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doi: <https://doi.org/10.57709/7339779>

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UNMET COMMUNITY NEEDS AND OVERALL COMMUNITY SATISFACTION OF  
OLDER ADULTS IN FULTON COUNTY, GEORGIA

by

KAYLA M. BROOKSHIRE

Under the Direction of Jennifer Craft Morgan, Ph.D.

ABSTRACT

Most individuals indicate a strong preference to remain in their homes and communities as they age. Aging in place can offer both economic and health benefits. As the population continues to age, it is especially critical that communities facilitate aging in place. This study aims to inform local policy by addressing two goals. First, determine potential unmet needs of older adults in Fulton County, Georgia through conducting a descriptive analysis; and second, determine predicting factors of community satisfaction through estimating a logistic regression model, based upon an adaptation of Bronfenbrenner's social-ecological framework. Descriptive findings showed that local senior centers and meal services are prevalent. However, potential unmet needs include housekeeping, home repair, transportation, social involvement, and awareness of a senior resource hotline. The regression model revealed home repair services and demographics including marital status, education, race, and income were statistically significant predictors of overall community satisfaction in this study.

INDEX WORDS: "Aging in place", "Aging in community," "Community characteristics," "Community needs," "Community satisfaction," "CPFOA," "Elderly," "Fulton County, Georgia," "Older adults," "Person-environment fit," "Social-ecological model"

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by

KAYLA M. BROOKSHIRE

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts

in the College of Arts and Sciences

Georgia State University

2015

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2015

UNMET COMMUNITY NEEDS AND OVERALL COMMUNITY SATISFACTION OF  
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by

KAYLA M. BROOKSHIRE

Committee Chair: Jennifer Craft Morgan

Committee: Chivon A. Mingo

Ann-Margaret Esnard

Electronic Version Approved:

Office of Graduate Studies

College of Arts and Sciences

Georgia State University

August 2015

## DEDICATION

To my brilliant mentors and committee members who have generously given their time, support, and energies to all my endeavors. To my peers and colleagues within the Gerontology Institute that I am honored to call friends for ceaselessly providing kind motivation and lending their assistance and talents along the way.

To my loving husband, Michael, for being a calming balance in the midst of chaos. I would like to say a special thanks to him for his devoted encouragement and tremendous patience throughout my work on my thesis project.

To my sister, Amanda, for cheering me on and reminding me that there is humor to be found even in life's trials. To my parents, Robert & Sherron, for their love, support, and constant belief in me. They were my first teachers in life; from them I learned the value of working hard and following my dreams.

In loving memory of my wonderful grandmother, Pearl, who passed away just this year. You are an inspiration, and I know that you are forever with me in all my successes.

I would like to extend the deepest thanks to everyone involved in sharing my journey and enriching the meaning of my work.

## ACKNOWLEDGEMENTS

Many individuals have contributed to the realization of this study, and I would like to sincerely express my gratitude to everyone involved.

First, I would like to thank my committee chair, Dr. Jennifer Craft Morgan, for the mentorship, wisdom, and constructive advisement that she has extended throughout this process. Thank you for your willingness to share your methodological expertise. I have learned such an incredible amount in the short time we have worked together! Thank you for the hours spent proofreading the many versions of this work, the countless early mornings, late evenings, and impromptu meetings that you donated to help me strategize, revise, and practice for my defense, and restoring my faith in myself when I became overwhelmed with it all.

Thank you to my committee members, Dr. Chivon Mingo and Dr. Ann-Margaret Esnard for their contributions to sharing the background knowledge that I needed to carry forward this study. Thank you both for your advice and guidance, valuable feedback, and support in making my thesis possible.

I would also like to thank the Gerontology Institute, both as a place and as a family. The Institute has provided me with the academic inspiration for my research interests and the physical resources that I needed to complete my project, but more than that, the Gerontology Institute provided my second family. For that, I would like to thank everyone at the Institute for their confidence that they have placed in me to see my study through to the finish.

Thank you also to the Robert Wood Johnson Foundation and the researchers involved in the Community Partnerships for Older Adults study. Their research contributions provided the data set for this secondary analysis. Many thanks to all of the scholars, researchers, and academics whose prior work has paved the way for this study. I am only able to scope out a

research horizon ahead because of the giants whose shoulders I am graciously allowed to stand upon.

Most of all, I would like to thank my friends and family. They have endured the many ups and downs of my struggles and triumphs with grace and compassion. Their presence has been a light in my life that has carried me through many difficult times. Words cannot express the gratitude for all you have given.

Thank you to everyone that has been a part of this work. Every contribution has been enormous, and without you all, this would not have been possible.



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## 1 INTRODUCTION

The cohort of individuals known as the baby boomer generation is approaching and entering retirement, contributing to a rapid growth of the older adult segment of the population (U.S. Census Bureau, 2014). A report published by the Administration on Aging (2012) estimates that the number of individuals over 65 years of age will double in the United States by the year 2060, comprising over 90 million persons. As the trend of population aging continues, the World Health Organization (WHO) is encouraging communities to adapt in ways that will meet the needs of older adults through the global age-friendly cities movement (WHO, 2007). The foundation of the age-friendly cities initiative is based on the premise that communities at a local level are uniquely capable of providing services and support systems to meet resident needs within the community, with the intent of helping older adults aging in the community cope with age-related functional decline (WHO, 2007).

According to the National Institute on Aging (NIA), the present cohort of older adults faces unique challenges and requires different needs; as baby boomers have a longer life expectancy, lower rates of disability, and more diverse demographics compared to previous generations of retirees (NIA, 2006). An important aim of the age-friendly cities initiative is to facilitate the ability of older adults to remain at home in their community for as long as possible, a preference indicated by 90% of individuals nearing retirement (AARP, 2011; and WHO, 2007). Assisting older adults with their goal of remaining in their community, or aging in place, offers the potential for numerous benefits. Not only does aging in place stand to benefit the health of individual older adults, research has additionally provided evidence that aging in place is a cost-efficient alternative to institutionalized care when possible (Ball, 2004; Eng et al., 1997; Menec et al., 2011; Mynatt et al., 2004; Shaw, 2014; and Thomas & Blanchard, 2009). In consideration

of the prospective societal benefits offered by instituting policies that promote aging in place, it is crucial to further explore the specific community-level needs of the baby boomer cohort.

Through elucidating the factors involved in creating age-friendly communities, effective policy can be better shaped to implement policy that meets the specific needs of the current older adult population.

The Atlanta metropolitan area provides a strong example of a community that is actively implementing age-friendly features at a local level. The Atlanta Regional Commission (ARC) describes their framework for developing metro-Atlanta into an age-friendly region as the “lifelong community” initiative. This lifelong community initiative focuses on components of accessibility and livability, including housing, transportation, services, and health (ARC, 2014). The initiative aims to meet the needs of the growing older adult population in the greater Atlanta area. According to the 2010 census, there were over 1.3 million baby boomers residing in the Atlanta metropolitan area alone. The age category between 45 and 64 increased by nearly 50% between the 2000 and 2010 census, representing the greatest percent increase of any age category. The 65+ age category, with a 45% increase between 2000 and 2010, represented the second largest percent increase. Although cities are thought to have relatively young populations, the Atlanta metropolitan area has an older adult population similar to the national distribution. Overall, the 45+ age category represents 35% of the Atlanta metropolitan population compared to 39% nationally (ARC, 2011). More specifically, residents of Fulton County, Georgia reported a higher than average number of years spent in their current home and higher average years spent residing in their community than the region averages for these categories (ARC, 2007a). Older residents of Fulton County, on average, indicated that if they relocated it would be to a residence

within the same region. Thus it appears that the assumption that older adults relocate to more rural areas for retirement is not necessarily true for the residents of Fulton County (ARC, 2007a).

Although over 70% of older adults in Fulton County rated the Atlanta region as a good or excellent place to retire, potential barriers may still significantly challenge the ability to age in place (ARC, 2007b). A study by MetLife (2013) lists possible barriers that might hinder an older adult's ability to continue living in their home. These factors include elements from the built environment (limited walkability due to dangerous traffic, unavailability of quality sidewalks), inadequate neighborhood safety, the lack of available community supports and services (nearby health care facilities, a variety of transportation options), residence distant from grocery stores and shopping destinations, and lack of social integration and social support from the community (MetLife, 2013).

Transportation is a particularly concerning issue for older adults in the metro Atlanta area. A 2011 report by Transportation America estimates that 90% of older adults in Atlanta will have poor transit access in 2015, compared to 41% of older adults in New York City. Approximately 88% of older adults in the area use their own vehicle as a primary means of transportation (ARC, 2007a). However, driving may not always be an option. A CDC (2013) publication reports that most older adults outlive their ability to drive by 6 to 10 years. When asked what will be their primary mode of transportation when they can no longer drive, 57% of older adults in the Atlanta area reported that they plan to be driven around by others while only 13% responded that they would use public transportation (CDC, 2013). As only 7% of all older adults currently receive transportation assistance by others, the transportation needs for aging adults may be largely unmet in the future without an increase in public transportation services (CDC, 2013).

A publication by Thomas & Blanchard (2009) calls for policy implementation that would facilitate aging within the community, blending financial resources and social capital in order to address barriers experienced by older adults that wish to remain in their homes. A few proposed examples of community level programs that facilitate aging in place include home modification and repair to improve accessibility, door-to-door transportation service to provide access to medical appointments, grocery stores, and senior centers, and improving community walkability through investing in high quality sidewalks, crosswalks, and street lights. However, in determining which community features are the priority targets for policy directions in a specific geographic area, further data is needed. In order to formulate successful policy toward designing age-friendly cities, it is necessary to investigate the perceptions of older adults regarding their anticipated perceived barriers to aging in place. As outlined in the WHO age-friendly city initiative, it is imperative for communities to identify and address the unmet needs of older adults at a local level in order to improve health outcomes and decrease unnecessary cost of care.

The objectives of this analysis are to investigate two primary avenues of underexplored research concerning aging in place. The first aim of the study is to assess areas of unmet resident needs for older adults that reside in Fulton County, Georgia. This aim will be addressed through conducting a descriptive analysis using the 2002 and 2008 Community Partnerships for Older Adults (CPFOA) data set. The intended outcome of this objective is to inform policy at a local level with regard to enhancing Atlanta as an age-friendly city and improving the ability of residents to age in place. The second major goal of this study is to identify the micro-, meso-, and macro- level factors related to community satisfaction for older adult residents of Fulton County, GA. Despite the fact that a number of previous studies (explored further in the Chapter 2 literature review) have found a link between community characteristics and health outcomes,



little has been done to identify the specific factors involved in predicting *older adult* community satisfaction in diverse geographic areas. In order to address this absence in the current body of research, a multivariate analysis will be conducted to determine the relative impact of factors on overall community satisfaction for older adult residents of Fulton County, Georgia. By identifying the specific factors that relate to high community satisfaction, policy makers can better determine the relevant policies, programs, and initiatives necessary for the continued successful design and development of global age-friendly cities. Study findings will be examined within the context of Bronfenbrenner's social-ecological theoretical model and the competency/congruence model of the person-environment fit theory with particular regard to community supplies-needs fit.

## **2 LITERATURE REVIEW**

### **2.1 Meanings and Definitions of “Community” and “Place”**

With the current emphasis on aging in place, it is important to consider the implications of what the terms “community” and “place” conceptually mean for researchers, policy makers, and older adults. Community has broad definitions as a term with meanings ranging from a specific geographic location with discrete boundaries to a concept inclusive of geographic location, elements of the built environment including resources and services, as well as social capital and psychological implications.

A study by Macqueen et al. (2001) set out to determine how members of diverse populations define community compared to the general definition and the definition of community from the research community through conducting qualitative interviews with minority populations. The authors first provide the common definition of community as, “a group of people with diverse characteristics who are linked by social ties, share common

perspectives, and engage in joint action in geographical locations or settings (Macqueen et al., 2001, p. 1929).” Macqueen et al. (2001) further iterate that community may have a second, more literal definition to public health programs, which typically define a community as the area or site where an intervention takes place. The results of the study speak to the definition of community among individuals. The definition of community was reconciled among study participants into five core elements: locus, sharing, joint action, social ties, and diversity (p. 1930). Although the study by Macqueen et al. (2001) is instrumental in defining community at the individual level, it is also crucial to consider the meaning of community at the micro-level as well.

Place attachment, place identity, place dependence, and place meaning are all concepts that are significant to understanding the importance of studying the role of “community” in lives of older adults from a research perspective. The University of Washington’s Green Cities: Good Health website (2015) defines these terms as follows:

- Place attachment, also termed an individual’s sense of place, involves personal identification to a place or location on an emotional level.
- Place identity can be described as the symbolic or emotional meaning that a person ascribes to a particular place.
- Place dependence is a type of place attachment that is based on the value of a place in the context of fulfilling individual needs.
- Lastly, place meaning refers to the associations of significance, purpose, symbolism, or physical value that a person cognitively applies to a particular place.

A New Zealand study conducted by Wiles et al. (2012) draws upon place attachment theory to examine the functional, symbolic, and emotional attachments and meanings given to

home, neighborhood, and community by older adult participants. Through focus groups and interviews, the researchers found that study participants wanted choices concerning living arrangements, as well as access to services and amenities in the community. The authors described participants as speaking passionately about their communities, speaking separately about their homes versus their neighborhoods, and describing social connections as valuable resources within their community. Interestingly, the term “aging in place” was not familiar to a majority of study participants, and even had negative connotations to a few participants, evoking feelings of being trapped or stuck in a particular location. However, at the conclusion of the study, Wiles et al. (2012) described participant discussion on aging in place as having a positive tone, noting that participants felt a sense of attachment or connection to their community, felt that there were practical benefits of having security and familiarity, and felt that community was related to a person’s identity.

## **2.2 Identifying Factors of Age-Friendly Communities**

### ***2.2.1 Policy Elements of Age-Friendly Communities***

Policy briefs are useful in considering the elements that comprise and define an age-friendly community from the perspective of policy makers. A publication by AARP (2011) presents an overview of state policy related to aging in place. The definition of a livable community according to this publication touches on the concepts of appropriate, affordable housing, community features and services that support aging in place, provides adequate mobility options, and as a whole, facilitates independence, social involvement, and engagement in the community.

The World Health Organization (WHO, 2007) describes seven key domains to consider when assessing the age-friendliness of a community: outdoor spaces and buildings,

transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, as well as community support and health services (p. 9). The guide proposes extensive recommendations for age-friendliness in each category.

The American Planning Association (APA) also recognizes the importance of considering aging in place needs from a community perspective. An APA (2014) publication suggests the following guiding policies: 1) involve and engage the perspective of older residents in the planning process, 2) provide diverse housing options with consideration to affordability, safety, accessibility, and sustainability, 3) ensure that older adults have access to a variety of transportation options, 4) utilize zoning to plan communities in a way that is mindful of the proximity of housing to community amenities and services, incorporate mixed-use developments to intentionally foster welcoming social environments that engage rather than isolate older adults, and ensure adequate community safety, walkability, and green space, 5) support the economic needs of older adults and care partners, 6) design policy and planning responses should aim to address the needs of vulnerable populations while strengthening community assets; this includes considering the needs of older adults at-risk of homelessness, considering social and community involvement, as well as considering community health outcomes that result from design policies and planning responses (p. 1-15).

In addition to the AARP, the WHO, and the APA, many other national and local organizations promote community level policy initiatives that support aging in place needs. These agencies include the Administration on Aging, the Centers for Disease Control (CDC), the Environmental Protection Agency (EPA), and many others. The common themes in such policy recommendations center around designing and developing or re-developing communities into healthy places to live for individuals across the life-course, with a focus on a wide array of

community characteristics, such as the built environment, economic factors, social capital, and community health.

### ***2.2.2 Resident-Reported Elements of Age-Friendly Communities***

Qualitative studies have been particularly effective in capturing the voice of older adults on the matter of what makes a community an age-friendly place to reside. Feldman & Oberlink (2003) describe the process of developing the AdvantAge Initiative Model through qualitative research involving a series of focus groups. Four domains of age-friendly communities were generated as a result of the study: addresses basic needs, promotes civic and social engagement, optimizes physical and mental health and well-being, and maximizes independence. The development of the AdvantAge Initiative Model was one of the first research efforts to broadly define key elements that are necessary for a community to become age-friendly, however this model does not account for specific components that fall under the four identified general categories of age-friendly environments.

A study by Novek & Menec (2014) took the AdvantAge model a step further by determining the specific community characteristics that enable or deter a community from being age-friendly. Positive characteristics included accessible physical environments, green spaces to facilitate physical activity and promote well-being, accessible grocery and retail shopping, affordable housing, available transportation, presence of community supports and health services, as well as opportunities for social activities (Novek & Menec, 2014). Participants also identified negative characteristics that prevent a community from being age-friendly, including inaccessible physical environments, hazardous sidewalks, lack of benches, unavailability of shopping amenities, expensive housing, and high rates of crime (Novek & Menec, 2014). The characteristics found by Novek & Menec (2014) to be integral to the classification of a

community as age-friendly are aligned with previous findings by Michael et al. (2006) and Smith et al. (2013).

Additional qualitative studies by Mahmood et al. (2012) and Day (2008) explore perceptions of community characteristics further with an added focus on health outcomes. Mahmood et al. (2012) utilized photovoice documentation of older adult residents to enhance the understanding of what aspects of a community influence physical health outcomes. Domains of importance included being safe and feeling secure, getting there, comfort in movement, diversity of destinations, community based programs, and elements of the social environment such as peer support and intergenerational activities. These domains were perceived as having an impact on physical activity, which in turn is known to positively impact mental and physical health outcomes for older adults (Blumenthal & Gullette, 2002; Nelson et al., 2007; and Penedo & Dahn, 2005). Day (2008) conducted a similar study to determine older adult perceptions of the impact of the local environment on their overall health. Five themes were produced, repeating elements from previous studies. These themes spanned the following topics: creating a community that is clean and unpolluted, peaceful and without noise disturbance, conducive to physical activity, supportive of socialization, and aesthetics that are emotionally uplifting.

Although documenting items of importance among older adult residents is essential, there are few demonstrated tools or measures used to evaluate age-friendliness of an environment. As a result, most qualitative studies use photovoice, interview, or focus group methodologies. Such methods have been largely successful, and allow for the generation of theory informed by the perceptions and views of older adult residents themselves. However, additional research is needed to quantify the relative importance of each category for older residents of a community. Through ranking items of importance to older adults and by determining the weight of each

community factor's influence on health outcomes, policy initiatives can be better directed to exert the most impact and best meet the needs of older adult community residents.

### **2.3 Impact of Community on Health Outcomes**

The fact that the relationship between person and place has a tangible impact on a wide range of mental and physical health outcomes has been well documented in a number of previous studies. Beard et al. (2009a) and Julien et al. (2012) published findings that compositional community characteristics can be predictors of depressive symptoms among older adults. Compositional community characteristics, such as collective community socioeconomic status (SES), average community educational attainment, community racial composition, and neighborhood stability had statistically significant associations with depressive symptoms in a regression model. In both studies, positive compositional community characteristics acted as protective factors against depressive symptoms, while negative compositional community characteristics were predictors of adverse mental health outcomes.

The finding that positive community level characteristics may have protective effects is particularly promising and provides a future direction for policy development through increasing access to education for individuals of all ages and engaging a community in activities that promote cultural awareness. However, additional research is needed to develop appropriate interventions and determine the factors that mitigate negative community compositional factors. Although such studies are instrumental in highlighting the impact of compositional community level characteristics on mental health outcomes, these studies are limited in their scope, as they do not explore the impact of contextual community factors, such as elements of the built and natural environment (sidewalks, green space, housing, etc.).

Further studies have provided insight into the impact of community characteristics on physical health outcomes. In a second study conducted by Beard et al. (2009b), a connection was discovered between compositional community characteristics and the prevalence of disability among older adults. Although this study only examined compositional characteristics such as community SES, other studies have identified an association between contextual factors of the built and natural environment and physical health outcomes.

A study by Pruchno and colleagues (2011) examined the impact of both compositional and contextual community characteristics on the prevalence of disability within the older adult population. Although the results of the study by Pruchno et al. (2011) support previous findings that compositional factors (such as SES) have a statistically significant impact on physical health outcomes, the study also found that contextual community characteristics impact physical health outcomes. Specifically, the availability of physicians and the presence of supermarkets were significantly associated with lower levels of disability, while community violence and the number of storefronts (including bars and convenience stores) were associated with higher levels of disability. The finding that contextual community factors can exert a positive effect on physical health outcomes is a unique and important contribution to the current literature.

The Pruchno et al. (2011) finding that storefronts are associated with poorer health outcomes is aligned with the results of previous studies, such as the Yen and Kaplan (1999) and Subramanian et al. (2006) studies. The Yen and Kaplan (1999) Alameda County Study stated the finding that the greater the number of commercial stores in a census tract, the higher the prevalence of all-cause mortality. Similarly, the Subramanian (2006) study found that lower service density did not negatively impact self-rated health (SRH) outcomes, while higher service density was associated with poorer SRH among older adults.



An additional study conducted by Balfour & Kaplan (2002) also uses the Alameda County Study sample to identify environmental neighborhood factors that influence the physical health outcome of functional loss among older adults. The study found that the most common neighborhood problems reported were traffic, crime, and excessive noise. However, other neighborhood problems reported included challenges in accessing public transit, insufficient neighborhood lighting, as well as trash and litter (Balfour & Kaplan, 2002). There was a strong association between the number of neighborhood problems reported and the compositional characteristics of the neighborhood. Most individuals that reported no neighborhood problems lived in a census tract with a low prevalence of poverty, while half of participants that reported two neighborhood problems or more lived in an area of lower socioeconomic status (Balfour & Kaplan, 2002). Of participants that developed functional loss during the course of the study, the instance of functional loss was 50% higher among individuals that resided in a neighborhood with one reported problem, and 250% higher among residents that lived in neighborhoods where multiple problems had been reported (Balfour & Kaplan, 2002, p. 510). Although all reported neighborhood factors were independently associated with a loss in function, the most significant neighborhood problems included excessive noise, inadequate lighting, heavy traffic, and limited access to public transportation (Balfour & Kaplan, 2002). The results of the Balfour & Kaplan (2002) study are considerable, as these findings offer robust support to the argument that contextual community factors have an impact on physical health outcomes.

The current body of literature has revealed associations between compositional and contextual community characteristics and specific health outcomes, including depressive symptoms, disability prevalence, physical activity, overall well-being, self-rated health, and functional loss. The types of studies that have been previously conducted on the impact of

community on older adult health outcomes have included a wide range of methodologies and have laid a foundation to continue this line of research, as many research questions still remain.

## **2.4 Role of Community Satisfaction**

There has been an interdisciplinary research interest in community satisfaction across the fields of psychology, sociology, urban planning, and public health. Conceptually, community satisfaction has been structured as a subcomponent of quality of life (Ladewig & McCann, 1980) and individual well-being (Theodori, 2001). Several studies have been instrumental in identifying the key factors that are involved in influencing community satisfaction as an outcome measure. These important factors include the existence and quality of community services (Ladewig & McCann, 1980; and Rodgers, 1982), as well as social capital (Goudy, 1977), and demographic factors such as race and socioeconomic status (Beard, 2009a; Beard 2009b; Galster & Hesser; 1981; and Julien, 2012).

However, previous studies have traditionally focused on the general population rather than older adults, and former studies have tended toward a theoretical rather than applied approach. A major goal of this study is to specifically determine the environmental (macro-), social (meso-), and individual (micro-) factors involved in predicting the community satisfaction of older residents of Fulton County, Georgia. The motivation for these study aims is to inform local policy, recommending that policy makers take into account the unique considerations and needs of the diverse Fulton County older adult population rather than relying on a one-size-fits-all process for planning effective policy goals for the community.

## **2.5 Research Problems**

The previously mentioned studies have been effective in elucidating elements of age-friendly communities, identifying factors involved in community satisfaction, and at

demonstrating an association between both compositional and contextual community-level characteristics and health outcomes including depressive symptoms, disability, self-rated health, and quality of life of older adults. Yet the topic of community impact on health outcomes still contains many facets that need additional research.

One major problem with researching community satisfaction and the influence of community on health outcomes concerns the challenge of defining what constitutes a community. A standardized meaning of community or neighborhood does not exist, and as a result, studies differ regarding the boundaries that are used to define such terms. Some studies rely on census tracts in order to set discrete boundaries of “place.” Other studies consider a city or even a county as the broader community where an older adult resides. Cummins et al. (2007) raises concerns about the different definitions of place and space within studies, comparing “relational” and “conventional” views. While conventional definitions of place use boundaries, Cummins et al. (2007) discuss how place may also be viewed as “nodes in networks” that are not contained within strict boundaries. Furthermore, Cummins et al. (2007) advocate for the consideration of context and composition as interrelated concepts, with each exerting an effect on the other. Coulton et al. (2001) and Cutchin et al. (2011) additionally demonstrate the problematic discrepancies that exist due to researchers differentially defining the boundaries of a neighborhood. The pilot study conducted by Coulton et al. (2001) involved the comparison of various methods of defining a neighborhood, including census tracts and resident-drawn maps. Coulton et al. (2001) found that resident-defined neighborhood boundaries substantially differed geographically and produced dissimilar social indicators than census tract boundaries used to define neighborhoods. Likewise, Cutchin et al. (2011) denote the lack of theoretical relevance associated with using pre-defined census tract boundaries as a construct for neighborhood.

As a result, it is likely that the way a community is defined and the methods utilized to study impacts of “place” are important, thus there is a need to focus on how the diverse definitions of neighborhood or community differentially impact health outcomes. Cutchin et al. (2011) propose the socio-spatial neighborhood estimation method, combining qualitative GIS techniques and field observation to define neighborhoods, while Weiss et al. (2007) similarly recommend a multi-step methodology incorporating both census tract data and field observation to obtain a meaningful delineation of neighborhood. Future qualitative studies could aim to discover how residents define neighborhoods and communities, whereas quantitative studies could aim to evaluate the differences among outcomes according to varying boundaries and definitions of place. Cutchin (2005) also illustrates the need for additional mixed method study due to the advantages offered in considering the impact of combined subjective and objective meanings of place.

Traditional quantitative studies have often relied on secondary survey data and objective measures of determining the presence or absence of community resources. Numerous weaknesses exist with this methodology. First, census data is a stronger measure of compositional rather than contextual data. As a result, previous community research has exhibited a tendency toward focusing exclusively on either compositional or contextual elements of community. As both elements have a demonstrated impact on health outcomes, future studies should aim to incorporate considerations of both composition and context. An additional concern posed by Schaefer-McDaniel et al. (2010) is that census data is only conducted every ten years, while cities are dynamic and change frequently. Relying on census data may not provide a relevant, up-to-date source for information. This could have a negative impact on policy

development, as relying on historical census information to predict future community needs could be a problem.

Other issues that require further research to resolve include the expanded study of community features, community satisfaction, and health outcomes. Further studies are needed to determine the impact of items such as public transportation, green space, housing, and services for older adults. These factors have been previously identified as important features of an age-friendly community within former qualitative studies, but the impacts of each characteristic have not been extensively explored through quantitative study (Austin et al., 2009; Reichstadt et al., 2007; and Schaefer-McDaniel et al., 2010). Future avenues of research could also aim to explore a wider range of health outcomes, seeking to consider the impact of compositional and contextual community characteristics on community satisfaction, as well as their impact on additional measures of mental and physical health.

## **2.6 Relevant Theory**

Two models are particularly well suited to conceptualizing the impact of community on the individual—the competency/congruence model of person-environment fit and Bronfenbrenner’s social-ecological model. Person-environment fit theory is based on the idea that factors of the person and the environment interact and combine to exert an impact on human behavior (Lewin, 1951). Lawton & Nahemow (1973) contribute further to person-environment fit, describing the balance between environmental demands (press) and individual abilities (competence). According to Lawton & Nahemow’s (1973) theory of person-environment fit, if environmental demands are disproportionate to an individual’s competence, excessive disability and loss of function may occur as a result of chronic stress. Consequently, even small modifications that reduce burdens of the environment can translate into major impacts for

individuals with diminished competence (Chappell & Cook, 2010; and Iwarsson, 2005). Carp & Carp (1984) describe how the environment may exert a positive influence rather than simply create demands for an individual. In the competency/congruence model of person-environment fit described by Carp & Carp (1984), environmental resources may be drawn upon in order to compensate for diminished individual competence, as may occur when an individual experiences ADL limitations (Cvitkovich & Wister, 2001). The interaction between environmental resources and personal needs (i.e. supplies-needs fit) thereby influences the outcome of well-being for older adults. Hence, a goodness of fit between community resources and resident needs results in higher levels of overall well-being, illustrating the importance of assessing met and unmet community needs of older adults.

A second model developed from Bronfenbrenner's social-ecological framework of human development is useful to the understanding of the interrelationships between factors at an individual, social, environmental, and policy level. The CDC uses an adapted version of Bronfenbrenner's social-ecological model, visualized as a series of concentric circles (CDC, 2014). Individual micro-level factors represent the innermost circle, followed by relationships and social factors at the meso-level, and lastly community and societal factors comprise the outermost macro-level circles (CDC, 2014). Previous studies and reports have further illustrated the versatility of the social-ecological model, employing the framework as a means of understanding complex person-place relationships and their resulting health and behavioral outcomes (Menec et al., 2011; Novek & Menec, 2014; Stokols, 1996; and WHO, 2007). Menec et al. (2011) in particular advocates for the use of a social-ecological framework when evaluating the age-friendliness of a community via a range of factors.

In the study of age-friendly communities, both the competency/congruence model of person-environment fit and the social-ecological model are valuable sources of theory to draw upon. Keating et al. (2013) describe the term “age-friendly” as a measure of the goodness of fit between older adults and their community. Person-environment fit and particularly supplies-needs fit offers a theoretical lens with which to assess “age-friendliness”. Furthermore, the social-ecological model is useful for framing the study of micro-, macro-, and meso-compositional and contextual factors that may predict community-related outcomes.

### 3 METHODS

#### 3.1 CPFOA Data Set

The Community Partnerships for Older Adults (CPFOA) 2002 and 2008 data sets provide a unique opportunity to evaluate community needs and overall community satisfaction of older adults at a local level. A major strength of examining data from the two random samples obtained in the 2002 and 2008 survey years is that it allows for the consideration of perspectives and resident needs reported by the first individuals of the baby boomer cohort reaching retirement age. The analysis and findings of the historical CPFOA data set may allow policy makers to better anticipate the resident needs for these same individuals of the baby boomer cohort that are now in their retirement years, as well as enhance the ability of policy makers to forecast the community needs for the remainder of the baby boomer cohort approaching retirement in the next decade.

Data from the original CPFOA study was collected via a telephone survey entitled *The Survey of Older Adults*. Surveys were conducted in 2002, before the Robert Wood Johnson Foundation (RWJF) provided development grants for community partnerships for older adults within each of the study locations, and again in 2008 after implementation grants were awarded

to select study sites. Participants of age 50 plus were selected from a random digit-dialing sample across study sites. An inclusion criterion was implemented in conducting the survey, which was designed to oversample vulnerable adults, with the goal of representing vulnerable older adults in 50% of the sample population. This inclusion criteria defined vulnerability as being 60 years of age or older and meeting one of the following conditions: needed assistance bathing, used a mobility assistance device, rated their health as fair or poor, was afraid to be alone for over two hours, had a chronic illness, or was older than 75 years of age.

The sites of interest for the purpose of this analysis are the South Fulton County and “Rest of Fulton County”, Georgia locations. For the purpose of the CPFOA survey, participants were defined as South Fulton County residents if they lived within a census block group for one of the following municipalities: East Point, Fairburn, College Park, Hapeville, Union City, or Palmetto. The sample size for the 2002 Fulton County Sample included 521 randomly-selected participants and the sample size for the 2008 Fulton County Sample included a separate random sample of 392 participants. As each survey year produced a random, independent sample, the data from Fulton County sites were combined from both survey years in an effort to increase the power of the sample, resulting in a total sample comprised of 913 individuals. However, missing data was excluded listwise in the logistic regression model, bringing the total sample to 702 individuals with full information for the model.

## **3.2 Analytic Strategy**

### **3.2.1 Descriptive Analysis**

A descriptive analysis was conducted on the CPFOA data set in order to better understand the demographics and met and unmet community needs of older adults in Fulton

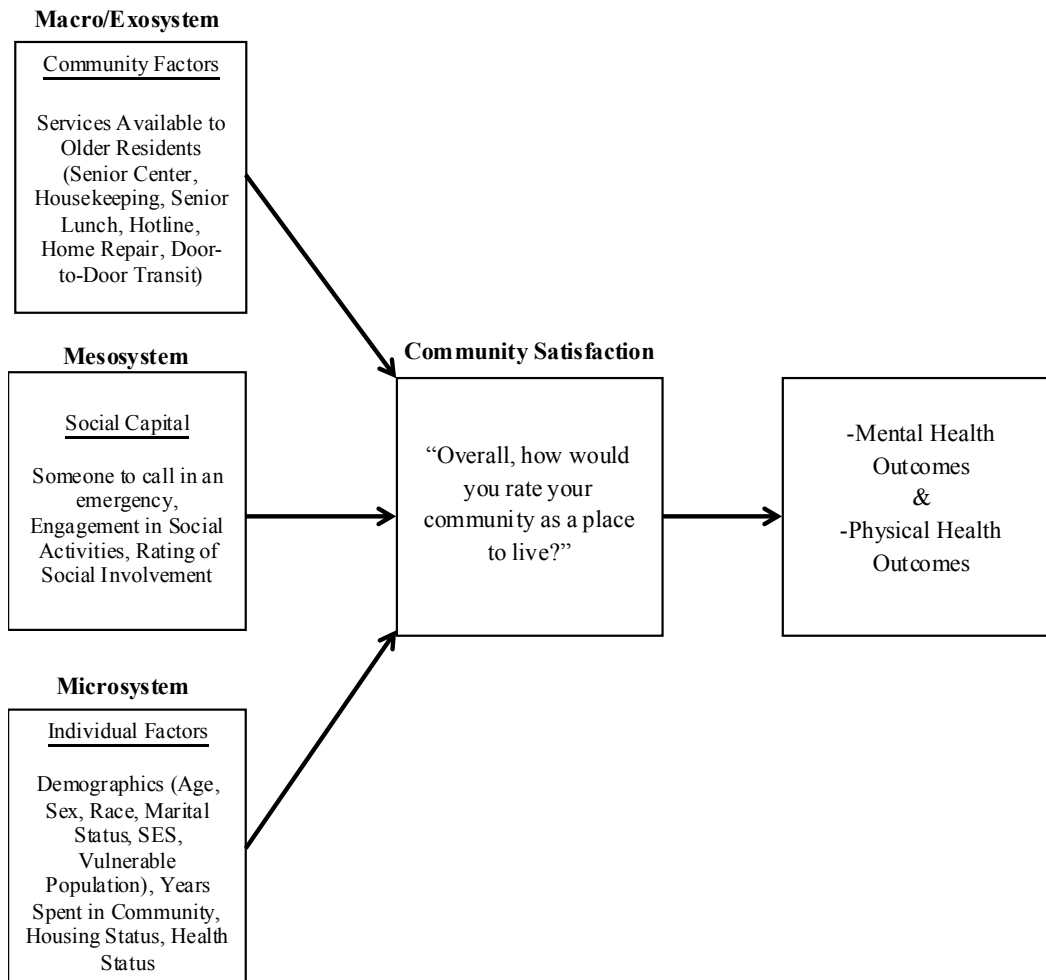


County, Georgia. Specific items for descriptive analysis were chosen based on previous designation as significant to the age-friendliness of a community in former studies in conjunction with availability of items within the CPFOA data set. An inclusive list of variables considered in the descriptive analysis for this study is presented in Table 1.

Chi-Square analyses were conducted to determine whether there was an association between demographics and variables of interest. Frequencies were determined for demographic variables of interest, including age, marital status, sex, race, income, education and vulnerability status. Frequencies were also determined for additional individual micro-level variables measuring community dwelling status, home needs repairs, number of years in the community, expectation of remaining in the community, importance of remaining in one's own home, confidence in one's ability to remain in one's own home, and health status. Frequencies were generated for several variables measuring social capital, including someone to call in an emergency, weekly religious service attendance, weekly social outings, weekly get-togethers with family or friends, and self-rated social involvement. Contextual community items were also selected for descriptive analysis to evaluate the met and unmet needs of older adults in Fulton County, Georgia. These variables encompassed the importance of improving community safety, the importance of improving services for frail older adults, the importance of improving public transit, the availability of senior centers, housekeeping services, senior lunch programs, senior help hotlines, home repair services, and the availability of door-to-door transit. Lastly, frequencies were examined for overall community measures, including community satisfaction, perceived individual-level influence on community, and perceived extent to which policy-makers consider older adults when making decisions for the community.

### 3.2.2 Proposed Concept Model

**Figure 1. Proposed Concept Model for the Impact of Macro-, Meso-, and Micro-Level Factors on the Intervening Variable of Community Satisfaction.**



### 3.2.3 Logistic Regression Strategy

#### 3.2.3.1 Proposed Concept Model

The proposed concept model depicted in Figure 1 is based on an adaptation of Bronfenbrenner's social-ecological model (CDC, 2014), which postulates that a complex interaction between macro-level policy factors, meso-level social factors, and micro-level individual and demographic factors combine to exert an impact on an individual's behaviors and

overall health. The hypothesis of this study is that community factors at the macro-level, social capital factors at the meso-level, and demographic and individual factors at the micro-level each impact community satisfaction. Community satisfaction is then proposed to act as an intervening variable on mental and physical health outcomes, but the predominant focus of this study is to explore the factors involved in predicting overall community satisfaction.

### ***3.2.3.2 Selection of Variables***

SPSS was used to conduct Chi-Square tests between each independent variable and the dichotomous outcome variable of community satisfaction. The Chi-Square analyses were used to determine whether a significant association existed between each independent variable and the dependent outcome variable. Independent variables measuring contextual community resources found to be statistically significant according to the Chi-Square tests ( $p < .10$ ) were included in a logistic regression model.

### ***3.2.3.3 Construction of the Logistic Regression Model***

A logistic regression model was conducted to determine the probability of each set of independent variables predicting good or excellent community satisfaction. First, an ordinal regression model was conducted. This model was selected based on its appropriateness for the ordinal dependent variable considered in this study—a four-point outcome measure of community satisfaction. Next, as a sensitivity test, a binary logistic regression model was conducted which yielded very similar results. In order to simplify interpretation, the results of the binary logistic model will be presented in this study.

Three separate models were constructed to examine the impact of each variable set (macro-, micro-, and meso-level factors) on the outcome of community satisfaction. Model I included macro-level contextual community characteristics, model II included macro-level and

meso-level social capital variables, and model III included the macro-, meso-, and micro-level individual and demographic factors. Final variables included in the model are presented in Table 10. Within each of the three logistic regression models, three primary results of interest were examined: the odds ratio, the standard error, and the p value. The odds ratio reveals the probability that a particular outcome will or will not occur. The odds ratio ( $\text{Exp}\beta$ ) must be greater than the threshold of 1 ( $\text{Exp}\beta > 1$ ) to indicate that the independent variable examined is associated with higher odds of the occurrence of a particular outcome. An odds ratio equal to 1 ( $\text{Exp}\beta = 1$ ) indicates that the independent variable does not have an impact on the, while an odds ratio less than 1 ( $\text{Exp}\beta < 1$ ) reveals that the independent variable is associated with a decreased likelihood in the occurrence of the outcome variable. The standard error was examined for each association to determine the reliability of the results based on the sample distribution. A lower standard error is indicative of the reliability of the results. Lastly, the p value the probability that the parameter estimate of the relationship between two variables in the model is a product of chance alone. An alpha value of .10 was chosen to indicate statistical significance in this analysis, given that this was an exploratory study design.

The dependent variable of community satisfaction was constructed from the following question: "Overall, how would you rate your community as a place to live?" Response categories for survey item >a5< were coded as 1="Excellent", 2="Good", 3="Fair", and 4="Poor". For the binary logistic regression, this item was dichotomized as 0 for "Fair or Poor" and 1 for "Excellent or Good". This item has been frequently used as a measure of community satisfaction in a number of previous studies and is considered to be a reliable measure (Echeverria et al., 2004; Greiner et al., 2004; Patterson & Chapman, 2004; Reisig & Parks, 2000; Sirgy & Cornwell, 2002; and Toseland & Rasch, 1978).

This study focuses specifically on the Fulton County, Georgia sites within the CPFOA Survey of Older Adults. However, it is important to note that the survey administrators treated “South Fulton County” and “Rest of Fulton County” as two separate site locations. In the CPFOA codebook, it is indicated that the demographic variables for race and income were only asked to participants that resided in South Fulton County. Due to the significance of the race and income variables G20 and G21, they were still included in this study. However, in order to account for the missing responses, the mean was imputed as follows for these missing variables: .54 for race (G20) and .52 for annual income (G21). This method was chosen because of the flaw in the study design around the question of race/ethnicity. If data could be judged to be missing at random, multiple imputation could be used. In this case, the only strategy available to us is to conduct sensitivity analysis examining the difference between models with listwise deletion and mean imputation. Given that mean imputation has the effect of diluting associations, we chose this conservative estimation approach.

## 4 RESULTS

### 4.1 Descriptive Analysis

#### 4.1.1 Complete Table of Variables

Table 1. provides an overview of each variable from the CPFOA data set included in the descriptive analysis for this study.

**Table 1. Complete Table of Variables for Descriptive Analysis.**

<b>Overall Community</b>	
A5	Overall, how would you rate your community as a place to live?
A9	How much influence do you think people like yourself can have in making your community a better place to live?
A11	To what extent do you think local officials take into account the interests and concerns of older people?
<b>Community Concerns and Services</b>	
A1c	How important is the following issue? Making the community safer

A1d	How important is the following issue? Improving services for frail older adults
A1e	How important is the following issue? Improving public transportation
C2_ anew	Senior Center Available
C2_ cnew	Housekeeping Service Available
C2_ dnew	Senior Lunch Program Available
C2_ enew	Senior Hotline Available
C2_ fnew	Home Repair Assistance Available
C2_ inew	Door-to-Door Transportation Available
<b>Social Capital</b>	
A8new	I have someone other than the police who I could call in an emergency.
A12a	Went to church/temple/religious service in past week
A12b	Went to movie/play/concert/restaurant/ sporting event... in past week
A12c	Got together with family/friends/neighbors in past week
A13	Self-perceived rating of social involvement
<b>Demographics</b>	
Agecat	Age
G11	Marital Status
G17	Sex
G18	Education
G20	Race
G21	Annual Income
Typen	Vulnerable/Non-vulnerable
<b>Additional Personal Factors</b>	
A2	How many years have you lived in the community?
A4	I expect to be living in the community five years from now.
B1	Housing Type [Community Dwelling or Institution]
B5	How important is it that you live in your own home as you grow older?
B6	How confident are you that you will be able to continue living in your current residence for as long as you like?
B8new	My current residence needs significant repairs, modifications, or changes to improve my ability to live in it over the next five years.
D1	Health Status

#### 4.1.2 Overall Community Variables

Frequencies for overall community variables are provided in Table 2. Both the number of occurrences and the valid percent are given for each variable, and when applicable, descriptive statistics were provided for the categorical and dichotomized version for each item. At 75%, a majority of the participants rated their community satisfaction as good or excellent. Additionally, 75% of participants indicated that they feel that they have some influence or a lot of influence on bettering their community.

**Table 2. Frequencies of Overall Community Variables.**

<b>Community Satisfaction (A5)</b>		
4-Point Scale		
	<b>Frequency</b>	<b>Valid %</b>
1. Excellent	166	24
2. Good	360	51
3. Fair	146	21
4. Poor	30	4
Dichotomized		
0. Fair/Poor	176	25
1. Good/Excellent	526	75
<b>Community Influence (A9)</b>		
4-Point Scale		
1. A lot	260	38
2. Some	254	37
3. Not very much	136	20
4. None	37	5
Dichotomized		
0. Not very much/None	173	25
1. Some/ A lot	514	75
<b>Extent of Consideration Officials Give Older Adults (A11)</b>		
4-Point Scale		
1. Quite a lot	108	16
2. Somewhat	308	47
3. Not very much	202	31
4. Not at all	39	6
Dichotomized		
0. Not very much/Not at all	241	37
1. Somewhat/Quite a lot	416	63

In Table 3., the results of the Chi-Square tests conducted between demographics and overall community variables are provided in terms of Pearson's Chi-Square value, degrees of freedom (df), and the p value for each item. Findings that were significant at the .10 alpha level or greater were indicated. Significant findings included an association between race and community satisfaction, marital status and community satisfaction, and a statistically significant association between income and community satisfaction. There were also statistically significant

associations found between the variables of race and community influence, as well as a marital status and community influence.

**Table 3. Chi-Square Analyses Between Demographics & Community Variables.**

<b>Community Satisfaction (A5)</b>			
	Pearson's $\chi^2$ Value	df	p Value
<b>Age (50-64)</b>	.32	1	.572
<b>Marital Status (Married)</b>	12.07	1	.001**
<b>Race (Non-white)</b>	15.77	2	.000**
<b>Sex (Female)</b>	.48	1	.488
<b>Income (&lt;\$30,000)</b>	7.97	2	.019*
<b>Education (&lt;High School)</b>	2.17	1	.141
<b>Community Influence (A9)</b>			
<b>Age (50-64)</b>	1.27	1	.261
<b>Marital Status (Married)</b>	6.96	1	.008*
<b>Race (Non-white)</b>	22.04	2	.000**
<b>Sex (Female)</b>	.94	1	.333
<b>Income (&lt;\$30,000)</b>	1.33	2	.515
<b>Education (&lt;High School)</b>	.17	1	.680
<b>Extent of Consideration (A11)</b>			
<b>Age (50-64)</b>	.68	1	.410
<b>Marital Status (Married)</b>	1.03	1	.309
<b>Race (Non-white)</b>	2.40	2	.301
<b>Sex (Female)</b>	.63	1	.429
<b>Income (&lt;\$30,000)</b>	1.35	2	.509
<b>Education (&lt;High School)</b>	.40	1	.527

+ Significant at .1 level      \* Significant at .05 level      \*\* Significant at .001 level

#### **4.1.3 Importance of Improving Aspects of the Community Variables**

Table 4. displays the frequencies and valid percentages for items measuring the importance of improving a particular aspect of the community. The descriptive characteristics for both the categorical and dichotomized form of each variable is provided. A majority of survey participants responded affirmatively for the importance of improving community safety (89%) and services for frail older adults (85%). However, an interesting finding is that only 56% of participants indicated that improving public transit was very or extremely important.



**Table 4. Frequencies of Improving Aspects of Community Variables.**

<b>Importance of Improving Community Safety (A1c)</b>		
4-Point Scale		
	<b>Frequency</b>	<b>Valid %</b>
1. Extremely Important	387	56
2. Very Important	235	34
3. Somewhat Important	51	7
4. Not Very Important	22	3
Dichotomized		
0. Somewhat/Not Very Important	73	11
1. Very/Extremely Important	622	89
<b>Importance of Improving Services for Frail Older Adults (A1d)</b>		
4-Point Scale		
1. Extremely Important	311	45
2. Very Important	275	40
3. Somewhat Important	70	10
4. Not Very Important	34	5
Dichotomized		
0. Somewhat/Not Very Important	104	15
1. Very/Extremely Important	586	85
<b>Importance of Improving Public Transportation (A1e)</b>		
4-Point Scale		
1. Extremely Important	172	25
2. Very Important	212	31
3. Somewhat Important	126	19
4. Not Very Important	169	25
Dichotomized		
0. Somewhat/Not Very Important	298	44
1. Very/Extremely Important	384	56

#### **4.1.4 Prevalence of Programs and Services Variables**

The frequencies and valid percentages for program and service availability are reported in Table 5. The programs and services assessed for availability in the community include a senior center, housekeeping service, a senior lunch program, a senior help hotline, home repair services, and door-to-door transportation. Most participants responded that a senior center and senior lunch programs or services were available in their community, while only half recognized the existence of public transit in their community, and fewer than half of participants reported available housekeeping services, a senior hotline, or a service that provides assistance with home repairs.

**Table 5. Frequencies for the Availability of Community Programs and Services.**

<b>Senior Center Available (C2a)</b>		
	<b>Frequency</b>	<b>Valid %</b>
0. No/Don't Know	124	18
1. Yes	578	82
<b>Housekeeping Available (C2c)</b>		
0. No/Don't Know	467	67
1. Yes	235	33
<b>Senior Lunch Available (C2d)</b>		
0. No/Don't Know	169	24
1. Yes	533	76
<b>Senior Hotline Available (C2e)</b>		
0. No/Don't Know	417	59
1. Yes	285	41
<b>Home Repair Available (C2f)</b>		
0. No/Don't Know	492	70
1. Yes	210	30
<b>Door-to-Door Transit Available (C2i)</b>		
0. No/Don't Know	336	48
1. Yes	366	52

#### **4.1.5 Social Variables**

The descriptive findings including frequencies and valid percentages for survey variables related to social capital are included in Table 6. A substantial number (82%) of participants felt that they had someone other than the police or emergency services to call in the event of an emergency. A majority of participants (77%) also reported that they had participated in a get-together with family or friends in the past week. Most participants (60%) had attended a religious service in the past week. Slightly above half of the participants participated in a social outing in the past week (54%). At 56%, just above half of the participants responded that they engage in about enough or too many social activities, leaving a sizable number of participants (44%), which indicated that they would like to be doing more in terms of their social involvement.

**Table 6. Frequencies of Social Variables.**

<b>Someone to Call in an Emergency (A8)</b>		
	<b>Frequency</b>	<b>Valid %</b>
0. No	127	18
1. Yes	575	82

<b>Attends Religious Service Weekly (A12a)</b>		
	<b>Frequency</b>	<b>Valid %</b>
0. No	279	40
1. Yes	423	60
<b>Participates in Social Outing Weekly (A12b)</b>		
0. No	321	46
1. Yes	381	54
<b>Has Get-Together with Family/Friends on a Weekly Basis (A12c)</b>		
0. No	162	23
1. Yes	540	77
<b>Rated Social Involvement (A13)</b>		
3-Point Scale		
1. Too Much	26	4
2. About Enough	366	52
3. Would Like to be Doing More	310	44
Dichotomized		
0. Not Enough	310	44
1. Too much/About enough	392	56

#### **4.1.6 Demographic Variables**

The following table (Table 7.) reports frequencies for the demographic variables of age, marital status, educational attainment, sex, race, annual income, and vulnerability status. For variables where categorical and dichotomized versions exist, frequencies and valid percentages are displayed for both item forms. Approximately half of the participants (51%) were between the ages of 50 and 64, while approximately the other half (49%) were over the age of 65. Approximately 43% of the sample identified as Non-white for race. Over one third (38%) of the participants reported an annual income below \$30,000. At 47%, nearly half of the participants in the study were categorized as “vulnerable.”

**Table 7. Frequencies of Demographic Variables.**

<b>Age (Agecat)</b>		
Categorical		
	<b>Frequency</b>	<b>Valid %</b>
1. 50 to 64	358	51
2. 65 to 74	174	25
3. 75 to 84	139	20
4. 85+	31	4

Dichotomized		
	Frequency	Valid %
0. Age 65+	344	49
1. Age 50 to 64	358	51
Marital Status (G11)		
Categorical		
1. Married	281	40
2. Widowed	181	26
3. Divorced	160	23
4. Separated	40	6
5. Never Married	36	5
Dichotomized		
0. Other	421	60
1. Married	281	40
Educational Attainment (G18)		
Categorical		
1. Less Than High School	111	16
2. High School/GED	204	29
3. Some College	176	25
4. College Degree (4yr)	118	17
5. Advanced Degree	93	13
Dichotomized		
0. Beyond High School	591	84
1. Less than High School	111	16
Sex (G17)		
0. Male	252	36
1. Female	450	64
Race (G20)		
0. White	278	40
.54	121	17
1. Non-white	303	43
Annual Income (G21)		
Categorical		
1. Less Than \$10,000	88	16
2. \$10,000-\$19,999	101	18
3. \$20,000-\$29,999	77	14
4. \$30,000-\$39,999	53	10
5. \$40,000-\$49,999	60	11
6. \$50,000-\$74,999	71	13
7. \$75,000-\$99,999	39	7
8. \$100,000 Or More	60	11
Dichotomized		
0. Greater than \$30,000	283	40
.52	153	22

1. Less than \$30,000	266	38
<b>Vulnerability (Typen)</b>		
Categorical		
	<b>Frequency</b>	<b>Valid %</b>
1. Vulnerable	329	47
2. Non-vulnerable	354	50
3. Decision Maker	19	3
Dichotomized		
0. Vulnerable/Decision maker	348	50
1. Non-vulnerable	354	50

#### 4.1.7 *Additional Individual Level Factors*

The final section of variables included in this descriptive analysis encompasses additional individual micro-level factors, such as years lived in the community, expectation of remaining in the community for 5+ years, status as community dwelling, importance of a participant remaining in their own home, participant confidence in their ability to remain in their own home, whether the participant is in need of home repairs, and the participants overall health status. Frequencies and valid percentages are provided for each variable in Table 8., including both categorical and dichotomized forms for items where both forms were assessed in the study.

**Table 8. Frequencies of Additional Individual Micro-Level Variables.**

<b>Years Lived in the Community (A2)</b>		
	<b>Frequency</b>	<b>Valid %</b>
0. 20 years or less	220	31
1. Greater than 20 years	482	69
<b>Expect to Live in the Community 5 Years from Now (A4)</b>		
0. No	62	9
1. Yes	640	91
<b>Community Dwelling (B1)</b>		
0. No	21	3
1. Yes	681	97
<b>Importance of Remaining in Own Home (B5)</b>		
Categorical		
1. Most Important	153	30
2. Very Important	254	50
3. Somewhat Important	69	14
4. Not Very Important	28	6
Dichotomized		
0. Not Very Important	28	4

1. Somewhat/Very/Most Important	674	96
<b>Confidence of Ability to Remain in Own Home (B6)</b>		
Categorical		
	<b>Frequency</b>	<b>Valid %</b>
1. Very Confident	423	62
2. Somewhat Confident	208	30
3. Not too Confident	33	5
4. Not at all Confident	21	3
Dichotomized		
0. Not too/Not at all Confident	54	8
1. Somewhat/Very Confident	631	92
<b>Home Needs Repairs (B8)</b>		
0. Yes	151	22
1. No	551	78
<b>Health Status (D1)</b>		
5-Point Scale		
1. Excellent	128	18
2. Very Good	198	28
3. Good	220	31
4. Fair	110	16
5. Poor	46	7
Dichotomized		
0. Fair/Poor	156	22
1. Good/Very Good/Excellent	546	78

Chi-Square results, including Pearson's Chi-Square value, the degrees of freedom (df), and the p value are provided in Table 9. Statistical significance is denoted for an alpha value of .10.

Significant findings include an association between age and years lived in the community, race and years lived in the community, as well as a statistically significant association between education and years lived in the community.

The association between age and expectation of remaining in the community after five more years was statistically significant, as was the association between marital status and remaining in the community five additional years. The Chi-Square results also show a statistically significant association between income and expectation to reside in the community after five years and a statistically significant association between education and expectation to remain in the community after five years.

A significant association was found between status as community dwelling and each of the demographic variables for age, marital status, income, and education. Age was also shown to have a statistically significant association to confidence in the participant's ability to remain in their own home.

Age, sex, race, marital status, and income all exhibited a statistically significant association with the variable measuring home needs repairs. Additional results of the Chi-Square analysis revealed that sex, race, income, and education each had a statistically significant association with health status in this study.

**Table 9. Association Between Demographics and Additional Micro-Level Variables.**

<b>Years Lived in the Community (A2)</b>			
	Pearson's $\chi^2$ Value	df	p. Value
<b>Age (50-64)</b>	20.48	1	.000**
<b>Marital Status (Married)</b>	1.74	1	.187
<b>Race (Non-white)</b>	8.50	2	.014*
<b>Sex (Female)</b>	.000	1	.997
<b>Income (&lt;\$30,000)</b>	3.41	2	.182
<b>Education (&lt;High School)</b>	4.76	1	.029*
<b>Expect to Live in the Community 5 Years from Now (A4)</b>			
<b>Age (50-64)</b>	10.85	1	.001**
<b>Marital Status (Married)</b>	10.94	1	.001**
<b>Race (Non-white)</b>	.892	2	.640
<b>Sex (Female)</b>	1.08	1	.299
<b>Income (&lt;\$30,000)</b>	8.46	2	.015*
<b>Education (&lt;High School)</b>	3.07	1	.080 <sup>+</sup>
<b>Community Dwelling (B1)</b>			
<b>Age (50-64)</b>	14.90	1	.000**
<b>Marital Status (Married)</b>	11.22	1	.001**
<b>Race (Non-white)</b>	2.11	2	.348
<b>Sex (Female)</b>	.51	1	.477
<b>Income (&lt;\$30,000)</b>	11.40	2	.003*
<b>Education (&lt;High School)</b>	8.08	1	.004*
<b>Importance of Remaining in Own Home (B5)</b>			
<b>Age (50-64)</b>	.077	1	.781
<b>Marital Status (Married)</b>	.226	1	.634
<b>Race (Non-white)</b>	3.07	2	.215
<b>Sex (Female)</b>	.000	1	.984

<b>Income (&lt;\$30,000)</b>	.09	2	.958
<b>Education (&lt;High School)</b>	.57	1	.451
<b>Confidence of Ability to Remain in Own Home (B6)</b>			
	Pearson's $\chi^2$ Value	df	p. Value
<b>Age (50-64)</b>	6.89	1	.009*
<b>Marital Status (Married)</b>	1.23	1	.268
<b>Race (Non-white)</b>	4.41	2	.110
<b>Sex (Female)</b>	.47	1	.494
<b>Income (&lt;\$30,000)</b>	3.77	2	.152
<b>Education (&lt;High School)</b>	.87	1	.351
<b>Home Needs Repairs (B8)</b>			
<b>Age (50-64)</b>	2.73	1	.098 <sup>+</sup>
<b>Marital Status (Married)</b>	.21	1	.647
<b>Race (Non-white)</b>	25.45	2	.000**
<b>Sex (Female)</b>	7.40	1	.007*
<b>Income (&lt;\$30,000)</b>	22.48	2	.000**
<b>Education (&lt;High School)</b>	.62	1	.432
<b>Health Status (D1)</b>			
<b>Age (50-64)</b>	.68	1	.408
<b>Marital Status (Married)</b>	17.30	1	.000**
<b>Race (Non-white)</b>	8.71	2	.013*
<b>Sex (Female)</b>	2.90	1	.089 <sup>+</sup>
<b>Income (&lt;\$30,000)</b>	48.46	2	.000**
<b>Education (&lt;High School)</b>	65.26	1	.000**

<sup>+</sup> Significant at .1 level      \* Significant at .05 level      \*\* Significant at .001 level

## 4.2 Binary Logistic Regression Model

### 4.2.1 Regression Model Variables

The variables included in the Binary Logistic Regression model are depicted in Table 10. Variables were selected based on Chi-Square tests revealing a statistically significant association with the outcome of community satisfaction. In addition, demographic items were included as control variables. The independent variables were grouped into sets by their categorization as macro-, meso-, and micro- level in accordance with the proposed concept model illustrated previously in Figure 1. The contextual community features correspond to the macro-system,



social capital variables correspond to the meso-system, and demographic and individual-level factors correspond to the micro-system. The outcome variable of interest is survey item A5, a measure of overall community satisfaction.

**Table 10. List of Variables Included in the Binary Logistic Regression Model.**

<b>MACROSYSTEM</b>	
Contextual Community Characteristics	
C2_ anew	Senior Center Available
C2_ cnew	Housekeeping Service Available
C2_ dnew	Senior Lunch Program Available
C2_ enew	Senior Hotline Available
C2_ fnew	Home Repair Assistance Available
C2_ inew	Door-to-Door Transportation Available
<b>MESOSYSTEM</b>	
Social Capital	
A8new	I have someone other than the police or emergency services who I could call in an emergency.
A12a	Went to church/temple/religious service in past week
A12b	Went to movie/play/concert/restaurant/ sporting event... in past week
A12c	Got together with family/friends/neighbors in past week
A13	Self-perceived rating of social involvement
<b>MICROSYSTEM</b>	
Demographics	
Agecat	Age
G11	Marital Status
G17	Sex
G18	Education
G20	Race
G21	Annual Income
Typen	Vulnerable/Non-vulnerable
Additional Personal Factors	
A2	How many years have you lived in the community?
A4	I expect to be living in the community five years from now.
B1	Housing Type [Community Dwelling or Institution]
B8new	My current residence needs significant repairs, modifications, or changes to improve my ability to live in it over the next five years.
D1	Health Status
<b>OUTCOME VARIABLE</b>	
Overall Community Satisfaction	
A5	Overall, how would you rate your community as a place to live?

#### 4.2.2 *Regression Model Results*

Table 11. presents the results of the three binary logistic regression models conducted for this study. Results from each of the three models are presented side-by-side in columns for ease of comparison. The odds ratio ( $\text{Exp}\beta$ ), the standard error, and the p value describing the association between each variable and the outcome measure of overall community satisfaction are presented in the row that corresponds to each dependent variable. The measures for Goodness of Fit are also included in the bottom rows of the table, and these measures include Pearson's  $\chi^2$  Value, the degrees of freedom (df), statistical significance, the -2 Log Likelihood, and Cox & Snell as well as Nagelkerke R Square values for each of the three models. In consideration of the exploratory nature of this preliminary study, the alpha level was set at .10 to indicate statistical significance, and statistical significance is denoted as such in Table 11.

Model I examines the association between each contextual community factor and overall community satisfaction. The availability of a senior center in the community, the availability of home repair assistance services, and the availability of door-to-door transit were all significantly associated with overall community satisfaction. The odds ratio for each significant contextual community feature indicated that these items have a positive association with overall community satisfaction. Specifically, residents that reported a senior center in their community were 46% more likely to report higher community satisfaction ( $\text{Exp}\beta=1.46$ ), residents that indicated the availability of home repair assistance in their community were 50% more likely to report higher community satisfaction ( $\text{Exp}\beta=1.50$ ), and residents that reported having door-to-door transit in their community were 40% more likely to report higher community satisfaction according to model I ( $\text{Exp}\beta=1.40$ ). Regarding goodness-of-fit, Model I showed statistical significance

( $p=.000$ ), had a Pearson's  $\chi^2$  Value of 25.26, and accounted for 4% to 5% of community satisfaction variance according to Cox and Snell and Nagelkerke R Square values, respectively.

Model II includes variables for contextual community factors, as well as variables that measure social capital, and examines the association between these variables and the outcome measure for overall community satisfaction. In Model II, the only statistically significant association is between home repair assistance services being available and overall community satisfaction. The odds ratio for this association revealed a positive association between the availability of home repair services and overall community satisfaction, indicating that respondents that reported having home repair services available in their community were 47% more likely to report higher community satisfaction ( $\text{Exp}\beta=1.47$ ) compared to residents that indicated that this type of service was not available in their community. Model II also demonstrated statistical significance ( $p=.003$ ). The Pearson's  $\chi^2$  Value for Model II was 28.47, and Model II accounted for 4% to 6% of community satisfaction outcome variance based on the Cox and Snell and Nagelkerke R Square values.

Model III assesses the association between contextual community factors, social capital factors, and demographic and individual level factors in relation to overall community satisfaction. The availability of home repair assistance services exhibited a statistically significant association to overall community satisfaction. Again in model 3, the odds ratio for this association demonstrates a positive association between home repair assistance services in the community and overall community satisfaction. In this model, residents that reported the availability of home repair services were 55% more likely ( $\text{Exp}\beta=1.55$ ) to report higher community satisfaction.

Several demographic variables were also shown to have a statistically significant association to overall community satisfaction, including marital status, education, race, and income. The odds ratio for the demographic variables of marital status and education show an inverse association, with married participants being 67% as likely to report higher community satisfaction ( $\text{Exp}\beta=.67$ ), and participants that reported less than high school educational attainment being 54% as likely to report higher community satisfaction ( $\text{Exp}\beta=.54$ ). Conversely, the odds ratio for the variables of race and income reveal a positive association to community satisfaction. Specifically, Non-white participants were 121% more likely to report higher community satisfaction than white participants ( $\text{Exp}\beta=2.21$ ), and participants reported less than \$30,000 annual income were 108% more likely to report higher community satisfaction ( $\text{Exp}\beta=2.08$ ) than participants that reported an annual income above \$30,000 in this model.

Also included in Model III are additional individual micro-level factors beyond demographics. The variables measuring expectation of remaining in the community for at least five more years, whether the participant resides in a home that is in need of repairs, and participant health status were significantly related to overall community satisfaction. The association between the expectation of remaining in the community for five additional years was significantly related to community satisfaction, and the odds ratio demonstrated a positive association between expectation of remaining in the community and overall community satisfaction. Residents indicating that they plan to remain in the community for five additional years being 146% more likely to report higher community satisfaction ( $\text{Exp}\beta=2.46$ ) than residents that responded that they are unlikely to remain in the community five additional years. For the variable considering whether the resident lives in a home that is need of repairs, the association between residing in a home that does **not** need repairs and overall community

satisfaction was shown to be a positive association according to the odds ratio, with residents that reported living in homes that do not need repairs being 58% more likely to report higher community satisfaction ( $\text{Exp}\beta=1.58$ ). Lastly, the association between health status and overall community satisfaction was statistically significant, and the odds ratio indicated a positive association between having good health and overall community satisfaction, wherein participants that reported good overall health were 64% more likely to report higher community satisfaction ( $\text{Exp}\beta=1.64$ ).

Model III resulted in a statistically significant association between the set of macro-, meso-, and micro- level variables and the outcome variable of community satisfaction ( $p=.000$ ). The Pearson's  $\chi^2$  Value for the final model was 80.57. The Cox and Snell and Nagelkerke R Square values for Model III show that this model accounts for 11% to 16% of community satisfaction variance.

**Table 11. Results of Binary Regression Models I, II, and III.**

	<b>Model I</b>	<b>Model II</b>	<b>Model III</b>
<b>Dependent Variables</b>	Odds Ratio Standard Error p value		
<i>Macro-Level</i>			
Senior Center Available (Yes)	1.46 .23 .096 <sup>+</sup>	1.45 .23 .108	1.45 .25 .135
Housekeeping Available (Yes)	1.32 .22 .193	1.31 .22 .220	1.18 .23 .469
Senior Lunch Available (Yes)	1.17 .22 .473	1.12 .22 .465	1.24 .24 .306
Hotline Available (Yes)	1.12 .20 .578	1.11 .20 .598	1.06 .21 .774
Home Repair Available (Yes)	1.50 .23 .075 <sup>+</sup>	1.47 .23 .095 <sup>+</sup>	1.55 .24 .071 <sup>+</sup>
Door-to-Door Transit Available (Yes)	1.40 .20 .090 <sup>+</sup>	1.38 .20 .102	1.30 .21 .219

	Odds Ratio		
	Standard Error		
	p value		
<b><i>Meso-Level</i></b>			
Someone to call in an Emergency (Yes)	1.24	1.12	
	.22	.24	
	.337	.630	
Attends Religious Service Weekly (Yes)	1.16	1.01	
	.19	.20	
	.433	.949	
Participates in Social Outing Weekly (Yes)	.95	1.12	
	.19	.21	
	.779	.617	
Has Weekly Social Gathering (Yes)	1.07	1.06	
	.22	.23	
	.745	.798	
Self-Rated Social Involvement (High)	.89	1.02	
	.18	.20	
	.506	.940	
<b><i>Micro-Level</i></b>			
Age (Between 50 and 64)			.92
			.25
			.738
Marital Status (Married)			.67
			.22
			.069 <sup>+</sup>
Sex (Female)			.90
			.21
			.607
Education (Less Than High School)			.54
			.28
			.025 <sup>*</sup>
Race (Non-white)			2.21
			.23
			.001 <sup>**</sup>
Annual Income (Less Than \$30,000)			2.08
			.26
			.006 <sup>*</sup>
Non-vulnerable (Yes)			.93
			.25
			.778
Length of Time in Fulton Co. (Over 20 Yrs.)			.76
			.21
			.192
Expect to Reside 5 More Yrs. (Yes)			2.46
			.30
			.003 <sup>*</sup>
Community Dwelling (Yes)			.45
			.78
			.311
Home Needs Repairs (No)			1.58
			.23
			.049 <sup>*</sup>

	Odds Ratio Standard Error p value		
Health Status (Good)			1.64 .24 .069 <sup>+</sup>
<b><i>Goodness of Fit</i></b>			
Pearson's $\chi^2$ Value	26.26	28.47	80.57
df	6	11	23
Sig.	.000**	.003*	.000**
-2 Log Likelihood	764.36	762.15	710.05
Cox & Snell R Square	.037	.040	.108
Nagelkerke R Square	.054	.059	.160
+Significant at .10 level                      *Significant at .05 level                      **Significant at .001 level			

## 5 DISCUSSION & CONCLUSIONS

### 5.1 Descriptive Findings

The random digit-dialing sampling strategy in the CPFOA study allowed for a diverse, representative study population. The population diversity is demonstrated in the demographic frequencies depicted in Table 7. The age composition of the sample uniquely provides the opportunity to compare the met and unmet community needs of Fulton county residents with regard to age. This opportunity for comparison potentially allows for improved forecasting of the community needs of individuals who had not yet reached the U.S. traditional retirement age at the time of the study.

In addition, approximately half of the sample indicated their race as Non-white, and over one third of the sample represented individuals with an annual income below \$30,000. It is particularly important to examine the community needs of racial minorities and economically

disadvantaged individuals, as both demographic categories are vulnerable population groups (AJMC, 2006). The demographic vulnerabilities of racial minorities and low-income individuals can compound with additional social factors and vulnerabilities, which may result in increased barriers to aging in place, increased difficulty accessing services, and increased risks for health disparities (AJMC, 2006; CDC, 2015; and The U.S. Dept. of Housing and Urban Development, 2013).

The findings concerning the demographic distribution of the sample is indicative of the study's ecological validity, with the sample being reasonably generalizable to the demographics of Fulton County according to the 2000 and 2010 census data (U.S. Census Bureau, 2000; and U.S. Census Bureau 2010).

Regarding the availability of services, the descriptive findings showed that most participants had senior centers (82%) and senior lunch programs (76%) available in their community. However, just above half recognized door-to-door transit availability in their community (52%), and even fewer indicated the presence of housekeeping services (33%), a senior hotline (41%), and a service that offers assistance performing home repairs (30%) (Table 5.). One important note to be made is that simply having these services available is not an indicator of service quality, so it is possible that even services that presently exist may not be meeting resident needs. Furthermore, the presence of services does not necessarily mean that they are readily accessible to all individuals. Although additional study is needed, this preliminary investigation reveals that the need for senior centers and senior lunch programs are likely being met for a majority of the older residents of Fulton County, Georgia. However, public transit, housekeeping services, senior hotlines, and home repair services are all potential areas of unmet need for older residents of Fulton County. As such, these areas provide possible targets



for improving the age-friendliness of the community through directing policy initiatives to address these needs at a local level.

Results of this study also revealed three areas of improvement that a majority of participants indicated were important: improving community safety (89%), improving services for frail older adults (85%), and improving public transportation (56%). Community safety, services for frail older adults, and public transportation are all items that have been identified in previous studies as crucial to age-friendly communities. As important facilitators to aging in place, these three concerns should be urgently prioritized for consideration by policy makers in the Metro Atlanta area.

A concerning possibility is that the need for public transportation is grossly underestimated due to potentially misplaced confidence that older adults have in their ability to independently drive throughout their lifetime. The importance of public transit is demonstrated through the call by multiple agencies for a local policy response to meet the public transportation needs of older adults (AARP, 2011; APA, 2014; CDC, 2013; MetLife, 2013; Transportation America, 2011; and WHO, 2007). Furthermore, increasing access to diverse public transit options is a particularly important policy consideration for regional planning and transportation officials in the metro Atlanta area, in light of several concerning findings from previous studies. Such findings include metro Atlanta's performance in a 2011 assessment by the Brookings Institute, which ranked transit access among the 100 largest U.S. metropolitan areas. In this study, Metro Atlanta fared worse than 90 of the other U.S. metro areas considered; as well as Atlanta's earning of a low urban mobility score in the 2014 Arthur D. Little Report entitled *The Future of Urban Mobility 2.0*, wherein Atlanta scored a total of 32.5 out of 100 possible points

based on 19 mobility criteria. This score earned Atlanta a spot as the third poorest performing city among 84 cities worldwide, ranking just above Baghdad and Hanoi (p. 19).

A number of studies identify social capital as an important resource and an essential component of the definition of a community (Day, 2008; Feldman & Oberlink, 2003; Mahmood et al., 2012; and Novek & Menec, 2014). A publication by Chippendale and Bear-Lehman (2010), describes social capital as a factor important to successful aging in place. As a result, the importance of social capital should not be discounted in studies that aim to measure community satisfaction. The descriptive social capital measures in this study revealed that most participants reported having high overall social capital (Table 6.). A majority of participants felt that they had someone to call in an emergency (82%), most had participated in a get-together with family or friends in the past week (77%), and over half reported attending religious service (60%). However, a smaller majority (54%) reported participation in a social outing in the past week, and 56% rated their social involvement as about enough or too much rather than not enough (Table 6.). There still remains a sizable number of individuals in these categories that reported no social outing in the past week (46%) or that they would like to be involved in more social activities (44%).

With social isolation posing a risk to older adult mental and physical health outcomes (Cornwell & Waite, 2009; and Tomaka, Thompson, & Palacios, 2006), this finding demonstrates a possible unmet need concerning the social involvement of older residents of Fulton County. By facilitating the social capital development at a local level for older residents, the health disparities associated with social isolation may be circumvented (Grundy & Sloggett, 2003; Leyden, 2002; and Smedley & Syme, 2001). Yet despite the importance of social capital, the macro-level variables examined in this study did not have a significant impact on community

satisfaction, which will be discussed in further detail in relation to findings from the binary regression model.

In line with the earlier discussed ARC (2007b) finding that a majority of older adults rate the Atlanta-area as a good or excellent place to retire, 75% of Fulton County older adults reported good or excellent community satisfaction in this study (Table 2.). Race, marital status, and income were significantly associated with community satisfaction (Table 9.). These findings were explored further in context of the binary regression model conducted in the second portion of this study.

The finding that most older adults (69%) have lived in the Fulton County community for over 20 years and that most residents anticipate remaining in the community at least five more years (91%) is also in accordance with previous findings from the ARC (2007a) (Table 8.).

While the finding is optimistic that most older adults in Fulton County (75%) felt that people like themselves have an influence on making their community a better place to live, a smaller majority (63%) felt that local officials at least somewhat take the interests and concerns of older adults into account (Table 2.). This leaves a substantial number of older adults in the sample (37%) that felt local officials do not take the interests and concerns of older adults into account very much or at all. This finding indicates that there is certainly room for improvement for local policy makers to ensure that the voices of older adults are considered seriously, and that the needs of older adult residents are equitably represented in policy decisions.

The descriptive findings show both areas of strength where Fulton County as a community is meeting the needs of older residents, and areas of weakness where Fulton County could do more to ensure that older residents' needs are met. The presence of senior centers and senior meal services may reduce environmental stress, offering an opportunity as an important

environmental resource to potentially compensate for losses in individual competence that may occur with age (Carp & Carp, 1984; Cvitokovich & Wister, 2001; Lawton & Nahemow, 1973; and Lewin, 1951). The prospective areas of unmet need for older residents of Fulton County illustrate domains where a disproportionate supplies-needs fit may exist, posing challenges in the form of environmental demands for aging individuals. These potential trouble areas include the lack of adequate accessible public transportation and the lack of resident awareness of available senior hotlines, housekeeping, and home repair services reported by older residents of Fulton County in this survey. Additional areas of unaddressed important resident concerns include improving community safety, improving services for frail older adults, increasing opportunities for social involvement, and again a call for improving public transportation, revealing further domains that may compromise the proportionality of the balance between individual competence and environmental demands.

With person-environment fit being such an important component of an age-friendly community, it is necessary for communities to make a concerted policy effort at a local level to address the service and community needs of older adults aging in place. In doing so, age-friendly communities can create an optimal balance of supplies-needs fit between community resources and residents needs in order to reduce environmental stressors, assist residents with navigating any functional declines that may occur, and preventing any avertible functional declines through environmental modification (i.e. appropriate community resources and services).

## **5.2 Programs, Policies, and Initiatives**

Since the final wave of data collection from the 2008 CPFOA survey, the Atlanta Regional Commission has undertaken the Lifelong Communities initiative, which outlines the goals of addressing some of the unmet needs defined in this study. These goals include

increasing housing and transportation options, encouraging healthy lifestyles, and expanding information and access to services (ARC, 2015). Although these goals are in place for Atlanta and the metro area, many specific programs have yet to be implemented at the time of this study. The ARC website (2015) describes several voucher transportation programs for Cobb, DeKalb, Fayette, Rockdale, Cherokee, and Gwinnett counties. These voucher-based programs aim to improve the mobility of vulnerable seniors and persons with disabilities. However, it does not appear that Fulton County has a comprehensive voucher program in place at this time. The local senior resource websites report information for previous programs that serviced Fulton County, including the Dial-a-Ride Transportation for Seniors (DARTS) program and the Transportation Reimbursement East Point (TREP) NORC service, but these programs do not appear to presently exist. Two additional commendable programs do presently exist in North Fulton County (confirmed by SeniorServices at the time of publication). First is the Transportation Options for Seniors Program that offers transportation to healthcare appointments once per month for older residents of North Fulton County (SeniorServices, 2015). Second is the Get Around Town Easily (GATE) Program, a voucher-based program which allows residents of North Fulton who are 60 years of age or older or have certain disabilities to purchase a transportation voucher book for \$25. The book in turn provides \$100 in vouchers to use for payment with a GATE driver or a driver of the individual's choice. These vouchers allow an older adult to negotiate a voucher payment for a trip to any destination (SeniorServices, 2015).

Despite the absence of a comprehensive voucher program to all residents of Fulton County, the MARTA system does offer discounted rates for older adults and persons with disabilities for a fee of \$1 each way on the rail or bus system (MARTA, 2015). Although the effort to increase access to transportation through lowering costs is laudable, many other barriers

may still act as deterrents to an older resident's mobility. MARTA stations or bus stops may not be conveniently located or accessible, individuals may not feel safe using MARTA due to pedestrian safety issues or fear of crime, the routes may not allow the resident to travel at convenient times, or MARTA may not be able to deliver the resident to the areas that they need to access.

The MARTA mobility program is an extension of the Atlanta-area public transit service that is specifically eligible to individuals with disabilities who are unable to use the regular bus or rail service. This service requires an ADA photo identification card, advanced reservation for pick up, and only provides service to areas within Fulton and DeKalb counties (MARTA, 2015). The cost for the MARTA mobility service is \$128.00 for a 30-day pass, or \$4 each way for a trip. The MARTA website explicitly states that reduced fare cards are not accepted for MARTA mobility service, and as a result, the cost may be prohibitive for individuals that could otherwise benefit from this service.

Outside of the public MARTA system, the ARC describes a number of other transportation options that are currently being explored in the metro area (ARC, 2015). These options include volunteer driver programs, such as the ICARE program serving DeKalb County; county-based transportation services, such as the local circulator and shuttles offered within the Chamblee, Toco Hills, and communities of south DeKalb County; the demand-response transportation services within Henry and Cherokee counties, offering curb-to-curb shuttle service; as well as the Georgia Medicaid-based non-emergency medical transportation for Medicaid participants to their qualified medical appointments (ARC, 2015). The array and variety of transportation options being considered in the metro Atlanta area is certainly a step toward progress in making the metro-Atlanta area an age-friendly community. However, many

of these programs still have limitations, and very few are specifically available to the residents of Fulton County.

In consideration of the potentially unmet social capital needs of older Fulton County residents, both policy makers and the academic community should invest in research and policy initiatives that aim to improve social capital. Some examples of programs that may build social capital include computer literacy training (White et al., 2010; and White & Weatherhall, 2010), group exercise programs such as mall walking (Travis, Duncan, & McAuley, 1996; and Schacht & Unnithan, 1991) or laughter yoga (Shahidi et al., 2011; and Streat, 2009), and pursuing evidence-based community interventions, as few currently exist (Sabir et al., 2009). Furthermore, policy attention should be drawn toward the built environment, through incorporating mixed-use land development, employing “visitable” housing through employing universal design, and through the development of parks and green-spaces that are able to promote social engagement as well as overall health (Baur, Gomez, & Tynon, 2013; Leyden, 2003; Maisel, Smith, & Steinfeld, 2008; Pynoos, Craviello, & Cicero, 2009; Rosenthal, 2009; and Tinsley & Tinsley, 2002).

As for the other potential areas of unmet need, including housekeeping services, home repair services, and a senior hotline, there are indeed programs that exist to address these issues within the Atlanta metro region. The ARC is making strides in this area through the Lifelong Community initiative’s goal of expanding information and access to services. The Atlanta Area Agency on Aging provides the AgeWise Connection, a website and phone hotline that is available 24 hours a day, 7 days a week in order to provide help and information. The website and phone hotline covers a range of topics relevant to older adults, including Medicare, transportation options, nutrition education, meal services, in-home help, housing, senior centers,

and many other topics. A major success of the AgeWise Connection website is the availability of an option to easily translate the webpage into another language via a dropdown menu located at the top of the website. The recognition of language barriers as a potential restraint to accessing information is a strong merit of this resource for the diverse older adult population in the metro-Atlanta region. AgeWise Connection is an extremely valuable resource for local older adults, but it is important to keep in mind that some individuals may not possess the technological skills required to access and navigate the website. One recommendation that may be beneficial is to increase awareness specifically for the AgeWise Connection's phone hotline in order to connect individuals to services in the event that they are unable to access the website. Possible venues for increasing awareness of this resource include distributing pamphlets to social workers, religious leaders in the community, religious institutions, medical offices, senior centers, and through advertising the AgeWise Connection phone number through radio and newspaper advertisements, as well as on billboards and signs around the community. By continuing to adequately address the congruence of person-environment fit for older residents at a local level, positive outcomes in health and well-being may be achieved for residents aging in place in the community.

### **5.3 Binary Regression Findings**

The variables identified in previous studies as important features of an age-friendly community were constructed into an adaptation of Bronfenbrenner's social-ecological model to visualize the conceptual interpretation of the impacts of micro-level individual and demographic factors, meso-level social variables, and macro-level environmental variables on community satisfaction (Table 10., Figure 1.).



A binary regression model was used to assess the quantitative association between each level of variables and the outcome variable of overall community satisfaction. All three models were statistically significant, but according to the R square results (Table 11.), Model III was the best suited to predict community satisfaction. Model III, inclusive of micro-, meso-, and macro-level factors accounted for 11% to 16% of variance in overall community satisfaction. Model I, exclusively comprised of macro-level contextual community factors was only able to account for 4% to 5% of variance in overall community satisfaction. Model II, which included the addition of meso- level factors with macro-level factors contributed little toward prediction the community satisfaction outcome, only accounting for 4% to 6% of variance. Although Model III was the best suited to predicting overall community satisfaction, the finding that only 11% to 16% of variance accounted for by the full set of variables included in the regression reveals that the model is incomplete. It is apparent through these results that there are additional factors involved in determining community satisfaction of older residents that were not explored in this study.

The regression analysis still offers many interesting findings. The finding that the presence of senior centers, door-to-door transit, and home repair services available in the community was significantly associated with positive overall community satisfaction in Model I reinforces the importance of community services. This finding provides a meaningful insight for Fulton County policy makers by showing the value of community resources as predictors of resident satisfaction. The finding that the availability of home repair services was significantly associated with positive overall community satisfaction in both Models I, II, and III, also illustrates the point that previous researchers have raised: contextual community factors can

influence community satisfaction independent of social and individual variables (Balfour & Kaplan, 2002; Pruchno, 2011; and Toseland & Rasch, 1978).

The lack of significant findings for the meso-level social capital variables on the impact of overall community satisfaction was rather surprising, given the evidence in previous studies outlining the significance of the role of social capital in successful aging in place (Chippendale & Bear-Lehman, 2010) and the impact of social capital on community satisfaction (Goudy, 1977). In the study conducted by Goudy (1977), social variables accounted for approximately 36% of community satisfaction. However, the social capital measures utilized by Goudy (1977) differed substantially from the measures included in this study. In this study, the data set contained limited measures of social capital.

Model III is the only model inclusive of demographic and individual level factors. Several of these compositional community characteristics exhibited a significant association with community satisfaction, which is in agreement with previous research (Table 11.). Namely, marital status, race, income, expectation of remaining in the community five more years, home not in need of repairs, and health status were all significantly associated with community satisfaction. A particularly interesting finding in the study was that Non-white residents were more likely to report community satisfaction, despite the issues of environmental justice that exist in the metro-Atlanta area, resulting in disproportionate exposure to poorer environmental conditions and pollutants (GreenLaw, 2012). One possible inference for the positive association between Non-white race and overall community satisfaction is the historical and social context of Fulton County. The Atlanta area has a significant historical and social meaning rooted in the city's prominence in the civil rights movement and its legacy, which may contribute to strong place attachment from older African American residents.

A publication by Kurdyavtsev, Stedman, and Krasny (2012) makes the pertinent statement that environmental studies have had a tendency to neglect the psychological component of place context and meaning. The authors describe the combination of both place attachment (bonding between an individual and a place) and place meaning (symbolic meanings ascribed to a particular place) as important to the understanding to the overall concept of sense of place. Kurdyavstev et al. (2012) further describe the influence to place meaning, including cultural values, social history, sense of heritage, and personal experiences. A study conducted by McAuley (1998) also examined the role of place attachment, focusing on older African American residents of All-Black towns in Oklahoma. In this study, McAuley (1998) noted that social-historical factors may play an important role in the level of resident place attachment.

A previous study conducted by Jackson (2013) found that place attachment is not significantly impacted by proximity to services. This finding reveals that place attachment may be prevalent despite negative neighborhood characteristics. Further support of the strong role of place attachment of African American residents in Atlanta can be found in a qualitative case study conducted by Combs (2010). This study revealed that being older and being African American were associated with a higher score for place attachment among participants in the study. However, this is only one possible explanation, and it is likely that resiliency (Baldwin et al., 2010; and Luthar, Cicchetti, & Becker, 2000) and religiosity (Coke, 1991; Krause, 2002; and Utsey et al., 2007) also have a role in anchoring individuals to Atlanta and Fulton County.

#### **5.4 Study Limitations**

The CPFOA data set was specifically chosen for its many strengths, including the availability of a large sample of older residents residing in Fulton County, as well as the presence

of survey measures related to overall community satisfaction. However, as with any study, several study weaknesses were identified that limited the scope of the study.

Although the original CPFOA survey included a number of measures to examine participant access and satisfaction with transportation options in their community, a skip pattern allowed participants to bypass a majority of transit items if they indicated that they were regularly able to get where they needed to go at the present time. This skip pattern prevented the collection of valuable data regarding transportation options that individuals may require at a later time. In addition to the limitations posed by insufficient transportation items, the survey design did not allow for the assessment of older adult perceptions of local parks and green space, housing availability and affordability, or measures of service quality.

Several items of interest were available concerning social capital. However, other studies have relied upon more widely accepted, previously validated measures of social capital, including the social capital indicators described by Kawachi et al. (1997), the Social Capital Assessment Tool (The World Bank, 2015), and the Personal Social Capital Scale (Chen et al., 2009) among others. The particular measures for social capital utilized in this study may have contributed to the lack of significant meso-level findings in the binary regression model.

Another limitation of the survey was the inconsistency between the “South Fulton” and “Rest of Fulton County” sites. The demographic items for race and income were only collected for participants that resided in the “South Fulton County” survey location site. The codebook indicated the assumption that the site for the remainder of Fulton County was homogenous in regard to white residents of higher socioeconomic status. However, this assumption was most disappointing, preventing the collection of valuable demographic data. In order to account for the race and income variables, the mean was imputed in the place of missing data for these

measures. Despite the lack of data for all respondents, race was too important of a demographic variable to remove from the analysis due to missing data. Given this choice, however, the findings related to race in this model should be interpreted with caution.

Additional characteristics of the study that may be construed as limitations are the age of the data set and the specificity to Fulton County, Georgia. Although the CPFOA data was collected in waves dating 7 and 13 years ago, the findings are still very relevant to current policy. Half of the individuals in the sample were between the ages of 50 and 64 at the time of the study (Table 7.). This cohort of individuals are now between the ages of 57 and 77 today. By examining the historical data provided by this cohort in 2002 and 2008, policy makers may be able to retroactively forecast resident needs. As a result, the age of this data set did not reduce the efficacy of achieving the goals of the study. However, it is also likely that resident perceptions and needs have changed in the past decade, prompting the need for follow up studies. Second, the specific aim of this study was to inform policy at a local level. While the specificity of the study pertains to Fulton County residents, and is not likely widely applicable to dissimilar national or international communities, the high ecological validity allowed for the capability of realizing the objectives of this study.

## **5.5 Future Directions of Study**

In consideration of the importance of community satisfaction as a component of life satisfaction and individual wellbeing, additional research is needed in this area. In future studies, surveys could be redesigned to include comprehensive items concerning the availability and quality of additional community services, satisfaction with amenities and utilities, presence and quality of parks and green space, and the inclusion of additional items and scales to assess

mental and physical health, neighborhood and community satisfaction, life satisfaction, and individual well-being.

In addition to surveys, a mixed-methods approach could aim to determine the specific community features that are most important to older adults, elucidate the policy priorities of older residents, and obtain information from policy makers and key community informants concerning the extent to which older adults are involved and considered with regard to policy initiatives and policy budgets.

The Atlanta region is well-known for its sprawl and expansive surrounding metropolitan area. As a result, additional avenues of future study should aim to include participants throughout the metro-region, allowing for aggregation of results as well as city and neighborhood level comparison. The findings of such additional studies can be utilized to develop additional theory, effectively inform policy, and direct local planning initiatives to build or redesign communities into age-friendly, livable, lifelong places of residence.

## **5.6 Conclusions**

This study is believed to be the first analysis of the CPFOA 2002 and 2008 data set to examine the potential unmet community needs and overall community satisfaction of older adults that reside in Fulton County, Georgia. Notable findings included the prevalence of senior centers and senior lunch programs among survey participants. This study also identified several potential unmet needs, including door-to-door transit services, housekeeping services, home repair services, a senior hotline, as well as the need to improve community safety, services for frail older adults, and increase social capital among older Fulton County residents.

Furthermore, the regression analysis conducted in this study demonstrates that senior centers, door-to-door transit programs, and home repair services are factors at the macro-level that are likely involved in predicting positive overall community satisfaction for older adults.

As a result, these study findings demonstrate the need for targeted macro-level programs, policies, and initiatives that focus on expanding the accessibility, affordability, and diversity of local transit options, improving social capital through evidence-based community interventions, and increasing resident access to crucial services for older adults in the metro-Atlanta area, which may involve increasing the public awareness of programs that are already in existence.

In the context of person-environment fit, and specifically supplies-needs fit, addressing the unmet needs of local older residents is crucial to increasing the “age-friendliness” of the Atlanta metropolitan area, facilitating aging in place at a local level, and thereby creating a truly “lifelong community” for Atlanta-area residents of all ages.

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