

FEDERALLY FUNDED HOUSING PRODUCTION DURING ECONOMIC CHANGE  
IN DEKALB COUNTY, GEORGIA: A QUANTITATIVE DESCRIPTIVE STUDY

by

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CHANGE IN DEKALB COUNTY, GEORGIA: A QUANTITATIVE  
DESCRIPTIVE STUDY

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## ABSTRACT

This quantitative descriptive non-experimental inquiry is to analyze the production of the federally funded affordable housing prior to the Great Recession (2004-2006), during the Great Recession (2007-2009), and after the Great Recession (2010-2012) in DeKalb County, Georgia. The results from this study of the archival data may provide findings to educate public housing leadership and officials of when to use various federal funding sources under variable conditions. The data for this study is specific to six federal funding sources used to produce affordable housing from public housing agencies who serve DeKalb County, Georgia. The approach was to find the housing production during 2004-2012 and to find the differences in housing production among the six federal funding sources. The data analysis process used two-way ANOVA without replication to reveal the findings. The study revealed the unit production of the three periods and the production units of each funding source. The outcome of the study uncovered a declining trend in unit production among the three periods and the use of funding sources throughout the study.

## DEDICATION

This dissertation is dedicated to my parents Deena Randle and the late Donnie J. Crawford Sr.; my children Tyson Stokes, Jazmine Trowers, Jasmine Hurst, Jeremiah Hurst, and Joshua Coffey; and my partner, Joy Hurst. Deena Randle, my mom, is a pre-school teacher of 28 years and counting for Albina Headstart in Portland, Oregon. Once my siblings and I grew up, she continued her passion of teaching children but did not pursue her education goals. It was 1998 when she decided to go to school to begin her educational journey. When I asked her what made her move forward, she told me, “it was you!” I had become her inspiration to continue her educational dreams.

Donnie J. Crawford, my dad, was a missing piece to my puzzle during my childhood years. I am thankful for my adult relationship I had developed with him over the years. He became a great friend, confidant, and father figure to me and my children. Unfortunately, he lost his battle to liver cancer August 2013. Dad, you are missed.

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## Chapter 1

### Introduction

The onset of the 2007 Great Recession led to an economic crisis, but the financial industry survives. In late 2007, the United States market was reducing the demand for housing and housing production (Ebel, Petersen, & Vu, 2013). The weakening of market decreases household moves (demand) and housing production to increase the housing stock. This reaction was in response to the financial meltdown that increased in 2008, channeling through 2009 as unemployment rose, and spending tumbled. The changes in the socio-economic environment (e.g., stability, strength, and balance) created an increased demand for services to assist Americans affected by the recession. The cost of housing is rising, making affordable housing challenging for low-income families to access. The location is essential in choosing a home; however, meeting the needs of the family is necessary for stabilization. According to the Joint Center for Housing Studies of Harvard University (2008), affordable housing access challenges low-income families who desire to move into areas that satisfy familial needs. The economic crisis created a rental affordability crisis, which resulted in owners losing homes and quickly buying another, others moving in with family and friends, and those owners becoming renters.

The public housing authority (PHA) is one of many vehicles used to create federal funded affordable housing options in communities in the United States. The priority of a PHA is to assist the lower-income population and provide mixed-income housing for communities eligible for affordable housing assistance. Public housing authorities can produce housing for the low-income population to create a diverse income community by

providing affordable housing options in higher market areas. The diversity of communities can enhance the quality of life for families.

The goal of this study was to evaluate the federally funded affordable housing production using federal funding sources and its effectiveness in DeKalb County, Georgia. The periods under evaluation were prior to the Great Recession (2004-2006), during the Great Recession (2007-2009), and following the Great Recession (2010-2012). Evaluating affordable housing production using federal sources may add to the understanding of which funding sources are sustainable for development during an economic change. The funding sources each have federal regulatory requirements for their use, which control how to use the funds (Georgia Department of Community Affairs, 2014g; United States Department of Housing and Urban Development, n.d.c, Housing Authority of the County of DeKalb, Georgia, 2013d). The findings of this research may guide leadership decisions during an economic change and influence partnership opportunities within the Commonwealth for federally subsidized affordable housing production by observing the use of affordable funding sources during an economic change.

Chapter 1 will provide information into the background of the problem, delineate the problem statement, identify the purpose of the study, and describe the nature of the study. The intention of the research questions and hypotheses developed is to analyze the production of federal subsidized affordable housing during economic change. A description of the theoretical framework and definition of terms are to assist with the conceptual understanding of issues in this study, followed by the assumptions, listing specific expected components of the research. The chapter concludes with a description

of the research, outlining the parameters of the study, the limitations, and the delimitations of the study.

### **Background of the Problem**

According to the White House Office of Management and Budget (OMB) (2008), the government subsidy fell \$2 billion dollars between 2004 and 2008 for subsidized affordable housing. The Great Recession affected the availability of resources as the housing market crashed increasing foreclosure rates (Appelbaum, Baker, & Schmitt, 2008) and decreasing affordable housing options using federal funding. The Center on Budget and Policy Priorities (2011) reported 9,354,142 low-income renters in the United States. The Center further noted that low-income renters paid more than half of their monthly income toward housing expenses (The Center on Budget and Policy Priorities, 2011). Federal rental assistance programs reach a small portion of the low-income housing population that pays rental costs beyond their means (The Center on Budget and Policy Priorities, 2011).

The enactment of the Federal Housing Act occurred during the Great Depression in 1934, to make home rentals and homeownership opportunities more affordable to the American citizens. The act led to the 1937 United States Housing Act, which allowed loans to local housing agencies to provide lower-rent public housing construction expenses (United States Department of Housing and Urban Development, 2007). In 1949, the enactment of the Housing Act helped to encourage community redevelopment, growth, wealth, and security of the citizen of the United States with the promise to provide affordable housing to low-income families (United States Department of Housing and Urban Development, 1999). To continue the work in the communities, Congress

funds additional housing activities throughout the United States. The activities financed included the restoration of homes, to provide supportive services, tenant opportunities, and programs that address crime and security in the community (United States Department of Housing and Urban Development, n.d.b).

The role of the PHA is to provide affordable housing options to the community, create partnerships with private owners to influence participation in developing federal subsidized affordable housing units, and to preserve the existing units in the community. The preservation and production of affordable housing using federal funds is an issue for public housing authorities. Shaun Donovan (2011), Secretary of the Department of Housing and Urban Development, stated, “State and local governments are major drivers of the production and preservation of affordable housing” (para. 4). Innovation of housing development and preservation has come from the private sector developers using federal funding sources, which have changed the housing industry (Donovan, 2011). Partnerships with nonprofit community development corporations, housing finance, and private section companies have led the charge in leveraging funding for affordable housing. Donovan (2011) stated that the federal government must get back in the business of building and preserving.

The public housing authority’s baseline populations are families who are at 50% of median family income (United States Department of Housing and Urban Development, n.d.k). In an economic downturn, the effects include families from other income brackets, which may need federal subsidized affordable housing. Federal financial allocations to public housing authorities are for housing programs that meet the need of communities (United States Department of Housing and Urban Development,

n.d.n). However, the programs have limitations of whom they can serve in each community leaving the public housing authority searching for other mechanisms to provide housing assistance. This assistance may come in forms of rent subsidies and rent caps using Low-Income Housing Tax Credits (LITHC) (United States Department of Housing and Urban Development, n.d.g). Additional forms are Multi-family Tax-Exempt Bonds (Housing Authority of DeKalb County, Georgia, 2013f), or a combination of programs to create layered financing to maintain affordable rents.

The analysis of the production was to identify which federal funding source is effective during economic change. Each funding source has limitations for affordable housing development (United States Department of Housing and Urban Development, n.d.b). Funding differs from each jurisdiction based on need. Current studies have data relevant to large cities and metropolitan areas to address affordable housing policy (Aurand, 2013; Sullivan & Power, 2012; Zeidel, 2010). This analysis may provide findings as a source for small jurisdictions to evaluate their federal funding allocation using various sources for housing production independent from large cities and metropolitan studies.

### **Statement of the Problem**

The socio-economic conditions of the community affect housing preservation options and consistent, affordable unit creation (Krigman, 2010). According to the United States Department of Housing and Urban Development (2011) study, the need for housing assistance surpasses the federal, state, and local governments' ability to supply it (p. vii, para 2). Household vulnerability for low-income families has increased demand

for affordable housing and employment opportunities (United States Department of Housing and Urban Development, 2011).

The general problem is federally funded affordable housing production does not meet the demand for affordable housing (Joint Center for Housing Studies of Harvard, 2014) due to federal funding limitations and economic influences. According to Krigman (2010), creating and maintain affordable housing is a challenge and continues to be in the midst of economic change. The analysis of the production may allow public housing authorities to strategize the use of federal funds in the time of economic change to meet the needs of its community.

The specific problem is that in DeKalb County, Georgia, economic changes pose limitations for lower-income populations in housing choices. The national tax credit investment fell from \$9 billion in 2006-2007 to approximately \$5.5 billion in 2008 (Solomon, 2009). During the Great Recession, increased demand for rental units pushed up rental rates and created incentives for the conversion of below-market-rate housing (Sullivan & Power, 2012). This resulted in increased low-income individuals and families to find affordable housing (Sullivan & Power, 2012). The negative effect of economic change poses limitations for lower-income populations; in housing choices are the decline in renter's income and the rise in rents increase the cost burden on families (Harvard Joint Center for Housing Studies, 2013). Public housing authorities (PHA) alone have limitations performing their missions and objectives to provide federal funded affordable housing during an economic change. Housing and Urban Development (HUD) programs play a critical role in creating stable housing for very low-income renters (United States Department of Housing and Urban Development, 2011) public

housing authorities must seek other alternatives using innovative approaches to maintaining low-income affordable housing (Solomon, 2009). This study may provide a model to advise small communities' projections and alternatives to produce affordable housing with limited funding source availability.

### **Purpose of the Study**

The purpose of this quantitative descriptive longitudinal non-experimental study was to analyze the production of federally funded affordable housing prior to the Great Recession (2004-2006), during the Great Recession (2007-2009), and after the Great Recession (2010-2012) in DeKalb County, Georgia. This particular period chosen was to examine the data for affordable housing federal funding source effectiveness in the midst of economic change. This longitudinal non-experimental study requires the use of the topical, geographical approach to focus on DeKalb County and the federally funded sources used to produce affordable housing units.

This quantitative research will evaluate the federally funded affordable housing production during a 9-year period. The years selected include the economic Great Recession (Sullivan & Power, 2012). The financial industry had reached a low point in the economic downturn (Ebel, Petersen, & Vu, 2013). In affordable housing, there are other options to continue stabilizing communities, federal funding resources (United States Department of Housing and Urban Development, n.d.). The affordable housing market evaluates major cities and on a national scales (United States Department of Housing and Urban Development, 2013). The affordable housing market is essential in every community, which makes this research valuable. DeKalb County, Georgia, is one of the largest jurisdictions in Georgia (Atlanta Convention & Visitors Bureau, 2012).

However, compared to the City of Atlanta, DeKalb County has no research for reference (Anil et al., 2010; Paris, 2006; Ruel et al., 2012; Tester et al., 2011; White, 1997).

According to HUD's 2011 Worst Case Needs Report, the Southeast region experienced the highest number of burdened renters (United States of Housing and Urban Development, 2011). The findings of this research may assist DeKalb County, Georgia with information to help community partners, local authorities, state, and government offices create community plans for their jurisdiction.

### **Significance of the Study**

The significance of this quantitative descriptive longitudinal non-experimental study is that the findings may provide a model for small jurisdictions to evaluate their use of federal funding to prepare for economic change. This study may also contribute to the housing industry about using federal financing sources to produce affordable housing units during an economic change in small communities. The focus of the study is on DeKalb County, Georgia, before the Great Recession, during the Great Recession, and after the Great Recession. The expected results for this study will be specific for DeKalb County, Georgia, which does not include Atlanta, Georgia to provide results for small communities within metropolitan areas. The production of affordable housing uses federal funding sources such as HOME Investment Partnership Fund, Community Development Block Grant (CDBG), Multi-family tax-exempt bonds, public housing, and Housing Choice Voucher Program (HCVP).

The descriptive longitudinal non-experimental quantitative study process included an evaluation of federal funded affordable housing and federal subsidized affordable housing types produced affecting the production of affordable housing units during this

9-year period of economic change. Examining the distribution of federal funded affordable housing production across the respective periods may create opportunities for leadership and developers to strategize the use of affordable housing funding sources and distribution of affordable units in DeKalb County, Georgia. In the review of the affordable housing units, production leadership may identify potential trends in economics and housing production. The approach of the study was to determine effective federal funding sources and the production of affordable housing units in DeKalb County, Georgia, with no influence of the Atlanta metro area in the years 2004-2012. Prior research focused the city of Atlanta or the Atlanta metro area that includes DeKalb County, Georgia. The discoveries of this research could assist the state, local, and government agencies, and local public housing authorities to create program guidelines to maintain and increase federal funded affordable housing in DeKalb County, Georgia.

### **Significance to Leadership**

State and local officials may use the findings of this study for jurisdictions to evaluate funding source trends during a specific period. Neighborhood preservation and production forecasts for communities could create a development plan to maximize federal housing funds. Such plans can leverage private investments into affordable housing to sustain communities. There was no other literature available. However, there are studies that included housing production to evaluate the financial use or community changes (Immergluck, 2009). The research is to evaluate the production of federally funded affordable housing surrounding the 2007 Great Recession. The research will be a scholarly contribution to addressing the knowledge gap on affordable housing issues in DeKalb County, Georgia, and similar jurisdictions.

Policy makers use data analysis to contribute to the decision-making process for budgeting for affordable housing production. In 2008, the creation of the Neighborhood Stabilization Program (NSP) was a response to the demand of affordable housing (Joint Center for Housing Studies for Harvard University, 2011). The NSP was a response to acquire and revitalize poor conditioned vacant in communities (Joint Center for Housing Studies for Harvard University, 2011). Congress appropriates funds like NSP to respond to the demand of affordable housing and to produce affordable housing in communities in need. Additional data sources by smaller housing jurisdictions assessing their housing production and forecasting their need creates opportunity to utilize funds like NSP. The funding and funding per jurisdiction may allow for precise disbursement of funds to the housing development agencies and public housing authorities.

### **Research Questions and Hypotheses**

Affordable housing demands change during an economic downturn (Schwartz, 2011). The production of affordable housing units in DeKalb County, Georgia among the federal funding sources is unknown. The production of federal funded affordable housing unit types during the economic change during 2004-2012 is unknown. Each funding source is useful for the development or rehabilitation of affordable housing. The goal of the federal funding sources is to increase the availability of affordable housing units in the United States using available sources of financing. Measurement of the variable occurs by summing the number of families receiving funding assistance (e.g., housing choice voucher program and public housing) and units using the Low-Income Housing Tax Credit (LIHTC), Multi-family Tax-Exempt Bond Finance, Public Housing,

Housing Choice Voucher (formerly known as Section 8), CDBG, HOME Investment Partnership Program, (see Appendix A).

**RQ:** What significant differences between periods and types of housing exist in the affordable housing production in DeKalb County, Georgia during the economic change?

**SQ1:** What statistically significant differences, if any, exist in the average production of federal affordable housing units among the three periods?

**H1o:** There are no statistically significant differences in the average production of federal funded affordable housing units among the three periods.

**H1a:** There are statistically significant differences in the average production of federal funded affordable housing units among the three periods.

**SQ2:** What statistically significant differences, if any, exist in the average production of Low-Income Housing Tax Credit (LIHTC), Multi-family Tax-Exempt Bond Finance, Public Housing, Housing Choice Voucher (formerly known as Section 8), CDBG, HOME Investment Partnership Program housing?

**H2o:** There are no statistically significant differences in the average production of Low Income Housing Tax Credit (LIHTC), Multi-family Tax-Exempt Bond Finance, Public Housing, Housing Choice Voucher (formerly known as Section 8), CDBG, HOME Investment Partnership Program housing units among the three periods.

**H2a:** There are statistically significant differences in the average production of LIHTC, Multi-family Tax-Exempt Bond Finance, Public Housing,

HCVP(formerly known as Section 8), CDBG, and HOME Investment Partnership Program housing units among the three periods.

### **Nature of the Study**

Quantitative studies can accept or reject the hypotheses, determine causation and frequency measure (Hoe & Hoare, 2013) using mathematically based methods (Muijs, 2011). The descriptive quantitative method of the research was purposive and was to use archival data to test the hypotheses of the production of federally funded affordable housing units during a specific economic change. The intent of this study was to find the distribution of the variable using numerical data.

Compared to quantitative research, the qualitative research approach is useful for investigating human behavior and the milieu which the behaviors take place (Salkind, 2012). Using interviewer contents in place of the numbers of (frequency) comments made is a part of the qualitative research design (Salkind, 2012). Qualitative research did not accomplish finding the relationships of information using numerical data.

The quantitative ex-post facto design examines archival materials. The ex-post facto design does not manipulate the variable (University of Central Arkansas, n.d.). The research design is useful for determining the cause-and-effect and correlational relationships (Simon, 2011). The researcher cannot manipulate an ex-post facto study (Simon, 2011).

In correlative research, pairs of variables are investigated (Black, 1999). This study does not have pairs of variables to investigate. This research is to evaluate causal, not correlative, relationships. The variables and treatment are clear and descriptive in nature. This study was purposive and the variables were specific to the time period and

federally funded affordable housing funding sources prescribed in this proposal. The quantitative descriptive non-experimental research method contributed in analyzing the data, as this research provided information to reject or accept the hypotheses. Under causal research, evidence of cause-and-effect of a change must be present (Fernbach & Erb, 2013). One must identify the controls for the variables and reveal if the predictions of outcomes are true or false (Fernbach & Erb, 2013). The descriptive longitudinal quantitative research method served the purpose of identifying the production and the distribution of federally funded affordable housing units during before the Great Recession, the Great Recession, and after the Great Recession.

### **Theoretical Framework**

The basis of the theoretical framework for the research study is on socio-economics and stakeholder theories. Jones (1995) stated the stakeholder theory is adequate in offering normative and instrumental grounding to include stakeholders in managerial decision-making. The benefits of stakeholders in decision-making is identifying the “primacy of the economic relationship to the firm, and the secondary classification of stakeholders who have a non-economic claim is found even in the work that aims to integrate and balance the competing perspectives on who matters” (Crane & Ruebottom, 2011, p. 79, para. 2). Stakeholders are anyone who benefits from the outcomes of decisions (Crane & Ruebottom, 2011). The communities are a stakeholder of public housing services. In an economic downturn, the stakeholders’ voices become louder, and the demand increases. Decision-making of public housing leadership must consider the community response and understand how the decision will influence the majority, even though the economic reasons may be the primary means of interaction

between the PHA and its constituents (Crane & Ruebottom, 2011). The stakeholder and socioeconomic theories relate to the services rendered or not rendered to the community in an economic crisis. The effects of the external environment and the views of social justice in access to social services as identified by John Rawls in his social justice theory (Banerjee, 2011) are themed in this study.

The socioeconomic influence of the 2007 recession increased the need of services for Americans. The socioeconomic theory relates to the rights of humans and justice (Waldron, 2011). The public housing authority acts as an agent for residential independence. The stakeholders of the public housing authority are community members. One may argue that public housing authorities require services, and the people have a right to access those services in their time of need. However, the basis of public housing authority program administration is on the needs of the community, so the priority is to designate the services to the lower-income population.

The 2007 recession influenced the availability of social services to communities. The socioeconomic theory explored in this study related to the access of services to community residents. The stakeholder theory established the parties who have an interest in the organizational decisions. Public housing authorities maintain the community to balance the economy while continuously evaluating community development.

The production of federally funded affordable housing units before the Great Recession, the Great Recession, and after the Great Recession was the focus of the study. Macroeconomics related to the supply and demand of affordable housing in this study. The economic changes in the banking industry, the downturn in the real estate market, and increased unemployment rate altered the dynamic of housing. John Keynes views

the economy (macro) as a whole and the elements in the economy (micro) to find distinctions in trends and relationships of influence.

The conceptual framework for this quantitative descriptive longitudinal non-experimental study is to emphasize the importance of the community and individual stakeholder in the volatile economic climate in the 2007 Great Recession and surrounding years. The basis for this study reflected the stakeholder and socioeconomic theory by connecting why community input is a necessary component in public housing authority decision-making. The study process continued with the investigation of the influence of environmental factors of social services during an economic change. Macroeconomics reflected the supply and demand of housing availability during the economic periods of 2004-2006, 2007-2009, and 2010-2012. The alignment of the socio-economic theory was an economic change with the influence of housing supply and demand. The leadership role of community collaborated as stakeholders in community preservation and meeting the long-term goals of neighborhood preservation contributed to the macroeconomics of housing supply and demand for residents.

Recent literature provided suggestions regarding the need for further research of economic changes and the influence of housing production in jurisdictions around the United States (Ebel, Petersen, & Vu, 2013; Gibson, 2010) . It continued to display gaps of economic factors, which may affect communities in providing housing choices to residents. The economic condition of DeKalb County, Georgia, and where it stands in the midst of economic change and serviceability for it residents. The literature review further described the economic changes and serviceability in Chapter 2.

## **Definition of Terms**

**Affordable Housing.** The cost for housing at or below 30% of a family's monthly income (HUD, 2013).

**Affordable Housing Eligibility.** HUD set low-income limits at 80% and very low-income limits at 50% of the median income for a county or metropolitan area. Each PHA determines eligibility based on the (a) annual gross income; (b) qualify as elderly, person with a disability, or as a family; (c) U.S. citizenship or eligible immigration status (United States Department of Housing and Urban Development, n.d.j).

**Community Development Block Grant (CDBG).** A flexible federal program that provides communities with resources to address affordable housing, loan guarantees, neighborhood stabilization, disaster recovery, and community development activities (United States Department of Housing and Urban Development, n.d.d).

**Family.** One or more persons occupying a housing unit (Housing Authority of DeKalb County, Georgia, 2013g).

**Federal Funded.** Affordable housing production using LIHTC, Multi-family Tax-Exempt Bond Finance, Public Housing, HVCP (formerly known as Section 8), CDBG, and HOME Investment Partnership Program funds (United States Department of Housing and Urban Development, n.d.n).

**HOME Investment Partnership Program.** The largest Federal block grant to state and local governments to create affordable housing for low-income households (United States Department of Housing and Urban Development, n.d.c).

**Housing Choice Voucher (HCV, formerly known as Section 8).** Housing choice vouchers service very low-income families with leased or purchased safe, decent,

and affordable private-owned rental housing (United States Department of Housing and Urban Development, n.d.f., para. 1).

**Housing Affordability.** Housing affordability is the ratio of housing costs to income for a household (Mulroy & Ewalt, 1996)

**Low-Income Housing Tax Credit (LIHTC).** Tax Credit financing is an alternative financing option for affordable housing developers. The LIHTC is an indirect federal subsidy used with other financing tools (United States Department of Housing and Urban Development, n.d.g).

**Multi-family Tax-Exempt Bond Financing.** Housing bonds assist with financing low-cost mortgages to produce low-income apartment rentals (National Council of State Housing Agencies, 2013).

**Public Housing.** Public housing is decent and safe rental housing for low-income families, elderly, and persons with disabilities ranging from scattered single-family houses to high-rise apartments for elderly families (United States Department of Housing and Urban Development, n.d.e).

### **Assumptions**

The source of the collected data was affordable housing units from housing authorities who service DeKalb County, Georgia. The data was in the public domain. The information supplied is the same data submitted to the Department of Housing and Urban Development for annual reporting. A further assumption is the accuracy of the housing data used to evaluate and forecast funding for the public housing agencies.

## **Scope**

The scope of this study was to evaluate the distribution of federally funded affordable housing production prior to the Great Recession (2004-2006), during the Great Recession (2007-2009), and following the Great Recession (2010-2012) in DeKalb County, Georgia. The units produced were from the Housing Authority of the County of DeKalb, Georgia, and the Georgia Department of Community Affairs who produce units in DeKalb County, Georgia. The research determined the number of federally funded affordable housing units produced in aggregate. These entities established the parameters of the study.

- LIHTC.
- Multi-family Tax-Exempt Bond Finance.
- Public Housing.
- HCVP (formerly known as Section 8).
- CDBG.
- HOME Investment Partnership Program funding sources.

The affordable housing data from the public housing authorities and state housing agency provided production data for federal funded affordable housing services in their jurisdiction during the 9-years using an open records request. Adding numerical data summation by years and funding source into a spreadsheet is necessary to summarize the information for statistical analysis. Once the data entry is complete for analysis, the results are ready for evaluation and interpretation.

## **Limitations**

The period of 2004-2012 included the years before and after the 2007-2009 Great Recession to observe economic influences. The research limitation amounts to information available from the agency databases. The data is numerical and reported either monthly or annually. For monthly, the December numbers were for the study. The limitation of the archival data from each agency cannot dictate the behavior of affordable housing production in DeKalb County by itself. Aggregate information from each agency is necessary to have sufficient research findings for DeKalb County, Georgia.

The quantitative descriptive longitudinal non-experimental research design presents limitations to the study. In a longitudinal non-experimental study, limitations extended to using the same funding sources over the nine-year period. Longitudinal studies challenges are theoretical and conceptual issues, methodical and design decisions, and analytical issues (Ployhart & Vandenberg, 2010). The focus of the study was to analyze the affordable housing production during the three periods using archival data. The inferences drawn from the discoveries were the value of federal funding source use during the years of study, the socioeconomic reference, and the projected use of federal financing sources to produce affordable housing units.

## **Delimitations**

Delimitations established the contributions of the study to the body of knowledge while acknowledging the threats to generalization (Ellis & Levy, 2010). Delimitations set the boundaries of the study by defining the parameters of the investigation (Simon, 2011). The first delimitation of this study was the federal funding sources chosen were the most common ones used in the affordable housing industry. The study did not

explore the option of layered funds because it would broaden the scope and change the focus of each of the funding sources. The second delimitation in this study was conducted in DeKalb County, Georgia. DeKalb County is a large part of the Atlanta Metropolitan area. However, DeKalb County has different housing needs than the metropolitan area. This study did not include exploring this topic in other counties within the Atlanta metropolitan area. The third delimitation was the affordable housing units produced specific to the years 2004-2012. The time period chosen was to include the Great Recession of 2007-2009. The final delimitation of the study was the affordable housing units in the study had to be produced in DeKalb County, Georgia, use the federally funding sources outlined in this study, and the time period for evaluation was 2004-2012.

### **Summary**

The focus was on the production and allocation of federal funded affordable housing units in DeKalb County, Georgia during an economic change. The years 2004-2006 were the baseline of federal funded affordable housing production to establish what the production was before the 2007-2009 Great Recession. To create a fair assessment of the economic conditions, 2010-2012 after the Great Recession completed the review. The effect on the viability of communities in restoring opportunities for families in need to access affordable housing and to evaluate the federal funded affordable housing production during economic change was the focus of the study. The research model guided the study to answer the question: What factors affect the affordable housing production in DeKalb County, Georgia during economic change? Conducting a quantitative descriptive longitudinal non-experimental study assisted with evaluating the

production of federal assisted affordable housing units during economic change. The conduction of a descriptive non-experimental study includes using the two-way ANOVA without repetition statistical analysis to determine if there are any differences in the production of affordable over these three periods.

Chapter 2 provided a review of the literature about the stakeholder theory and affordable housing surrounding the topic. Chapter 2 contains an examination of the theoretical frameworks supporting this study, including the stakeholder theory to establish the community as a stakeholder and voice in the decision-making process. Additional stakeholders are the government agencies, other nonprofit social services, community residents, and private stakeholders who influence the accessibility of housing services. The other theory of support was the macroeconomic theory of supply and demand of affordable housing units. The 2007 Great Recession created a demand for affordable housing units, which challenged the availability and access to federal funded affordable housing. A detailed review of this subject matter is in the review of the literature in Chapter 2.

## Chapter 2

### Review of the Literature

The purpose of a literature review is to assess the research surrounding public housing since its inception in community settings. The literature review is to establish an understanding of the body of knowledge and credibility (Pearl, Brennan, Journey, Antill, & McPherson, 2014). The review of the literature assisted with establishing the timelines of federal funded affordable housing program development in economic change. The 2007 Great Recession challenged public housing authorities' service distribution in communities. According to United States Department of Housing and Urban Development (2009), "the supply of public rental assistance was far from adequate to cope with the surging needs and indeed expanded very little during the 2007-2009 period" (p. 2, para 3). The purpose of the quantitative descriptive longitudinal non-experimental study was to analyze the differences of federal funded affordable housing production during economic change and the funding types during an economic change.

Chapter 2 begins with the history of public housing authorities and their role in the community. The literature review included information about implementing federal funded affordable housing programs, the Housing Authority of DeKalb County, Georgia, Georgia, Georgia Department of Community Affairs, DeKalb County Community Development, and The United States Department of Housing and Urban Development. The presentation of the literature for this study was: (a) documentation of searches, (b) overview of theoretical frameworks, (c) background of public housing and housing programs, (d) public housing authorities and housing agencies, (e) current documentation of entities related to research variables (f) leadership, (g) summary and conclusion.

## Title Searches, Articles, Research Documents, and Journals

Most materials for this study were from electronic libraries (see Table 1). The EBSCO Discovery Service database provided 175 sources, of which 14 were, peer-reviewed articles focusing on research theory. The peer-reviewed articles were about stakeholder and socioeconomic theories regarding community members and the limitation of public housing. Articles on macroeconomics and supply and demand were available for a general understanding of the economic climate during the study period. A limitation existed on the topics of macroeconomics supply and demand of affordable housing. Other sources, such as the Internet, provided information regarding public housing authority's initiatives, services, and housing availability in the DeKalb County, Georgia, community.

Table 1

### *Summary of Literature Review by Search Topic*

| Literature topic   | Journal Articles<br>Empirical Periodicals | Books | Internet | Reports | Resources<br>published within<br>past 5 years |
|--------------------|---|-------|----------|---------|---|
| Leadership         | 49  | 13    | 10       |         | 65  |
| Affordable Housing | 15  | 3     | 6        | 2       | 23  |
| Research theory    | 3   | 7     | 4        |         | 13  |
| Total              | 67  | 23    | 20       | 2       | 101   |

Information regarding public housing activity was searchable on the Department of Housing and Urban Development (HUD), the Housing Authority of DeKalb County, Georgia, the Department of Community Affairs, Georgia website. The Internet provided electronic newspaper articles regarding economic changes, economists' opinion, and forecasting of future changes. Leadership roles, issues, and styles were part of the electronic library and texts.

## **Socio-economic Theory and Justice Theory**

Theories of socio-economic rights together with theories of justice are an intellectual conundrum. John Rawls (1971) defines socio-economic rights to equal human rights, the theory of justice. Rawls (1971) further accounted for the theory of justice and theory of the person, by two principals:

1. Justice and fairness and;
2. Certain detailed theorems in public policy.

The socioeconomic theory's relationship to the theory of justice is the defense of citizens' rights. Developing affordable housing is a goal of the federal government. Based on the Housing Act of 1934 citizens are afforded decent, safe, and sanitary housing in their community (United States Department of Housing and Urban Development, 1999). As public policy provides housing to its citizens, the theories of socioeconomics and justice validate a citizen's request for housing. The socioeconomic challenge is the affordability of housing to the different income classes. According to the 2009 Worst case needs report, in "2007, 5.91 million very low-income renters represented 5.3% of U.S. households and 37% of all very low-income renter households" (p. 22, para. 1). The 2009 Words case needs report continued to state, "Of the 5.91 million identified, 97% had excessive rent burdens" (p. 22, para. 2). The theory of justice challenges the communities housing available, however, not available to all classes.

The position of the theory of justice is equality. The 1934 Housing Act stated access to housing for all (United States Department of Housing and Urban Development, 2007). Public housing authorities abide by the 1934 Housing Act to produce and preserve affordable housing units. As stated by the United States Department of Housing

and Urban Development (n.d.j), HUD administers federal aid to local housing agencies that manages “housing for low-income residents at rents they can afford” (para 1). The socioeconomics of the community and the theory of justice support community responsibility of availability of housing to citizens.

### **Stakeholder Theory**

Freeman (1984) defined a stakeholder as “any group or individual who can affect or is affected by the achievement of the organizational objectives” (p. 68). Freeman’s (1984) theory of stakeholders introduces the inclusion of individuals serviced by business and upholding their ethical role in providing goods and services to citizens. Public housing is a service available to eligible low-income persons with disabilities, elderly, and families (United States Department of Housing and Urban Development, n.d.e). According to the theory of stakeholders, building relationships with citizens as citizens build a humanistic approach to how to resolve issues with providing products or services (Silver, 2012). The federal government subsidizes public housing program administration around the country (United States Department of Housing and Urban Development, n.d.e). The servicing of the citizens is to provide the service to those in need and qualify during the time of need. The stakeholder theory justifies a community opinion and suggestion of public housing use to service people in need.

Corporations can affect the interests of citizens (Silver, 2012). The effect is by acting to undermine the equitable treatment of the interest of all citizens in their societies or by undercutting the ability of citizens to exercise their authority to make social decisions (Silver, 2012). Most housing authorities and agencies report to the board of commissioners who represent the community objectives and serve as the community

voice of program and service needs (Alabama Association of Housing and Redevelopment Authorities, n.d.). Minoja (2012) related the stakeholder theory to corporate social responsibility. Minoja (2012) further acknowledged that scholars advocated for integrating corporate social policy into strategic management.

Policy and management is an appropriate for this study as the public housing authorities have public policies to uphold yet, have to manage the services afforded to the community Public Housing Authorities fulfilling their responsibilities during economic change present challenges to community objectives. The 1937 Act allowed the United States Public Housing Authority authorized loans to local public housing authorities to create lower-rent public housing (United States of Housing and Urban Development, 2007). The programs were designed to respond to the economic conditions of the 1930s (United States of Housing and Urban Development, 2007). The response is contingent on funding, collaboration, and program implementation.

Public housing authorities apply for additional funding for programs such as the housing choice voucher program to service families (U.S. Department of Housing and Urban Development, n.d.k). Public Housing Authorities are awarded funding through a competitive process (U.S. Department of Housing and Urban Development, n.d.k). The significance of social responsibility or serving a plurality of stakeholder leads to competitive advantage or improved financial performance “reinforces, rather than relieves, the tension” quoted by Margolis and Walsh (as cited by Minoja, 2012, p. 67). Public housing authorities must serve their community and assist residents to reach self-sufficiency.

## **Macroeconomics**

The United States experienced a crisis during the Great Recession. The Great Recession brought on long lasting effects resulting in social and political instability around the world (Vukovic, 2011). Control of the affordable housing market through regulations that enforce the stimulation of government-sponsored enterprises, rating agencies, and banking regulation (Vukovic, 2011) changes housing production. The connection between the government and the finance industry increased as the financing products became limited for housing production. According to the Joint Center for Housing Studies of Harvard University (2011), rental housing requires access to affordable financing. The Joint Center for Housing Studies of Harvard University (2011) continues to state the changing landscape of mortgage finance and the effects of the cost of availability of funds.

One of the causes of such a change in the economy is deregulation and profit seeking. The original Keynes theory views the economy as a whole (Vukovic, 2011). The theory was not entirely applicable to the United States, but the (New) Keynesians urged for more intervention into financial regulation and government stimuli to drive the growth of the economy (Vukovic, 2011). The crisis in the financial industry and the bubble burst of the housing market in the economic cycle reached an economic downturn. The crisis, enhanced by the greed of investors to reap financial gain, was not the rationale for expectations of investments over time (Vukovic, 2011), which, caused a depressed housing market (Chernick, Langley, & Reschovsky, 2011). The reflection of economic influence differs from each major city. The macroeconomic approach provides the

national outlook for the foundation of the microeconomic impact of DeKalb County, Georgia.

### **History of Legislation for Affordable Housing**

The United States of America experienced an economic downfall during the 1929 stock market crash. During the 1930s, the economic change caused the unemployment rate to reach 23% but averaged 14% during the depression (Samuelson, 2012). The depression further hardened the financial industry for private and commercial loans, which weakened banks by increasing customer loan defaults (Samuelson, 2012). The Great Depression was the socioeconomic period between 1929 and 1941. In response to the hardship of unemployment, housing construction costs, and housing availability to the poor, the federal government entered into the housing business (Great Depression put government in the housing business, 1993). In 1932, legislators passed the Federal Home Loan Bank Act (United States Department of Housing and Urban Development, n.d.a).

The creation of the Federal Home Loan Bank Act was to “ensure that the housing government-sponsored enterprises (GSE) operate in a safe and sound manner so that they serve as a reliable source of liquidity and funding for housing finance and community investment” (Federal Housing Finance Agency, 2014, para 6). In cooperation with the Federal Home Loan Bank Act, the government created a new organization, the Home Loan Bank Board and Bank System (United States Department of Housing and Urban Development, n.d.a). To continue the efforts of housing finance structure in government Congress created the Reconstruction Finance Corporation. This corporation provided loans to private developers and entities that provided housing for low-income families (Great Depression put government in housing business, 1993).

Enacted in 1934, the purpose of the National Housing Act was to relieve unemployment and stimulate the release of private credit controlled by banks and lending institutions (United States Department of Housing and Urban Development, n.d.a). In the same year, the government created the Federal Housing Agency (FHA). The FHA assisted with the availability of public housing and low-rent housing (United States Department of Housing and Urban Development, n.d.a).

The United States Housing Act of 1937 allowed local public housing agencies to receive loans for construction expenses as it relates to the production of lower rent public housing (United States Department of Housing and Urban Development, n.d.a). The Act further introduced the public housing program in response to the lower-income families in need of housing (United States Department of Housing and Urban Development, 2007). The Housing Act subsidized the development of low-rent public housing by local authorities. The establishment of public housing authorities (PHA) was by necessity in states, cities, and counties. The PHA creates, preserves, and stimulates the development in their areas of jurisdiction (United States Department of Housing and Urban Development, 2007). Since 1937, the PHAs role has expanded per the Housing Act of 1937 Amendment (United States Department of Housing and Urban Development, 2007). The amendments continue to allow PHAs to revitalize communities using federal financing to afford the citizens affordable housing.

The Housing Act of 1937 evolved to include economic development in communities (United States of Housing and Urban Development, n.d.d). The Community Development Block Grant Program (CDBG) of 1974 addressed community development needs. The program is to “benefit low-and-moderate-income persons,

prevent or eliminate slums or blight, or address community development to address severe and immediate threat to the health or welfare of the community for which another funding is not available” (United States of Housing and Urban Development, n.d.d., para 14). The realization of federal funded affordable housing depends upon the economic conditions, community need, and services required for stabilizing the area. Funding is provided to public housing agencies using the Notice of Funding Availability (NOVA) based on the grant applications and annual contribution contracts (ACC) (United States of Housing and Urban Development, 2014). The United States Department of Housing and Urban Development offers other government low- and no-interest funding options for community development use (United States Department of Housing and Urban Development, n.d.d). Public Housing Authorities, community developers, and private developers have access to these funding sources when their housing projects provide affordable housing units in their community.

Both acts assisted with federal housing policy relating to public housing and subsidies for low-income families and provided credit for middle-income family homeownership (Lendman, 2010). In 1942, the National Housing Agency was formed followed by the Housing and Home Finance Agency in 1947, the Urban Renewal Administration, VA Home Loans, and Farmers Home Administration Section 502 in 1949 (Huduser, n.d.).

Legislation passed to address housing for United States citizens by creating housing acts under the law. In 1949, the United States Housing Act of 1949 became law (Huduser, n.d.), followed by the enactment of the United States Housing Act of 1954. In 1965, the Department of Housing and Urban Development Act passed and the 1968 Fair

Housing Act furthered the support of housing equality for citizens (Huduser, n.d.). In 1966, rent supplements (Huduser, n.d.) became available. In 1967, public housing introduced scattered sites into the program (Huduser, n.d.) known as single-family homes. The Housing and Community Development Act passed in 1974, and amended twice, in 1977 and 1978, to address current housing issues and program objectives.

The aggressive expansion of public housing operating subsidies for Section 8 project-based and Section 8 Existing Housing (tenant-based) helped to address the need for shelter (Huduser, n.d.). Public housing provides decent and inexpensive rental housing for low-income families, elderly and physically challenged families (Lendman 2010). During the Regan Administration in the 1980s, grass-root efforts to support funding, servicing, and program development associated with homelessness (United States Department of Housing and Urban Development, n.d.a) changed the presence of federal funded housing options.

### **Housing Authorities and Housing Agencies**

Housing authorities and housing service agencies serve the same purpose in the community to provide affordable housing to its community (United States Department of Housing and Urban Development, n.d.l). Each agency has an extension of housing and community development to enrich the socioeconomic environment. The missions, values, and goals of the community drive the development of housing objectives for each agency using an administrative plan (United States Department of Housing and Urban Development, n.d.m). Although federal funding exists, these housing programs to assist with housing issues in the community, the economic environment affects the production of housing in the community and who obtains services.

In 2010, the Delaware Housing Coalition (DHC) created a publication to provide data, community awareness, and empowerment to local constituents in the changes experienced in Delaware (Delaware Housing Coalition, 2010). In one of the articles called, “Increasing Housing Needs” (Gibson, 2010), reviewed the affordability gap in Delaware’s largest markets. The analysis evaluated the increase of poverty levels since the 2007 recession while considering the external environment of unemployment, the housing market, and family size (Gibson, 2010). The article evaluated the funding available to Delaware to assist in the changes of the housing environment.

In the research, the findings indicated that federal assistance increased in small increments since 2004 (Gibson, 2010), putting pressure on the local public housing authority to find solutions to help its community. Other programs are available to assist the housing problem in the community, such as Low-Income Housing Tax Credits (LIHTC) and homeownership; however, these programs are for the families in a higher income bracket than families who have suffered income loss because of the economic change (Gibson, 2010).

**Public housing authorities.** State and local governments as a local governing body (LGB) create public housing authorities (United States of Housing and Urban Development, 2007a). The PHA and housing agencies manage and operate federal low-income housing programs for rental and homeownership opportunities in communities (United States and Housing and Urban Development, 2007). The funding for PHAs comes from the Department of Housing and Urban Development (see Appendix B). The funding varies according to programs administered in the PHA jurisdiction. Appendix B

describes the public housing program funding types available and the activities associated with the source.

Although the administration of public housing authority programs different, either by the PHA, or by contracting out the program services, the community service objectives are satisfied using different business methods. The authority's administrative plan outlines program administration (United States Department of Housing and Urban Development, n.d.m). The administrative plan outlines the goals and objectives of the Authority (United States Department of Housing and Urban Development, n.d.m) as approved by the board of commissioners. Board members are stakeholders with an appointment from community stakeholders (Alabama Association of Housing and Redevelopment Authorities, (n.d).

***Housing Authority of DeKalb County, Georgia.*** The DeKalb County, Georgia, affordable housing efforts are collective. DeKalb County has two housing authorities, Housing Authority of the City of Decatur, Georgia, and the Housing Authority of the County of DeKalb, Georgia. The Housing Authority of DeKalb County (HADC) Georgia is the largest housing authority in DeKalb County.

According to Housing Authority of the County of DeKalb, Georgia, (2013e), "HADC was established in 1955 in accordance with state and federal laws" (para 1). Housing Authority of DeKalb County administers federal funded affordable housing programs to include public housing, the Housing Choice Voucher Program (HCVP), affordable housing, and Multi-Family Tax-Exempt Bonds (Housing Authority of the County of DeKalb, Georgia, 2013e). The housing authority has a commitment to collaborate with other agencies to revitalize and maintain neighborhoods, influence

economic development, and provide affordable housing options to DeKalb County residents (Housing Authority of the County of DeKalb, Georgia, 2013e).

***HADC public housing.*** The Housing Authority of the County of DeKalb, Georgia, owns and operates 698 units of public housing (Housing Authority of the County of DeKalb, Georgia, 2013c). The public housing units scattered around DeKalb County, Georgia, service residents in need (Housing Authority of the County of DeKalb, Georgia, 2013c). Some public housing units have designation to the senior population who meet the low-income guidelines.

***Housing choice voucher program.*** The Housing Authority of DeKalb County (HADC) is the third largest Housing Choice Voucher Program in Georgia (Housing Authority of the County of DeKalb, Georgia, 2013b). Housing Authority of DeKalb County administers over 5,500 Housing Choice Vouchers for families (Housing Authority of the County of DeKalb, Georgia, 2013b). The program services families with housing options to live in single-family homes or apartment living.

***HADC affordable housing.*** Housing Authority of DeKalb County's affordable housing program is the development of homes available for purchase (Housing Authority of the County of DeKalb, Georgia, 2013a). The most recent development of East Side Walk encourages affordable housing homeownership opportunities in DeKalb County. These HADC single-family homes range in size from 1560-2300 square feet (HADC, 2013a).

***Multi-family tax-exempt bond program.*** The tax-exempt bond program finances single- and multi-family housing (Housing Authority of the County of DeKalb, Georgia, 2013d). The program helps to provide financing for housing developers to build

affordable housing units for families at income levels below DeKalb County's median income (Housing Authority of the County of DeKalb, Georgia, 2013d). This program assists in County economic development efforts by ensuring a supply of housing for workers in new industries, therefore, creating an attraction to the County (Housing Authority of the County of DeKalb, Georgia, 2013d).

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workers in new industries, therefore, creating an attraction to the County (Housing Authority of the County of DeKalb, Georgia, 2013d).

**DeKalb County Community Development.** The DeKalb County Community Development Department is a partner in providing affordable housing options to residents in DeKalb County, Georgia. According to DeKalb County Community Development (n.d.), the Department “provides the resources for decent and affordable housing, improvement and expansion of community facilities and infrastructure, and creation of new job opportunities” (para 1.). DeKalb County Community Development administers programs such as Community Development Block Grant Recovery (CDBG-R) Program, Homeless Prevention and Rapid Re-Housing Program (HPRP), and Neighborhood Stabilization Programs 1 (NSP<sub>1</sub>) and 3 (NSP<sub>3</sub>) (DeKalb County Community Development, n.d.). These programs afford the DeKalb County residents options for housing opportunities. The DeKalb County Community Development submits federal funded affordable housing activity to the Georgia Department of Community Affairs.

***Community development block grant recovery (CDBG-R) program.*** The CDBG funding help developers with hard costs associated with infrastructure improvements and activities that stimulate job creation and economic revitalization (DeKalb County Community Development, 2013). Community development block grant recovery funding works to ensure decent affordable housing (United States Department of Housing and Urban Development, n.d.e). This source of funding is a valuable tool for tackling the challenges in the communities (United States Department of Housing and Urban Development, n.d.e).

***Homeless prevention and rapid re-housing program (HPRP).*** The Homeless Prevention and Rapid Re-Housing Program is a prevention program for individuals and families (DeKalb County Community Development, 2013). The program assists residents who may lose their homes or to help the homeless with re-housing and stabilization (DeKalb County Community Development, 2013). The purpose of the program is to quickly re-house and stabilize individuals and families (DeKalb County Community Development, 2013).

***Neighborhood stabilization program (NSP<sub>1</sub>).*** The Neighborhood Stabilization Program is a revitalization program to help communities who have suffered from foreclosures and abandonment (Department of Housing and Urban Development, 2013). According to the Department of Housing and Urban Development (2013), “NSP<sub>1</sub>, a term that references the NSP funds authorized under Division B, Title III of the Housing and Economic Recovery Act (HERA) of 2008, provides grants to all states and selected local governments on a formula basis” (Para 1). The goal of the DeKalb County Community Development program is to stabilize neighborhoods affected by foreclosures and mortgage crises (DeKalb County Community Development, 2013).

***Neighborhood stabilization program (NSP<sub>3</sub>).*** According to the Department of Housing and Urban Development (2013), NSP<sub>3</sub>, a term that references the NSP funds authorized under the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) of 2010, provides a third round of neighborhood stabilization grants to all states and select governments on a formula basis. DeKalb County Community Development focused the NSP funding to the Hidden Hills neighborhood in DeKalb

County, Georgia, to stabilize the community (DeKalb County Community Development, 2013).

**Georgia Department of Community Affairs.** The Georgia Department of Community Affairs (DCA) was created in 1977 (Georgia Department of Community Affairs, 2014a). The Department of Community Affairs role is to serve as an advocate for local governments. This branch of government includes the Georgia Housing and Finance Authority (GHFA), which holds the housing and housing finance components of the state. The Department of Community Affairs has four divisions of housing (a) Community Development and Finance Division (CDFD), (b) Executive Division (ED), (c) Housing Finance Division (HFD) and (d) Rental Assistance Division (RAD) (Georgia Department of Community Affairs, 2014a).

***Community development and finance division (CDFD).*** The Community Development and Finance Division house the CDBG program for community redevelopment. This program funds neighborhood revitalization and homebuyer assistance to residents (Georgia Department of Community Affairs, 2014c). The CDFD department continues to provide low-moderate-income citizens with resources for rehabilitation, homeownership, and community blight (Georgia Department of Community Affairs, 2014).

***Executive division.*** The Executive Division administers the “Georgia Allocation System” (para. 1) for local and state government issuing authorities seeking to issue “private activity tax-exempt bonds” (Georgia Department of Community Affairs, 2014b, para. 1). This department issues multi-family housing development bonds for single-family and multi-family units (Georgia Department of Community Affairs, 2014b, para.

1). This branch of government monitors the multi-family tax-exempt bond program administered throughout Georgia (Georgia Department of Community Affairs, 2014b, para. 1).

***Housing finance division.*** The Housing Finance Division (HFD) encompasses the majority of affordable housing programs administered by Georgia. Some programs in the division are the Georgia Dream Homeownership program, HOME Rental Housing Loan program, Housing Opportunities for Persons with AIDS (HOPWA), and Low Income Housing Tax Credit program Georgia Department of Community Affairs, 2014d). The Georgia Dream Homeownership program allows low and moderate-income families to live the dream of homeownership using three down payment loan options. The options are (a) standard program buyers qualify for \$5,000; (b) Pen program for military, health care, educators, and public protectors qualify for \$7,500; and (c) Choice program for households who have an individual living with a disability qualify for \$7,500 (Georgia Department of Community Affairs, 2014d).

The HOME Rental Housing Loan program (HOME Program) results from the 1990 National Affordable Housing Act (Georgia Department of Community Affairs, 2014e). The Georgia Department of Community Affairs is under contract to administer project funding with the Georgia Housing and Finance Authority (Georgia Department of Community Affairs, 2014e). This program funds participating jurisdictions (PJs) to assist in affordable housing developments.

The Housing Opportunities for Persons with AIDS (HOPWA) program is a federal supported program to provide housing assistance (emergency, shelter, transitional, and permanent) for low-income persons with HIV/AIDS (Georgia Department of

Community Affairs, 2014f). These sub-granted funds to nonprofit agencies assist individuals with AIDS (Georgia Department of Community Affairs, 2014f). The Department of Housing and Urban Development funds three government entities within Georgia for HOPWA administration (Georgia Department of Community Affairs, 2014f).

Low-Income Housing Tax Credits (LIHTC) is a program, which state and federal credit allocation to owners of qualified rental properties that reserve all or a portion of the development for low-income tenants (Georgia Department of Community Affairs, 2014g). The Low-Income Housing Tax Credit program, regulated by Section 42 of the Internal Revenue Service, develops affordable housing units under the program guidelines (United States Department of Housing and Urban Development, n.d.l). The program provides owner funding with favorable financing terms in exchange for long-term affordable housing units in the community (United States Department of Housing and Urban Development, n.d.l).

The Housing Choice Voucher Program (HCVP) serves eligible low-income individuals and families throughout Georgia. The program enhances living conditions for low-income persons while maintaining rent payments (Georgia Department of Community Affairs, 2014). This program provides an incentive for private property owners to participate by offering subsidy payments (Georgia Department of Community Affairs, 2014h).

### **Public Housing Activity**

Public housing was a charge of the federal government since the 1960s (United States Department of Housing and Urban Development, 2007). The program activity has evolved to allow public housing authorities to develop low-income housing to meet the

needs of their communities (United States Department of Housing and Urban Development, n.d.j). Public housing has expanded to include multi-family rental housing, single-family rental housing, and homeownership opportunities. The expansion uses various types of federal financing like Moving to Work (MTW) and Homeownership and Opportunity for People Everywhere VI (HOPE VI).

Public housing options have evolved from high-rise developments to garden-style communities. In 2000, Chicago Housing Authority (CHA) began a 10-year transformation plan to demolish their Cabrini-Green high-rise community that housed tens of thousands of households. The transformation was an attempt to replace them with 25,000 new or rehabilitated public housing units (Salsich, Jr., 2012). The reform of the project was in an effort of using the HOPE VI funds, which were leveraged with private investment to broaden the socioeconomic mix (Salsich, Jr., 2012). The flexibility of federal funding allows public housing authorities with the investment from community partners to transform this property into an asset in the community.

The Atlanta Housing Authority (AHA) used the HOPE VI funds to demolish spatially concentrated developments. The funding was to replace mixed-income housing (Tester, Ruel, Anderson, Reitzes, & Oakley, 2011, para. 1). To break up the concentration of poverty and other social and physical ills, AHA relocated residents into the private market rental housing using the housing voucher subsidies (Tester et al., 2008). The relocation of residents created an opportunity to improve the quality of life and experience in other areas of the city.

Baltimore Housing Authority funded 24 public housing developments with a bond deal worth \$476 million pay for current work (Barbanel, 2013). The housing

developments houses 32,000 people (Barbanel, 2013). The preservation of public housing is at the charge of the PHA. However, the availability of funds dictates the financing of the activities.

Continued efforts in preserving affordable housing are Annapolis Housing Authority in the rehabilitation of a 50-unit Bowman Court complex and its sister site Annapolis Gardens of 100-units (Kelly, 2010). The community built in 1964 and 1976 cost \$12 million in federal funds and \$4 million in private funds in renovation funds to improve living standards. Some improvements include flooring, washer and dryers, and structural durability (Kelly, 2010). The preservation efforts maintain the needs of the community and goals of the housing authority.

### **Housing Production during Economic Changes**

The need for affordable housing is overwhelming (Reid, 2001). A 1997 report by the Center for Housing Policy found that over 14 million families critically needed housing (Reid, 2001). Critical needs are defined as a family spending over 50% of their income on housing or live in substandard housing (Reid, 2001). According to Scally (2009), housing finance agencies (HFA) have spent \$192 billion in mortgage revenue bonds for home loans and more than \$55 billion in multi-family bonds to fund 687,000 apartment units through 2004 (p. 195, para 4). The role of the HFA is much like a banker by issuing bonds and tax credits for affordable housing (Scally, 2009).

Further studies show the perspective of national housing projections. In 2007, a study called Projecting the underlying demand for new housing units: Inferences from the past, assumptions about the future, made projection of housing predictions of newly built homes based on fundamentals of demand (Belsky, Bogardus Drew, & McCue, 2007).

Based on the study, they projection was estimated at 19.5 million homes for 2005-2014 with an average of 1.94 million homes per year (Belsky, Bogardus Drew, & McCue, 2007). The projection factored in household growth to include an increase in immigrants in the United States, vacant units, and replacement units to accommodate the household changes (Belsky, Bogardus Drew, & McCue, 2007). The long run projections take in account of natural disasters, economic fluctuations, political climate, technology advances, and housing cycles (Belsky, Bogardus Drew, & McCue, 2007). Studies are limited to the bigger scope of national and metropolitan changes.

To capture the outlook of affordable housing changes during economic conditions, reports, and articles address the housing production of past and present conditions. According to the State of the Nation's Housing 2010 Report, the number of renters increased by 800,000 in 2009 to include existing for-rent homes and new multi-family apartment completions (Joint Center for Housing Studies for Harvard University, 2010). The economic shift cut production since 2005 of over 70%; leaving homeowners in undervalued and distressed homes (Joint Center for Housing Studies for Harvard University, 2010). In 2009, the housing market showed signs of recovery although there were high unemployment rates and foreclosures (Joint Center for Housing Studies for Harvard University, 2010).

## **Leadership**

Citizen leadership and transformational leadership are models identified in this descriptive longitudinal non-experimental study. The leadership styles apply to the different stakeholders involved in the community. Citizen leaders exhibit leadership, which occurs when people take sustained action to bring about change that will permit

them continued or increased well-being (Couto, 1992). In instances of defending a cause, citizen leaders rise to defend what is right in the eyes of the majority (Couto, 1992). Politics can be a factor in this leadership style, or it can begin with a simple cause of concern of citizens.

Wolff et al. (2004) recognized that communities empowered to make change create active communities and influence of change by their community leadership. Wolff et al. (2004) revealed that the leadership in the community appeared successful as the partnership opens communication, respect, sharing of credit, and shared goals. The partnership focuses on strengths, assets and shared resources as stated in the findings by Pew Health Professionals Commission (Wolff et al, 2004).

**Public housing authority leadership.** Local government framework of strategic planning in the community influences public housing authority leadership (Davis, 2006). The public housing authority's role is to provide housing and community services to its residents (Housing Authority of DeKalb County, Georgia, 2013e). The housing component of the PHA is strategic and is most successful when community partners come together to create community goals. Public housing authority administration is on a community level; however, the federal government administers and regulates the funding for federal funded PHA programs (United States Department of Housing and Urban Development, n.d.b). The programs include but not limited to; public housing, the housing choice voucher program, HOME investment partnership program, Low-Income Housing Tax Credit, multi-family tax-exempt bonds, and CDBG (United States Department of Housing and Urban Development, n.d.b). To achieve the community goals, the PHA must have objectives using an administrative plan (United States

Department of Housing and Urban Development, n.d.m) while committing to meeting the goals of the community.

The community must define the role the PHA has in the community. Strategic planning of community development and housing can affect the goals and success of the local PHA. The collaboration of partners strengthens the community and success of the objectives of housing development (Housing Authority of DeKalb County, Georgia, 2013e). The strategic plan should center on housing needs of the community when assessing the economic, social, and environmental objectives of the community (Davis, 2006). Empowering the PHAs voice in the community and housing development can lead to other services such as healthcare, education assistance, and transportation in the community. Housing is an important component in the activity of residents in the community. According to Davis (2006), “adequate housing, of a decent standard and in reasonable environments, is recognized as fundamental to inclusion and to enabling people to be active in the community” (p. 26) thus, creating stakeholders (i.e., the residents), in the development of their community and providing input to future changes in their environment.

### **Partnerships**

Developing partnerships to address the community needs models transformational leadership. Simola, Barling, and Turner (2012) connected transformation leadership to models of care and reasoning. Simola et al. (2012) further stated that transformational leadership is leadership that forms relationships organized to transform, motivate, and enhance the actions and ethical acts of followers. Partners of other social services connecting with public housing authorities to address community concerns need the

ability to motivate the community and other partners toward their community development plan.

A partnership begins when developers use federal funds allocated to housing and community development agencies throughout their jurisdiction. In DeKalb County, public housing authorities, the Department of Community Affairs, and community development organizations collaborations develop affordable housing units to encourage neighborhood revitalization and viable communities (Housing Authority of DeKalb County, Georgia, 2013e). For successful transactions to occur, developments must meet the mission and objectives of each agency.

### **Stakeholders**

Stakeholders in affordable housing are the customers, community, affordable housing leaders, and the local, state, and the federal government. Any group who can or is affected by the achievement of another's objective is called a stakeholder (Freeman, 1984). The community stakeholders charge the public housing authority leaders to take responsibility for their role in business conduct. Goodstein and Wick (2007) argue the relationship between corporate responsibility and modification on the focus to stakeholders and responsibility. Minoja (2012) further explained that the identification of the roles of each stakeholder interest is significant. Losing stakeholder identification decreases the commitment to cooperate (2011). The community members align with citizen leadership. The increased need for affordable housing during economic climate changes poses an opportunity for community leaders to speak on behalf of the needs of their communities. Leuenberger (2007) explored the possibility of sustainable development as a tool for social justice to include the citizens in public administration

decision-making. Public housing leadership must identify the roles and input of the stakeholders before the decision-making process begins for community development.

Affordable housing developments provide the community with needed low-income housing (United States Department of Housing and Urban Development, n.d.n). Community input is essential to the viability of future developments desired of the residents. A part of the process of using DeKalb County's Multi-family Tax-exempt Bond program is to have a Tax Equity and Fiscal Responsibility Act of 1982 hearing, which allows the public to comment on a development using that funding source (Housing Authority of the County of DeKalb, Georgia, 2013f, p. 14).

### **Government**

In a time of crisis, the government is a source for solutions. The Department of Housing and Community Development budget funds for community development and program service administration through local public housing authorities and other housing agencies eligible for program funds like public housing, the housing choice voucher program, CDBG, and HOME investment partnership program (United States Department of Housing and Urban Development, n.d.b). The Internal Revenue Service monitors programs such as the multi-family tax-exempt bond program (Internal Revenue Service, 2013). Local government agencies have funding allocated to address community must meet local objectives. Nonprofits are providers of social services on behalf of local and federal government funding agencies. Berman and West (1995) stated that nonprofit organizations are essential as they are leading the charge in responding to social service issues in collaboration with the local government. The nonprofit

connection assists local governments with forming strategic plans and implementing program advocacy (Berman & West, 2004).

### **Other Research Methods used in Affordable Housing**

The literature search of federal affordable housing uncovered many means of research using surveys, descriptive analysis, and narratives using data. Research examples of the Cities of Atlanta, Georgia (Myers, 1997) and Del Ray, California (Rouda, 2008), and on a national scale used different research methods to analyze data related to affordable housing. In Atlanta, the Urban Health Initiative conducted a survey of public housing residents at risk of relocating during the summer in 2008 (Ruel, Oakely, Ward, Alston, & Reid, 2012). The research occurred face-to-face only to find issues in the participation of the study (Ruel et al., 2012). The researchers then added volunteers to increase the sampling size to test the random and non-random portions of the sample (Ruel et al., 2012). Although, this course of research used surveys to sort the demographics of household makeup, education, income, and relocation, the results yielded themes of opportunity and stability (Rule et al., 2012).

Other findings led to federal funding using Low-Income Housing Tax Credits (LIHTC) on a national scale serving low-income families. In the article, “Thoughts on Rental Housing and Rental Housing Assistance” the census data regarding rental housing was acquired from the American Housing Survey (Green, 2011). This study uncovered why rental housing is desirable, and the changes of rental housing assisted using LIHTC (Green, 2011). The study continued to use census data to determine the number rental units using LIHTC over time compared to rental percentiles in various geographical areas

(Green, 2011). The basis of the study was efficiency and equity of the housing program using quantitative analysis.

### **Gaps in the Literature**

Existing literature regarding the causation of the Great Recession and its effects on the housing and finance industry is available (Appelbaum, Baker, & Schmitt, 2008; Chernick, Langley, & Reschovsky, 2011; Vukovic, 2011). The literature researched provided affordable housing production and economic conditions on a global scale. This research is about DeKalb County. Literature is available about Atlanta, Georgia and specific housing projects and programs (Myers, 1997; Paris, 2006; Paris & Kangari, 2005; White, 1997). However, there were no research findings specific for DeKalb County, Georgia.

Although DeKalb County is a part of Metro Atlanta, Georgia, no specific research articles were available written about the DeKalb County community sustainability or revitalization of affordable housing units. The expected results for this study could be one of the examples of research that reveals what happened to federal funded affordable housing production in DeKalb County, Georgia during an economic change.

**Atlanta metro housing literature.** The Atlanta metropolitan area is a large metropolitan area in the Georgia. Atlanta housing market crashed with the rise of foreclosures during the Great Recession (Atlanta Regional Commission, 2010). The housing production was the highest in the nation between 2000-2010 (Atlanta Regional Commission, 2014) In response to the socio-economic downturn in the metro area, the city of Atlanta housing authority responded by redeveloping a housing community to house more families (Ruel, Oakely, Ward, Alston, & Reid, 2012). Other efforts included

an economic development plan to expand areas of affordability and job creation in Atlanta (Kirkman, Noonan, & Dunn, 2012).

Atlanta is a large city with a high affordable housing demand (Atlanta Regional Commission, 2014). Articles featuring Atlanta show innovation and cutting edge housing decisions using HOPE VI (Tester, Ruel Anderson, Reitzes, & Oakley, 2011). Atlanta is one of the movers and shakers in affordable housing. For instance, the City of Atlanta housing authority is one of the public housing authorities awarded the opportunity to implement the program Welfare to Work (WTW) (Boston, 2005; Anil, Sjoquist, & Wallace, 2010). This program allows a restriction for housing services based on family self-sufficiency and excluding physically challenged and elderly participants.

### **Conclusion**

The focus of this study was to research and evaluate federal funded affordable housing production changes during 2004-2012, which included the recessionary period of 2007-2009 in DeKalb County, Georgia. Housing programs were the driver of providing affordable housing units (United States Department of Housing and Urban Development, n.d.j). However, as the economic climate changed the production of federal funded affordable housing units are in jeopardy. The understanding of partnerships of community members and funding sources influences the sustainability of the DeKalb County, Georgia, community. The purpose of the study was to identify production during 2004-2006 before the Great Recession, the 2007-2009 Great Recession, and after the Great Recession during 2010-2012, using proposed findings that may assist smaller jurisdiction identify patterns in housing production using specified criterion. The gap in the literature was the ability to assess the affordable housing activity in smaller

jurisdictions other than metropolitan areas. The focus of DeKalb County was to show that data was available to recognize the contribution of smaller jurisdictions in affordable housing. The literature review in Chapter 2 revealed information about public housing authorities and housing agency structures from the federal level to the local level and showed that partnerships are essential for successful community development.

### **Summary**

The Chapter 2 literature review descriptions related to affordable housing and the relationship variables in the community, with an influence on the affordable housing options in DeKalb County, Georgia. A review of the literature indicated the disconnections of community elements and affordable housing revealing the need to connect with environmental factors to federal funded affordable housing choices. The literature review illustrated similar community initiatives among housing partners. Research shows different objectives about housing targets; however, sharing the mission to provide affordable housing in DeKalb County, Georgia. DeKalb County Community Development (DCCD) shares in affordable housing efforts. DeKalb County Community Development has a homeownership program for low and moderate-income families wishing to purchase a home in DeKalb County, Georgia (DeKalb County Community Development, 2013). The Housing Authority of DeKalb County, Georgia is multifaceted in program administration. The Housing Authority of DeKalb County programs assist low-moderate-income families participating in the Housing Choice Voucher Program and public housing (Housing Authority of DeKalb County, Georgia, 2013). The agency also develops housing for all incomes in multi-family and single-family housing (HADC, 2013).

Researchers linked the macroeconomic conditions to local communities and their socioeconomic conditions (Appelbaum, Baker, & Schmitt, 2008; Chernick, Langley, & Reschovsky, 2011, July; Vukovic, 2011). The national economic conditions of the Great Recession and the bubble burst centered on the financial industry and real estate market crash in the United States. The recession influenced the housing industry and contributed to the availability of affordable housing in the United States (Vukovic, 2011). A quantitative descriptive longitudinal non-experimental study of the housing issues related to the recessionary periods of 2004-2006, 2007-2009, and 2010-2012 in DeKalb County, Georgia; the study may reveal variable contributions to affordable housing production by using proposed findings to identify patterns of housing production. Chapter 3 describes the research design chosen to facilitate data collection and analysis for this descriptive longitudinal non-experimental study.

## Chapter 3

### Methodology

A process during this study analyzed the production of federally funded affordable housing prior to the Great Recession (2004-2006), during the Great Recession (2007-2009), and after the Great Recession (2010-2012) in DeKalb County, Georgia. This quantitative descriptive longitudinal non-experimental research study included an evaluation of the differences in federal funded affordable housing production during economic change and the affordable housing funding sources in DeKalb County, Georgia. The goal of this study was to create a model to evaluate the use of housing funding sources over a period of time for housing organizations.

Chapter 3 described the quantitative research design and the appropriateness of the selected design for this study. This section includes an outline of the variables and subtopics for data collection, which may help to identify the variation in the means among the variables. A description of the confidentiality measures and geographical location follow later in the chapter. Chapter 3 includes details regarding the data analysis and reliability of sources used in the data collection. The conclusion will provide a final review of how the quantitative descriptive longitudinal non-experimental research study findings will assist with the treatment of the variables using the design and provide the findings to answer the research questions.

#### **Research Design**

The quantitative descriptive longitudinal non-experimental study was useful for assessing the federal funded affordable housing production between the periods of 2004-2006, 2007-2009, and 2010-2012. Quantitative data collection identified one or more

variables to develop, standardize and give attention to the validity and reliability of the measurements (Drost, 2011). In quantitative research, the need for the study requires support from the review of the literature, which helps to shape the purpose for research and exposes the gap in the literature about a topic. The literature review analysis assisted in quantitative studies to identify worthy variables to research and identify relationships and trends for examination (Pearl et al., 2014). The research questions asked in a quantitative study are concrete and narrow to obtain measurable data for analysis (Coates, 2011).

The qualitative method uses participants and in-depth interviews that direct the findings of the research (Kahn, 2014). Qualitative research is full of description, detail, people, and conversations (Kahn, 2014). Qualitative research allows for the exploration of the phenomenon through experiences using social sciences. The research method does not rely on research questions using operational variables. A qualitative approach seeks to experiment or survey information to uncover the meaning of a phenomenon of experiences (Koro-Ljungberg & Bussing, 2013). The qualitative research method includes data collection and exploration methods that are not required by this study. The quantitative research design is a type of research in which participants respond to specific open-ended questions, producing random or assessed answers (Black, 1999). This approach is inconsistent with the design of this study.

The descriptive design allows the researcher to increase the knowledge base on a topic and describe a situation (Coates, 2011). This research design is to generate results to form a basis for future developments and forecasts (Coates, 2011). The ability to use the statistical analysis using existing data minimizes data issues by the researcher and

reduced researcher bias in the data collection. The quantitative approach depends on the replicability, control, and measurement (Coates, 2011) to address the question using logic, knowledge of the subject, and design for data collection.

**Design appropriateness.** Qualitative research uses interviewing, observing and analyzing activities to draw its conclusion (Kahn, 2014). The qualitative research method uses those activities to find the phenomenological meaning of those involved (Kahn, 2014). In qualitative research, the study is reliant on the participant's perspective, not the researcher (Kahn, 2014). In this proposed study, the data collection activities do not include interviews or observations. Furthermore, the study process does not include gathering the participants' perspectives.

The quantitative research design is suitable for this proposed study, as opposed to the qualitative design. In the quantitative descriptive research method, the researcher knows nothing about the connection of the variables or the significance of the role the variables with one another. Using a quantitative approach would permit data collection for examining the distribution of federal funded affordable housing units over time. The non-experimental design would allow the observation of variables without manipulation and under the prescribed treatment for results (McMillan & Schumacher, 2010). The design allows the statistical results to display trends, if any, in the outcome.

The experimental design does not observe variables in their natural state. The experimental design requires some manipulation or control of the variables. The variables chosen for this proposed research do not need such nor do the research questions have predictions. The experimental approach would provide an outcome to the

research outside of the initial scope of the housing production during the years of economic change.

The purpose of the quantitative descriptive longitudinal analysis was to examine the distribution of the variable production federal funded affordable housing units' production during economic change during 2004-2012. Longitudinal studies employ quantitative research to allow quantification and validation of the differences between variables. This analysis method is suitable for this study.

### **Research Questions and Hypotheses**

Federal funded affordable housing production during an economic change in DeKalb County, Georgia is unknown. The supply of federal subsidized affordable housing units during the prescribed periods produced by the funding sources during the periods is unknown. Each funding source is useful for the development or rehabilitation of affordable housing. The goal of the sources of financing is to increase the availability of affordable housing units in the United States using available funding sources.

Measurement of the variables occur by summing the number of families receiving assistance (e.g., housing choice voucher program and public housing), units using the LIHTC, Multi-family Tax-Exempt Bond Finance, Public Housing, HCVP(formerly known as Section 8), CDBG, and HOME Investment Partnership Program, (see Appendix A).

**RQ:** What significant differences between periods and types of housing exist in the affordable housing production in DeKalb County, Georgia during the economic change?

**SQ1:** What statistically significant differences, if any, exist in the average production of federal affordable housing units among the three periods?

**H1<sub>0</sub>:** There are no statistically significant differences in the average production of federal funded affordable housing units among the three periods.

**H1<sub>a</sub>:** There are statistically significant differences in the average production of federal funded affordable housing units among the three periods.

**SQ2:** What statistically significant differences, if any, exist in the average production of LIHTC, Multi-family Tax-Exempt Bond Finance, Public Housing, HCVP(formerly known as Section 8), CDBG, HOME Investment Partnership Program housing?

**H2<sub>0</sub>:** There are no statistically significant differences in the average production of LIHTC, Multi-family Tax-Exempt Bond Finance, Public Housing, HVCP (formerly known as Section 8), CDBG, HOME Investment Partnership Program.

**H2<sub>a</sub>:** There are statistically significant differences in the average production of LIHTC, Multi-family Tax-Exempt Bond Finance, Public Housing, HVCP(formerly known as Section 8), CDBG, HOME Investment Partnership Program.

### **Data Collection**

The numerical data collected on federally funded housing types and years of interest in DeKalb County, Georgia are from public housing authorities and the state housing agency. The data requested was specific to the County of DeKalb, Georgia. The numerical data requested was data utilized by the Department of Housing and Urban Development.

Participating agencies received a reintroduction letter of the study with a copy of the signed permission form via e-mail. Included in the letter was a preferred Excel table for data entry (see Appendix G). The letter included a due date 30 days from receipt. Upon receipt of the information electronically, the data format was be evaluated. The data collection spreadsheet provided the data needed to complete the study. Using the data collection spreadsheet, limits receiving additional information outside of the scope of this proposed study. The public housing agencies used Appendix G provided in the e-mail at the acceptance of participation. Similar documentation was acceptable as long as the fields in the spreadsheet were satisfied.

Data received in PDF format anticipate manual data entry into an Excel worksheet. Information received by hard copy required manual data entry into the Excel worksheet (see Appendix G). For a quantitative longitudinal non-experimental descriptive analysis, collecting quantifiable numeric data for entry may assist with interpreting the results. All data utilized in the study was ratio-level. The two-way ANOVA without replication required an independent variable and dependent variable.

### **Data Analysis**

The data is coming from the Housing Authority of the County of DeKalb, Georgia, and the Department of Community Affairs. The data requested was to account for the number of units produced using the federal funding sources during the chosen years for this study. The focus of the analysis was comprised of two evaluations: the number of units of time and the types of units within each period (see Appendix I). The variables are:

1. Time periods: 2004-2006, 2007-2009, 2010-2012.

2. Federal funding sources: Low-Income Housing Tax Credit (LIHTC), Multi-family Tax-Exempt Bond Finance, Public Housing, Housing Choice Voucher (formerly known as Section 8), Community Development Block Grant (CDBG), HOME Investment Partnership Program housing.

The two-way ANOVA is an extension of the one-way ANOVA test of equality (Jones, 2015). The two independent variables: time periods and federal funding sources are measured for variation (Jones, 2015). If the results of the initial analysis of either variable are  $p < .05$ , a Tukey post hoc test will be performed to determine which units or years are statistically significantly different.

### **Validity and Reliability**

**Internal validity.** Internal validity threats refer to history, insufficient knowledge, and contradictions in logic (Ihantola & Kuhn, 2011). The historical data used was public information downloaded from the public housing agencies databases used to report to the Department of Housing and Urban Development and the Internal Revenue Service. Other sources may be from the United States Department of Housing and Urban Development Voucher Management System (VMS), which is accessible to public housing agencies who administer the Housing Choice Voucher program (United State Department of Housing and Urban Development, 2015). The Integrated Disbursement and Information System (IDIS) for HOME investment partnership program and CDBG, and the Tenant Rental Assistance Certification System (TRACS) is an HUD computer system used to document assisted housing programs (United State Department of Housing and Urban Development, 2015). The tax-exempt bonds used for affordable housing product is documented with the Internal Revenue Service, and developers must

report residential rental project qualification using IRS for 8703 (Internal Revenue Service, 2014).

A threat to internal validity due to the non-experimental research design is the inability to measure or infer causality (Yu & Ohlund, 2010). The variables of federal funded affordable housing units and federal funding sources cannot be forecasted in connection with the time periods to manipulate the data for a different outcome. Internal validity issues could arise if the data includes information from other counties or cities that cross into the DeKalb County causing a threat to influence the variables (McMillian & Schumacher, 2010). This study was limited to DeKalb County to assure that the data collection and reports are across the jurisdiction through time. Other administrative jurisdictions used processes that are significantly different not permitting analysis. Although their methods are internally valid and consistent, it allowed generalizability of the results.

**External validity.** The external validity refers to generalizing the findings from this research to other times, locations, or conditions (Lund, 2010). The years in this study have significance as it included the economic Great Recession. The unit production in DeKalb County justified high validity because it is one of the largest counties in Georgia and the Atlanta metro area (Atlanta Convention & Visitors Bureau, 2012). Atlanta has economics similar of metropolitan areas in the United States.

The external validity level of this study was high. The purpose of the study was to demonstrate the replicable process for other affordable housing entities. Most affordable housing agencies use and administer one or more federal funding source for low-income housing developments (Housing Authority of the County of DeKalb,

Georgia, 2013e). The variables used are common in the affordable housing industry. The process to study for DeKalb County during economic change may differ from other jurisdictions (McMillian & Schumacher, 2010). The proposed model in this study may provide assistance to other jurisdictions using funding sources.

Public housing authorities use federal funding sources to develop affordable housing. Public housing authority jurisdictions may operate different programs not represented in this study. However, the measurement of housing units produced using those programs apply to this study. The dollars available for affordable housing financing and housing development varies by the Department of Housing and Urban Developments budget set by Congress (Rice, 2013). The economic condition and program funding may evolve; thus changing the availability of federal funding for housing production. This study may be a tool for other PHAs to evaluate the use of financing in times of economic change.

**Reliability.** The reliability of the study considered the replication of the study and its ability to arrive at the same conclusion (Drost, 2011). Reliability changed once the parameters include other variables, and the focus is beyond housing production, types of housing produced, and years under study. The information needed for this study was public record so any researcher could retrieve the same to replicate the study. Evaluating federal funded housing types during specific years is an applicable scenario for housing agencies. There is an assumption that the data reported to the Department of Housing and Urban Development is reliable for use in statistical analysis. Further, the data collected from PHAs and housing agencies can only yield the results of the data available for review.

## **Informed Consent**

Informed consent was not applicable for this study. The data for this study was historic data, which is available through the Open Records Act. The initial contact with the organizations was by e-mail in observance of the Open Records Act. Data access and permission forms (see Appendix B, see Appendix C, and see Appendix D) are available in preparation of any data retrieval issues. The forms were for data hosted in targeted organizations' databases for retrieval for formality purposes only. Premises, Recruitment, Name (PRN) and Use Permission forms were sent to the agencies in the event data must be collected on site by the researcher (see Appendix E). The Georgia Department of Community Affairs provided a response letter (see Appendix F) to the participation request and the data request forms stating the request as open records, and the information was available upon request.

## **Confidentiality**

A designated lockbox for data results and model will be in the researcher's home. The researcher will be the only person with access to the research data. Required data storage is 3 years. After 3 years, the data will be destroyed by shredding and computerized data will be deleted.

## **Geographic Location**

The focus of the study was DeKalb County, Georgia. DeKalb County, Georgia, is the third largest county in metro Atlanta (DeKalb County, Georgia, 2010), which comprises 28 counties (Atlanta Convention & Visitors Bureau, 2014). The population was the number of federal funded affordable housing units produced in DeKalb County, Georgia using Low Income Housing Tax Credit (LIHTC), Multi-family Tax-Exempt

Bond Finance, Public Housing, Housing Choice Voucher (formerly known as Section 8), Community Development Block Grant (CDBG), and HOME Investment Partnership Program (see Appendix G). The participating housing authorities are the largest agencies servicing DeKalb County, Georgia residents.

### **Instrumentation**

The data retrieved was in the format provided by the public housing authorities and state housing agency. The researcher-designed instrumentation was not a part of this study. A representation of the data collection instruments is in Appendix G and Appendix H.

### **Summary**

The quantitative descriptive longitudinal non-experimental research method was appropriate for this study using a two-way ANOVA without replication analysis. The topic of this research was the production of federal funded affordable housing during an economic change. Undergoing this study using data, servicing DeKalb County, Georgia, served as an example to other jurisdictions who want to know how their federal funding affordable housing production fares in the midst of economic change. The sources of financing listed in this research assist in developing affordable housing in communities across the country. DeKalb County, Georgia, is the geographic location of this study to identify any differences in federal funded affordable housing production in economic conditions. Chapter 4 presents an in-depth review, data analysis, and the description of the methods used to analyze the housing data.

## Chapter 4

### Results

The Great Recession had an overall effect on the economy and the financial industry, which influenced affordable housing development. The purpose of this quantitative non-experimental study was to evaluate the production of federally funded affordable housing units in DeKalb County, Georgia during economic change. Chapter 4 describes the data collection, analysis, and findings to answer the research questions of this study. The chapter continues by analyzing the 2004-2012 production of federally funded housing unit production analysis using descriptive statistics and ANOVA. The chapter ends with a summary of the findings

#### **Research Questions and Hypotheses**

The research question was: What significant differences between periods and types of housing exist in the affordable housing production in DeKalb County, Georgia during the economic change? To answer the question, two sub-questions were tested.

The first research sub-question was:

**SQ1:** What statistically significant differences, if any, exist in the average production of federal affordable housing units among the three periods (before the Great Recession (2004-2006), during the Great Recession (2007-2009), and after the Great Recession (2010-2012))? The corresponding hypothesis was:

**H1<sub>o</sub>:** There is no statistically significant difference in the average production of federally funded affordable housing units among the three periods.

**H1<sub>a</sub>:** There is a statistically significant difference in the average production of federally funded affordable housing units among the three periods.

The second research sub-question was:

**SQ2:** What statistically significant differences, if any, exist in the average production of LIHTC, Multi-family Tax-Exempt Bond Finance, Public Housing, HCVP (formerly known as Section 8), LIHTC and Multi-family Tax-Exempt Bonds, and LIHTC and HOME Investment Partnership Program?

**H2o:** There is no statistically significant difference in the average production of each type of federally funded affordable housing.

**H2a:** There is a statistically significant difference in the average production of each type of federally funded affordable housing.

### **Variable Identification**

The Department of Housing and Urban Development uses the Voucher Management System (VMS) to store the monthly reported data for the Housing Choice Voucher Program. The Public Housing data is reported in the Tenant Rental Assistance Certification System (TRACS) for program management and to control program finances (United States Department of Housing and Urban Development, 2015). Low-Income Housing Tax Credits and Tax-Exempt Bonds are reported to the Internal Revenue Service annually.

Initially, the study included six affordable housing federal funding sources. The study proposed to research: the HVCP, Public Housing, LIHTC, Multi-family Tax-Exempt Bonds, CDBG and the HOME Investment Partnership Program. Data was obtained as permitted by the Open Records Act from the Department of Community Affairs, Georgia, and the Housing Authority of DeKalb County, Georgia. The data collected had information for the HCVP, Public Housing, LIHTC, and Multi-family Tax-Exempt Bonds. The data did not include the Community Development Block Grant

program or the HOME Investment Partnership Program because housing production data was not provided. The data eliminated two of the initial six funding sources from this study because the funding sources produced zero units. The data obtained from the Department of Community Affairs, Georgia revealed layered funding combinations not previously considered in the study. Layered funding is the use of more than one source of federal funding for affordable housing. The layered combinations were Multi-family Tax-exempt bonds and LIHTC producing units and the HOME and LIHTC producing housing units. These combinations were added to the list of funding sources being analyzed.

An Excel spreadsheet (Appendix I) was created for manual data entry for housing agencies. The Excel spreadsheet separated each federal funding source used for affordable housing production by year. Table 2 shows the change in funding source evaluation for analysis.

Table 2

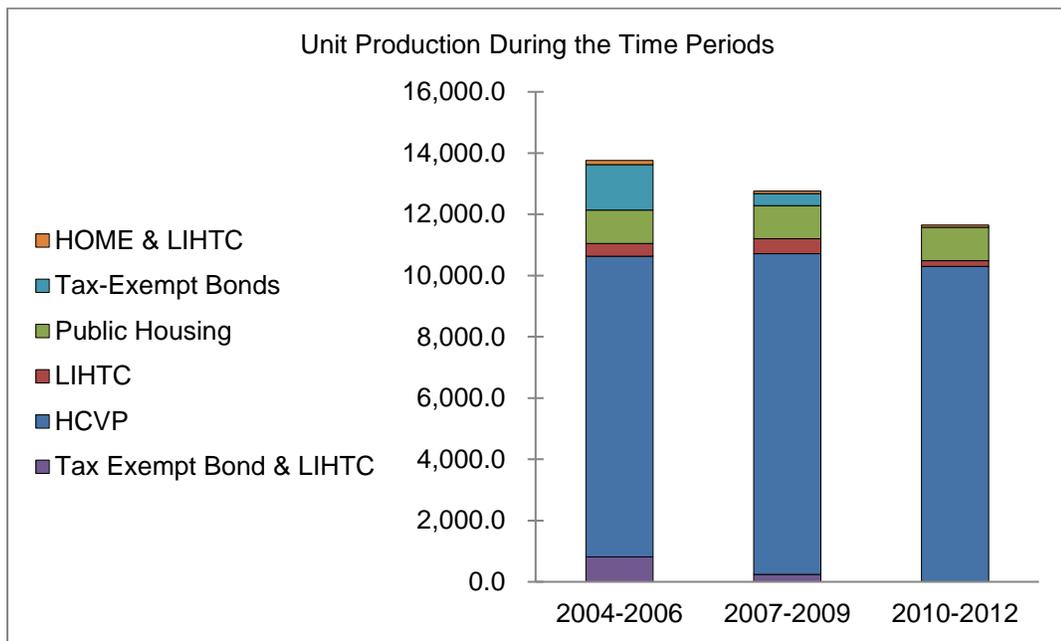
*Federal Funding Sources Used*

| Proposed Funding Sources            | Modified Funding Sources   |
|-------------------------------------|--|
| Housing Choice Voucher Program      | Housing Choice Voucher Program   |
| Public Housing                      | Public Housing   |
| Low-Income Housing Tax Credits      | Low-Income Housing Tax Credits   |
| Multifamily Tax-Exempt Bonds        | Multifamily Tax-Exempt Bonds   |
| Community Development Block Grant   | Low-Income Housing Tax Credits and Multifamily Tax-Exempt Bonds        |
| HOME Investment Partnership Program | Low-Income Housing Tax Credits and HOME Investment Partnership Program |

**Findings**

Two-way ANOVA without repetition was used to analyze the time periods and funding sources. SQ1 factors are the three time periods. SQ2 factors are the six funding sources (including the layered funds). The findings described will detail the units produced during the time periods and federal funding unit types for this study.

**Units produced during time periods.** Statistics calculated for the affordable housing unit production before the Great Recession (2004-2006), during the Great Recession (2007-2009), and after the Great Recession (2010-2012). 2013-2015 was not a part of the proposed scope of study as the years 2014-2015 had not passed when the study was initially proposed. The analysis for SQ 1 depicted in Figure 1 compares the number of units produced during each period of the study. The units produced before the Great Recession (2004-2006) were 24,225; during the Great Recession (2007-2009) produced 23,941 units; and after the Great Recession (2010-2012) 20,431 were produced.



*Figure 1.* Number of Federally Funded Affordable Housing Units Produced by Each Period of the Study with Layered Funding.

All funding sources in this study are in Figure 1. According to Figure 1, the Housing Choice Voucher program (before -9822, during - 10,468, and after -10,298) and public housing (before -1086, during -1086, and after - 1086) are consistent unit producers. The figure also shows the production during 2010-2012 used four (HCVP, LIHTC, Public Housing, and HOME & LIHTC) of the six funding sources in the study.

The data shows a declining trend of unit production from 2004 to 2012. The assumption made from the data is the absence of unit production of Multi-family Tax-exempt bonds and Multi-family Tax-exempt bonds and LIHTC. The figure shows the period before the Great Recession (2004-2006) as the most productive period of affordable housing units.

The ANOVA compared the federal funded affordable housing units produced during each period of the study. Table 3 displays the ANOVA analysis. The time periods *p-value* returned as .3159, which is not statistically significant for the study. The average productions of federal funded affordable housing types were significantly different. The average production among the three time periods was not significantly different.

Table 3

ANOVA Table of Federally Funded Affordable Housing Units Produced by Each Period of the Study with Layered Funding

| Source          | SS             | df | MS            | F      | p-value  |
|-----------------|----------------|----|---------------|--------|----------|
| Time Periods    | 372,498.11     | 2  | 186,249.06    | 1.3    | 0.3159   |
| Funding Sources | 236,436,256.94 | 5  | 47,287,251.39 | 329.05 | 9.37E-11 |
| Error           | 1,437,098.56   | 10 | 143,709.86    |        |          |
| Total           | 238,245,853.61 | 17 |               |        |          |

### Federal Funding Source Unit Production

A post hoc analysis using the Tukey test was conducted to determine which funding sources were statistically significant at  $p < .05$  (Table 4). According to the *p*-values for pairwise *t*-tests, the layered funding of HOME & LIHTC was significantly lower than the other funding sources. Housing Choice Voucher Program (HCVP) is statistically different from all others. Public housing is statistically significant from three of the six funding sources.

### **Sub- Question 1 Findings**

The null hypothesis for Research Question was as follows:

**H1a:** There are no statistically significant differences in the average production of federal funded affordable housing units among the three periods.

The Great Recession of 2007-2009 was the biggest economic downfall and financial breakdown since the 1920 Depression. The production between the time periods indicated no statistically significant difference across the three periods.

The difference in output did not change significantly over the term of this study, as can be seen in Figure 1. The economic change of the Great Recession of 2007-2009 did not negatively influence the affordable housing production in DeKalb County, Georgia, as the production was stable during the Great Recession. The null hypothesis was not rejected.

### **Sub-Question 2 Findings**

Research Sub-question 2 asked if there were statistically significant differences in the average production of LIHTC, Multi-family Tax-Exempt Bond Finance, Public Housing, HCVP (formerly known as Section 8), CDBG, HOME Investment Partnership Program housing units among the three periods. The test of using LIHTC), Multi-family Tax-Exempt Bond Finance, Public Housing, HCVP (formerly known as Section 8), Tax-Exempt Bond and LIHTC, and HOME and LIHTC layered federal funding sources indicated there were statistical significant differences in the average production across the funding sources; the null hypothesis was rejected.

Table 4

*Post hoc ANOVA Analysis of Federally Funded Affordable Housing Units Produced by Each Period of the Study with Layered Funding*

| <i>Post hoc analysis</i>   |              |                  |          |                          |                |            |  |
|--|--------------|------------------|----------|--------------------------|----------------|------------|--|
| <i>p</i> -values for pairwise <i>t</i> -tests                    |              |                  |          |                          |                |            |  |
|  | HOME & LIHTC | Tax-Exempt Bonds | LIHTC    | Tax-Exempt Bonds & LIHTC | Public Housing | HCV        |  |
| HOME & LIHTC   | 98.333       | 352.333          | 366.333  | 625.333                  | 1,086.000      | 10,196.000 |  |
| Tax-Exempt Bonds   |              | .4310            |          |                          |                |            |  |
| LIHTC  |              |                  | .9648    |                          |                |            |  |
| Tax-Exempt Bonds & LIHTC   |              |                  |          | .4223                    |                |            |  |
| Public Housing   |              |                  |          |                          | .1675          |            |  |
| HCV  |              | 1.73E-11         | 2.22E-11 | 2.25E-11                 | 2.94E-11       | 4.79E-11   |  |
| <i>Tukey simultaneous comparison t</i> -values ( <i>df</i> = 10) |              |                  |          |                          |                |            |  |
|  | HOME & LIHTC | Tax-Exempt Bonds | LIHTC    | Tax-Exempt Bonds & LIHTC | Public Housing | HCV        |  |
| HOME & LIHTC   | 98.333       | 352.333          | 366.333  | 625.333                  | 1,086.000      | 10,196.000 |  |
| Tax-Exempt Bonds   |              | 0.82             |          |                          |                |            |  |
| LIHTC  |              |                  | 0.05     |                          |                |            |  |
| Tax-Exempt Bonds & LIHTC   |              |                  |          | 0.88                     | 0.84           |            |  |
| Public Housing   |              |                  |          |                          | 1.49           |            |  |
| HCV  |              |                  |          |                          |                | 29.43      |  |
| Critical values for experimentwise error rate:                   |              | 0.05             | 3.47     |                          |                |            |  |
|  |              | 0.01             | 4.55     |                          |                |            |  |

## **Research Question Findings**

The two sub-questions were used to answer the question: What significant differences between periods and types of housing exist in the affordable housing production in DeKalb County, Georgia during the economic change? The funding sources were the factor that affects affordable housing production in DeKalb County, Georgia. The analysis uncovered significant differences among the funding sources. Four of the six funding sources showed unpredictable production during the three periods.

## **Summary**

In summary, the study used archived data from two public housing agencies to examine the production of federally funded affordable housing units in DeKalb County, Georgia in a nine-year period. Based on no significant differences in the three periods, the null hypothesis for H1 was not rejected. Based on the significant differences in average production between the federal funding sources, the null hypothesis for H2 was rejected. The research question uncovered that differences in the federal funding sources were significant during the nine-year period. In Chapter 5, these findings are compared to prior research. In addition, conclusions and implications are described, and recommendations are suggested.

## Chapter 5

### Conclusions and Recommendations

Public housing authorities and community development organizations produce affordable housing. Federal affordable housing funds house low-income families in need. The research examined the federally funded affordable housing production from the participating agencies. The organization of the requested data was by period and funding source for observation. In chapter 4, data collection, statistical analysis, and a summary of the findings were presented. Chapter 5 includes conclusions, implications of the results for leadership, and recommendations for future research.

#### **Research Questions**

This descriptive quantitative inquiry examined the production of federally funded affordable housing during periods of economic change and the unit production of federal funding sources. RQ: What significant differences between periods and types of housing exist in the affordable housing production in DeKalb County, Georgia during the economic change? Two sub-research questions were used to answer the research question. The questions are as follows:

SQ1: What statistically significant differences, if any, exist in the average production of federal affordable housing units among the three periods?

SQ2: What statistically significant differences, if any, exist in the average production of LIHTC, Multi-family Tax-Exempt Bond Finance, Public Housing, HCVP(formerly known as Section 8), LIHTC, and Multi-family Tax-Exempt Bonds and LIHTC and HOME Investment Partnership Program?

Based on the findings the following conclusions were drawn for the research question and the two sub-questions:

**Research Question.** The two sub-questions tested the production of affordable housing units during three periods (before the Great Recession (2004-2006), during the Great Recession (2007-2009), and after the Great Recession (2010-2012)) and six federal affordable housing funding sources. The assumption was the Great Recession caused a downturn in the nation's socio-economic health, which led to a decline in housing production and inability to serve the increased number of people seeking to house. The analysis of SQ1 suggests that DeKalb County, Georgia affordable housing production was not influenced by the economic changes during 2004-2012. The sub-questions analysis determined that although the difference in output did not change across periods, the pattern of federal financing sources changed.

**Research Sub-question 1.** Research sub-question 1 examined whether there were differences in production between the time periods during the economic change in DeKalb County, Georgia. The results from research sub-question 1 suggest no significant differences in affordable housing production.

**Research Sub-question 2.** Research sub-question 2 examined the differences in production between the six federal affordable housing funding sources during the 2004-2012 economic change. The results from research sub-question 2 suggest a significant difference in output between the six sources of finance. The analysis determined a pattern in funding production. Changes in the funding source unit production during the three periods suggest a significant difference in the distribution of housing produced by each source.

## **Findings Compared to Literature**

The federally funded affordable housing unit production and funding source use of two public housing agencies were the focus of this quantitative case study. The affordable housing production and federal funding sources used established the findings of this study. The two participating organizations responded to the Opens Records Request and filled out the data table used in this study (Appendix I) which provided the basis for this investigation. The findings presented developed from the analysis from the two sub-questions:

**Sub-Question 1 findings.** The conclusion that emerged from the data analysis was that the economic change in DeKalb County, Georgia of 2004-2012, which included the Great Recession of 2007-2009, had no influence on unit production. According to the literature review in chapter 2, the Great Recession was one of the worst economic downturns with the crash of the financial industry and the real estate bubble burst (Vokovic, 2011). Private banking loans and real estate foreclosures challenged housing development and financing. Studies show affordable housing unit production but the need for affordable housing units continued to increase (United States of Housing and Urban Development, 2013). The study results confirm that DeKalb County produced affordable units during the challenged term of 2007-2009. The data results revealed a decline in production. However, the decline began before the Great Recession and continued throughout the study. The changes in financing are an assumption of why the production levels decreased.

**Sub-Question 2 findings.** Two findings emerged from the data analysis of federal funding source production of affordable housing units using one or more

financing tool. The analysis revealed strong production levels of single source funding and layered backing throughout 2001-2012. The data also exposed a pattern of use during the economic change. Layered funding was used more during the 2004-2006 (before the Great Recession) and 2007-2009 (during the Great Recession) than 2010-2012 (after the Great Recession). Since the 1960s the United States Department of Housing and Urban Development (HUD) have developed programs and funding sources to develop low-income housing units (United States Department of Housing and Urban Development, n.d.j). The funding source use aligns with HUD's initiative to produce affordable housing (United States Department of Housing and Urban Development, n.d.j); however, meeting the demand is a challenge. The infusion of affordable housing units on a national scale is dependent on household growth, an increase in immigrants in the U.S. and unit replacement to address family composition changes (Belsky, Bogardus Drew, & McCue, 2007).

### **Implications of the Study**

The study connects to the funding process by evaluating the utilization of the sources of financing in DeKalb County, Georgia. In recognizing the housing data captured in metropolitan areas or major cities; this study observes the activity of a piece of metro Atlanta and its unit production. What appeared to be missing in prior research studies are the characteristics of smaller cities and counties. The obstacles of large city housing needs may not match the needs of a small town, county, or rural area. The assumption is there is no one solution to affordable housing. Allocations are provided to the state for distribution to cities, states, and community developers to develop affordable housing but are the distribution enough to address the community need for affordable

housing. Taking the study further to address affordability at a rate that keeps up with the population, economic changes, and community diversity using federal housing funds may be beneficial to community development. In meeting legislative requirements, the programming has to keep up with the evolution of communities and their dynamics.

The findings in this study concentrated on DeKalb County, Georgia, and its production. The findings did not assess the county housing demand to compare to community need. The study did not address the amount of funds provided to the public housing agencies to develop affordable housing to assess the utilization. The understanding of the unit production in DeKalb County, Georgia is a small piece of a bigger picture of how the funds work and how much is allocated to achieve community development goals.

The federal funding sources are acquired and used differently for affordable housing production. The Housing Choice Voucher Program and Public Housing program funds are allocated to public housing authorities based on monthly reports transmitted to HUD. Low-Income Housing Tax Credits, Multi-Family Tax Exempt Bonds and the HOME Investment Partnership Program are accessed by developers to create and rehab affordable housing units. These funding sources are used based on the financial need to complete the project. Once these funds are allocated, the units may take 12-24 months to complete for tenancy.

Established in the socio-economic and justice theory is the theme of fairness and certain detailed theorems in public policy (Rawls, 1971). The study identified the production of affordable housing, however, what was modified was meeting the need of the public based on public policy and citizen request. Communities are challenged to

house families of all income classes. Policy and management decisions are essential to affordable housing production. The theory of Justice notes theorems of public policy. The housing policy directed by legislation guides the United States Department of Housing and Urban Development. The programs are designed to carry out legislation written to meet affordable housing needs in the United States. The study results illustrated the willingness to look for options to produce affordable housing units. This study demonstrates the use of federal funding sources, the combinations used to continue production throughout the years, and the support of public policy and the United States Department of Housing and Urban Development. The study confirmed the socio-economic and justice theory.

The theory of justice is equality and social order. The equal access to affordable housing is challenged to meet the demand of affordability and the availability for low-income families. Research indicated a rise in housing needs in the United States (United States Department of Housing and Urban Development, 2013). This study found stability in production during an economic change in DeKalb County. The United States Department of Housing and Urban Development (HUD) is a stakeholder upholding their services to provide affordable housing. Public housing authorities and community development organizations adhere to the same social expectation. This study confirms the position of HUD, public housing agencies, and community development organization as a stakeholder vested in affordable housing by creating additional affordable housing programs for low-income families. The theory continues to acknowledge the social responsibility of businesses and the integration of social policy into strategic management.

The study is an example of how a public housing authority, researcher, or policy maker can use the model to evaluate the production of housing units. They can assess any period where there was an economic change or not. Utilizing the model to find patterns of funding used may assist in forecasting the use of many federal funding sources or the layering of funding sources based on historical data.

The affordable housing agencies program management assumes the responsibility of providing equal access to affordable housing for low-income families. The findings and conclusions confirm the position of policymaking and the management of federally funded programs. The study findings did not verify program accessibility to every low-income family in need in DeKalb County, Georgia.

The history of federal funded affordable housing began as a response to the economic downturn of the Great Depression (Huduser, n.d.). The Federal Housing Agency was created in 1934 to assist with the availability of public housing and low-rent housing (United States Department of Housing and Urban Development, 2007). As the years progressed, government programs were created in response to the need for affordable housing. In 1967, public housing was introduced followed by the Housing and Community Development Act in 1974 and the creation of subsidies for Section 8 programing. The development of other programs was in response to economic change and the demand for affordable housing. During the Great Recession, the Neighborhood Stabilization Program (NSP) was created in response to the downfall, housing preservation, and affordability (United States Department of Housing and Urban Development, 2013). This study did not include the NSP funding source. The initial

request of participating agencies did not contain the source. The source may have influenced the affordable housing outcomes of this study.

Prior housing studies observed why rental housing is desirable, the changes in the rental housing using federal funds, and worst-case housing needs (Green, 2011 and the United States Department of Housing and Urban Development, 2013). This research contributes to industry studies by providing housing data other than national or metropolitan reports. The study also observes the activity of funding sources in DeKalb County, Georgia. The activity could be used to compare to other jurisdictions similar to DeKalb County and metropolitan areas.

Policy makers may learn about the unit production and federal funding utilization in DeKalb County, Georgia during 2004-2012. Policy makers could learn to take a closer look at jurisdictions and their activity in affordable housing development. The activity may provide assumptions about their funding utilization. The funding utilization may also suggest programmatic revisions for funding use. Policy makers may evaluate the existing federal funding sources, use, restrictions, and the economic temperament to determine federal program validity. Policy makers may explore housing development restructuring programs to include funding refinancing options for rehabilitation and preservation of existing affordable housing units. In result, the policy makers would determine if there is a need to amend current funding programs or create new innovative programs to address recent housing data and issues that arise.

**Conclusion of study findings.** The study findings are in agreement with previous affordable housing research studies. The research suggests that longer periods and other funding sources are needed to assist in drawing conclusions. The model

created may be used to observe a longer period, other financing sources and other jurisdictional characteristics (local regulations, size, etc.) could be informative. The model may also test for evolving patterns in funding sources across jurisdictions to establish optimal funding composition. By providing data for smaller jurisdictions without the influence of metropolitan data, it may create the ability to focus on their needs.

### **Recommendations for Future Research**

Other studies measured housing production and use of funds on a national and metropolitan scale, DeKalb County, Georgia is a part of metropolitan Atlanta. However, there are no studies available for this county. The study of affordable housing production in DeKalb County, Georgia suggests directions for future research such as providing a potential model for similar jurisdictions, seeking data analysis for future developments, and sustainability.

Federal funding sources used by developers are The LIHTC, tax-exempt bonds, HOME & LIHTC, and tax-exempt bond & LIHTC. These funding sources are issued based on project financing needs. The study suggests that examining funding sources other than HCVP and public housing. Participation of the other agencies may have revealed other sources of financing for analysis without HCVP or public housing. The model using the sources of financing suggested the potential for further research of unit production in DeKalb County, Georgia.

The significant feature in this study used to examine unit production during a known economic downturn. The results suggested that had the study extended to 2013-2015 years and the addition of other agencies; the research might have given better

results. The effectiveness of federal funding sources used during economic change is hard to determine within the period chosen for this study. The study was not expanded due to the innovative expansion and changes of some of the federal funding sources. However, expanding the study to include additional years and funding sources may have changed the significance of effects or changes in DeKalb County, Georgia. The addition could provide a better picture of housing production changes and the influence of the economy. Another limitation was the three time periods and no study of additional variables. The study focused on the time periods surrounding the Great Recession and specific federal funding sources used for housing production. The study suggests that expanding to additional variables and analysis options may reveal other characteristics affecting DeKalb County.

The data for this study was from two participating public housing agencies that service DeKalb County, Georgia. The initial list of affordable housing units did not contain any funding source combinations. The data received after proposal approval from the Georgia Department of Community Affairs (DCA) had layered funding sources. Before analysis, modification of the list of sources was to include DCA's layered financing. The reason for the change in composition is the data had no unit production for the HOME Investment Partnership Program and Community Development Block Grant during part of the study period. The layered sources replaced the HOME Investment Partnership Program and Community Development Block Grant funding. The limitation of this study was the consideration of layered federal funding sources

Federal funding sources are the key to affordable housing. Although each federal source of finance can produce affordable housing, using more than one financing source

is finding optimal ways to do so. Layered funding is common, and encouraged.

Layering funds increase the longevity of affordable housing. Some federal sources of financing require a 30-year affordability commitment from developers, but the attraction is the financing percentage rate and developer fee.

The model did reveal that it could be used to determine the significance of other funding source and time variables within the federal affordable housing market in DeKalb County, Georgia. The results of this study for the time periods were not significant, yet the change in the economy was changing. Adding additional years or other variables would reveal any changes in unit production, which may coincide, with economic change. Expanding funding source variables would uncover other affordable housing unit output and funding source combinations not recognized in this study. Other variables (funding sources) were operating during this study, therefore, looking for, and considering other funding sources would be helpful.

Narrowing and expanding variables using the model in this study may assist in finding significant differences in unit production and funding source use. The findings could lead to additional variables, which influence the behaviors of their affordable housing users. A subsequent study could be conducted of other public housing authorities in the Atlanta metro area to observe the use of federal funding in comparison to the metropolitan data. This study was an opportunity to look at a smaller jurisdiction as compared to large metropolitan areas or national statistics to guide future developments and federal financing utilization.

The goal of the current research study was to contribute to the body of knowledge about the federally funded affordable housing unit production and associated factors in a

jurisdiction like DeKalb County, Georgia. The suggested recommendations are as follows:

- Categorize the types of housing occupied, bedroom size, ethnicity, and family size. Each of the components may be crucial to determining the mobility of families, uses of the federal funding sources, and location. The movement of housing recipients may lead to where funding sources are most useful and determine further developments.
- Expand the model to include other characteristics and analysis.
- Analyze the changes in production, if any, to evaluate finance layering, restriction flexibility, and developer fee incentives.
- Evaluate programmatic functions of each federal funding source to determine program validity in the current housing market.
- Evaluate program utilization in various markets, potential funding amendments, or application development that addresses community diversity to meet affordable housing needs.
- Test smaller real estate markets to assess federal funding utilization and affordability gaps for potential programmatic changes.

The bigger picture is constant evaluation of data from metropolitan areas and smaller jurisdictions to determine housing needs, funding, and program development.

Programs need to include components to address different characteristics of a community. For example, cultural diversity, large families over the size of seven persons have value in understanding housing production. Housing data should be more inclusive to finding in smaller cities and counties that do not have big city support or expertise.

## **Recommendations for Actions by Stakeholders**

Stakeholders are individuals who have a stake in their community. A recommendation is to create an environment of empowerment by allowing community suggestion in pre-development plans. Public meetings about new housing projects are customary. However, it is unclear if housing developments, financing used, and opportunities to voice opinions outside of public notices can reach residents. Other avenues of opportunity could be created to benefit the support of housing developments and community ownership. Collaborate with local officials, public housing agencies, and community development partners to organize public forums for residents to comment and suggest community development needs and desires. A survey of the effectiveness of community involvement as it correlates to unit production to observe stakeholder influences in community development. The results may reveal the growth of ownership and insight of how stakeholders see the future development of their community.

**Community development organizations.** Affordable housing development and sustainability is one of many goals of community development organizations. Housing developments are funded using one or more federal funding source. Using federal sources prolong unit production and housing affordability. Sources like LIHTC and tax-exempt bonds carry and 15-30 year affordability restriction. The HOME has rent limitations, income level restrictions, and affordability up to 20 years. The Neighborhood Stabilization Program (NSP) is used to rid communities of slums and blight (United States Department of Housing and Urban Development, 2013). Layering these funding sources accomplishes community goals and affordability up to 30 years. The longevity of affordability assists in meeting the need of low-income housing in the

community. Creating a Request for Proposal (RFP) process in collaboration with local agencies to target area in needs of affordable housing development may evaluate the process and production of units in partnership with local organizations. An RFP may also dictate the type of housing developments needed within the County. The RFP could streamline the access to funding for developers and increase affordable housing unit development.

**Affordable housing recipients.** Affordable housing recipients have an avenue to share their concerns regarding the use and demand for affordable housing. The avenues are public board meetings, a seat in the Housing Authority's board, and resident advisory committees. The input from those receiving federally funded housing offers a realistic view of program efficiency and suggestive improvements from participants.

Additionally, the resident's vested interest may foster renewed pride and ownership of their community. The change in outlook may nurture care and management of affordable housing to maintain the units for sustainability.

**Taxpayers.** Taxpayer's dollars are used to fund infrastructure, programming, and can be the agent for change in communities. Investing into community's by paying taxes, utilizing affordable housing, or becoming a developer starts the conversation of how affordable housing influences the community. Development in the community could create an investment beyond funding. The examination of population growth, economic development, evaluation of gentrification, and mobility of low-income families may educate individuals on how each community piece works together.

## **Summary**

Two-way ANOVA without repetition was used to find the significant differences in unit production of federal funded affordable housing during three time periods (before the Great Recession (2004-2006), during the Great Recession (2007-2009), and after the Great Recession (2010-2012)) and the differences in unit production between six federal funding sources. The analysis was completed to answer the study questions regarding DeKalb County, Georgia in the midst of the economic downturn in the United States. The study results and conclusions are significant to the affordable housing industry because the findings demonstrate the ability to do research on smaller jurisdictions for community decisions. The study is an example of a county finding valuable information about their community other than relying on large city housing and economic research and data. This approach is to provide community leaders an alternative from using major city data, which could be misleading.

In addition to the economic effects of production, this study reviewed the use of federal funding sources. Evaluating the use of federal financing during the time of financial stress could lead to better use of federal fund sources and combinations. The combinations of federal funding sources data displayed a pattern of stabilizing the affordable housing unit production. The study findings may help community leaders, developers, and finance professionals create funding layering options for project types. Another useful aspect of this study was to establish a model for researchers to analyze smaller jurisdictions working in the affordable housing industry.

The purpose of the study was to evaluate the federal funding affordable housing production during an economic change in DeKalb County, Georgia. Analysis of the data

revealed that economic change had no influence on the unit production in DeKalb County, Georgia. However, the study suggests the funding sources used were significant and uncovered the pattern sources used during the economic change.

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## Appendix A

### Housing Variables Spreadsheet

The data will be reviewed for the period during 2004-2006 (before the Great Recession) for foundation, the be reevaluated from 2007-2009 (Great Recession) and 2010-2011 (after the Great Recession) for differences in production

| Variable           | Sub-variable   | What is Measured? | Units (people, routes, percentages) | How often? | How is the data reported?                   |
|--------------------|----------------|-------------------|-------------------------------------|------------|---|
| Affordable Housing |                |                   |                                     |            |   |
|                    | Tax Credit     | Units produced    | Numbers                             | Annually   | # of families housed in South DeKalb County |
|                    | Bond           | Units produced    | Numbers                             | Annually   | # of families housed in South DeKalb County |
|                    | Public Housing | Units produced    | Numbers                             | Monthly    | # of families housed in South DeKalb County |
|                    | Section 8      | Units produced    | Numbers                             | Monthly    | # of families housed in South DeKalb County |
|                    | CDBG           | Units produced    | Numbers                             | Annually   | # of families housed in South DeKalb County |
|                    | HOME           | Units produced    | Numbers                             | Annually   | # of families housed in South DeKalb County |

## Appendix B

### Public Housing Programs

| Public Housing Programs                               |  |
|---|--|
| Capital Fund  | The Capital Fund provides funds to housing authorities to modernize public housing developments.   |
| Demolition/Disposition                                | The Demo/Dispo program was created in an effort to help eliminate old, run down public housing.  |
| Homeownership   | A Public Housing Authority (PHA) may sell all, or a portion of, a public housing development to eligible residents or resident organizations, for purposes of homeownership, provided that a Homeownership Plan was submitted by the PHA and was approved by HUD.  |
| HOPE VI   | Since 1993, HOPE VI the engine driving the revitalization of the Nation's most distressed public housing developments by providing grants and unprecedented flexibility to address the housing and social service needs of their residents.  |
| Housing Choice Vouchers (Formerly Section 8)          | Allow very low-income families to choose and lease or purchase safe, decent, and affordable privately owned rental housing.  |
| Moderate Rehabilitation                               | Provides project-based rental assistance for low-income families. The program was repealed in 1991, and no new projects are authorized for development. Assistance is limited to properties previously rehabilitated pursuant to a housing assistance payments (HAP) contract between an owner and a Public Housing Agency (PHA).                      |
| Moving to Work Demonstration (MTW)                    | MTW is a demonstration program that allows housing authorities (Has) to design and test ways to give incentives to families to become economically self-sufficient, achieve programmatic efficiencies, reduce costs, and increase housing choice for low-income households.  |
| Operating Fund  | The Public Housing Operating Fund provides operating subsidies to housing authorities (HAs) to assist in funding the operating and maintenance expenses of their own dwellings, in accordance with Section 9 of the U.S. Housing Act of 1937, as amended. The subsidies are required to help maintain services and provide minimum operating reserves. |
| Rental Housing Integrity Improvement Project (RHIIIP) | Develops and implements plans, which address HUD's high-risk rental housing subsidy programs.  |

Resident Opportunities and Self Sufficiency (ROSS) and Neighborhood Networks (NN)

The ROSS program links services to public housing residents by providing grants for supportive services, resident empowerment activities, and activities to assist residents in becoming economically self-sufficient.

---

(United States Department of Housing and Urban Development, n.d.h)

## Appendix C

### Two-way ANOVA

The two-way ANOVA requires the factors to separate into groups for variation:

$$SS_T = SS_W + SS_A + SS_B + SS_{AB}$$

where  $SS_T$  = total variability

$SS_W$  = within-group variability

$SS_A$  = variability associated with Factor A

$SS_B$  = variability associated with Factor B

$SS_{AB}$  = variability associated with the interaction of Factors A and B

To test the hypotheses the F ratios must be computed:

$$F_{AB} = \frac{SS_{AB} / df_{AB}}{SS_W / df_W} = \frac{MS_{AB}}{MS_W}$$

Further analysis to determine the degrees of freedom using:

$$df_W = N - (df_A + df_B + df_{AB} + 1)$$

The *F*test of the systematic variance would be appropriate for this proposed study.

The *F*test would allow the examination of the differences between the time periods and affordable housing funding sources (Bluman, 2009).

To answer SQ1, the years of interest (2004-2006, 2007-2009, 2010-2012) and the number of federal funded affordable housing units produced by each funding source..

Table 5

The years of interest by period (2004-2006, 2007-2009, 2010-2012) and the aggregate number of federally funded affordable housing units are additional factors in this study.

Table 5

*SQ1 - Sample ANOVA Table – Aggregate Federal Funded Affordable Housing Units*

| Source of Variation                                 | SS | df | MS | F | P-value | F crit |
|---|----|----|----|---|---------|--------|
| Federal funded affordable housing units – aggregate |    | 6  |    |   |         |        |
| Time Periods 2004-2006, 2007-2009, 2010-2012        |    | 3  |    |   |         |        |
| Error   |    |    |    |   |         |        |
|   |    |    |    |   |         |        |
| Total   |    |    |    |   |         |        |
|   |    |    |    |   |         |        |
|   |    |    |    |   |         |        |

Funding sources (independent) during the time periods (independent) (2004-2006, 2007-2009, 2010-2012) are reviewed in this study.

Table 6

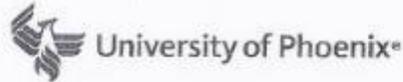
*SQ2 - Sample ANOVA Table – Low-income Housing Tax Credit*

| Source of Variation                          | SS | df | MS | F | P-value | F crit |
|--|----|----|----|---|---------|--------|
| Low-income Housing Tax Credit                |    | 1  |    |   |         |        |
| Time Periods 2004-2006, 2007-2009, 2010-2012 |    | 3  |    |   |         |        |
| Error  |    |    |    |   |         |        |
|  |    |    |    |   |         |        |
| Total  |    |    |    |   |         |        |

## Appendix D

### Data Access and Use Permission

#### Confidential Organization



#### DATA ACCESS AND USE PERMISSION

Please check mark any of the following statements that you approve regarding the study and data described below:

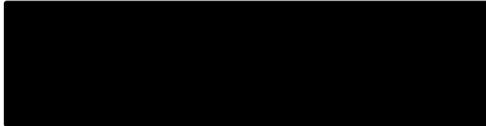
I hereby authorize Deidre V. Randle, a student of University of Phoenix who is conducting a research study titled or described as follows: Affordable housing production during economic change: A quantitative study access to, and use of, the non-identifiable archival data described as follows: affordable housing units produced during [REDACTED], formerly known as [REDACTED], and multifamily housing tax-exempt bonds for use in the aforementioned research study. In granting this permission, I understand the following (please check mark each of the following as applicable):

- The data will be maintained in a secure and confidential manner.
- The data may be used in the publication of results from this study.
- This research study must have IRB approval at the University of Phoenix before access to the data identified here is provided to Deidre V. Randle.
- Access to, and use of, this data will not be transferred to any other person without my/our express written consent.
- The source of the data may be identified in the publication of the results of this study.
- Relevant information associated with this data will be available to the dissertation chair, dissertation committee, school as may be needed for educational purposes.

Current version 032012

Appendix E  
Letter Requesting Participation  
Confidential Organization

March 5, 2014



Request for Participation

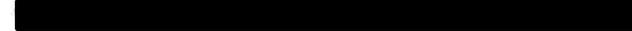


This letter is sent to you to request your participation in a research project to study the production of affordable housing in DeKalb County, Georgia during economic change. I am requesting information regarding the Housing Choice Voucher Program (formerly known as Section 8), Public Housing, and multifamily housing tax-exempt bond unit production or allocation during 2004-2011 for study.

The results of this project will be used for my dissertation research project. Through your participation, I hope to contribute to the understanding of affordable housing production and the funding source selection during economic change.

Attached to this letter are two required forms which will allow me to continue my efforts in my research. If you agree to participate, please sign the following forms 1) Data Access Form; and 2) The Premises, Recruitment, and Name (PRN) Use Permission Form. The data will be requested at a later date however, I must have permission forms signed before I submit to the Institutional Review Board (IRB). Once I obtain approval, I would like to request the data to continue my research.

I hope you will consider participating in this research by assisting in providing information related to unit production and allocation for the affordable housing sources managed by the



If you have any questions or concerns about this study, you may contact me at [redacted]. If you have any concerns about your rights as a participant in this study, you may contact the IRB via e-mail (IRB@phoenix.edu). Please return the signed forms via email to: [redacted].

Sincerely,

/S/ Deidre V. Randle

Deidre V. Randle  
Doctoral Student, University of Phoenix

Appendix F  
Letter Requesting Participation  
Confidential Organization

March 8, 2014



Request for Participation

To whom it may concern,

This letter is sent to you to request your participation in a research project to study the production of affordable housing in DeKalb County, Georgia during economic change. I am requesting information regarding Community Development Block Grant (CDBG), HOME (HOME Investment Partnership Program, Low-Income Housing Tax Credit (LIHTC), and multifamily housing tax-exempt bond unit production or allocation during 2004-2011 for study.

The results of this project will be used for my dissertation research project. Through your participation, I hope to contribute to the understanding of affordable housing production and the funding source selection during economic change.

Attached to this letter are two required forms which will allow me to continue my efforts in my research. If you agree to participate, please sign the following forms 1) Data Access Form; and 2) The Premises, Recruitment, and Name (PRN) Use Permission Form. The data will be requested at a later date however, I must have permission forms signed before I submit to the Institutional Review Board (IRB). Once I obtain approval, I would like to request the data to continue my research.

I hope you will consider participating in this research by assisting in providing information related to unit production and allocation for the affordable housing sources managed by the

If you have any questions or concerns about this study, you may contact me at [REDACTED]. If you have any concerns about your rights as a participant in this study, you may contact the IRB via e-mail (IRB@phoenix.edu). Please return the signed forms via email to: [REDACTED]

Sincerely,

/S/ Deidre V. Randle

Deidre V. Randle  
Doctoral Student, University of Phoenix

## Appendix G

### Premises, Recruitment, Name (PRN) and Use Permission

#### Confidential Organization



#### PREMISES, RECRUITMENT AND NAME (PRN) USE PERMISSION

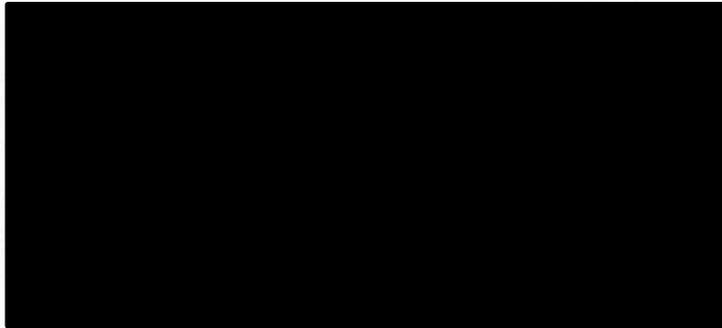


*Please complete the following by check marking any permissions listed here that you approve, and please provide your signature, title, date, and organizational information below. If you have any questions or concerns about this research study, please contact the University of Phoenix Institutional Review Board via email at [IRB@phoenix.edu](mailto:IRB@phoenix.edu).*

I hereby authorize Deidre V. Randle, a student of University of Phoenix, to use the premises (facility identified below) to conduct a study entitled Affordable housing production during economic change: A quantitative study

I hereby authorize Deidre V. Randle, a student of University of Phoenix, to recruit subjects for participation in a conduct a study entitled Affordable housing production during economic change: A quantitative study.

I hereby authorize Deidre V. Randle, a student of University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled Affordable housing production during economic change: A quantitative study.



Appendix H

Open Records Request Response

Confidential Organization



Nathan Deal  
GOVERNOR

April 14, 2014

Deidre V. Randle  
University of Phoenix

**Re: Affordable Housing Data**

Dear Ms. Randle:

received your written open records act request for the following documents or data:

**Affordable housing units produced in DeKalb County during 2004-2011 using the following:**

- Low Income Housing Tax Credit (LIHTC)
- Multifamily Tax-Exempt Bond Finance
- Public Housing
- Housing Choice Voucher
- Community Development Block Grant (CDBG)
- HOME Investment Partnership Program

After reviewing your request, it has been determined that documents you requested are subject to release unless specific exemptions apply. Please see Attachment for any exemption from production claimed.

Please note that the data requested is not information that currently exist in a format to access as requested; however, as a courtesy and to extent we have the ability to compile the information requested, the information will be provided to you at no charge. For your further information, our system is unable to compile any Public Housing or CDBG information, at this time.

You indicated that you did not need the data now. Please advise when you would like us to compile the data requested.

Should you have any questions, please contact me

Appendix I

Data Collection Spreadsheet Aggregate

For Each Funding Source

Data Entry Spreadsheet - Aggregate (For each funding source)

| Funding Source   | Years                      |      |      | Years               |      |      | Years                     |      | Totals |
|--|----------------------------|------|------|---------------------|------|------|---------------------------|------|--------|
|  | Before the Great Recession |      |      | The Great Recession |      |      | After the Great Recession |      |        |
|  | 2004                       | 2005 | 2006 | 2007                | 2008 | 2009 | 2010                      | 2011 |        |
| Community Development Block Grant - CDBG                     |                            |      |      |                     |      |      |                           |      |        |
| HOME - HOME Investment Partnership Program                   |                            |      |      |                     |      |      |                           |      |        |
| Housing Choice Voucher Program - formerly known as Section 8 |                            |      |      |                     |      |      |                           |      |        |
| Low-Income Housing Tax Credits - LIHTC                       |                            |      |      |                     |      |      |                           |      |        |
| Public Housing   |                            |      |      |                     |      |      |                           |      |        |
| Tax-Exempt Bonds   |                            |      |      |                     |      |      |                           |      |        |
| Totals   |                            |      |      |                     |      |      |                           |      |        |

Appendix J  
 Data Collection Spreadsheet  
 By Funding Source CDBG

---

Data Entry Spreadsheet - By funding source CDBG

---

| Property Name | Years                      |      |      | Years               |      |      | Years                     |      |
|---------------|----------------------------|------|------|---------------------|------|------|---------------------------|------|
|               | Before the Great Recession |      |      | The Great Recession |      |      | After the Great Recession |      |
|               | 2004                       | 2005 | 2006 | 2007                | 2008 | 2009 | 2010                      | 2011 |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
|               |                            |      |      |                     |      |      |                           |      |
| Totals        |                            |      |      |                     |      |      |                           |      |

Appendix K

**Table 7. Federally Funded Affordable Housing Units Produced Each Period of the Study (N=4)**

| Year      | M        | SD        |
|-----------|----------|-----------|
| 2004-2006 | 1,019.25 | 1,725.099 |
| 2007-2009 | 983.50   | 1,678.849 |
| 2010-2012 | 931.75   | 1,526.056 |

Figure 3 is the illustrated version of the table to display the production of units during each period. The analysis was performed two ways: by period (Appendix K) and each year (Appendix L).

Appendix L

**Table 8. Federally Funded Affordable Housing Units Produced Each year of the Study**

(N=4)

| Year | M        | SD        |
|------|----------|-----------|
| 2004 | 1,035.25 | 1,588.392 |
| 2005 | 1,117.75 | 1,532.082 |
| 2006 | 881.50   | 1,418.511 |
| 2007 | 965.50   | 1,572.174 |
| 2008 | 988.50   | 1,634.387 |
| 2009 | 1,092    | 1,760.220 |
| 2010 | 1,019.25 | 1,725.099 |
| 2011 | 983.50   | 1,678.849 |
| 2012 | 931.75   | 1,526.056 |