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Research Universities as Engines of Economic Growth: How Do Research Universities Impact Regional Economic Growth?

Stephanie Arnette Pink

RESEARCH UNIVERSITIES AS ENGINES OF ECONOMIC GROWTH:

HOW DO RESEARCH UNIVERSITIES IMPACT

REGIONAL ECONOMIC GROWTH?

By

Stephanie Arnette Pink

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As a result of the 2008-2010 economic crisis as well as continuing efforts to redevelop and revitalize local economies, public administrators across America are challenged with the task of developing methods to sustain their economies.

According to Florida (2002) economic growth today is contingent upon a locality's ability to attract a certain group of people, particularly those of the "creative class". Furthermore, Florida et al., (2006), assert that universities are key contributors to regional development in their ability to attract creative class individuals into a community. Contrary to the assertion that the creative class is a prerequisite for economic growth, researchers argue that additional economic development theories should be examined in comparison to the creative class theory. This study examines the creative class, human capital, social capital, and the institutional intellectual capital theories to determine which is the best predictor for economic growth in nonmetropolitan areas. This study also presents an additional theoretical framework, the community capital approach to provide a multi-dimensional examination of the quality of life and

demographic factors that can aid local public administrators in understanding what impacts the economic growth and development of communities.

To assess this relationship, a multivariate regression analysis; specifically ordinary least squares regression is used to determine the strength of factors that influence the measurements of economic development.

The findings for the creative class theory provide marginal support for the assertion that the presence of the creative class leads to more economic growth. There is also marginal support for the human capital, social capital, and the institutional intellectual capital theories as predictors of economic growth in nonmetropolitan areas.

This research suggests that there are two paths that can be pursued by local public administrators to improve their economies. First, local public administrators with access to higher education institutions should focus their efforts on educating their workforce. Secondly, local public administrators from communities not equipped with higher education institutions should direct their strategies towards the community capital approach by creating more green space for parks and trails since these factors can be easily enhanced.

DEDICATION

I can do all things through Christ who strengths me Philippians 4:13. First and foremost, thank you to my Lord and Savior Jesus Christ from whom all blessings flow. Thank you Lord for giving me the faith, courage, and strength to accomplish this task. I know that all things are possible if you only believe in God. Thank you for not giving up on me and teaching me to not give up on myself.

This dissertation is dedicated in loving memory to my paternal grandmother Edith Echols Pink, and to my maternal grandfather Wallace Elston.

This dissertation is also dedicated to my parents, John and Alberta Pink. Words truly cannot express my gratitude to you for your unconditional and enduring love, support, encouragement, and most importantly your prayers during this journey in my life. I am so blessed to have you as my parents. I thank God for you daily. Daddy, I thank God for blessing me with such a God fearing man in my life. Your profound words of inspiration are the source of my strength. Thank you for your encouragement, words of wisdom and prayers, and for teaching me to "Keep My Head to the Sky". Mommy, I don't know if you will ever truly understand how grateful I am to have you in my life. Your career path in research inspired me to see no limitations. You are my best friend, and my hero! Thank you for you for believing in me, understanding my frustrations, and providing me with hands on love, support, and assistance. I love you like a ROCK!

To my brother Johnathan (JP), I hope and pray that you now understand that if your big sister can do it, you can too. I love you and I am proud of the young man that

you are becoming. I can't wait to celebrate your graduation and I look forward to doing it again when you complete your Masters!

To my Granny (Mrs. Willie Ann Elston), thank you for believing in me. The love and support you showed to my Mom, your first College Graduate has guided me here. I realize the sacrifices that you made for your family to pursue their educational goals, and it has inspired me to attain the highest educational degree possible.

To my Mom's family (The Elstons), Aunt Judy, Uncle Leonard, Aunt Priscilla, Aunt Lynn, and Uncle Roy (Aunt Dee), and my Dad's family (The Pinks), Uncle Bubba (Aunt Pearl), Aunt Dorothy, Aunt Betty (Uncle Franklin), Aunt Cassie, Uncle Melvin (Aunt Beverly), Uncle Harvey, Aunt Marjorie, Uncle David, and all my cousins, thank you for your unwavering support and prayers. To my Mt. Sinai Church family, thank you for your prayers.

Last but not least Darnell, I am so grateful for having you in my life. I have been blessed by your unconditional love and unwavering support during this process. I could always depend on you being there as my greatest supporter. Thank you for being there for me, believing in me, and encouraging me to not give up.

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To the Political Science and Public Administration Faculty, thank you for sincerely caring about my success as a student and for providing me with an excellent education. Last but not least, thanks to Mississippi State University for giving me the opportunity to accomplish my dream and goals.

If the mind can conceive it, and the heart can believe it, than it can be done.

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CHAPTER I

INTRODUCTION

The 2008-2010 economic crisis can be characterized by rising unemployment trends and poverty rates, the collapse of the housing market, failed banks (Waggoner, 2008), and a globalized economy. These challenges have led to a declining public tax base for the federal government to provide state and local governments with the financial capital necessary for public administrators to effectively and efficiently provide the public services their constituents' desire. Furthermore, these factors have caused local government officials across America to discover methods to stimulate and sustain their economies (Lamore et al., 2006).

According to Meyer (1991), one particular method of maintaining the economic stability of local communities is through the process of economic development. Economic development is defined a continuous process designed to promote and maintain the economic stability of a community (Malizia, 1994). This process of creating and maintaining the wealth of a community is typically achieved by implementing economic development policies which are designed to promote the retention, expansion, and attraction of businesses (Morgan et al., 2007). Such policies include fiscal, tax, and nonfinancial strategies to attract, retain and create new jobs based upon geographically-based intervention and local business development strategies (Meyers, 1991, and Koven and Lyons, 2003). Thus, local government officials are now pursuing various economic development policies in anticipation that they will have the desired implications for their

constituents. This research examines the dominant economic development theoretical frameworks and the methods associated with each theory in anticipation that an examination of these theories will provide local communities with the insight necessary to foster their economic growth.

The economic development literature identifies three paradigms or waves of economic development policy. Each wave is categorized by a specific group of strategies or tools pursued by government officials to stimulate a regions economic growth (Bradshaw and Blakely, 1999). The first wave dates back to the 1930s and was dominated by business attraction tools such as offering businesses tax incentives, loan guarantees, and facility or utility subsidies, and thus involved local governments competing against each other to lure businesses into their jurisdiction. Such recruitment efforts were targeted at industrial businesses in anticipation that they would be enticed to locate into a particular jurisdiction (Bradshaw and Blakely, 1999 & Koven and Lyons, 2003).

The second wave of economic development policies began in the early 1980s. During this wave, government officials shifted their efforts away from business attraction to the development of strategies to foster and encourage the retention and expansion of existing businesses (Koven and Lyons, 2003). Government officials during this second wave began to offer businesses technical and investment assistance to foster their existing businesses' growth and expansion (Bradshaw and Blakely, 1999).

The most recently identified wave focuses on efforts of creating environments within a community that promote future growth and development. This strategy is generally achieved by local government officials investing in and strengthening their human and social capital assets (Koven and Lyons, 2003).

Since the second wave has given way to the third wave, local government officials are exploring what this means for their future economic growth. Officials are now shifting their attention to the attraction of people rather than firms. According to Hoch (2000), in today's economy, competitive places are those that focus on quality of life and physical amenity assets that people find attractive.

According to Richard Florida (2002), investing in people is a prerequisite for economic growth. His research explores why some cities and regions grow and prosper more than others, and he concludes that economic growth is contingent upon a locality's ability to attract a certain group of people, particularly those of the "creative class" (Florida, 2002). Florida (2002) asserts in *The Rise of the Creative Class* that today's economic growth in regions can be explained by not tracing the trends of people moving to jobs but by following trends of companies moving to locations that have skilled people. His theory of the creative class explores the question of how people choose to live and work in certain locations as opposed to others and Florida (2002) asserts that creativity has now become the driving force behind economic growth in those locations that are tolerant, diverse, and open to creativity.

Statement of the Problem

According to Florida's (2002) creative class theory, the presence of creative people or highly educated professionals in specific careers drives economic growth and competiveness for metropolitan areas (Donegan et al., 2008). Since his creative class theory was introduced, it has attracted the attention of policy makers and city officials across the United States. City and regional economic development leaders have thus

begun to utilize Florida's (2002) measurements and indicators of growth to shape their development strategies (Hoyman and Faricy 2009).

Contrary to Florida's (2002) assertion that the creative class is a prerequisite for the economic growth of an area, McGranahan and Wojan (2007), and Hoyman and Faricy (2009) argue that additional economic development theories should be examined and explored in comparison to assertions of the creative class argument. According to McGranahan and Wojan (2007), little research has been done to comprehensively test Florida's (2002) theoretical premise. While Florida (2002) presents corroborative evidence on the relationship between the creative class and growth, his research lacks an examination in a multivariate statistical framework (McGranahan and Wojan, 2007). Hoyman and Faricy (2009) have also found the adoption of his theory to be problematic because there has been little evidence in the academic literature to support the relationship between creativity and economic indicators of growth or development. Furthermore, Peck (2005) and Markusen (2006) argue that the application of the creative class theory proves problematic for policymakers looking to adopt this theory as a method of promoting economic growth because Florida's theoretical premises lack empirical evidence of significance.

Due to the lack of consensus (Stewart, 2008) on the factors that impact the economic growth of communities, as identified by Hoyman and Faricy (2009), this research examines several different economic development theoretical frameworks. In this study the concepts of creative class, human capital, social capital, institutional intellectual capital, and other factors including quality of place, socioeconomic and demographic factors that may influence the economic development of counties are

examined. This research assesses the relationship between Florida's theory in the context of universities and non-university towns specifically in nonmetropolitan areas.

According to Florida (2002), universities serve as knowledge intensive engines. However, his research only examines the role of universities in attracting the creative class to metropolitan statistical areas. Thus the scope of his research is limited and problematic for the following reasons: first, Florida's (2002) examination of the creative class in the context of metropolitan statistical areas fails to include the nonmetropolitan populations of America. According to the U.S. Department of Agriculture (2008), nearly 50 million Americans live in nonmetropolitan areas. These residents make up 17 percent of the population thus illustrating that a comprehensive analysis of nonmetropolitan areas deserves further exploration (U.S. Department of Agriculture, 2008).

Secondly, the economic development literature only provides a single-dimensional view of knowledge based areas. This research seeks to determine what economic development tools, policies, and strategies achieve economic growth and development in nonmetropolitan communities. Florida's (2002) research does not provide an examination of how his theoretical premise compares to others. However, in this research a multi-dimensional examination of communities is provided by integrating an examination of the unique relationship that exists between communities and university towns. Based upon research it is expected that the university will remain a vital factor in the economic growth and development process in nonmetropolitan areas (Hoyman and Faricy (2009), Florida et al. (2006), Florida (2002), Goldstein and Drucker (2005), and Mansfield (1991). Florida (2002) and other researchers such as Hoyman and Faricy (2009), Putnam (1993), Becker (1964), and Barron, Black and Loewenstein (1987) have examined the dominant economic development theories and have failed to include in

their analysis an examination of community related variables that have been identified in other research to impact economic growth trends. This research includes an examination of community related factors such as the quality of the education system, quality of life, political structure and political culture in order to provide a more comprehensive understanding of the context in which these theories can be best understood.

Significance of the Study

The most recent data from the United States Census Bureau (2011) and the United States Bureau of Labor Statistics (2011), state that America's poverty and unemployment rates have dramatically risen in the last ten years. These datasets illustrate that identifying strategies that local governments can employ to aid them during this period of economic downturn is critical. Therefore, this research seeks to provide a model that economic developers and local public administrators can implement to aid them through this time period of economic hardship.

This research seeks to explore the relationship between the creative class and universities host communities (where highly education professionals reside) and how these factors impact the economic growth of a community. More specifically, this research looks at the unique relationship between communities and universities, an examination that has been unaddressed by other studies. By acknowledging and attempting to integrate these factors, the best theory for generating economic growth for a community will emerge. Additionally, this research is unique in that it employs several multivariate regression models to compare and test Florida's hypotheses regarding economic growth and a community's attractiveness and competitiveness.

According to Florida (2002 and 2006), the university plays a powerful role in generating, attracting, and mobilizing talented individuals into a community. Additionally, the university acts as a magnet and encourages highly educated, talented people and businesses to locate nearby based upon the many leisure and attractive work qualities that universities possess. For example, Florida (2002) states that large research universities shape the environment of the town by making it more tolerant of diverse people and ideas. Florida (2006) argues that the university is an engine of economic development and is vital because it is the source of creativity in regional development. In other words, the university is the supplier/generator of human creativity which is the driving force of economic growth. Furthermore, if a community can attract or create a social climate that is conductive to creativity, then it will possess an economic advantage over others, a task which research university communities have the ability to do.

Prior research suggests that colleges and universities provide economic benefits for a community. Such studies have found that major research universities, institutes and research units are critical components of economic growth and development. For example, Feldman (1994) notes the vital role that research universities provide for local economic development and she states that the research university provides knowledge and skilled workers for a local economy. However Hoch's (2000) research concluded that the simple presence of a university or college in a community is not enough to automatically assure economic growth. So what other factors are necessary for a community's economic growth and development?

There are four key elements that signify this research as unique and significant and illustrate its merit for exploration. First, the status of America's 2008-2010 economy characterized as an economic recession with high unemployment rates (Bureau of Labor

Statistics, 2011) illustrates that it is vital to understand how local economies can remain sustained. Second, Florida's research has attracted the interest of other researchers and public officials. Thus, the adoption of his theory by local public administrators across cities nationwide illustrates that his research deserves further exploration. Third, researchers have identified several important limitations in Florida's study since it lacks empirical evidence (Peck, 2005, Hoyman and Faricy, 2009). Lastly, this research expands and builds upon Florida's study by providing an empirical analysis.

Specifically, this research will provide the following contributions to local public administrators. This research expands and builds upon Florida's study by offering an empirical analysis. Second, this research expands Florida's unit of analysis by exploring university and non-university towns in nonmetropolitan areas and their levels of economic growth. Third, this research will expand and fill the gap in the existing literature in its inclusion of community related variables that have been excluded by previous researchers.

This study also contributes to the field of public administration in several ways. First, this study adds to the knowledge in the field regarding the relationship between the form of government at the local level and how it impacts economic development policy choice decisions. Secondly, this study contributes to public administration by adding to the discipline's knowledge of the relationship between the political culture of a state and the choice of policy instruments pursued by policy makers at the local level.

Objectives of the Research

This research seeks to determine which theory of economic development best predicts economic growth for communities in nonmetropolitan counties with the presence

of a research university. According to Donegan et al. (2008) and Mathur (1999), empirical evidence has concluded that communities with more educated residents grow faster. The human capital research which explores this assertion that an educated workforce leads to more economic growth for an area is further supported by Storper and Scott (2009), Hoyman and Faricy (2009), Ullman (1958), Becker (1964), and Barron et al. (1987). Therefore this research is unique in that it examines the impact that the presence of a research university has on the economic growth of communities across several theoretical frameworks. More specifically, this research seeks to determine if Florida's (2002 and 2006) creative class theory outperforms other theories (e. g. human capital, social capital, institutional intellectual capital, and community capital) found to promote economic growth in nonmetropolitan university communities.

According to Florida (1999) the university has been characterized by many as a "knowledge factory." Researchers including Florida (1999) argue that we now exist in a new type of economy, one which is based upon knowledge and ideas. Florida (1999) notes that many researchers have found that a region's proximity to a university is a vital component to that location's ability to possess an economic advantage over others. Based on these findings, there are two major objectives of this research. First, this research seeks to expand the scope of Florida's creative class theory research to include nonmetropolitan statistical areas. Second, this research seeks to provide empirical evidence of Florida's creative class theory in the context of university and non-university towns.

Research Questions

This research seeks to examine Florida's creative class theory to determine if it is applicable to nonmetropolitan America or if his findings are limited only to metropolitan statistical areas. This research also seeks to expand Florida's ideas and by quantitative analysis of university and non-university communities in order to test his theory of the creative class and its correlation with economic growth in this unique environment. Questions that will be explored in this research:

1. Can Florida's creative class urban theory be applied to nonmetropolitan areas?
2. If so, what elements foreshadow economic growth in nonmetropolitan areas?
3. How does the creative class theory compare against other theories?
    - Human capital
        - Adults with a College degree.
    - Social capital
        - Number of nonprofit organizations
    - Institutional intellectual capital
        - Density of higher education institutions in an area.
    - Community capital
        - Quality of life factors (e.g. quality of education system, outdoor recreation activities, natural amenities, healthcare facilities, crime rate, housing value, commute time to work, commercial airport distance, form of government and political culture).

Florida (2002) argues that the presence of a research university is an advantage for an area in today's creative economy. In the creative economy these areas with a research university are known for attracting a diverse array of faculty and students from

various backgrounds which increases a regions tolerance as an open people climate. Thus such efforts result in the attraction and retention of other members of the creative class which then leads to increases in the economic growth of an area (Florida, 2002).

Based upon Florida's (2002) assertion of the vital role that research universities possess in today's creative economy, this research utilizes the university as the unit of analysis to test his theory that areas with the presence of a research university generate more economic growth. Therefore, the following question will be explored through multivariate analysis in order to test this portion of Florida's (2002) creative class theory. Is Florida's creative class theory applicable to nonmetropolitan knowledge intensive communities? To determine this answer, I will employ ordinary least squares regression analysis for university and non-university communities.

Organization of Dissertation

This research assesses the impact that the creative class, human capital, social capital, institutional intellectual capital, and community capital theories have on the economic growth of a region. This study is divided into six chapters and is outlined as the following. Chapter two reviews the literature on the general concept of economic development. Chapter three of this research assesses the impact that the creative class, human capital, social capital, institutional intellectual capital, and community capital theoretical frameworks have on the economic growth of a region.

Chapter four discusses the methodology and the collection of the data employed in this study. This chapter also presents the theoretical research model and the operational definitions (Stewart, 2008) of the variables. Chapter five discusses the statistical data and it provides an analysis of the study's findings. The final chapter,

chapter six, discusses the policy recommendations suggested as economic growth and development strategies for university and non-university towns across the United States. It also provides a discussion of the policy recommendations for the field of public administration in general. Lastly, this chapter provides a discussion of suggestions for further research, and the limitations of the study.

Table 1.1 An Overview of the Research

Research Overview	
Statement of the Problem	Richard Florida's creative class research has garnered global attention. Local government officials have responded by enacting policies to attract and retain individuals from the creative class. Florida's research lacks empirical support for the argument that the presence of creative class individuals drives economic growth and development more than other theoretical perspectives.
Solution to the Problem	This research explores the relationship between the presence of the creative class as an explanation for economic growth and development of a community. It incorporates other theoretical perspectives found to contribute to the economic prosperity of a community.
Theoretical Frameworks Employed	The creative class, human capital, social capital, institutional intellectual capital, and community capital perspectives are examined to assess their influence on small knowledge intensive communities.
Research Questions	1.) Can Florida's creative class urban theory be applied to nonmetropolitan areas? 2.) If so, what elements foreshadow economic growth in nonmetropolitan areas? 3.) How does the creative class theory compare against these other theories? • Human capital • Social capital • Institutional intellectual capital • Community capital
Methodology	Multivariate regression analysis will be used to determine the strength of factors that influence the economic growth for nonmetropolitan counties.
Unit of Analysis	Nonmetropolitan counties.
Contributions	This research contributes to public administration by expanding the economic development theories to include an examination of community related variables in towns. This research also examines the appropriateness of extending the creative class to small knowledge intensive areas.

CHAPTER II

LITERATURE REVIEW

Economic development has escalated to the top of the agenda for local governments across America. Thus a historical overview of this concept of economic development is vital considering America's current economic status characterized by rising unemployment and poverty trends (Bureau of Labor Statistics, 2011). This chapter reviews the economic development literature to provide an overview of the historical evolution of the concept.

Specifically this chapter reviews the local, state, and federal economic development literature. It seeks to provide an overview of the trends that have impacted the current direction of the field.

The first section provides a discussion of the university's role in generating economic growth and development. The next section provides justification for solely examining nonmetropolitan counties. Then in the third section a discussion of the state and local economic development trends is presented. This discussion provides background information on the concept of economic development as it relates to the lower levels of government and their approach to generating economic growth for their jurisdiction. In the final section, a discussion of the historical evaluation of the federal government's involvement in economic development is presented. This discussion provides an understanding as to how each level of government operates in the process of generating economic growth for its jurisdiction. It also explains how the actions of each

level of government has impacted the current economic problems and thus the need for this study. This chapter seeks to provide the background information necessary for local governments to sustain their economies.

The Role of Universities

What is the relationship between universities, economic development, and local government? According to Florida et al., (2006), universities are key contributors to regional development. Conventional knowledge asserts that the university's role in economic growth lies in its ability to transfer the research that they produce into industry. Thus universities possess the capacity to generate innovation and prosperity for surrounding communities.

Knowledge is a vital component of economic advantage for a community to possess (Steward, 1997 and Edvisson and Malone, 1997). Thus the university's role in economic development and growth has become increasingly important (Florida, 1999). Miner et al. (2001) also assert that universities are one of the conditions thought to contribute to successful local economic development. Research universities are unique in that they provide scientific knowledge, technical information, and skilled workers, key factors necessary for economic growth. However, researchers conclude that the mere presence of a university is not a sufficient condition to guarantee that economic development and growth will follow for communities (Feldman, 1994).

Goldstein and Drucker (2005) examined the economic contributions that universities have on regional growth and their findings indicate that universities increase average annual earnings for a community. Similarly, Mansfield's (1991) research found that academic research investments yield significant returns to the economy and society.

Lastly, Jaffe's (1989) research examined the impact that university research has on the economy of a community and his findings assert that university research results in more efficient corporate innovation for a community. He also found that businesses located within close proximity to a university generate more research production (Jaffe, 1989).

The Relationship Between Universities and Nonmetropolitan Counties

What is the relationship between universities and counties? According to the United States Department of Agriculture, Economic Research Service (2008), today nearly 50 million Americans reside in nonmetropolitan areas. Between July 2000 and July 2006 the nonmetropolitan population nationwide increased by 1.3 million, an annual growth rate of 0.4 percent. In comparison, the growth rate for metropolitan area's annual growth rate was 1.1 percent (U.S. Department of Agriculture, 2009). These percentage gaps illustrate the necessity to further explore ways in which nonmetropolitan areas can increase their attractiveness and thus, increase their economic growth opportunities.

Florida's (2002) creative class research is based upon two basic arguments: the creative class constitutes the primary source of economic growth in our nation; and the creative class locates to metropolitan areas with certain quality of place amenities including outdoor recreation activities. According to Florida (2002), the creative class is attracted to areas that have the combination of the built environment and a natural environment, as well as diverse kinds of people and active creative endeavors. If evidence supports his premise that the creative class is the primary source of economic growth in our nation, then further research is needed to determine ways in which nonmetropolitan areas can gain attractiveness to creative class individuals. Furthermore, Florida's (2002) research only seeks to examine the migration trends of the creative class

into urban areas thus neglecting the migration trends of the creative class into rural areas (McGranahan and Wojan, 2007).

Beyers and Lindhahl (1996) found evidence to support the argument that the creative class is also moving into nonmetropolitan areas. They documented the nature of rural areas in attracting the creative class to nonmetropolitan areas based upon the quality of life outdoor recreational amenities that these areas possess. McGranahan and Wojan (2007) construct a recast of Florida's (2002) creative class theory and find that rural areas that posses certain natural physical characteristics tend to attract workers in creative occupations and they conclude that the quality of life gains afforded by rural areas has led to increases in their economic growth (McGranahan and Wojan, 2007).

Evolution of State and Local Government Economic Development Policies

State and local government economic development policies can be classified into a set of three evolutionary strategies or waves. The first wave dates back to the 1930s, and is typically characterized as business attraction, involving both state and local governments competing against each other to lure businesses into their community by offering financial incentives. Common incentives offered to attract business included grants, loans, and tax policies (Bradshaw and Blakely, 1999 and Koven and Lyons, 2003).

Grants remain a highly desirable form of financial assistance because potential firms have no financial obligation to repay them. This tool of economic development has been implemented by states, localities, and the federal government in attempts to aid local communities. At the state level, grants are offered for communities, particularly for

rural development (Koven and Lyons, 2003).The disadvantage associated with grants is that the provider of must possess the economic stability to offer this form of assistance.

Loans are another popular financial incentive tool offered today because they provide businesses an opportunity to obtain funding at or below market rates and they are beneficial to businesses that lack an established line of credit. The downside associated with this tool is that if such loans go into default, the result may be a financial loss to the taxpayer (Koven and Lyons, 2003).

Tax policies also remain another economic development tool that state and local governments as well as the federal government use to attract businesses into their locality. Generally, a high tax business climate is viewed negatively by firms while low taxes are viewed with a more positive outlook. According to Koven and Lyons (2003) nearly all states offer some form of a tax incentive to attract and retain businesses into their locality.

Many state and local government economic development planners provide tax incentives for several reasons since they are thought to increase the economic prosperity of a community. First, they fear that if they do not offer such incentives, they will lose the battle of competition to another jurisdiction. Additionally, local governments want to project a business friendly image. However, researchers have found that tax inducements, grants, and loans are not the sole determinants of a business' location decisions (Koven and Lyons, 2003).

Recently local government officials have begun to realize the disadvantages associated with these tools of economic development implemented to attract new businesses. For example, according to Koven and Lyons (2003) the economic development literature illustrates that incentives do not effectively influence firm location

decisions; therefore, the best way to influence a businesses' location decision is to create and sustain a quality community.

From the debate over the flaws in relying on incentive based strategies emerged a new wave of economic development. The second wave of economic development policies began in the 1980s. The focus during this wave shifted from attracting businesses into a jurisdiction towards encouraging the retention and expansion of existing businesses within their community (Koven and Lyons, 2003). During this wave, local government officials began to focus their efforts on identifying ways to maintain the existing businesses in their jurisdiction since a community's existing businesses are an important asset to its economy (Koven and Lyons, 2003).

The most recent wave of economic development emphasizes the creation of sustainable environments that are conducive for future growth and long-term prosperous development. To create long-term sustainable environments this wave of policies focuses on tools such as strategic planning, human-capital building, and improving the overall quality of life within a region to strategically attract and provide opportunities for networking among citizens of the community to promote development (Koven and Lyons, 2003). Despite growing trends towards the third wave of economic development, business creation, attraction, retention, and expansion strategies continue to remain popular even though business attraction methods have been criticized many researchers debating the success of their cost effectiveness (Koven and Lyons, 2003).

Peters and Fisher (2004) provide a metareview exploring of the impact of economic development incentives in efforts to determine if they are a cost-effective strategy for achieving economic growth. In their analysis, they determine that there is

inconclusive evidence to support the idea that incentives significantly induce economic growth.

This discussion holds particular interest for this study because many communities today lack the financial resources necessary to attract businesses into their locality. Furthermore local governments lack the necessary financial resources to provide their constituents with the basic public services they desire. Thus, the interaction and dependence of state and local governments has been experiencing a change. Because of the current economic declines, many state and local government officials lack the financial resources to pursue financial based attraction strategies. Current economic development policy efforts of state and local government officials are now more aligned with the third wave, focusing on the creation of strategically attractive communities (Koven and Lyons, 2003).

Evolution of Federal Government Economic Development Policies

In comparison to the historical role of state and local governments regarding economic development policies, federal economic development policies have taken a different turn. While the history of federal government economic development policies does not discuss the emergence of waves of strategies, the federal government has played an integral role in local economic development in the form of grants to fund development projects. Figure 2.1 provides a timeline summarizing the history of federal, state, and local economic development efforts.

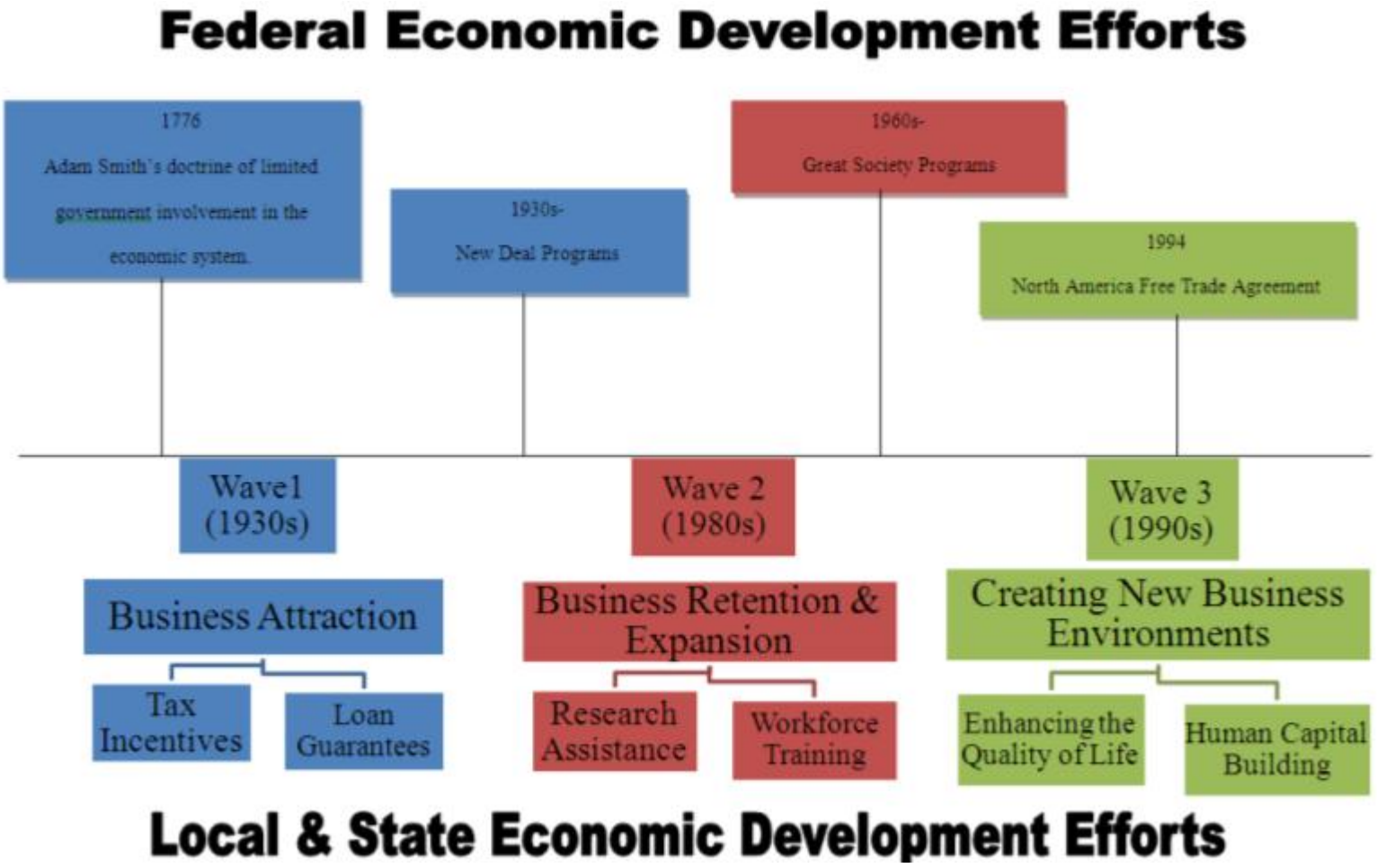

Figure 2.1 Federal, State, and Local Government Economic Growth Efforts Timeline

According to Markusen and Glasmeier (2008), federal economic development policies and programs have existed and evolved over 30 years. Recently, due to the economic crisis, the federal government has less funding latitude. Thus, many local communities are in distress. Thousands of communities nationwide have found themselves in need of financial assistance during this critical time (Markusen and Glasmeier, 2008).

The history of federal government involvement in economic development indicates that for at least three decades, the popular tone of federal politicians has become pessimistic towards the idea of federal government involvement in regards to social and economic development policies. According to Ronald Regan's view: "government is not the solution to our problem; government is the problem" (Regan, 1981). As a result, today many politicians as well as citizens argue that a laissez-faire model of economic development should be the approach (Koven and Lyons, 2003).

Views supporting minimalist-government intervention in economic development are not new to just the past century. Antipathy towards government involvement in policies has been advised for much of America's history. Adam Smith (1776) also argued for the doctrine of limited government involvement in the economic system. Smith (1776) feared government controls in the economic sector because they could be harmful to economic development thus leading to the creation of less wealth. Therefore, he argued that the maximization of wealth could most effectively be achieved when individuals within a community were allowed to make their own decisions regarding the pursuit of their economic well-being (Koven and Lyons, 2003).

Despite opposition, historical events and crises have resulted in the intervention of government to provide economic assistance to its constituents. The most notable involvement of the federal government in the promotion of the economic stability of communities dates back to the 1930s, a period of expanding federal government involvement in local and state affairs. During President Roosevelt's presidency, Congress enacted the New Deal programs, illustrating the integration of economic development policies onto the national agenda. The federal government began to invest in the promotion of housing and community social programs. The New Deal created federal agencies specifically designed to promote the economic stability of America such as Social Security Administration, Tennessee Valley Authority, Federal Housing Authority, and the Public Works Administration (Franklin D. Roosevelt American Heritage Center, 2007).

Most recently, federal agencies such as the Department of Housing and Urban Development, the Economic Development Administration, and the Department of Agriculture have played a critical role in the revitalization of communities (Markusen and Glasmeier, 2008). These agencies generally provide financial assistance to local communities experiencing periods of economic hardship particularly those rural and depressed by supporting entrepreneurship by offering small business incentives to create new economic activities (Markusen and Glasmier, 2008).

As illustrated above, through these agencies, the federal government has played a large role in the economic development process of local communities. However, in the midst of the current economic recession, the federal government is limited in the amount of financial assistance that they can provide to distressed local communities in revitalizing their economies.

In efforts to improve America's economic stability, the promotion of economic development policies remains an issue of great importance. One method with which the federal government attempts to promote the economic stability of America is through free trade agreements. According to the Office of the United States Trade Represenative (2011), the United States has free trade agreements in force with 17 countries (2011). The most highly recognized agreement, the North America Trade Agreement (NAFTA), was intended to aid the governments of Canada, Mexico and the United States in improving their competitiveness in the global market by sustaining their economies. Such federal economic development trade policies seek to promote the creation of jobs, improve the overall quality of life for the citizens of each country involved, and to promote sustainable development (Trade Compliance Center, 2008).

Despite the prevalence of free trade agreements, many Americans are fearful that open trade, outsourcing, and off-shoring have negatively impacted the nation's markets (Friedman, 2005). However, these free trade agreements do not just involve America moving functions to other countries. For example, Mercedes-Benz's announced in 2003 that its first non-German car factory would be located in Tuscaloosa, Alabama (Friedman, 2003) but on the other hand, many local communities are suffering as a result of companies relocating their firms to another country.

Globalization trends have thus resulted in the emergence of third wave local based economic development strategies. These strategies involve a shift of focus on local development by creating the context for economic growth based on resources sought to increase the global competitiveness of a community (Bradshaw, and Blakely, 1999). However, in the midst of the current economic crisis, many states as well as localities no longer possess the economic stability to attract similar firms. Thus, considering the

current economic context of local communities, this research seeks to explore the local based resources that communities possess and how they can integrate them to generate their economic prosperity.

Conclusion

Federal, state, and local governments, areas have recently experienced a period of economic hardship (Markusen and Glasmeir, 2008) caused by rising unemployment and poverty trends in the last decade (Bureau of Labor Statistics, 2011). For example, growth in state and local governments' tax revenues began to slowly decline in 2008 and in 2009 it fell sharply. State and local governments are unique because unlike the federal government which can issue long-term debt during a recession to cover their economic shortfall, most local communities are required to maintain a balanced budget, thus resulting in slow recovery efforts (Carroll, 2010). Therefore, this study explores a series of the factors that can be integrated in their economic development strategies to aid them during these difficult times. The purpose of this chapter was to discuss the historical evolution of state and local government economic development policies and trends and to provide a historical examination of the role of the federal government and its involvement in aiding local communities to sustain their economies. Both discussions were presented to provide an understanding of the factors that have influenced current economic development trends and policies.

The following chapter examines several theoretical perspectives, explored by researchers and found as vital tools for promoting the economic growth and development of an area. More specifically, it examines the creative class, human capital, social

capital, and community capital theoretical perspectives in order to determine their impact on aiding communities to sustain their economies.

CHAPTER III

THEORETICAL FRAMEWORK

This research examines five theoretical frameworks: the creative class, human capital, social capital, institutional capital, and unique to this research, the community capital framework. The examination of multiple theoretical frameworks is included to construct a multidimensional and robust model of the factors that impact a community's potential for economic growth. This chapter provides an overview of each theoretical framework employed in this study and a summary of the economic development research findings that have examined each theoretical framework respectively.

The Creative Class

The Creative Class theoretical perspective was created by Richard Florida (2002) and serves as an explanation to why some cities and regions grow more successfully than others. Contrary to the economic growth assumptions dominating the 1980s and 1990s, where cities believed that the key to their economic growth was attributable to attracting and retaining businesses, Florida's (2002) research argues against the conventional wisdom that a region's ability to attract businesses is the cause of economic growth trends today. He asserts that a region's ability to attract creative people from certain occupations is the central explanation of economic growth trends today. In other words, regions of economic growth are defined by their densities of innovative people rather than their best positioned businesses (Hoyman and Faricy, 2009).

Florida's (2002) creative class theory is a human capital based strategy based on creativity which he refers to as the creative class. Florida (2004) defines the creative class as people who add economic value through their creativity (Florida, 2004). This theoretical premise is based upon procedures of sorting out relevant occupations based upon the educational levels of workers. Additionally, Florida (2002) asserts that creative people congregate together in specific locations based upon the amenity offerings found in a locality. Florida's (2002) explanation for the creative class locations is based upon the premise that creative people locate to places that are centers of creativity and where they like to live not just where the jobs are.

Florida's (2002) theory distinguishes between two strata of the creative class; the super creative class and core creative professionals. The super creative consists of those individuals who fully engage in the creative process by producing new forms or designs. The core creative professionals are those individuals who work in knowledge-intensive industries. According to Florida, they engage in creative problem solving, and their jobs require a high degree of formal education (human capital). These groups of individuals make up the creative class because they both relate through the process of creating new forms of goods and services (Table 3.1 below).

Florida (2002) asserts that regional economic growth is driven by the location choices of creative people. Florida's (2002) interviews and research from focus groups indicated several factors that provide insight into understanding why creative people migrate to certain locations. First, according to the creative class, they migrate to locations that provide many employment opportunities (Florida, 2002). These particular locations provide creative class individuals with the potential for horizontal job growth. Secondly, Florida's (2002) qualitative analysis concludes that although employment

opportunities are vital in their location decisions, lifestyle supersedes employment opportunity factors in the location decisions of the creative class members. They seek locations that play to their varied desires and interest such as "music and nightlife scenes, and outdoor recreational activities" (Florida, 2002). Social interaction, the uniqueness of a community, and identity are among the highly valued factors also mentioned. Lastly, one of the factors Florida (2002) notes as consistently listed by the creative class as a highly valued factor in their location decisions is diversity. Creative class individuals consistently noted that they seek out communities that are open to different racial and ethnic groups, to different ages, to different sexual orientations, and a to non-traditional appearances (Florida, 2002).

Most creative class research concludes that creative class variables perform only marginally different from traditional theories of economic growth (Wojan et al., 2007, Rauch and Negrey, 2006, and Donegan et al., 2008). Hoyman and Faricy's (2009) research explored the impact that the creative class theory has on generating growth in cities and their research concluded that the creative class theory failed consistently across multiple tests to explain various economic growth and development factors. Glaeser's (2005) research which compared the creative class theory to other economic theoretical frameworks revealed that the creative class theory failed to outperform others. Peck (2005) and Markusen (2006) conclude that the creative class concept proves problematic to policy makers and city officials seeking to adopt the theoretical premise into practice because Florida's (2002) research lacks valid empirical tests. This research seeks to address this problem in the literature by providing empirical tests of the creative class theory in comparison to these other dominant economic growth and development theories. This research also seeks to aid local public administrators in understanding

what strategies associated with the creative class, human capital, social capital, and institutional intellectual capital and community theoretical frameworks can strengthen their economies.

Table 3.1 Florida's Creative Class

Super Creative Class	**Core Creative Class**
Mathematical	Management
Computer	Business Operations
Architecture	Financial Operations
Engineering	Legal
Life Science	Healthcare
Physical Science	Technical
Social Science	High-Ends Sales & Sales Management
Education	
Training	
Library	
Arts	
Design	
Entertainment	
Sports	
Media	

Human Capital

The human capital theory asserts that economic growth trends can be explained by patterns of highly educated people in a location (Storper and Scott, 2009). The argument is that concentrations of educated individuals will produce high levels of economic growth (Becker 1964, and Barron et al., 1987). Human capital research conducted by Hoyman and Faricy (2009) of metropolitan cities, and Ullman's (1958) examination of concentrations of regional development supports the argument that human capital is a vital explanation factor for economic growth. Furthermore, both national and regional economic growth studies have concluded clear connections between a nation and

a region's level of human capital (Florida, 2002). Glaeser's (1998) research supports the assertion that locations with greater numbers of human capital tend to have higher economic growth trends.

Research exploring endogenous growth has emphasized the importance of human capital in explaining growth and productivity across cities and regions. Human capital research examining the impact of skilled and highly educated people illustrates that these individuals have the ability to generate knowledge. In turn, these individuals' knowledge has been found to lead to greater economic productivity. Furthermore, research confirms that firms locate in areas with high stocks of human capital concentrations to gain competitive advantages (Florida et al., 2008).

Mathur (1999) argues that viable strategies for regional economic development are the result of the accumulation and the promotion of human capital. He defines the concept as the source of knowledge which promotes growth and development through externalities by increasing the productivity of labor and capital (Mathur, 1999). He refers to the concept additionally as an accumulated stock of skills and talents of the educated and skilled workforce of a region and asserts that a region will grow (employment and per capita income) if it saves and invests in human based resources that accrue human capital. In conclusion, his research illustrates, that cities and regions with higher levels of human capital grow faster than those will smaller levels of human capital (Mathur's, 1999).

Similarly, Lucas (1988) constructs a neoclassical theory of economic growth. His research examines the concept of human capital measured as the accumulation of education obtained through schooling. His research highlights the clustering effect of human capital. His research reveals that cities with high concentrations of human capital

create knowledge spillovers that result in more economic productivity for a region. Thus these regions become engines of economic growth (Lucas, 1988).

Berry and Glaester (2005) examine trends of human capital migration and their research concludes that economic growth is a function of human capital. Koven and Lyons (2003) also note that the development of human capital enhances productivity and economic growth.

Gottlieb and Fogary (2003) explore the relationship between educational attainment at the bachelor's degree level of individuals 25 years or older and economic growth in metropolitan areas. They compare the economic performance of highly educated and less educated areas by ranking large metropolitan areas by their educational attainment from 1980 and 2000 and their findings reveal that educational attainment is significantly related to employment growth. Lastly, Gotez (1997) conducts a comprehensive study to identify state and county level determinants of economic growth and development and the findings of his research indicated that higher educational attainment levels were associated with statistically significant growth (Gotez, 1997).

How is Florida's creative class theory different from the human capital theory? According to Florida (2002), his creative class theory differs from the traditional human capital theory in two ways. First, his theory identifies a type of human capital; the creative class. Second, his research identifies the factors that shape the location decisions of these individuals (Florida, 2002).

Social Capital

There is growing empirical evidence that social capital contributes to economic development (Torsvik, 2000). Social capital can be defined as the process of linking

individuals and organizations into networks that enhance a community's ability to achieve goals by pooling resources (Putnam, 1993). The concept refers to civics (community based organizations), norms, and trust among individuals within a community (Putnam, 1993, Grisham and Gurwitt, 1999, and Pink, 2011). According to this theoretical premise, social capital and civic engagement are necessary prerequisites for successful economic development (Koven and Lyons, 2003, and Putnam, 1993). The concept of social capital initiated in community studies research (Nahapiet and Ghoshal, 1996). In the early usage of the concept, its significance was identified as an influence on the economic performance of communities and geographic regions (Baker, 1990, and Putnam, 1993 and 1995).

In Putnam's (1993) research he discusses how communities can integrate social capital to generate economic growth. Putnam (1993) defines social capital as the various features of social organizations such as networks, norms, and trust that facilitate the coordination and the cooperation of benefits within a society (Pink, 2011). Additionally, he defines the concept as a vigorous network of grassroots associations (Putnam, 1993 and Pink, 2011). He also defines the concept as social networks which can be found in formal and informal community associations including civic associations, friendship networks, schools, churches, bridge clubs, and other institutional networks that engage people in collective action (Putnam, 2000).

Putnam's (1993) research specifically examined new communities in Italy. These twenty new institutions were virtually identical in their form but they differed in the context of their social, economic, political, and cultural aspects (Pink, 2011). The goal of his examination was to determine if newly established community institutions differed in economic performance (Pink, 2011). While some were found to be inefficient and

lethargic, the others were found to be successful in promoting economic development. He attributed their success to a commitment vested in civics, citizen based networks, associations, and organizations (Pink, 2011). These civic vested regions of Italy were found to have more active community organizations and to value solidarity and civic participation (Putnam, 1993). According to Putnam (1993), these communities became wealthy because of the citizen based networks developed among each other (Pink, 2011), thus illustrating that the social capital embodied in the networks of civic engagement were a precondition for successful economic development (Putnam, 1993).

Rural development studies have found that networks of local community based associations are essential for economic growth and development (Putnam, 1993). Robison et al. (2002) also assert that social capital is a vital resource that can aid in the elimination of poverty through both physical and financial redevelopment for communities (Pink, 2011).

The explanation for varied economic growth across regions according to social capital theory is based upon regional differences in certain social based variables. These social based variables explain differences in a regions level of productivity and income (Torsvik, 2000).

Institutional Intellectual Capital

Recently interest has increased in understanding the impact of higher education institutions and their impact on the economic growth and development of an area. In 1998, Nahapiet and Ghoshal's research extended the human capital theory by constructing the concept of "intellectual capital." This concept refers to a density of higher education institutions and asserts that universities possess the ability to attract

educated people, which thus lead to increases in human capital (Nahapiet and Ghoshal, 1998).

Goldstein and Drucker's (2006) research explores the question of whether and to what extent institutions of higher education influence regional economic development. Their research distinguishes between the different types of university activity: teaching, research, and technology development. The study population that they examined consisted of 313 metropolitan statistical areas from 1986-2001. The objective of their research is to determine the impact that research institutions have on the regional economic development of an area (e.g. the average annual earnings). Their findings reveal that research universities have substantial positive effects on regional earnings gains.

Hoyman and Faricy's (2009) research examines the relationship between intellectual capital and economic growth. Specifically, their research examines 276 metropolitan statistical areas from 1990-2000. They found that those communities with high intellectual capital as measured by the density of research universities were significantly related to growth in average wages.

Community Capital

The community capital theoretical premise integrates a composite of several community related quality of life and socio-economic and demographic variables. Specifically this theoretical perspective asserts that the combination of the community related factors, race, K-12 public school system quality, quality of life, political structure, political culture, research university presence, median household income, employment status, population, and geographic region may influence the economic prosperity of a

community. A comprehensive examination of each of these factors has not been collectively employed in the literature, yet each of the variables included in this theoretical framework have been identified individually as factors that impact the economic growth trends of an area. Therefore, this theoretical framework seeks to provide the economic development literature with a more multi-dimensional examination of the impact that these factors have on the economic development trends of an area. Thus, this composite of factors examined provides a broader understanding of the impact that these factors have on the economic prosperity of community. Each factor is discussed below in the following sections in detail regarding how it has been examined in previous research.

Quality of K-12 Education System

McGranahan and Wojan (2007) assert that the quality of local schools may be a critical factor in determining the location decisions of creative class workers that deserves further exploration. Although they fail to explore this factor analytically, they assert that public school education quality needs further research due to their findings. They showed that the proportion of young adults with a college degree or higher is strongly related to creative class growth. They assert that an explanation for this trend may be reflected in the quality of an area's local school system. Furthermore, they conclude that since high parental educational attainment levels generate more economic prosperity, this trend could be explained as the result of a strong school system (McGranahan and Wojan, 2007).

Florida (2003) also notes that K-12 education reform is critical to attract the creative class into a locality. In his exploration of factors that make a city attractive to

the creative class, he notes that the K-12 education system is vital. However his research and other research (McGranhan and Wojan, 2007, and Hoyman and Faricy, 2009) examining these theoretical frameworks in similar context also fails to include any empirical examination of the relationship that it has on the economic growth and development trends for an area (Florida, 2008).

In 2001 with the enactment of the No Child Left Behind Act, states, school districts, and each individual school were to be held accountable for the performance of their students based upon how well they performed on a statewide standardized test. Although with this legislation all states, school districts, and schools were thus required to administer a test to determine the quality of a schools education system across the states, the tests were not comparable. For example, the statewide test that determines the level of proficiency for students differs in Mississippi and in Utah. Each state is allowed to set their own standards of measurement to determine how the performance of students will be determined.

Additionally, there are standardized tests that can be examined to determine the quality of a school system across states such as the American College Testing which can be used to examine the performance of students from one state to another. However, the problem with this particular quality of education factor is that all students from each school district, school, or state are not required to take the examination. Furthermore, this test is generally only taken by those students who actually intend to attend college. Therefore, this form of measuring the quality of an education system is also flawed because it is not an accurate reflection of all students and their performance.

Since Congress passed the No Child Left Behind of 2001, schools and school districts are required to use graduation rates to help determine whether schools and

school districts meet targeted performance goals. This performance measurement indicator of education quality has risen in its prevalence as one of the most accurate indicator of the quality of a school because the definition of graduation does not vary from state to state. Additionally, this particular performance measurement indicator is often employed in education research because graduation rates can be easily compared across states.

Quality of Life

Clark (2004), Florida (2002), and McGranhan and Wojan (2007) explore the impact that quality of life amenities have on the economic growth of an area. According to Clark (2004), amenities are successful in attracting people to an area. However, Florida (2002) notes that the attraction of the creative class is based upon certain quality of life amenities. According to Florida (2002), creative class individuals are most attracted to cities with natural amenities, particularly outdoor recreation activities and other quality of life amenities including vibrant street life, café cultures, arts, and musical forms of entertainment.

McGranahan and Wojan's (2007) research reveals that rural characteristics tend to also attract workers from creative occupations to rural areas. Their research explores the impact of natural amenity factors such as landscape and climate. They conclude that the quality of life that rural areas possess has become a vital element to the growth trends of these areas.

In Florida's (2008) *Who's Your City?* he provides a comprehensive list of the quality of life factors that matter in today's creative economy. His research is based upon a survey of factors that respondents stated were vital for them in deciding where to live.

The survey respondents reveled that aesthetics matter a great deal in their location decisions. He also found that they rated the physical environment and recreational offerings of their community as important. Specifically, respondents stated that they look for physical environmental qualities such as outdoor parks, playgrounds, trails, and they also rated safety factors as vital to the types of communities that they are more highly attracted to. He relates safety factors to lower crime rates. Healthcare was also found as a vital factor in attracting the individuals to live in one area over another. Thus having access to quality and affordable healthcare is critical for communities to compete in today's economy. Additionally, his research revealed that it is imperative for a community to have an attractive housing market. Lastly, his research reveals that the ability to move easily within a community to and from work or elsewhere is critical for attracting the creative class in today's economy (Florida, 2008).

In 2004, the United States Department of Agriculture, Economic Research Services, developed an amenities scale that focuses on measuring the physical characteristics of a county area. The scale was created by combining six different physical characteristics measurements. The scale examines the climate and topography, specifically warm winter, winter sun, temperate summer, low summer humidity, topographic variation, and water area measurements (United States Department of Agriculture, Economic Research Service, 2004).

In a recent study conducted by McGranahan et al. (2011) they seek to determine the relationship between an amenities scale that includes several components of the Economic Research Services (2004), a natural amenities scale, and the population patterns of Florida's (2002) creative class particularly in rural areas. The assumption made in their research from the creative class theory is that workers in occupations

specializing in creative tasks demonstrate strong preferences for natural amenities such as landscape and climate factors Thus their preferences affect the location decisions of this talented group of individuals (McGranahan et al., 2011). The findings of their research reveal that these amenities have a direct bearing on nonmetropolitan net migration trends which were thus found to increases in the economic growth and development of an area (McGranahan et al., 2011).

Political Structure

According to Sharp (1991), while there has been an abundance of research on the topic of economic development, little research had been done in an attempt to explain the variations among cities pursuing one form of economic development policies or tools over others. This research seeks to examine this question in the context of understanding, why some cities pursue one form of economic development policies or tools over others. Additionally, this research seeks to provide a better understand of how these policy decisions can impact the economic outcomes of a community. Since Sharp's (1991) assertion, researchers such as Feiock et al. (2003) have explored various economic development policy decisions and their impacts regarding a city's decision to pursue certain economic development policies.

The one variable continuously examined by researchers (Feiock, et al, 2003, and Folz and French, 2005) exploring the variations among cities and their decisions to pursue one form of economic development policy over another is the form of government According to the International City County Management Associations, five forms of local government exist: the mayor-council, council-manager, commission, town meeting, and representative town meeting. Typically the commission form is only utilized by counties

and both forms of town meetings solely exist in New England cities and are therefore removed from this study (Folz and French, 2005).

The council-manager form of government seeks to limit the role of politics in local government decision making and also seeks to create more efficiency in local government (Feiock et al., 2003). This model provides a rationale for the separation of the practice of administration from political interference. Under the council-manager form of government, the city manager's role is to efficiently and effectively carry out the implementation of policies (Svara, 1998).

According to Feiock et al., (2003) city managers as opposed to mayors will best pursue the interest of citizens regarding policy issues because they are ultimately driven by their professional goals of acting as an unbiased administrator rather than the political interest of voters and the council. The council-manager form of government is presumed to allow for the long-term economic growth interest and development projects of a community. Miller (2000) also states that city managers can provide certain benefits than elected officials because they are trained professional bureaucrats who seek to commit themselves to a higher professional standard and attachments to neutral competence which can help them fulfill the public's trust. Thus, the assumption is that that a city manager's pursuit of economic development policies will illustrate more emphasis on long-term programs as opposed to short-term programs that will promote more overall growth and stability for a locality.

According to McGranahan and Wojan (2007), rural areas found most attractive to creative workers tend to have sufficient population density to provide a reasonable level of services that they desire. Their research reveals that creative class workers are more attracted to those areas that offer opportunities for outdoor recreation activities. Their

analysis provides evidence that local economic development strategies may influence the ability to attract creative class workers. Thus, the assumption in this research is that the form of government, which has been found to impact the pursuit of certain economic development strategies, may in turn, impact the ability of a community to attract more businesses, jobs, and increases in citizens' pay. Additionally, the assertion from Sharp (1991) and Feiock et al. (2003) is that those counties operating under one particular form of government, specifically the council-manager (council-administrator) form will have higher economic growth and development measures.

Although different, the three basic forms of county government share some distinguishing characteristics with municipal forms of government. Under the commission form of government board members possess legislative authority and executive privileges. In comparison to the council-manager form of government most counties operating under the commission form of government lack a professional administrator. Those counties operating under the council-administrator form of government have an administrator appointed by the board of commissioners (or board of supervisors) who they are accountable to. This form of county government most closely resembles the council-manager municipal form of government since the administrator's duties are similar. Under the county administrator form of government, the chief administrative officer is responsible for coordinating all administrative and management functions. Similarly, the city manager under the council-manager form of government is also responsible for all administrative functions. Lastly, the council-elected executive form features an independently elected executive who is considered the formal head of the county. The difference between the latter two forms of government is that the executive is elected at large (ICMA, 2009). According to Feiock et al. (2003),

communities operating without an administrator will have more short term economic growth compared to those communities operating with an appointed administrator because of their professional expertise. Therefore my research seeks to determine the different relationships that these various forms of county government have on a county's economic growth and development based upon the type of political structure that they operate under.

Political Culture

Daniel Elazar (1984) developed three typologies identified as the dominant American subcultures: moralistic, individualistic, and traditionalistic. Associated with each of these subcultures is the assertion that policymakers are socialized into their state's prevailing culture and will view economic development policies consistent with the values of their state's culture and with their views. Furthermore, depending on the political culture of a locality, political institutions, practices, the economic development policies and strategies pursued by each subculture will vary (Hanson, 1991).

According to Hanson (1991), little research has been conducted that examines the specific relationship between political subcultures and economic development policies and strategies pursued. In Hanson's (1991), research he asserts that policymakers in moralistic states are more likely to offer incentives to attract a business. This means that in a moralist subculture, certain types of economic growth and development are generally encouraged, particularly those that promote improvements in the overall quality of life in a community.

In the individualistic subculture states, economic development policy is supposed to reflect the preferences of those with political power. On the other hand, in the

traditionalistic subculture, economic development policies are promoted to help foster a better business climate and specifically to maintain existing patterns of social domination. In theory, these three subcultures are associated with a specific orientation towards the role of government in stimulating economic development (Hanson, 1991).

Demographics

Race/Ethnicity

Generally the racial composition of a community tends to have an impact on the economic prosperity of a community. Hoyman and Faricy's (2009) study reveals that high concentrations of Blacks are negatively correlated with growth but Hispanics are positively correlated with growth. According to McGranahan and Wojan (2007), rural communities with high minority populations have historically been associated with declines in population and employment trends. These findings thus lead to the conclusion that communities with higher minority population concentrations will see lower economic growth and development. Conversely, Florida (2002) argues that the creative class individuals are attracted to those areas that are more diverse. This assertion as it relates to economic growth and development is that communities that are becoming more open to diverse groups of individuals will have higher measures of economic growth and development. However, since the literature with empirical evidence (Hoyman and Faricy, 2009, and McGranahan and Wojan, 2007) reveals that areas with high concentrations of minorities have lower economic growth, this research explores this assertion.

Median Household Income

The median household income of a community has been scarcely explored as a factor impacting the economic development of a county in any of the aforementioned theoretical frameworks. However, McGranhaan and Wojan's (2007) research of economic growth trends in rural and urban counties examined this variable. Their findings reveal, contrary to what is expected, counties with lower median household incomes experienced higher economic growth. McGranahan et al.'s (2011) research also reveals the same findings for the percentage change in the number of jobs that counties with lower median incomes lead to more jobs.

Employment Status (Unemployment)

Feiock et al. (2003) also examines the pursuit of various economic development policies based upon the political structure of a community. Specifically they examine economic and population decline trends of a community. They hypothesized that higher unemployment rates would result in increased economic development activity under the mayor-council form of government for a city. Their findings reveal that for those cities with mayor-council form of government, the economic factors of a community were important in distinguishing the policy instrument choices that a city pursued (Feiock et al., 2003).

Population

Goldstein and Drucker (2006) employ a population variable in their research examining the impact of universities on the economic growth of a region. Their findings reveal that areas' university towns with higher population levels experience more rapid changes and opportunities for economic development (Goldstein and Drucker, 2006).

Region

According to Stoper and Scott (2009), in the 1920s the Manufacturing Belt region of the United States flourished as the major concentration of industrialization. Since the 1980s, they assert the Sunbelt region of the nation has begun to see increased migration trends and thus trends of more economic growth. More specifically, Stoper and Scott (2009) identified cities of the Northeast and Midwest as experiencing periods of stagnated levels of economic prosperity. Hoyman and Faricy's (2009) research also reveal similar findings. They found that the Northeast, Midwest, and West regions lost jobs during their period of examination (Hoyman and Faricy, 2009). The map below provides a graphic illustration of their findings (Source: U.S. Census Bureau, 2000).

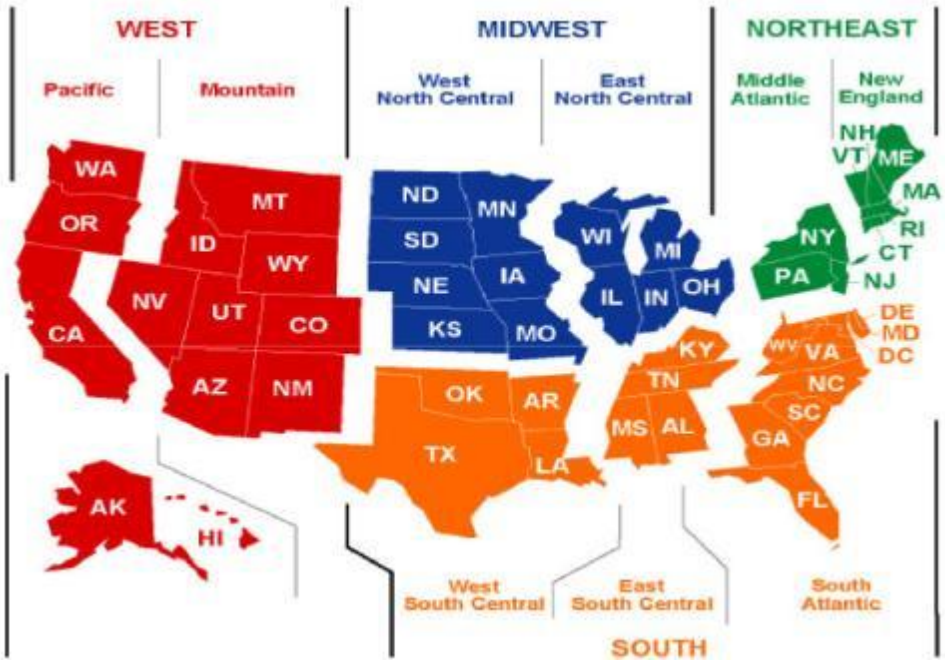

Figure 3.1 United States Geographic Regions Explored in the Literature

Economic Distress Indicators

The 1965 Public Works and Economic Development Act outlines the requirements necessary for a community to be eligible for federal grants if they are found as an area under economic distress. The per capita market income is calculated as the total personal income minus transfer payments, divided by the population. Additionally, the poverty rate of an area is also used to determine the economic distress of an area. These factors combined together with unemployment rate of an area are used to determine the economic health of an area. They combine to form an index that indicates if a county is economically distressed, at risk, transitional, or competitive. These factors are generally used by most federal entities as measurements of the economic demographics of an area (Public Works and Economic Development Act of 1965, 2004). According to the United States Department of Labor, Bureau of Labor Statistics (2011), the nation's unemployment rate was 9.3%, for 2009, which is double the rate of 4.0% from 2000. Also according to the United States Census (2011) the poverty rate for 2009 was 14.3%, the highest it has been since 1994.

Research University Presence

According to Feldman and Desrochers (2003), universities have been recognized as an important factor in economic development. Goldstein and Drucker's (2006) research supports this assessment. According to Goldstein and Drucker (2006), in areas where the universities constitute a smaller proportion of the innovative activity, (e. g. larger MSAs), the universities are a less critical ingredient to the regional economic growth of an area. Furthermore in the larger MSA regions that they examined, the average earnings for those areas were more dependent on factors not related to the university (Goldstein and Drucker, 2006).

McGranahan and Wojan's (2007) examination of both rural and urban counties examines the presence of post-secondary schools as a measure of two-year and four-year public institutions and four-year private institutions of higher education. They justified including this variable in their model because many counties with a high creative class share in 1990 were also the counties with the presences of a university. Their findings reveal that the presence of a university in an area contributes to its economic growth.

CHAPTER IV

METHODOLOGY AND DATA COLLECTION

This chapter begins with a description of the model employed in the study as outlined in Figure 4.1, and includes a discussion of the methodological information including how each dependent and independent variables employed in the model are defined, specified, and are operationalized. Additionally, a discussion of the sources from which the data was collected is presented.

Multivariate regression analysis, specifically ordinary least squares regression analysis, is utilized in this study. The regression analysis aids in determining the strength of factors that influence the measurements of economic development.

This chapter presents the model, the related hypotheses, and organizes the variables by their respective theoretical perspectives to examine the following research questions:

1. Can Florida's creative class theory be applied to nonmetropolitan areas?
2. If so, what elements foreshadow economic growth in nonmetropolitan areas?
3. How does the creative class theory compare against other theories?
    - Human capital
    - Social capital
    - Institutional intellectual capital
    - Community capital

This study examines the factors that influence economic growth and development in small, knowledge based communities, specifically in nonmetropolitan counties. In this research four measurements of economic growth and development are tested: wage change, job growth, new businesses created, and new jobs created. It investigates the influence that the creative class, human capital, social capital, institutional capital, and community capital have on these measures of economic development. The full model that provides a comprehensive examination of all the factors that influence economic growth and development is provided in the final section. Then, several nested models that explore the factors that impact economic growth and development under the lens of various theoretical frameworks are employed.

This research is unique because the variables employed in this model have not been examined simultaneously in studies exploring the economic development trends of an area. Also, the application of these variables in solely nonmetropolitan research university communities is not addressed in the literature, therefore illustrating the uniqueness of this study.

The General Model

The general model shown in Figure 4.1 outlines five groups of independent variables. Each independent variable grouping excluding community capital has been explored in previous public policy and administration research but not simultaneously. Figure 4.2 presents the proposed general model and the expected relationships, designated as either + or – of the relationship between the dependent and independent variables.

This study focuses on nonmetropolitan university and non-university towns across two time periods. The percent change difference in building permits and the number of jobs for FY 2000 and FY 2009 are examined and the percentage change difference in average annual pay and businesses created for FY2001 and FY2009 are examined. The examination of this time period is critical for determining the impact of economic growth and development because it captures the impact of the recent economic recession. The examination of this time period is also critical because it expands recent economic growth and development research with the most recent examination including data from FY 2000 for the creative class.

The creative class theory will be measured by examining the percentage of individuals in a county in a creative occupation. The human capital theory will be measured by examining the percentage of individuals with a bachelor's degree or higher in each county. The social capital theory will be measured by examining the number of nonprofits in each county. The institutional intellectual capital for each county will be measured by examining the aggregate of all university and colleges designated by Carnegie's institutional level rankings in a county. The community capital theory will be measured by examining the quality of the county's K-12 education, the quality of life factors, the political structure (form of government), the presence of a university, and the political culture of the host state of each county. Each theoretical perspective will be tested to determine whether they predict various measures of economic development and growth.

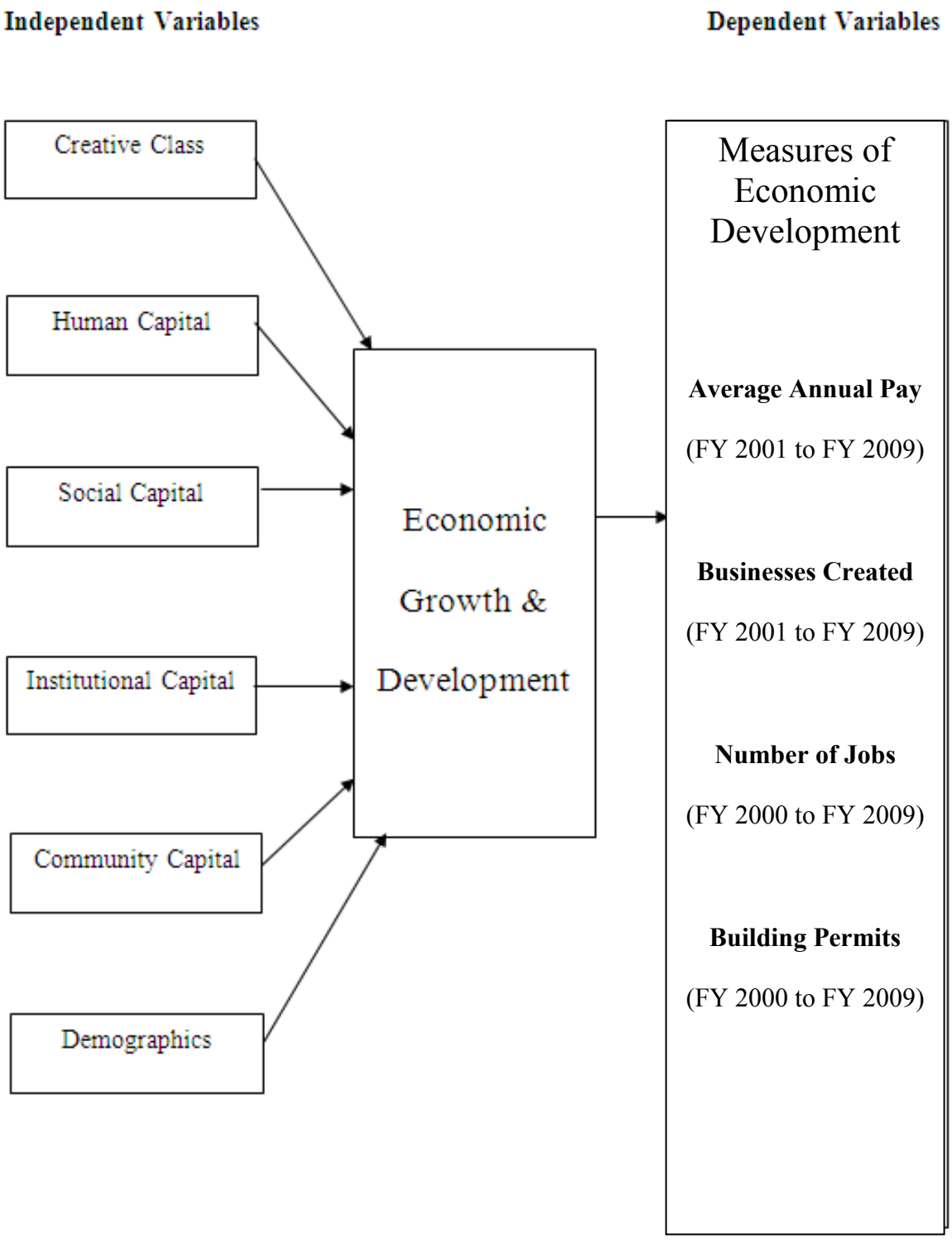

Figure 4.1 Full Model

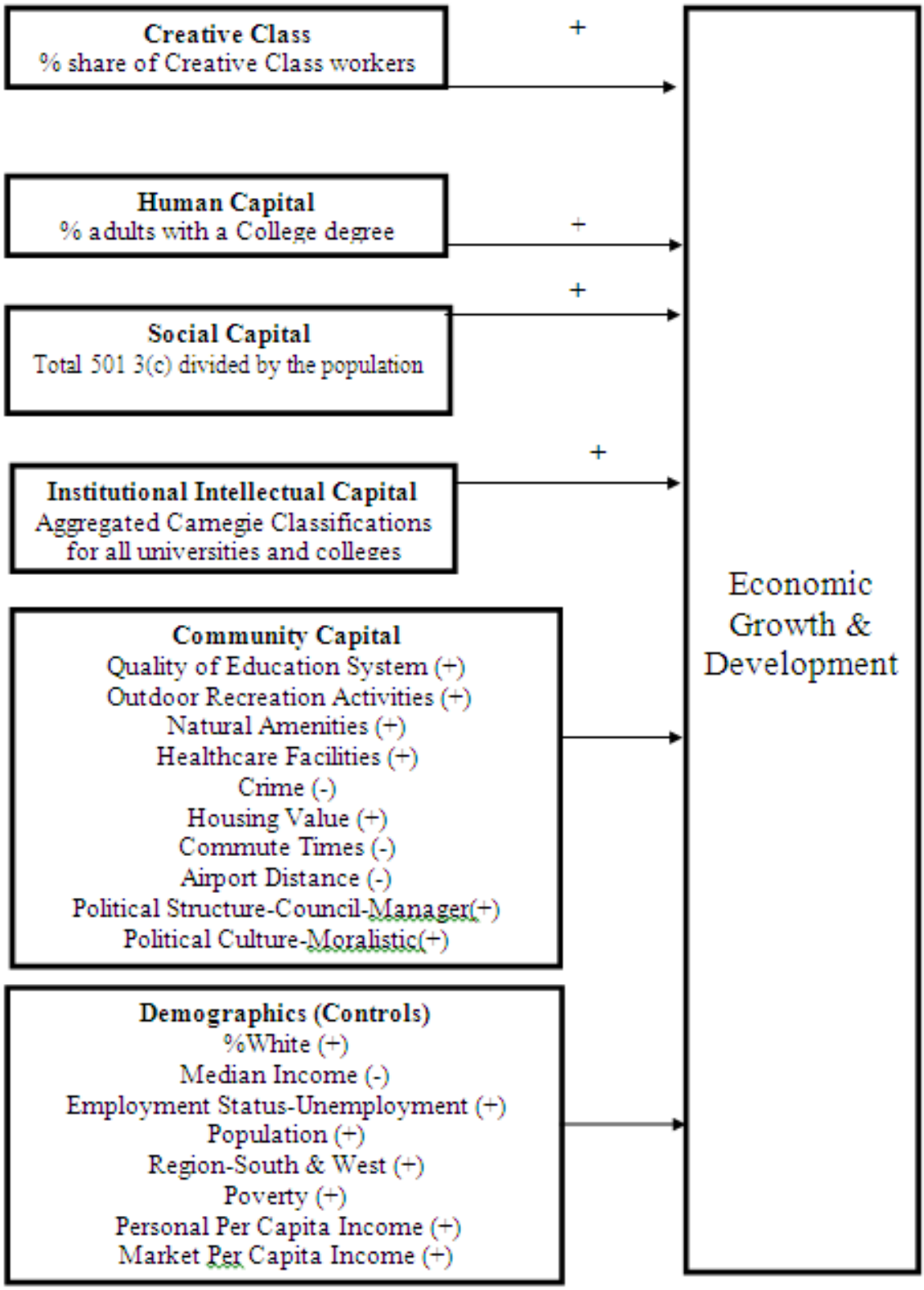

Figure 4.2 Model with Variable Descriptions

Regression Equation Full Model

Economic Growth & Development = f(creative class, human capital, social capital, institutional capital, and community capital).

Y1 (Average Annual Pay Change) = f(creative class, human capital, social capital, institutional capital, and community capital).

Y2 (Number of Businesses Created Change) = f(creative class, human capital, social capital, institutional capital, and community capital).

Y3(Number of Jobs Change) = f(creative class, human capital, social capital, institutional capital, and community capital).

Y4 (Building Permits Change) = f(creative class, human capital, social capital, institutional capital, and community capital).

Hypotheses

H_1: Counties with higher percentages of creative class individuals are more likely to have higher measures of economic development than counties with lower percentages of creative class individuals.

H_2: Counties with higher human capital percentages are more likely to have higher measures of economic development than counties with lower human capital percentages.

H_3: Counties with higher social capital (number of non-profits) are more likely to have higher measures of economic development than counties with lower social capital.

H_4: Counties with higher institutional capital (quality and quantity of higher education institutions scores) are more likely to have higher measures of economic development than counties with lower institutional capital.

H_5: Counties with higher K-12 graduation rates are more likely to have higher measures of economic development than counties with lower institutional capital.

H_6: Counties with higher outdoor recreational activities (number of parks and trails) are more likely to have higher measures of economic development than counties with lower outdoor recreational activities.

H_7: Counties with higher natural amenities scores are more likely to have higher measures of economic development than counties with lower natural amenities scores.

H_8: Counties with the presence of a Primary Care healthcare facility are more likely to have higher measures of economic development than counties without the presence of a Primary Care healthcare facility.

H_9: Counties with lower crime rates are more likely to have higher measures of economic development than counties with higher crime rates.

H_{10}: Counties with higher median housing value are more likely to have higher measures of economic development than counties with lower median housing value.

H_{11}: Counties with a lower mean commute time to work are more likely to have higher measures of economic development than counties with a higher mean commute to work time.

H_{12}: Counties with shorter travel distance to a commercial airport are more likely to have higher measures of economic development than counties with longer travel distance to a commercial airport.

H_{13}: Counties operating under the council-manager form of government are more likely to have higher measures of economic development than counties operating under the council-elected executive and commission form of government.

H_{14}: Counties identified as moralistic are more likely to have higher measures of economic development than counties identified as individualistic and traditionalistic.

H_{15}: Counties with the presence of a research university are more likely to have higher measures of economic development than counties without the presence of a research university.

H_{16}: Counties with higher White populations are more likely to have higher measures of economic development than counties with higher percentages of non-whites.

H_{17}: Counties with lower median household incomes are more likely to have higher measures of economic development compared to counties with higher median household income levels.

H_{18}: Counties with higher employment rates are more likely to have higher measures of economic development than counties with lower employment rates.

H_{19}: Counties with higher populations are more likely to have higher measures of economic development than counties with lower populations.

H_{20}: Counties in the South and West regions are more likely to have higher measures of economic development than counties in the Northeast and Midwest regions.

H_{21}: Counties with higher poverty rates are more likely to have higher measures of economic development than counties with lower poverty rates.

H_{22}: Counties with higher per capita incomes are more likely to have higher measures of economic development than counties with lower per capita incomes.

H_{23}: Counties with higher market per capita incomes are more likely to have higher measures of economic development than counties with lower market per capita incomes.

Expectations

The hypotheses aforementioned are constructed based upon findings from the economic development literature regarding each theoretical framework explored in this study. Literature on the Creative Class, Human Capital, Social Capital, Institutional Capital, Community Capital, and the control variables are examined respectfully.

In addition to the hypotheses previously mentioned this research also examines the following relationships.

1) The presence of universities positively effects economic growth and development.
2) Different university level categories positively have an effect on economic growth and development.
3) More specifically, research intense institutions have a greater positive effect on economic growth and development.

Proposed Models

The model outlined in Figure 4.1 was constructed based upon the uncertainty of the variables' influence on each other. By examining several different variations of the

full demographics model along with the additional major theoretical frameworks models, the most comprehensive, robust, and best specified models can be identified.

The following list of proposed models was examined: a demographics (controls) model, a research university presence model, a creative class model, a human capital model, a social capital model, an institutional intellectual capital model, and a community capital model is examined. An in-depth exploration into each model including the findings from each will be discussed in the next chapter.

The demographic models explore the relationship between the socioeconomic variables used as controls across each of the models. The demographics models are developed to determine which of these factors are the best predictors of the economic growth and development of a county. The research university model includes the best specified model developed from the control variables with the addition of the research university variable. This model seeks to determine the relationship between the presence of a research university and its impact on the economic growth and development of a county. The human capital model explores the relationship between the percentage of the county population 25 years and older, and the controls on the economic growth and development of a county. The social capital model explores the relationship between the control variables, and the number of nonprofits, on the economic growth and development of a county. The institutional intellectual capital model explores the relationship between the control variables and quality and quantity of other higher education institutions on the economic growth and development of a county. Lastly the community model seeks to determine the role that the control variables and the community capital related variables have on the economic growth and development of a county.

Model 1: Demographics (Controls)

Includes:
- Race
- Median Income
- Employment Status
- Population
- Geographic Region
- Poverty
- Unemployment
- Personal Per Capita Income
- Market Per Capita Income

Model 2: Universities Matter

Includes:
- Presence of a Research University
- Race
- Median Income
- Employment Status
- Population
- Geographic Regions
- Poverty
- Unemployment
- Personal Per Capita Income
- Market Per Capita Income

Model 2: Creative Class

Includes:
- Creative Class Share
- Presence of a Research University
- Race
- Median Income
- Employment Status
- Population
- Geographic Regions
- Poverty
- Unemployment
- Personal Per Capita Income
- Market Per Capita Income

Model 4: Human Capital

Includes:
- Human Capital
- Presence of a Research University
- Race
- Median Income
- Employment Status
- Population
- Geographic Regions
- Poverty
- Unemployment
- Personal Per Capita Income
- Market Per Capita Income

Model 5: Social Capital

Includes:
- Social Capital
- Presence of a Research University
- Race
- Median Income
- Employment Status
- Population
- Geographic Regions
- Poverty
- Unemployment
- Personal Per Capita Income
- Market Per Capita Income

Model 6: Institutional Intellectual Capital

Includes:
- Human Capital
- Race
- Median Income
- Employment Status
- Population
- Geographic Regions
- Poverty
- Unemployment
- Personal Per Capita Income
- Market Per Capita Income

Model 7: Community Capital

Includes: Community Capital
Race/Ethnicity
Median Income
Employment Status
Population
Geographic Regions
Poverty
Unemployment
Personal Per Capita Income
Market Per Capita Income

Dependent Variable (Measures of Economic Development)

This research utilizes secondary data and employs a cross-sectional study. A data set is developed from government and private data sources as outlined below. The dependent variable is conceptualized as a grouping of variables relating to measurements of economic development.

There are four specific measures of economic development employed in this research. The dependent variables categorized as measures of economic development, include; annual average pay change, job growth, new establishments created, and the change in building permits. This information was collected from the Bureau of Labor Statistics, Bureau of Economic Analysis, and the Census Bureau.

Business Establishments Created

Business establishments created is measured as the percentage change in the number of new businesses created for FY 2001 and FY 2009. Business establishment data was collected from the Bureau of Labor Statistics (www.bls.gov).

Average Annual Pay Change

Average annual pay change is measured as the percentage change in average annual pay for FY 2001 and FY 2009. Average annual pay data was collected from the Bureau of Labor Statistics (www.bls.gov).

Number of Jobs

Number of jobs is measured as the percentage change in the number of new nonagricultural jobs created for FY 2000 and FY 2009. Data for the number of jobs was collected from the Bureau of Economic Analysis (www.bea.gov).

Building Permits

Building permits percentage change is measured as the number of building permits for units and buildings for FY 2000 and FY 2009. Building permits data was collected from the United States Census Bureau (www.census.gov).

Independent Variables

This study examines seven categories, groupings of variables, to test the hypotheses previously mentioned. Creative class, human capital, social capital, institutional capital, community capital and demographic variables are examined to explain the changes in the measures of economic development and growth from FY 2000. The community capital category variable includes the quality of K-12 public school education for each county, quality of life factors, political structure, political culture, and university presence. The control demographic category variable includes; race, economic status, population, economic distress indicators, and region.

The Creative Class

Creative class refers to the percentage of individuals in a county employed in a creative occupation as shown below in Table 4.1. It is measured as the number of individuals in a county employed in creative occupations divided by the number of individuals in a county from all occupations (total number of civilians over 16 employed).

According to Richard Florida (2002) the creative class occupations are those occupations that develop, design, or create new applications, ideas, relationships, systems or products. The information for this variable is produced by the Employment and Training Administration, Department of Labor, which provides descriptions of occupations. Data for the creative class share for each county was collected from the 2000 United States Census Bureau data set (www.census.gov).

Table 4.1 Florida's Creative Class Occupations

Creative Occupations
Super Creative Professionals
Mathematical Occupations
Computer Occupations
Architecture Occupations
Engineering Occupations
Life Science Occupations
Physical Science Occupations
Social Science Occupations
Education Occupations
Education Training Occupations
Library Occupations
Arts Occupations
Design Occupations
Entertainment Occupations
Sports Occupations
Media Occupations
Core Creative Professionals
Management Occupations
Business Operations Occupations
Financial Operations Occupations
Legal Occupations
Health Care & Technical Occupations
High-End Sales & Sales Management Occupations (For this research the entire sales and related occupations category is included.)

As identified in research by McGranahan and Wojan (2007), the availability of county level data for occupation details is limited. County level occupation detail data can be obtained; however it only include the broad category for sales occupations in comparison to Florida's (2002) more narrow examination of only the high-end sales and sales management occupations. Therefore, the creative class share calculated for each county examined in this research may be slightly inflated for all counties included in the unit of analysis.

When compared to other research that similarly examines nonmetropolitan areas, the occupation details included in this research are more appropriate in aligning with Florida's (2002) definition for the creative class. Although McGranahan and Wojan's (2007) creative class data only includes high-end sales and sales management category as similarly defined by Florida (2002), the creative class data that they calculate for each county actually is the number of workers in a region not specific to the county. For example, McGranahan and Wojan's (2007) creative class data for Oktibbeha County, Mississippi, only include the high end sales occupation as defined by Florida; however, the source of the data for this county is actual representative of the entire Northeast region of Mississippi, which includes other nonmetropolitan areas such as Tupelo.

Human Capital

Human capital refers to the educational attainment level of adult individuals over 25 in each county and is measured as the percentage of adult workers in a county with a college degree or higher per capita. Data for the independent variable human capita was collected from the 2000 United States Census Bureau data set (www.census.gov).

Social Capital

Social capital refers to the number of non profit civic based organizations or 501 3 (c)s in a county and is measured as the number of nonprofit civic based organizations in each county per capita. Data for the social capital independent variable was collected from the National Center for Charitable Statistics via the Urban Institute from the 2000 data set (http://nccsdataweb.urban.org/PubApps/990search.php).

Institutional Intellectual Capital

Institutional intellectual capital refers to the total number of colleges and universities in each county as designated by the Carnegie Foundation. The Carnegie Foundation for the Advancement of Teaching classifies colleges and universities as Doctoral/Research Universities, Master's Colleges and Universities, Baccalaureate Colleges, Associates Colleges, or Tribal Colleges and Universities.

Doctoral/Research institutions are classified as either Extensive or Intensive institutions. These institutions typically offer a wide range of baccalaureate programs and are committed to graduate education through the doctorate degree. Such institutions are assigned their rank based upon the number of doctoral degrees that they award per year. Master's Colleges and Universities are classified as Master's Colleges and Universities I and II. They offer a wide range of baccalaureate programs and are also committed to graduate education through the master's degrees they award. Baccalaureate Colleges are classified as Baccalaureate Colleges-Liberal Arts, Baccalaureate Colleges-General, or Baccalaureate/Associate's Colleges. The liberal arts institutions award half of their degrees in liberal arts fields, the general institutions offer the undergraduate degree in various fields of study, and the associate's/baccalaureate colleges offer some baccalaureate degrees but the majority of their conferrals are below the baccalaureate level (associate's degrees and certificates). The associate's colleges offer associate's degrees and certificate programs but they do not award any baccalaureate degrees (e.g. community, junior, and technical colleges are included in this category). Lastly, tribal colleges and universities are tribally controlled and located on reservations (The Carnegie Foundation for the Advancement of Teaching, 2001).

To measure the institutional intellectual capital, the aggregate of higher education institutions is calculated for each county examined. As similarly defined and calculated by Hoyman and Faricy (2009), the institutional intellectual capital variable measures the quality and quantity of universities and colleges in each county explored in this research. The Carnegie 2000 Classifications are used and coded as found below. In each county, the total number of colleges and universities and their quality ranking are aggregated into an institutional intellectual capital score per capita for each county in this study.

Doctoral/Research Universities

- *Doctoral/Research Universities-Extensive (9)*
- *Doctoral/Research Universities-Intensive (8)*

Master's Colleges and Universities

- *Master's Colleges and Universities- I* (7)
- *Master's Colleges and Universities-II* (6)

Baccalaureate Colleges

- *Baccalaureate Colleges-Liberal Arts (5)*
- *Baccalaureate Colleges-General (4)*
- *Baccalaureate/Associate's Colleges (3)*

Associate's Colleges

- *All Associate's Colleges (2)*

Tribal Colleges and Universities

- *All Tribal Colleges and Universities (1)*

Community Capital

The variables included in the community capital category form a unique contribution to the literature since they have not been examined in their entirety alongside

the other theoretical frameworks employed in this research. Although not measured collectively, each variable is included in this category as an indicator of the quality of life/place and as those factors that make a place more attractive to individuals employed in today's creative economy. The community capital composite variables included are the quality of the K-12 education system, the quality of life/place attractiveness factors, the form of government that a county operates under, and the political culture. These variables are tested to provide a more comprehensive examination of the factors which most importantly matter in today's creative economy. It is important to note that although some of the dates for the data in this theoretical framework vary, the years of each variable all fall within the time period examined in this study.

Quality of K-12 Education System

This variable refers to the quality of the K-12 schools combined in each county. To test the quality of the K-12 education system the aggregate graduation rates and dropout rates of the schools systems in each county were calculated. The data for this variable were collected from the Department of Education for the 19 states included in the study. Specifically data for the 2005-2006 school year is used because this is the earliest year of data available across all 19 states.

Quality of Life

Quality of life refers to the outdoor recreation activities, the natural amenity scale, healthcare facilities, the crime rate, the housing value, commute times, and commercial airport distance. Each variable and source within this category is described below.

Outdoor Recreational Activities

This variable is measured as the total number of parks and trails per county. The park portion of this variable is defined as a place or area set aside for recreation or preservation of a cultural or natural resource under some form of local government administration and does not include a National or State Park, Wilderness area, or National Historical landmark (www.hometownlocator.com, 2010).

The trail portion of this variable refers to the total number of trails for each county. Trails are defined as a route for passage from one point to another. The data for both of these factors that are combined as the outdoor recreational activities variable are obtained from www.hometownlocator.com. More specifically, they obtained the information for these variables from the Geographic Name Information System which is maintained by the United States Geological Survey (www.hometownlocator.com).

The Amenity Scale

In efforts to better understand what attracts people to rural areas, Economic Research Service developed a natural amenities scale. This scale is employed in this research under the assumption that people are drawn to areas with varied topography: lakes, ponds, or oceanfront; warm, sunny winters; and temperate, low-humidity summers. Thus, these physical characteristics lead to enhancements for outdoor recreational opportunities.

This variable is defined as a measurement of the physical characteristics of a county that enhance the location as a place to live. This scale developed by the United States Department of Agriculture's Economic Research Services was constructed by combining climate (mean temperature from 1941-1970), topography, and water area that reflect the environment qualities that people prefer. Explicitly the measurement for this

scale includes warm winter, winter sun, temperate summer, low summer humidity, topographic vibration, and water area into an average for each of these combined factors (United States Department of Agriculture, Economic Research Service, 2004). Although the data for mean temperatures exceeds the data of examination in this study, the United States Global Change Research Program (2011) states that average temperatures have only risen two degrees over the last fifty years, thus illustrating that the average temperatures have remained stable relative to the dates of examination in this study. Furthermore, McGranhan and Wojan's (2007) research also employs the climate averages from 1941-1970 for counties in their study examining the 1990-2000 time periods.

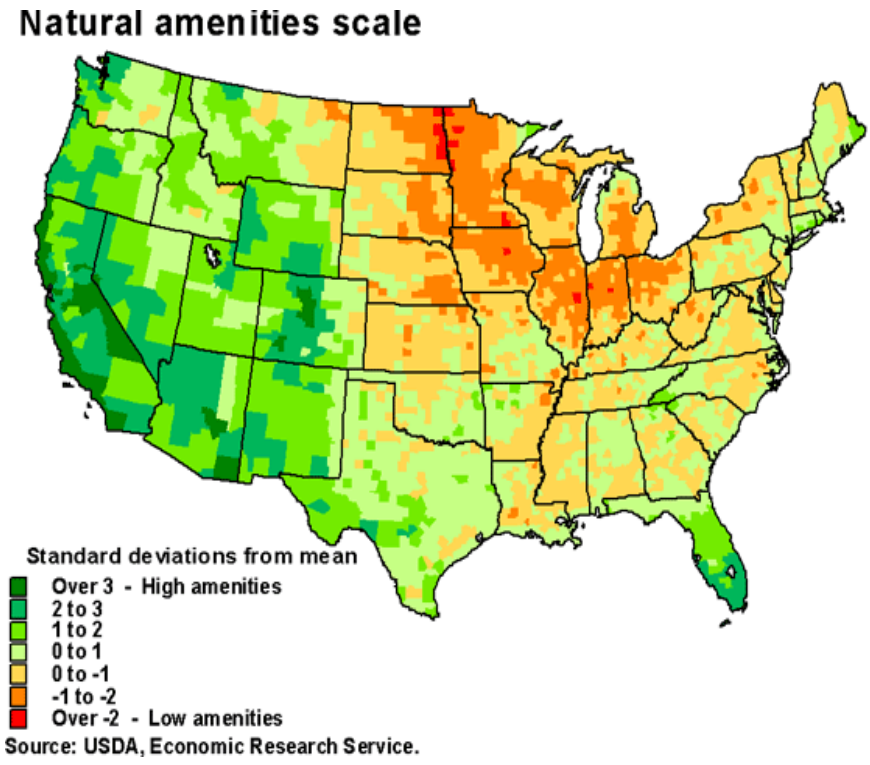

Figure 4.3 The Natural Amenities Scale

Healthcare Facilities

The healthcare component of the community capital variable refers to the Health Professional Shortage Areas designations for each county in 2007. This variable is measured as a dummy variable and counties with the presence of a Primary Healthcare facility are assigned a 1, and those counties without the presence of a Primary Care facility are assigned a 0. The data for this variable was collected from the 2000-2007 County Characteristics data set from the Interuniversity Consortium for Political and Social Research database (2007).

Crime

The crime variable is measured as the crime rate for each county. Crime rate refers to the total number of crimes reported to police in 2004 divided by the total county population of law enforcement agencies that reported crimes in 2004. The data for this variable was collected from the Interuniversity Consortium for Political and Social Research database (2007). They collect the data from a data file prepared by their National Archive of Criminal Justice Data which is a file based on the Uniform Crime Reporting Program at the Federal Bureau of Investigation.

Housing Value

Housing value refers to the median housing value of each county in 2000. Data for the independent variable median housing value was collected from the United States Census Bureau data set (www.census.gov).

Commute Times

Commute times refers to the average commute time to work for workers 16 and over and is defined as the mean travel time to work for workers in 2000. Data for the

independent variable commute time value was collected from the United States Census Bureau (www.census.gov).

Airport Distance

Airport distance refers to the distance of the nearest commercial airport in proximity to the county and is defined as the mileage to the nearest commercial airport for each county. The data for this variable was collected from Travelmath.com. This database calculates the nearest commercial airport in proximity to each county (www.travelmath.com).

Political Structure

Political structure refers to the form of government that each county operates under. This variable is defined as a council manager form of government, the council-elected executive form of government, or the commission form of government. Data for the county forms of government was collected from the International City/County Management Association's Municipal Yearbook (International City/County Management Association Municipal Yearbook, 2000).

Political Culture

The political culture of each county is determined by Daniel Elazar's (1984) political culture typology. His typology has been used extensively to measure the political culture of a state. His typology distinguishes between three major subcultures: individualist, moralist, and traditionalist. The following is the list of states that, according to Elazar's model fall into each political subculture.

Table 4.2 Daniel Elazar's Political Culture

Traditionalist	Individualist	Moralist
Arizona	Alaska	Maine
New Mexico	Hawaii	New Hampshire
Texas	Nevada	Vermont
Oklahoma	Wyoming	Michigan
Arkansas	Nebraska	Wisconsin
Louisiana	Missouri	Iowa
Mississippi	Illinois	Minnesota
Alabama	Indiana	North Dakota
Georgia	Ohio	South Dakota
Tennessee	Pennsylvania	Kansas
Kentucky	New York	Colorado
Florida	Massachusetts	Utah
South Carolina	Rhode Island	Montana
North Carolina	Connecticut	Idaho
Virginia	New Jersey	Washington
West Virginia	Delaware	Oregon
	Maryland	California

Demographics

Race/Ethnicity

This variable is measured as the percentage of each county population that classifies itself as White. Although the Census defines race and ethnicity into different categories, using the percentage of a county that classifies itself as White illustrates the county's population from the other races. If a county has a high percentage of Whites,

then they have lower percentages of the other racial groups. The data for this variable was collected from the U.S. 2000 United States Census Bureau data set (2000).

Median Household Income

The median household income is the amount which divides the total amount of income distributions for the county into two equal groups. The median household value is the income for all households in the county with half with incomes above that amount and half with income below that amount. The value is a reflection of the income for the middle class of all households in the county. Using the median instead of the mean values avoids distortions that can occur though the presence of a relatively small number of very wealthy households. The data for this variable was collected from the 2000 United States Census Bureau data set (2000).

Employment Status (Unemployment)

Employment status, which is defined as the unemployment rate, refers to the percentage of the population that is unemployed. This variable is measured as the percentage of the county population 16 and over that are unemployed but who are eligible to work. This information was collected from the 2000 United States Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics (United States Bureau of Labor Statistics, 2000).

Population

Population refers to the total number of residences in each county. Population estimates were obtained from the U.S. Census Bureau from the 2000 Census population counts data set (U.S. Census Bureau, 2000).

Region

The region variable refers to the U.S. Census (2000) classification data for the United State geographic regions. Table 4.4 below provides a listing of the geographic regions that each state is a part of.

Table 4.3 United States Geographical Regions

Northeast	Midwest	South	West
Maine	Wisconsin	Delaware	Idaho
New Hampshire	Michigan	Maryland	Montana
Vermont	Illinois	Virginia	Wyoming
Massachusetts	Indiana	West Virginia	Nevada
Rhode Island	Ohio	North Carolina	Utah
Connecticut	Missouri	South Carolina	Colorado
New York	North Dakota	Georgia	Arizona
Pennsylvania	South Dakota	Florida	New Mexico
New Jersey	Nebraska	Kentucky	Alaska
	Kansas	Tennessee	Washington
	Minnesota	Mississippi	Oregon
	Iowa	Alabama	California
		Oklahoma	Hawaii
		Texas	
		Arkansas	
		Louisiana	

Economic Distress Indicators

The poverty economic distress variable is measured as the percentage of a county's population whose income falls below the national poverty line. Data for this variable was collected for 2000 from the Small Area Income and Poverty Estimate program data from the United States Census Bureau (United States Census Bureau, 2000

and United States Department of Agriculture, Economic Research Service, County Poverty Rates, 2009).

The personal per capita income refers to how much income each individual receives in monetary terms of the yearly income generated in each county. Data for this variable was collected from the Bureau of Economic Analysis, Regional Economic Information System for 2000 (2011).

The per capita market income refers to the disposable income of the individuals in a county. Per capita market income is measured by dividing the total personal income of the county minus transfer payments, by the county population. The data for this variable was collected from the Bureau of Economic Analysis, Regional Economic Information System for 2000 (2011).

Research University Presence

Research University presence is defined as the presence of a Carnegie-defined four year research (public and private) university. This variable is measured as a dummy variable and counties with the presence of a research university are assigned a 1, and those counties without the presence of a research university are assigned a 0. Data for this variable was obtained from the Carnegie Foundation for the Advancement of Teaching based upon their 2000 Classification of Institutions of Higher Education (The Carnegie Foundation, 2000).

Unit of Analysis

This research employs data from 23 counties with the presence of a Carnegie defined Doctoral/ Research Institution located in a nonmetropolitan statistical area. These 23 institutions were identified by examining the 2000 Carnegie Classification of

Higher Education Institutions category listing of institutions. This listing includes public and private colleges and universities in the United States that are degree-granting, accredited agencies recognized by the United States Secretary of Education (Carnegie, 2000).

Each university's host county metropolitan status was determined by the 2000 Office and Management and Budget's definition for Metropolitan and Nonmetropolitan statistical areas. According to the United States Census Bureau, a metropolitan area contains a core urban area population of 50,000 or more. Micropolitan areas contain an urban core population of at least 10,000, but less than 50,000 (U.S. Census Bureau, Population Division, 2000). Thus a county's total population can exceed 50,000 and not be defined as a metropolitan statistical area because no one city in the county has an urban core population of 50,000.

Once the 2000 Carnegie listing of Doctoral/Research institutions was identified based upon these criteria, a match/comparable county from the same state was identified. There are 23 counties with the presence of a Carnegie defined Doctoral/Research institutions and for each research university an additional 23 match/comparable counties are included in the unit of analysis. The comparable counties with the absence of a Carnegie (2000) Doctoral/Research institution were identified and included in this study based upon two criteria: similar populations and similar economic status as the doctoral/research institutions counties. More specifically, the match/comparable counties were identified based upon similar populations with the university county from 2000 and a similar per capita income with the university county from 1999. This information was obtained from the U.S. Census Bureau (2000).

The inclusion of these match/comparable counties is employed to determine the relationship that a research university has on the economic growth and development of an area in comparison to those areas that lack the presence of a research university. It is important to note however that there are some limitations to this process because the selection of different counties may result in different findings. For example, some states such as New Hampshire have a small number of counties in total, and so the range of matching these criteria expanded greatly to reflect the makeup of the state and may result in varied findings if another match/comparable county was employed in the study.

Table 4.5 below summarizes the universities classified by the Carnegie Foundation (2000) as research institutions. Additionally, the host city and the county in which it is located are presented below. The specific Carnegie (2000) classification is also indicated below and rages from intensive to extensive. The largest university county in regards to population was St. Lawrence, New York, which had a population of 111, 931 in 2000. The smallest university county in regards to population was Clay, South Dakota, which had a population 13, 537 in 2000.

Those counties with an asterisk in Tables 4.5 and 4.6 for their population are identified as nonmetropolitan counties according to the United States Census because although their total population may exceed 50,000, they do not have an urban core of at least 50,000. These counties are classified as Micropolitan statistical areas according to the Census Bureau (2000).

Table 4.4 Unit of Analysis: Doctoral/Research University Counties

Institution	Location	2000 Population	County	Carnegie Research Classification
Antioch University New England	Keene, NH	73,825*	Cheshire. NH	Intensive
Central Michigan University	Mt Pleasant, MI	63,351*	Isabella, MI	Intensive
Clarkson University	Potsdam, NY	111,931*	St. Lawrence, NY	Intensive
Georgia Southern University	Statesboro, GA	81,743*	Bulloch, GA	Extensive
Indiana University of Pennsylvania	Indiana, PA	55,983*	Indiana, PA	Intensive
Louisiana Tech University	Ruston, LA	89,605*	Lincoln, LA	Intensive
Michigan Technological University	Houghton, MI	42,509*	Houghton, MI	Intensive
Mississippi State University	Starkville, MS	36,016	Oktibbeha, MS	Extensive
Missouri University of Science and Technology	Rolla, MO	42,902	Phelps, MO	Intensive
Montana State University-Bozeman	Bozeman, MT	39,825	Gallatin, MT	Intensive
New Mexico Institute of Mining & Technology	Socorro, NM	18,018	Socorro, NM	Intensive
Ohio University	Athens, OH	62,223*	Athens. OH	Extensive
Oklahoma State University	Stillwater, OK	68,190*	Payne, OK	Extensive
South Carolina State University	Orangeburg, SC	91,582*	Orangeburg, SC	Intensive
South Dakota State University	Brookings, SD	28,220	Brookings, SD	Intensive
Southern Illinois University Carbondale	Carbondale, IL	59,612*	Jackson, IL	Extensive
Texas A & M University-Kingsville	Kingsville, TX	31,549	Kleberg, TX	Intensive
University of Idaho	Moscow, ID	34,935	Latah, ID	Extensive
University of Mississippi	Oxford, MS	38,744	Lafayette, MS	Extensive
University of South Dakota	Vermillion, SD	13,537	Clay, SD	Intensive
University of Wyoming	Laramie, WY	32,014	Albany, WY	Extensive
Washington State University	Pullman, WA	40,740	Whitman, WA	Extensive

*Denotes a county defined as a Micropolitan Statistical area. A Micropolitan Statistical area is a county whose total population may exceed 50,000, but the county do not have an urban core population of at least 50,000.

This study also examines match/comparable counties as illustrated in Table 4.6 below without the presence of a Carnegie (2000) defined Research University. The populations for the match/comparable counties range between 11,276 in 2000 for Lake

County, South Dakota, the match/comparable county for Clay County, South Dakota which had a population of 13,537 2000. The largest non-university county, Jefferson County, New York had a population of 111,738 in 2000.

This table also illustrates the range and similarities between the university host county and the match/comparable counties per capita income. The county with the lowest per capita income was $14,040 for Pike County, Mississippi, the match/comparable county for Lafayette County which had a per capita income of $16,406. The county with the highest per capita income was $22,758 for Troup County which is the match/comparable county for Bulloch County, GA which had a per capita income of $22,227.

Table 4.5 Unit of Analysis: Match/Comparable Counties

Institution	University County Population 2000	University County Per Capita Income 1999	University County	Match County	Match County Population 2000	Match County Per Capita Income 1999
Antioch University New England	73,825	20,685	Cheshire. NH	Carroll, NH	43,666	21,931
Central Michigan University	63,351	16,242	Isabella, MI	Montcalm, MI	61,266 *	16,183
Clarkson University	111,931	15,728	St. Lawrence, NY	Jefferson, NY	111,738 *	16,202
Georgia Southern University	81,743	22, 227	Bulloch, GA	Troup, GA	56,325*	22,758
Indiana University of Pennsylvania	55,983	16,080	Indiana, PA	Crawford, PA	58,779 *	16,791
Louisiana Tech University	89,605	15,312	Lincoln, LA	Webster, LA	90,366 *	16,870
Michigan Technological University	42,509	14,313	Houghton, MI	Chippewa, MI	41,831	15,203
Mississippi State University	36,016	15,078	Oktibbeha, MS	Warren, MS	38,543	15,858
Missouri University of Science and Technology	42,902	14,998	Phelps, MO	Pettis, MO	49,880	17,527
Montana State University	39,825	16,084	Gallatin, MT	Flathead, MT	39,403	16,251
New Mexico Institute of Mining & Technology	18,018	12,826	Socorro, NM	Roosevelt, NM	18,078	14,185
Ohio University	62,223	14,171	Athens. OH	Huron, OH	59,487 *	18,133
Oklahoma State University	68,190	15,983	Payne, OK	Muskogee, OK	69,451 *	14,828
South Carolina State University	91,582	15,057	Orangeburg, SC	Lancaster, SC	61,351 *	16,276
South Dakota State University	28,220	17,586	Brookings, SD	Codington, SD	25,897	18,761
Southern Illinois University Carbondale	59,612	15,755	Jackson, IL	Coles, IL	53,196	17,370
Texas A & M University-Kingsville	31,549	13,542	Kleberg, TX	Howard, TX	33,627	15,027
University of Idaho	34,935	16,690	Latah, ID	Bonner, ID	36,835	17,263
University of Mississippi	38,744	16,406	Lafayette, MS	Pike, MS	38,940	14,040
University of South Dakota	13,537	14,452	Clay, SD	Lake, SD	11,276	16,446
University of Wyoming	32,014	16,706	Albany, WY	Fremont, WY	35,804	16,519
Washington State University	40,740	15,298	Whitman, WA	Stevens, WA	40,066	15,895

*Denotes a county defined as a Micropolitan Statistical area. A Micropolitan Statistical area is a county whose total population may exceed 50,000, but the county do not have an urban core population of at least 50,000.

CHAPTER V

FINDINGS

This chapter presents the findings of the analysis. It is organized in respect to the three original research questions stated at the onset of this study as found below. A response to each of these questions is presented with evidentiary support from the regression models results.

1. Can Florida's creative class theory be applied to nonmetropolitan areas?
2. If so, what elements foreshadow economic growth in nonmetropolitan areas?
3. How does the creative class theory compare against other theories?
    - Human capital
    - Social capital
    - Institutional intellectual capital
    - Community capital

The results will provide insight on the elements that foreshadow economic growth in nonmetropolitan areas. The results will also provide insight as to how the creative class theory compares against the other economic growth theories explored in this research (human capital, social capital, institutional intellectual capital, and community capital). This chapter begins with an assessment of the descriptive statistics for the dependent and independent variables. Then a discussion of the findings from each individual model is presented. These models are shown collectively in tables which

identify the important related variables within each of the various theoretical frameworks examined. The various models culminate in the development of the best specified full model which is introduced in the latter portion of this chapter.

Dependent Variables Descriptive Statistics

A discussion of the descriptive statistics provides background and illustrations of the variations that exist among the counties in this study. This section also provides an overview of the counties in comparison to each other. An overview of these statistics is presented below in Table 5.1 of the study's five dependent variables.

Table 5.1 Descriptive Statistics for Dependent Variables

Dependent Variables	Minimum	Maximum	Mean	Standard Deviation	N	Data Source
Business Establishment (2001-2009)	85.95 (-14.05 %)	131.83 (31.83 %)	106.21 (6.21 %)	10.09	46	Bureau of Labor Statistics
Average Annual Pay (2001-2009)	118.93 (18.93 %)	152.40 (52.40 %)	130.04 (30.04 %)	7.34	46	Bureau of Labor Statistics
Number of Jobs (2000-2009)	72.31 (-27.69%)	134.18 (34.18 %)	105.38 (5.38 %)	11.75	46	Bureau of Economic Analysis
Building Permits (Buildings) (2000-2009)	12.27 (-87.73 %)	342.86 (242.86 %)	72.13 (-27.87 %)	75.29	46	Census Bureau
Building Permits (Units) (2000-2009)	3.88 (-96.12 %)	375 (275 %)	81.67 (-18.33 %)	88.66	46	Census Bureau
The number in parentheses is the percentage change. This number is calculated by subtracting the 2009 value from 100 (the value for 2000 and 2001) is the base value for each county.						

Notable variations are found among each variable. Business establishments are defined as the number of new businesses for each county by the Bureau of Labor Statistics (www.bls.gov). The percentage change for business establishments was calculated by dividing the number of businesses created in 2009 by the number of businesses in 2001, times 100.

The descriptive statistics for business establishments are shown in Table 5.1 and reveal that Orangeburg County, South Carolina, had the lowest percentage change in business establishments, a 14.05% decrease in businesses created for the FY 2001 and FY 2009 time period. Gallatin County, Montana, was the county with the largest change in business establishments. They had a 31.83% increase in the number of businesses created from FY 2001 and FY 2009. The study's average percentage change in business establishments is a 6.2% increase in the number of businesses created.

Figure 5.1 below provides a visual overview of the range of the average annual pay for the 46 counties. Appendix A shows the percentage change for each county from FY 2001 and FY 2009 for business establishments. It also shows the actual number of business establishments for each county from FY 2001 and FY 2009.

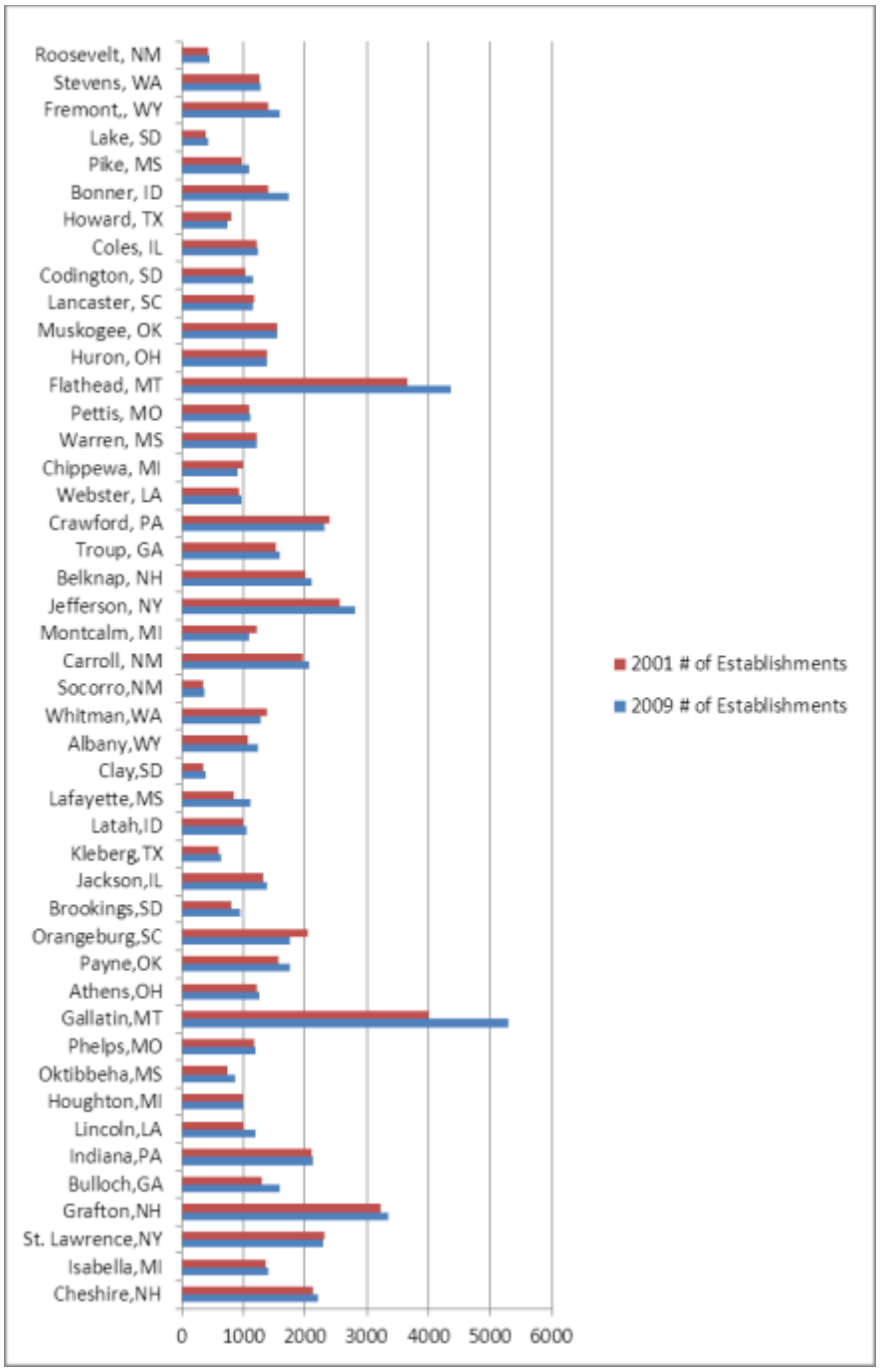

Figure 5.1 Business Establishments

Average annual pay is defined by the Bureau of Labor Statistics (www.bls.gov). The percentage change for average annual pay was calculated by dividing the 2009 average annual pay by the 2001 average annual pay for each county; times 100.

An assessment of the descriptive statistics found in Table 5.1 reveals that the mean ratio was 130.04 for FY 2001 and FY 2009 for average annual pay. Specifically, the average percentage change was a 30.04% increase. Lancaster County, South Carolina had the lowest average annual pay percentage change of a 18.93% increase for the FY 2001 and FY 2009 time period while Payne County, Oklahoma, experienced a 52.4 % increase in regards to their average annual pay for FY 2001 and FY 2009.

Figure 5.2 below provides a visual overview of the range of the average annual pay for the 46 counties. Appendix B shows the percentage change for each county from FY 2001 and FY 2009 for average annual pay. It also shows the actual average annual pay for each county from FY 2001 and FY 2009.

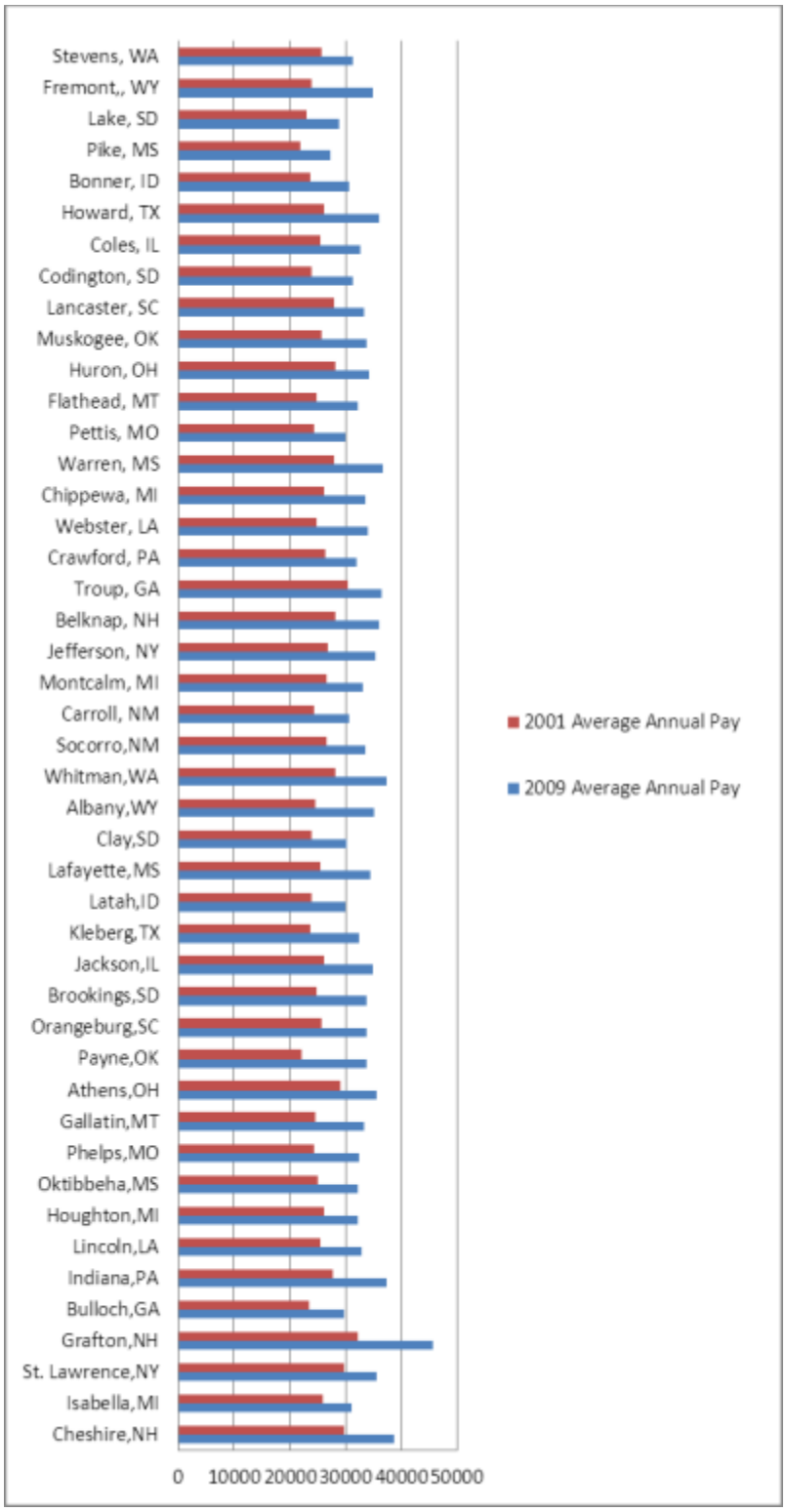

Figure 5.2 Average Annual Pay

The number of jobs is defined by the Bureau of Economic Analysis as the total number of nonagricultural employment (www.bea.gov). The percentage change for the jobs was calculated by dividing the number of jobs created in 2009 by the number of jobs in 2000, times 100.

The descriptive statistics for the percentage change in the number of jobs from Table 5.1 reveals that the average percentage change in the number of jobs was a 5.38% increase in the number of jobs between FY 2000 and FY 2009. The minimum value percentage change was a 27.69% decrease for Montcalm County, Michigan, illustrates that they experienced the largest job loss during this time period. However, Clay County, South Dakota, experienced a 34.18% increase in the number of jobs. This statistic is particularly interesting because Clay County, South Dakota, is one of the smallest counties in this study with a population of 13,537. Interestingly, the match/comparable county for Clay County, Lake County, experienced a negative percentage change in the number of jobs during this time period.

Figure 5.3 below provides a visual overview of the range of the changes for business establishments for the 46 counties. Appendix C shows the percentage change for each county from FY 2000 and FY 2009 for number of jobs. It also shows the actual number of jobs for each county from FY 2000 and FY 2009.

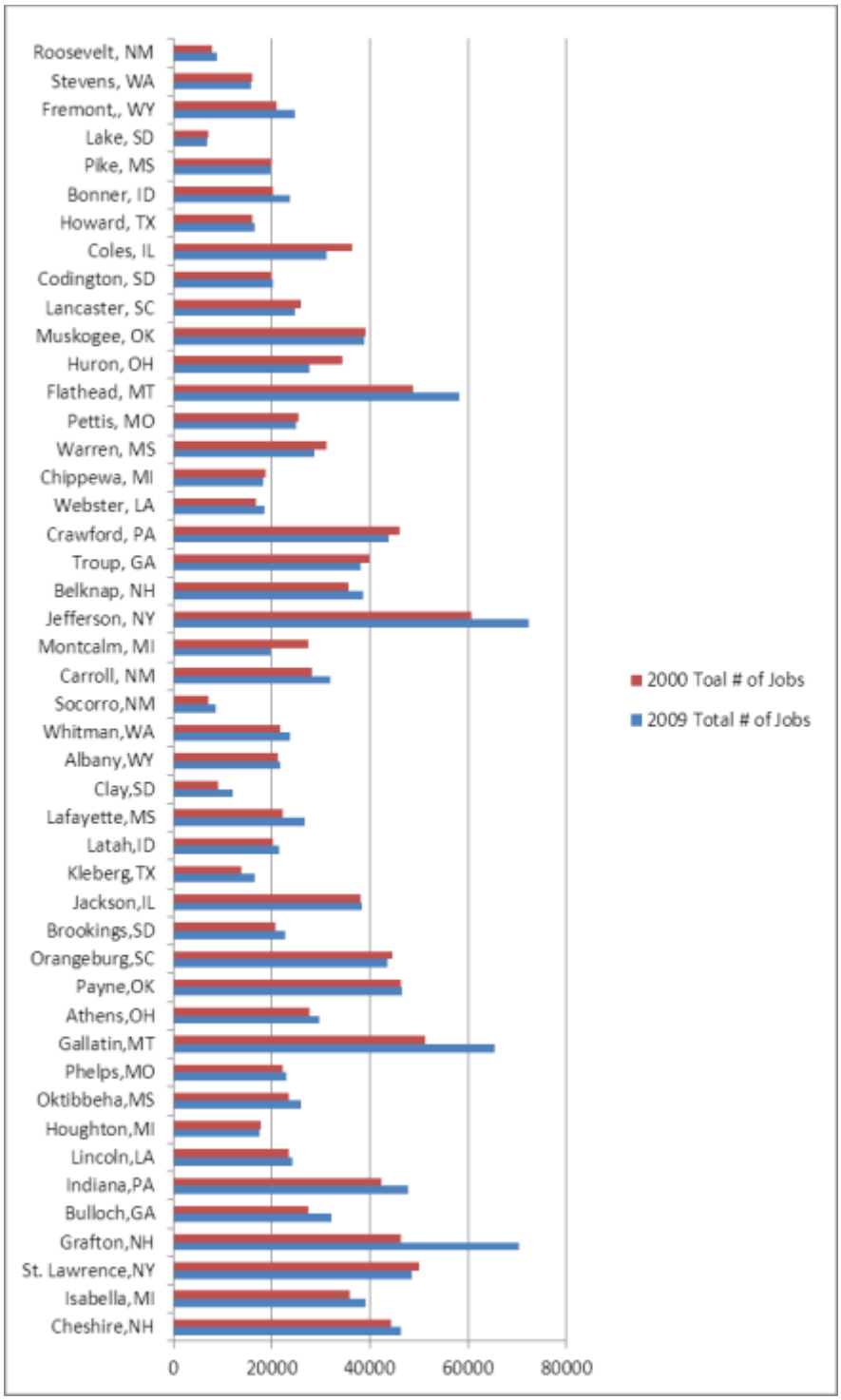

Figure 5.3 Number of Jobs

Building permits are defined as the number of residential permits per building as defined by the Census Bureau (www.census.gov). The percentage change for building permits per building was calculated by dividing the number of building permits in 2009 by the building permits in 2000 times 100.

The descriptive statistics for the percentage change in the number of building permits per building variable reveal the following. First, the average change in the number of building permits was 27.87% decrease. The minimum value was 12.27% for Isabella County, Michigan which indicates they experience the largest loss in the number of building permits during this time period. Interestingly, however, the maximum value was a 242.86% increase for Roosevelt County, New Mexico, which indicates that they experienced the largest increase percentage change in the number of building permits for FY 2000 and FY 2009.

Figure 5.4 provides a visual overview of the range of the building permits percentage changes. Appendix D shows the percentage change for each county from FY 2000 and FY 2009 for building permits. It also shows the actual number of building permits for each county from FY 2000 and FY 2009.

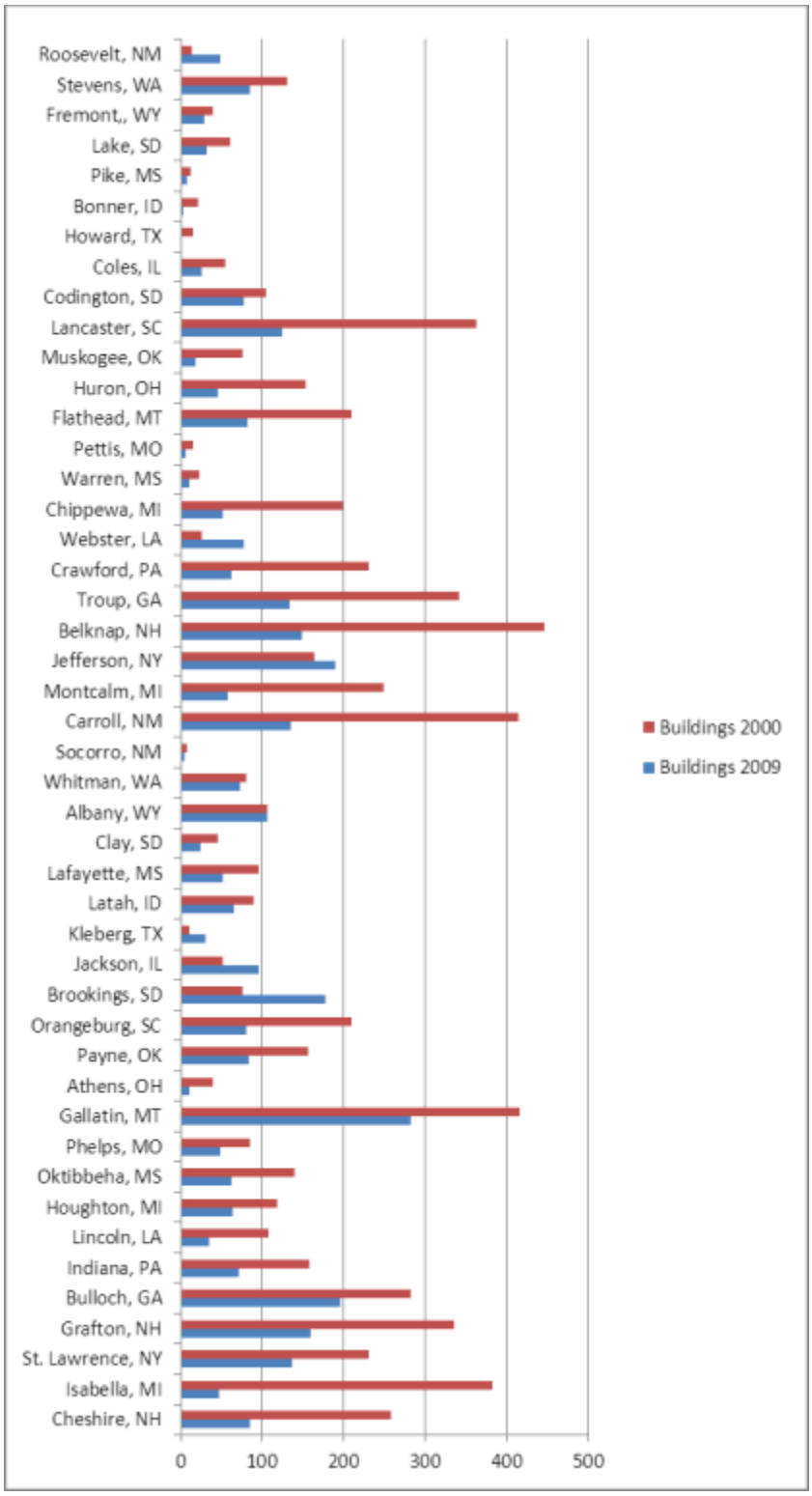

Figure 5.4 Building Permits (Buildings)

Building permits are defined as the number of residential permits per units as defined by the Census Bureau (www.census.gov). The percentage change for the number of building permits per unit was calculated by dividing the number of building permits in 2009 by the building permits in 2000 times 100.

The mean ratio for unit building permits was a 18.33% increase which reveals that on average, most counties saw a decline in the number of building permits for FY 2000 and FY 2009. The minimum percentage change statistics for building permits was a 96.12% decrease for Isabella County, Michigan, which indicates that they experienced the largest decline in the number of unit building permits for FY 2000 and FY 2009. Interestingly, however, the maximum percentage change value was a 275% increase in the number of building permits per unit reported for FY 2000 and FY 2009, which was for Pike County, Mississippi.

Figure 5.5 provides a visual overview of the range of the changes for the 46 counties in unit building permits. Appendix E shows the percentage change for each county from FY 2000 and FY 2009 for building permits per unit. It also shows the actual number of building permits per unit reported for each county from FY 2000 and FY 2009.

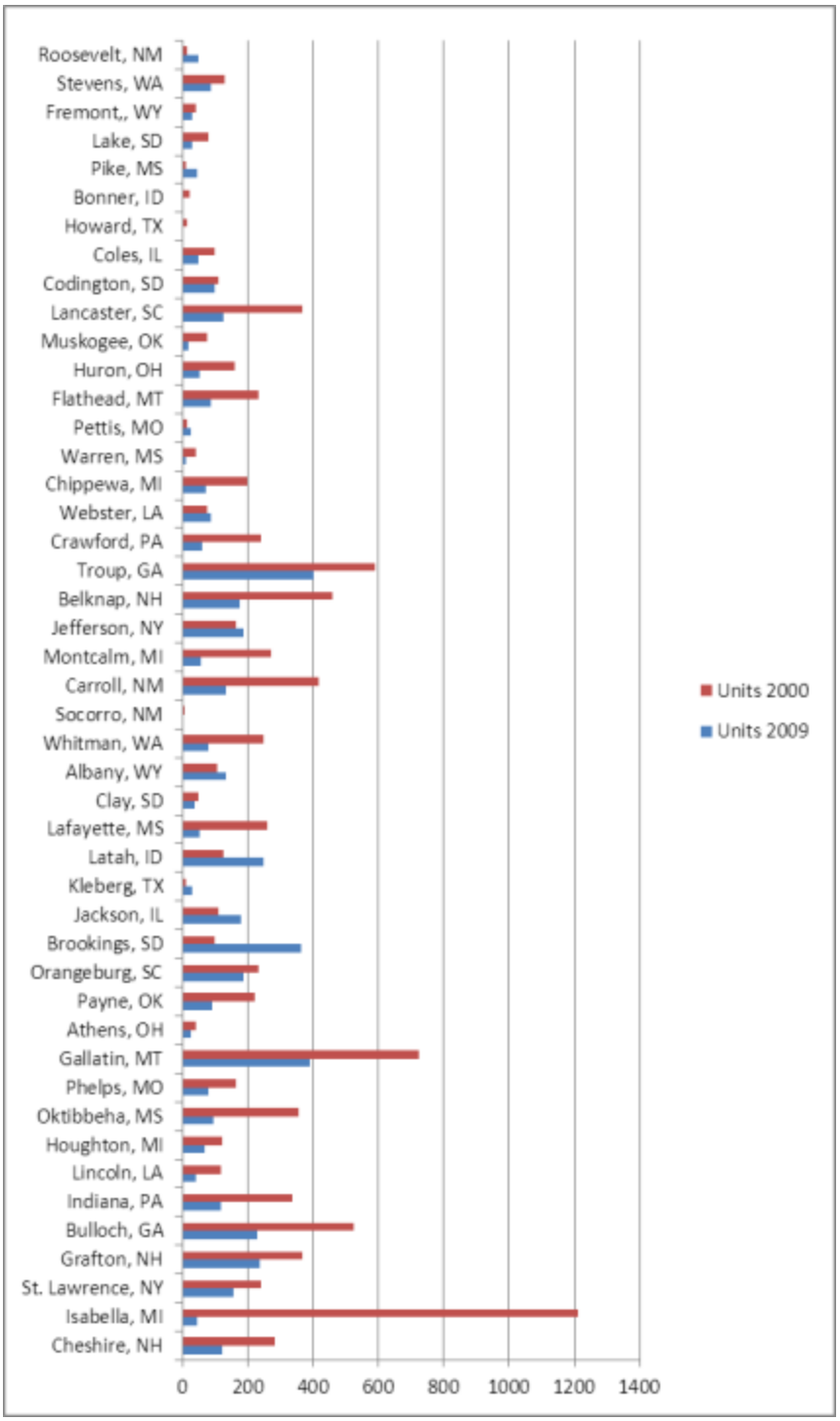

Figure 5.5 Building Permits (Units)

Independent Variables Descriptive Statistics

Table 5.2 provides a descriptive view of the study's independent variables. A discussion of the descriptive statistics provides background and illustrations of the variations that exist among the counties in this study. This section also provides an overview of the counties in comparison to each other.

The creative class variable is defined by the number of employed individuals in a county in a creative occupation according to Florida (2002). This data was collected from the Census Bureau (www.census.gov) and was calculated as the total number of individuals employed in a creative occupation in 2000 divided by the total number of employed individuals in a county in 2000. The descriptive statistics for the independent variable creative class reveal that the percentage of individuals who are employed in creative class occupations in a county range from a low of 27.85% in Lancaster County, South Carolina, to a high of 51.63% for Whitman County, Washington. The mean value of a county's population employed in the creative class occupations indicated that on average 39.75% of a county's population was composed of members of the creative class.

The human capital variable is defined at the percentage of adults with a bachelor's degree or higher in a county. This data was collected from the Census Bureau (www.census.gov). The human capital variable, ranges from a low of 10.2% in Lancaster County, South Carolina, to a high of 44.8% with a college degree for Whitman County, Washington. The mean human capital percentage for a county was 23.13%, indicating that on average most counties have 23.13% of their population with a college degree. Interestingly, this statistic does reveal that the average human capital percentage for the 46 counties in this study is only slightly below the national average of 24.4% for the population over 25 with a bachelor's degree or higher (www.census.gov).

The social capital variable is defined as the total number of nonprofit organizations in a county per capita according to the National Center for Charitable Statistics via the Urban Institute (http://nccsdataweb.urban.org/PubApps/990search.php). The social capital descriptive statistics reveals that the minimum value of nonprofits was 0.0023 per capita for Lancaster County, South Carolina. However, Payne County, Oklahoma had the highest number of nonprofits with a value of 0.0113 per capita.

The institutional intellectual capital independent variable is the number of higher education institutions as defined by the Carnegie Foundation for the Advancement of Teaching (http://classifications.carnegiefoundation.org/resources/.) The descriptive statistics for institutional intellectual capital reveal that the minimum aggregate index value of higher educational institutional was 0, indicating that some counties, specifically Carroll, Webster, Warren, Pettis, Huron, Codington, Bonner, and Stevens, all match/comparable counties, lack the presence of any type of higher educational institution within the county. However, Cheshire County, New Hampshire's, aggregate index value for institutional intellectual capital was 19, illustrating that they have the presence of several different types of higher education institutions, which includes a Carnegie Research Intensive institution. The mean value was 6.5 for the number of higher education institutions in the counties.

The research university presence independent variable that seeks to determine if the presence of just a research university matters in explaining economic growth was coded as a dummy variable. Each county with the presence of a Carnegie defined research university was coded as 1 or 0 if otherwise.

The graduation rate is the number of students who receive a traditional diploma. The graduation rates and dropout rates data was collected individually from each of the

19 states, departments of education that have counties examined in this study. The quality of the K-12 education system community capital related variable reveals the following from the graduation rates data. Warren County, Mississippi, had the lowest graduation rate of 57.2%, and Lake County, South Dakota, had the highest graduation rate of 96.21%. The mean graduation rate for the study was 83.21%. The other quality of the K-12 education system variable is dropout rates which is defined by the departments of education from the 19 states included in this study as the percentage of individuals who are not in school and have not earned a high school diploma. Brookings County, South Dakota, had the lowest dropout rate of only 0.32%. However, Warren County, Mississippi, had the highest dropout rate of 31.3% of students who failed to complete high school.

There were three variables classified as outdoor recreational activities which includes, the number of parks, trials, and the combined number of trails and parks (outdoor recreational activities) as defined by Hometown Locator as a place or area set aside for recreation or preservation of a cultural or natural resource under some form of local government administration (www.hometownlocator.com). The descriptive statistics reveal that several counties only had 1 park, trail, and or both combined. However, Flathead County, Montana had the highest number of outdoor recreation activities with a value of 249 trails and parks combined.

The natural amenities scale variable was developed by the United States Department of Agriculture's Economic Research Services was constructed by combining climate (mean temperature from 1941-1970), topography, and water area that reflect the environment qualities that people prefer (United States Department of Agriculture, Economic Research Service, 2004). The descriptive statistics for the natural amenities

scale variable reveal that the minimum value that a county had on the scale was -3.1 for Isabella County, Michigan, regarding its combination of the six physical features and characteristics. On the other hand, the Albany County, Washington, had the highest rank on the scale of 4.91.

The healthcare facilities variable refers to the Health Professional Shortage Areas designations for each county which was collected by the County Characteristics data set from the Interuniversity Consortium for Political and Social Research. The descriptive statistics indicate that the minimum was a 0 and the maximum was 1 since this variable was coded as a dummy variable. Of the 46 counties, 20 are defined as a county with at least one facility as a Primary Care Health Profession Shortage Area.

The crime independent variable data is a measure of the crime rate for each county. The crime rate is measured as the total number of crimes reported to police divided by the total number of law enforcement agencies that reported crimes. This data was collected from the County Characteristics data set from the Interuniversity Consortium for Political and Social Research. The descriptive statistics for crime rate indicates that the minimum crime rate for a county was 1321.59 for Cheshire County, New Hampshire. The maximum value was a 6994.33 crime rate (total reported crime divided by total population reporting crime) for Troup County, Georgia. The average crime rate was 3354.751 for the 44 counties since data was not provided for the two Illinois counties in the dataset.

The housing value independent variable is measured as the median housing value for each county as defined by the United States Census Bureau (www.census.gov). The descriptive statistics for housing value indicate that the minimum median housing value

was $39,000 for Howard County, Texas while the maximum value of $143,000 is reflective of Galvlatin County, Montana, for 1999.

The average commute time to work for the 46 counties was 20.15 minutes as defined by the United States Census Bureau (www.census.gov). Additionally, regarding transportation related variables in the quality of life component of the community capital theory, the average number of miles to the nearest airport for the counties was 32.91 miles as calculated by Travelmath.com.

The political structure independent variables include the Council-Manager, Council-Elected Executive, and Commission forms of government for counties according to the International City/County Management Association Municipal Yearbook. These variables were coded as dummy variables. Of the 46 counties, six operated under the council-manager form of government, and six operated under the council-elected executive form of government. The remaining thirty four counties operated under the commission form of government.

The political culture independent variables as defined and collected from Elazar (1984) for the individualist, moralistic, and traditionalist political culture were coded as a dummy variable. Of the 46 counties, twelve are in individualistic states, fourteen are in moralistic states, and twenty are in traditionalistic states.

The race/ethnicity variable is defined as the percentage of each county population that classifies itself as White according to the United States Census Bureau (www.census.gov). The descriptive statistics for the race/ethnicity variable reveals that the lowest total White percentage of a county was 37.2 for Lancaster County, South Carolina. This statistic also reveals that Lancaster County had a high percentage of non

Whites but Carroll County, New Hampshire's White percentage was the highest at 98.2%.

The median household income variable is the amount which divides the total amount of income distributions for a county into two equal groups and the data was collected from the United States Census Bureau (www.census.gov). The descriptive statistics for median household income reveal that the minimum median household income for a county was $23,439 for Socorro County, New Mexico. The highest median household income was $43,605 for Belknap County, New Hampshire.

The unemployment status independent variable which measures the percentage of the population unemployed reveals that the minimum unemployment rate was 2.2% Brookings County, South Dakota. The highest unemployment rate was 7.6% for Bonner County, Idaho. The data for unemployment was collected from the United States Department of Labor, Bureau of Labor Statistics, Local Area Unemployment Statistics (http://www.bls.gov/lau/).

The poverty independent variable is defined as the percentage of a county's population whose income falls below the national poverty line and the data was obtained from the United States Census Bureau (www.census.gov). The descriptive statistics reveal that the minimum was 6.5%, reflective of Belknap County, New Hampshire. However, Socorro County, New Mexico, which has the lowest median household income, also has the highest poverty rate of 27.9%.

The United States Geographical Regions as defined by the Census Bureau are employed in this study (www.census.gov). Each of the regional variables was coded as a dummy variable. Eight of the counties are in the Northeast. Both the South and Midwest each have 14 counties in the study, and there are 10 counties from the West.

The personal per capita income is defined as how much income each individual receives in monetary terms of the yearly income generated in each county according to the Bureau of Economic Analysis, Regional Economic Information System. The personal per capita income independent variable descriptive statistics reveal that the minimum personal per capita income level was $15,956 for Socorro County, New Mexico, a county which had the highest poverty rate and the lowest median household income. The maximum value of $31,627 reveals that Carroll County, New Hampshire, has the highest median household income. Interestingly, this county also has the highest white percentage as well.

The personal market per capita income variable is defined by the Bureau of Economic Analysis, Regional Economic Information System as the disposable income of the individuals in a county. The personal market per capita income independent variable descriptive statistics reveal that the minimum value was $12,440 for Socorro County, New Mexico, a county as stated above with other similar low values for the economic related variables. On the other hand, the maximum value was $27,139 for Carroll County, New Hampshire, which has some of the highest economic related variables in comparison to Socorro County, New Mexico.

Table 5.2 Descriptive Statistics for Independent Variables

Independent Variables	Minimum	Maximum	Mean	Standard Deviation	N
Creative Class	.2785	.5163	.3975	.0550	46
Core Creative Share	.2054	.3142	.2590	.252	46
Super Creative Share	.0702	.2683	.1371	.5388	46
Human Capital	10.2	44.8	23.13	9.3793	46
Social Capital	.0023	.0113	.0060	.0022	46
Institutional Capital	0	19	6.5	4.5399	46
Research University Presence	0	1	.5	.5055	46
Graduation Rates	57.2	96.21	83.2169	10.6774	46
Dropout Rates	.32	31.3	5.0028	6.6391	46
Outdoor Activities	1	249	30.67	48.1160	46
Parks	1	62	17.0434	14.1436	46
Trails	0	187	13.6304	38.5915	46
Amenities Scale	-3.1	4.91	.2589	2.0493	46
Healthcare	0	1	.4347	.5012	46
Crime	1321.59	6994.33	3354.751	1463.511	44
Housing Value	39000	143000	84691.3	25382.5	46
Commute Time	14.1	28.2	20.15	3.8164	46
Airport Distance	2	64	32.9130	17.3036	46
Council Manager	0	1	.1304	.3405	46
Council Elected Executive	0	1	.1304	.3405	46
Commission	0	1	.7391	.4439	46
Individualist	0	1	.2608	.4439	46
Moralistic	0	1	.4347	.5012	46
Traditionalist	0	1	.3043	.4652	46
% White	37.2	98.2	83.1413	15.7279	46
Median Household Income	23439	43605	32181.48	4889.046	46
Unemployment	2.2	7.6	4.3891	1.3695	46
Population	11276	111931	51633.93	23678.84	46
Northeast	0	1	.1739	.3832	46
Midwest	0	1	.3043	.4652	46
South	*0*	*1*	*.3043*	*.4652*	46
West	*0*	*1*	*.2173*	*.4170*	46
Poverty	*6.5*	*27.9*	*4.8723*	*14.7130*	46
Personal Per Capita Income	15956	31627	22355.13	3463.232	46
Market Per Capita Income	12636	27336	1879.57	3589.825	46

Analysis and Results for Demographics Models

In this section the results of the ordinary least squares regression analysis are presented. These models are critical because the demographics (control variables) establish a standardized series of factors identified from Hoyman and Faricy (2009), McGranahan and Wojan (2007), Feiock et al. (2003), Goldstein and Drucker (2006), Stoper and Scott (2009), and Fledman and Desrocher (2003) as vital for understanding the context in which the dependent variables can be best explained and understood.

Table 5.3 provides an assessment of the control variables and their impact on the number of businesses established (Model 1), average annual pay (Model 2), average annual pay with dummied Payne County, Oklahoma, and the number of jobs (Model 4). Initially, each of the independent variables from the full research model presented in Figure 4.2 were examined. However, the sample size of this study does not allow for each of these variables to be examined collectively because of colinearity issues. Therefore, the personal per capita income and poverty variables were excluded from Models 5.3-5.27. Furthermore, the control factors included in Table 5.3 were included in the models based upon the statistical strength of the variables in the models collectively (as interpreted in the adjusted R square, and the F scores of the models). The construction of the best specified controls models were also identified based upon their relationship to the theoretical frameworks identified as explanations of economic growth and development. The variables in Table 5.3 were also selected based upon their minimal degree of colinearity with the other variables, and thus, this set of variables below in Table 5.3 are the best identified demographic predictors of the economic growth and development and are included in each of the models examined in this research hereafter.

Table 5.3 Results for the Demographics Models

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Average Annual Pay & Payne County	Model 4 Number of Jobs
Constant	b 65.491 (3.48)	b 136.566 (8.82)	b 138.837 (9.85)	b 129.242 (5.69)
% White	.36739** (2.39)	.05825 (0.46)	-.05984 (-0.49)	.11864 (0.64)
Median Household Income	-.00126*** (-2.86)	-.00072* (-1.97)	-.00054 (-1.60)	-.00151*** (-2.84)
Unemployment	1.968 (1.46)	-.76867 (-0.69)	.03477 (-0.03)	-.01650 (-0.10)
Population	-.00002 (-0.24)	.00001 (0.19)	-.00003 (-0.54)	-.00009 (-1.04)
Northeast	-10.887* (-1.99)	-5.206 (-1.16)	-2.817 (-0.68)	.46714 (0.07)
Midwest	-7.263* (-1.91)	-6.605** (-2.11)	-5.227* (-1.81)	-12.801*** (-2.79)
South	5.53 (1.12)	-.89507 (-0.22)	-4.074 (-1.06)	-5.951 (-1.00)
Market Per Capita Income	.00242** (3.46)	.00094 (1.63)	.00096* (1.83)	.00138 (1.63)
Payne County, OK	-	-	22.078*** (2.97)	-
Adjusted R Square **F Statistic** **N=**	.3083 3.51* 46	.1146 1.73 46	.2695 2.84* 46	.2572 2.95* 46
Unstandardized coefficients with t-scores in parenthesis reported.				

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Ordinary least squares regression assumes that the dependent variables, the percentage change in business establishments, in the average annual pay, in the number of jobs, and the number of building permits each have a linear relationship with the various independent variables employed in this study. However, only four of the models for building permits were significant; therefore, those results will not be discussed in detail but can be found in Appendix F.

Analyzing the number of businesses established (Model 1) from Table 5.3, as a whole, the F score of 3.51 indicates that the model is significant, and the Adjusted R

square of 0.3083 indicates that the model is moderately weak. The regression estimates for this model reveal that five variables are statistically significant; percent White, median household income, Northeast, Midwest, and market per capita income.

The positive coefficient of 0.36739 for the percent White indicates that for each 1% higher White population percentage of a county there is a positive .367% percent change for business establishments. This finding may provide support for Hoyman and Faricy (2009) and McGranahan and Wojan's (2007) studies which reveal that minorities typically experience more hardships regarding economic opportunities. Conversely, this finding challenges the assertion from Florida (2002) that those areas which are more diverse will excel in economic growth today. However, it is important to note that this research only tested for racial diversity and not the cultural diversity as to which Florida (2002) refers.

The negative coefficient of -0.00126 indicates that for every 1% decline in the median household income there is a -0.0126% increase in the number of business establishments. Median household income is a measurement of the amount of wealth in a county. One explanation for this negative relationship between median household income and business establishments could be that the less wealthy counties (lower median household incomes) had more room for growth opportunities for new businesses in their jurisdiction. This expected finding provides support for the Hypothesis 17 that counties with lower median household income have higher economic growth. This finding also confirms the findings from McGranahan and Wojan (2007) whose research found that in nonmetropolitan areas, counties with lower median household incomes experienced higher economic growth. As expected this research also provides support

for McGranahan et al.'s (2011) research which also reveals similar findings for counties with lower median household incomes.

The negative coefficients of -10.887 for the Northeast and -7.263 for the Midwest reveal that the Northeast and Midwest regions in comparison to the West experienced lower growth in the number of businesses which provides support for Hypothesis 20. These results are consistent with Stoper and Scott (2009) who found that cities in the Northwest and Midwest experienced periods of stagnated economic growth. These findings also confirm the results from Hoyman and Faricy's (2009) research in which they found that the Northeast and Midwest regions lost jobs during their time period of examination.

The last significant variable in this model is market per capita income. The market per capita income of a county is a measurement of the quality of jobs in a county. This variable which is defined as the personal per capita income less transfer payments to individuals provides an indication of the worth of jobs in a county. Thus, it is expected that there is a positive relationship between market per capita income and the measures of economic growth. The coefficient results reveal that for every 1% increase in a county's market per capita income there is a 0.00242% increase in business establishments. This variable has not been previously examined in the literature; however, this finding supports Hypothesis 23 that there is a positive relationship between higher market per capita income and higher measures of economic growth.

Model 2 presents the results for the average annual pay dependent variable. The F score of 1.73 indicates that the model is not significant, and the Adjusted R square of 0.1146 illustrates that this is a relatively weak model. However, the results for median household income and the Midwest variables are significant and provide support for the

expected negative relationship between counties in the Midwest and measures of economic growth. Additionally, the median household income variable has an expected negative relationship with this measurement of economic growth, similar to Model 1's results.

Model 3 presents the results for the average annual pay and Payne County, Oklahoma. Payne County was identified as an outlier for the percentage change in the average annual pay model. This county was identified as an outlier based upon its Cooks D value, Leverage value, and Studentized Deleted Residuals statistics exceeding the critical value times two for the Cooks D and Leverage value, and exceeding 2 for the Studentized Deleted Residuals (Fox, 1991). To correct for this problem a dummy variable for Payne County was employed in the model. Payne County was identified as an outlier because it is the county with the largest percentage change increase in pay.

Model 3 with the dummy variable created for Payne County in the average annual pay mode improves the adjusted R square of the model and now the F score, is significant. For example, the new model's Adjusted R square improves from 0.1146 to 0.2695, and where the model was previously not found significant based upon the F score this model is now significant with an F score of 2.84. Therefore, from this point forward, each average annual pay model is run with the dummy variable created for Payne County, Oklahoma. Thus creating a dummy variable for Payne County, Oklahoma improves the overall strength of the model and the variance when Models 2 and 3 are compared.

The results for each of the individual variables did not significantly change. The Midwest regional variable remains significant and still has a negative relationship with average annual pay as before in Model 2. This finding provides support for Hypothesis

20 that counties in the Northeast and Midwest experienced lower average annual pay as compared to those in the West. Additionally, where in Model 2 the market per capita income variable is trending towards being significant, by employing the dummy variable for the outlier Payne County this variable is now significant. The findings for market per capita income illustrate that for every 1% increase in the market per capita income there is a .0096% increase in the average annual pay for a county. This expected finding provides support for the hypothesis that counties with higher market per capita income have higher measures of economic development compared to those counties with lower market per capita incomes.

Model 4 presents the results for the base demographics model for percent change in the number of jobs. The F score of the model is 2.95 which indicates that the model is significant while the Adjusted R square of 0.2572 indicates that the model is moderately weak.

The results indicate that for every 1% decrease in the median household income there is a -0.00151% increase in the percent change in the number of jobs. This result provides support for the research of McGranahan and Wojan (2007) and McGranahan et al. (2011). Also as similarly identified from the other base demographics models, the Midwest is a significant variable with a negative relationship. The results of this variable indicate that for every 1% decrease in the percent change in the number of jobs there is a -12.801% decrease in the number of jobs in the Midwest. This finding illustrates that in comparison to the West region, which was omitted from the model as the reference category, the Midwest region lost jobs. Model 4 also provides further evidentiary support for the hypothesis that counties in the Midwest experienced greater declines in economic

growth than counties in the West. These findings confirm the works of Stoper and Scott (2009) and Hoyman and Faricy (2009).

Each of the demographics models found in Table 5.3 were tested for multicollinearity and the variance inflation factors for the variables did not indicate that any of the variables were highly collinear with each other. According to Fox (1991), a variance inflation factor score of 5.26 or greater indicates that there is too much multicollinearity. In the models for the percentage change in business establishments and the number of jobs, no outliers were identified. Each of the models was also tested for heteroskedasticity using the Brusch-Pagan/Cook-Weisberg test. There was some heteroskedasticity found in the business model; however, after correcting for it with robust standard errors which attempt to normally distribute the nonlinear error terms, the t-scores of the variables, in the models do not change in a significant manner. Therefore, since the correction method for dealing with heteroskedasticity does not alter the substantive findings of the variables the models without the robust standard errors are presented.

Analysis and Results for Alternative Demographics Models without Population and Unemployment

In this section of the results, the models are presented with the removal of the population and unemployment variables. These models provide an understanding as to why these variables are included in the remainder of the variables in the study. Table 5.4 provides an alternative perspective of the demographics variables without the population and unemployment variables. These alternative models are presented to illustrate how some factors individually are significant, and when combined with others, collectively, some factors can become interrelated to each other, thus impacting their significance.

The alternative demographics models in Table 5.4 illustrate the statistical relevance of including the independent variables population and unemployment in the final base demographics model. As illustrated in Model 5, for business establishments the model is slightly less significant without these variables. In Model 5 in Table 5.4 and Model 1 in Table 5.3, the major observation with the removal of unemployment and population is that the same variables from Model 1 remain significant. The independent variables White, median household income, Northeast, Midwest and market per capita all remain significant variables in Table 5.4 and in the same direction as in Table 5.3 and maintain the same support for the related hypothesis supporting Models 1-4.

Model 6, the average annual pay model without population and unemployment is a slightly more significant model in comparison to the full demographics model presented as Model 2 in Table 5.3. Interestingly in this model, without population and unemployment market per capita, income becomes a stronger significant variable here than in the full demographics model presented in Table 5.3.

Lastly, the jobs alternative model, Model 7, excluding population and unemployment is a slightly more significant model as indicated by its F statistic. Similarly, the same variables (median income, Midwest, and market per capita income) remain in the same direction and significant even with the removal of these variables. The major difference with this model is that the level of significance improves for the other variables identified as significant in model 3 without the presence of unemployment and population. Additionally, in the alternative demographics model, market per capita becomes positive and significant.

Overall, these alternative models provide an additional perspective of the impact that these factors have on each of the measures of economic growth and development.

Hypothesis 17 for median household income remains supported for all of the models. Additionally, the white percentage of a county Hypothesis 16 remains supported for predicting percentage changes in pay and business. These findings further illustrate that those counties with lower minority percentages experience more growth. Lastly, the market per capita income variable across Models 5-8 remains significant and thus provides further support for Hypothesis 23 that those counties with higher market per capita or disposable income have higher measures of economic growth and development. The models with population and unemployment are thus included to provide a comprehensive examination of factors that help explain the various economic growth and development trends as identified. These more specific variables can provide similar communities in their development of identifying appropriate economic development strategies to pursue.

For the following Tables 5.5-5.27, an analysis and discussion of the new variables that are introduced into the analysis which relate to each of the theoretical frameworks tested will be provided. A discussion of each individual demographic variable will be interpreted in a summary of the results presented in Chapter six.

Table 5.4 Results for Alternative Demographics Models Without Population and Unemployment

	Model 5 Business Establishments	Model 6 Average Annual Pay	Model 7 Number of Jobs	Model 8 Number of Jobs & Clay County
Constant	b 84.026 (6.23)	b 136.964 (13.53)	b 123.900 (7.72)	b 120.418 (8.02)
% White	.32289** (2.14)	-.05378 (-0.46)	.12334 (0.68)	.11070 (0.66)
Median Household Income	-.00110** (-2.67)	-.0006* (-1.95)	-.00167*** (-3.40)	-.00120** (-2.46)
Northeast	-11.636** (-2.61)	-4.177 (-1.28)	.-3.536 (-0.67)	-4.092 (-0.83)
Midwest	-9.151** (-2.55)	-5.269* (-2.01)	-12.801*** (-3.00)	-15.036*** (-3.70)
South	3.538 (0.75)	-4.235 (-1.15)	-6.852 (-1.23)	-6.944 (-1.33)
Market Per Capita Income	.00184*** (3.43)	.00105** (2.69)	.00167** (2.62)	.00113* (1.80)
Payne County, OK	-	21.264*** (3.09)	-	-
Clay County, SD	-	-	-	27.608** (2.64)
Adjusted R Square **F Statistic** **N=**	.3060 4.31* 46	.3020 3.78* 46	.2737 3.83* 46	.3703 4.78* 46
Unstandardized coefficients with t-scores in parenthesis reported.				

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for Research University Presence Models

The results in Table 5.5 represent the best specified full demographics model determined for this research with the inclusion of the research university dummy variable. According to Florida (2006, 2003, and 2002), research universities are key contributors to regional economic growth and development. Research universities possess the capacity and ability to generate innovation and thus economic prosperity for surrounding communities. The models in Table 5.5 below tested this theory.

The research university presence variable is positive and significant for the business establishments Model 10 and the number of jobs Models 12 as expected and stated in Hypothesis 15. Models 9 and 10 for business establishments, Model 11 for average annual pay and Model 12 for jobs show that counties with the presence of a research university are more likely to experience higher increases in the number of business establishments and jobs created.

The models in Table 5.5 were tested for multicollinearity and outliers. There were no variables identified as highly collinear with each other. However, the business establishment model did have the presence of an outlier. Specifically, Orangeburg County, South Carolina was identified as an outlier based on its Cooks D exceeding the critical value according to Fox (1991). Therefore, an additional model (Model 10 in Table 5.5) with the inclusion of a dummy variable for Orangeburg is created and presented in the models hereafter. The most interesting finding from this model with Orangeburg dummied (Model 10) is that research university presence then becomes positive and significant.

The findings in Models 10 and 12 provide support for Florida's (2006 and 2002) assertion that the presence of a research university in a community is a key contributor to a region's economic growth. The findings from this model also provide support for Miner et al.'s (2001) research which asserts that universities are one of the conditions that contribute to successful local economic development. Furthermore, this research confirms the findings of Goldstein and Drucker's (2005) research which found that universities have a significant contribution to a region's economic growth.

Table 5.5 Results for the Research University Presence Models

	Model 9 Business Establishments	Model 10 Business Establishments & Orangeburg County	Model 11 Average Annual Pay	Model 12 Number of Jobs
Constant	b 53.492 (2.62)	b 60.017 (2.99)	b 135.5105 (8.67)	b 109.868 (4.56)
% White	.35762** (2.35)	.18531 (1.06)	-.06332 (-0.51)	.10287 (0.57)
Median Household Income	-.00098** (-2.03)	-.00083* (-1.75)	-.00046 (-1.22)	-.00105* (-1.85)
Unemployment	2.656* (1.87)	2.675* (1.95)	.16144 (0.14)	.94524 (0.57)
Population	-.00005 (-0.62)	-4.46e-07 (-0.01)	-.00004 (-0.66)	-.00014 (-1.55)
Northeast	-10.605* (-1.96)	-12.056** (-2.28)	-2.723 (-0.65)	.92343 (0.14)
Midwest	-6.725* (-1.78)	-6.004 (-1.63)	-5.068* (-1.73)	-11.932** (-2.68)
South	6.277 (1.28)	3.658 (0.74)	-3.893 (-1.00)	-4.781 (-0.83)
Market Per Capita Income	.00240*** (3.47)	.00246*** (3.67)	.00095* (1.80)	.00014* (1.64)
Research University	4.224 (1.41)	5.402* (1.82)	1.176 (0.51)	6.820* (1.94)
Orangeburg County, SC	-	-19.550* (-1.84)	-	-
Payne County, OK	-	-	22.221*** (2.96)	-
Adjusted R Square **F Statistic** **N=**	.3265 3.42* 46	.3684 3.62* 46	.2543 2.53* 46	.3084 3.23* 46
Unstandardized coefficients with t-scores in parenthesis reported.				

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for Demographics, Research University Presence, and the Removal of Regions

The last set of demographics models in Table 5.6 exclude the regional variables Northeast, Midwest and South. These models are alternative control models that are only implemented in the Political Culture, Community Capital theory models that are

presented in Table 5.26. These models exclude the regional variables since the political culture and regional variables were found highly collinear with each other.

The results of the base demographics models with the removal of the regions variables yield the following results in Table 5.6. In Model 13, for business establishments, research university presence remains significant. Most importantly, this model's results support the hypothesis 15 that research universities matter in predicting the percentage change in business establishments. However, the findings for average annual pay in Model 14 do not provide support for hypothesis 15 that counties with a research university presence have higher measures of economic growth.

Model 14 is significant with an Adjusted R square of 0.2480, and the market per capita variable remains significant. Model 15 and 16 for the number of jobs increase in regards to its strength when comparing Models 12 and 15 in Table 5.5. These results are particularly interesting with the inclusion of the presence of research universities and the removal of the region variables. Furthermore, the models for both jobs and businesses show the research university variable as both a positive and significant variable in predicting these measures of economic growth and development, supporting the proposed hypothesis 15 as previously found in Table 5.5.

Table 5.6 Results for Demographics, Research University Presence, and the Removal of Regions

	Model 13 Business Establishments	Model l4 Average Annual Pay	Model 15 Number of Jobs	Model 16 Number of Jobs & Jefferson County
Constant	b 83.496 (5.39)	b 124.733 (10.58)	b 85.064 (4.49)	b 86.756 (4.83)
% White	-.06793 (-0.60)	-.04701 (-0.64)	.06698 (0.55)	.03275 (0.28)
Median Household Income	-.00835 (-1.66)	.00050 (-1.34)	-.00118** (-1.94)	-.00091 (-1.54)
Unemployment	2.818** (2.10)	.9629 (0.94)	2.756* (1.68)	2.472 (1.58)
Population	-.00007 (-1.09)	-.00005 (-1.04)	-.00009 (-1.14)	-.00016** (-2.04)
Market Per Capita Income	.00235*** (3.53)	.00119** (2.41)	.00219** (2.68)	.00197** (2.53)
Research University	5.669* (1.80)	1.676 (0.73)	7.842** (2.08)	9.782** (2.66)
Orangeburg County, SC	-22.711** (-2.16)	-	-	-
Payne County, SC	-	22.767*** (3.30)	-	-
Jefferson County, NY	-	-	-	26.349** (2.31)
Adjusted R Square **F Statistic** **N=**	0.2758 3.45* 46	.2480 3.12* 46	.1966 2.83* 46	.2767 3.46* 46
Unstandardized coefficients with t-scores in parenthesis reported.				

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for the Creative Class Models

The findings for the creative class theoretical framework are presented in Tables 5.8-5.10. To test Florida's (2002) creative class theory, the models presented in these tables employ the creative class variable which measures the number of individuals employed in a creative occupation and the original demographic set of variables.

According to Florida (2002), the presence of the creative class leads to more economic growth. The expectation is that those communities with more creative class individuals are more likely to have higher measures of economic growth. Florida's (2002) creative class theory distinguishes between two strata: the super creative and the core creative professionals. A listing of the occupations classified under each stratum is provided below in Table 5.7.

The super creative class consists of those individuals who fully engage in the creative process by producing new forms or designs. The core creative class professionals are those who work in knowledge-intensive industries. The individuals employed in both strata engage in creative intense problem solving and their jobs require a high degree of formal education (human capital). Thus, Florida (2002) asserts that regional economic growth is driven by their location decisions.

Table 5.7 Florida's Creative Class Occupations

Super Creative Class		Core Creative Class
Mathematical	Education	Management
Computer	Training	Business Operations
Architecture	Library	Financial Operations
Engineering	Arts	Legal
Life Science	Design	Healthcare
Physical Science	Entertainment	Technical
Social Science	Sports	High-Ends Sales & Sales Management
Media		

This section of the analysis is vital in determining if the two objectives of this research were achieved. The first objective was to test Florida's (2002) creative class theory and its application to include nonmetropolitan areas. Based upon the findings presented below in Table 5.8, this research supports and expands the scope of Florida's

research by specifically examining the creative class theory in nonmetropolitan areas. The creative class theory is statistically significant in the modified models for business establishments (Model 2) and number of jobs model (Model 6).

The second objective which seeks to provide empirical evidence of Florida's creative class theory specifically to university and non-university towns is also achieved as presented in Tables 5.8-5.10. Although the findings presented in Table 5.8 only provide marginal support for the first hypothesis presented in this study, these findings do present some interesting insight into understanding the best predictors of the economic growth and development of an area. Specifically, Table 5.8 illustrates that the presence of the creative class with the exclusion of some control variables, median household income and research university presence does lead to more businesses and jobs.

The findings in Table 5.8 show that with modifications to the original control set of variables, the creative class variable is positive and significant for the business establishments and number of jobs models. More specifically, these models provide support for the Hypothesis 1 that counties with more creative class individuals have higher measures of economic growth and development. Interestingly, however, the creative class variable is not significant until the median household income and research university presence variables are removed. Thus these findings illustrate that the demographics variables are stronger predicators in explaining economic growth trends in comparison to the creative class theory variable.

According to Florida (2002), the presence of the creative class leads to more economic growth, and the results in Table 5.8 confirm Florida's (2002) assertion. This research also provides support for the findings from McGranahan and Wojan's (2007) research which examines the impact that the creative class has on regional economic

growth. They found that the presence of the creative class leads to more regional economic growth for nonmetropolitan areas. Conversely, the findings in Table 5.8 challenge the works of Hoyman and Faricy (2009) who found that the creative class theory failed consistently across models in explaining job growth, growth in wages, and absolute levels of wages for cities.

Table 5.8 Results for the Creative Class Models

	Model 1 Business Establishments	Model 2 Business Establishments with Modifications	Model 3 Average Annual Pay	Model 4 Number of Jobs	Model 5 Number of Jobs & Jefferson County	Model 6 Number of Jobs with Modifications
Constant	b 65.410 (2.28)	b 34.270 (1.31)	b 127.978 (5.88)	b 107.197 (3.21)	b 124.167 (3.93)	b 82.263 (2.74)
% White	.181293 (1.02)	.16718 (0.94)	-.06357 (-0.51)	.10165 (0.56)	.12746 (0.75)	.05625 (0.31)
Median Household Income	-.00089 (-1.66)	-	-.00036 (-0.86)	-.00101 (-1.56)	-.00100 (-1.65)	-
Unemployment	2.637*(1.89)	2.163 (1.51)	.19707 (0.17)	.9653 (0.57)	.57944 (0.37)	-.06538 (-0.04)
Population	-3.11e-06 (-0.04)	4.35e-06 (0.05)	-.00003 (-0.51)	-.00013 (-1.47)	-.00022** (-2.43)	-.00015 (-1.66)
Northeast	-12.401** (-2.25)	-10.462* (-1.84)	-2.362 (-0.55)	1.075 (0.16)	2.452 (-0.39)	1.025 (0.15)
Midwest	-6.515 (-1.56)	-4.004 (-0.95)	-4.324 (-1.31)	-11.653** (-2.28)	-14.419***(-2.97)	-9.757* (-1.95)
South	3.151 (0.59)	5.699 (1.04)	-3.212 (-0.77)	-4.568 (-0.74)	-4.890 (-0.86)	-2.332 (-0.38)
Market Per Capita Income	.00256*** (3.26)	.00127** (2.35)	.00080 (1.30)	.00128 (1.36)	.00154 (1.75)	-.00014 (-0.22)
Research University	6.085 (1.54)	-	.23937 (0.08)	6.489 (1.43)	11.480**(2.47)	-
Total Creative Class Share	-11.759 (-0.27)	65.749** (2.34)	17.978 (0.50)	6.096 (0.12)	-44.007 (-0.85)	80.554** (2.40)
Orangeburg County, SC	-20.273* (-1.83)	-15.560 (-1.42)	-	-	-	-
Payne County, OK	-	-	21.630*** (2.82)	-	-	-
Jefferson County, NY	-	-	-	-	29.866** (2.59)	18.157 (1.59)
Adjusted R Square **F Statistic** **N=**	.3512 3.21* 46	.2925 3.07* 46	.2381 2.28* 46	.2890 2.83* 46	.3887 3.60* 46	.2713 2.86* 46
Unstandardized coefficients with t-scores in parenthesis reported.						

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table 5.9 provides the results of the core creative strata of Florida's (2002) creative class theory. When examining the results of the core creative strata of the creative class theory, this stratum remains positive and significant as a predicator in explaining economic growth trends for counties. The business establishment and number of jobs models found in Table 5.9 are statistically significant for the core creative class subset of the creative class theory. These findings show that counties with more core creative class individuals experienced higher increases in the number of business establishments and the number of jobs. These findings provide support for Florida's (2002) creative class theory which asserts that the presence of the creative class leads to more economic growth. Furthermore, as found in Table 5.9, the core creative class subcomponent of Florida's creative class theory is fully accepted as an explanation of the business establishments and number of jobs models as measurements of economic growth without the removal of any of the control variables.

Table 5.9 Results for the Core Creative Class Models

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
Constant	b 26708 (1.26)	b 125.907 (6.85)	b 74.796 (2.99)
% White	.13930 (0.88)	.07676 (-0.62)	.07372 (0.46)
Median Household Income	-.00051 (-1.17)	-.00036 (-0.95)	-.00054 (-1.03)
Unemployment	2.556** (2.07)	.13531 (0.12)	.67979 (0.46)
Population	.00002 (0.25)	-.00003 (-0.58)	-.00017** (-2.06)
Northeast	-13.334*** (-2.79)	-3.056 (-0.72)	-.1.832 (-0.32)
Midwest	-4.611 (-1.38)	-4.657 (-1.57)	-10.957*** (-2.76)
South	2.142 (0.48)	-4.347 (-1.11)	-5.176 (-1.00)
Market Per Capita Income	.00159** (2.39)	.00070 (1.20)	.00039 (0.49)
Research University	6.281** (2.34)	1.425 (0.62)	9.193*** (2.87)
Core Creative Class	164.930*** (3.04)	47.437 (1.00)	155.977** (2.35)
Orangeburg County, SC	-19.967** (-2.09)	-	-
Payne County, OK	-	22.456*** (2.99)	-
Jefferson County, NY	-	-	20.623* (2.00)
Adjusted R Square **F Statistic** **N=**	.4891 4.92* 46	.2541 2.39* 46	.4628 4.52* 46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

In Table 5.10 the results of the super creative strata of the creative class theory are shown. The super creative class results are unexpectedly negative and significant. The models for business establishments and jobs reveal that those counties with higher

percentages of super creative individuals experienced higher declines in business establishments and jobs.

These findings challenge Florida's (2002) assertion that regional economic growth is driven by the location decisions of the creative class. This unexpected result could be explained by the context in which this research examines the economic impact of the creative class. The fact that this research examines the impact of the super creative class in nonmetropolitan areas might provide insight since these occupations are not typically found in nonmetropolitan areas. Such findings should caution local public administrators in trying to adopt Florida's assertion without further evidence of support as presented here. Specifically this finding illustrate that further empirical examinations of the super creative stratum of creative class theory is needed for counties to determine its validity for their community.

Table 5.10 Results for the Super Creative Class Models

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
Constant	b 93.972 (4.33)	b 140.264 (7.65)	b 140.153 (6.00)
% White	.09417 (0.58)	-.07004 (-0.56)	.10728 (0.71)
Median Household Income	-.001278*** (-2.80)	-.00052 (-1.31)	-.00131** (-2.52)
Unemployment	2.273* (1.81)	.13178 (0.12)	.22183 (0.16)
Population	-.00002 (-0.24)	-.00005 (-0.75)	-.00026*** (-3.21)
Northeast	-17.337*** (-3.37)	-3.321 (-0.75)	-6.980 (-1.21)
Midwest	-11.339*** (-2.97)	-5.868* (-1.75)	-19.036*** (-4.37)
South	-3.595 (-0.70)	-4.940 (-1.11)	-10.185* (-1.90)
Market Per Capita Income	.00301*** (4.72)	.00103* (1.85)	.00174** (2.44)
Research University	13.999*** (3.50)	2.407 (0.72)	18.697*** (4.18)
Super Creative Class	-138.558*** (-2.90)	-20.997 (-0.51)	-160.648*** (-3.03)
Orangeburg County, SC	-28.592*** (-2.82)	-	-
Payne County, OK	-	23.149*** (2.97)	-
Jefferson County, NY	-	-	33.488*** 3.39
Adjusted R Square **F Statistic** **N=**	.4788 4.76* 46	.2382 2.28* 46	.5087 5.24* 46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for the Human Capital Models

The findings for the human capital theoretical framework are found below in Table 5.11. The models found in Table 5.11 are simply the original control models from Table 5.3 with the addition of the human capital variable. The findings from these

models reveal that the human capital variable is not initially significant across the three dependent variables. The human capital variable is not statistically significant until the median household income and research university presence variables are removed from the business establishments and number of jobs models. These findings illustrate that the median household income and research university presence variables appear to be better predictors of explaining increases in the percentage change trends for business establishments created and number of jobs created. Furthermore, these findings illustrate that for nonmetropolitan counties, the context in which a variable is examined can impact the relationship and significance that they have with other variables. Interestingly, however, the human capital variable is not significant for the average annual pay model even with the removal of variables.

The business establishments models suggest that as expected in hypothesis 2, counties with higher percentages of human capital (individuals with a college degree) experienced higher growth in the number of businesses created. The number of jobs model as expected in Hypothesis 2 shows that counties with higher percentages of human capital experienced higher growth in the number of jobs created.

These findings confirm Storper and Scott's (2009) research which asserts that economic growth trends can be best explained by patterns of highly educated people in a location. This research also confirms other human capital research which has proven that concentrations of highly educated individuals are significantly important to regional economic growth (Hoyman and Faricy, 2009, Ullman, 1958, Becker, 1964, Barron, et. al.1987). This research also provides support for Glaser's (1998) examination of the impact that the human capital assertion has on regions. His research confirms that locations with greater numbers of highly educated people have higher economic growth

trends. Furthermore, this research confirms the findings from Lucas' (1988) research of the human capital theory in which he found that cities with higher concentrations of human capital become engines of economic growth.

Table 5.11 Results for the Human Capital Models

	Model 1 Business Establishments	Model 2 Business Establishments with Modifications	Model 3 Average Annual Pay	Model 4 Number of Jobs	Model 5 Number of Jobs with Modifications
Constant	b 63.008 (3.00)	b 55.636 (2.62)	b 137.484 (8.50)	b 111.390 (4.86)	b 108.348 (4.48)
% White	.18456 (1.05)	.14098 (0.79)	-.05551 (-0.44)	.1.869 (0.88)	.04091 (0.23)
Median Household Income	-.00096* (-1.80)	-	-.00057 (-1.33)	-.00112* (-1.86)	-
Unemployment	2.553* (1.82)	2.361 (1.62)	.07524 (0.07)	.4165 (0.26)	.08510 (0.05)
Population	1.78e-06 (0.02)	-.00002 (-0.24)	-.00004 (-0.67)	-.00021** (-2.41)	-.00019* (-2.13)
Northeast	-13.984** (-2.20)	-7.906 (-1.33)	-4.110 (-0.84)	-5.925 (0.84)	3.835 (0.55)
Midwest	-7.311 (-1.67)	-3.702 (-0.87)	-6.19* (-1.75)	-15.848*** (-3.19)	-9.631* (-1.92)
South	2.431 (0.44)	5.772 (1.06)	-4.738 (-1.12)	-6.017 (-1.05)	-1.972 (-0.32)
Market Per Capita Income	.00278*** (3.11)	.00111** (2.16)	.00120* (1.73)	.00198* (2.01)	-.00033 (-0.53)
Research University	7.369* (1.60)	-	2.642 (0.76)	13.801** (2.67)	-
Human Capital	-.17953 (-0.56)	.41687** (2.39)	-.13978 (-0.57)	-.45605 (-1.28)	.49976** (2.42)
Orangeburg County, SC	-20.997* (-1.90)	-16.794 (-1.54)	-	-	-
Payne County, OK	-	-	22.505*** (2.96)	-	-
Jefferson County, NY				29.081** (2.69)	22.010* (1.96)
Adjusted R Square **F Statistic** **N=**	.3557 3.26* 46	.2964 3.11* 46	.2395 2.29* 46	.4043 3.78* 46	.2731 2.88* 46
Unstandardized coefficients with t-scores in parenthesis reported.					

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for the Social Capital Models

The regression results for the social capital theoretical framework are presented in Table 5.12. Overall, the social capital variable across the three dependent variables is not found significant when added to the original demographics models. However, as found in Models 2 and 4, the social capital variable is statistically significant for business establishments and the number of jobs when modifications are made to the original demographics models. These findings provide support for Hypothesis 3 that counties with more non-profits are more likely to have higher measures of economic growth. Specifically, the results reveal that counties with more non-profits have higher increases in the number of business establishments and jobs created. Interestingly, however, the social capital variable in the number of jobs model is not significant even with the exclusion of variables. In particular, the social capital variable is not significant until the unemployment, population, market per capita, and research university presence variables are removed from these models. Although the social capital variable is significant for Models 2 and 4 with modifications to the original base models, these modifications indicate that the other variables, unemployment, population, market per capita, and research university presence, are better predictors of economic growth trends for a county.

In conclusion, although the social capital variable is statistically significant for the business establishments and number of jobs models with significant modifications, the modified models only provide subtle support for the social capital theory. According to Putnam (1993), networks of local community based associations and organizations are essential for the economic growth of a community. Findings from Torsvik's (2000) examination of the social capital literature assert that empirical evidence has been found

to support the idea that civic based associations and organizations contribute to the economic growth and development of a community.

Table 5.12 Results for the Social Capital Models

	Model 1 Business Establishments	Model 2 Business Establishments with Modifications	Model 3 Average Annual Pay	Model 4 Average Annual Pay with Modifications	Model 5 Number of Jobs
Constant	b 60.0831 (2.94)	b 88.915 (5.65)	b 134.845 (8.44)	b 132.502 (12.27)	b 108.222 (4.80)
% White	.1871 (1.02)	.16098 (0.82)	-.06808 (-0.54)	-.06018 (-0.48)	.17512 (1.01)
Median Household Income	-.00083 (-1.65)	-.00003 (-0.07)	-.00042 (-1.08)	-.00005 (-0.19)	-.000098* (-1.75)
Unemployment	2.671* (1.91)	-	.14790 (0.13)	-	.59148 (0.38)
Population	-7.68e07 (-0.01)	-	-.00003 (-0.56)	-	-.00002** (-2.45)
Northeast	-12.106** (-2.18)	-7.669 (-1.54)	-2.455 (-0.56)	-1.927 (-0.55)	-3.221 (-0.52)
Midwest	-6.027 (-1.59)	-8.199 ** (-2.08)	-4.981 (-1.67)	-5.040* (-1.84)	-13.214*** (-3.15)
South	3.637 (0.72)	3.713 (0.72)	-3.530 (-0.86)	-2.126 (-0.54)	-4.424 (-0.81)
Market Per Capita Income	.00247*** (3.36)	-	.00087 (1.47)	-	.00157* (1.92)
Research University	5.431* (1.75)	-	.94857 (0.38)	-	10.099*** (2.87)
Social Capital	-29.195 (-0.04)	1291.27* (1.86)	222.101 (0.32)	1018.629* (1.92)	-1128.354 (-1.28)
Orangeburg County, SC	-19.521* (-1.81)	-16.614 (-1.52)	-	-	-
Payne County, OK	-	-	20.991** (2.46)	16.822** (2.16)	-
Jefferson County, NY	-	-	-	-	27.502** (2.59)
Adjusted R Square **F Statistic** **N=**	.3498 3.28* 46	.1872 2.48* 46	.2347 2.25* 46	.2431 3.06 46	.4046 3.78* 46
Unstandardized coefficients with t-scores in parenthesis reported.					

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for the Institutional Intellectual Models

In Table 5.13 results for the institutional intellectual capital theoretical framework are shown. As similarly found in the creative class, human capital, and social capital tables, the institutional intellectual capital variable is only a significant predictor in

explaining economic growth when some of the original demographics variables are removed. More specifically, the institutional intellectual capital variable is only found significant for the business establishments and number of jobs models, with modifications to the original set of demographic variables employed.

After reexamining the three theoretical perspectives previously discussed thus far, none of the theoretical premises are fully accepted in the context of this research. However, when the subcomponents of the creative class theory (e.g. super creative class and the creative class) are tested, they are both partially accepted across the dependent variables.

The findings from these models in Table 5.13 confirm that counties with higher densities of higher education institutions experienced higher business establishments and the number of jobs created growth trends as stated in Hypothesis 4.

The findings from these models provide support for Nahapeit and Ghoshal's (1998) research which explored the impact that densities of higher education institutions have on region's ability to attracted educated people. Their research reveals that regions with higher densities of higher education institutions gain more human capital which leads to more economic growth. The findings of this research also provide support for Hoyman and Faricy's (2009) research in which they found that clusters of universities correlated highly with economic growth.

Table 5.13 Results for the Institutional Intellectual Capital Models

	Model 1 Business Establishments	Model 2 Business Establishments with Modifications	Model 3 Average Annual Pay	Model 4 Number of Jobs	Model 5 Number of Jobs with Modifications
	b	b	b	b	b
Constant	60.523 (2.85)	57.438 (2.52)	134.910 (8.10)	111.626 (4.66)	102.920 (6.05)
% White	.18241 (1.01)	.14706 (0.80)	-.05902 (-0.45)	.07387 (0.42)	.11758 (0.64)
Median Household Income	-.00082* (-1.69)	-	-.00046 (-1.21)	-.00072 (-1.30)	-
Unemployment	2.648* (1.85)	1.984 (1.31)	.19118 (0.16)	.46493 (0.29)	-
Population	-7.21e-07 (-0.01)	-.00002 (-0.24)	-.00004 (-0.65)	-.00020 (-2.25)	-.00022** (-2.47)
Northeast	-11.950* (-2.17)	-14.229** (-2.43)	-2.852 (-0.65)	.08133 (0.01)	-3.656 (-0.53)
Midwest	-5.989 (-1.60)	-7.560* (-1.90)	-5.080* (-1.71)	-12.124*** (-2.88)	-14.231*** (-3.23)
South	3.619 (0.72)	2.916 (0.54)	-3.832 (-0.96)	-4.179 (-0.76)	-3.834 (-0.65)
Market Per Capita Income	.00245*** (3.53)	.00016** (2.66)	.00010* (1.77)	.00107 (1.37)	.00026 (0.49)
Research University	5.653 (1.34)	-	.89073 (0.27)	11.536** (2.41)	-
Institutional Intellectual Capital	-.03831 (-0.08)	.57161* (1.69)	.04234 (0.12)	-.41837 (-0.81)	.71416* (1.99)
Orangeburg County, SC	-19.440* (-1.79)	-22.159* (-1.92)	-	-	-
Payne County, OK	-	-	22.217** (2.92)	-	-
Jefferson County, NY	-	-	-	25.007** (2.31)	27.664** (2.33)
Adjusted R Square **F Statistic** **N=**	.3499 3.20* 46	.2449 2.62* 46	.2327 2.24* 46	.3877 3.59* 46	.2351 2.73* 46
Unstandardized coefficients with t-scores in parenthesis reported.					

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for the Community Capital Models

In this section, the regression results for each component of the community capital theory are found in Tables 5.14-5.26. The results for the quality of K-12 education system which includes graduation rates and dropout rates are found in Tables 5.14 and 5.15. A discussion of the analysis for both quality of education variables are provided simultaneously. Tables 5.16-5.18 provide the results for the outdoor recreation

activities variables which includes: number of parks (Table 5.16), number of trails (Table 5.17), and the total number of parks and trails combined as outdoor recreational activities (Table 5.18). In Table 5.19, the results from the natural amenities score variable are presented, and then in Table 5.20, the healthcare facilities variable results are presented. Table 5.21 provides the results for crime rates, and in Table 5.22, shows the results for median housing value. Tables 5.23 and 5.24 provide the results for the transportation variables, commute time to work, and travel distance to a commercial airport respectively. In Table 5.25, the political structure (form of government) results are shown. Lastly, in Table 5.26, the political culture variables are employed and the results are discussed. Following the analysis of the community capital theory variables, each statistically significant variable identified from the previous models is combined into a best specified full model, Table 5.27.

As illustrated below in Tables 5.14-5.26, there are variations that exist among each of the community capital variables across the dependent variables. Examining each component of the community capital theory into different models provides more comprehensive insight into understanding the significant factors that can aid communities in stimulating and maintaining their economies. Although some of the following expectations are rejected, this does not mean that they should be fully rejected as an explanation for economic growth measurements because the context (nonmetropolitan counties) in which these variables are examined could impact the results.

Analysis and Results for the Community Capital Models (Quality of K-12 Education: Tables 5.14-5.15)

The findings in Table 5.14 for the graduation rates variable and the dropout rates variable in Table 5.15 reveal that the quality of the K-12 education system factors are not

statistically significant. Neither of the quality of K-12 education variables is found important in explaining the economic growth trends across any of the three models in nonmetropolitan counties. The expectation for these variables in Hypothesis 5 was that the quality of the K-12 education system would impact the economic growth of a county. These results challenge the assertions made by McGranahan and Wojan (2007) which state that the quality of local schools may be a critical factor in determining businesses location decisions, increases in annual pay, and new jobs created. However, Hypothesis 5 could be accepted in the context of a metropolitan area and/or in a model with additional variables examined.

Table 5.14 Results for the Community Capital Models (Graduation Rates)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
	b	b	b
Constant	64.108	113.802	92.574
	(2.45)	(5.69)	(3.08)
% White	.19541	-.08403	-.10112
	(1.08)	(-0.70)	(0.59)
Median Household Income	-.00083*	-.00048	-.00077
	(-1.73)	(-1.31)	(-1.41)
Unemployment	2.528	.85759	1.180
	(1.67)	(0.74)	(0.69)
Population	-6.43E-07	-.00004	-.00020**
	(-0.01)	(-0.72)	(-2.33)
Northeast	-12.066**	-2.605	-1.012
	(-2.25)	(-0.63)	(-0.17)
Midwest	-6.000	-5.271*	-12.438***
	(-1.61)	(-1.84)	(-2.95)
South	3.339972	-1.743	-2.313
	(0.64)	(0.43)	(-0.40)
Market Per Capita Income	.00242***	.00115**	.00129
	(3.46)	(2.17)	(1.63)
Research University	5.413*	.94373	8.762**
	(1.80)	(0.42)	(2.56)
Graduation Rates	-.04045	.20488	.12072
	(-0.25)	(1.68)	(0.66)
Orangeburg County, SC	-19.018*	-	-
	(-1.73)		
Payne County, OK	-	20.973***	-
		(2.85)	
Jefferson County, NY	-	-	27.296**
			(2.51)
Adjusted R Square	.3510	.2911	.3836
F Statistic	3.21*	2.68*	3.55*
N=	46	46	46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table 5.15 Results the Community Capital Models (Dropout Rates)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
	b	b	b
Constant	59.796	134.208	102.158
	(2.93)	(8.49)	(4.52)
% White	.16470	-.08523	.06750
	(0.85)	(-0.67)	(0.39)
Median Household Income	-.00085*	-.00052	-.00090
	(-1.74)	(-1.35)	(-1.64)
Unemployment	2.884*	.60454	1.760
	(1.81)	(0.48)	(1.01)
Population	-3.10E-07	-.00004	-.00022**
	(-0.00)	(-0.74)	(-2.48)
Northeast	-11.790**	-1.968	.51280
	(-2.16)	(-0.45)	(0.08)
Midwest	-5.683	-4.475	-11.011**
	(-1.45)	(-1.47)	(-2.58)
South	4.017	-2.800	-.89330
	(0.77)	(-0.67)	(-0.15)
Market Per Capita Income	.00255***	.00114*	.00161*
	(3.34)	(1.95)	(1.93)
Research University	5.508*	1.251	9.126**
	(1.82)	(0.54)	(2.70)
Dropout Rates	-.07610	-.16175	-.37436
	(-0.27)	(-0.78)	(-1.26)
Orangeburg County, SC	-20.730*	-	-
	(-1.78)		
Payne County, OK	-	22.261***	-
		(2.95)	
Jefferson County, NY	-	-	28.118**
			(2.63)
Adjusted R Square	.3512	.2460	.4036
F Statistic	3.21*	2.33*	3.77*
N=	46	46	46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for the Community Capital Models (Outdoor Recreational Activities: Tables 5.16-5.18)

The findings for the outdoor recreational activities variables are found in Tables 5.16-5.18. The number of parks, number of trails and total number of parks and trails combined variables are statistically significant for various models. Specifically, the parks

variable is significant for the business establishments and number of jobs models and the trails and outdoor recreational variables are significant for the number of jobs models.

The results from Table 5.16 for number of parks indicates that counties with more parks had higher economic growth in regards to the number of business establishments created and the number of jobs created as expected in Hypothesis 6. The results from Table 5.17 for trails indicate that counties with more trails experienced higher growth in the number of jobs created, as expected. Lastly, the outdoor recreational activities variable was found significant for the number of jobs model, illustrating that counties with more parks and trails in total experienced higher growth in the number of jobs created as expected.

The findings from these various outdoor recreational activities variables provide support for Clark's (2004) assertion that quality of life amenities are vital factors in attracting people to an area. The findings from Florida's (2008) research are also supported in this research. According to Florida (2008) people rate the recreational offerings of their community including factors such as the physical environmental qualities such as parks, playgrounds and trails as vital when making location decisions.

Table 5.16 Results for the Community Capital Models (Parks)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
Constant	b 64.864 (3.31)	b 136.831 (8.51)	b 115.487 (5.51)
% White	.21591 (1.27)	-.06829 (-0.55)	.09904 (0.64)
Median Household Income	-.00100** (-2.15)	-.00048 (-1.26)	-.00098* (-1.96)
Unemployment	2.920** (2.19)	.22859 (0.20)	1.137 (0.79)
Population	-8.6E-05 (-0.99)	-.00005 (-0.79)	-.00032*** (-3.55)
Northeast	-8.112 (-1.46)	-1.954 (-0.43)	4.505 (0.77)
Midwest	-4.452 (-1.22)	-4.692 (-1.53)	-9.630** (-2.45)
South	6.245 (1.25)	-3.575 (-0.89)	-.38073 (-0.07)
Market Per Capita Income	.00224*** (3.40)	.00091 (1.68)	.00085 (1.19)
Research University	5.440* (1.90)	1.247 (0.54)	9.428*** (3.03)
Parks	.21672* (1.86)	.04321 (0.46)	.34342*** (2.82)
Orangeburg County, SC	-14.763 (-1.39)	-	-
Payne County, OK	-	22.717*** (2.96)	-
Jefferson County, NY			27.542 (2.83)
Adjusted R Square **F Statistic** **N=**	.4100 3.84* 46	.2371 2.28* 46	.4939 4.99* 46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table 5.17 Results for the Community Capital Models (Trails)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
Constant	b 61.894 (3.00)	b 139.216 (8.79)	B 115.464 (5.43)
% White	.18758 (1.06)	-.06950 (-0.57)	.11392 (0.73)
Median Household Income	-.00081* (-1.70)	-.00042 (-1.13)	-.00064 (-1.26)
Unemployment	2.629* (1.89)	.10689 (0.10)	.46715 (0.32)
Population	-1.2E-05 (-0.15)	-.00006 (-0.98)	-.00027*** (-3.19)
Northeast	-11.076* (-1.95)	-.90141 (-0.20)	3.673 (0.63)
Midwest	-5.260 (-1.32)	-3.636 (-1.16)	-8.328* (-2.01)
South	4.437 (0.85)	-2.680 (-0.67)	.66540 (0.13)
Market Per Capita Income	.00232*** (3.18)	.00070 (1.24)	.00040 (0.52)
Research University	5.447* (1.82)	1.309 (0.58)	9.574*** (3.04)
Trails	.02104 (0.52)	.03834 (1.21)	.11390** (2.64)
Orangeburg County, SC	-19.176* (-1.78)	-	-
Payne County, OK	-	23.023*** (3.08)	-
Jefferson County, NY			31.453*** (3.13)
Adjusted R Square **F Statistic** **N=**	.3549 3.25* 46	.2643 2.47* 46	.3546 3.47* 46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table 5.18 Results for the Community Capital Models (Outdoor Activities)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
	b	b	b
Constant	63.717	139.537	118.606
	(3.11)	(8.76)	(5.77)
% White	.19357	-.07206	.10818
	(1.11)	(-0.59)	(0.72)
Median Household Income	-.00083*	-.00044	-.00071
	(-1.76)	(-1.19)	(-1.46)
Unemployment	2.640*	.16559	.59711
	(1.92)	(-0.15)	(0.43)
Population	-3.2E-05	-.00007	-.00031***
	(-0.38)	(-1.06)	(-3.65)
Northeast	-9.909*	-.65542	5.440
	(-1.72)	(-0.14)	(0.95)
Midwest	-4.594	-3.610	-7.490*
	(-1.16)	(-1.14)	(-1.87)
South	5.280	-2.659	1.641
	(1.01)	(-0.66)	(0.32)
Market Per Capita Income	.00220***	.00072	.00030
	(3.06)	(1.27)	(0.40)
Research University	5.479*	1.338	9.767***
	(1.85)	(0.59)	(3.21)
Outdoor Activities	.03315	.03165	.11243***
	(0.96)	(1.17)	(3.19)
Orangeburg County, SC	-18.228*	-	-
	(-1.70)		
Payne County, OK	-	23.246***	-
		(3.09)	
Jefferson County, NY			31.820***
			(3.19)
Adjusted R Square	.3670	.2622	.5196
F Statistic	3.37*	2.45*	5.42*
N=	46	46	46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for the Community Capital Models (Quality of Life Factors: Tables 5.19-5.24)

Tables 5.19-5.24 below include various quality of life factors identified in the literature as vital in economic growth trends for a community.

The amenities variable in Table 5.19 is statistically significant for the average annual pay model as expected in hypothesis 7. This model provides support for McGranahan et al. (2011) research which explores the relationship between various physical and environmental factors. The findings of their research illustrate that individuals demonstrate strong preferences for natural amenities such as the landscape and climate factors encompassed in the natural amenities scale.

The findings in Table 5.20 for healthcare facilities are not significant for any of these models. These results challenge Florida's (2002) research, which indicated that healthcare facilities are a vital factor in attracting individuals to live in one area over another, and Hypothesis 8.

The findings from Table 5.21 for crime rates reveal that this factor is not a significant quality of life factor for any of the dependent variables employed in this study. These results challenge Florida's (2002) research, which indicated that safety is a vital factor in attracting individuals to live in one area over another, and do not provide support for Hypothesis 9.

The findings in Table 5.22 for median housing value reveal that this factor is a significant factor in predicting average annual pay trends of economic growth, as expected in Hypothesis 10. This model for housing value provides support for Florida's (2002) research which reveals that it is imperative for a community to have an attractive housing market in order to experience increases in the average annual pay in a county.

The last quality of life factors are related to transportation. More specifically Table 5.23 includes the commute time to work variable, and Table 5.24 examines the impact that distance to a commercial airport has on measures of economic growth. The findings for commute time illustrate that this variable is not significant in explaining

economic growth trends for Hypothesis 11. However, the findings in Table 5.24 reveal that airport distance is significant for explaining average annual pay economic growth trends. This finding illustrates that counties with a shorter travel distance to a commercial airport had higher average annual pay growth. This finding confirms Florida's (2002) premise that the ability to move easily within a community to other areas by airplane is a critical factor in explaining economic growth trends and Hypothesis 12.

In sum, the analysis of the community capital models provides some support for Florida's overall argument regarding the important role that the quality of life/place plays in making communities attractive for economic growth. Although the measures of crime and health care facilities are not significant, the measures of parks, trails, outdoor recreational activities, amenities, and commercial airport proximity confirm Florida's overall argument that the quality of life/place plays a significant role in generating economic prosperity for a community. However, the findings for housing value challenge his assertion that the housing value is a critical factor for the economic growth of a community. These factors which were tested are critical for communities' survival. Their significances illustrate that those communities with better quality of life standards are advantaged in attracting more businesses, having higher average annual pay for citizens, and increasing the number of jobs in a community.

Table 5.19 Results for the Community Capital Models (Amenities)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
	b	b	b
Constant	58.547	137.952	107.247
	(2.89)	(9.43)	(4.77)
% White	.21931	-.11989	.07636
	(1.22)	(-1.02)	(0.45)
Median Household Income	-.00087	-.00037	-.00071
	(-1.82)	(-1.05)	(-1.31)
Unemployment	2.915**	-0.34300	.33554
	(2.07)	(-0.32)	(0.21)
Population	-.00002	-.00001	-.00018*
	(-0.21)	(-0.18)	(-2.01)
Northeast	-14.837**	3.656	3.754
	(-2.35)	(0.78)	(0.53)
Midwest	-10.3097	4.345	-5.101
	(-1.61)	(0.93)	(-0.72)
South	2.208	-.47793	-.76868
	(0.42)	(-0.12)	(-0.13)
Market Per Capita Income	.00257***	.00070	.00097
	(3.74)	(1.38)	(1.25)
Research University	5.818*	.11909	8.028**
	(1.93)	(0.05)	(2.34)
Amenities	-.94811	2.083**	1.614
	(-0.82)	(2.48)	(1.25)
Orangeburg County, SC	-18.403*	-	-
	(-1.71)		
Payne County, OK	-	22.982***	-
		(3.28)	
Jefferson County, NY			26.810**
			(2.53)
Adjusted R Square	.3625	.3497	.4032
F Statistic	3.33*	3.20*	3.76*
N=	46	26	46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table 5.20 Results for the Community Capital Models (Healthcare Facilities)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
Constant	b 66.373 (3.11)	b 128.227 (7.60)	b 100.834 (4.05)
% White	.17866 (1.02)	-.02733 (-0.21)	.1311 (0.76)
Median Household Income	-.00079 (-1.66)	-.00053 (-1.39)	-.00079 (-1.43)
Unemployment	2.458* (1.76)	.27190 (0.24)	.87495 (0.54)
Population	-4.31e-06 (-0.06)	-.00003 (-0.56)	-.00020** (-2.30)
Northeast	-10.699* (-1.94)	-4.231 (-0.95)	-1.992 (-0.31)
Midwest	-6.058 (-1.64)	-5.257* (-1.79)	-12.381*** (-2.93)
South	3.078 (0.61)	-2.709 (-0.67)	-2.936 (-0.52)
Market Per Capita Income	.00221*** (3.04)	.00119** (2.07)	.00132 (1.59)
Research University	5.168* (1.73)	1.274 (0.56)	9.0252** (2.60)
Healthcare Facilities	-2.510 (-0.90)	2.444 (1.06)	1.588 (0.47)
Orangeburg County, SC	-17.882 (-1.65)	-	-
Payne County, OK	-	19.392** (2.44)	-
Jefferson County, NY			27.947** (2.46)
Adjusted R Square **F Statistic** **N=**	.3648 3.35* 46	.2570 2.41* 46	.3798 3.51* 46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table 5.21 Results for the Community Capital Models (Crime)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
	b	b	b
Constant	62.372 (2.81)	139.805 (7.79)	102.555 (4.02)
% White	.145340 (0.76)	-.08662 (-0.64)	.14069 (0.76)
Median Household Income	-.00110** (-2.06)	-.00040 (-0.92)	-.00110* (-1.75)
Unemployment	2.879* (2.00)	.04342 (-0.04)	1.099 (0.68)
Population	.00004 (0.42)	-.00004 (-0.53)	-.00017* (-1.72)
Northeast	-13.135** (-2.19)	-3.906 (-0.79)	-.72516 (-0.11)
Midwest	-4.436 (-1.06)	-6.115* (-1.82)	-9.940** (-2.12)
South	2.668 (0.52)	-3.709 (-0.91)	-4.021 (-0.72)
Market Per Capita Income	.00284*** (3.74)	.00092 (1.50)	.00527* (1.76)
Research University	5.057 (1.61)	1.055 (0.43)	7.984** (2.22)
Crime	-.00018 (-0.14)	-.00065 (-0.62)	.00056 (0.38)
Orangeburg County, SC	-21.376* (-1.93)	-	-
Payne County, OK	-	21.582** (2.74)	-
Jefferson County, NY	-	-	24.335** (2.21)
Adjusted R Square **F Statistic** **N=**	.3644 3.24* 44	.2303 2.17* 44	.3594 3.19* 44
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table 5.22 Results for the Community Capital Models (Housing Value)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
Constant	b 66.625 (3.23)	b 122.517 (8.47)	b 106.841 (4.48)
% White	.17274 (1.00)	-.01537 (-0.14)	.11224 (0.65)
Median Household Income	-.00105** (-2.08)	-.00007 (-0.20)	-.00082 (-1.40)
Unemployment	2.183 (1.54)	1.032 (1.00)	.65476 (0.40)
Population	-.00001 (-0.18)	-.00002 (-0.33)	-.00020** (-2.27)
Northeast	-6.020 (-0.84)	-13.783*** (-2.71)	.06971 (0.01)
Midwest	-1.871 (-0.38)	-12.828*** (-3.62)	-11.536* (-2.00)
South	7.233 (1.27)	-10.048** (-2.54)	-2.855 (-0.45)
Market Per Capita Income	.00198** (2.57)	.00182*** (3.36)	.00108 (1.21)
Research University	3.159 (0.91)	5.163** (2.17)	8.397** (2.11)
Housing Value	.00013 (1.23)	-.00024*** (-3.22)	.00003 (0.21)
Orangeburg County, SC	-18.335* (-1.73)	-	-
Payne County, OK	-	21.281*** (3.19)	-
Jefferson County, NY	-	-	26.358** (2.43)
Adjusted R Square **F Statistic** **N=**	.3775 3.48* 46	.4116 3.86* 46	.3765 3.47* 46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table 5.23 Results for the Community Capital Models (Commute Time to Work)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
Constant	b 61.748 (2.88)	b 144.589 (8.91)	b 104.267 (4.20)
% White	.18461 (1.04)	-.08667 (-0.72)	.12047 (0.70)
Median Household Income	-.00079 (-1.56)	-.00025 (-0.66)	-.00080 (-1.39)
Unemployment	2.724* (1.94)	.36635 (0.33)	.71840 (0.45)
Population	-1.90e06 (-0.02)	-.00004 (-0.65)	.-.00020** (-2.26)
Northeast	-11.663** (-2.09)	-1.161 (-0.27)	-1.325 (-0.21)
Midwest	-6.0934 (-1.63)	-5.373* (-1.90)	-12.316*** (-2.90)
South	3.887 (0.76)	-3.060 (-0.80)	-3.593 (-0.65)
Market Per Capita Income	.00241*** (3.42)	.00073 (1.37)	.00120 (1.50)
Research University	5.266* (1.73)	.68954 (0.31)	8.906** (2.53)
Commute Time to Work	-.11130 (-0.26)	-.52750 (-1.65)	.06616 (0.13)
Orangeburg County, SC	-18.962* (-1.72)	-	-
Payne County, OK	-	21.373*** (2.91)	-
Jefferson County, NY	-	-	26.712** (2.33)
Adjusted R Square **F Statistic** **N=**	.3511 3.21* 46	.2896 2.67* 46	.3760 3.47* 46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table 5.24 Results for the Community Capital Models (Airport Distance)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
	b	b	b
Constant	60.256	139.459	105.837
	(2.94)	(9.05)	(4.56)
% White	.18647	-.07951	.11685
	(1.05)	(-0.66)	(0.69)
Median Household Income	-.00082*	-.00032	-.00077
	(-1.69)	(-0.87)	(-1.39)
Unemployment	2.668*	.20315	.74613
	(1.91)	(0.19)	(0.47)
Population	-2.88e-06	-.00008	-.00020**
	(-0.04)	(-1.22)	(-2.22)
Northeast	-11.938**	-.86338	-.9416
	(-2.17)	(-0.20)	(-0.15)
Midwest	-5.991	-4.615	-12.326***
	(-1.60)	(-1.61)	(-2.91)
South	3.806	-2.603	-3.388
	(0.73)	(-0.67)	(-0.59)
Market Per Capita Income	.00245***	.00081	.00117
	(3.55)	(1.56)	(1.49)
Research University	5.387*	1.101	8.783**
	(1.79)	(0.49)	(2.54)
Airport Distance	-.00779	-.10447*	-.00866
	(-0.10)	(-1.70)	(-0.10)
Orangeburg County, SC	-19.444*	-	-
	(-1.79)		
Payne County, OK	-	25.794***	-
		(3.39)	
Jefferson County, NY	-	-	26.005**
			(2.36)
Adjusted R Square	.3500	.2924	.3759
F Statistic	3.20*	2.69*	3.46*
N=	46	46	46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for the Community Capital Models (Political Structure and Political Culture: Tables 5.25-5.26)

The findings for political structure (form of government) are not significant for any of the models. These findings challenge Hypothesis 13 that the form of government impacts economic growth trends in nonmetropolitan areas. These findings also challenge

Feiock et al. (2003) which explores the impact that the form of government impacts the economic growth trends of an area. However, Feiock et al. (2003) does not explore the implications that the form of government has on a county; their research only examines cities. Therefore, future research should seek to further clarity the difference that jurisdiction at the city versus the county level has on economic growth trends in nonmetropolitan areas.

The findings for political culture are also not significant for any of the models. These findings reject the expected relationship from Hypothesis 14 which asserts that the political culture of a county impacts economic growth. However, according to Hanson (1991), little research has been conducted that examines the specific relationship between political subcultures and economic development policies. Thus, it is important to note that although these findings also challenge the political culture application to nonmetropolitan areas, Elazar's (1984) research does not examine the application of the political cultures to nonmetropolitan areas and thus may be supported when examined in another context. Similarly, Hanson's (1991) assertions of the relationship between the moralistic political subculture and business attraction strategies may be supported in another context. However, since this theory has not been examined in a similar context, it is necessary in future research to further explore its application for counties in nonmetropolitan areas.

Table 5.25 Results for Community Capital Models (Political Structure)

	Model 1 Business Establishments & Orangeburg County	Model 2 Average Annual Pay & Payne County	Model 3 Number of Jobs
	b	b	b
Constant	57.022 (2.80)	138.966 (9.06)	101.735 (4.34)
% White	.23458 (1.31)	-.13398 (-1.06)	.17675 (0.95)
Median Household Income	-.00011** (-2.05)	-.00006 (-0.14)	-.00087 (-1.42)
Unemployment	3.386** (2.20)	-.49288 (-0.41)	1.409 (0.80)
Population	-5.21e-06 (-0.07)	-.00003 (-0.45)	-.00021** (-2.33)
Northeast	-11.626** (-2.17)	-3.614 (-0.88)	-.8612 (-0.14)
Midwest	-4.869 (-1.27)	-6.072** (-2.07)	-11.444** (-2.62)
South	4.807 (0.94)	-5.858 (-1.51)	-2.904 (-0.51)
Market Per Capita Income	.00289*** (3.76)	.00037 (0.64)	.00132 (1.49)
Research University	5.837* (1.87)	1.205 (0.53)	9.439** (2.67)
Council Elected Executive	-2.187 (-0.36)	-.51258 (-0.12)	-5.0768 (-0.76)
Commission	-5.267 (-1.13)	5.010 (1.49)	-4.471 (-0.86)
Orangeburg County, SC	-22.278* (-1.97)	-	-
Payne County, OK	-	21.772*** (2.97)	-
Jefferson County, NY	-	-	26.703** (2.44)
Adjusted R Square **F Statistic** **N=**	.3614 3.12* 46	.3044 2.64* 46	.3722 3.22* 46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table 5.26 Results for the Community Capital Models (Political Culture)

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
	b	b	b
Constant	64.955	130.941	105.464
	(2.91)	(8.83)	(4.66)
% White	.04465	-.10570	.01592
	(0.28)	(-1.16)	(0.12)
Median Household Income	-.00047	-.00055	-.00156**
	(-0.78)	(-1.24)	(-2.25)
Unemployment	3.070**	.91179	2.224
	(2.24)	(0.87)	(1.43)
Population	-.00010	-.00006	-.00011
	(-1.41)	(-1.13)	(-1.39)
Market Per Capita Income	.00208***	.00126**	.00236***
	(2.93)	(2.41)	(2.94)
Research University	6.592*	1.443	7.637*
	(2.00)	(0.59)	(1.99)
Individualistic	1.660	1.684	-6.285
	(0.46)	(0.64)	(-1.55)
Traditionalistic	6.125	-2.02	-7.075
	(0.17)	(-0.67)	(-1.42)
Orangeburg County, SC	-14.488	-	-
	(-1.13)		
Payne County, OK	-	24.790***	-
		(3.44)	
Jefferson County, NY	-	-	26.554**
			(2.33)
Adjusted R Square	.2637	.2329	.3010
F Statistic	2.79*	2.52*	3.15*
N=	46	46	46
Unstandardized coefficients with t-scores in parenthesis reported.			

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Analysis and Results for the Best Specified Models

The three models below in Table 5.27 have been constructed based upon the significant relationships previously identified between these variables in Tables 5.3-5.26. Some of the community capital variables that were not found significant in Tables 5.14-5.26 are included here because they appeared to be trending towards significant. It is important to note that the models in Table 5.27 are driven by their statistical significance

not their theoretical significance. In other words, these models should not discount the validity of findings of the individual models previously discussed. Therefore, the following conclusions can be drawn from each of these specific models.

Of the three best specified models presented, the model for percentage change in business establishments has an adjusted R square of 0. 5606 indicating that the model explains 56.06% of the variance. Additionally, this model further supports the findings from Table 5.6 and Goldstein and Drucker's (2006) Feldman and Desrochers's (2003), and McGranahan and Wojan's (2007) research that the presence of a research university is a positive and significant factor in explaining percentage change increases in business establishments. This model also provides support for Florida's (2002) assertion that the presence of the creative class leads to more economic growth, as similarly found in Table 5.9. More specifically, this model illustrates those counties with higher percentages of employed individuals in the core creative class occupation experienced higher increases in the number of business establishments.

Although the best specified business model in Table 5.27 produces different findings from Table 5.22, here they confirms support for the quality of life/place Hypothesis 10 regarding housing value. Specifically, this model driven by statistical importance further illustrates that those counties with a higher median housing value experienced higher increases in the number of business establishments. These findings provide support for Florida (2011) research and show that it is imperative for a community to have an attractive housing market. Interestingly, however, there is an unexpected negative but significant relationship between the percentage of a county's population over 25 with a bachelor's degree or higher and the number of business establishments. These findings do not support those in Table 5.9 or the findings from

Hoyman and Faricy (2009), Florida (2002), Mathur (1999), Lucas (1988) Berry and Glaester (2005), Koven and Lyons (2003), Gottlieb and Fogary (2003), and Gotez (1997). This finding may be the result of the time period of economic hardship examined. In other words, those counties that were wealthier and better educated may have experienced a deeper depression during this time period and may have been more directly impacted by the recession. This finding is vital to note because it illustrates that a model driven by statistical premises and not theoretical premises can result in unconventional findings contrary to the literature. Another explanation could be that these communities could have, over the time period, experienced more growth, but also during this time period, they were the areas that were more vulnerable to harm during the recession. In other words, the more human capital that a community has could lead to more growth typically, but during a period of economic hardship these areas have expanded so that it sets them up for greater decline. Additionally, this finding illustrates the need for further examination into the type of businesses that each of these counties house. For example, an area that once housed the largest economic facilitator for a community could have lost one large business during this time period and the results show that they grew the least despite their still sustainable economy.

Model 2 has an adjusted r square of .5736 which indicates that this model explains 57.36% of the variance. This model for average annual pay provides support for several of the community capital theory variables. However, this best specified model produces different results for graduation rates as found in Table 5.14. The results in Table 5.14 for average annual pay show that graduation rates were only trending towards significant. However, in this model the findings for graduation rates show that graduation rates are a positive and significant factor in explaining average annual pay

trends. These results illustrate that those counties with higher graduation rates had higher average annual pay during this time period when examined in a different context with different variables. This factor further illustrates the significant role that the community capital has in improving the economic development efforts of a community.

Additionally, this model for average annual pay illustrates the positive and significant relationship between percentage change increases in average annual pay and a county's natural amenity score, as similarly found in Table 5.19. This finding supports those from McGranahan and Wojan (2009), whose research focuses on the critical role that amenities have for nonmetropolitan areas in promoting their economic growth and development.

The average annual pay model, however, rejects the form of government Hypothesis 13 which states that those counties operating under the commission form of government in comparison to the council manger form will more likely have higher measures of economic development. These findings also challenge the findings in Table 5.25 in which the commission form of government was not significant, but the variable was trending towards being significant in the average annual pay model. One explanation for this finding may be that those communities operating under the commission form of government's growth may be driven by their desire to support those agendas which will lead to their reelection. Therefore, these public administrators may be more guided by the needs of the community overall.

Additionally, the following conclusions can be drawn from the average annual pay model. First, community capital factors such as the quality of the K-12 educational system can provide insight for local public administrators in their economic development initiatives. More specifically, those counties with higher graduation rates had higher

percentage change increases in average annual pay. This finding illustrates to local public administrators that they need to strengthen the quality of their education systems to improve their average annual pay. The average annual pay model findings also illustrate that the physical characteristics as captured in the natural amenities score for a county is also a critical factor in enhancing the economic growth and development efforts of a community, and it provides supports for McGranahan and Wojan's (2007) research. Interestingly this model reveals that as the housing value of a county decreases so does the percentage change in the average annual pay for a county. This finding challenges Florida's (2002) assertion that it is imperative for a community to have an attractive housing market to lead to increases in the average annual pay for a county. Lastly, this model illustrates that there is a positive and significant relationship between the commission form of government and average annual pay. This finding challenges Hypothesis 13 which states that communities operating under the council manager form of government in comparison to the council elected executive and commission form are more likely to experience higher measures of economic growth. Since this factor has not be previously examined in this context, the result illustrates that further examination of this variable is needed to aid communities in determining the impact that the form of government has for nonmetropolitan counties.

The third full model provides the best specified full model for the percentage change in the number of jobs. Model 3 has the highest adjusted R squared of 0.5860 indicated that this is a strong model, and that it explains 58.60% of the variance. This model provides support for the research university presence hypothesis as also found consistently in other models. This model for jobs also provides further support for the premise that quality of place factors such as natural amenities leads to increases in the

number of jobs for communities. As found in Table 5.10 for the super creative core of the creative class theory, this model also challenges Florida's (2002) assertion that the presence of the super creative core leads to more regional economic growth for an area.

In conclusion, there is much insight to be gained from the various models employed in this study. Providing both the individual and best specified models are critical in this study because both supply meaningful information to local public administrators. For example, county public administrators should first focus on the development of their market per capita income. In other words, in order for a county to attract more businesses and have higher average annual pay growth they need to focus on improving the amount of disposable income for their citizens. Although there were other factors that were are significant, this variable remained consistently positive across all models, as the strongest predictor in explaining economic growth trends. On the other hand, counties with lower median household incomes (an indicator of the wealth of a county) experienced an increase in the number of jobs. This finding should provide counties with lower average incomes some insight for sustaining their economies, specifically that wealthy counties are not the only communities positioned to gain more jobs for their citizens.

This research also reveals that the presence of a research university matters in terms of explaining the number of businesses and jobs that a county has. Counties that already have the presence of a research university should focus their efforts on utilizing the presence of the research university in their region to help them gain more business firms and more jobs for their jurisdiction. These counties should work to improve their future plans to include more collaborative efforts among the county administrators and

university officials so that the benefits of the presence of a research university are maximizing the potential for economic growth.

The findings from the creative class theory reveal that counties interesting attracting the creative class must note that they also need financial capital (disposable income) along with the presence of individuals employed in creative occupations to experience more economic growth in regards to more businesses.

Although hypotheses are rejected, examining them in these various contexts provides insight into the strategies that local public administrators can pursue. The overall objective of the various models is to aid local public administrators in identify the best strategy for their community to foster sustainable economic growth and development.

Table 5.27 Best Specified Full Model Results

	Model 1 Business Establishments	Model 2 Average Annual Pay	Model 3 Number of Jobs
Constant	48.098 (2.57)	118.794 (10.89)	143.638 (6.69)
% White	-	-.16006 (-1.62)	.10230 (0.74)
Median Household Income	-.00124 ** (-2.59)	.000263 (0.82)	-.00114** (-2.37)
Unemployment	1.519 (1.26)	-	.20594 (0.16)
Population	-	-	-.00034*** (-4.24)
Northeast	-9.243 ** (-2.61)	-6.301 (-1.36)	-.25588 (-0.08)
Midwest	-	-5.161 (-1.10)	-13.699*** (-3.07)
South	-	-5.490 (-1.43)	-4.602 (-0.86)
Research University	9.581 ** (2.65)	2.699 (1.40)	17.428*** (4.22)
Market Per Capita	.00182 **(2.49)	.00091** (2.36)	.00091 (1.26)
Core Creative Share	195.475*** (3.92)	-	-
Super Creative Share	-	-	-127.377** (-2.54)
Human Capital	-.58435* (-2.08)	-	-
Graduation Rates	-	.16940* (1.84)	-
Outdoor Recreation Activities	-	-	.09145** (2.71)
Amenities	-	1.500** (2.21)	-
Housing Value	.00020** (2.56)	-.00017 ** (-2.79)	-
Commission	-	4.642** (2.29)	-
Airport Distance	-	-.04745 (-1.02)	-
Orangeburg County, SC	-24.395*** (3.33)	-	-
Payne County, OK	-	21.404 *** (3.77)	-
Jefferson County, NY	-	-	36.542*** (4.00)
Adjusted R Square **F Statistic** **N**	.5606 7.38* 46	.5736 5.66* 46	.5860 6.31* 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

CHAPTER VI

CONCLUSION

The findings produced and discussed previously in Chapter five generally find support for and are mostly consistent with the research from Florida (2006 and 2002), McGranahan and Wojan (2007), Hoyman and Faricy (2009), Ullman (1958), Storper and Scott (2009), Becker (1964), Barron et al. (1987), Glaser (1998), Mathur (1999), Lucas (1988), Berry and Glaester (2005), Gottlieb and Fogary (2003), Gotez (1997), Putnam (1993), and Clark (2004). However, this study is unique because it identifies and presents an additional theoretical framework to the economic growth and development literature for communities. Specifically, the community capital theoretical perspective is developed and employed to provide a more multi-dimensional and comprehensive examination of the factors that can be identified in aiding local public administrators better understand what impacts the economic growth and development of an area in a similar context.

Summary Analysis of the Findings

According to the regression models in Chapter five, this study does produce some different findings in comparison to the Hoyman and Faricy (2009) examination of the creative class. Hoyman and Faricy (2009) found that the creative class failed consistently across their measurements for economic growth. Interestingly, however, the creative class is supported for business establishments and the number of jobs models with modifications to the control variables. Additionally, in this research when the creative

class share is classified into two categories Florida examines, the core creative share occupations variable is significant for both business establishments and the number of jobs with modifications to the control variables. However, contrary to Florida's (2002) findings, when the creative class's super creative occupations are examined on their own, there is a significant but negative relationship for the business establishments and number of jobs models.

Also in comparison to Hoyman and Faricy's (2009) research where they found human capital to be significant across their models, this variable was not found as a significant predictor of any of the models until median household income and research university presence were removed from the business establishments and number of jobs models. These results are interesting for this particular variable considering that this factor has typically been found to be a strong and consistent predictor of economic growth and development in other research. Social capital theory was only found significant with the removal of the unemployment, population, market per capita income, and research university presence control variables. Similarly, institutional intellectual capital was also found significant and positively correlated but only with the removal of median household income, and removal of research university presence for business establishments, and the removal of median household income, unemployment and research university presence for the number of jobs.

On the other hand, for McGranahan and Wojan's (2009) research which reveals that employment in creative occupations is positively related with economic growth and development factors there was only marginal support for this theory in the study. However, as similarly identified in this research, nonmetropolitan areas do possess other factors which they identified as explanations for improving the economic growth of an

area. Specifically McGranahan and Wojan's (2009) conclusions and those presented here in this study support the premise that outdoor amenities are vital contributors to the economic growth and development for an area.

Although the creative class, human capital, social capital, and institutional intellectual capital theories examined here were not supported in their entirety, such conclusions do not call for the full rejection of these perspectives as strategies for sustaining the economic growth and development efforts of a community. In other words, just because the significance of these variables was contingent upon the removal of some control variable, such findings should not discount their overall value and validity as predictors of measurements of economic growth. These findings simply emphasize the assertion that there are multiple applications for these theories among different types of communities.

Table 6.1-6.3 provides a summary of the results for each dependent variable and the independent variables. For each model, the results from each variable are provided including the total number of times the variable was tested, how many times it was positive and significant, how many times it was negative and significant, and the expected relationship hypothesized.

Summary Analysis for the Theoretical Frameworks for all Models

The creative class variable was tested a total of five times: twice each in the business establishments and number of jobs models and once in the average annual pay model. The creative class variable was found significant twice, once for the business establishments and once for the number of jobs model, and both significant findings are in the expected positive direction. These findings for the creative class variable provide

marginal support for Florida's (2002) assertion that the presence of the creative class leads to more economic growth. Similarly, when the creative class variable is examined by its two subsets, the core creative subset of the creative class theory, identical outcomes are found to those described for the creative class variable. These findings further show that the core creative class subset is a strong determinant in predicting business establishments growth and job growth for a community. However, neither the combined creative class nor the core creative class is related to average annual pay changes during the time period under study. Therefore, higher concentrations of creative class and core creative class individuals do not lead to higher growth in pay for a community, but they do lead to more businesses and jobs.

The human capital variable was tested a total of five times, twice each in the business establishments and number of jobs models, and once in the average annual pay model. Human capital was found significant twice, once for the business establishments and once for the number jobs models, and both significant findings are in the expected positive direction. These findings for human capital provide marginal support for the hypothesis that regions with more educated individuals grow more in regards to businesses and jobs. However, this research shows that human capital is not a strong determinant in predicting average annual pay changes during the time period under study. However, these findings provide marginal support for the assertion that economic growth trends can be best explained by patterns of highly educated people in a location (Storper and Scott, 2009). This research also confirms other human capital research which has proven that concentrations of highly educated individuals are significantly important to regional economic growth (Hoyman and Faricy, 2009, Ullman, 1958, Becker 1964, Barron et al., 1987). The findings in this study also support Glaser's (1998) examination

of the impact that the human capital assertion has on regions, an examination which asserts that locations with greater numbers of highly educated people have higher economic growth trends. Furthermore, this research confirms the findings from Lucas's (1988) research of the human capital theory in which he found that cities with higher concentrations of human capital become engines of economic growth.

The social capital variable was tested a total of five times: twice each for the business establishments and average annual pay models and once in the number of jobs model. Social capital was found significant in the expected positive direction twice: once in the business establishments and once in the average annual pay models. These findings for the social capital variable provide marginal support for Putnam's (1993) research which asserts that concentrations of civic based organizations lead to more economic growth.

The institutional intellectual capital variable was tested was tested a total of five times: twice in the business establishments and number of jobs models and once in the average annual pay model. Institutional intellectual capital was found significant twice: once in the business establishments model and once in the number of jobs models. Both significant findings are in the expected positive direction. The findings from this expected relationship provide marginal support for Nahapeit and Ghoshal's (1998) research which reveals that regions with higher densities of higher education institutions have increases in human capital which leads to more economic growth. These findings also provide marginal support for Hoyman and Faricy's (2009) research in which they found that clusters of universities correlated highly with economic growth.

Lastly, there were 15 community capital variables tested. The quality of K-12 education variables includes graduation rates and dropout rates. The graduation rates

variable was tested four times and found significant once in the expected positive direction. The results for graduation rates show that in the average annual pay model graduation rates are a strong indicator of economic growth. However, the dropout rates variable was tested once in each model and was not found significant in any of the models.

There were three outdoor recreational activities variables employed in this study. The parks variable was tested three times and was found significant once in the expected positive direction for the business establishments model, and twice in the number of jobs models. The trails variable was tested three times and was only found significant in the positive direction for the number of jobs model. The outdoor recreation activities variable which measures both the number of parks and trails collectively was tested four times and was found significant in the expected positive direction twice in the number of jobs model. The community capital variables for parks, trails and outdoor recreation activities provide the following insight for local public administrators. The results from these community capital variables confirm support for Florida's (2008) research which found that people rate the recreational offerings of their community as vital in making location decisions, specifically he found that people rate the physical environmental qualities such as parks, playgrounds and trails as important when making location decisions and this research supports that finding.

The natural amenities scale variable was tested four times and was found positive in the expected relationship twice for the average annual pay model. This finding provides strong support for the argument that natural amenities lead to more economic growth as found by McGranahan et al. (2011).

The healthcare, crime rates, and commute time to work variables were each tested three times, once each in the business establishments, average annual pay, and number of jobs models. However, these variables were not found significant in any of the models and thus, these results show that these factors are not significant determinants in explaining economic growth.

However, the housing value from the community capital theory was tested five times and was unexpectedly found negative and significant in the average annual pay models, but positive and significant in the business establishments models. The unexpected negative and significant findings in the average annual pay models challenge Florida's (2002) assertion that an attractive housing market is critical for economic growth, but the expected positive and significant findings in the business establishments models provide support for it.

Airport distance was tested four time: once each in the business establishments and number of jobs models, and twice in the average annual pay models. However, airport distance was only found significant once in the expected negative direction, in the average annual pay models. This finding does provide partial support for the Hypothesis 12 which states that transportation factors are critical for economic growth and Florida's work examining critical quality of life factors (2002).

The political structure variables include the council elected executive and the commission forms of government. The council elected executive variable was tested three times, once in each model, and was not found significant in any model. However, the commission form of government was tested five times and was unexpectedly found positive and significant twice in the average annual pay models. Thus, this research finding challenges the assertion of Hypothesis 13 that counties operating under the

commission form of government in comparison to the council manager form would have higher measures of economic growth.

Lastly, the political culture variables: the individualistic and traditionalistic political subcultures, were tested three times each, once in each model, and were not found significant. These findings challenge Hypothesis 14 and illustrate that the political culture of a county is not supported as a predictor in explaining economic growth trends for a county. This finding, however, does not discredit the works of Elazar's (1984) but it illustrates that this typology is not supported in the nonmetropolitan county context as examined here. Furthermore, according to Hanson (1991), little research has been conducted that examines the specific relationship between political subcultures and economic development policies and strategies pursued.

Summary Analysis for the Business Establishments Models

In Table 6.1 for business establishments, the White % variable was found significant 3 times and was tested 29 times for business establishments. Of the 3 times that the White % variable was found significant, is was found significant 3 times in the expected positive direction. These findings illustrate that the White % of a county is a weak determinant of the business establishments created economic growth of a county. Additionally, it is important to note that race/ethnicity was tested by including several other categories other than White only. However, this variable was not an important factor in explaining economic growth trends regardless as to which definitional category was employed in the study.

Median household income was tested 26 times for the business establishments model and this variable was found significant 16 times in the expected negative direction.

The findings for this variable illustrate that the median household income of a county is a strong predicator in explaining business establishments growth trends.

The unemployment variable was tested 27 times and was found positive and significant 21 times. This finding challenges the hypothesis proposed in this study; however, it illustrates that high unemployment rates are a very strong predicator in explaining business establishments growth trends.

Population was tested 27 times for the business establishment model and this variable was not found significant. This finding illustrates that population is not a factor that counties should be concerned about regarding their strategies to gain more business establishments.

The Northeast regional variable was tested 27 times and was found significant and negative 23 times, and it was not found positive and significant. The findings from this variable in the expected negative direction illustrate that counties in the Northeast are more likely to experience higher declines in terms of the number of business establishments. This variable is a strong predicator in explaining business establishment trends.

The Midwest regional variable was tested 26 times and was only found significant 6 times in the expected negative direction. The findings for this variable illustrate this regional variable is a weak indicator for understanding business establishments trends.

The South regional variable was tested 27 times for the business establishment model, and this variable was not found significant for any of the models. Thus the South is not a statistically significant factor that counties need to consider when developing their economic development strategies for business establishments.

Market per capita income, an indicator of the quality and pay of jobs in a community, was tested 28 times. This variable was found positive and significant 28 times as expected. This finding illustrates that market per capita income is a very strong indicator of a community's ability to attract new business establishments.

The presence of a research university was tested 24 times. This variable was found significant 18 times in the expected positive direction. The results for research university and business establishments show that the presence of a research university is a strong predicator in understanding business establishments growth trends for a community.

In sum, the results for business establishments show that the strongest predictor in explaining economic growth trends is the market per capita income of a community. This finding illustrates that in order for nonmetropolitan counties to grow, they must have a high market per capita income. The next best indicator for understanding economic growth trends of a community is the unemployment rate of a county. This finding illustrates that those counties with higher unemployment rates are those which are more likely to have higher business establishment growth. This finding should be encouraging for local communities because it illustrates that those suffering during this period of economic hardship can still successfully increase the number of businesses locating to their jurisdiction. Lastly, the presence of a research university remained a positive and significant factor in understanding economic growth trends for a community. This finding illustrates, that those communities with the presence of a research university are advantaged in that they are more likely to have more business establishments locate in their community.

Table 6.1 Summary Results for Business Establishments

Independent Variables	Total # of Times Tested	# of Times Negative & Significant	# of Times Positive & Significant	Expected Relationship
% White	29	0	3	+
Median Household Income	26	16	0	-
Unemployment	27	0	21	-
Population	27	0	0	+
Northeast	27	23	0	-
Midwest	26	6	0	-
South	27	0	0	+
Market Per Capita Income	28	0	28	+
Research University	24	0	18	+
Creative Class	2	0	1	+
Core Creative Class	2	0	2	+
Super Core Creative	1	1	0	+
Human Capital	3	1	1	+
Social Capital	2	0	1	+
Intellectual Capital	2	0	1	+
Graduation Rates	1	0	0	+
Dropout Rates	1	0	0	+
Parks	1	0	1	-
Trails	1	0	0	+
Outdoor Recreation Activities	1	0	0	+
Amenities	1	0	0	+
Healthcare	1	0	0	+
Crime	1	0	0	-
Housing Value	2	0	1	+
Commute Time	1	0	0	-
Airport Distance	1	0	0	-
Council-Elected	1	0	0	-
Commission	1	0	0	-
Individualistic	1	0	0	-
Traditionalistic	1	0	0	-

Summary Analysis for the Average Annual Pay Models

The summary results for the average annual pay models are found in Table 6.2. The White %, unemployment, and population variables were not found significant across any of the average annual pay models. The findings for each of these variables show that

these factors are not statistically significant predictor of the average annual pay for a county.

However, the regional variable Midwest was tested 25 times and was found significant and negative, as hypothesized, 14 times. This finding provides moderately strong support for the assertion that counties in the Midwest are more likely to have lower average annual pay in comparison to counties in the West.

The findings for market per capita income also provide moderately strong support for the hypothesis that counties with higher market per capita income are more likely to have higher measures of economic growth. This variable was found positive and significant 12 times and was tested 25 times. The results for this variable show that counties with better quality (paying) jobs already existing in their jurisdiction were more likely to have higher average annual pay.

The findings for median household income show that this variable is a weak indicator for explaining average annual pay trends. Median household income was tested 26 times and was significant 2 times in the negative direction. Similarly, the Northeast was tested 25 times and was found significant 1 time in the negative direction. The South was also tested 25 times and was only found significant 1 time with a negative relationship to average annual pay. These findings illustrate that there is very weak support for these variables as predictors of average annual pay trends. Research university presence was tested 22 times and was only found to have a positive and significant relationship with average annual pay trends for one model. This result illustrates that the presence of a research university is not a critical factor necessary for predicting average annual pay trends.

Table 6.2 Summary Results for Average Annual Pay

Independent Variables	Total # of Times Tested	# of Times Negative & Significant	# of Times Positive & Significant	Expected Relationship
% White	26	0	0	+
Median Household Income	26	2	0	-
Unemployment	23	0	0	-
Population	23	0	0	+
Northeast	25	1	0	-
Midwest	25	14	0	-
South	25	1	0	+
Market Per Capita Income	25	0	12	+
Research University	22	0	1	+
Creative Class	1	0	0	+
Core Creative Class	1	0	0	+
Super Core Creative	1	0	0	+
Human Capital	1	0	0	+
Social Capital	2	0	1	+
Intellectual Capital	1	0	0	+
Graduation Rates	2	0	2	+
Dropout Rates	1	0	0	+
Parks	1	0	0	-
Trails	1	0	0	+
Outdoor Recreation Activities	1	0	0	+
Amenities	2	0	2	+
Healthcare	1	0	0	+
Crime	1	0	0	-
Housing Value	2	2	0	+
Commute Time	1	0	0	-
Airport Distance	2	1	0	-
Council-Elected	1	0	0	-
Commission	2	0	1	-
Individualistic	1	0	0	-
Traditionalistic	1	0	0	-

Summary Analysis for the Number of Jobs Models

The following conclusions can be drawn from Table 6.3 for number of jobs and the independent variables. First, several variables including White %, Northeast, social capital, graduation rates, dropout rates, amenities, healthcare, crime, housing value,

commute time, airport distance, the council elected and commission form of government, and both the individualistic and traditionalistic form of government were tested and not found significant across the number of jobs models. Secondly, of the independent variables tested for number of jobs, research university presence, population and the Midwest regional variable were identified as the strongest predicators of explaining number of jobs economic growth trends. Research university presence was tested 24 times and was found positively significant 22 times. This finding provides support for the assertion that the presence of a research university leads to more economic growth for a community.

Population was employed in 29 models and was found negatively significant for 20 models. This unexpected relationship rejects the hypothesis proposed in this study. However, these results provide interesting insight for nonmetropolitan counties by illustrating that smaller counties are more likely to experience higher economic growth in terms of the number of jobs. This finding shows that smaller counties possess an advantage in attracting businesses into their jurisdiction. The findings for the Midwest regional variable are consistent with Stoper and Scott (2009) who found that communities in the Midwest experienced periods of stagnated economic growth. These findings provide further support for Hoyman and Faricy's (2009) research in which they found that the Midwest lost jobs during their time period of examination. The market per capita income variable was also identified as a strong predicator for the number of jobs trends. Market per capita income was tested 30 times and was found significant 12 times in the expected positive direction. This finding provides further support for the hypothesis that the quality of existing jobs as reflective in the market per capita income of a county is strong indicator of the number of jobs for a county.

The summary results for the number of jobs also show that there is weak support for the unemployment variable as a predicator for number of job trends. This variable was tested 27 times and was only found significant for 1 model. The South regional variable was tested 28 times and was only found significant for 1 model in the unexpected negative direction. This finding shows that the South is a weak factor for understanding number of jobs trends.

Table 6.3 Summary Results for Number of Jobs

Independent Variables	Total # of Times Tested	# of Times Negative & Significant	# of Times Positive & Significant	Expected Relationship
% White	30	0	0	+
Median Household Income	27	12	0	-
Unemployment	27	0	1	-
Population	29	20	0	+
Northeast	28	0	0	-
Midwest	28	24		-
South	28	1	0	+
Market Per Capita Income	30	0	12	+
Research University	24	0	22	+
Creative Class	2	0	1	+
Core Creative Class	1	0	1	+
Super Core Creative	2	2	0	+
Human Capital	2	0	1	+
Social Capital	1	0	0	+
Intellectual Capital	2	0	1	+
Graduation Rates	1	0	0	+
Dropout Rates	1	0	0	-
Parks	1	0	1	+
Trails	1	0	1	+
Outdoor Recreation Activities	2	0	2	+
Amenities	1	0	0	+
Healthcare	1	0	0	+
Crime	1	0	0	-
Housing Value	1	0	0	+
Commute Time	1	0	0	-
Airport Distance	1	0	0	-
Council-Elected	1	0	0	-
Commission	1	0	0	-
Individualistic	1	0	0	-
Traditionalistic	1	0	0	-

Analysis of the Research Questions

The first question that this research sought to answer was if Florida's creative class theory can be applied to nonmetropolitan areas. In this study, the creative class theory was found statistically significant in the modified models for business

establishments and number of jobs. The findings illustrate that there is subtle support for Florida's creative class theory. Furthermore, this research shows that the core creative subset of the creative class theory is strongly supported across the business establishments and number of jobs models.

The second question that this research tested was if the creative class theory can be applied to nonmetropolitan areas, what are the other factors that foreshadow economic growth? The results of this study show that for the business establishments model, low median household incomes, high unemployment rates, high market per capita incomes, the presence of a research university, and location are the factors that foreshadow business establishments economic growth trends for a community. When examining the average annual pay model, low median household income, location, and high market per capita incomes foreshadow average annual pay economic growth trends. Lastly, across the number of jobs models, the factors that foreshadow economic growth include low median household incomes, low populations, location matters, high market per capita income, and the presence of a research university are individually vital.

The third question that this research sought to address was how Florida's creative class theory compares against other theories. The findings in Tables 6.1-6.3 show that for explaining business establishments economic growth trends, the creative class performs similarly to the human capital, social capital, institutional intellectual capital, and community capital theoretical frameworks as predictor of economic growth. The only variable that was fully accepted was the core creative subset of the creative class theory. The other theories, including the total creative class, only perform as strong indicators of business establishment with the removal of several demographic variables. The findings below in Table 6.2 illustrate that for average annual pay, the creative class,

human capital, and intellectual capital theory failed consistently. The one theoretical framework that outperforms these theories is social capital which was only significant with the removal of other variables. Lastly, for the number of jobs models, the creative class does not outperform any of the other theoretical frameworks. Although the variables for each theoretical framework are found statistically significant, it is only when other variables are removed for each that they are then found significant. Thus, in sum it can be concluded that there is validity found in each theoretical framework as a predicator of economic growth; however, the most important lesson that local public administrators should note is that the context in which their community exist is what matters the most in terms of their future economic growth trends.

Policy Implications for Nonmetropolitan Counties

In conclusion, there are two paths that can be pursued by local public administrators to sustain their economies. The first path is for those communities with access to higher education institutions. One of the recurring themes found from the results of this study is the important role that higher education has on improving the economic prosperity of a community. Therefore, one recommendation for local public administrators with access to higher education institutions is to focus their efforts on improving the advanced (post secondary) education of their workforce. The findings of this study which examined a total of twenty three communities with a research university presence and twenty three towns without a research university presence illustrate the positive impact that a university has on the economic growth of a community. Specifically, the findings of this study consistently show across the business establishments and number of jobs models that the presence of a research university

matters in explaining economic growth trends in nonmetropolitan areas. The research university presence results also illustrate the important roles that higher education and knowledge have in today's economy. Additionally, the creative class, human capital, and intellectual institutional capital theoretical frameworks all focus on higher education. Therefore, one recommendation for local public administrators is to focus their efforts on enhancing the quality of their K-12 education system and access to higher education for their citizens.

The second path is for those communities not equipped with higher education institutions. The recommendation for these communities is that they should focus their efforts on improving the quality of life features which were found positively significant as predictors for economic growth trends. Local public administrators from these communities should direct their economic development strategies towards creating more green space for parks and trails since these factors can be easily enhanced. By focusing on those factors identified in Chapter 5 as significant predicators of economic growth and development of an area, all nonmetropolitan areas can improve their overall opportunities for advancing in today's new economy.

Additionally, the findings from McGranahan and Wojan (2009) and this study support the idea that local public administrators should focus their efforts on enhancing their outdoor amenities. Particularly, such strategies can become of particular interest to those communities without a research university or even those with one. Such findings illustrate that local public administrators should focus on increasing and enhancing their community as a whole. This approach involves enhancing the outdoor recreational opportunities which were found to play a vital role in improving a nonmetropolitan county's economic growth and development efforts.

Therefore, in today's economy, local public administrators should seek to increase the attractiveness of their community by enhancing their community as a place to live, first and foremost. The findings of this study illustrate that the direction of economic development strategies vary by community; however, overall the findings of this study show that it is in the best interest of communities to focus their efforts on the third wave strategies of economic development. The third wave suggests that local public administrators focus their attention on creating an environment that is conducive for economic growth. Thus focusing on creating an environment that enhances the quality of life will provide communities with sustainable growth that does not focus solely on the attraction of businesses and jobs but on an overall enhanced community for citizens to live in. Furthermore, by focusing their efforts on such strategies of enhancing the quality of their community overall, such efforts will result in improvements in the community advancing in today's both knowledge- based and global economy.

Policy Implications for Public Policy and Administration

This research explored the relationship between several theoretical frameworks and various measures of economic growth and development. The overall objective of this research was to determine if empirical evidence for Florida's (2002) creative class theory could be found in nonmetropolitan areas and it sought to determine how this theoretical premise compared to other dominant economic growth theories. Specifically, this research explored the relationship between the creative class theory in comparison to the human capital, social capital, institutional intellectual capital, and community capital dominant economic growth and development theories.

An examination of the most recent economically distressed time period, from 2008-2010, in America's history characterized by high poverty and unemployment rates is intended to provide local public administrators with empirical evidence that they can utilize and implement to aid them though an economic downturn (United States Bureau of Labor Statistics, 2011). Thus, this research is relevant for the field of public administration in numerous ways.

This research provides an examination of the relationship between integrating theory with practice. More specifically, this research provides local public administrators with an empirical analysis of the most prominent theoretical practices currently being pursued by local communities. Additionally, this research provides analysis of these theories in the context of an arena which has not yet been explored. Thus, this research provides local public administrators with a more comprehensive multi-dimensional overview of the factors that are critical for their communities to sustain their economic growth for the future. This research finds in support of other research that the creative class theory did not perform better than the traditional economic growth and development strategies examined in this study.

Furthermore, this research illustrates the importance of bridging and integrating theories developed by scholars with their practice and implementation into local communities by practitioners in the field of public administration. Additionally, this research illustrates the continued need for further exploration and empirical analysis before theories are implemented into practice by local public administrators. Further research efforts into this issue are of particular importance when the theories developed by scholars' lack evidentiary exploration or support. If local public administrators continue to attempt to implement those theories which have not been adequately tested,

such efforts may be problematic for local communities, particularly during a time period when local governments lack the adequate financial capital and resources necessary to provide basic services to their constituents. Such efforts may continue to steer local communities into an even further economic decline. Therefore, this research seeks to provide a bridge between these dominant theories and their implications for adoption by local communities.

Further Research

Although this research provides a comprehensive examination of the dominant economic development strategies that lead to more growth for an area, there are still many areas of this research that need to be explored further.

Consistently, the variables in the demographics model developed were found to outperform the theoretical perspectives as explanations for the percentage changes in economic growth and development. Thus, an examination that seeks to determine the factors that lead to higher market per capita incomes and higher median household incomes may provide further insight into understanding the factors that are the products of increases in the measures of economic growth and development as well as the identification of the factors that produce more economic growth and development for an area. Developing models that seek to determine what factors attract the creative class to a particular area may also provide more insight into understanding the relationships between these variables and others that may be identified as explanations for economic growth and development trends.

An expanded unit of analysis which includes all nonmetropolitan areas nationwide with or without the presence of a research university may provide more

insight into understanding additional factors that are better predictors of economic growth and development trends for a community. These and other issues ought to be examined in the future to determine those strategies which are the best predictors of economic growth and development of communities that lack the presence of a research university. Such efforts will help to ensure that all local public administrators nationwide are equipped with the knowledge necessary to maintain and sustain their communities to compete in today's global economy.

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APPENDIX A

NUMBER OF BUILDING ESTABLISHMENTS (2001 & 2009) & DATA ON BUSINESS ESTABLISHMENTS PERCENTAGE CHANGE

Appendix A Building Establishments				
	Number of Establishments			
County	2009	2001	Difference	Percentage Change
Cheshire, NH	2202	2120	1.038679245	103.8679245
Isabella, MI	1390	1368	1.016081871	101.6081871
St. Lawrence, NY	2283	2302	0.991746308	99.17463076
Grafton, NH	3348	3213	1.042016807	104.2016807
Bulloch, GA	1580	1287	1.227661228	122.7661228
Indiana, PA	2119	2100	1.009047619	100.9047619
Lincoln, LA	1190	1014	1.17357002	117.357002
Houghton, MI	992	985	1.007106599	100.7106599
Oktibbeha, MS	862	742	1.161725067	116.1725067
Phelps, MO	1199	1165	1.029184549	102.9184549
Gallatin, MT	5292	4014	1.31838565	131.838565
Athens, OH	1248	1222	1.021276596	102.1276596
Payne, OK	1747	1567	1.114869177	111.4869177
Orangeburg, S C	1751	2037	0.859597447	85.95974472
Brookings, SD	947	799	1.185231539	118.5231539
Jackson, IL	1370	1322	1.036308623	103.6308623
Kleberg, TX	631	591	1.067681895	106.7681895
Latah, ID	1043	976	1.068647541	106.8647541
Lafayette, MS	1116	847	1.317591499	131.7591499
Clay, SD	385	347	1.109510086	110.9510086
Albany, WY	1233	1077	1.144846797	114.4846797
Whitman, WA	1276	1384	0.921965318	92.19653179
Socorro, NM	357	348	1.025862069	102.5862069
Carroll, NM	2056	1955	1.051662404	105.1662404
Montcalm, MI	1085	1218	0.890804598	89.08045977
Jefferson, NY	2799	2553	1.096357227	109.6357227
Belknap, NH	2099	2000	1.0495	104.95
Troup, GA	1591	1518	1.048089592	104.8089592
Crawford, PA	2304	2384	0.966442953	96.6442953
Webster, LA	960	921	1.042345277	104.2345277
Chippewa, MI	893	986	0.905679513	90.56795132
Warren, MS	1210	1208	1.001655629	100.1655629
Pettis, MO	1117	1098	1.017304189	101.7304189
Flathead, MT	4354	3661	1.189292543	118.9292543
Huron, OH	1372	1372	1	100
Muskogee, OK	1543	1548	0.996770026	99.67700258
Lancaster, SC	1143	1170	0.976923077	97.69230769
Codington, SD	1162	1037	1.120540019	112.0540019
Coles, IL	1239	1220	1.01557377	101.557377
Howard, TX	740	796	0.929648241	92.96482412
Bonner, ID	1738	1402	1.239657632	123.9657632
Pike, MS	1088	969	1.122807018	112.2807018
Lake, SD	423	381	1.11023622	111.023622
Fremont,, WY	1581	1390	1.137410072	113.7410072
Stevens, WA	1266	1255	1.00876494	100.876494
Roosevelt, NM	447	423	1.056737589	105.6737589

APPENDIX B

AVERAGE ANNUAL PAY (2001 & 2009) & DATA ON AVERAGE ANNUAL PAY

PERCENTAGE CHANGE

Appendix B Average Annual Pay				
	Average Annual Pay			
County	2009	2001	Difference	Percentage Change
Cheshire, NH	38607	29698	1.299986531	129.9986531
Isabella, MI	31125	25806	1.206114857	120.6114857
St. Lawrence, NY	35509	29814	1.191017643	119.1017643
Grafton, NH	45734	32120	1.42384807	142.384807
Bulloch, GA	29630	23516	1.259993196	125.9993196
Indiana, PA	37381	27819	1.343721917	134.3721917
Lincoln, LA	32818	25548	1.284562392	128.4562392
Houghton, MI	32296	26144	1.235312118	123.5312118
Oktibbeha, MS	32155	25097	1.281228832	128.1228832
Phelps, MO	32387	24425	1.325977482	132.5977482
Gallatin, MT	33250	24493	1.357530723	135.7530723
Athens, OH	35599	28950	1.229671848	122.9671848
Payne, OK	33673	22095	1.524009957	152.4009957
Orangeburg, SC	33779	25676	1.31558654	131.558654
Brookings, SD	33780	24887	1.357335155	135.7335155
Jackson, IL	34845	26191	1.330418846	133.0418846
Kleberg, TX	32528	23688	1.373184735	137.3184735
Latah, ID	29902	23863	1.253069606	125.3069606
Lafayette, MS	34345	25460	1.34897879	134.897879
Clay, SD	30270	23835	1.26998112	126.998112
Albany, WY	35034	24646	1.421488274	142.1488274
Whitman, WA	37390	28087	1.33122085	133.122085
Socorro, NM	33643	26572	1.26610718	126.610718
Carroll, NM	30542	24317	1.255993749	125.5993749
Montcalm, MI	33096	26492	1.249282802	124.9282802
Jefferson, NY	35393	26919	1.314796241	131.4796241
Belknap, NH	35962	28136	1.278148991	127.8148991
Troup, GA	36422	30383	1.198762466	119.8762466
Crawford, PA	31895	26466	1.205131112	120.5131112
Webster, LA	33980	24737	1.373650806	137.3650806
Chippewa, MI	33495	26165	1.280145232	128.0145232
Warren, MS	36590	27940	1.309591983	130.9591983
Pettis, MO	29841	24321	1.226964352	122.6964352
Flathead, MT	32201	24695	1.303948168	130.3948168
Huron, OH	34151	28144	1.213438033	121.3438033
Muskogee, OK	33814	25800	1.310620155	131.0620155
Lancaster, SC	33260	27966	1.189301294	118.9301294
Codington, SD	31354	23789	1.31800412	131.800412
Coles, IL	32711	25527	1.281427508	128.1427508
Howard, TX	35895	26241	1.367897565	136.7897565
Bonner, ID	30627	23680	1.293369932	129.3369932
Pike, MS	27371	21796	1.255780877	125.5780877
Lake, SD	28932	22563	1.268227629	128.2276293
Fremont,, WY	34983	23899	1.463785096	146.3785096
Stevens, WA	31246	25700	1.215797665	121.5797665
Roosevelt, NM	29420	21031	1.398887357	139.8887357

APPENDIX C

NUMBER OF JOBS (2000 & 2009) & DATA ON NUMBER OF JOBS PERCENTAGE CHANGE

Appendix C Number of Jobs				
	Number of Jobs			
County	2009	2000	Difference	Percentage Change
Cheshire, NH	46381	44275	1.047566347	104.7566347
Isabella, MI	39019	35867	1.087880224	108.7880224
St. Lawrence, NY	48427	49945	0.969606567	96.96065672
Grafton, NH	70286	65006	1.081223272	108.1223272
Bulloch, GA	32116	27403	1.171988468	117.1988468
Indiana, PA	47786	42416	1.126603169	112.6603169
Lincoln, LA	24261	23430	1.03546735	103.546735
Houghton, MI	17434	17683	0.985918679	98.5918679
Oktibbeha, MS	25882	23392	1.106446648	110.6446648
Phelps, MO	23104	22255	1.038148731	103.8148731
Gallatin, MT	65503	51321	1.27633912	127.633912
Athens, OH	29565	27783	1.064139942	106.4139942
Payne, OK	46503	46303	1.004319375	100.4319375
Orangeburg, SC	43502	44533	0.976848629	97.68486291
Brookings, SD	22703	20649	1.099472129	109.9472129
Jackson, IL	38342	38167	1.004585113	100.4585113
Kleberg, TX	16605	13778	1.205182174	120.5182174
Latah, ID	21431	20272	1.057172455	105.7172455
Lafayette, MS	26606	22287	1.193790102	119.3790102
Clay, SD	12110	9025	1.341828255	134.1828255
Albany, WY	21844	21161	1.032276357	103.2276357
Whitman, WA	23757	21783	1.090621127	109.0621127
Socorro, NM	8553	7173	1.192388122	119.2388122
Carroll, NM	31905	28248	1.129460493	112.9460493
Montcalm, MI	19860	27465	0.72310213	72.310213
Jefferson, NY	72350	60686	1.192202485	119.2202485
Belknap, NH	38655	35722	1.082106265	108.2106265
Troup, GA	38048	39786	0.956316292	95.63162922
Crawford, PA	43736	46024	0.950286807	95.02868069
Webster, LA	18438	16689	1.104799569	110.4799569
Chippewa, MI	18152	18782	0.966457246	96.64572463
Warren, MS	28652	31073	0.922086699	92.20866991
Pettis, MO	24915	25499	0.977097141	97.70971411
Flathead, MT	58327	48918	1.192342287	119.2342287
Huron, OH	27708	34441	0.804506257	80.45062571
Muskogee, OK	38950	39178	0.994180407	99.41804074
Lancaster, SC	24697	26069	0.94737044	94.737044
Codington, SD	20373	19941	1.021663909	102.1663909
Coles, IL	31158	36314	0.858016192	85.80161921
Howard, TX	16560	16120	1.027295285	102.7295285
Bonner, ID	23720	20258	1.170895449	117.0895449
Pike, MS	19738	20072	0.983359904	98.33599043
Lake, SD	6900	7000	0.985714286	98.57142857
Fremont,, WY	24752	21002	1.178554423	117.8554423
Stevens, WA	15683	15971	0.981967316	98.19673158
Roosevelt, NM	8918	7836	1.138080653	113.8080653

APPENDIX D

TOTAL NUMBER OF PERMITS PER BUILDING (2000 & 2009) & DATA ON BUILDING PERMITS (BUILDINGS) PERCENTAGE CHANGE

Appendix D Building Permits Per Building				
	Building Permits Per Building			
County	2009	2000	Difference	Percentage Change
Cheshire, NH	85	258	0.329457364	32.94573643
Isabella, MI	47	383	0.122715405	12.27154047
St. Lawrence, NY	137	231	0.593073593	59.30735931
Grafton, NH	159	335	0.474626866	47.46268657
Bulloch, GA	196	283	0.692579505	69.25795053
Indiana, PA	71	158	0.449367089	44.93670886
Lincoln, LA	35	107	0.327102804	32.71028037
Houghton, MI	64	118	0.542372881	54.23728814
Oktibbeha, MS	62	140	0.442857143	44.28571429
Phelps, MO	49	85	0.576470588	57.64705882
Gallatin, MT	283	416	0.680288462	68.02884615
Athens, OH	10	39	0.256410256	25.64102564
Payne, OK	83	156	0.532051282	53.20512821
Orangeburg, SC	81	209	0.387559809	38.75598086
Brookings, SD	178	76	2.342105263	234.2105263
Jackson, IL	96	51	1.882352941	188.2352941
Kleberg, TX	30	11	2.727272727	272.7272727
Latah, ID	65	89	0.730337079	73.03370787
Lafayette, MS	51	95	0.536842105	53.68421053
Clay, SD	24	45	0.533333333	53.33333333
Albany, WY	106	106	1	100
Whitman, WA	72	80	0.9	90
Socorro, NM	4	8	0.5	50
Carroll, NM	135	414	0.326086957	32.60869565
Montcalm, MI	57	249	0.228915663	22.89156627
Jefferson, NY	189	164	1.152439024	115.2439024
Belknap, NH	148	446	0.331838565	33.1838565
Troup, GA	134	342	0.391812865	39.18128655
Crawford, PA	62	230	0.269565217	26.95652174
Webster, LA	78	25	3.12	312
Chippewa, MI	52	199	0.261306533	26.13065327
Warren, MS	11	22	0.5	50
Pettis, MO	6	15	0.4	40
Flathead, MT	82	209	0.392344498	39.23444976
Huron, OH	46	153	0.300653595	30.06535948
Muskogee, OK	18	76	0.236842105	23.68421053
Lancaster, SC	125	363	0.344352617	34.43526171
Codington, SD	78	105	0.742857143	74.28571429
Coles, IL	25	54	0.462962963	46.2962963
Howard, TX	2	15	0.133333333	13.33333333
Bonner, ID	3	21	0.142857143	14.28571429
Pike, MS	7	12	0.583333333	58.33333333
Lake, SD	32	61	0.524590164	52.45901639
Fremont,, WY	28	40	0.7	70
Stevens, WA	85	131	0.648854962	64.88549618
Roosevelt, NM	48	14	3.428571429	342.8571429

APPENDIX E

TOTAL NUMBER OF PERMITS PER UNITS (2000 & 2009) & DATA ON BUILDING PERMITS (UNITS) PERCENTAGE CHANGE

Appendix E Building Permits Per Unit				
	Building Permits Per Unit			
County	2009	2000	Difference	Percentage Change
Cheshire, NH	122	284	0.429577465	42.95775
Isabella, MI	47	1210	0.038842975	3.884298
St. Lawrence, NY	158	242	0.652892562	65.28926
Grafton, NH	238	367	0.648501362	64.85014
Bulloch, GA	231	526	0.439163498	43.91635
Indiana, PA	118	335	0.352238806	35.22388
Lincoln, LA	41	120	0.341666667	34.16667
Houghton, MI	70	122	0.573770492	57.37705
Oktibbeha, MS	95	356	0.266853933	26.68539
Phelps, MO	79	166	0.475903614	47.59036
Gallatin, MT	391	723	0.540802213	54.08022
Athens, OH	25	41	0.609756098	60.97561
Payne, OK	93	220	0.422727273	42.27273
Orangeburg, SC	187	234	0.799145299	79.91453
Brookings, SD	363	101	3.594059406	359.4059
Jackson, IL	180	112	1.607142857	160.7143
Kleberg, TX	30	11	2.727272727	272.7273
Latah, ID	249	127	1.960629921	196.063
Lafayette, MS	53	259	0.204633205	20.46332
Clay, SD	38	49	0.775510204	77.55102
Albany, WY	132	107	1.23364486	123.3645
Whitman, WA	79	247	0.319838057	31.98381
Socorro, NM	4	8	0.5	50
Carroll, NM	135	418	0.322966507	32.29665
Montcalm, MI	58	272	0.213235294	21.32353
Jefferson, NY	189	164	1.152439024	115.2439
Belknap, NH	177	458	0.386462882	38.64629
Troup, GA	401	590	0.679661017	67.9661
Crawford, PA	62	240	0.258333333	25.83333
Webster, LA	86	77	1.116883117	111.6883
Chippewa, MI	73	199	0.366834171	36.68342
Warren, MS	11	42	0.261904762	26.19048
Pettis, MO	26	16	1.625	162.5
Flathead, MT	86	234	0.367521368	36.75214
Huron, OH	52	160	0.325	32.5
Muskogee, OK	18	76	0.236842105	23.68421
Lancaster, SC	125	367	0.340599455	34.05995
Codington, SD	98	109	0.899082569	89.90826
Coles, IL	50	101	0.495049505	49.50495
Howard, TX	2	15	0.133333333	13.33333
Bonner, ID	3	23	0.130434783	13.04348
Pike, MS	45	12	3.75	375
Lake, SD	32	81	0.395061728	39.50617
Fremont,, WY	32	43	0.744186047	74.4186
Stevens, WA	86	131	0.65648855	65.64885
Roosevelt, NM	48	15	3.2	320

APPENDIX F

BUILDING PERMITS MODELS

BUILDING PERMITS MODELS

The following models are for the building permits per building and building permits per unit dependent variables. The data from these models reflects estimate counts from the United States Census Bureau and not actual reported building permit data (http://censtats.census.gov/bldg/bldgprmt.shtml).

These models employ the same set of demographic (control) variables. As found below, an outlier was identified for the building permits model per building. This outlier was identified based upon its Cooks D value exceeding the critical value times two (Fox, 1991). Socorro County, New Mexico was the outlier that was identified for the building permits per unit models, based upon its Cooks D value exceeding the critical value times two (Fox, 1991). Therefore, these variables are employed in the remaining variables.

Each of the models was tested for multicollinearity and the variance inflation factors for the variables did not indicate that any of the variables were highly collinear with each other. According to Fox (1991) a variance inflation factor score of 5.26 or greater indicates that there is too much multicollinearity. The models were also tested for heteroskedasticity using the Brusch-Pagan/ Cook-Weisberg test. There was some heteroskedasticity found in the building permits per unit models. However, after correcting for it with robust standard errors which attempts to normally distribute the non linear error terms, the t-scores of the variables in the models do not change in a significant manner. Therefore, since the correction method for dealing with heteroskedasticity does not alter the substantive findings of the variables the original models are presented.

Only four of the following models were found statistically significant. Additionally, it is important to note that some of the variables in the models below are

statistically significant. However, the models overall are not statistically significant. Therefore, these variables are not interpreted since the models lack and substantive strength.

The demographics model without the population and unemployment variables for building permits per building was significant. However, the only variable significant in the model was the dummy variable created for Roosevelt County, New Mexico. There were two additional models found statistically significant for the building permits per building dependent variable. The community capital model including housing value was statistically significant. For this model, the dummy variable for Roosevelt County was significant and the housing value variable was significant. The findings from this model illustrate that for each 1% decrease in housing value, there is a -.00182% decrease in the number of building permits per building for a county. This finding rejects hypothesis 10 stated below. However, the findings are consistent with those found in Table 5.12 for Community capital housing value in which there was a negative but significant relationship between housing value and average annual pay.

H_{10}: Counties with higher median housing value are more likely to have higher measures of economic development than counties with lower median housing value.

The community capital for political culture is also statistically significant for building permits per building. However, in this model, the only variable statistically significant was the dummy variable for Roosevelt County. The other model that was found statistically significant for the building permits per unit was for political culture. However, the only variables that were statistically significant in this model were the two dummy variables; Brookings County, South Dakota and Pike County, Mississippi.

Table F.1 Demographics

	Building Permits (Buildings)	Building Permits (Buildings) Roosevelt County	Building Permits (Units)	Building Permits (Units) Socorro County
Constant	332.864 (1.93)	103.557 (0.62)	419.509 (2.07)	665.874 (2.87)
% White	-.41394 (-0.29)	.49233 (0.39)	-1.555 (-0.94)	-2.858 (-1.65)
Median Household Income	-.00280 (-0.69)	-.00366 (-1.02)	-.00299 (-0.63)	-.00267 (-0.58)
Unemployment	-7.209 (-0.58)	2.045 (0.18)	-5.54 (-0.38)	-12.695 (-0.88)
Population	-.00085 (-1.27)	-.00044 (-0.72)	-.00109 (-1.38)	-.00144* (-1.84)
Northeast	18.948 (0.38)	13.652 (0.31)	35.225 (0.60)	48.359 (0.85)
Midwest	-24.465 (-0.70)	4.922 (0.15)	-.82967 (-0.02)	-20.307 (-0.50)
South	-20.905 (-0.46)	26.565 (0.63)	-41.532 (-0.78)	-92.823 (-1.61)
Market Per Capita Income	-.00265 (-0.41)	.00219 (0.37)	-.00134 (-0.18)	-.00532 (-0.71)
Roosevelt, NM	-	266.568*** (3.41)	-	-
Socorro, NM	-	-	-	-215.609* (-1.97)
Adjusted R Square **F Statistic** **N=**	-0.0478 0.74 46	0.1864 2.15 46	-0.0391 0.79 46	0.0363 1.19 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.2 Demographics Without Population & Unemployment

	Building Permits (Buildings)	Building Permits (Buildings) Roosevelt County	Building Permits (Units)
Constant	227.670 (1.84)	101.876 (0.91)	321.041 (2.21)
% White	-.24141 (-0.17)	.47305 (0.39)	-1.417 (-0.87)
Median Household Income	-.00480 (-1.27)	-.00410 (-1.26)	-.00518 (-1.17)
Northeast	-18.344 (-0.45)	-4.902 (-0.14)	-12.206 (-0.25)
Midwest	-19.114 (-0.58)	2.948 (0.10)	2.563 (0.07)
South	-24.061 (-0.56)	21.111 (0.54)	-48.884 (-0.97)
Market Per Capita Income	.00188 (0.38)	.00269 (0.63)	.00327 (0.57)
Roosevelt, NM	-	275.283*** (3.80)	-
Adjusted R Square **F Statistic** **N=**	-0.0522 0.63 46	0.0192 2.79* 46	-0.0446 0.68 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.3 Demographics & Research University Presence

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	28.670 (0.15)	665.778 (2.69)
% White	.51024 (0.40)	-2.858 (-1.63)
Median Household Income	-.00232 (-0.58)	-.00266 (-0.52)
Unemployment	6.056 (0.49)	-12.689 (-0.82)
Population	-.00054 (-0.87)	-.00144* (-1.74)
Northeast	14.644 (0.33)	48.363 (-0.82)
Midwest	9.660 (0.30)	-20.303 (-0.49)
South	33.512 (0.77)	-92.820 (-1.59)
Market Per Capita Income	.00240 (0.41)	-.00532 (-0.69)
Roosevelt, NM	285.799*** (3.48)	-
Socorro, NM	-	-215.624 *(-1.93)
Adjusted R Square **F Statistic** **N=**	0.1780 1.97 46	0.0087 1.04 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.4 Demographics, Research University Presence, and Regions Removed

	Building Permits (Buildings)	Building Permits (Buildings) Roosevelt County	Building Permits (Units)	Building Permits (Units) Brookings County Pike County
Constant	239.869 (1.75)	112.283 (0.91)	269.82 (1.68)	202.734 (1.67)
% White	-.0906 (-0.10)	-.13614 (-0.18)	-.29643 (-0.29)	.17631 (0.23)
Median Household Income	-.00352 (0.80)	-.00232 (-0.61)	-.00355 (-0.68)	-.00383 (-0.97)
Unemployment	-3.072 (-0.26)	2.849 (0.27)	-2.689 (-0.19)	-2.053 (-0.19)
Population	-.00058 (-1.06)	-.00407 (-0.85)	.-.00081 (-1.26)	-.00413 (-0.84)
Research University	-2.839 (-0.10)	16.903 (0.70)	-3.826 (-0.12)	-5.719 (-0.23)
Market Per Capita Income	-.0010 (-0.02)	.00214 (0.42)	.00033 (0.05)	.00045 (0.09)
Roosevelt, NM	-	265.542*** (3.73)	-	-
Brookings, SD			-	287.593*** (4.01)
Pike, MS	-	-	-	280.733*** (3.82)
Adjusted R Square **F Statistic** **N=**	-0.0256 0.81 46	0.2295 2.91* 46	-0.0205 0.85 46	0.4339 5.31 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.5 The Creative Class Models

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	141.39 (0.58)	1044.229 (3.06)
% White	.58841 (0.46)	-3.018* (-1.75)
Median Household Income	-.00391 (-0.87)	-.00682 (-1.20)
Unemployment	5.504 (0.44)	-16.558 (-1.08)
Population	-.00064 (-1.00)	-.00181** (-2.15)
Northeast	7.693 (0.17)	33.089 (0.57)
Midwest	-2.068 (-0.06)	-58.598 (-1.24)
South	25.273 (0.56)	-130.485** (-2.10)
Market Per Capita Income	.00496 (0.73)	.00030 (0.04)
Research University	36.196 (1.09)	41.933 (1.02)
Roosevelt, NM	292.977*** (3.52)	-
Socorro, NM	-	-266.062** (-2.34)
Creative Class	-275.670 (-0.76)	-742.157 (-1.57)
Adjusted R Square	0.1681	0.0488
F Statistic	1.83	1.21
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.6 The Core Creative Class Models

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	88.712 (0.41)	794.202 (2.58)
% White	.59982 (0.46)	-2.888 (-1.63)
Median Household Income	-.00290 (-0.70)	-.00351 (-0.66)
Unemployment	6.429 (0.51)	-13.054 (-0.84)
Population	-.00057 (-0.91)	-.00154* (-1.82)
Northeast	16.965 (0.38)	53.757 (0.91)
Midwest	7.410 (0.22)	-26.700 (-0.63)
South	36.850 (0.83)	-94.401 (-1.60)
Market Per Capita Income	.00409 (0.62)	-.00318 (-0.38)
Research University	19.191 (0.74)	-1.77 (-0.05)
Roosevelt, NM	288.747*** (3.48)	-
Socorro, NM	-	-241.403** (-2.05)
Core Creative Class	-312.370 (-0.60)	-498.903 (-0.71)
Adjusted R Square	0.1628	-0.0055
F Statistic	1.80	0.98
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.7 The Super Creative Class Models

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	53.444 (0.25)	784.951 (2.80)
% White	.50728 (0.39)	-2.937 (-1.66)
Median Household Income	-.00278 (-0.64)	-.00455 (-0.82)
Unemployment	5.806 (0.46)	-14.356 (-0.92)
Population	-.00057 (-0.90)	-.00159* (-1.88)
Northeast	10.547 (0.22)	31.942 (0.52)
Midwest	4.934 (0.13)	-41.488 (-0.87)
South	28.618 (0.60)	-116.254* (-1.82)
Market Per Capita Income	.00290 (0.47)	-.00351 (-0.44)
Research University	27.847 (0.76)	29.572 (0.65)
Roosevelt, NM	288.037*** (3.45)	-
Socorro, NM	-	-221.695* (-1.98)
Super Creative Class	-122.197 (-0.28)	-504.992 (-0.91)
Adjusted R Square	0.1558	0.0040
F Statistic	1.76	1.02
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.8 The Human Capital Models

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	32.794 (0.17)	765.828 (2.81)
% White	.53886 (0.41)	-2.936 (-1.66)
Median Household Income	-.00263 (-0.58)	-.00524 (-0.89)
Unemployment	5.848 (0.46)	-16.424 (-1.02)
Population	-.00055 (-0.86)	-.00146* (-1.85)
Northeast	10.788 (0.20)	17.115 (0.25)
Midwest	6.919 (0.18)	-50.284 (-0.94)
South	31.533 (0.68)	-123.940* (-1.82)
Market Per Capita Income	.00310 (0.40)	-.00017 (-0.02)
Research University	24.600 (0.63)	37.030 (0.70)
Roosevelt, NM	286.84 ***(3.43)	-
Socorro, NM	-	-265.476** (-2.12)
Human Capital	-.37867	-3.389 (-0.89)
Adjusted R Square	0.1544	0.0027
F Statistic	1.75	1.01
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.9 The Social Capital Models

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	44.813 (0.23)	693.479 (2.74)
% White	.75675 (0.57)	-2.628 (-1.46)
Median Household Income	-.00329 (-0.78)	-.00376 (-0.69)
Unemployment	5.252 (0.42)	-13.804 (-0.88)
Population	-.00059 (-0.94)	-.00151* (-1.80)
Northeast	5.649 (0.12)	38.423 (0.64)
Midwest	5.583 (0.17)	-25.726 (-0.61)
South	28.734 (0.65)	-100.541 (-1.68)
Market Per Capita Income	.00414 (0.65)	-.00342 (-0.42)
Research University	25.556 (0.95)	6.624 (0.20)
Roosevelt, NM	283.000*** (3.42)	-
Socorro, NM	-	-227.294* (-2.00)
Social Capital	-4989.057 (-0.75)	-5895.137 (-0.68)
Adjusted R Square **F Statistic** **N=**	0.1677 1.82 46	-0.0068 0.97 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.10 The Institutional Intellectual Capital Models

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	79.9412 (0.42)	779.871 (2.93)
% White	.03316 (0.03)	-3.626* (-1.93)
Median Household Income	-.00132 (-0.33)	-.00158 (-0.30)
Unemployment	3.356 (0.27)	-17.504 (-1.10)
Population	-.00052 (-0.85)	-.00151* (-1.82)
Northeast	28.291 (0.63)	64.904 (1.09)
Midwest	15.195 (0.47)	-20.233 (-0.49)
South	30.284 (0.71)	-108.244* (1.81)
Market Per Capita Income	.00131 (0.22)	-.00747 (-0.95)
Research University	59.548 (1.60)	39.406 (0.84)
Roosevelt, NM	309.187*** (3.75)	-
Socorro, NM	-	-247.135** (-2.16)
Institutional Intellectual Capital	-5.469 (-1.44)	-5.701 (-1.14)
Adjusted R Square **F Statistic** **N=**	0.2026 2.04 46	0.0169 1.07 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.11 The Community Capital Model (Graduation Rate)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	119.805 (0.52)	779.377 (2.55)
% White	.67612 (0.52)	-2.671 (-1.49)
Median Household Income	-.00224 (-0.56)	-.00263 (-0.51)
Unemployment	3.061 (0.23)	-16.623 (-1.00)
Population	-.00051 (-0.81)	-.00140 (-1.68)
Northeast	13.278 (0.30)	46.588 (0.80)
Midwest	11.758 (0.35)	-19.121 (-0.46)
South	26.195 (0.58)	-102.393 (-1.69)
Market Per Capita Income	.00166 (0.28)	-.00629 (-0.80)
Research University	22.589 (0.87)	1.073 (0.03)
Roosevelt, NM	296.722*** (3.53)	-
Socorro, NM	-	-209.804* (-1.86)
Graduation Rates	-.97970 (-0.71)	-1.135 (-0.65)
Adjusted R Square	0.1663	-0.0080
F Statistic	1.82	0.97
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.12 The Community Capital Models (Dropout Rate)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	22.433 (0.11)	684.035 (2.78)
% White	.42212 (0.32)	-2.344 (-1.30)
Median Household Income	-.00258 (-0.63)	-.00138 (-0.26)
Unemployment	7.932 (0.57)	-21.804 (-1.28)
Population	-.00057 (-0.89)	-.00132 (-1.58)
Northeast	17.762 (0.38)	31.882 (0.54)
Midwest	12.210 (0.36)	-32.068 (-0.76)
South	38.228 (0.82)	-114.045* (-1.88)
Market Per Capita Income	.00320 (0.49)	-.00912 (-1.11)
Research University	20.916 (0.80)	-1.813 (-0.06)
Roosevelt, NM	286.512*** (3.44)	-
Socorro, NM	-	-206.713* (-1.86)
Dropout Rates	-.67395 (-0.30)	3.430 (1.21)
Adjusted R Square	0.1561	0.0214
F Statistic	1.76	1.09
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.13 The Community Capital Models (Parks)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	44.487 (0.23)	668.402 (2.56)
% White	.48316 (0.37)	-2.867 (-1.59)
Median Household Income	-.00269 (-0.66)	-.002692 (0.51)
Unemployment	6.779 (0.54)	-12.665 (-0.81)
Population	-.00074 (-1.03)	-.00146 (-1.48)
Northeast	24.168 (0.50)	49.234 (0.77)
Midwest	14.401 (0.42)	-20.014 (-0.47)
South	38.913 (0.87)	-92.646 (-1.56)
Market Per Capita Income	.00188 (0.31)	-.00539 (-0.67)
Research University	21.517 (0.83)	.14673 (0.00)
Roosevelt, NM	286.975*** (3.46)	-
Socorro, NM	-	-216.745* (-1.85)
Parks	.57622 (0.57	.04840 (0.04)
Adjusted R Square	0.1620	-0.0204
F Statistic	1.79	0.92
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.14 The Community Capital Models (Trails)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	26.222 (0.13)	667.595 (2.60)
% White	.51091 (0.39)	-2.861 (-1.60)
Median Household Income	-.00234 (-0.58)	-.00265 (-0.51)
Unemployment	6.107 (0.49)	-12.731 (-0.81)
Population	-.00053 (-0.81)	-.00145 (-1.66)
Northeast	13.382 (0.28)	49.090 (0.79)
Midwest	8.630 (0.24)	-19.766 (-0.44)
South	32.408 (0.71)	-92.350 (-1.52)
Market Per Capita Income	.00258 (0.41)	-.00543 (-0.65)
Research University	20.431 (0.78)	.09975 (0.00)
Roosevelt, NM	285.610*** (3.43)	-
Socorro, NM	-	-215.934** (-1.90)
Trails	-.02795 (-0.08)	.01565 (0.03)
Adjusted R Square	0.1540	-0.0204
F Statistic	1.74	0.92
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.15 The Community Capital Models (Amenities)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	24.287 (0.13)	662.204 (2.63)
% White	.27907 (0.22)	-2.804 (-1.54)
Median Household Income	-.00185 (-0.46)	-.00274 (-0.52)
Unemployment	3.983 (0.32)	-12.183 (-0.76)
Population	-.00361 (-0.58)	-.00146* (-1.71)
Northeast	48.001 (0.90)	42.744 (0.60)
Midwest	61.449 (1.10)	-28.410 (-0.40)
South	55.253 (1.17)	-95.591 (-1.53)
Market Per Capita Income	.00129 (0.22)	-.00507 (-0.64)
Research University	16.262 (0.63)	.93310 (0.03)
Roosevelt, NM	301.053*** (3.63)	-
Socorro, NM	-	-214.231*((-1.89)
Amenity	11.104 (1.14)	-1.830 (-0.14)
Adjusted R Square **F Statistic** **N=**	0.1848 1.93 46	-0.0198 0.92 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.16 The Community Capital Models (Healthcare Facilities)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	18.142 (0.09)	733.978 (2.81)
% White	.54306 (0.41)	-3.064* (-1.72)
Median Household Income	-.00241 (-0.59)	-.00218 (-0.42)
Unemployment	6.369 (0.50)	-14.822 (-0.94)
Population	-.00055 (-0.86)	-.00144* (-1.73)
Northeast	12.568 (0.27)	60.742 (1.01)
Midwest	9.517 (0.29)	-20.073 (-0.48)
South	34.669 (0.78)	-100.446* (-1.69)
Market Per Capita Income	.00279 (0.44)	-.00775 (-0.94)
Research University	20.668 (0.79)	-1.365 (-0.04)
Roosevelt, NM	284.737*** (3.41)	-
Socorro, NM	-	-213.897* (-1.91)
Health	4.255 (0.18)	-25.425 (-0.84)
Adjusted R Square **F Statistic** **N=**	0.1547 1.75 46	0.0001 1.00 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.17 The Community Capital Models (Crime)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	38.175 (0.18)	611. 683 (2.23)
% White	.60994 (0.44)	-2.443 (-1.26)
Median Household Income	.00081 (0.18)	-.00085 (-0.14)
Unemployment	2.217 (0.18)	-13.073 (-0.80)
Population	-.00081 (-1.21)	-.00171* (-1.82)
Northeast	12.285 (0.25)	63.786 (0.95)
Midwest	-12.197 (-0.34)	-24.401 (-0.52)
South	42.201 (0.97)	-87.716 (-1.44)
Market Per Capita Income	-.00155 (-0.24)	-.00803 (-0.92)
Research University	19.621 (0.75)	3.187 (0.09)
Roosevelt, NM	279.636*** (3.43)	-
Socorro, NM	-	-219.736* (-1.88)
Crime	-.00371 (-0.35)	.00640
Adjusted R Square	0.1840	-0.0366
F Statistic	1.88	0.86
N=	44	44

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.18 The Community Capital Models (Housing Value)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	-10.518 (-0.06)	611.683 (2.23)
% White	.66842 (0.54)	-2.443 (-1.26)
Median Household Income	.00052 (0.13)	-.0085 (-0.14)
Unemployment	10.307 (0.85)	-13.073 (-0.80)
Population	-.00045 (-0.74)	-.00171* (-1.82)
Northeast	-67.861 (-1.14)	-50.114 (-0.66)
Midwest	-55.235 (-1.22)	-88.670 (-1.65)
South	-24.452 (-0.48)	-147.634* (-2.34)
Market Per Capita Income	.00810 (1.28)	.00261 (0.31)
Research University	46.058 (1.65)	35.628 (0.99)
Roosevelt, NM	233.206*** (2.80)	-
Socorro, NM	-	-209.271* (-1.95)
Housing Value	-.00183* (-1.99)	-.00215* (-1.91)
Adjusted R Square	0.2424	0.0781
F Statistic	2.31*	1.35
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.19 The Community Capital Models (Commute Time)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	47.180 (0.22)	685.125 (2.64)
% White	-45461 (0.34)	-2.908 (-1.62)
Median Household Income	-.00200 (-0.47)	-.00215 (-0.39)
Unemployment	6.242 (0.50)	-12.022 (-0.76)
Population	-.000555 (-0.87)	-.00144* (-1.71)
Northeast	17.295 (0.37)	52.260 (0.87(
Midwest	8.706 (0.26)	-20.829 (-0.50)
South	33.915 (0.77)	-90.343 (-1.51)
Market Per Capita Income	.00199 (0.32)	-.00581 (-0.73)
Research University	19.449 (0.73)	-1.232 (-0.04)
Roosevelt, NM	282.102*** (3.33)	-
Socorro, NM	-	-212.550* (-1.87)
Commute Time	-.8291 (-0.23)	-1.304 (-0.28)
Adjusted R Square	0.1552	-0.0180
F Statistic	1.75	0.93
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.20 The Community Capital Models (Airport Distance)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	73.568 (0.38)	678.065 (2.72)
% White	.50540 (0.40)	-3.088* (-1.72)
Median Household Income	-.00145 (-0.37)	-.00319 (-0.61)
Unemployment	4.795 (0.39)	-13.114 (-0.84)
Population	-.00082 (-1.28)	-.00131 (-1.55)
Northeast	28.140 (0.63)	40.965 (0.69)
Midwest	10.476 (0.33)	-24.741 (-0.59)
South	47.879 (1.09)	-112.500*(-1.74)
Market Per Capita Income	.00094 (0.16)	-.00505 (-0.65)
Research University	18.562 (0.73)	1.826 (0.06)
Roosevelt, NM	275.704*** (3.40)	-
Socorro, NM	-	-249.984** (-2.06)
Airport Distance	-.94895 (-1.47)	.67919 (0.74)
Adjusted R Square	0.2045	-0.0044
F Statistic	2.05	0.98
N=	46	46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.21 The Community Capital Models (Political Structure)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	27.930 (0.14)	618.388 (2.28)
% White	.13845 (0.10)	-2.578 (-1.28)
Median Household Income	.00046 (0.10)	-.00158 (-0.26)
Unemployment	3.414 (0.26)	-10.265 (-0.57)
Population	-.00045 (-0.71)	-.00137 (-1.59)
Northeast	8.786 (0.19)	43.741 (0.73)
Midwest	6.291 (0.19)	-15.624 (-0.35)
South	23.394 (0.52)	-89.710 (-1.46)
Market Per Capita Income	-.00121 (-0.18)	-.00639 (0.74)
Research University	23.344 (0.89)	2.995 (0.09)
Roosevelt, NM	303.519*** (3.34)	-
Socorro, NM		-178.285 (-1.35)
Council Executive Elected	-11.648 (-0.22)	-36.000 (-0.49)
Commission	29.458 (0.71)	-5.489 (-0.11)
Adjusted R Square **F Statistic** **N=**	0.1679 1.76 46	-0.0411 0.85 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test

Table F.22 The Community Capital Models (Political Culture)

	Building Permits (Buildings) Roosevelt County	Building Permits (Units) Socorro County
Constant	88.817 (0.64)	226.578 (1.62)
% White	-.2553 (-0.27)	-0.20997 (-0.22)
Median Household Income	-.00032 (-0.07)	-.00367 (-0.74)
Unemployment	3.228 (0.30)	-3.081 (-0.28)
Population	-.00059 (-1.13)	-.00051 (-0.92)
Market Per Capita Income	.00010 (0.18)	.00051 (0.09)
Research University	23.227 (0.90)	-4829 (-0.18)
Roosevelt, NM	263.054*** (3.59)	-
Brookings, SD	-	271.531*** (3.44)
Pike, MS	-	282.302 ***(3.76)
Individual	9.089	26.427 (0.73)
Traditional	-17.277 (-0.50)	9.842 (0.28)
Adjusted R Square **F Statistic** **N=**	0.2076 2.31* 46	0.4114 4.15* 46

*Significant at the .10 level, two-tailed test
** Significant at the .05 level, two-tailed test
***Significant at the .01 level, two-tailed test