
Economic Strength and Micropolitan Statistical Areas: Looking Beyond Generalities

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ABSTRACT

Facility location decisions serve an important role in setting up efficient and cost-effective supply chains. While metropolitan areas may appear an obvious choice for many companies, nonmetropolitan areas deserve consideration. In the past, nonmetropolitan areas have been classified as “rural” with reports of economic decline. This research looks beyond the general category of nonmetropolitan by dividing the area into micropolitan statistical areas and non-core statistical areas. The authors use U.S. Census data from the years 2010 to 2016 to analyze changes in population, median household income, retail employment, and retail salaries in Alabama, Georgia and Mississippi. Companies can use this more refined information approach to help identify specific counties outside metropolitan statistical areas that demonstrate growth and may provide suitable facility locations.

INTRODUCTION

Facility location represents a major decision in developing a strategic plan for a company’s supply chain (Gunaeskaran et al., 2008). Locating facilities closer to the customer can improve a company’s responsiveness (Holwe and Helo, 2014). In evaluating location options, metropolitan areas often appear to provide the convenience of location and needed amenities, but they may also provide business challenges. Businesses concerned with shortening their supply chains while adding agility should look beyond the metropolitan areas options. Companies may hesitate considering options in nonmetropolitan or “rural” areas. The economic decline of rural areas in the United States has received much media attention. However, this decline may be somewhat overrated (Crabtree, 2016). In reality, some nonmetropolitan areas have experienced sustained growth in the last decade.

Metropolitan sites may face problems such as high costs, transportation congestion, and inappropriately skilled workforce. Manufacturing plants locating within metropolitan areas may face limited available land for suppliers looking to locate adjacent to or very close to the planned facility (Kaneko and Nojiri, 2008). Nonmetropolitan options can provide lower costs and a cheaper, more abundant workforce than those in metropolitan areas (Kaneko and Nojiri, 2008). All nonmetropolitan areas are not alike; they have many differences. To make location decisions requires relevant and specific local information (Howe et al., 2015).

The ultimate choice of schema provides the basis for results on which decisions are made (Atav and Darling, 2012). To better judge and evaluate nonmetropolitan area options, studies should go beyond the category of nonmetropolitan. The terms “nonmetropolitan” and “rural” have been used synonymously, but that tends to provide an inaccurate image (Ratcliffe et al., 2016).

In 1993 the category of nonmetropolitan was divided into micropolitan statistical areas and non-core areas by the United States Bureau of Economic Analysis (USBEA). Micropolitan statistical areas have an economic center community with a population between 10,000 and 49,999 people. Non-core areas have no communities over 10,000. In the long run, locating in micropolitan statistical areas, especially those located with proximity to metropolitan areas, could provide better opportunities for growth (Vias, 2011). By dividing this category into separate sections, a clearer and more detailed understanding can be obtained from the three statistical areas: metropolitan, micropolitan and noncore.

Data from USBEA and the US Census Bureau provide county-level information on these two distinctly different statistical areas. This study analyzes the counties of a three-state area within the Southeastern United States. The research focuses on the two nonmetropolitan statistical areas --micropolitan and non-core. The study seeks to answer the following question:

To what extent does dividing nonmetropolitan data into the categories of micropolitan statistical areas and non-core statistical areas extend the findings?

There is a gap in the study of micropolitan statistical areas when compared to metropolitan areas or nonmetropolitan areas. Micropolitan statistical areas have not received extensive study (Davidsson and Rickman, 2011). Vias (2011) called for research on micropolitan areas when he stated the time is right to “make up for the lack of research on these significant statistical/geographical areas” (Vias, 2011, p. 123). This study answers Vias’s call using data from the United States Census Bureau in four categories: population, median household income, retail employment, and retail payroll.

This study incorporates data from the United States Census Bureau from 2010 to 2016, years for which data are available in all three categories. The study includes a literature review. Next, the analysis of the data is presented with findings. Comments follow on the academic and

business applications of the findings. The paper concludes with recommendations for further research.

Literature Review

Rural America

Researching rural issues and trends, like other research topics, have complexities in defining the terms and standardizing the parameters to collect data in a comparable form. Isserman (2005) stated the importance of researching urban and rural. We can learn what is rural and thereby help understand the dynamics of change and the urban-rural transitions, such as business relocation, brain flight, and youth migration. But researchers have not developed a clear single definition of *rural*. The term *rural* has a history of being interpreted differently within different contexts (Hart, Larson, and Lishner, 2005). In recent literature, rural has been designated to mean areas outside metropolitan areas (Burton et al., 2013) or the non-metropolitan counties (Johnson, 2011; Keyes et al., 2014). Giri and Johnson (2017) used a Bureau of the Census and U.S. Department of Commerce definition where rural counties are defined as counties with no incorporated town with a population of more than 2,500 people.

Gouevitch et al. (2018) categorized and analyzed data based on three geographic distinctions: metropolitan, micropolitan and rural areas. However, instead of counties, Gouevitch et al. (2018) used locations (geographic areas) separated into populations larger than 2.5 million, 50,000 to 2.5 million, and rural regions that were regions not included in the other larger regions.

Rural areas have different population sizes and levels of remoteness. Conceptions of rural life are often inaccurate; it is best to avoid generalities (Litcher and Brown, 2011). A single designation of rural can obscure unique factors about a local area (Hart et al., 2005). Using a single rural classification does not take into account that rural areas are not homogeneous.

Defining rural by county is not without its problems and limitations. While counties provide an advantage through historically stable boundaries, counties are not the ideal measure (Isserman, 2005; Johnson, Nucci and Long, 2005; Johnson, 2011). Topographic county lines are not always great dividers as urban cores can overbound or underbound these lines (Hart et al., 2005; Isserman, 2005). “That an entirely rural county integrated economically with nearby cities is an important fact, but it cannot negate another important fact: the county is rural” (Isserman, 2005, p. 474). Many counties within metropolitan areas have census tracts that qualify as rural. However, counties are the base unit for collecting and reporting census data (Johnson, 2011).

Micropolitan Statistical Areas

To better distinguish between metropolitan statistical areas and smaller regions with a population core, the Office of Management and Budget (OMB) divided non-metropolitan areas

into two separate categories: micropolitan statistical areas and non-core statistical areas (Brown, Cromartie and Kulcsar, 2004). The OMB (2013) defines a micropolitan statistical area as a county/parish with one community with a population greater than 10,000 but not more than 49,999 plus adjacent counties with social and economic ties to the core community. A non-core statistical area is defined as a county/parish that is a nonmetropolitan county not included in the micropolitan areas (Brown et al., 2004). The current study defines rural using the two non-metropolitan designations adopted by the Office of Management and Budget in 2003. In this paper, the term non-metropolitan is used when referring to both micropolitan statistical areas and non-core statistical areas.

Beyond the boundaries of population size, there is no single standard micropolitan statistical area. Micropolitan statistical areas are diverse in their geography, economic base, available amenities and proximity to major metropolitan areas. What is common in micropolitan statistical areas is a county/parish with at least one community with a population greater than 10,000 but less than 50,000 and adjacent territory with social and economic ties to the core community (OMB, 2013). Micropolitan statistical areas population parameters are different from the other two recognized statistical areas. Metropolitan statistical areas have a core community with more than 50,000 in population, and non-core based statistical areas do not have a core community of size (OMB, 2013).

When the designation of the micropolitan statistical area was first announced, there was a move to include it in economic development research. Micropolitan areas have been studied much less extensively by academics than have either metropolitan areas or nonmetropolitan areas more broadly (Davidsson and Rickman, 2011). William Fruth with POLICOM has published quality annual economic strength rankings for metropolitan and micropolitan statistical areas since 1997 (POLICOM, 2018). The use of micropolitan statistical areas in research has been adopted in the research of health issues (e.g., Abougergi, et al., 2018; Lee et al., 2010; Slifkin et al., 2004).

The use of micropolitan statistical areas on economic issues has been more limited. Soon after OMB officially designated the three statistical areas, there was initial excitement. Plane (2003) was one of the first to tout the significance of the “new” micropolitan statistical areas. He called for regional growth research with studies on migration patterns to better understand the economics of these regions. Another study further introduced the possibilities of incorporating the new designations in research through a study on populations and socioeconomic characteristics by county type (Brown et al., 2004). Mulligan and Vias (2006) pointed out that the call for research on the micropolitan statistical areas was given soon after they were designated. However, this early excitement has not translated into the standards for research.

Some studies have focused on micropolitan statistical areas in specific states. Newly incorporated municipalities within micropolitan statistical areas were studied in North Carolina (Smith, 2014). Others focus on individual micropolitan counties. Garden City, located within a micropolitan county in Kansas, was the subject of a study of its school system and immigration (Stull and Ng, 2016).

“Rural researchers must shoulder the extra responsibility to ensure that their work is maximally informative and easily replicable.” (Koziol et al., 2015, p. 11). With research on micropolitan statistical areas, it is important to look beyond a county’s classification and to study its proximity to other counties with similar and different classifications (Plane, 2003). Noting that metropolitan and some micropolitan statistical areas include more than one county, Tong and Plane (2014) focused on the OMB designations “central counties” and “outlying counties.” Central counties meet the core community population standards. Outlying counties are adjacent counties with a “high degree of social and economic integration with the core as measured by commuting ties” (OMB, 2017, p.7). Hence, a more regional approach.

One regional approach study involved both the Appalachian Region, defined as 400 counties and defined on a map to include states from New York to Arkansas, and the Black Belt, depicted on a map to include states from Texas to New York (Oliver and Thomas, 2014). This study focused on population density, geographic isolation, and developed land. Richman and Richman (2011) focused on earnings, population, and housing cost growth in the 1990s in metropolitan and nonmetropolitan areas. A study of amenity inventories focused on non-metropolitan counties in Iowa, Kansas, and Nebraska (Besser et al., 2011). Another study looked at the impact of SBA lending practices in micropolitan statistical areas in the Southeastern United States (Cortes and Ooi, 2017).

While the MICRO concept is relatively new to many researchers, incorporating Micropolitan statistical areas into research identifies an important distinction between US counties and parishes that are entirely rural and those exhibiting some urban activities (Mulligan, 2015).

Population

Population change has been found to reflect an area’s economy (Lin et al. 2016). Research has shown a county’s population tends to be the largest factor affecting retailing (Giri and Johnson, 2017). Higher population density strengthens a community’s retail market which in turn attracts additional population (Dodds and Dubrovinsky, 2015). Populations generally decline in areas with deteriorating economies and remote rural areas dependent on farming and manufacturing (Lewis and Stanley (2016). Population loss can also result in a declining tax base, which is of special concern for nonmetropolitan areas (Mullis and Kim, 2016). While population loss has occurred in some U.S. regions, growth does occur, and in some instances rapid growth, in nonmetropolitan counties including, related to this study, counties with proximity to Atlanta,

Georgia (Cromartie, 2016). Some changes in population result from how an area is classified by government agencies. A primary contributing factor in the reduction of the percentage of the nonmetropolitan population has been the inclusion of formerly nonmetropolitan territory in expanding metropolitan areas (Johnson et al., 2005). Population growth was found to be greater in nonmetropolitan counties adjacent to metropolitan areas (Johnson, 2012). Johnson (2011) found that counties that are entirely rural are more prone to a natural decrease in population.

Household Income

Income is a factor that can change habits in consumption and shopping (Grewal et al., 2012). Increases in household income tend to lead to increased spending at some categories of retail. A decline in household income can result in reduced retail purchases, especially of the higher-priced brands (Kaswengi and Diallo, 2015). Differences in household income can result in changes in shopping and consumption behaviors (Grewal et al., 2012).

As the economy differs from county-to-county, assessing communities at the regional or state level is insufficient to get an understanding of individual counties (Zhang, Kinnucan, and Gao, 2016). Household income is considered a control variable because it affects economic activity. Increases in household income might be expected to be associated with more retail economic activity that leads to more retail employment through increases in retail establishments (Mushinski et al, 2014).

Retail

Retail is important to the economies of all geographic levels and serves as a critical component of a community's economic vigor and economic development efforts (Artz and Stone, 2012; Giri and Johnson, 2017). Retail serves as an indicator of a community's overall economic performance (Giri and Johnson, 2017). Retail is especially important in non-micropolitan areas because of retail's contribution to the local economy (Giri and Johnson, 2017). With an available, healthy, local retail selection, residents have more convenient shopping options (Artz and Stone, 2012). Retailers are very successful in serving more rural-based markets. Dollar General, which focuses on rural communities, in its most recent fiscal year reported a profit more than double that of Macy's, Inc. (Nassauer, 2017). Dollar General is not alone. Companies such as Shopko, Family Dollar, and Walmart are locating smaller stores in smaller towns to serve underserved small-town markets (Horovitz, 2016). Having Walmart provides stability in the retail sector of smaller trade areas (Artz and Stone, 2012). This encourages shopping locally while discouraging out-shopping to larger nearby communities (Artz and Stone, 2011).

Retail Employment

In micropolitan statistical areas and non-core areas, retail is the number two employer, next to the government (Artz and Stone, 2012). However, if retail sales in a small community decline, a

significant source of jobs are threatened (Artz and Stone, 2012). Closures happen in all areas (Cavan, 2016). Retail store closures are a normal part of the retail industry (Cavan, 2016). Store closures are not unique to nonmetropolitan areas. The closures of retail stores are becoming increasingly common due to insufficient trade area population (Cavan, 2014). With smaller towns and counties, the biggest obstacle is the limited economic capacity (Knox and Mayer, 2009). Without a strong base, the local economy may not be strong enough to expand. It takes locally owned businesses to build a sense of place (Knox and Mayer, 2009). An area's prosperity and retail health are interdependent. When a community's retail sector is healthy, population growth can be stimulated (Paddison and Eric, 2007).

Sample

The study includes data on three adjacent states – Alabama, Georgia, and Mississippi. These states were chosen as a sample of the larger Southeastern United States. The Southeastern United States is comprised of 1,025 counties/parishes in twelve states (United States Bureau of Economic Analysis, 2014). The Southeastern United States serves as a sample of the United States with similar distribution of metropolitan, micropolitan and non-core counties. As detailed in Table 1, the Southeastern United States includes 203 counties located within a micropolitan statistical area, 376 counties are designated as non-core based statistical areas, and 446 counties compose the metropolitan statistical areas (U.S. Census Bureau, 2017). The three-state analysis includes similar percentages. Table 1 presents the number and percentages of counties in each state located within the three statistical areas.

This study uses U.S. Census Bureau population estimates. Population estimates have been commonly used by researchers and policymakers. This study incorporates data at the county level. While counties may not be the ideal measure, counties do provide an advantage through historically stable boundaries (Isserman, 2005; Johnson, Nucci and Long, 2005; Johnson, 2011). Counties are the base unit for reporting census data (Johnson, 2011). As stated previously, topographic county lines are not always great dividers. Urban cores can overbound or underbound these lines (Hart et al., 2005; Isserman, 2005).

	Total	Number of Total			Percentage of		
	Counties	Micro	Non-core	Metro	Micro	Non-core	Metro
United States	3,142	656	1,317	1,169	20.8%	41.9%	37.2%
Southeast US	1,025	203	376	446	19.8%	36.7%	43.5%
AL, GA, MS	308	70	118	120	22.7%	38.3%	40.0%
Alabama (AL)	67	14	24	29	20.9%	35.8%	43.3%
Georgia (GA)	159	29	56	74	18.2%	35.2%	46.5%
Mississippi (MS)	82	27	38	17	32.9%	46.3%	20.7%

Table 7 - Statistical Areas in Three States in the Southeastern United States

NOTE: Micro – Micropolitan statistical area; Non-core – Non-core statistical area; Metro – Metropolitan statistical area.
 SOURCE: United States Census Bureau, State-based Metropolitan and Micropolitan Statistical Areas Map (2013) and Office of Management and Budget (2015).

The three states have a total of 308 counties. After reviewing the available data, 17 counties were removed due to incomplete data. The counties removed included one located within a micropolitan statistical area, nine in non-core statistical areas, and seven in metropolitan statistical areas. This left a final count of 291 counties on which to base the analysis. Table 2 presents the number of counties removed from each state’s different statistical areas.

	Total Counties	Micropolitan Statistical Area	Non-Core Statistical Area	Metropolitan Statistical Area	Total Counties in this Study
Alabama	67	0	0	0	67
Georgia	159	1	8	6	144
Mississippi	82	0	1	1	80
Total	308	1	9	7	291

Table 8 - Number of Counties Removed for Incomplete Data

Method

This study focused on three states, three statistical areas, and four exemplars of economic measures. County-level secondary data was gathered from the United States Census Bureau. A comparison was made between the information divided into the two categories of

metropolitan statistical areas and nonmetropolitan statistical areas with the category of nonmetropolitan divided into micropolitan and non-core statistical areas. A second analysis, suggested by Isserman (2005), presented a more comprehensive description of the economic situation in each of the micropolitan counties. and through analysis, more insight into the possible influences on that status. Four exemplars were chosen for this analysis: population, household income, retail employment and retail payroll. Retail employment was chosen as the best available indicator of retail growth levels. Employment was preferred over business counts as the business counts do not distinguish between small and large retail businesses (Artz and Stone, 2012). Retail sales were not chosen as available data do not discriminate between online and local sales.

Analysis 1 – Comparing Two Categories with Three Categories

The first analysis compares data at the county-level in the three states covered by this study. Data are presented as two categories (metropolitan statistical areas and non-metropolitan statistical areas) and compared with the same area divided into the three categories. The category of “non-metropolitan statistical areas” is divided into micropolitan statistical areas and non-core statistical areas. The four exemplars of the study are examined individually in the tables shown below. The test of any proposed typology, analysis or results includes the new insights generated (Isserman, 2005) and how useful those insights are to decision makers and researchers. The percentages in all the following tables represent the percent of the total number of counties in the three-state region.

Statistical areas	Total Number	Counties with Growth		Counties Decline		Change	
		Number	Percent	Number	Percent	Number	Percent
<i>Metropolitan and Non-Metropolitan Counties (Percentages are of the Total)</i>							
Metropolitan	113	70	24.1%	43	14.8%	0	0.0%
Non-Metropolitan	178	46	15.8%	132	45.4%	0	0.0%
Total	291	116	39.9%	175	60.1%	0	0.0%
<i>Metropolitan, Micropolitan and Non-Core Counties (Percentages are of the Total)</i>							
Metropolitan	113	70	24.1%	43	14.8%	0	0.0%
Micropolitan	69	25	8.6%	44	15.1%	0	0.0%
Non-Core	109	21	7.2%	88	30.2%	0	0.0%
Total	291	116	39.9%	175	60.1%	0	0.0%

Table 9 - Changes in Population (2010-2016)
 SOURCE: United States Census Bureau

In Table 3, the two categories of metropolitan and non-metropolitan show 132 non-metropolitan counties (45.4 percent of the counties in the three states) experienced a population decline. When non-metropolitan counties are divided into the categories micropolitan and non-core, it is evident that micropolitan counties represent only a third of the nonmetropolitan counties that experienced a population decline. This table also raises questions about the counties with population growth. Population growth was experienced in 25 micropolitan counties and 21 non-core counties. Does this growth relate to the proximity of the counties to metropolitan or micropolitan areas? Additional research is needed to understand the level of growth in these counties. The counties are identified as growing, but the extent to which they have grown is not included.

Statistical areas	Total Number	Number counties experiencing:			Percent counties experiencing:		
		Growth	Decline	No Change	Growth	Decline	No Change
<i>Metropolitan and Non-Metropolitan Counties (Percentages are of the Total)</i>							
Metropolitan	113	50	63	0	17.2%	21.6%	0.0%
Non-Metropolitan	178	134	44	0	46.0%	15.1%	0.0%
Total	291	184	107	0	63.2%	36.8%	0.0%

<i>Metropolitan, Micropolitan and Non-Core Counties (Percentages are of the Total)</i>							
Metropolitan	113	50	63	0	17.2%	21.6%	0.0%
Micropolitan	69	44	25	0	15.1%	8.6%	0.0%
Non-Core	109	90	19	0	30.9%	6.5%	0.0%
Total	291	184	107	0	63.2%	36.8%	0.0%

Table 10 - Changes in Household Income (2010-2016)
SOURCE: United States Census Bureau

In Table 4, micro and non-core both experienced growth in a majority of counties while a majority of metropolitan counties experienced a drop in average household income. When comparing the three areas, it is evident that there is a difference between the micropolitan and non-core counties. A higher proportion of non-core counties experience growth in household income. This comparison lists the number of counties, but does not include the size of the growth, nor the exact location. Further research is needed to identify the extent of the growth and where these counties are located.

Statistical areas	Total Number	Number counties experiencing:			Percent counties experiencing:		
		Growth	Decline	No Change	Growth	Decline	No Change
<i>Metropolitan and Non-Metropolitan Counties (Percentages are of the Total)</i>							
Metropolitan	113	87	25	1	29.9%	8.6%	0.3%
Non-Metropolitan	178	91	84	3	31.3%	28.9%	1.0%
Total	291	178	109	4	61.2%	37.5%	1.4%
<i>Metropolitan, Micropolitan and Non-Core Counties (Percentages are of the Total)</i>							
Metropolitan	113	87	25	1	29.9%	8.6%	0.3%
Micropolitan	69	45	23	1	15.5%	7.9%	0.3%
Non-Core	109	46	61	2	15.8%	21.0%	0.7%
Total	291	178	109	4	61.2%	37.5%	1.4%

Table 11 - Changes in Retail Employment (2010-2016)
SOURCE: United States Census Bureau

In Table 5, the non-metropolitan category reported a slightly higher number of counties grew than declined. When non-metropolitan is divided into two categories, it becomes more clear that the loss in retail employment is substantially lower in the micropolitan statistical areas than in the non-core areas. As the number of jobs is not specified, additional research is needed to define the number of retail jobs.

Statistical areas	Total Number	Number counties experiencing:			Percent counties experiencing:		
		Growth	Decline	No Change	Growth	Decline	No Change
<i>Metropolitan and Non-Metropolitan Counties (Percentages are of the Total)</i>							
Metropolitan	113	101	12	0	34.7%	4.1%	0.0%
Non-Metropolitan	178	140	38	0	48.1%	13.1%	0.0%
Total	291	241	50	0	82.8%	17.2%	0.0%
<i>Metropolitan, Micropolitan and Non-Core Counties (Percentages are of the Total)</i>							
Metropolitan	113	101	12	0	34.7%	4.1%	0.0%
Micropolitan	69	64	5	0	22.0%	1.7%	0.0%
Non-Core	109	76	33	0	26.1%	11.3%	0.0%
Total	291	241	50	0	82.8%	17.2%	0.0%

Table 12 - Changes in Retail Payroll (2010-2016)
SOURCE: United States Census Bureau

Table 6 shows a higher number of counties experiencing a decline of retail payroll amounts are in 38 non-metropolitan areas. When data are divided into the three categories, it shows that only 5 of the 38 counties experiencing declining retail payrolls are in micropolitan areas. Micropolitan counties reported increases in retail payroll in 64 of 69 counties.

Analysis 2 – Dividing the Data into Seven Categories

Adapting Isserman’s (2005) categories of the urban influence, for this study counties were further divided into seven categories based on the statistical areas of adjacent counties. Table 7 lists the seven categories and their distribution of the counties within the three states used as the study’s focus. Percentages shown represent the percentage of the total 291 counties in the three states. With more detail in the data, a more in-depth analysis of the geographic area studied can be presented.

	Number	Percentage
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	Total	AL	GA	MS	Total	AL	GA	MS
Stand alone	2	0	1	1	0.7%	0.0%	0.3%	0.3%
Adjacent to								
1 micro county	25	6	14	5	8.6%	2.1%	4.8%	1.7%
2 micro counties	49	7	14	28	16.8%	2.4%	4.8%	9.6%
1 metro county	19	14	4	1	6.5%	4.8%	1.4%	0.3%
2 metro counties	56	7	40	9	19.2%	2.4%	13.7%	3.1%
1 metro and 1 micro county	25	5	13	7	8.6%	1.7%	4.5%	2.4%
3/+3 metro or micro counties	115	28	58	29	39.5%	9.6%	19.9%	10.0%
TOTAL	291	67	144	80	100.0%			

Table 13 - Seven Categories of Counties Divided by States
SOURCE: United States Census Bureau

The data for all four exemplars are presented in Tables 8, 9, 10, and 11. The major classifications are the same as previously shown in Tables 3, 4, 5, and 6.

Statistical areas counties	Total Number	Number counties experiencing:			Percent counties experiencing:		
		Growth	Decline	No Change	Growth	Decline	No Change
<i>TOTAL</i>	291	116	175	0	39.9%	60.1%	0.0%
METROPOLITAN	113	70	43	0	24.1%	14.8%	0.0%
Stand-alone	0	0	0	0	0.0%	0.0%	0.0%
Adjacent to							
1 Micro	10	5	5	0	1.7%	1.7%	0.0%
2 Micro	9	4	5	0	1.4%	1.7%	0.0%
1 Metro	9	4	5	0	1.4%	1.7%	0.0%
2 Metro	37	30	7	0	10.3%	2.4%	0.0%
1 Metro/1 Micro	7	5	2	0	1.7%	0.7%	0.0%

3/+3Metro/Micro	41	22	19	0	7.6%	6.5%	0.0%
MICROPOLITAN	69	25	44	0	8.6%	15.1%	0.0%
Stand-alone	1	1	0	0	0.3%	0.0%	0.0%
Adjacent to							
1 Micro	9	1	8	0	0.3%	2.7%	0.0%
2 Micro	14	4	10	0	1.4%	3.4%	0.0%
1 Metro	1	0	1	0	0.0%	0.3%	0.0%
2 Metro	9	4	5	0	1.4%	1.7%	0.0%
1 Metro/1 Micro	5	3	2	0	1.0%	0.7%	0.0%
3/+3Metro/Micro	30	12	18	0	4.1%	6.2%	0.0%
<i>NON-CORE</i>	109	21	88	0	7.2%	30.2%	0.0%
Stand-alone	1	1	0	0	0.3%	0.0%	0.0%
Adjacent to							
1 Micro	6	2	4	0	0.7%	1.4%	0.0%
2 Micro	26	4	22	0	1.4%	7.6%	0.0%
1 Metro	9	0	9	0	0.0%	3.1%	0.0%
2 Metro	10	2	8	0	0.7%	2.7%	0.0%
1 Metro/1 Micro	13	3	10	0	1.0%	3.4%	0/0%
3/+3Metro/Micro	44	9	35	0	3.1%	12.0%	0.0%

Table 14 - Changes in Population Divided into Seven Categories (2010-2016)

SOURCE: United States Census Bureau.

In reviewing the more detailed information on population changes as presented in Table 8, several items become evident. More counties in metropolitan and non-core areas show decline, primarily in counties adjacent to two other micropolitan counties or adjacent to three or more metropolitan or micropolitan counties. The population growth appears to happen in more metropolitan counties adjacent to either two metropolitan counties or adjacent to more than three metropolitan or micropolitan counties.

Statistical areas counties	Total	Number counties experiencing:			Percent counties experiencing:		
		Growth	Decline	No Change	Growth	Decline	No Change

	Number						
<i>TOTAL</i>	291	178	109	0	61.2%	37.5%	0.0%
METROPOLITAN	113	50	63	0	17.2%	21.6%	0.0%
<i>Stand-alone</i>	0	0	0	0	0.0%	0.0%	0.0%
<i>Adjacent to</i>							
<i>1 Micro</i>	10	5	5	0	1.7%	1.7%	0.0%
<i>2 Micro</i>	9	4	5	0	1.4%	1.7%	0.0%
<i>1 Metro</i>	9	5	4	0	1.7%	1.4%	0.0%
<i>2 Metro</i>	37	12	25	0	4.1%	8.6%	0.0%
<i>1 Metro/1 Micro</i>	7	5	2	0	1.7%	0.7%	0.0%
<i>3/+3Metro/Micro</i>	41	19	22	0	6.5%	7.6%	0.0%
MICROPOLITAN	69	44	25	0	15.1%	8.6%	0.0%
<i>Stand-alone</i>	1	0	1	0	0.0%	0.3%	0.0%
<i>Adjacent to</i>							
<i>1 Micro</i>	9	8	1	0	2.7%	0.3%	0.0%
<i>2 Micro</i>	14	9	5	0	3.1%	1.7%	0.0%
<i>1 Metro</i>	1	1	0	0	0.3%	0.0%	0.0%
<i>2 Metro</i>	9	7	2	0	2.4%	0.7%	0.0%
<i>1 Metro/1 Micro</i>	5	3	2	0	1.0%	0.7%	0.0%
<i>3/+3Metro/Micro</i>	30	16	14	0	5.5%	4.8%	0.0%
<i>NON-CORE</i>	109	90	19	0	30.9%	6.5%	0.0%
<i>Stand-alone</i>	1	1	0	0	0.3%	0.0%	0.0%
<i>Adjacent to</i>							
<i>1 Micro</i>	6	5	1	0	1.7%	0.3%	0.0%
<i>2 Micro</i>	26	24	2	0	8.2%	0.7%	0.0%
<i>1 Metro</i>	9	8	1	0	2.7%	0.3%	0.0%
<i>2 Metro</i>	10	7	3	0	2.4%	1.0%	0.0%
<i>1 Metro/1 Micro</i>	13	12	1	0	4.1%	0.3%	0/0%

<i>3/+3Metro/Micro</i>	44	33	11	0	11.3%	3.8%	0.0%
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Table 15 – Changes in Household Income Divided into Seven Categories (2010-2016)

SOURCE: United States Census Bureau.

The data in Table 9 for changes in household income shows nearly the opposite county growth and decline patterns as the population data in Table 8. More micropolitan and non-core counties increased in household income while more metropolitan counties declined. What stands out is that more non-core counties grew in the household income than micropolitan counties both in number and in percentage as a whole. Growth in the household income is more apparent in the better connected non-core counties adjacent to two micropolitan counties, or adjacent to one micropolitan county and one metropolitan county or adjacent to three or more metropolitan or micropolitan counties.

Statistical areas counties	Total Number	Number counties experiencing:			Percent counties experiencing:		
		Growth	Decline	No Change	Growth	Decline	No Change
<i>TOTAL</i>	291	178	109	4	61.2%	37.5%	1.4%
METROPOLITAN	113	87	25	1	29.9%	8.6%	0.0%
Stand-alone	0	0	0	0	0.0%	0.0%	0.0%
Adjacent to							
1 Micro	10	6	4	0	2.1%	1.4%	0.0%
2 Micro	9	5	4	0	1.7%	1.4%	0.0%
1 Metro	9	6	2	1	2.1%	0.7%	0.3%
2 Metro	37	34	3	0	11.7%	1.0%	0.0%
1 Metro/1 Micro	7	6	1	0	2.1%	0.3%	0.0%
<i>3/+3Metro/Micro</i>	41	30	11	0	10.3%	3.8%	0.0%
MICROPOLITAN	69	45	23	1	15.5%	7.9%	0.3%
Stand-alone	1	1	0	0	0.3%	0.0%	0.0%
Adjacent to							
1 Micro	9	5	4	0	1.7%	1.4%	0.0%
2 Micro	14	10	4	0	3.4%	1.45	0.0%

1 Metro	1	1	0	0	0.3%	0.0%	0.0%
2 Metro	9	5	4	0	1.7%	1.4%	0.0%
1 Metro/1 Micro	5	3	1	1	1.0%	0.3%	0.3%
3/+3Metro/Micro	30	20	10	0	6.9%	3.4%	0.0%
<i>NON-CORE</i>	109	46	61	2	15.8%	21.0%	0.7%
Stand-alone	1	1	0	0	0.3%	0.0%	0.0%
Adjacent to							
1 Micro	6	3	3	0	1.0%	1.0%	0.0%
2 Micro	26	10	16	0	3.4%	5.5%	0.0%
1 Metro	9	3	6	0	1.0%	2.1%	0.0%
2 Metro	10	4	6	0	1.4%	2.1%	0.0%
1 Metro/1 Micro	13	5	7	1	1.7%	2.4%	0.3%
3/+3Metro/Micro	44	20	23	1	6/9%	7.9%	0.3%

Table 16 – Changes in Retail Employment Divided into Seven Categories (2010-2016)
 SOURCE: United States Census Bureau.

As shown in Table 10, retail employment grew in micropolitan counties adjacent to two micropolitan counties and to three or more metropolitan/micropolitan counties. Metropolitan counties also grew in counties adjacent to two micropolitan counties and to three or more metropolitan/micropolitan counties. Interestingly, more non-core counties experienced a decline in retail employment for the same two categories. In non-core counties adjacent to one micropolitan county there was about equal number of counties experiencing growth or decline. The stand alone non-core county increased in retail employment.

Statistical areas counties	Total Number	Number counties experiencing:			Percent counties experiencing:		
		Growth	Decline	No Change	Growth	Decline	No Change
<i>TOTAL</i>	291	241	50	0	82.8%	17.2%	0.0%
METROPOLITAN	113	101	12	0	34.7%	4.1%	0.0%
Stand-alone	0	0	0	0	0.0%	0.0%	0.0%
Adjacent to							

1 Micro	10	9	1	0	3.1%	0.3%	0.0%
2 Micro	9	8	1	0	2.7%	0.3%	0.0%
1 Metro	9	7	2	0	2.4%	0.7%	0.0%
2 Metro	37	36	1	0	12.4%	0.3%	0.0%
1 Metro/1 Micro	7	7	0	0	2.4%	0.0%	0.0%
3/+3Metro/Micro	41	34	7	0	11.7%	2.4%	0.0%
MICROPOLITAN	69	64	5	0	23.7%	1.7%	0.0%
Stand-alone	1	1	0	0	0.3%	0.0%	0.0%
Adjacent to							
1 Micro	9	7	2	0	2.4%	0.7%	0.0%
2 Micro	14	14	0	0	4.8%	0.0%	0.0%
1 Metro	1	1	0	0	0.3%	0.0%	0.0%
2 Metro	9	8	1	0	2.7%	0.3%	0.0%
1 Metro/1 Micro	5	4	1	0	1.4%	0.3%	0.0%
3/+3Metro/Micro	30	29	1	0	10.0%	0.3%	0.0%
<i>NON-CORE</i>	109	76	33	0	26.1%	11.3%	0.0%
Stand-alone	1	1	0	0	0.3%	0.0%	0.0%
Adjacent to							
1 Micro	6	6	0	0	2.1%	0.0%	0.0%
2 Micro	26	18	8	0	6.2%	2.7%	0.0%
1 Metro	9	7	2	0	2.4%	0.7%	0.0%
2 Metro	10	6	4	0	2.1%	1.4%	0.0%
1 Metro/1 Micro	13	11	2	0	3.8%	0.7%	0.0%
3/+3Metro/Micro	44	27	17	0	9.3%	5.8%	0.0%

Table 17 - Changes in Retail Payroll Divided into Seven Categories (2010-2016)
SOURCE: United States Census Bureau.

Table 11 shows a higher number of counties experienced growth in retail payroll, and relatively few counties reported a decline in retail payroll. All micropolitan counties adjacent to two other micropolitan counties experienced growth and 29 of 30 micropolitan counties adjacent to three

or more metropolitan/micropolitan counties experienced growth. A similar result was recorded in non-core counties. The strongest growth was experienced in metropolitan counties adjacent to two other metropolitan counties and to three or more metropolitan/micropolitan counties.

Discussion

It is in the national interest to get rural “right” (Isserman, 2005). To remain healthy and relevant, rural regions must provide evidence of making effective contributions to national economic development efforts (Freshwater, 2016). This detail of data and form of analysis could help companies working on the efficiency of their supply chains to understand the type and source of growth within some smaller markets. In recognizing the existence and differences of these two classifications, companies can see that opportunities exist in these underserved, less-densely populated areas.

Local economic development officials and businesses can take these findings and began to look further beyond the one category of nonmetropolitan. Leaders with communities in a micropolitan statistical area or non-core statistical area can build upon the existing positives and identify the negatives that need to be addressed (Vias, 2011).

Limitations and future research

This study is influenced by several limitations. County-level information is only available for two types of retail – NAICS Codes 44 for store retailers and NAICS code 45 for non-store retailers (US Census Bureau, 2018). The study focuses on count-level changes in terms of increases and decreases. The exact magnitude of these changes is not included. Further research could group these changes by percentages or numbers. Counties are identified by statistical areas and not specifically by location or by name. This study should spark more detailed analysis that could be conducted based on this added information.

The study’s classification structure provides support for future research in micropolitan statistical areas. This clear distinction between the micropolitan statistical area and noncore statistical areas could encourage more defined and focused research on the rural United States.

Conclusions

The introduction of the micropolitan statistical area and non-core statistical area provided an opportunity for more detailed and enlightened data analysis and research. Generalizations do not provide the differentiation of geographic areas that is provided through more detailed information. By dividing research into three standardized statistical areas rather than the often used two categories of metropolitan and nonmetropolitan provides deeper insight and understanding. Medical research has recognized this and is utilizing these three categories. Economic development and community-based research have made limited use of the three category distinctions. Future research could benefit from more specific information.

As companies look to improving their supply chains through sites which provide lower costs and proximity to production and customers, dividing the traditional rural area into micropolitan and non-core statistical areas can bring to light additional locations that may provide needed amenities, labor force, and lower costs while mitigating some social problems caused by population migration to metropolitan areas.

The point where the distinction between urban and rural begins and ends can be difficult to pinpoint (Ratcliffe et al., 2016). Further research incorporating the three statistical areas can be developed in many directions. Transportation costs, labor availability and identifying county-level amenities could all benefit by incorporating these categories. Additional research is needed further breaking down these counties based on additional characteristics. The key and the challenge to consistent research is to look beyond the surface definition of rural or nonmetropolitan and dig deeper.

Relevance to Marketing Educators, Researchers and Practitioners: Rural regions must provide evidence of making effective contributions to national economic development efforts to remain healthy and relevant (Freshwater, 2016). This study could help educators, researchers, and practitioners better understand the building of supply chain efficiency by understanding the level of growth within smaller markets.

In looking beyond the traditional two classifications of metropolitan and nonmetropolitan statistical areas, a more detailed and geographically specific analysis can be conducted. By breaking the data into smaller categories, trends are suggested that are worth further study. Local economic development agencies, community leaders, governmental officials, and businesses can take these findings and begin to look beyond the one category of nonmetropolitan. Leaders with communities in a micropolitan statistical area or non-core statistical area can build upon the positives and negatives revealed in the data. They can then begin to build upon the existing positives and to rectify the negatives (Vias, 2011)

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