BRAIN DRAIN TO BRAIN GAIN: A COMPARATIVE LOCAL ECONOMIC
DEVELOPMENT ANALYSIS OF THE CREATIVE CLASS IN GAINESVILLE, FLORIDA
USING GEOGRAPHIC INFORMATION SYSTEMS (GIS)

By

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A THESIS PRESENTED TO THE GRADUATE SCHOOL OF THE UNIVERSITY OF
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To my parents

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LIST OF ABBREVIATIONS

BLS	Bureau of Labor Statistics
CES	Center for Economic Studies
GIS	Geographic Information Systems
LQ	Location Quotient
MSA	Metropolitan Statistical Area
NAICS	North American Industry Classification System
SFC	Santa Fe College
UF	the University of Florida

Abstract of Thesis Presented to the Graduate School
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BRAIN DRAIN TO BRAIN GAIN - ATTRACTING THE CREATIVE CLASS TO
GAINESVILLE, FLORIDA: A LOCAL ECONOMIC DEVELOPMENT ANALYSIS
UTILIZING GEOGRAPHIC INFORMATION SYSTEMS (GIS)

By

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Gainesville, Florida has long suffered from "brain drain", or the emigration of young educated professionals, mostly graduates of the University of Florida and Santa Fe College, away from the city. However, Gainesville has long shown the potential to become a flourishing town for recent college graduates to start their careers – similar to Austin, Texas or Raleigh-Durham, North Carolina. Despite this potential, many students continue to move away from Gainesville soon after graduation, to locate to coastal Florida or other parts of the country. What makes graduates want to leave? What has Gainesville done right to make itself more attractive to the young professionals?

In 2002, Richard Florida coined the term "creative class" to describe a socioeconomic class of professionals who are the driving economic force behind modern growing cities. The creative class is a broad group representing individuals whose jobs require applied intelligence and decision making. The creative class has grown to represent more than 35% of total employment in the U.S. in 2010 and has been identified as having a strong positive impact on the growth of cities.

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In August 2010, Florida published an article for *The Atlantic* magazine that projected a 17.65% growth in creative class employment between the years of 2008 and 2018 for Gainesville. That was the highest rate among metropolitan statistical areas in the nation. This is concurrent with his previous analysis of Gainesville in 2002, stating that of all U.S. cities with a population under 250,000 it had the second highest potential to attract the creative class.

The objective of this thesis was to find Gainesville's industry strengths and determine how Gainesville can fully capitalize on its potential through policy and development. After the completion of analysis, it was determined that Gainesville's strengths lie in the sectors of education and health care services and that sectors of potential growth are comprised of the real estate and rental, professional and technical services, and the public administration sectors.

CHAPTER 1
INTRODUCTION

In an era of decline in manufacturing and other physical labor industries, many areas are going through a difficult time trying to figure out how to rejuvenate their economies. Some regions have been prosperous by attracting lucrative industries, with more creative companies following due to clustering around related industries or migrating towards highly knowledgeable residents. Richard Florida has repeatedly said that Gainesville, Florida is ripe for creative class job growth (Florida 2002 and 2010).

In a classic "chicken and egg" scenario, it is difficult to answer why the creative class does not flourish in Gainesville. Many college graduates want to leave Gainesville because there aren't enough suitable employers locally once they graduate, and employers are reluctant to locate because they perceive that recent graduates are anxious to leave Gainesville and view employment within Gainesville as a "stepping stool" to a better job elsewhere. Gainesville can solve this dilemma by retaining recent graduates and attracting creative class employers, but the difficult part is sparking this catalyst for growth.

Gainesville, Florida Profile

Gainesville is a city located in Alachua County, in north-central Florida. Gainesville had a population of 124,354 within the city limits and 264,275 within its metropolitan area as of the 2010 Census. It was once a hub for railroad connectivity, but railroad lines have lost their necessity. It is not served by any water shipping routes, and it contains a regional airport that is used for commercial flights. The primary means of transportation to and from Alachua County is I-75, an interstate highway that runs the length of Florida and intersects the heart of Alachua County.

The University of Florida (UF) is a high-ranking university of about 50,000 students located in Gainesville. Most of these students spend four or more years in Gainesville acquiring their degree, then move away. To reach its growth potential, Gainesville needs to find a way to retain more graduates. Santa Fe College (SFC), Shands Hospital, and the North Florida Regional Medical Center are three more of the larger employers in Gainesville. They contribute to the two main economic bases in Gainesville – the education and health care industries.

Introduction of the Creative Class

Richard Florida, Director of the Martin Prosperity Institute and Professor of Business and Creativity at the Rotman School of Management at the University of Toronto, coined the term "creative class" to refer to an innovative group of workers. Creative class employment describes jobs in which the employee is required to apply their knowledge to make decisions. It includes people in the science and engineering, architecture and design, education, arts, music, and entertainment fields - people who are employed to innovate. It also includes creative professionals such as individuals working in business and finance, law, and healthcare (Florida 2002:8). The creative class had grown to represent over 35% of the total United States workforce in 2010. (Bureau of Labor Statistics, 2010)

Richard Florida wrote *The Rise of The Creative Class* in 2002 and "attracted the attention of policymakers, urban planners, and developers throughout the United States and in other parts of the world" (Donegan, 2008, p. 180). The book offered a prototype strategy for economic development for cities seeking high-paying jobs and overall growth. Certain cities and local regions have experienced prosperous growth by attracting creative class companies and industries, both naturally and via economic

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development planning. Unfortunately, the same solution cannot be prescribed for every region – specializations and clusters will occur naturally. The key to economic development is to develop an area as unique and specialized in a certain industry or in complementary industries (Blanco, 2011a). A rural potato farming town in Idaho isn't likely to attract a high-tech startup company. Likewise, a lumber factory isn't likely to relocate to Silicon Valley either. Several factors play into where companies – and jobs – locate, including the cost of living, climate, and others that the locality can't control. On the other hand the region can create an economic development plan to make a region more attractive.

Turning "Brain Drain" into "Brain Gain"

One of the more difficult factors to attract to a city is talent. Educated professionals are necessary for creative companies, and local regions with colleges and universities have a distinct advantage in producing the talent that many companies are looking for. So Gainesville, Florida is ideal for companies looking to relocate, right? Not necessarily.

Gainesville suffers from "Brain Drain," a phenomenon in which young, highly educated people move away from an area. Brain drain, formally known as Human Capital Flight, has been a hindering factor of economic growth for both local regions and large nations. Alternately, few areas have experienced "Brain Gain" - the immigration of young, educated people. A study in 2000 by the U.S. Census determined that areas in the Great Plains, rust belt, and the northeast United States were experiencing brain drain. The young educated population was moving to or remaining in the southeast and the western United States. Unfortunately for Gainesville, the areas in the southeast that were experiencing the brain gains were the larger metropolitan areas and/or the areas located along the coast.

Justification for this Research
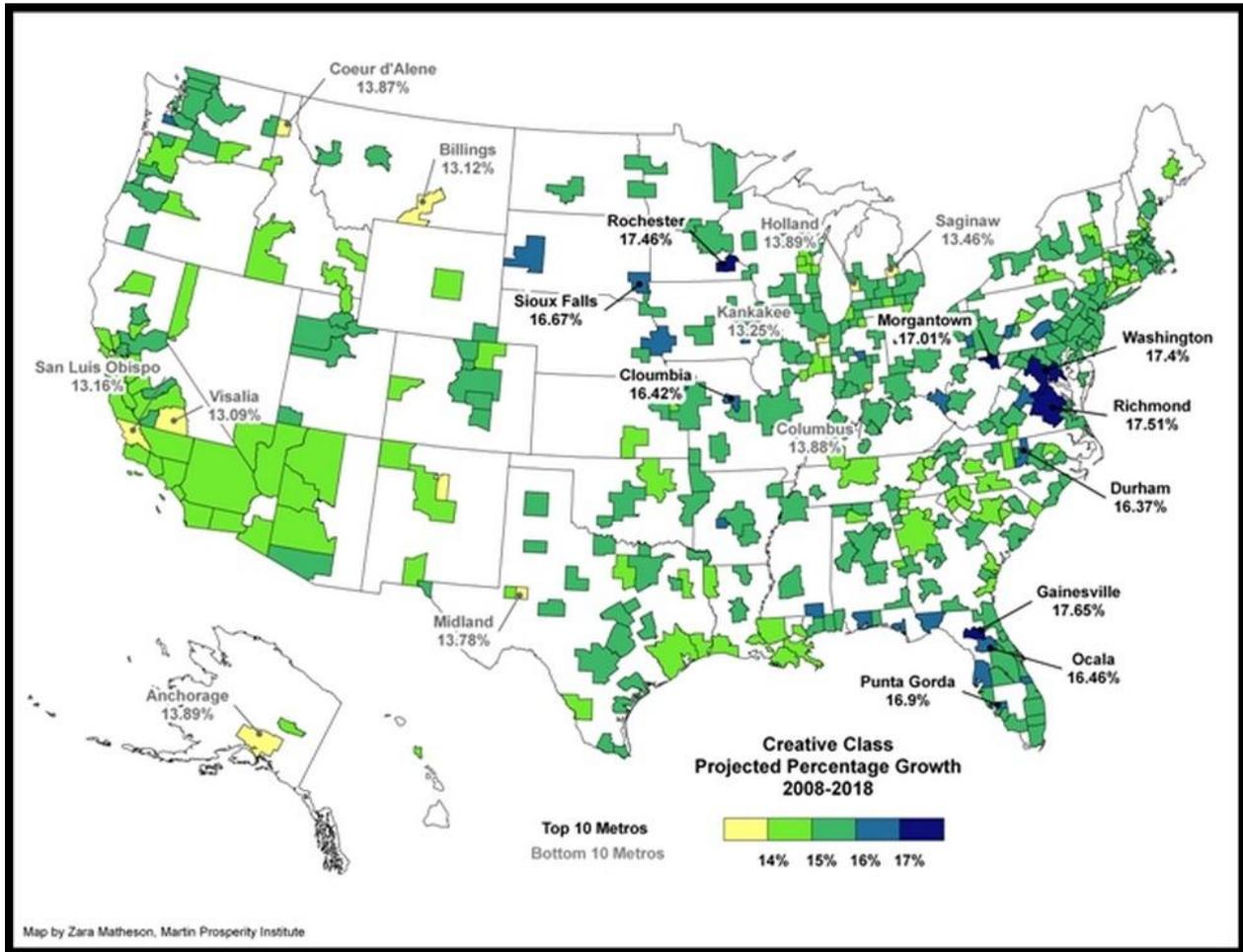
Figure 1-1. Projected Creative Class Growth between 2008 and 2018. Reprinted by
permission from Florida, R. (2010c, August 25). Where the Creative Class
Jobs Will Be. *The Atlantic.* Retrieved from http://www.theatlantic.com/

Richard Florida has listed Gainesville as a potential hub for creative class-type

economic growth. In his 2001 book *The Rise of the Creative Class* he listed Gainesville

as the metropolitan area with the second-highest potential for creative class growth, and

in his August 2010 article "Where the Creative Class Jobs Will Be" he lists Gainesville

as having the largest percentage of creative class job growth of all metro areas at

17.65% growth between 2008 and 2018.

Additionally, local Gainesville leaders have shown that they are aware of the city's potential and are working to harness it. On January 24th, 2012, during the State of the City address for Gainesville, Mayor Craig Lowe opened his speech with the following,

> Recently speaking about middle-class job creation in Kansas, President Obama said, 'The world is shifting to an innovation economy and nobody does innovation better than America.' I agree with the President. He said, 'Nobody has a greater diversity of talent and ingenuity.' I agree with that too. But it was what he said next that I think truly captures where we are as a community. He said, 'The things that have always been our strengths match up perfectly with the demands of the moment.' I absolutely agree. This sentiment perfectly describes Gainesville today.

Organization

This work will be presented in six chapters. Chapter 2 describes the creative class and local economic development strategies. Chapter 3 outlines the study area. Chapter 4 provides a methodology of the economic development analyses used in conjunction with GIS. Chapter 5 details the results from the economic analyses and GIS analyses. Chapter 6 discusses the unique opportunities of Gainesville based on the analyses and how Gainesville has already successfully attracted creative class employers. Chapter 7 outlines restrictions and proposes further research into the topic.

CHAPTER 2
LITERATURE REVIEW

In an age of increasingly advanced computing and manufacturing technology, coupled with rising labor costs and more restrictive governmental regulations, blue-collar manufacturing jobs have left the United States by the tens of thousands (Bureau of Labor Statistics, 2010). Cities and local regions are having a difficult time attracting jobs of any kind and are so desperate for employers that they are creating larger incentives, both policy-based and physical-based, to attract companies. During this economic recession, some cities have found a way to prosper by attracting a specialized set of jobs. Cities such as Portland, Oregon and Austin, Texas and the regions of Silicon Valley in California and the Research Triangle in North Carolina have shown incredible progress in attracting high-paying jobs to their cities.

Local Economic Development Strategies

A proper approach to local economic development planning is needed for successful implementation of the economic development program. Often times, though, local economic development planners do not practice planning in a systematic manner. As Levy (1990) points out, in many cases communities jump into economic development programs in an effort to achieve quick results. This often is due to political reasons. It makes the local government look good in the short-term and gives the economic planner job security. These planners spend much more of their time working on short-tern job growth, hence limiting the ability to wait for and attract the types of jobs that will truly benefit a community in the best way.

Proper planning includes a variety of appropriate stages. First, the program needs assessment. This determines the goal of the project, i.e. create jobs, increase tax base,

etc. Further, the assessment should determine the specifics of what it wants. For example, if the decision is to create more jobs, the next task is to determine which type of jobs and why - to address underemployment, unemployment, etc. Next the program must carry out a market evaluation. This involves an objective analysis of the community's strengths and weaknesses. This includes a multitude of different factors but some of the most telling are employment analyses, including location quotient, shift-share, cluster, and input-output analyses. This type of research will help the community quickly determine which types of companies or industries it should try to attract and which ones will be more likely to want to relocate to the community or expand locally. After the evaluation comes the assessment of the consequences of an economic development program. A new economic development program aims to provide new revenue but will require new expenditures. It can impact traffic, environmental quality, housing, etc. A cost-benefit analysis should be performed to determine whether an economic development plan will be beneficial and if so, what impacts it will have. Finally, the plans need to be formulated. There are four types of economic development strategies that a community can use to promote economic growth. They include sales and promotion, subsidization, making sites and buildings available, and use of land-use controls and the provision of infrastructure (Levy, 2009, p. 258). Local economic development typically includes a combination of two or more of these strategies.

Sales and Promotion

The local community can try to "sell" itself to prospective employers. Through marketing, advertising, and public relations, a community can make itself more visible to a company than other regions. All other things being equal, a community that engaged in promotion gives itself an advantage in attracting certain companies. An example of

this strategy is Austin, Texas' "City of Ideas" billboard campaign, in which the city placed a dozen billboards around its metropolitan area in the late 1990s to promote its innovative industries. Although the campaign wasn't aimed at any certain company or industry, it was a low-cost way of projecting the perception that Austin was an innovative city to both residents and visitors.

Subsidization

There are numerous financial incentives a community can use to attract a company. These include offering tax abatements, loans, enterprise zones, and cash. Subsidizations are the quickest and simplest form of economic development strategy to develop and offer. These incentives may also be based on performance quotas. For example, a city may offer a company more incentives if it creates and retains a certain number of jobs within a set number of years.

Subsidizations are advantageous over other forms of incentives in that they only cost the city if the company accepts the offer. The other types of incentives require that the city initiates spending and then the decision is up to the company, with no guarantee that the incentives will produce results. Contrarily, subsidizations cost the city a lot of money, which inevitably increases the taxes elsewhere in the city. This creates a scenario that attracts one company but may entice another to move away due to increased burden.

Another problem with subsidizations is that they are only useful if they make an impact. The objective of the city is to attract the new company while offering as small a subsidy as possible. If a company had planned to invest in a locality regardless of the community's offer, than the subsidy is a windfall and the community loses money unnecessarily. Additionally, every company has a threshold for the amount of subsidy

required for it to locate in the community. As it is in the company's best interest, it does not reveal how much of an incentive it wants but instead hears offers from multiple cities. If an offer is too low, the city loses out and doesn't get the deal. If the offer is too high, the company takes it and every dollar subsidized beyond the company's internal threshold price is a windfall. John Levy (2009) explains the process as if it were a poker game, where the company holds their cards close to their chest and the community must lay their cards face up on the table for the company to see. There is only a small chance that the community will offer right amount of subsidy; therefore, the company is almost always the true beneficiary.

Making Sites and Buildings Available

An aggressive and more direct approach at local economic development includes preparing space for companies to move in. A common example of this is setting up a municipal industrial park. The locality uses public funds to acquire and prepare the land for development by prospective companies. Some communities go even further and develop buildings on the land. This approach allows a company to locate quickly. The supplying of land or building space is often provided to the company below market value and a debt is incurred by the city, as a form of subsidy. An example of a making a site available is Research Triangle Park in the Research Triangle area of North Carolina. The Research Triangle Park was first developed as an economic development strategy in 1959 by the local and state governments and the region's universities (Research Triangle Park, 2011).

Use of Land-Use Controls and Provision of Infrastructure

In the case of using land-use controls and provision of infrastructure, the land is prepared for development both physically and non-physically. Physically, infrastructure

may be built or altered in a way that improves its functionality and increases the land potential. This may include adding sewer, electric, railroad, and walkable connectivity to a site. Non-physically, zoning and land use changes may be required to make the land more suitable for a potential use. This strategy is similar to making sites and buildings available and the two strategies are often used together.

A Final Note on Economic Development Planning

By no means does this imply that implementing any of the aforementioned strategies will work. It is up to the city to create a plan using these strategies in conjunction with each other to make the city stand out to potential companies. However, by declaring its intentions of high potential land via planning, zoning, and budgeting, the land is much more likely to remain viable for use than if the city doesn't create a plan.

Local economic development is not only focused on attracting new companies but also in retaining current ones. As cities create offers to attract established companies to their community, the original community is also trying to counter those offers to retain the company locally. For example, in 1989 Sears, Roebuck, and Company announced that it planned to relocate its headquarters from the Sears building in downtown Chicago. Through various incentives, Illinois spent $178 million to persuade the company to remain in the Chicago area. Eventually the company moved to a suburb of Chicago, and Illinois spent millions of dollars on Sears without creating a single job, yet it was considered a good investment (Levy, 2009, p. 256).

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The Creative Class

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Richard Florida, possibly the world's most influential living urban theorist (Kay, 2009) defined the term "creative class" in *The Rise of the Creative Class*. The creative class is comprised of employment that requires independent judgment and high levels

of education or human capital. In the book, Florida's defines the creative class not by

the color of the collar but instead by the degree to which they use their knowledge.

Occupation fields in the creative class include "science and engineering, architecture

and design, education, arts, music and entertainment, business and finance, law, health

care, and related fields" (Florida, 2002, p. 8). As Florida points out when defining

classes, "The key difference between the creative class and other classes lies in what

they are primarily paid to do. Those in the Working Class and the Service Class are

primarily paid to execute according to plan, while those in the creative class are

primarily paid to create and have considerably more autonomy and flexibility than the

other two classes to do so" (Florida, 2002, p. 8). The creative class is the fastest

growing class of workers in the United States.

Occupational Classes

Florida defined occupational classes differently than most in *The Rise of the*

Creative Class. The conventional way of classifying jobs was into categories based on

the task performed. There was blue-collar, white-collar, agriculture, and service

workers. Service jobs included jobs in which a service was performed, including much

of the healthcare, teaching, and dining industries and the agriculture class included

workers in the farming, fishing, and forestry industries. Blue-collar and white-collar jobs

were made up of the occupations not included in agriculture and service industries.

Blue-collar jobs included any occupations that required physical labor and white-collar

included jobs that did not. In Florida's book, he classifies the classes based on how they

use their knowledge instead of the task performed. For the most part, blue-collar and

service workers remained in the working and services classes, respectively. There were

some changes though. For example, educators and healthcare professionals provide

services, yet their occupations require education and application of higher level knowledge, so they are members of the creative class.

Agriculture class

Slightly more than one percent of the employed population worked in the agriculture class in 2010. This class of occupations includes employment in farming, fishing, and forestry occupations. At the beginning of the 20th century, the agriculture class was the dominant class, employing three of every eight employees in the United States. The agriculture class is the only class that has been continuously declining since 1900.

Working class

In 2010, 24.6% of the employed population worked in the working class. This class, often referred to as blue-collar workers, includes construction, maintenance and repair, manufacturing, and transportation occupations. The working class has hovered at around 35 to 40% of the total employment in the United States until the 1970s, when it started to slowly, consistently decline.

Service class

The largest class, the service class, makes up 38.8% of total United States employment. This class is comprised of occupations in industries including retail, restaurants, tourism, and personal services. At the beginning of the 20th century, only one in every six workers was in the service class, but at its peak in the 1980s, almost one-half of workers were in the service class. That number declined gradually over the next 30 years. It is important to note that the service class does not include all the occupations that make up the service economy. Highly educated people in a service

economy with occupations in finance, health, and education are grouped in the creative class.

Creative class

Making up 35.6% of the total United States employment in 2010, the creative class was the second-highest occupational class. Richard Florida has further broken down the creative class into two major sub-classes: the super-creative core and the creative professionals. The super-creative core sub-class is composed of computer and mathematical occupations, architecture and engineering occupations, life, physical and social occupations, education, training, and library occupations, and arts, design, entertainment, sports, and media occupations. These professions require creativity in its truest sense.

Table 2-1. Employment classes as a percentage of total employment

	Agriculture	Working	Service	Creative
1900	37.5%	35.8%	16.7%	10.0%
1910	30.9%	38.2%	19.8%	11.1%
1920	27.0%	40.2%	21.1%	11.7%
1930	21.2%	39.6%	25.2%	13.9%
1940	17.4%	39.8%	28.6%	14.2%
1950	11.9%	41.1%	30.5%	16.6%
1960	6.1%	37.7%	33.3%	17.9%
1970	3.1%	35.9%	38.8%	19.8%
1980	2.8%	31.7%	46.2%	18.7%
1991	3.0%	26.0%	45.7%	25.4%
1999	0.4%	26.1%	43.4%	30.1%
2010	1.0%	24.6%	38.8%	35.6%

Source: Florida, 2002, p. 332 and Bureau of Labor Statistics, 2010

The percentage of super-creative workers in the United States workforce has increased from 2.4% in 1900 to 11.7% in 1999. The creative professionals sub-class includes workers in management occupations, business and financial operations occupations, legal occupations, healthcare practitioner and technical occupations,

educational occupations, and high-end sales and sales management occupations

(Florida, 2002, p. 328). This group makes up the rest of the creative class not included

in the super-creative core. It made up 18.4% of the workforce in1999 and, contains

more than ten times as many workers in 1999 than in 1900.

Why Focus on the Creative Class?

Cities create economic development plans to create jobs to increase the tax base,

lower the unemployment rate, and spur growth, but specifically why do planners want to

attract creative class jobs? Creative class jobs help lower unemployment, provide

higher wages, and produce higher input-output ratios better than other classes. The

creative class has been identified as the driving force of innovation and economic

growth (Florida, 2010).

Unemployment nationwide in 2010 was at about 10%, but unemployment for

creative class jobs was only 5% while it was at 15% for the working class population.

The creative class isn't immune to unemployment rise - it increased from 3% at its

lowest point - but it is more immune to volatility and swings of the economy than the

other occupational classes. More than any other class, Richard Florida is certain that

the creative class industries will outpace the other classes in economic growth as the

economy recovers from recession (Florida, 2010).

Also, creative class occupations offer higher wages than employment in the other

classes. In 2010, creative class jobs made up roughly a third of total national

employment, yet they accounted for over half of the total income in the United States

(Florida, 2010). Creative class employees, like everyone else, use that income for

necessities and non-necessities, such as housing, food, and leisure activities. Those

expenditures are dispersed and redistributed throughout the rest of the economy in the

form of, for example, retail services, rental services, and food services. Since creative class wages offer more to spend, more money is free to trickle down through the economy which creates more employment overall.

Additionally, planners like having creative class employment because it generally has a high multiplier in input-output analyses. Creative class employers, like all companies, tend to cluster with related industries. As an example, a research group may need to outsource website development that it cannot perform. It hires a web development firm to create a website for their company and pays the firm for their services. Therefore, the input of funds to the economic research group is turned into an output in the form of buying website services. That output is the input for the website development firm. The website development firm may buy software from a software development company. Once again, the output from the website firm becomes the input for the software company. All three companies are comprised of creative class employment and all three rely on each other for economic sustainability.

Impact of Location

It would make sense that a global economy would level the playing field and break down distance barriers, but that is hardly the case. Creative class employers cluster just as much as any other industry. In *The Rise of the Creative Class,* Florida provided a list of factors that he used as indicators of a region's creativity index – its potential to attract creative people and industries. These factors were indices that calculate an area's high-tech economy, innovation, gay couples, Bohemians, and talent. Three of the indexes that are most telling are called the three Ts – technology, talent, and tolerance (Florida, 2000, p. 365). The cities with the highest creative index – a product of the three Ts – have shown the greatest strength in creative class employment.

Florida pointed out a first-hand example of this. During his time as a professor at Carnegie Mellon University in Pittsburgh, Pennsylvania, Florida noticed a recent graduate being recruited by Trilogy, a software firm from Austin, Texas (Florida, 2002, p. 215). How could it be that firms from Austin were plucking students right out of the great city of Pittsburgh – a large established city with plenty of promise for a career? It turns out that of the 49 metropolitan areas with a population of more than one million, Austin ranked second in creativity and Pittsburgh ranked 36th. Austin scored much better than Pittsburgh in all factors of the creativity index – creative class employment, high-tech presence, innovation, and diversity. The only region to have a better creativity score was the San Francisco metropolitan area, just up the road from the burgeoning high-tech hub Silicon Valley (Florida, 2002, p.246).

Criticism of the Creative Class

One of the main criticisms of the creative class is that its composition of occupations is loosely defined (Long, 2008, p. 54). The creative class is defined as a group of people in the arts (writers, actors, and musicians), knowledge workers (software engineers, architects, and scientists), and service professionals (lawyers, business managers, and health professionals). Although this seems like an unlikely grouping of occupations, all these professions meet Florida's standard for inclusion: an occupation in which the person uses their intelligence to make decisions necessary to the job. Additionally, Florida does not change the requirements for inclusion over the course of his study. This group of occupations has risen in size and percentage of the economy as evidenced in Figure 2-1. This increase also undeniably relates to economic growth and attractive cities (Florida, 2002).

Further, an issue with using employment data for analysis is that the data is grouped together based on the establishment. For example, a library employing twenty people will aggregate twenty jobs as librarians even though, for example, three may be managers, three may be janitors, and another two employers may be security guards. This issue occurs across all industries and it is difficult to gather employment data that has this error corrected (Blanco, 2011a, slide 45). Florida's studies been made horizontally across all regions equally, so if an aggregation error in calculating employment is particularly worse in an industry it won't have an effect on the analysis.

Another criticism is that public officials who have been convinced by Florida have tried to implement policies and incentives to attract the creative class talent instead of focusing on attracting creative class companies. Donegan's 2008 article in the Journal of the American Planning Association points out:

> Our goal is not to dismiss the creative class argument, but rather to bring wider attention to its more traditional and less publicized tenets. Our concern is that, although Florida's creative class notion is incorporated into many development plans across the country, we have little empirical evidence that his arguments are grounded in economic reality. As a result, we fear that policies based on a narrow interpretation of Florida's creative class concept may not live up to some policymakers' positive expectations, and may actually do harm by misallocating scarce public resources. (p. 181)

Florida argues that an economic development plan must be developed uniquely by the local region and that the locality must determine how to allocate funding towards creating a region that is both attractive to companies and to educated professionals.

Industrial Strengths and Weaknesses

Edward Blakely (2002) said "economic development intervention requires a detailed analytical understanding of the strengths and weaknesses of the local economy, as well as the forces that are constraining it." The simplest way to understand

strengths and weaknesses of the local economy is to look at raw employment numbers

over a given period of time. If the employment is growing in a particular industry, that

industry is growing and if the employment is declining, the industry is shrinking. To truly

understand strengths and weaknesses of a local economy, it must be measured against

a reference, or base, economy. Economic development planners will typically compare

the strengths and weaknesses of their locality with a much larger area, depending on

the context of the analysis. Two common examples of strength analysis include the

location quotient analysis and the shift-share analysis.

Location Quotient Analysis

Location quotient (LQ) analysis is helpful in understanding an area's strengths and

weaknesses against the base economy. It is useful in determining comparisons among

regions but does not allow for a dynamic analysis of change over time. The formula

used to calculate the location quotient values is as follows:

$$LQ = \left(\frac{e_i}{e}\right) \div \left(\frac{E_i}{E}\right)$$

where

$$LQ = Location\ Quotient$$
$$e_i = local\ employment\ in\ industry\ i$$
$$e = total\ local\ employment$$
$$E_i = national\ employment\ in\ industry\ i$$
$$E = total\ national\ employment$$

"A location quotient of 1.00 indicates that the local area is on par with the base

area in a given industry's employment" (Blakely, 2002). An LQ value of more than 1.00

indicates an export industry for the local area and less than 1.00 indicates an import

industry. Values of more than 1.25 and less than .75 are considered significant: LQ

values of 1.25 or more show that the area is specialized in a certain industry, indicating

a local strength. LQ values of .75 or less show a significant local disadvantage to certain

industries, showing that those industries are not significant to the local economy

(Blanco, 2011a). It would seem ideal for a locality to have an LQ of 1.00 for all of its

industries, representing that it is self-sustaining, but that is not the case. Due to

economies of scale it is more efficient to specialize and use the profits from the

specialized industries to supplement the industries that are not specialized locally.

Table 2-2. Location quotient indications

LQ Value	What is means
LQ = 1	The local industry has the same percentage of employment as the base economy. It is neither an export nor an import industry.
LQ > 1	The local industry has a higher percentage of employment than the base economy. It is an export industry and locally a strength. It should be maintained, and if possible, grown. Depending on the exact LQ, total employment, and change over time, this industry may indicate a cluster locally.
LQ < 1	The local industry has a lower percentage of employment than the base economy. It is an import industry and a weakness locally. It should be analyzed further to determine if growth in this industry would be efficient.
LQ < 0.75	The economy relies on importing the goods or services of this industry. It will require the most effort to grow this industry locally. Analysis should be done on whether it is more efficient to continue importing this industry's services or to invest in this industry locally.
LQ > 1.25	The economy relies on exporting the goods or services of this industry. Typically this indicates an industry cluster. Clusters attract related industries naturally and therefore this industry should be maintained locally.

Source: Blakely 2010, Blanco 2011a

A LQ analysis is useful in determining strengths and weaknesses but planning

should also incorporate actual employment numbers. For example, agriculture

industries only make up a small percentage of employment nationally and likely locally.

If an area has slightly more agricultural employment than the national average, it will

indicate a very strong industry, though it only represents a small amount of the local employment.

Location quotients are useful but they are static and show an economy's strengths and weaknesses at one given point in time without relation to the overall trend. For successful planning it is also important to understand where the economy is going and where the jobs will be. Having this information allows for the appropriate allocation of public resources and public infrastructure (Blanco, 2011b, slide 3).

Shift-Share Analysis

The shift-share analysis is a dynamic analysis, meaning it represents change over time. This analysis is necessary to determine trends in the local economy relative to the base area. The same data needed for location quotient information is also needed for a shift-share analysis but data from two points in time are needed. The purpose of shift-share analysis is to disaggregate the growth of an industry into its three contributing parts:

- Economic Growth (Share)
- Mix Component (Proportional Shift)
- Competitive Component (Differential Shift)

Economic growth (share)

The change in employment of an industry locally is primarily impacted by the overall economic change of the base area. When an economy is growing or shrinking it is expected that local industries are changing proportionally. Strengths and weaknesses vary across different regions so the economic growth share is first calculated to determine how much change the overall economy can account for. The economic growth of a local economy is calculated using the following formula:

$$x = e_i \left[\frac{US^*}{US} - 1 \right]$$

where

$$x = Economic\ Growth\ share$$
$$e_i = local\ employment\ in\ industry\ i\ at\ the\ beginning\ of\ the\ period$$
$$US = total\ U.S.\ employment\ at\ the\ beginning\ of\ the\ period$$
$$US^* = total\ U.S.\ employment\ at\ the\ end\ of\ the\ period$$

Mix component (proportional shift)

As an industry in the base region changes in employment, it is expected that the local industry will change proportionally. The mix component shift of the shift-share analysis is used to calculate the expected change of a local industry based on the change in employment of the same industry for the base area. If an industry is growing at a given rate overall, it is expected that the same industry is growing at the same rate locally. The mix component shift of a local economy is calculated using the following formula:

$$y = e_i \left[\frac{(US_i^*)}{(US_i)} - \left(\frac{US^*}{US} \right) \right]$$

where

$$y = Mix\ Component\ shift$$
$$e_i = local\ employment\ in\ industry\ i\ at\ the\ beginning\ of\ the\ period$$
$$US = total\ U.S.\ employment\ at\ the\ beginning\ of\ the\ period$$
$$US^* = total\ U.S.\ employment\ at\ the\ end\ of\ the\ period$$
$$US_i = U.S.\ employment\ in\ industry\ i\ at\ the\ beginning\ of\ the\ period$$
$$US_i^* = U.S.\ employment\ in\ industry\ i\ at\ the\ end\ of\ the\ period$$

Competitive component (differential shift)

The competitive component of the shift-share analysis represents the difference in the local industry change and the national industry change. Unlike the economic growth share and the mix component shift, which rely on base area growth, the competitive

component shift calculates the change in local industry employment due to local factors.

The competitive component can be calculated using the following formula:

$$z = e_i \left[\frac{(e_i^*)}{(e_i)} - \left(\frac{US_i^*}{US_i} \right) \right]$$

where

$$z = Competitive\ Component\ shift$$
$$e_i = local\ employment\ in\ industry\ i\ at\ the\ beginning\ of\ the\ period$$
$$e_i^* = local\ employment\ in\ industry\ i\ at\ the\ end\ of\ the\ period$$
$$US_i = U.S.\ employment\ in\ industry\ i\ at\ the\ beginning\ of\ the\ period$$
$$US_i^* = U.S.\ employment\ in\ industry\ i\ at\ the\ end\ of\ the\ period$$

Shift-share analysis: putting it all together

When combined, the three components of a shift-share analysis can be used to tell a story of the industries working within the local economy and which factors are causing their employment to change. The entire formula to calculate local employment change and its factors is as follows:

$$\Delta e_i = \underbrace{e_i \left[\frac{US^*}{US} - 1 \right]}_{Economic\ Growth} + \underbrace{e_i \left[\frac{(US_i^*)}{(US_i)} - \left(\frac{US^*}{US} \right) \right]}_{Mix\ Component} + \underbrace{e_i \left[\frac{(e_i^*)}{(e_i)} - \left(\frac{US_i^*}{US_i} \right) \right]}_{Competitive\ Component}$$

where

$$\Delta e_i = Total\ increase\ in\ employment$$
$$e_i = local\ employment\ in\ industry\ i\ at\ the\ beginning\ of\ the\ period$$
$$e_i^* = local\ employment\ in\ industry\ i\ at\ the\ end\ of\ the\ period$$
$$US = total\ U.S.\ employment\ at\ the\ beginning\ of\ the\ period$$
$$US^* = total\ U.S.\ employment\ at\ the\ end\ of\ the\ period$$
$$US_i = U.S.\ employment\ in\ industry\ i\ at\ the\ beginning\ of\ the\ period$$
$$US_i^* = U.S.\ employment\ in\ industry\ i\ at\ the\ end\ of\ the\ period$$

In the best case scenario, all three shift-share components would be positive, indicating industrial growth due to a growing economy, a growing industry, and local

factors. In many analyses, there will be a mix of positive and negative change. When that is the case, it must be deciphered where the growth is occurring. Economic developers prefer the competitive component to be positive more than the other two components, indicating that local factors are working to increase employment regardless of the base area.

Table 2-3. Shift-share components

Shift-Share Component	Positive	Negative
Economic Growth	The overall economy of the base area is growing and the local industry is expected to increase by this many jobs because of the overall growth	The overall economy of the base area is shrinking and the local industry is expected to decrease by this many jobs because of the overall decline
Mix Component	The base area industry is growing and the local industry is expected to increase by this many jobs because of the industry growth	The base area industry is shrinking and the local industry is expected to decrease by this many jobs because of the industry decline
Competitive Component	There was an increase in this many jobs due to local factors and independent of the base area's overall or industry performance	There was a decrease in this many jobs due to local factors and independent of the base area's overall or industry performance

Source: Blakely, 2010, p. 181 and Blanco, 2011c, slide 13

Before creating an economic development plan, it is necessary to understand the factors leading to employment change. For example, if an industry is growing locally and declining within the base region, it may be an indication of a weak industry overall. It is possible that the decline in the industry has not impacted the local region yet, therefore it would not be wise to invest in that industry unless more research has been done looking at it sustainability. Also, the results from the shift-share analysis should be measured against the actual employment for the industries locally. If a local industry has

only a small number of jobs, shift-share results further from zero will be more substantial and will be more significant than an industry in which the local employment is large. For example, if the agriculture industry has one-tenth the employment as the service industry locally and both have the same growth in employment, then the growth is ten-times more significant for the agriculture industry.

Cluster Analysis

Understanding clusters is an important part of economic development planning. Michael Porter, professor at the Harvard Business School and the most cited author in business and economics (Aktouf, 2002, p. 75), defines clusters as "a geographically proximate group of interconnected companies and associated institutions in a particular filed, linked by commonalities and complementarities" (Huggins, 2011, p. 176). Clusters are formed because companies prefer to locate near their competition, their suppliers, and the industries they are supplying. Some examples of clusters in the United States include Silicon Valley (technology), Seattle (aviation), and Detroit (automobile production). Companies are attracted to clusters and the absence of a cluster is a disadvantage locally.

An example of a specific type of cluster is the health care system. Hospitals have the ability to attract a large amount of industries both directly and indirectly. Doctors prefer to locate near a hospital for patient efficiency. They want a competitive advantage over other doctors or, since most locate next to a hospital, to not be burdened by a disadvantage of locating further away. Doctors prescribe prescriptions for their patients and pharmacies are needed to fill those prescriptions. Once again, pharmacies will cluster around hospital and doctors' offices for a competitive advantage. These are all necessary components for a region, but for specialized areas it doesn't stop there.

Clinical laboratories, pharmaceutical companies, and health insurance providers will all

prefer to cluster. This example shows that not all clustering companies must be in the

same industry. In this case, they may not even be in the same sector but by having a

hospital industry, many more were attracted locally. It should also be noted that in this

example, all the industries are comprised of creative class jobs (Porter, 1983, p. 271).

Table 2-4. Cluster analysis

	Not Competitive (declining local shift)	Competitive (growing local shift)
High-Local Concentration (LQ over 1.00)	Transforming Industries	Growing Base Industries
Low-Local Concentration (LQ less than 1.00)	Declining Industries	Emerging Industries

Source: Blakely, 2010, p.193

A cluster analysis can be done to determine if a cluster exists locally. It takes into

account a local industry's LQ and competitive component. The two values are entered

into a four quadrant table and based on the result the local industry is assigned a label

as a growing base industry, an emerging industry, a transforming industry, or a

declining industry. For a local economic development program, a cluster analysis can

be useful to understand a community's industry growth if deciphered correctly. For

growing base industries, infrastructure should be enhanced to sustain the local industry

advantage. For emerging industries, subsidies can be offered to continue the growth.

Transforming industries often indicate a declining cluster and the community should

alter its planning policies to retain the advantage. Additionally, emerging and

transforming industries are the most dynamic ones and should be examined most

before developing a local economic development plan. Declining industries indicate that

a cluster does not exist and should be of least priority for a community. Regardless of

the state of the local industry, any economic planning policies developed should be

focused on enhancing the cluster, not just to sustaining it. As Porter (1990, p. 75) says,

"The only way to sustain a competitive advantage is to upgrade it."

CHAPTER 3
STUDY AREA

Two study areas were used for analysis. The first study area, Florida, was necessary for determining how the Gainesville Metropolitan Statistical Area (MSA) employment fared against other MSAs within Florida. The second study area, the Gainesville MSA, was used in determining which block groups in the Gainesville MSA contained the highest density of creative class jobs.

Overview of Gainesville, Florida

Gainesville, a city of 124,354 in 2010, is the primary city of the Gainesville metropolitan area. It is located in north-central Florida in the southeastern United States. It has an area of approximately 62 square miles and is located in Alachua County. The county had a population of 247,336 in 2010 and is projected to have about 272,200 people by 2020 and 320,400 by 2040 (Enterprise Florida, 2012).

Economic History of Gainesville

When the Fernandina-Cedar Key railroad was built, the residents of Alachua County decided to move the county seat from Newnansville to a location closer to the railroad in present-day Gainesville. Subsequently, Gainesville was founded as the Alachua County seat on September 6th, 1853 and later incorporated on April 14th, 1864. Its economy was based on the cotton, citrus, and vegetable farming industries until the freezes of 1894-1895. After the freezes, the phosphate and lumber industries became the economic base for Gainesville. By 1906, the University of Florida had relocated to Gainesville and the city's economy shifted again when the local phosphate industry collapsed due to World War I and the cotton industry suffered due to a boll weevil infestation. The city's economic growth continued as the education industry helped

maintain Gainesville's economy. By the 1930s, the university had become the most important economic industry in Alachua County (Pickard, 1991 and City of Gainesville, 2009).

The University of Florida

The University of Florida (UF) is one of the largest higher education institutions in the nation. UF was formed in 1905 under the Buckman Act, which consolidated four state schools to create the university. Gainesville was the site chosen as home of the university and classes in Gainesville started in 1906. Since the 21st century, the number of enrolled students has leveled off around 50,000 students and the university has played a major economic role in Gainesville, Alachua County, and the state of Florida. In the 2009-10 fiscal year, UF generated $4.27 billion dollars of revenue for the state of Florida, with $2 billion coming from sources outside of Florida. It directly produced 41,434 jobs and an additional 64,684 jobs indirectly (Hodges, 2011).

Innovation Square

In 2009 Alachua General Hospital closed its doors with the opening of a new hospital closer to UF. The 80-year old hospital was subsequently torn down the following year and plans were created to build a research park on the six blocks – or 40 acres – of open space. The plan was a joint project between the City of Gainesville, the Gainesville Community Redevelopment Agency, and UF.

Innovation Square was awarded an $8.2 million grant in July 2009 from the Federal Economic Development Administration to create its first building, the Florida Innovation Hub at UF. The Florida Innovation Hub, at 48,000-square-feet, was completed in late 2011 with tenants moving in by early 2012. This was just the start of development with three more privately funded buildings planned for construction later in

2012 (Bredfeldt, 2011). Additionally, the progress made by 2012 spurred redevelopment and renovation for areas surrounding Innovation Square. Many of the building surrounding the site were previously fitted for medical uses –due to clustering around the former hospital. As of 2012, those same buildings were being renovated for other uses. Innovation Square won the 2012 American Planning Association's (APA) award for excellence in economic planning. The APA award panel "was impressed with the project's high quality, establishment of a vision that is not only aspirational but implementable, and the collaboration of a wide-range of stakeholders" (San Felasco Chapter, 2012).

Figure 3-1. A map of Innovation Square in Gainesville. Reprinted by permission from Florida Innovation Hub at UF. (2010). *Close to UF.* Retrieved from http://www.floridainnovationhub.ufl.edu/

Progress Corporate Park

Progress Corporate Park is a research park located in the City of Alachua, six miles northwest of the Gainesville city limits. The research park started as a vision by UF president Dr. Robert Marston and developed in the late 1980s on 200 acres formerly owned by the University of Florida Foundation. The park was developed throughout the 1990s and sold to a group of local real estate investors in 2000. Since the sale to the investors development of the property has accelerated. As of 2012, 80% of employment in the research park was provided by spinout companies from UF (Progress Energy Park, 2012).

Metropolitan Statistical Areas (MSAs)

Metropolitan statistical areas are defined by the U.S. Census as principal cities with at least 50,000 residents. Included in the MSA is the county that contains the principal city. Additional counties may be included in the MSA if they meet specified commuting requirements. As of 2012, additional counties were included if at least 15% of their residents commuted to work to the central county.

MSAs in Florida

As of 2012 there were 20 MSAs in Florida. Eleven of these MSAs contained only one county and nine contained two or more counties. According to 2010 Census data the Miami-Fort Lauderdale-Pompano Beach MSA in South Florida, including Miami-Dade, Broward, and Palm Beach Counties, had the high population of Florida MSAs with 5,564,635 residents. The Jacksonville MSA contained the most counties, including the central county, Duval, and four outlaying counties – Baker, Clay, Nassau, and St. Johns Counties.
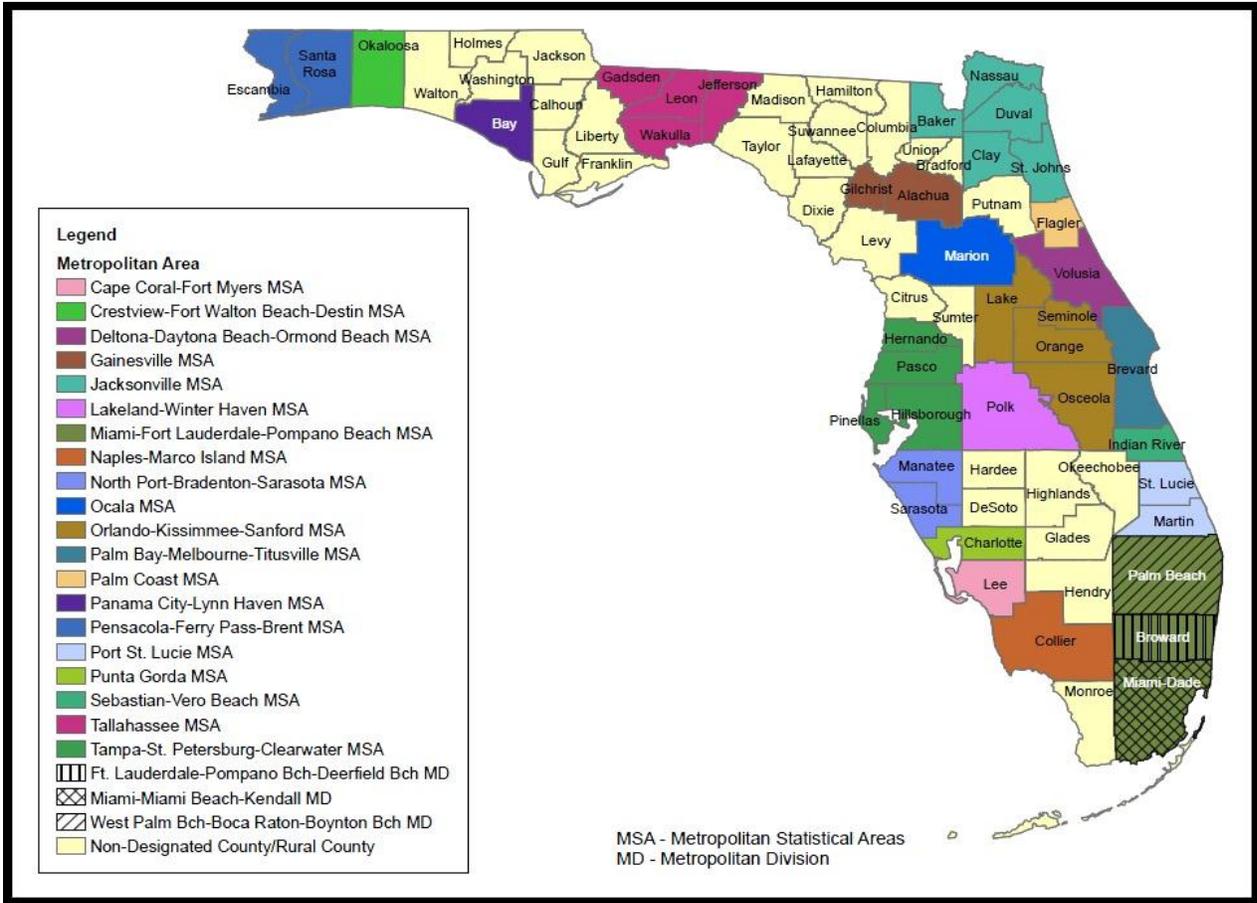
Figure 3-2. Florida's Metropolitan Statistical Areas. Reprinted by permission from
Florida Agency for Workforce Innovation. (2011). *Florida Metropolitan Areas*.
Retrieved from http://www.docstoc.com/docs/108798945/Florida-
Metropolitan-Areas

The Gainesville MSA

The Gainesville Metropolitan Statistical Area is an MSA comprised of the primary

county, Alachua County, and one outlaying county, Gilchrist County. Gainesville was

first defined as an MSA in 1971, comprised of only Alachua County. In 1983 Bradford

County, northeast of Gainesville, was added to the MSA and in 1993 it was removed. In

2003 Gilchrist County, to the west of Gainesville was added to the MSA and has been

included since. Gilchrist County, a county of 16,939 residents, has two-and-a half cities

and towns (Fanning Springs is split in half and shared with Levy County to the

south.),only one traffic light, and no more than one lane moving in either direction on any roads. Its economy surely relies on Gainesville. According to the MSA standards, the Gainesville MSA had at least 2,540 residents that commuted to Alachua County from Gilchrist County.
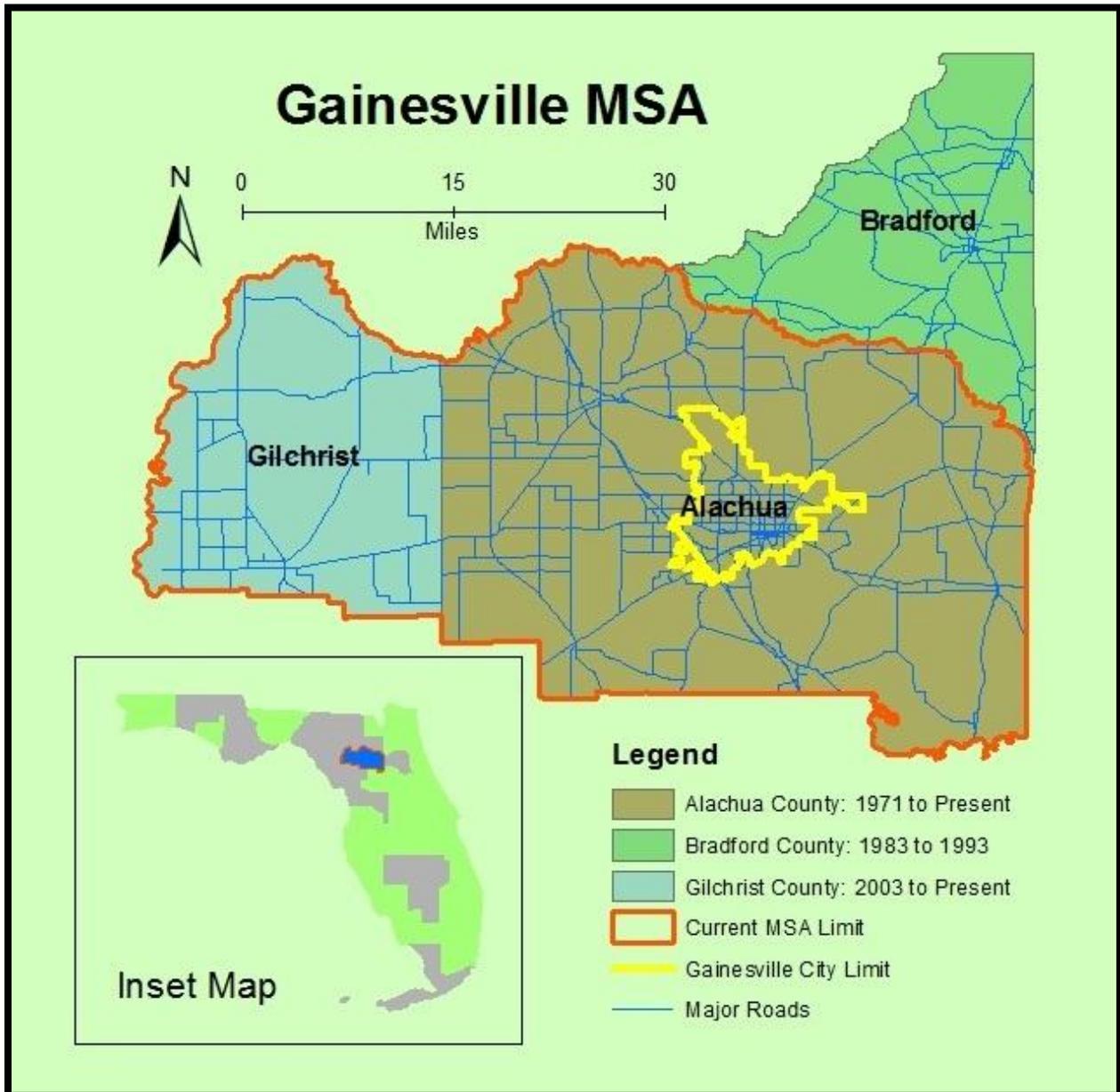
Figure 3-3. Gainesville Metropolitan Statistical Area. Source: Florida Geographic Data Library, 2012. Adapted by author using ArcMap 10.1.

CHAPTER 4
METHODOLOGY

Methodology Overview

As stated before, a systematic approach is necessary for efficient economic

development planning. Per the first step of this process, Gainesville needed

assessment. As a victim of "brain drain", Gainesville suffers from underemployment in

the creative class sectors of the economy. Therefore, Gainesville's priority was to

provide increased employment, specifically creative class jobs, by attracting creative

companies. Next, Gainesville needed a market evaluation. This research aimed to

provide that evaluation through the use of location quotient and shift-share analyses as

a comparison of the Gainesville MSA against the United States and Florida and within

the Gainesville MSA.

This research was able to determine two things: which creative class industries in

Gainesville had strengths and weaknesses and which areas within Gainesville should

be focused on development for creative class job growth. To perform this research,

employment data was gathered and analyzed for MSAs in Florida and for block groups

within the Gainesville MSA. The analysis tools used included location quotient and shift-

share analyses. These analysis tools were helpful in determining areas' strengths and

weaknesses in employment and change in employment over time. Based on the

strengths and weaknesses, suggestions were created for the City of Gainesville to

maximize its economies' potential. These suggestions for improvement are included in

the discussion and conclusion chapters.

Three local regions were used throughout this analysis. They are the City of

Gainesville, Alachua County, and the Gainesville MSA. The city of Gainesville's vision

for the future, based on Erik Bredfeldt's lecture and Craig Lowe's State of the City reflect the desired progress of the City of Gainesville, including creating creative class jobs, attracting innovative companies, redevelopment, and mixed-use development. Much of the analysis has been done for the Gainesville MSA as a whole but the recommendations have been directed towards the City of Gainesville since the city seemed to be the leading local entity in harnessing their creative potential, has more than 47% of the MSA's population within its city limits and is the principal city of the Gainesville MSA.

North American Industry Classification System (NAICS)

The North American Industry Classification System (NAICS) was created by the Office of Management and Budget in 1997 to allow for comparability in business statistics among the United States, Canada, and Mexico. It is the standard used by federal agencies for analysis of the Unites States economy. It classified employment at six levels of detail. At the highest level of classification, there are eleven base industries that aggregate employment based on their place in the economy and not based on the type of employment. Therefore many industries may be grouped together that provide jobs for different employment classes. Because of this, base industries are not useful for analysis as they are not specific enough in determining strengths and weaknesses.

Sectors

At the second-highest level of classification, the census aggregates employment into sectors. These are represented by two-digit NAICS codes. There are twenty sectors identified by the Census. The data used in the majority of this analysis was detailed to the sector level. Of the twenty sectors, Richard Florida classifies nine containing creative class employment.

Table 4-1. NAICS sectors and their corresponding class

NAICS Code	Industry	Class
11	Agriculture, forestry, fishing and hunting	Agriculture
21	Mining, quarrying, and oil and gas extraction	Working
22	Utilities	Working
23	Construction	Working
31-33	Manufacturing	Working
42	Wholesale trade	Working
44-45	Retail trade	Service
48-49	Transportation and warehousing	Working
51	Information	Creative
52	Finance and insurance	Creative
53	Real estate and rental and leasing	Creative
54	Professional and technical services	Creative
55	Management of companies and enterprises	Creative
56	Administrative and waste services	Service
61	Educational services	Creative
62	Health care and social assistance	Creative
71	Arts, entertainment, and recreation	Creative
72	Accommodation and food services	Service
81	Other services, except public administration	Service
92	Public Administration	Creative

Source: Florida, 2002, p. 330

Sub-Sectors

NAICS Codes are further separated to the three-digit level. These categories were

more helpful in determining specific industry strengths and weaknesses but were not

freely available at any geographic level beyond the county level. NAICS Codes

containing more digits allowed for more specific analysis but also came with restrictions.

Some data was not released by the Bureau of Labor Statistics because of privacy

concerns. Areas that had two or less employers per NAICS code had either NC or ND

listed for their local employment. NC stood for Not Calculable, which meant that the

data did not exist or was zero. ND stood for Not Disclosable, which meant that there

was employment in the local region but it could not be disclosed due to privacy

concerns (Bureau of Labor Statistics, 2005). In this analysis, sub-sector data was used for reference but it was too restricted to use it for a horizontal analysis.

Beyond Three-Digit NAICS Codes

In addition to base industry and two- and three-digit NAICS Codes, the census also classifies employment to the four-, five-, and six-digit levels. "The fourth digit designates the industry group, the fifth digit designates the NAICS industry, and the sixth digit designates the national industry" (Census, 2011). This data is often labeled as NC or ND at the county level, rendering it useless for analysis.

<div align="center">

Creative Sectors

</div>

There are nine sectors, within five base industries, that are made up of creative class occupations. Sectors with NAICS Codes 51, 52, 53, 54, 55, 61, 62, 71, and 92 are considered creative (Florida, 2002). Analysis could not be performed at the base industry level because two of the base industries contain both creative class and non-creative class employment. Specifically the leisure and hospitality base industry is composed of mostly service workers nationally but also includes NAICS 71: Arts, entertainment, and recreation. Likewise, the information base industry includes mostly creative occupations but also NAICS Code 56: Administrative and waste services.

NAICS Code 51: Information

The information sector is comprised of establishments that produce and distribute informational and cultural products, provide the means to transmit these products, or process data. Main components of this sector include traditional publishing, internet publishing, software publishing, motion picture and sound recording, broadcasting, data processing, web search, and information services (Census, 2012). Two examples of

information establishments in Gainesville would be the University Press of Florida and Grooveshark.

NAICS Code 52: Finance and Insurance

The finance and insurance sector is comprised of establishments that are primarily engaged in financial transactions or facilitating financial transactions. Its main types of activities include "raising funds by taking deposits and issuing securities, underwriting insurance and annuities, and providing specialized services facilitating or supporting financial intermediation, insurance, and employee benefit programs". Additionally, monetary authorities are included in this sector (Census, 2012). Some examples of finance and insurance sector establishments in Gainesville include Campus USA Credit Union and Nationwide Insurance.

NAICS Code 53: Real Estate and Rental and Leasing

The real estate and rental and leasing sector is comprised of establishments that primarily rent, lease, or otherwise allow the use of tangible and intangible assets. Tangible assets include real estate and equipment. Intangible assets include patents and trademarks. The sector's main activity is real estate and includes selling, renting, buying for others, and appraising real estate (Census, 2012). In Gainesville two examples of real estate and rental and leasing sector establishments include Bosshardt Realty Services and Paradigm Properties.

NAICS Code 54: Professional and Technical Services

The professional and technical services sector is comprised of establishments that specialize in performing professional, scientific, and technical activities for others. These activities require a high level of expertise and training. These services include: legal, accounting, architectural, engineering, computer, consulting, research, advertising,

photographic, translation, and veterinary services. This sector specifically excludes typical office administrative service, a sector that has its employment classified in the service class (Census, 2012). This is the sector that many localities are vying to attract because it offers a broad range of high-paying professions. Many local economic development initiatives have professional and technical services employment in mind when planning and creating policies. Some examples of professional and technical services establishments in Gainesville include CH2M Hill and 352 Media Group.

NAICS Code 55: Management of Companies and Enterprises

The management of companies and enterprises sector is comprised of establishments that "oversee companies and enterprises for the purpose of owning a controlling interest or influencing business decisions". This sector is only comprised of private sector establishments. Public management and oversight is included in the public administration sector (Census, 2012). An example of a management establishment in Gainesville is the Collier Companies, which manages residential rental service companies in college towns including their flagship company in Gainesville, Paradigm Properties.

NAICS Code 61: Educational Services

The education services sector is comprised of establishments that provide instruction and training. The establishments include schools, colleges, universities, and training centers. They may be privately owned and operated for profit or not for profit, or may be publicly owned and operated. Education services are administered by teachers or instructors that "explain, tell, demonstrate, supervise, and direct via a wide array of means and locations". All instructors of this sector require subject matter expertise and

50

teaching ability (Census, 2012). Two examples of educational services sector establishments in Gainesville would be UF and the School Board of Alachua County.

NAICS Code 62: Health Care and Social Assistance

The health care and social assistance sector is comprised of establishments that provide health care and social assistance services administered by trained professionals. All industries within this sector require expertise and many industries within the sector are defined by the educational degree held by the practitioner. Specifically excluded from this sector are fitness instructors and weight-reducing centers (Census, 2012). Some examples of health care and social assistance sector establishments in Gainesville would be Shands Hospital and the Orthopaedic Institute.

NAICS Code 71: Arts, Entertainment, and Recreation

The arts, entertainment, and recreation sector provides cultural, entertainment and recreational interests to its patrons. It includes establishments involved in "producing, promoting, or participating in live performances, events, or exhibits intended for public viewing, establishments that preserve and exhibit objects and sites of historical, cultural, or educational interest, and establishments that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure interests." This sector specifically excludes establishments in the food and accommodation services industry (Census, 2012). Examples of arts, entertainment, and recreation sector establishments in Gainesville would include the University Athletic Association and the Hippodrome Theater.

NAICS Code 92: Public Administration

The public administration sector is comprised of establishments of local, state, and federal government agencies. These agencies "have executive, legislative, or judicial

power and administer, oversee, and manage public programs" within their given area. Generally, these establishments oversee governmental programs and activities that are not administered by the private sector. These government establishments "typically organize and finance the production of public goods and services, often for free or at prices that are not economically significant" (NAICS Association, 2008). In Gainesville, examples of public administration employers would be the City of Gainesville and Alachua County.

<div align="center">**Datasets**</div>

Employment data was obtained from the United States Department of Labor's Bureau of Labor Statistics (BLS) and from the U.S. Census Bureau's Center for Economic Studies (CES). The BLS data was more detailed in the depth of the NAICS code given but only provided data at the county level. Contrarily, the CES data only provided two-digit NAICS codes but provided data for individual blocks. Furthermore, the CES data included public and private sector employment but the BLS data only included private employment.

Bureau of Labor Statistics Data

The BLS data was obtained for various NAICS code employment sectors at the two-digit and three-digital NAICS Code levels. To allow for shift-share analysis, data from 2001 and 2010 was used. Data for these years was chosen because it was the earliest and latest data available, respectively, and offered the most compete time period for analysis. BLS data was only obtained for Alachua County and was used for reference, not analysis, due to it being vastly not calculable or not disclosable in Gilchrist County and not including location more detailed than at the county level.

Center for Economic Studies Data

CES data was obtained at the two-digit NAICS code level for every block in Florida. This data was better suited for giving an overall diagnosis of the Gainesville MSA in comparison to the rest of the MSAs in Florida. Additionally, it was helpful for location-specific analysis within the Gainesville MSA. The CES data was aggregated and analyzed using GIS. Additionally, the CES data provided employment information for NAICS 92: Public Administration, a creative class sector. The BLS doesn't release NAICS 92: Public Administration employment information because it is comprised of public sector employment. To allow for shift-share analysis, data from 2002 and 2010 was used. These years were chosen because they were the earliest and latest years for which data was available, respectively, and offered the most compete time period for analysis.

Topologically Integrated Geographic Encoding and Referencing (TIGER)/Line Data

Geographical data was obtained from the U.S. Census' TIGER/Line shapefile set. Every feature in the CES data had a unique 15-digit ID that geographically corresponded to its respective block. The first two digits were made up of the state FIPS Code and the next three were the county FIPS code. The following six digits represented the census block and the final four digits represented the block code, with the first digit of the block code representing the block group within the census tract. There were over 484,000 blocks in the state of Florida and about a third of them contained employment in either 2002 or 2010.

Process

First, the CES data for Florida's blocks was imported to ArcGIS and joined to the TIGER/Line shapefile. The blocks were then dissolved based on their block group and the employment data based on NAICS sector was summed. Next, a select by attributes was performed to select the block groups in Alachua and Gilchrist Counties. Those blocks were exported as a new shapefile. In the block group shapefile, the block groups were dissolved based on their county and the employment data based on NAICS sector was summed. The counties not belonging to any MSAs were deleted and the rest of the counties were dissolved based on their MSA and the employment data based on NAICS sector was summed. The attribute tables of the Florida MSA shapefile and the Gainesville MSA block group shapefile were exported to Microsoft Excel. In Excel, location quotient and shift-share analyses were performed. The base region used in the analyses was the United States. The United States was chosen as the base region because it provided a more comprehensive analysis, though regions within Florida can be compared against each other using their location quotient and shift-share results. Once the analyses were performed, the tables were loaded back into ArcGIS and joined to their respective shapefile. The result was a shapefile of Florida's MSAs and a shapefile of Gainesville MSA's block groups, with both files containing actual employment numbers, location quotients, and shift-share results for all nine creative class sectors and the total of all creative class employment.

Sector Score Analysis

To further understand the importance for each sector within Gainesville, five importance indicators were ranked among the nine creative class sectors. They include the actual local employment for 2010, the location quotient for 2010, the location

quotient measured against other Florida MSA's location quotients for 2010, the national

growth rate between 2002 and 2010, and the local growth rate between 2002 and 2010

(the last two are variations of the mix and competitive component shifts respectively but

have the local employment factor removed to offset the bias already captured in total

employment). These five factors were measured, and the nine creative class sectors

were ranked based on how they performed in Gainesville. The rankings were totaled up

and an overall rank was given to each sector. This informal matrix helped measure the

importance of each sector to Gainesville while incorporating all factors into it. For

example, a sector may have been growing quickly locally, but if it was declining

nationally, offered low employment, or had a low location quotient, it was easy to

determine that the city should not have prioritized it.
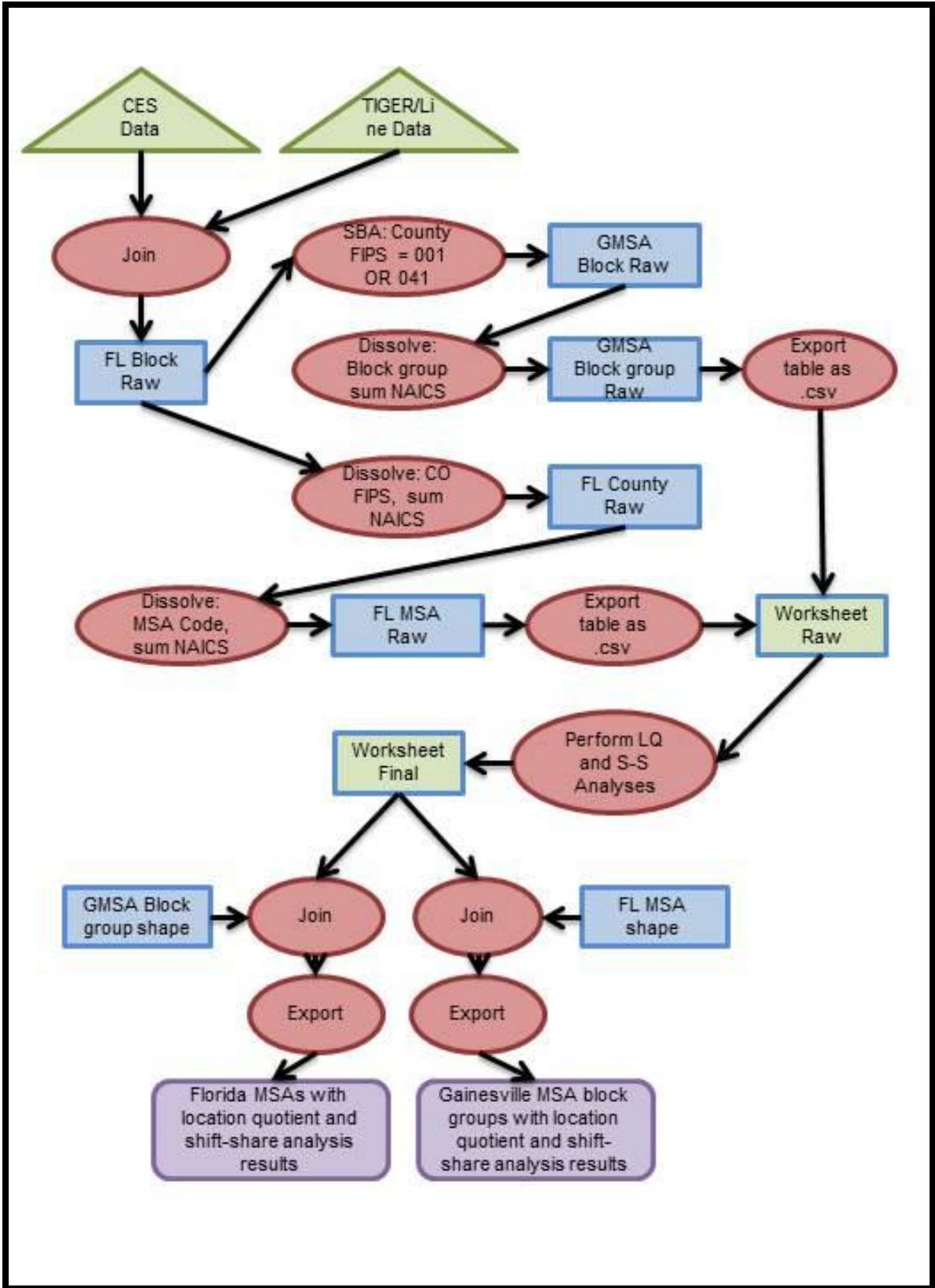
Figure 4-1. Methodology Flow Chart

State-Wide MSA Analysis

Overall, Gainesville is a hub for creative class employment, both nationally and within Florida. It had a 1.26 location quotient for creative class jobs which meant that proportionally it had 26% more creative class jobs than the U.S. average in 2010.
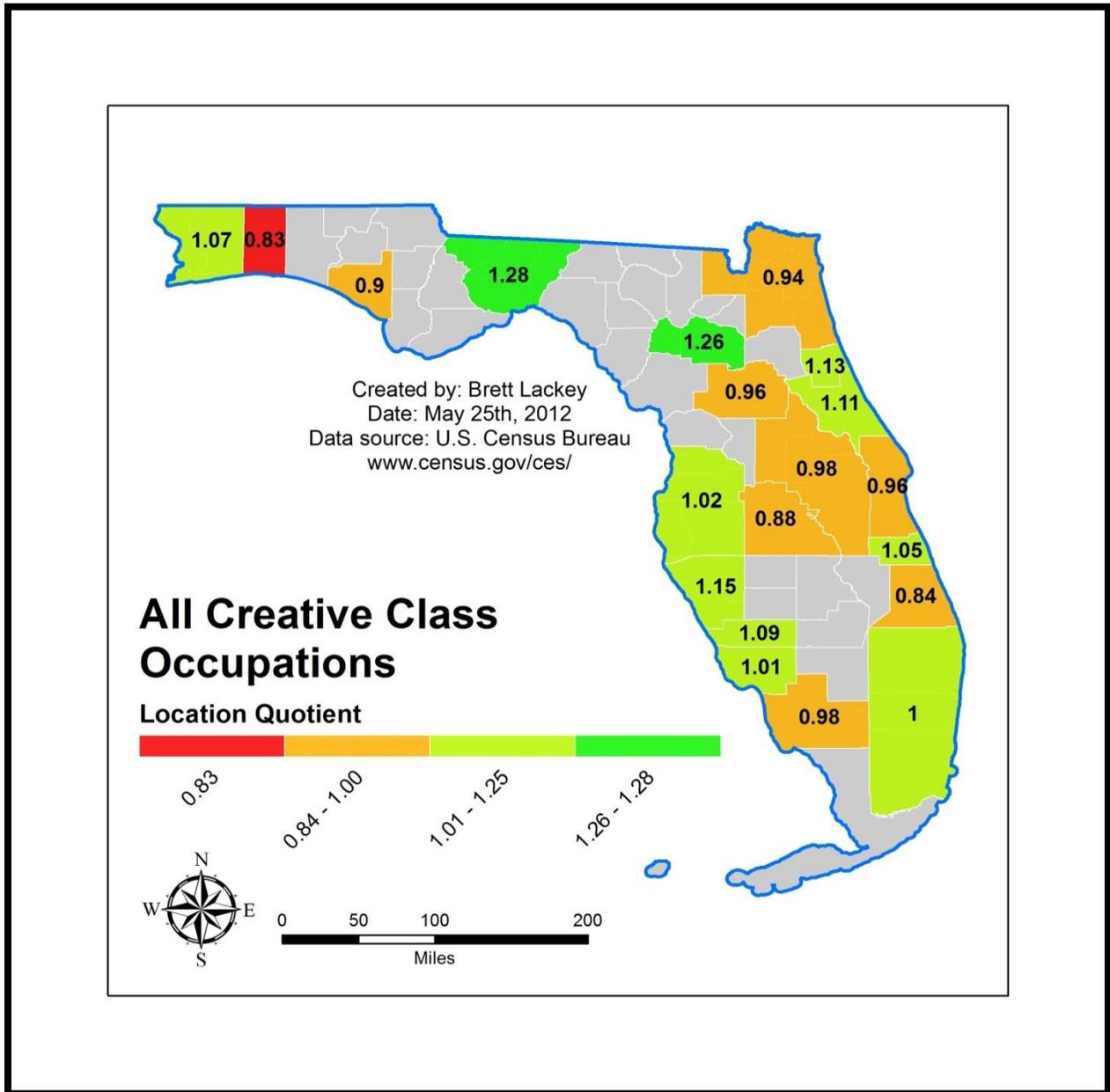
Figure 5-1. Creative class location quotients for Florida, 2010

Gainesville had the second-highest creative class location quotient of the twenty Florida MSAs. The only MSA in Florida with a higher location quotient was Tallahassee at 1.28. Tallahassee's high location quotient was the result of it also being a college town and it being the state capital. As the capital, it had a secure economic base of public administration jobs – something that Gainesville did not have. Other than the two prominent college towns in Florida, the rest of the MSAs had location quotients ranging from 0.83 to 1.15.

In a shift-share analysis, Gainesville had an economic growth share of -741 but had a mix component shift of 7,998, meaning that although there was an economic decline nationally, the class grew. The competitive component shift was -2,613, meaning that the national growth outpaced the local growth. When all three factors of the shift-share analysis were combined, it was revealed that Gainesville gained 4,644 creative class jobs between 2002 and 2010, an increase of 7.4%.

Table 5-1. Ten largest employers in Gainesville, 2011.

Employer	2011		2002	
	Employees	Percentage of employment	Employees	Percentage of employment
University of Florida	14,723	12.88	11,870	11.11
Shands Hospital	12,588	11.01	7,986	7.47
VA Hospital	4,317	3.78	1,627	1.52
Alachua County School Board	4,299	3.76	4,209	3.94
City of Gainesville	2,200	1.92	1,863	1.74
Publix Supermarkets	2,056	1.80	n/a	n/a
North Florida Regional Medical Center	1,700	1.49	900	0.84
Nationwide Insurance	1,300	1.14	1,065	1.00
Alachua County	1,120	0.98	783	0.73
Santa Fe Community College	796	0.70	800	0.75

Source: City of Gainesville, 2011.

Of the top ten employers in Gainesville in 2011, nine were comprised of creative class jobs with three contributing to the education services sector, three contributing to the health care and social services sector, two contributing to the public administration sector, and one contributing to the finance and insurance sector. The only other employer in the top ten locally was Publix, which was comprised of employment in the retail trade sector, in the service class.

Information

Having a 0.71 location quotient, the Gainesville MSA did not fare well against the rest of the country or against Florida's other MSAs in the information sector. It is important to keep in mind that although many professors at UF and SFC publish text and video, they were included in the educational services sector instead. The shift-share analysis of this sector showed that between 2002 and 2010, the Gainesville MSA had an economic growth share of -32, meaning that the total employment decline in the United States accounted for 32 lees jobs in this sector in the Gainesville MSA. It had a mix component of -497, meaning that the decline in national employment in the Information sector accounted for 497 less jobs in the Gainesville MSA. Tellingly though, it had a competitive component shift of -333, meaning that the local sector lost 333 jobs due to local factors, regardless of the national trends. These losses in jobs represented a 32%, or 862-job, drop in employment between 2002 and 2010 in the Gainesville MSA.

Attracting the information sector to Gainesville should not be a priority of the city. Although information sector jobs represent the creative class, they are moving away from Gainesville. This is not likely to entice information companies to cluster in Gainesville. Information companies looking to move to Florida would be better suited to
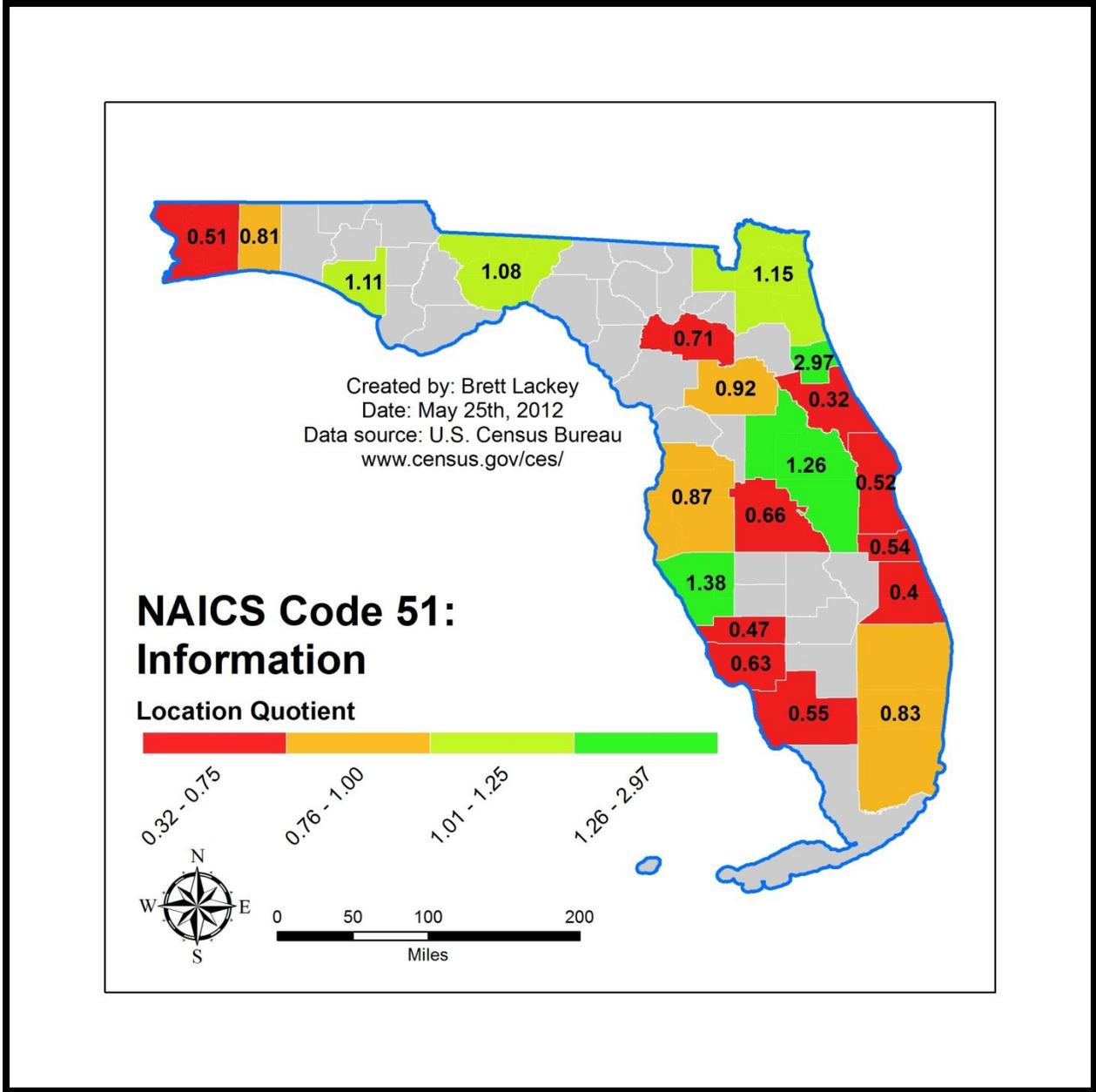
Figure 5-2. NAICS code 51 location quotients for Florida, 2010

move elsewhere in Florida – the Palm Coast, Orlando, and Sarasota MSAs are very

attractive to the information sector, both statewide and nationally.

Finance and Insurance

The finance and insurance sector also did not perform well in the Gainesville MSA.

It received a 0.76 location quotient, the median location quotient for MSAs in Florida.
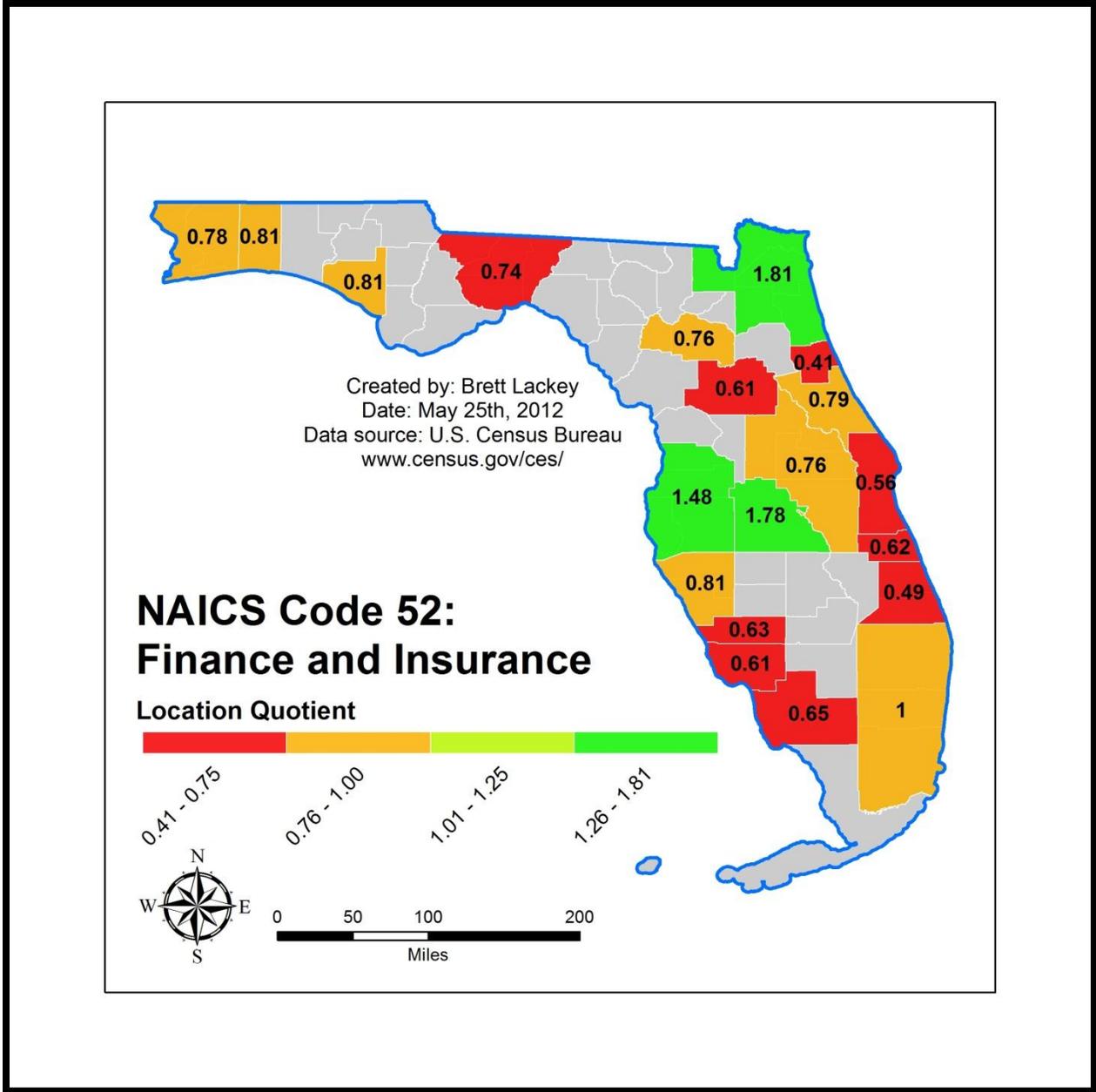
Figure 5-3. NAICS code 52 location quotients for Florida, 2010

After doing a shift-share analysis, its economic growth share was -49 and its mix

component was -90, meaning that between 2002 and 2010, 49 jobs were lost due to the

total national employment decreasing and 90 were lost due to the sector decreasing in

employment nationwide. On a positive note, the competitive shift indicated that local

factors created five new sector jobs in the Gainesville MSA, bringing the total job loss to

134 jobs between 2002 and 2010. Overall, this represented a 3% drop in jobs for finance and insurance in the Gainesville MSA.

Nationwide Insurance was the eighth-largest employer and the second-largest private sector employer in Gainesville in 2011. It operates one of its five regional offices in Gainesville (Nationwide Insurance, 2012). Between 2002 and 2011 it added 235 jobs to Gainesville and as of 2011 it employed 1300 people, or 1.14% of the total workforce in Gainesville (City of Gainesville, 2011).

Other than Nationwide Insurance, Gainesville was not conducive to attracting the finance and insurance sector. Companies looking to locate in Florida may be better suited to cluster in the Jacksonville, Tampa, or Lakeland MSAs where the location quotients are much higher. Attracting finance and insurance companies should not be a priority for Gainesville.

Real Estate and Rental and Leasing

The real estate and rental and leasing sector performed well in the Gainesville MSA based on its location quotient of 1.32. Even though the region had such a high location quotient, it only ranks 9th out of the 20 MSAs in Florida. The location quotient may have been high because Gainesville has a high number of apartments per capita compared to elsewhere in the state due to its college student population. Though Tallahassee is also a college town and had the second lowest location quotient in the state among MSAs. Between 2002 and 2010, employment in the real estate and rental and leasing sector increased from 2,059 to 2,408, an increase of 17%, or 349 jobs. The economic growth share was -24 and the mix component was -90, but the competitive component was 463, the 7th highest competitive shift in the state despite Gainesville MSA's relatively small population.
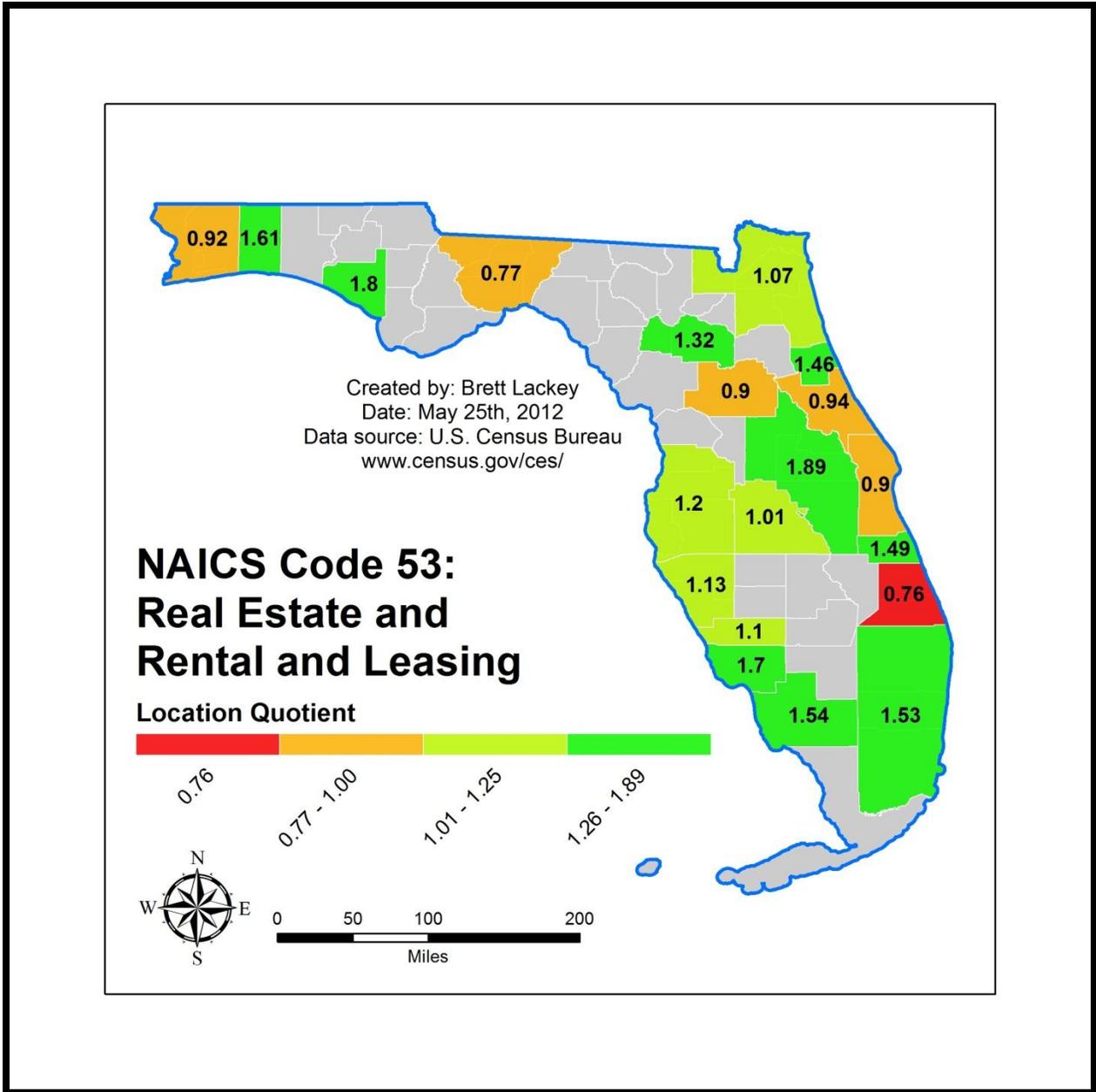
Figure 5-4. NAICS code 53 location quotients for Florida, 2010

The real estate and rental and leasing sector should be a priority for economic development in Gainesville. Although it only employs 2% of the total Gainesville MSA workforce, the sector is doing much better in Gainesville than throughout the rest of the nation and state. Companies in the sector should look to move to Florida, given its growth in a sector that is in decline nationally, and should look specifically at Gainesville

given its high location quotient and stable base of potential customers – UF and SFC

students.

Professional and Technical Services
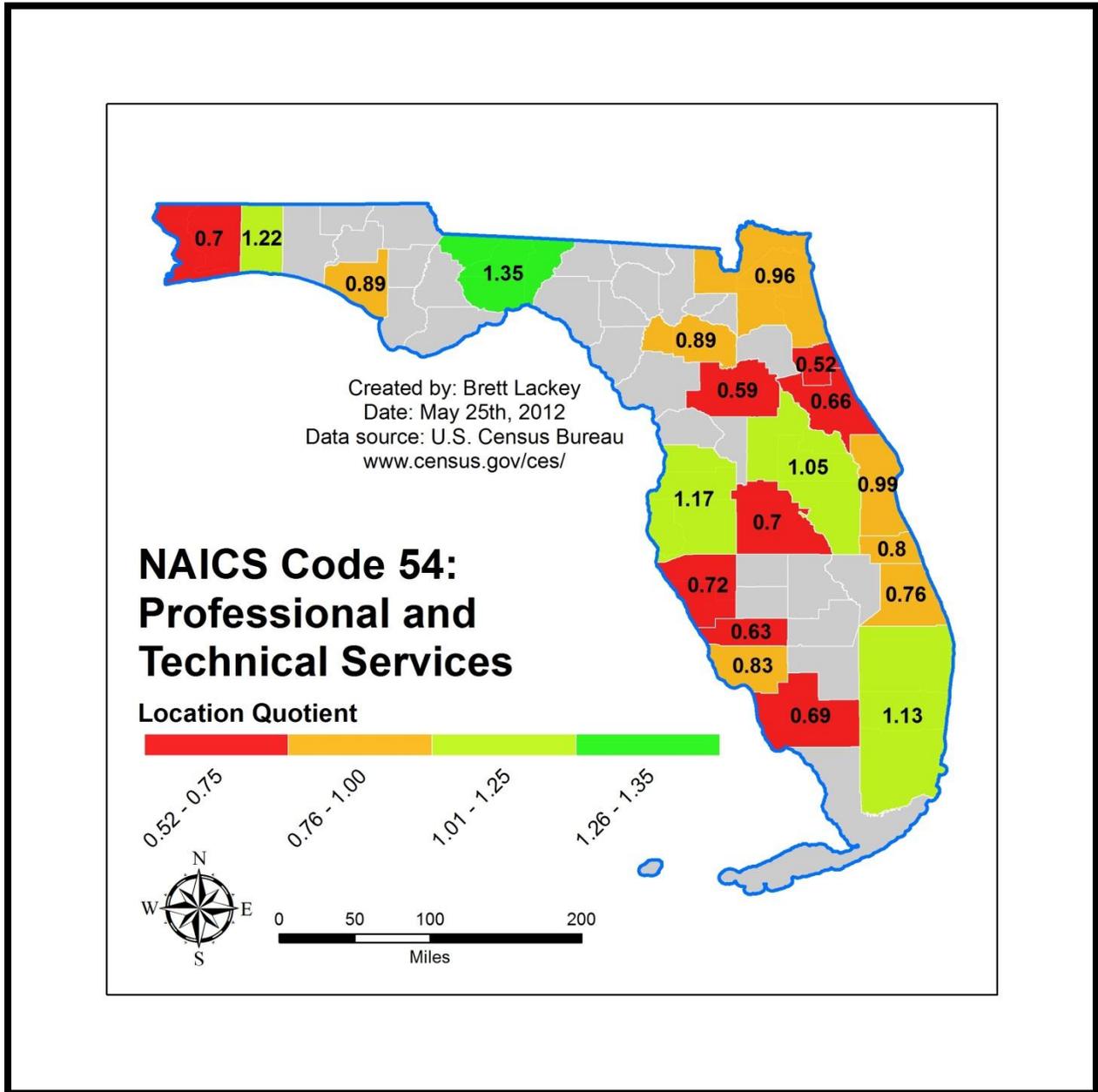

Figure 5-5. NAICS code 54 location quotients for Florida, 2010

The professional and technical services sector is full of occupations that cities are

eager to attract, including lawyers, engineers, architects, scientists, and consultants.

Gainesville received a 0.89 location quotient in this sector, which shows that it was not a strong sector locally but may have potential. It ranked 8th out of the 20 MSAs in Florida.

Between 2002 and 2010, the sector increased its employment by 6% locally from 5,965 to 6,315. In the shift-share analysis, this was represented by an economic growth of -71, a mix component of 790, and a competitive component of -370, meaning that the total national employment was declining as well as the local sector employment, but overall the sector is growing nationally. Additionally, the sector represented 5.5% of the total employment in the Gainesville MSA, 4th among creative class sectors behind education, healthcare, and public administration.

Overall the professional and technical services sector was growing nationally, had high local employment, and was locally growing in employment despite having a low location quotient and a negative competitive shift. Additionally, it is comprised of high-paying professional jobs - the kind that cities are attracted to. Gainesville should place importance on finding a way to attract employers in this sector.

Management of Companies and Enterprises

As the Gainesville MSA's weakest creative class sector, the management of companies and enterprises sector received only a 0.14 location quotient in 2010. Additionally, it only employed 247 people in Gainesville, also the weakest among creative class sectors.

In the shift-share analysis, national economic decline led to an economic growth of -2 but sector growth led to a mix component of 19 and local sector growth led to a competitive component of 49. The increase of 66 jobs between 2002 and 2010 earned the sector the highest percentage growth of creative class sectors in Gainesville, a 36.5% increase in employment. Even though the jump in employment was high

proportionally, an increase of 66 jobs was only a fraction of the next largest growing

sector locally.
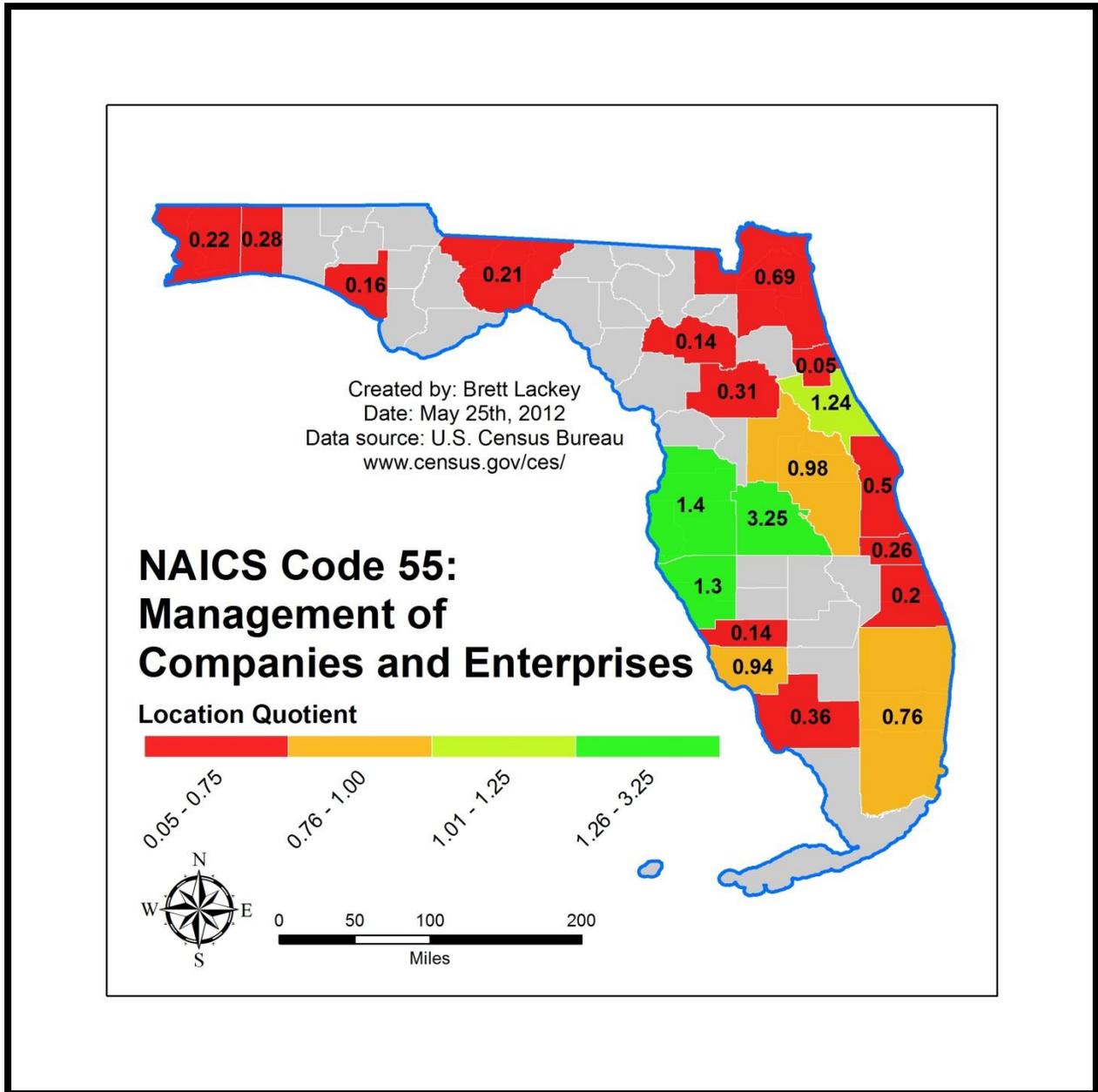
Figure 5-6. NAICS code 55 location quotients for Florida, 2010

Attracting the management of companies and enterprises sector should not be a

priority of Gainesville. The sector doesn't contribute much to the employment in

Gainesville. Gainesville's resources can be better spent attracting or maintaining other

creative class sectors more effectively. The sector was ranked second-to-last on the

sector score matrix, including ranking last in three of the five fields.

Education Services
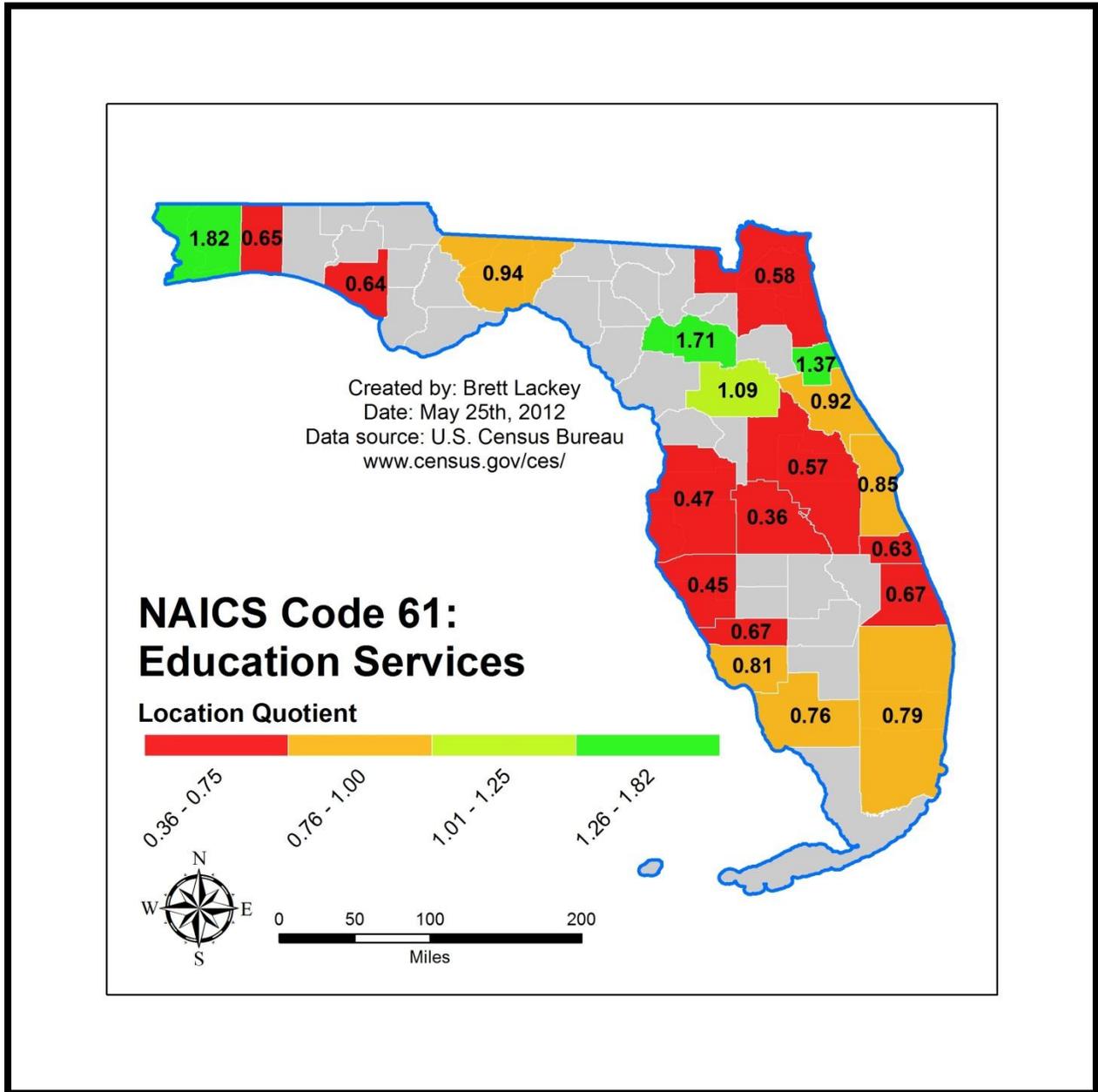
Figure 5-7. NAICS code 61 location quotients for Florida, 2010

The education services sector stands out as one of Gainesville MSA's top creative

class sectors. The Gainesville MSA boasts two large higher-education institutions which

help attract students, money, talent, and jobs to the city. UF, SFC, the Alachua County School Board were three of the top ten employers in Gainesville in 2011 (City of Gainesville, 2001). Not only did the sector have the second-highest location quotient among MSAs in Florida, but it also employed 20,482 people in 2010 in the Gainesville MSA. Additionally, the education industry has formed the base of the local economy in Gainesville since the 1930s (Pickard, 1991).

The shift-share analysis resulted in an economic growth of -209 and a competitive component shift of -1,870. On the bright side it earned a mix component shift of 4,835 bringing the total gain in jobs from 2002 to 2010 to 2,756, a 16% increase in employment. The sector grew nationally by 26% between 2002 and 2010, the highest percentage growth of all creative class sectors.

Although the local employment increased at a slower rate than the national average, the education industries within Gainesville play a large part in shaping the local economy. Of the five factors used in the sector score matrix, it ranked highest in three and overall was the highest ranking sector locally. Gainesville should prioritize both attracting and retaining the education services sector.

Health Care and Social Assistance

Gainesville's other top sector was the health care and social assistance sector. Having a 1.43 location quotient, the Gainesville MSA had the 4th highest location quotient among Florida MSAs in 2010. In 2011, the second-, third-, and seventh-largest employers in Gainesville were Shands Hospital, VA Hospital, and the North Florida Regional Medical Center, respectively. The health care and social assistance sector employed a total of 22,049 people in 2010, the highest employment among creative class sectors in Gainesville.
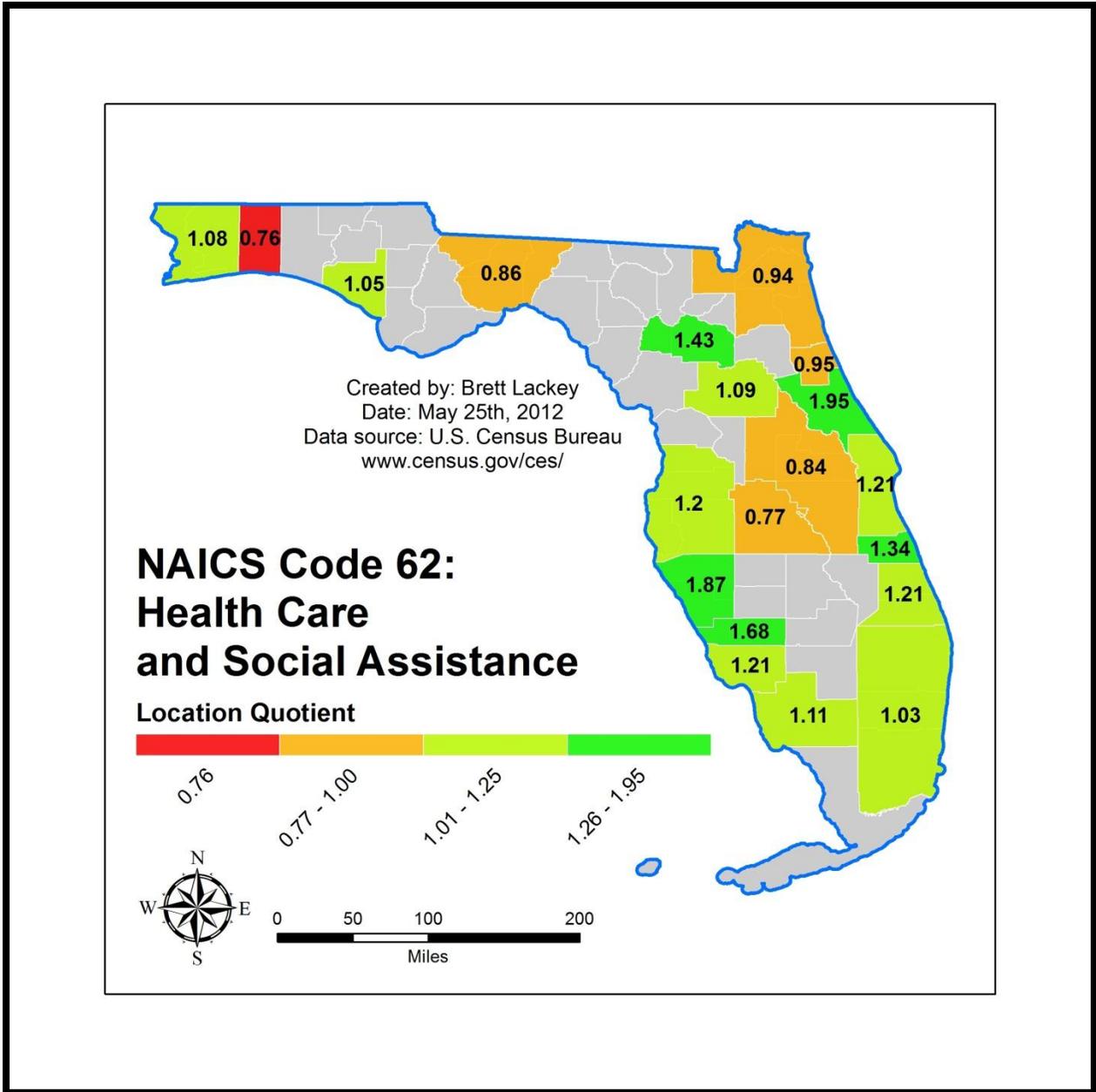
Figure 5-8. NAICS code 62 location quotients for Florida, 2010

In the shift-share analysis, this sector had an economic growth of -237 but had a mix component shift of 4,435. The competitive component shift was -2,230, bringing the total increase in employment to 1,968 between 2002 and 2010. This represents an increase of nearly 10% in employment since 2002.

Attracting and maintaining the health care and social assistance sector should be a priority for Gainesville. It is the largest employer among creative class sectors in Gainesville and has the second-highest ranking in the Sector Score matrix. Employment in this sector represented 19.3% of all employment in the Gainesville MSA. Gainesville is a hub for the medical industry within both the state and the nation. Today it, along with the education industry, forms the economic base for Gainesville.

Arts, Entertainment, and Recreation

Florida did well as a whole in the arts, entertainment, and recreation sector. This was mostly due to Florida's tourism industry, which drives a significant portion of the state economy. The highest location quotient belonged to Orlando, the tourism capital of the world. Within Gainesville, the location quotient was 1.02, slightly higher than the national average but low compared to the rest of the MSAs in Florida. In 2010, the sector employed 1,849 people. This represents a 467-job increase, or a 34% increase from 2002.

A shift-share analysis revealed that the sector had an economic growth share of -16 but it had a mix component shift of 97 and a competitive component shift of 386. That means that the sector was growing nationally in a shrinking economy and that the local sector growth was outpacing the national sector growth. Unfortunately there were many other MSAs in Florida that are outperforming Gainesville.

Gainesville should place emphasis on attracting other creative class sectors rather than the arts, entertainment, and recreation sector. It does not provide as much employment as the other sectors and, although it is doing better than the national average, the sector was not performing as well in the Gainesville MSA as it was in the rest of Florida.
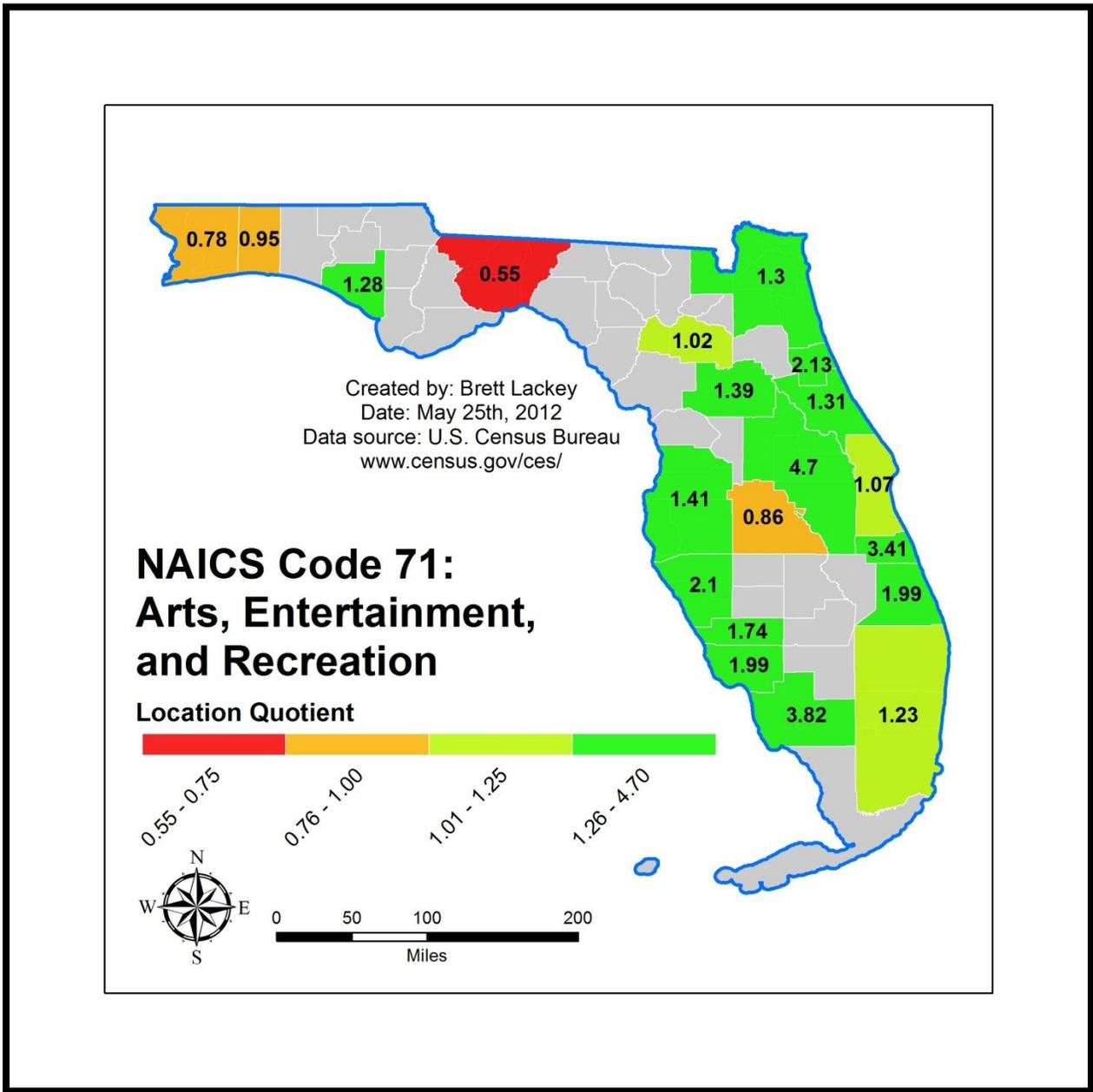
Figure 5-9. NAICS code 71 location quotients for Florida, 2010

Public Administration

The public administration sector was one of the most varied across Florida's MSAs

and as expected, the state capital Tallahassee had the highest location quotient. The

Gainesville MSA also had a high location quotient at 1.45, placing fourth among

Florida's MSAs. In 2010 there were 8,184 public administration jobs in Gainesville, making it the third largest creative class sector by employment. Although there was a decrease of 316 jobs in between 2002 and 2010, the sector only shrank by 3.7% locally.
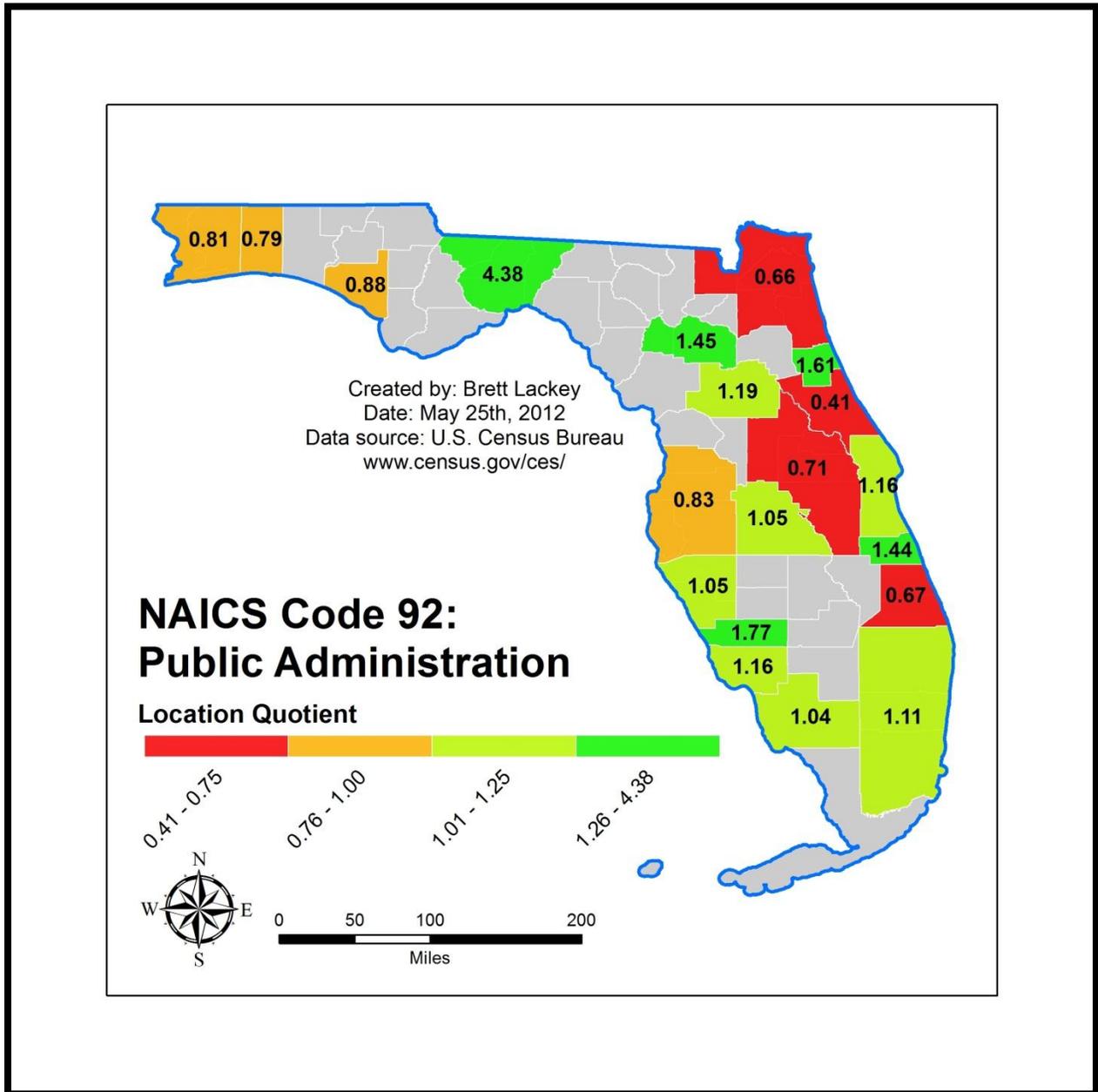
Figure 5-10. NAICS code 92 location quotients for Florida, 2010

Using a shift-share analysis to analyze this decrease, it was revealed that the economic growth share was -100, the mix component shift was 562, and the

competitive component shift was -778. This meant that the sector was growing

nationally even though the national economy overall was shrinking. Additionally, the

sector was shrinking locally due to local factors and not keeping up the pace of the

national sector.

Tallahassee being the state capital was significantly reflected in the results. Many

public administration jobs are anchored in Tallahassee. Tallahassee had the third-

highest amount of public administration jobs, only behind Miami and Tampa, and in

2010 had five-times (8,148 to 39,641) the amount of public administration jobs of

Gainesville – a sector that Gainesville in still strong in but cannot compete much in.

The public administration sector was an important economic base for Gainesville

supplying over 7% of the total Gainesville MSA employment. It also had a high location

quotient and was a growing sector nationally. Overall it ranked third on the sector score

matrix and based on the information available, the public administration sector should

receive priority from the City of Gainesville for attracting and maintaining jobs.

Local Analysis of Prioritized Creative Class Sectors

Based on the results of the sector score matrix, the creative class sectors have

been prioritized. The sectors of highest priority were the education services and the

health care and social assistance sectors. These sectors ranked highest primarily due

to their prominence in the Gainesville MSA in 2010. It is just as important to sustain

these sectors within Gainesville as it is to promote their growth. Also, three other

sectors were prioritized. They include the real estate and rental and leasing sector, the

professional and technical services sector, and the public administration sector. These

sectors displayed a high local concentration, strong growth between 2002 and 2010,

and a strong local employment total. They have been identified as strong candidates for

creative class employment growth. The five prioritized sectors were further analyzed

within the Gainesville MSA. Their employment data for each block group was mapped

by jobs per kilometer to detect sector concentrations within the MSA.

The following maps display total employment in 2010 within the Gainesville MSA

per square kilometer for the five creative class sectors identified as a priority. They are

based on the employment data from the CES at the block group level –the smallest

geographic unit that was useful for analysis. The blue line represents the boundary of

Alachua and Gilchrist Counties, encompassing the entire Gainesville MSA and the red

line represents the Gainesville city limit as of 2012.
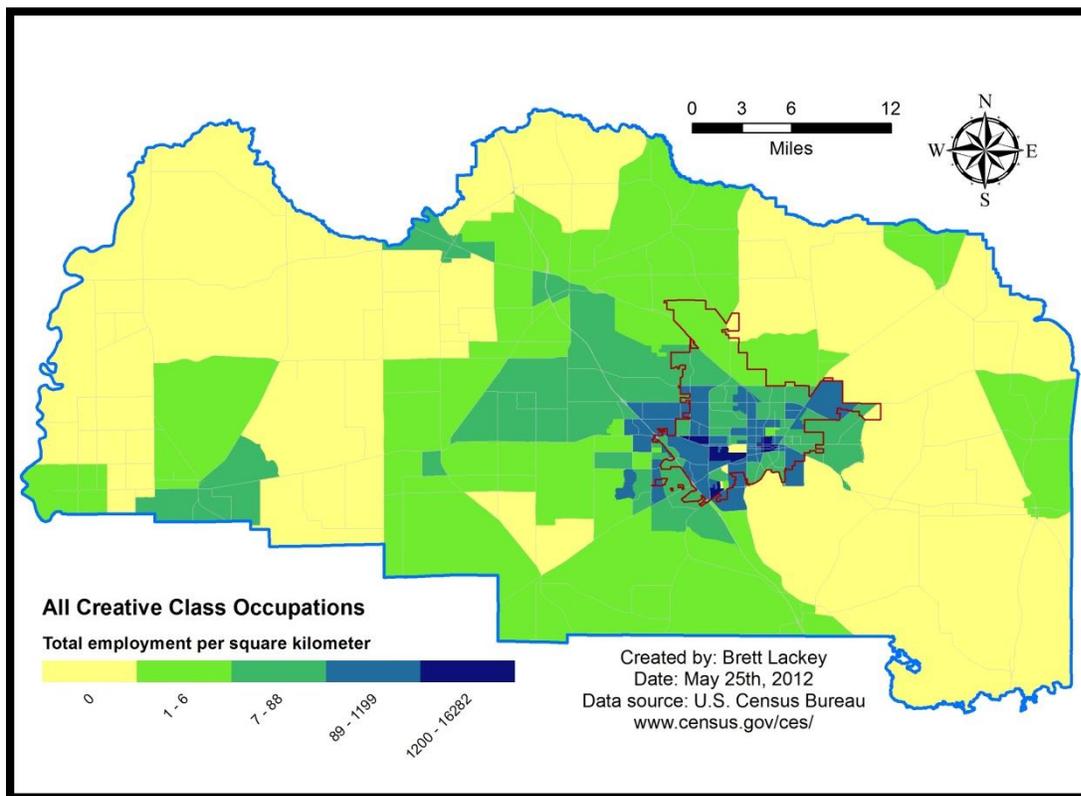
Figure 5-11. Gainesville MSA creative class employment

In figure 5-11, it is apparent that creative class employment within the Gainesville

MSA was concentrated within the city limits of Gainesville and to the west of the city,

surrounding I-75. This was to be expected, as Gainesville is the primary city of the Gainesville MSA and therefore much of the employment is located within the city. The highest concentration of creative class employment was located on the UF campus and in Gainesville's downtown.

Real Estate and Rental and Leasing
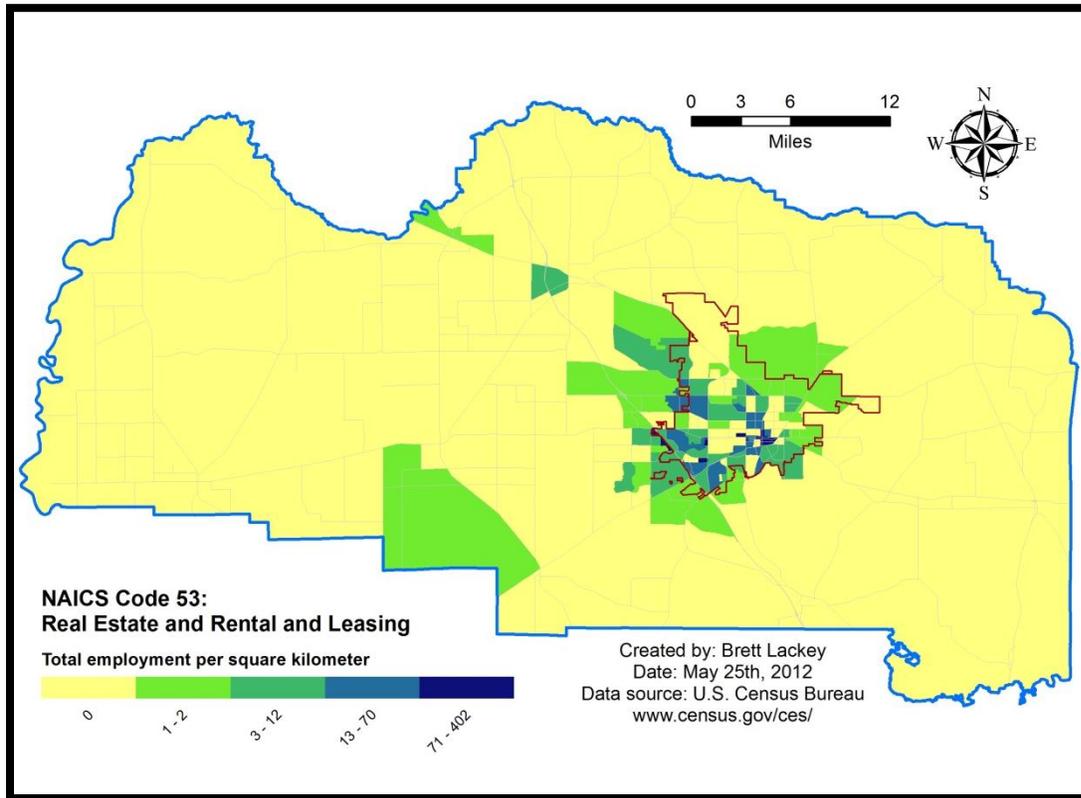
Figure 5-12. Real estate and rental and leasing employment

In the real estate and rental and leasing sector it was obvious that the highest concentration of this employment was in the area immediately surrounding UF. As mentioned before, the presence of a university increases the demand for rental services because students need housing. The highest concentration of this sector was located to the east of the UF campus, in the downtown Gainesville area. Overall, this sector created a ring of employment around UF.

Professional and Technical Services
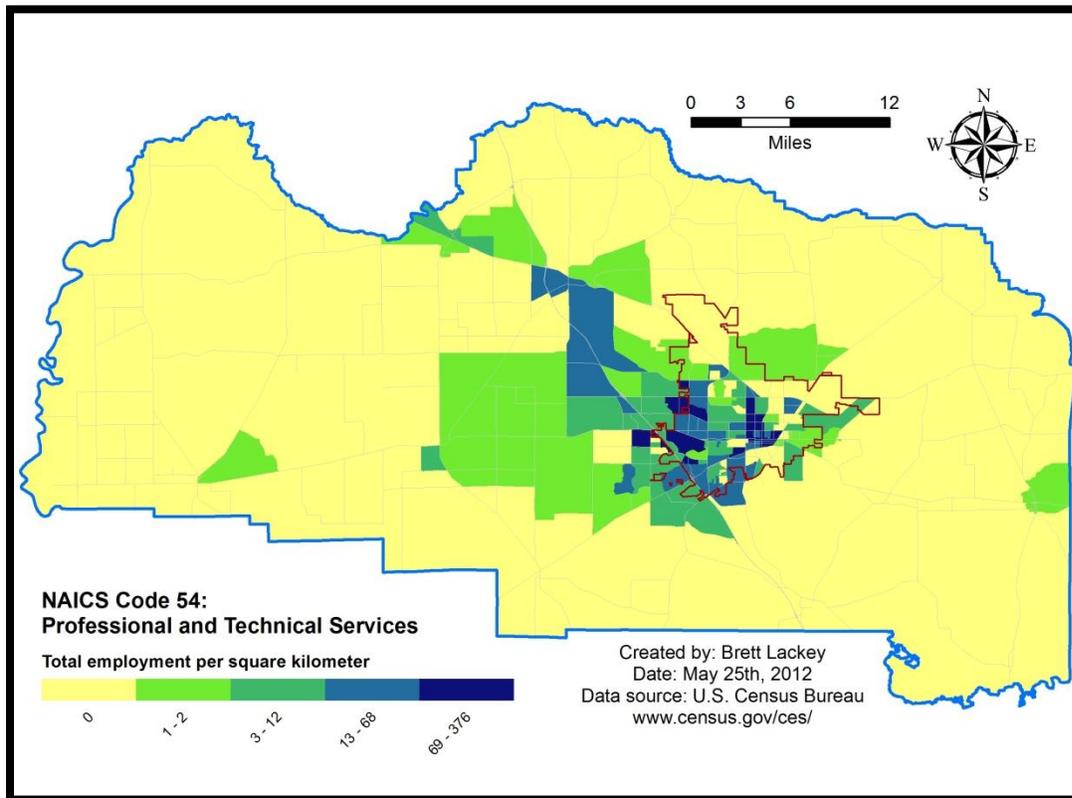
Figure 5-13. Professional and technical services employment

The professional and technical services sector seemed to be less clustered than the other creative class sectors. Although the employment was spread out across Gainesville and certain areas of Alachua County, the largest concentrations of employments were in the downtown area and in west Gainesville. This sector was the most diverse of the creative class sectors and therefore was not as prone to clustering as the others. Alternatively, it was one of the most sought after sectors of employment for localities.

Educational Services

As expected, the highest concentration of educational services employment was centered near the three largest educational employers in the MSA. UF's employment

stood out on its campus just west of downtown. Alachua County School Board

employment was prominently represented in the downtown area, where its

headquarters are located. Additionally, SFC's campus is located in northwest

Gainesville, outside of the Gainesville city limits. Outside of these three areas, the

employment was spread throughout the rest of Gainesville, decreasing outside of the

city limits and especially outside of Alachua County.
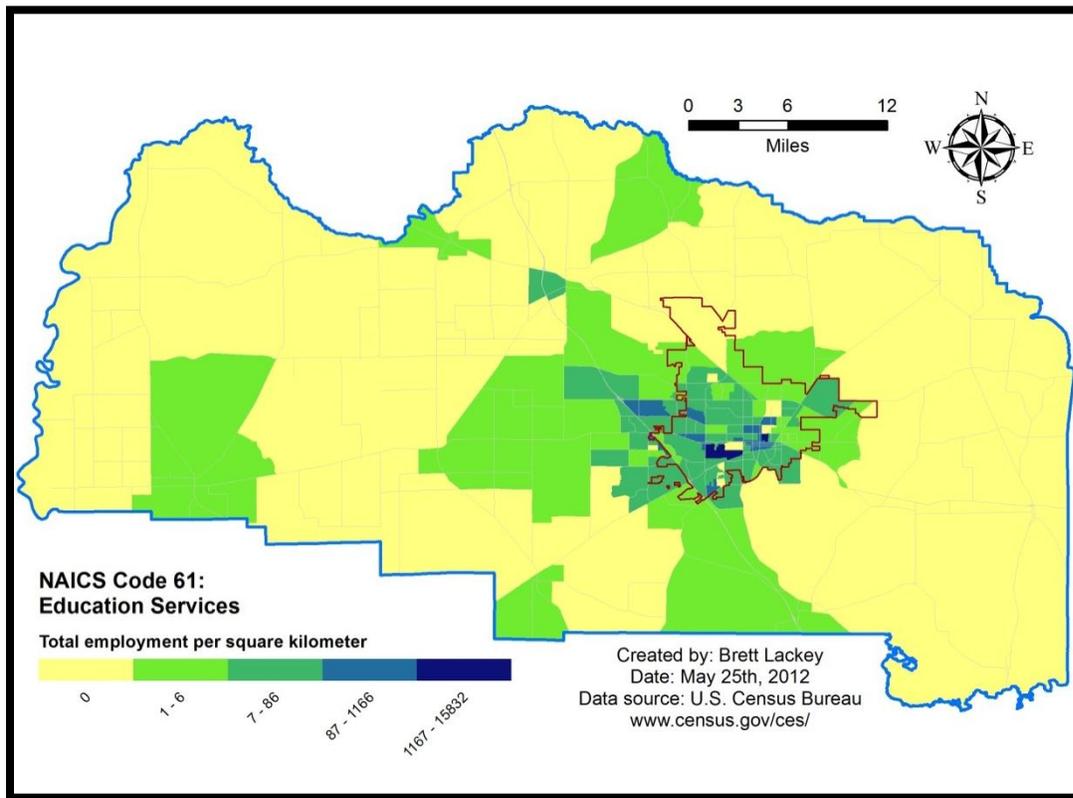
Figure 5-14. Education services employment

Health Care and Social Assistance

Employment in the health care and social assistance sector was surprisingly

decentralized. There were hubs for employment at Shands Hospital, the North Florida

Regional Medical Center, and around the former AGH site (this is the current location of

Innovation Square but the surrounding buildings still contain some healthcare-related

establishments). Although the health care and social assistance sector employment was decentralized, it was mostly contained within Alachua County and especially within the Gainesville City limits.
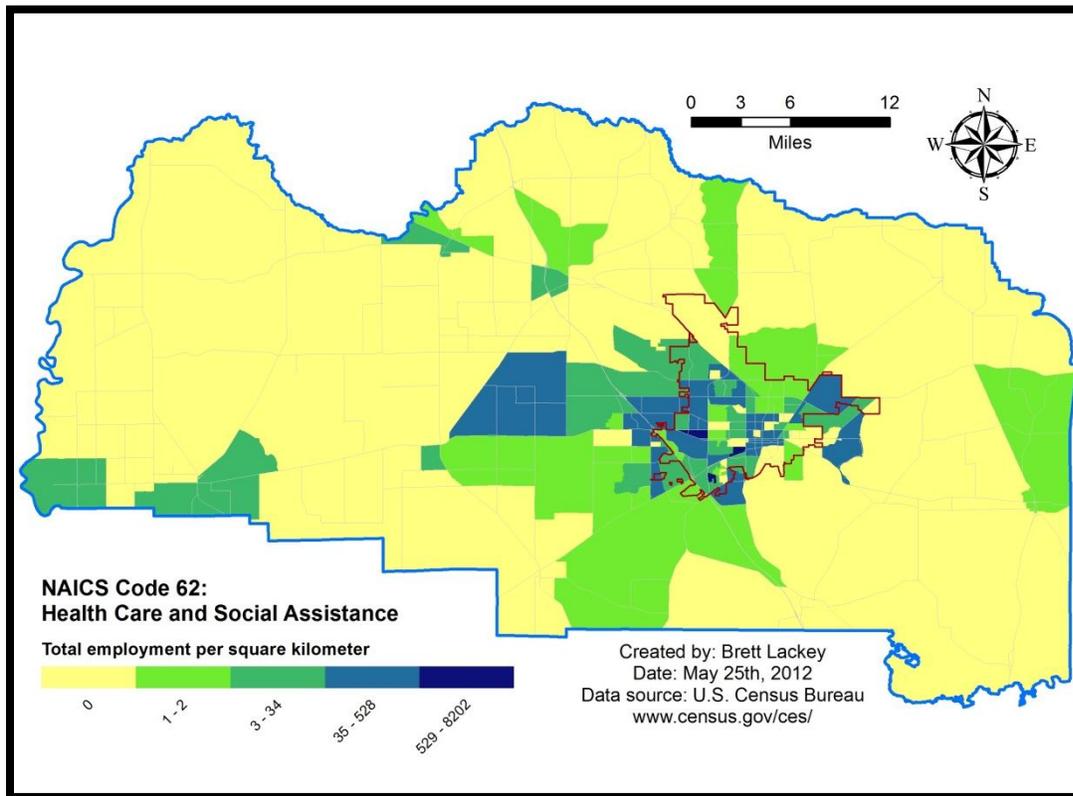
Figure 5-15. Health care and social assistance employment

Public Administration

Public administration employment is often concentrated in the city center and Gainesville was no exception. The majority of public administration jobs were located in downtown Gainesville. This sector was also highly concentrated on the UF campus. Outside of the Gainesville city limits, public administration employment was much scarcer. Also, many of the outlaying municipalities had their own public administration employment represented, but with Gainesville being the primary city and the Alachua

County seat, Gainesville had a significant advantage in holding this sector's employment.
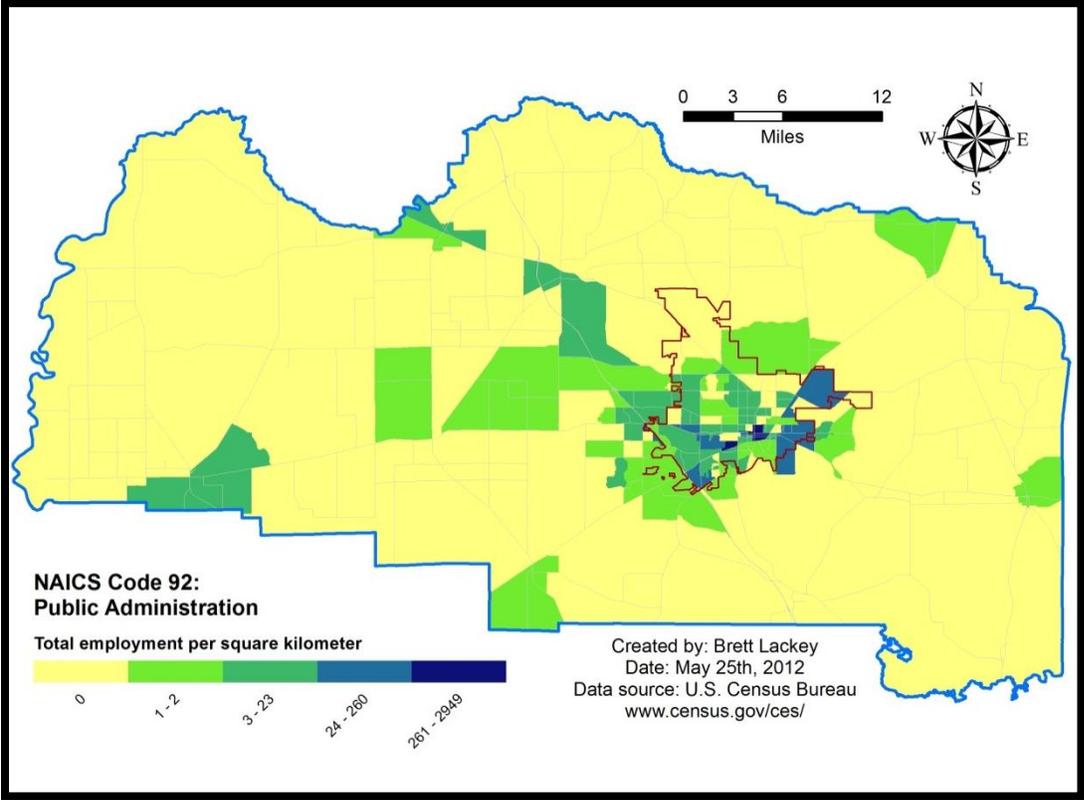
Figure 5-16. Public administration employment

Table 5-2. Sector score matrix

NAICS Code	Total Score	Local Employment	Rank	LQ vs. USA	Rank	LQ vs. FL	Rank	National Growth	Rank	Local Growth	Rank
61	41	20,482	8	1.71	9	2	9	1.261	9	1.155	6
62	36.5	22,049	9	1.43	7	4	7.5	1.209	8	1.098	5
92	28.5	8,184	7	1.45	8	4	7.5	1.054	4	0.963	2
54	27	6,315	6	0.89	4	8	6	1.121	7	1.059	4
53	24	2,408	4	1.32	6	9	5	0.945	2	1.169	7
71	23	1,849	3	1.02	5	16	2	1.058	5	1.338	8
55	18	247	1	0.14	1	18	1	1.094	6	1.365	9
52	18	3,974	5	0.76	3	10	4	0.966	3	0.967	3
51	9	1,832	2	0.71	2	11	3	0.804	1	0.680	1

Source: Center for Economic Studies, 2010

CHAPTER 6
DISCUSSION

When the cluster analysis was applied to the employment data from 2010, it
appeared that not all the industries labeled as a priority had shown potential for
economic development. Specifically, the real estate and rental and leasing sector was
the only growing base industry. The professional and technical services sector was
considered a declining industry and the rest were classified as transforming industries.

Table 6-1. Cluster analysis, applied to Gainesville

	Not Competitive (declining local shift)	Competitive (growing local shift)
High-Local Concentration (LQ over 1.00)	Transforming Industries Education Services Health Services Public Administration	Growing Base Industries Real Estate and Rental
Low-Local Concentration (LQ less than 1.00)	Declining Industries Professional and Technical Services	Emerging Industries (none)

Source: Blakely, 2010, p. 193

A Closer Look

Bureau of Labor Statistics data was used to look at these industries in detail for
Alachua County. Additional LQ and shift-share values were collected to paint a more
detailed picture of the Gainesville economy within its industry sectors. Instead of using
CES data, BLS data was used because it allowed for analysis at more detailed NAICS
codes. Unfortunately, BLS data did not include public sector employment or
employment data that could cause privacy concerns. Therefore, the BLS data was
limited in further analysis, but very helpful in some cases.

The BLS data was measured for Alachua County instead of the Gainesville MSA. Many of the industries in Alachua County did not have privacy concerns, but their counterparts in Gilchrist County did. Since Alachua County's values were known, the Gilchrist County industry values could be deciphered by subtracting the Alachua County values from the Gainesville MSA values. Therefore, the BLS did not provide employment data as thoroughly for the Gainesville MSA as it did for Alachua County.

Growing Base Industries

As the only growing base industry, the real estate and rental and leasing sector was strong in Alachua County. Specifically, the main portion of the sector, NAICS 531: Real estate had a 1.59 LQ and NAICS 5311: Lessors of real estate had a 2.04 LQ. Unfortunately the other sub-sectors' employment totals and LQs could not be revealed due to privacy concerns. These values reflect the sectors' reliance on higher-education students' need for temporary housing. Gainesville should allow this sector to operate as it has been already. Housing is a necessity and as long as Gainesville continues to attract students and companies, there will be demand in the housing market. Additionally, there has been no shortage of the development of apartment buildings around the UF campus. Gainesville should encourage development and make its economic development plans known to the developers of these buildings so that they can locate housing adjacent to future development projects. This will reduce the strain on transportation infrastructure and decrease commute times for students and employees.

Transforming Industries

Gainesville's health and education industries are strong economic bases for the region. These sectors provide 42,531 jobs to the Gainesville MSA economy, more than

37% of all employment in Gainesville and more than 63% of all local creative class

employment. Additionally, the public administration sector provides more than 8,000

jobs locally. Unlike the case in Chicago where Sears had to be enticed to stay in Illinois,

many of the companies in the education and health sectors, and especially the public

administration sector, are tied into their location in Gainesville because of private-public

partnerships. Gainesville should enhance these clusters by working with the schools

and hospitals to determine how they can attract more companies to cluster within

Gainesville. Figure 6-2 shows how the private employment within Alachua County was

distributed within the health care and social assistance sector in 2010. This detail was

not available for the education services or public administration sectors because they

were heavily comprised of public employment; therefore they contained too many

restricted values for Alachua County.

Table 6-2. Health care and social assistance employment

Industry	Employment	LQ
NAICS 62 Health care and social assistance	19,503	1.60
NAICS 621 Ambulatory health care services	5,444	1.21
NAICS 622 Hospitals	10,241	2.93
NAICS 623 Nursing and residential care facilities	2,108	0.90
NAICS 624 Social assistance	1,711	0.92

Source: Bureau of Labor Statistics, 2010

Gainesville should try to attract medical and health-related companies to the area

surrounding Innovation Square. The demand for that area has decreased since AGH

was demolished, leaving healthcare businesses that relied upon the hospital without a

customer base. The Ayers Medical Plaza was renovated for non-medical use and

renamed Ayers Plaza. It originally housed the UF Human Resources Department and

soon will be the U.S. development center for MindTree Limited, a software company.

Although this is an example of a non- medical company moving into a medical building,

it is an example of the Innovation Square attracting companies to the area immediately

surrounding it. Companies may want to locate next to Innovation Square instead of it

because rent is likely cheaper and because the buildings are already built. For medical

purposes, many of the buildings are already ideal for medical uses.

Gainesville should further develop public administration-suitable buildings

downtown, if needed. In an effort to attract state funding and employment, the city can

prove to the state government that it is capable of handling tasks and departments, both

with office space and talent.

Declining Industries

Although the professional and technical services sector was classified as a

declining industry in the cluster analysis, it was made up of a wide range of creative

class occupations. The sector included many of the types of industries that economic

development programs aim to attract. This grouping included the high-paying,

innovative, and highly clustered jobs that have made Austin, Texas and Silicon Valley,

California hubs for innovative growth. The sector was broken up to the NAICS industry

group level and it showed just as wide a range of LQ values.

Table 6-3. Professional and technical services employment

Industry	Employment	LQ
NAICS 54 Professional and technical services	5,732	1.02
NAICS 5411 Legal services	893	1.06
NAICS 5412 Accounting and bookkeeping services	433	0.65
NAICS 5413 Architectural and engineering services	1,408	1.46
NAICS 5414 Specialized design services	77	0.90
NAICS 5415 Computer systems design and related services	644	0.59
NAICS 5416 Management and technical consulting services	872	1.14
NAICS 5417 Scientific research and development services	351	0.75
NAICS 5418 Advertising, PR, and related services	267	0.87
NAICS 5419 Other professional and technical services	787	1.80

Source: Bureau of Labor Statistics, 2010

Because there was such a wide range in LQ values, employment data from 2001 was collected from the BLS and used in a shift-share analysis. The competitive component was coupled with the LQ value and placed in a cluster analysis for each industry group.

Table 6-4. Cluster analysis, professional and technical services

	Not Competitive (declining local shift)	Competitive (growing local shift)
High-Local Concentration (LQ over 1.00)	Transforming Industries NAICS 5413	Growing Base Industries NAICS 5411 NAICS 5416 NAICS 5419
Low-Local Concentration (LQ less than 1.00)	Declining Industries NAICS 5412 NAICS 5417	Emerging Industries NAICS 5414 NAICS 5415 NAICS 5418

Source: Blakely, 2010, p. 193

Within the technical and professional services sector, the industrial groups of legal services and consulting services were growing base industries for the economy and design services, computer systems design services, and advertising and PR services were emerging industrial groups. The growth of these groups should be encouraged, especially in the emerging industries, in an effort to establish a cluster. Given its total local employment and LQ, the architectural and engineering industrial group was the strongest within its sector in Gainesville even though it has not performed as well proportionally between 2001 and 2010. Gainesville should act quickly to determine what local factors have hindered the growth of this industry and to fix them if advisable.

Comparison to Other Creative Hub College Cities

Compared to college towns of similar or larger size than Gainesville, it is apparent that Gainesville is on par with other successful cities. Even though Austin, Texas is a mecca for creative class industries, its LQs scored poorly in half of the sectors analyzed. Granted, health care and education public employment was not represented, Austin scored worst and second-worst, respectively, among the eight college cities compared. None of the other seven cities examined contained LQs higher than 1.00 for all creative class Sectors. Based on this, Gainesville has a healthy creative class economy compared to other college cities. It already has a strong advantage in many large creative class sectors and is developing Innovation Square in a way that is sure to bring in many more.

Table 6-5. Creative class location quotients for college cities

Sector	Gainesville	Tallahassee	Austin	College Station	Raleigh	Durham	Nashville	State College
Information	0.71	1.08	1.30	1.24	1.65	0.70	1.34	1.07
Finance and insurance	0.89	0.74	1.02	0.99	0.87	0.86	1.06	0.64
Real estate and rental and leasing	1.50	0.77	1.21	1.17	1.13	0.69	1.07	1.07
Professional and technical services	1.02	1.35	1.42	1.61	1.38	1.55	0.86	1.07
Management of companies and enterprises	0.18	0.21	0.47	0.27	1.42	0.42	1.01	0.95
Educational services	0.86	0.94	0.69	0.70	0.84	2.38	1.28	0.62
Health care and social assistance	1.60	0.86	0.80	1.22	0.84	1.32	1.03	1.10
Arts, entertainment, and recreation	1.22	0.55	0.95	0.64	1.27	0.61	0.90	0.89

Source: Bureau of Labor Statistics, 2010

CHAPTER 7
CONCLUSION

Traditional economic development planning focuses on attracting companies but Richard Florida says cities should instead try to attract talent and companies will follow. In the case of Gainesville, Florida, the city has been able to attract the talent through the University of Florida, but much of the talent leaves after graduating. What is the solution? Gainesville has created an effective economic development plan that attracts creative class employers to Gainesville.

Specifically, Gainesville should prioritize maintaining and growing the education and health sectors and it should attract the real estate, professional and technical services, and the public administration sectors. These industries have shown potential for growth and are strengths in the Gainesville economy. The City of Gainesville has already used many economic development practices mentioned earlier. Instead of providing subsidies, Gainesville has thought of innovative ways to attract creative class jobs, such as making sites and buildings available. Gainesville's Innovation Square is the most obvious example of this, and nearby Alachua's Progress Industrial Park is another example of successful implementation. The first building in Innovation Square was built using federal and UF funds, but the market has shown demand for mixed-use buildings and further development has been approved for private developers in the surrounding area (Bredfeldt, 2011). Additionally, the city has streamlined the permitting process to develop on the site. Innovation Square has not only shown a positive impact attracting creative class companies, but also has spurred the growth of housing, retail, and food establishments in the surrounding area. The city has found innovative ways to

make Innovation Square stand out from other research parks, including its latest offer to supply 1Gbps-speed internet to Innovation Square and its surrounding area.

<h2 align="center">Restrictions</h2>

The single most inhibiting factor in this research was the limited employment data. It would have been useful to identify industries at the three-digit and four-digit NAICS code to better understand specific industry clustering within Gainesville and throughout Florida. Although the data is available, it is protected by the government due to privacy concerns. The data is available through many third-party suppliers at cost. Notably, Esri's Business Analyst provides NAICS employment. Their data is classified to the sixth-digit NAICS code. Also in their data, specific establishments are identified instead of aggregated per region. This is especially useful because it identifies employers and where they are located.

Another tool that city planners use in economic development is the input-output analysis. The input-output analysis was created in 1936 as a tool to trace sales among industries in a region. Cities prefer employment that retains money in the local economy as much as possible. Creative class jobs are known to have a high local output and therefore are more likely to retain this money locally.

The city of Cincinnati released an economic analysis report titled *Identification of Industry Clusters for Guiding Economic Development Efforts in Cincinnati USA*. The report used total employment, and average wages and location quotient, shift-share, and input-output analyses, coupled with spatial information. The result was the use of six thresholds of economic importance that were determined to be useful in evaluating sector cluster health. Of the six measures, one pertains to input-output ratios, a set of data that was not freely accessible for this study (Blakely, 2010, p. 195).

Further Research

Further research can be done to evaluate how Gainesville's initiatives so far have worked, directly and indirectly. Gainesville has shown that it is devoted to economic growth in and around Innovation Square. Economic development planning practices can be analyzed to give an evaluation of the effect Gainesville's plan had on economic growth.

The research in this thesis was based on employment data provided by the government. It would be useful to further analyze the non-quantifiable factors that go into making a city attractive. The culture and reputation of cities have played a large part in making them livable. Unfortunately these factors cannot be placed into a statistical analysis without extensive surveying. It would be helpful though to understand the factors that make a city more attractive.

In an effort to delve further into statistical analysis, a geographically weighted regression could be performed to better understand clustering within Gainesville and other creative cities. Spatial analysis research has been done to determine indicators of creative class employment in rural areas using a locally weighted regression model (Cho 2007). The formula used in that research can be adapted to urban use to determine indicators in MSAs.

Certain industries that didn't fare well in the Gainesville MSA may have fared better elsewhere in Florida. Any economic growth in the state can benefit Gainesville, especially if Florida's regions attract companies from out of state and cooperate within the state. As an example, Tallahassee had a high location quotient in the professional and technical services and in the public administration sectors. Also, the Tampa, Lakeland, and Sarasota areas had high location quotients in the finance and insurance

and in the management of companies and enterprises sectors. This data analysis could be helpful in economic growth for Gainesville but also for other parts of the state. Understanding what other regions specialize in can be used as an advantage and allow for economic partnerships to be formed between regions.

Final Thoughts

As this research has been analyzed and written, Gainesville has already made strides in attracting creative class employers and, specifically, private development in and around Innovation Square. These actions have made this thesis time-sensitive. Gainesville will be able to develop its vision to its full potential, and if that is the case, then this thesis may not be necessary in a few years. More than anything, this thesis serves as a snapshot in time of Gainesville as it meets a turning point in its history as a growing city.

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