly with the subjects’ level of place attachment. This perception of the variety of neighborhood amenities and destinations is also among the physical variables associating with place attachment, as it appeared in model #1.

On the other hand, many subjects in their comments about what they dislike about their neighborhoods have stressed the fact that they needed more amenities in and around their neighborhoods, such as more grocery stores and cafes within walking distance. The results of this study have shown that residents of central city neighborhoods could want more facilities and amenities in their neighborhoods that are easy to walk to and access and that might help in connecting them to their neighborhoods.

7.2.3 Proximity to Good Schools
Although the proximity to good schools was not one of the most important factors in the participants’ selection of their current neighborhood, good schools were found to be major service facilities that are associated with participants’ attachment and connection to place.
Opinions about the quality of the neighborhoods’ schools varied throughout participants’ comments depending on their household status. Some of them considered their neighborhood school an asset and one of the likable things in their neighborhoods. Others expressed concerns that their neighborhood school is not in a good condition and needs much consideration. Some participants indicated that the school zoning system does not allow them to enroll their children into their neighborhood school, which causes some troubles that may lead them to move out from the neighborhood to seek better schools for their children.

7.2.4 Neighborhood Walkability

The neighborhood walkability and street quality were among the variables that are significantly associated with the subjects’ levels of place attachment. The street quality index combines the subjects’ perception of the sidewalks’ quality and the streets’ greenery and aesthetics. Although there is a low agreement among the participants (34%) that the sidewalks in their neighborhoods are in a good condition, a high percentage of them (93%) positively perceive and agree on their neighborhood walkability. This could be due to the nice ambience of streets and the greenery and aesthetics of the neighborhood, which the majority of the participants overwhelmingly perceive and agree upon (92%). It can be also due to the low traffic volume and quiet streets that the participants mentioned repeatedly in their comments. It was detected through the comments that the walkability of the neighborhood was the second most likeable feature in the studied neighborhoods. Many of these neighborhoods were described as walkable and bike-able, despite the lack of sidewalks in many parts of them. The nature, greenery and aesthetics of the neighborhoods seemed to motivate and promote walkability. Participants also believed that neighborhood walkability could promote interaction and sociability among residents, as it facilitates seeing and meeting other people.
7.2.5 Parks and Playgrounds
The presence of the parks and playgrounds in or on a close proximity to the neighborhoods under investigation was an important factor in the participants’ selection of their current neighborhood. The park’s physical features such as size, visibility, and location did not show significant impact on predicting place attachment. On the other hand, the park’s safety, significance to the health and well-being of the neighborhoods, and role in connecting residents to their neighbors showed a significant association with place attachment on a neighborhood level. The most agreed upon park feature was the safety of the parks (94%); the majority of the participants agreed that their neighborhood park is safe to use during the day. In terms of the connectivity of the parks, more than half of the participants (59%) agreed that their neighborhood park plays a role in connecting residents to their neighbors. In addition, a high percentage of the participants (88%) agreed that their neighborhood park is a significant component to the health and well-being of the neighborhood.

With the same percentage of agreement, 88% of the participants believe that their neighborhood park is in a good location in relation to the neighborhood layout. Although not every park under study was in a relatively central location in its neighborhood, participants perceived a good location of the park. There is a great agreement (95%) from the participants on their neighborhood park’s visibility or that the “park is easy to find.” This might be due to the good accessibility and visibility of most of those parks. Most of them are well served with several roads or streets. It may also be related to the size of the park or how it is spread out in the neighborhood, except for Trinity Park. A high percentage of the participants (81%) agree that the size of their neighborhood is satisfying in relation to the number of households in the neighborhood.

7.2.6 Neighborhood Cultural Aspects
Florida (2002) indicates that the creative class is usually drawn to places with diversity in ethnicities, races, ages, and sexual orientation, as diversity signifies excitement and energy
Tolerance is another important factor, indicating openness and inclusiveness to all backgrounds and walks of life (Florida, 2002). When asked about the importance of the neighborhood’s cultural aspects in their selection of their neighborhood, many participants placed this factor third after the proximity or closeness to downtown and work/study. Approximately three quarters of the participants (76%) consider the cultural aspects that their neighborhood bears important/very important factors in their choice of their neighborhood. The perception of these cultural aspects correlated and associated strongly with the participants’ attachment to place. Diversity of the neighborhoods under study was one of the major factors that participants liked and stressed in their comments. Many participants enjoyed the socio-economic, political, age, and racial diversity in their neighborhoods. However, some comments emphasized that this diversity is not sufficient, and that they want more “real” diversity. Many of them stressed that their neighborhoods are gay-friendly and family friendly.

7.2.7 Residential Satisfaction

The majority of the participants (92%) are satisfied or very satisfied with their current neighborhood. With a close level of agreement and a close percentage, 90% of the participants are satisfied with their community. It seems that participants perceive the quality of their neighborhood and community very positively. This can be interpreted that the participants’ perception of the actual conditions of their neighborhood or community does not differ greatly from their desired ones.

In this study, residents’ satisfaction with their neighborhood correlated to their positive perception of their neighborhood’s walkability, street quality, the variety of destinations within their neighborhood and in the downtown area and the existence of and proximity to neighborhood parks. It was stated throughout literature that neighborhood residential satisfaction involves neighboring behaviors, the frequency and quality of personal contact and interaction, and the degree to which residents work together towards common goals.
Throughout the results of this study, participants’ level of satisfaction with their community correlated to their involvement and engagement in their neighborhood and the interaction with their neighbors and friends. In addition, forms of involvement and participation in the neighborhood, reflected in their informal meetings with close neighbors to discuss neighborhood problems and the frequency of participating in the neighborhood events and gatherings, correlated significantly to participants’ satisfaction with their community.

7.2.8 Neighborhood Involvement

Although participants indicated that they are satisfied with their neighborhood and community, only a small percentage of them are involved or participate in their neighborhood. In terms of meeting informally with neighbors to discuss neighborhood problems, only 35% of the participants indicated that they either often or very often meet informally with their neighbors to discuss neighborhood issues or problems. With a higher percentage, 44% of the participants stated that they often or very often participate in neighborhood social events and gatherings.

7.3 Study Strengths

As indicated earlier, much of the previous literature on place attachment focused only on the social and phenomenological aspects in a neighborhood but overlooked the importance of specific physical features and the integration between physical, social, and demographic aspects. It is lacking when it comes to the physical variables/features that influence place attachment on a neighborhood level. One of the strengths of this study is that it attempted to identify the key physical and social variables correlating and associating with place attachment on a neighborhood level. In addition, an index measuring place attachment was developed based upon well-studied items from previous scales of place dependence and place identity. The index also included questions or items developed from the reviewed literature on place attachment. This index showed a high internal consistency when tested by Chronbach’s alpha equals to eight.
Urban neighborhoods received little attention in the literature regarding their valuable characteristics and assets that attract residents to move to and stay in them. The focus has been mostly on the assets of the nearby city center or downtown, but not on the particular features that add to the quality and desirability of those neighborhoods. Therefore, this study attempted to highlight the assets of urban neighborhoods. While this study does not examine the attitudes or behaviors of residents directly, it provided a look at people-place relationships and particularly place attachment as assets to motivate action and work towards the livability and well-being of neighborhoods.

The study closely examined or highlighted specific physical and social features on a neighborhood level. It also attempted to emphasize the relationship and the integration between these physical and social variables in order to create a better cohesive community and neighborhood. The social variables hypothesized to predict place attachment were selected based upon their potential relationship to the physical variables, such as cleaning or maintaining the park and participating in the park or the neighborhood events. The study investigated the physical and the social variables relating to subjects’ satisfaction with their neighborhood and community to confirm the results of physical and social variables associating with place attachment.

7.4 Study Weaknesses

There are several factors that may limit the generalizability of the findings. The study has some weaknesses, such as: 1) the bias sampling frame: residents who responded to the survey may be people who are especially and genuinely interested in the topic; 2) samples were conveniently selected for the purpose of the study; 3) case studies were selected purposefully and conveniently; 4) low response rate: although there were enough respondents to perform the necessary statistical procedures, the response rate was lower than what would have been ideal; 5) due to the different levels of help acquired from the neighborhood associations, unequal numbers of questionnaires were distributed in each neighborhood; 6) the
investigated neighborhoods contain different sizes of green spaces or parks; 6) these neighborhoods are also on different levels of regeneration and revitalization; and 7) analysis of the bivariate correlations revealed significant relationships between many of the hypothesized physical predictors and place attachment; however, most of the these bivariate correlations were not very strong (r equal to or less than 0.30).

Independence is one of the most basic assumptions underlying traditional linear and binary regression models. When the clustering structure in the data is ignored and the independence assumption is violated, the traditional linear and binary models tend to underestimate the standard errors. When observations are grouped in clusters of higher-level units, the observations are no longer independent. The fact that participants of this study are clustered in groups may violate the assumptions of independent observations because of the clustered nature of the data. Multi-level modeling is a technique that has been developed to analyze data and take into account this clustering of observations. In the case of this study, because of the limited number of group units under study (case studies/neighborhoods), this type of analysis was not utilized.

7.5 Implications for Design
It is suggested through the results of this study that residents of urban neighborhoods would seek a variety and intensity of land uses and a variety of local amenities in their neighborhood, especially within walking distance from where they live. The study suggests that these land uses might be distributed in a way that does not interrupt the privacy of residential settings, and/or does not interfere with the residential use of a space. Therefore, it can be suggested that a variety of amenities can be provided to residents on the fringes of a group/cluster of residential blocks. These amenities could be preferably distributed within walking distance and with easy access of the majority of the residents. These amenities could vary among leisure amenities such as cafes, restaurants, grocery stores, and shopping centers.
Other recreational amenities were also emphasized through participants’ comments and perception of their neighborhood, especially parks and playgrounds.

The study also suggests that neighborhood walkability could be promoted through design and redevelopment efforts. Literature stated that the quality of sidewalks could promote walkability, but the results of this study found that sidewalks’ quality may not significantly impact walkability. The streets’ greenery and aesthetics as well as calm traffic could be considered the two main factors in influencing positive perception of walkability, according to this study’s results. Therefore, the amount of greenery and aesthetics might be increased in a neighborhood in order to promote walkability. In addition, design solutions might be provided to ensure calm traffic and low traffic volumes on residential streets.

The perceived role of the park in connecting residents, and its significance to the neighborhood’s well-being were proven to be the two most important factors in connecting people to place. Participants were connected to the neighborhood park as an entity or a destination. Therefore, it is suggested that a park may be provided as a destination of green space and various activities in a neighborhood, which may help develop connections or ties between residents and their neighborhood. It was proved through the study that the size or the location of the park could be not as important as its visibility or accessibility—how well it is accessible and interwoven into the urban fabric. It is important that the park maintains an active, interactive and dynamic nature that serve a variety of uses and purposes.

Although housing did not show a correlation or an association with place attachment, it was proved through the subjects’ comments and answers on the open ended questions to be the second factor in what residents like about their neighborhood. They stressed the importance of providing a variety of housing that varies price and size and suits different sizes of families and orientations.
7.6 Implications for Future Research

Given the strengths and limitations of this study, there are many implications for future research and practice. It is important for future research studies to examine the difference of place attachment between older neighborhoods and new planned neighborhoods. Also, future research studies may focus on the difference of place attachment between people describing their connection to place through social aspects and social variables, and others describing their connection to place in terms of its physical aspects or features. The location of the neighborhood may also have an impact on changing or varying levels of place attachment. Therefore, the difference of place attachment can be studied between neighborhoods closer to downtown and amenities and other neighborhoods that are further away from downtown or in the suburbs. It can be also suggested that a study of place attachment in different neighborhoods characterized by different ethnic groups is needed to illustrate the relationship between social aspects and place attachment.

7.7 Concluding Statement

This study attempted to fill the gaps in the research and study of place attachment through examining four neighborhoods in Durham, NC. This study was an attempt to discover features in the built environment that relate to nurturing place attachment on a neighborhood level. It was intended to identify the key physical and social variables relating and associating with levels of place attachment on a neighborhood level. Through studying four case studies/neighborhoods, a correlational approach was adopted and multiple research methods were utilized, including questionnaire, interviews, and GIS.

It was found that the participants’ positive perception of specific physical features is associated with increasing levels of place attachment on a neighborhood level. These physical features were identified to be: the neighborhood location in relation to downtown and good schools; the street quality and walkability; the variety of amenities in and around the neighborhood; and parks and playgrounds. In addition, a group of social variables
reflecting participants’ social experiences and activities relate and associate with levels of place attachment on a neighborhood level. These social variables are: the number of friends in the neighborhood; residential satisfaction with neighborhood and community; informal meetings with neighbors to discuss neighborhood problems; attending neighborhood events and gatherings; and the neighborhood cultural aspects represented in values such as diversity and tolerance. Only age and marital status are the demographic variables that were found to correlate to the levels of place attachment. Other demographic variables that were proved throughout the literature to relate to place attachment such as homeownership and length of residence did not show a significant association with place attachment through this study.
REFERENCES


Mooney, P. (2009). The physical and social aspects of place attachment: Their role in self-sustaining communities. *TOPOS, 2*


Appendix A

Old North Durham Neighborhood

Dear Old North Durham Neighborhood Resident,

My name is Aliaa Elabd. I am a Ph.D. candidate at the College of Design, North Carolina State University. Old North Durham neighborhood is one of the case studies that I have selected for the purpose of my dissertation research. The objective of my study is to understand the main features and qualities of your neighborhood, and what it means to you as a resident.

Your opinion is highly valuable for this study, as it will help identify the strength factors of your community. Your answers to the below questionnaire will also assist in developing guidelines for future redevelopment of urban neighborhoods. This questionnaire can be completed by one member of the household, who will be included in a lottery to win one of two $40.00 value gift cards from Target. If you would like your name to be included in this lottery, please provide your name and address at the end of this questionnaire. Confidentiality of your responses is assured. Your completion of this form acknowledges your agreement to participate in the study. Please fill out this questionnaire and kindly return back to me at: Aliaa Elabd, PhD student, Care of: Dr. Robin Abrams, College of Design, NC State University, Campus Box 7701, Raleigh, NC 27695-7701.

I am willing to share the results of this research study with all interested residents and the community of Old North Durham upon request. I appreciate you taking time to fill out this questionnaire. For any questions or concerns, please do not hesitate to contact me. My e-mail address is: aelabd@ncsu.edu, and my cell phone number is: 512-791-8414.

Thanks!
Sincerely,
Aliaa Elabd

First I would like to ask you about the reasons for which you selected Old North Durham Neighborhood to move to and live in

1- How important was each of the following in your decision to move or live in Old North Durham Neighborhood? Please check the box that best describes the degree of importance for you of each statement.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all Important</th>
<th>Unimportant</th>
<th>Neither Important nor Unimportant</th>
<th>Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closeness to Work or Study</td>
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<td></td>
<td></td>
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<tr>
<td>Closeness to Downtown</td>
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<td></td>
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<td></td>
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<tr>
<td>Neighborhood Cultural Aspects</td>
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<td></td>
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<tr>
<td>Neighborhood History</td>
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<tr>
<td>Closeness to Medical Facilities</td>
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<tr>
<td>Parks and Children playgrounds</td>
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<td></td>
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<tr>
<td>Good Schools</td>
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</tr>
<tr>
<td>Closeness to Friends</td>
<td></td>
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</tr>
</tbody>
</table>

2- How important was each of the following in your choice of your current home? Please check the box that best describes the degree of each statement’s importance to you?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all Important</th>
<th>Unimportant</th>
<th>Neither Important nor Unimportant</th>
<th>Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>House Size</td>
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<tr>
<td>House Affordability</td>
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<tr>
<td>House Age</td>
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<tr>
<td>Lot size</td>
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<tr>
<td>House Style</td>
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</tbody>
</table>

3- How much do you agree or disagree with these statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old North Durham neighborhood is a walkable neighborhood.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>The streets of Old North Durham Neighborhood have nice trees.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The streets of Old North Durham have nice sidewalks.</td>
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<td></td>
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<tr>
<td>Old North Durham is a safe neighborhood.</td>
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<td></td>
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<tr>
<td>Downtown Durham has a variety of places to visit and enjoy.</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Old North Durham has a variety of places to visit and enjoy.</td>
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</tr>
</tbody>
</table>
Here I would like to ask you about your neighborhood park

4- Which park do you usually visit?
☐ Old North Durham  ☐ Bay-Hargrove Park  ☐ Durham Central Park  ☐ Trinity Park  ☐ Duke Park

5- How often do you visit this park?
☐ Rarely  ☐ 1-3 times a month  ☐ 1-3 times a week  ☐ Always

6- When you visit the park, do you usually?
☐ Drive  ☐ Walk  ☐ Bike  ☐ Carpool

7- What kinds of activities are you usually engaged in the park you selected above in question 4? Please check all answers that apply.
☐ Exercising  ☐ Reading  ☐ Meeting with friends  ☐ Attending concerts and other events such as Halloween or 4th of July  ☐ Other

8- Based on your experience using that park, how much do you agree or disagree with the following statements?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This park is safe to use during the day.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>This park is easy to find.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The size of the park is satisfying in relation to the number of the households in Old North Durham.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>This park is in a good location in relation to the neighborhood layout.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>This park connects me more to my neighbors.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>This park is a significant part of our neighborhood.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

9- How often are you active in doing the following?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Not often</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting informally with neighbors to discuss neighborhood problems.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Attending the meetings of Old North Durham Neighborhood Association.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Volunteering in cleaning, maintaining, and/or greening the neighborhood park.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Participating in the neighborhood social events and gatherings.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Now I would like to ask you questions about your neighbors

10- How many friends do you have who live in Old North Durham Neighborhood?
☐ 1-3  ☐ 4-6  ☐ 7-9  ☐ 10-12  ☐ More than 12

11- How many friends do you have who live in adjacent neighborhoods such as Trinity Park, Northgate Park, or Duke Park neighborhoods?
☐ 1-3  ☐ 4-6  ☐ 7-9  ☐ 10-12  ☐ More than 12

12- Of the neighbors living nearest to you, how many do you know by first name?
☐ None or almost none  ☐ About Quarter or less  ☐ About half or less
☐ More than half  ☐ All or almost all of them

13- How often do you and your neighbors participate in a favorite activity together, such as walking, running, shopping, etc.?
☐ Never  ☐ Rarely  ☐ Sometimes  ☐ Frequently  ☐ Always

14- How often do you and your neighbors do favors for each other, such as watching each other’s children, lending tools, helping with shopping, etc.?
☐ Never  ☐ Rarely  ☐ Sometimes  ☐ Frequently  ☐ Always
I plan to remain a resident of this neighborhood for a number of years. I am attached to Old North Durham neighborhood. I identify strongly with Old North Durham neighborhood.

17- Please list three things you like the most about your neighborhood.

18- Please list three things you like the least about your neighborhood.

Finally, I would like to ask you questions about yourself

19- Gender?  

20- Marital Status?  

21- Are there any children under the age of 12 living in your household?  

22- What is your age?  

23- What is the highest level of education you have completed?
24. How long have you been living in your neighborhood?
   - Less than a year
   - More than a year, and if so how many years approximately? __________

25. Do you live in?
   - Single Family House
   - Duplex
   - Apartment

26. Do you?
   - rent
   - own
   - other

27. If you have children, do they usually walk or bike to school?
   - Yes
   - No

28. How do you usually go to school/work?
   - Walk
   - Bike
   - Drive
   - Carpool
   - Use Public Transportation

29. Any additional comments?

30. Name and Address (Optional)