National Assembly of State Arts Agencies
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Quantitative Data Sources for Understanding Rural Creative Economies

Working Paper to inform the National Governors Association Center for Best Practices

National Assembly of State Arts Agencies

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Introduction Return to Table of Contents

The National Assembly of State Arts Agencies (NASAA) is working collaboratively with the National Governors Association Center for Best Practices (NGA) on an initiative funded by the National Endowment for the Arts (NEA) to investigate how the arts and creative industries can contribute to the sustainable economic development of rural communities across the United States. NASAA's role in this partnership is to provide research and consulting services to the NGA to support its formulation of recommendations for governors and their chief economic advisors.

One strand of NASAA's work is to identify nationally available quantitative data sets that can offer a perspective on rural creative economies. To this end, this briefing paper identifies potentially useful national data sets and explains key definitional and methodological issues associated with using them. It also highlights supplemental state- and national-level data sets that may be useful to policymakers formulating arts based strategies to drive rural economic development.

NASAA welcomes additions to and feedback on this brief. Contribute your knowledge by contacting NASAA Research Director Ryan Stubbs at ryan.stubbs@nasaa-arts.org.

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There are a number of ways to approach the collection of quantitative data relevant to arts based economic development in rural areas, though each has specific challenges. It is possible, for example, to isolate rural geographies and to identify arts related industries or occupations within national economic data sets. Such a method, however, raises definitional questions when selecting rural geographies and identifying available arts related economic data. This brief offers some guidance on navigating the many working definitions of "rural" and aspects of the creative economy.

Second, while there are localized surveys that clearly define what is rural and how to identify rural respondents, they are not national in scope or they focus on specific industries. As such, they may not contain broadly replicable data or shed light on rural creative economic development beyond their particular geography or sphere of study.

An additional challenge in selecting data for analysis is identifying research questions. For example, an investigation of how rural residents nationwide participate in the arts would need survey data on arts participation patterns from a sample of rural residents across the country.

Similarly, a study of the economic impact of the arts in rural America would require economic data on specified industries in all rural areas and the use of an input/output model that takes into account the regional economies of every rural location. While these two questions seem relatively straightforward, definitional issues and data collection difficulties are part of the reason why most in-depth explorations of these topics have occurred at the local rather than national level.

Notwithstanding these limitations, some nationally normed data sets do exist that can shed light on rural creative economies. This paper focuses on nationally available secondary data sources—data that has already been collected by another party—that a meet a minimum standard of rural geography.

How to define rural? Return to Table of Contents

There is no universal definition of "rural" for policy considerations, but there are a number of ways to designate rural areas for statistical purposes. Geographic areas comprise a continuum of places from densely populated cities to areas with very few human inhabitants. Making a definitional decision about where to draw a line that separates the urban from the suburban from the rural will always be an imperfect exercise in an ever-evolving built environment. To analyze data on the very important topic of rural communities and residents, however, it is necessary to adopt some functional designations. This is manifest in the many federal and state programs serving rural populations, which apply geographic definitions to inform eligibility requirements.

Counties are a common geographic boundary and an important building block in making rural distinctions. Other boundaries used nationwide such as Census Blocks and ZIP Codes can offer smaller and therefore more precise distinctions.

The federal Office of Management and Budget establishes and maintains the delineations of Metropolitan Statistical Areas (MSA) to enable consistent geographic distinctions for collecting, tabulating and publishing federal statistics. A metro area includes one or more counties containing a core urban area and any adjacent counties that have a high degree of social and economic integration with the urban core. MSA distinctions are one common way for researchers to designate non-MSA counties as rural. The advantage to this definitional approach is that county boundaries represent political jurisdictions and are relatively stable over time. The disadvantages are that county size varies considerably from state to state and larger counties can contain both rural and urban areas.

The United States Department of Agriculture Economic Research Service (USDA ERS) often uses MSA designations for research purposes. USDA ERS also uses a more refined classification scheme that measures counties by population size and by degree of urbanization and adjacency to a metro area. Each county in the U.S. is assigned one of nine Rural-Urban Continuum Codes that allows researchers to segment county data into more granular residential groups. In this schema, counties are still the unit of geographic measurement, but there is a measure of relative rurality for each county.

The United States Census Bureau is another agency that delineates geographic areas as urban and rural for statistical purposes. The Census identifies "urbanized areas" as geographies with 50,000 or more residents, "urban clusters" as having populations of 2,500 to 50,000 and "rural" as areas encompassing all territories not included within the two aforementioned categories. The Census has county-level data on the percentage of America's population living in a rural area as well as a number of resources regarding the measurement of rural populations.

States interested in collecting demographic, social and economic data describing rural populations face a challenge in drawing geographic boundaries that precisely align with changing rural populations. Important, too, is recognizing the salient geographic characteristics of a region. For example, population size alone may not be a sufficient measure of rural character if other factors—such as distance or type of terrain—play isolating roles. By knowing a variety of approaches and having a clear idea of which indicators or measurements are most appropriate, researchers can collect data that have a large degree of coalescence with rural areas.

What are the particular economic challenges of rural areas? Return to Table of Contents

By establishing a rural definition and then examining available economic data, it is possible to highlight specific economic strengths or disparities present in rural areas. Economic indicators from the Bureau of Labor Statistics (BLS) can show employment and inflation trends in different regions of a state, and the U.S. Census American Community Survey (ACS) can highlight poverty rates, household income, the number of persons living with disabilities and a broad range of additional demographic data. The U.S. Department of Agriculture Economic Research Service (USDA ERS), meanwhile, publishes extensive research on economic and social challenges in rural America. Its annual Rural America at a Glance report highlights current and pressing issues. Additionally, USDA ERS has online resources addressing rural poverty and well-being, employment and education, population and migration and business and industry. For state-level data, USDA ERS publishes state fact sheets with information on rural population, income,

poverty, food security, education, employment and agricultural metrics such as commodity exports.

Even though they don't focus on the arts, such contextual data are important for state policymakers interested in the creative economy because they highlight issues affecting the prosperity of rural areas and illuminate factors that may contribute to—or curtail—the viability of arts based policy interventions.

What industries and occupations are relevant to the creative economy? Return to Table of Contents

There are also definitional challenges related to measuring the creative economy. For example, all regional economies are unique, which means expertise and locally calibrated data are usually required for any serious inquiry into how a state or regional economy works. When such an inquiry addresses the impact of the arts, it is necessary to determine which industries and/or occupations to consider. Helpful resources to guide such choices include:

- America's Creative Economy: A Study of Recent Conceptions, Definitions, and Approaches to Measurement Across the USA (Creative Economy Coalition, 2013)
- NASAA's State Arts Agencies and Creative Economy Research: Frequently Asked Questions (NASAA, 2017)
- Interactive Database of State Creative Economy Studies (NASAA)
- Industries within the Arts and Cultural Production Satellite Account of the Bureau of Economic Analysis.

In addition, industry and occupational data are available from federal sources. The U.S. Census Bureau and the Bureau of Labor Statistics (BLS) identify specific industries using the North American Industrial Classification System (NAICS), a taxonomy that assigns codes to industries and segments of industries. To identify occupations, BLS uses the Standard Occupational Classification (SOC) system, which classifies workers into occupational categories. The Arts and Cultural Production Satellite Account (ACPSA), meanwhile, draws on the national income and product accounts of the U.S. Bureau of Economic Analysis (BEA) to precisely define arts and culture production within and across industries. For example, ACPSA data on software publishing includes only the percentage related to computer games, computer-assisted design and other arts related software. Jewelry manufacturing data is restricted to artistic contribution and excludes commercial costume jewelry. ACPSA data also includes fractional production by advertising services, educational services (e.g., colleges and universities) and printing, to name

a few. This refinement, done by BEA, captures the scope of the creative economy in a way that is otherwise unavailable in other data sources.

What nationally validated data sets offer information on the creative economy in rural areas? Return to Table of Contents

There are number of federal data sets that allow researchers and policy makers to select counties that fall within an acceptable definition of rural and to simultaneously zoom in on creative occupations and industries.

County Business Patterns from the U.S. Census

County Business Patterns (CPB) data are available for business establishments at the national, state, county, metropolitan area, ZIP Code, and congressional district levels. Business establishment data include geographic area, North American Industrial Classification System (NAICS) industry code, number of establishments, employment and payroll. CBP data do not prescribe a parameter for rural inclusion. Therefore, CBP users interested in rural data must make definitional choices when sorting and analyzing it.

CBP data tables, which are downloadable, can be analyzed for information such as the number of creative businesses, the number of employees working at those businesses and their annual payroll. All of these data speak to the contribution of creative businesses to rural economies.

Example Data and Fields

Geographic area name	2012 NAICS code	Meaning of 2012 NAICS code	Year	Number of establishments	Paid employees	First-quarter payroll ($1,000)	Annual payroll ($1,000)
Autauga County, Alabama	71	Arts, entertainment, and recreation	2015	11	207	661	$2,643

Bureau of Labor Statistics Quarterly Census of Employment and Wages

The Quarterly Census of Employment and Wages is a rich data source—available by industry type at the county, Metropolitan Statistical Area, state and national levels—of employment and wage data reported by employers that collectively sustain more than 95% of U.S. jobs. Information is available by NAICS codes (from the two-digit to six-digit level, which provides the

most refined industry definitions). Industry classification data can be further filtered by county. Rural county designations are not automatically included in this data set, but users can cross reference such designations from either the U.S. Department of Agriculture Economic Research Service (USDA ERS) or Census lists of rural counties (see previous sections) to produce data files containing only nonmetropolitan areas.

Example Data and Fields

County	Industry title	Establishment count	Employment at month 3	Total Quarterly Wages
Teton County, Wyoming	Motion picture and sound recording industries	10	50	$398,859

Bureau of Labor Statistics Occupational Employment Statistics

Occupational Employment Statistics (OES) provide employment and wage estimates for over 800 occupations and are a useful way to understand arts related employment and wages in nonmetropolitan areas. These estimates are available for the nation as a whole, for individual states, and for metropolitan and nonmetropolitan areas. Occupational data are important for measuring creative economies because creative occupations can cut across different industries. For example, graphic designers may work in a variety of industries outside of the arts, such as healthcare and finance. One tool that describes which occupations are prevalent in which industries is the National Employment Matrix.

Example Data and Fields

Series Title	Annual median wage for Arts, Design, Entertainment, Sports, and Media Occupations in All Industries in Northeast Wyoming nonmetropolitan area	
Measure Data Type	Annual median wage	
Industry	Cross-industry, Private, Federal, State, and Local Government	
Occupation	Arts, Design, Entertainment, Sports, and Media Occupations	
Area	Northeast Wyoming nonmetropolitan area	
Area Type	Metropolitan or nonmetropolitan area	

Year	Period	Label	Observation Value
2016	A01	2016 Annual	32310

OES data offers tabulations of employment and wages for all occupations by Standard Occupational Classification (SOC) code for every state and for nonmetropolitan regions (typically comprising multiple counties) within each state.

Example Data and Fields

Occupation: Actors (SOC Code 272011)

Area Name	Employment	Employment percent relative standard error	Hourly mean wage
Southwest Missouri nonmetropolitan area(2900004)	170	17.7	13.74

U.S. Department of Agriculture Economic Research Service Creative Class County Codes

The USDA ERS has downloadable data sets with metropolitan definitions and share of employment in creative occupations by county. Its creative class codes indicate a county's share of population employed in occupations that requires "thinking creatively."

The USDA ERS creative class metric uses American Community Survey (ACS) data to provide the number and percent of workers employed in creative class occupations as well as a metropolitan/nonmetropolitan indicator for all counties. These data are available for the years 1990, 2000 and 2007-11. The data tables additionally have a measure for occupations with a greater arts focus.

Example Data and Fields

State abr.	County	metro 2003 definition (1=metro, 0=nonmetro)+	Creative 2007-11 Pooled (number)	Creative 2007-11 Pooled (share)	Arts 2007-11 Pooled (number)	Arts 2007-2011 Pooled (share)
AL	Autauga County	1	5680	0.23529	140	0.0058

Census and Bureau of Labor Statistics data are used by many researchers to study the American economy, but they are not deployed specifically for the study of rural development. USDA ERS has specifically interpreted and analyzed data within their creative county work in an effort to discern what story they tell about the creative economy in rural America. Some topline conclusions include:

- The interaction of the environment for entrepreneurship with the share of the local workforce employed in creative occupations is strongly associated with growth of the number of new rural establishments and employment
- Following the recession, rural "creative class counties" were more likely to be classified as "resilient" than their non-creative class peers
- The percentage of metropolitan counties classified as resilient, however, was higher than the percentage of nonmetropolitan counties, irrespective of creative class status.

The most recent USDA ERS Creative Class County Codes data set, constructed in 2014, was based on five years (2007-2011) of pooled ACS data. This "pooling" was required to secure a sufficiently robust number of data observations from rural households. USDA ERS has not replicated this pooling for more recent ACS data series, but in theory that could be done to yield a more current post-recession view of the creative economy in rural counties.

Which data sets enumerate the cultural, educational or community institutions available to rural residents in each state?

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Data on Schools and School Districts in Rural Areas

The National Center for Education Statistics within the Institute of Education Sciences holds a wealth of information on schools and school districts. This information is highly relevant for finding location-specific information for schools across the country. There is even a mapping tool that can locate any school district and list the institutions within it. This is a valuable resource for understanding access to educational institutions in rural areas. Unfortunately, there is not a universal tool for understanding arts education programming in rural communities. Resources are currently being developed by the NEA to support arts education data collection via Statewide Longitudinal Data Systems. In addition, a number of states have conducted statewide arts education assessments to better understand access to arts education in different geographies. The monograph Leveraging Change: Increasing Access to Arts Education in Rural Areas, funded by an NEA Collective Impact grant, includes a helpful

discussion of the types of quantitative data that may be useful in developing policy interventions that reduce barriers to the delivery of arts education in rural areas.

Community and Cultural Institutions in Rural Areas

The Urban Institute's National Center for Charitable Statistics (NCCS) is an excellent resource for understanding publically available data based on the tax documents nonprofit organizations are required to file with the Internal Revenue Service. NCCS publishes Core Files of nonprofits and their finances, which combine data from the IRS Business Master File and Return Transaction Files—these contain, respectively, data on all active tax-exempt organizations and on all 501(c)(3) groups that have filed a Form 990. A related NCCS guide helps users leverage this synthesized data. Arts nonprofits are included in the file and can be identified by their National Taxonomy of Exempt Entities Code. Address and county data are also included, which makes this a useful data set to find resources specific to rural areas.

How does my state currently invest in the arts in rural areas? Return to Table of Contents

Final Descriptive Reports

State arts agencies and regional arts organizations submit annual Final Descriptive Reports to the NEA and NASAA to describe arts activities supported through state and federal funds. Key variables include information on grantees, information on funded activities and key budget indicators. These data, collected using a standardized taxonomy, are important to understanding the scope of state investments in the arts. Data are available at the street address level and can therefore be distinguished by metropolitan or nonmetropolitan geographic areas as well as by census blocks or other geographic boundaries. These data, which NASAA analyzes at the national level through its Support for Arts in Rural Communities Fact Sheet, help state arts agencies assess how well their grants and activities reach rural communities. Additionally, NASAA produces numerous custom analyses, visualizations and maps of these data based on specific state arts agency requests.

What about state or regional surveys that collect quantitative data on rural economies? Return to Table of Contents

All of the above data sources are nationally replicable secondary sources, meaning that the data collection mechanisms already have been designed and implemented by federal agencies.

These sources, however, are often not sufficiently precise for researching localized or specialized data to inform state or regional policymaking. In most cases, the only way to collect this more granular information is to conduct a localized survey. For example, this study, which looks at the economic impact of the craft industry in western North Carolina, was based on three separate surveys: intercept surveys for craft consumers, mail surveys for craft artisans, and mail surveys for craft galleries and shops. This type of effort can be costly and is very difficult to replicate at a national level.

NASAA's Interactive Database of State Creative Economy Studies attempts to catalogue all publicly available statewide creative economy studies with information on data sources. As shown in the database, many statewide studies of creative economies use data from the U.S. Census, Bureau of Labor Statistics or other national sources identified in this paper. Several state studies utilize survey mechanisms to collect information on specific creative economy assets and locations. Primary survey data, meaning surveys that are designed and implemented for a specific analysis, can be useful for rural areas where questions about creative business health and challenges may not be available from national secondary sources. For example, this study from the Alaska Department of Commerce uncovers specific information about independent creative workers in Alaska.

Survey data are an important aspect to measuring statewide creative economies. Americans for the Arts deploys a large survey of nonprofit arts organizations in the creation of its Arts & Economic Prosperity reports. Several states also use tools and systems available from DataArts to collect detailed financial information on nonprofit arts organizations. These data describe the statewide economic impact of nonprofit arts organizations. An example of this can be seen in this report from the Arizona Arts Commission.

How does arts participation differ in rural communities? Return to Table of Contents

The National Endowment for the Arts partners with the U.S. Census Bureau to measure how Americans participate in the arts. The NEA's Annual Arts Basic Survey and Survey of Public Participation in the Art (SPPA) provide data regarding changing participation patterns in a variety of (both formal and informal) cultural activities. SPPA data are published at the state level, highlighting how participation patterns vary between states, but not at a more granular level. Observing differences in participation rates between states based on percentages of statewide rural populations is one useful but imprecise way to consider rural arts participation patterns.

More state and regional surveys are required to understand how rural arts participation patterns differ from national trends. If local researchers can uncover such data, national- and state-level data can serve as an essential point of reference. As an example, this literature review of arts participation research from the Los Angeles County Arts Commission provides insight into acquired knowledge from multiple arts participation data collection efforts. A 2015 study from the Irvine Foundation, meanwhile, observes differences in arts participation in "more and less urban areas" in California. A key and expected finding in this research is that those in less urban areas are more likely to attend arts event in less formal settings. For example, visual arts exhibitions are more likely to take place at schools and colleges instead of art galleries, and theater performances are more likely to take place at community centers and libraries rather than performing arts centers.

What other metrics apply to rural communities and their economies? Return to Table of Contents

Rural Establishment Innovation Survey

The results of the U.S. Department of Agriculture Economic Research Service's Rural Establishment Innovation Survey (REIS), which was deployed in 2014, provides a sample of innovation processes in rural businesses. Innovation is defined as the introduction of new goods, services or ways of doing business that are valued by consumers. The REIS polls establishments in both rural and urban areas about a wide range of business practices, including intellectual property protections, investments in and use of design, and, notably, innovation processes. This NEA report analyzes REIS data to better understand the role of design and innovation in rural areas. Four accompanying research briefs provide additional detailed findings, including:

- Rural counties home to performing arts organizations experienced population growth three times faster than rural counties lacking performing arts institutions did
- Rural counties with design-driven businesses recovered more quickly from the recession, showing more growth in weekly earnings over a four year period (2010-2014)
- Rural counties housing performing arts organizations provide residents with higher incomes (up to $6,000 higher) than are reported in rural counties lacking performing arts organizations
- Two out of three rural business establishments report that arts and entertainment are either “somewhat” or “very” important to attracting and retaining workers

- Businesses that value the arts are more likely to report an expanding market for their products and services.

The 2016 Rural Broadband Report

The 2016 Broadband Progress Report from the Federal Communications Commission provides detailed data on broadband adoption and accessibility across the country. The report includes data by county and maps indicating which areas of the country have access to broadband. This is extremely helpful for identifying rural areas having trouble accessing high-speed internet, which can be a determinative factor for a community's ability to attract creative workers and industries.

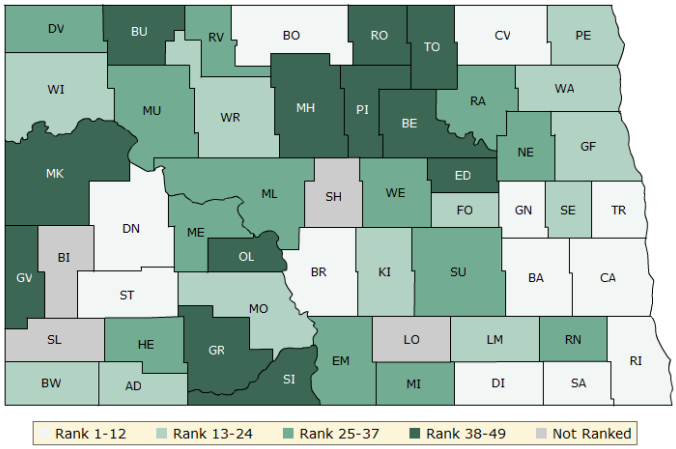
Example Data and Fields

	Rural Areas		
	Pop. Without Access	% of Rural Pop.	Pop. Density
United States	23,430,037	39%	17.478
Alaska	167,986	67%	0.439
Denali Borough	1,725	100%	0.135

Measurements of Health and Well-Being

Another potentially relevant indicator is the health and well-being of individuals living in rural communities. The Center for Disease Control, which tracks a variety of metrics of public health, has community-level indicators that are comparable at the county level. The County Health Rankings and Roadmap is an excellent source to understand and measure—at the county level—vital health factors, including high school graduation rates, obesity, smoking, unemployment, access to healthy foods, the quality of air and water, income inequality, and teen births.

Example Map, North Dakota Health Rankings by County



Can private firms help or provide additional data? Return to Table of Contents

All of the aforementioned sources of information are publicly available national accounts that are free to use but that come with time and labor costs associated with data analysis. Alternatively, there are a number of private data providers that—for a fee—collect, package and present business and labor market information tailored to specific needs. Some of these data providers also can implement modeling techniques to increase the value of data by, for example, refining levels of geographic detail and projections for current or future years. State arts agencies, regional arts organizations and national arts service organizations all have used private data firms to assist with creative economy reporting. Examples of these firms include:

- Economic Modeling Specialists, Inc. (which the Western States Arts Federation used for its Creative Vitality Suite and its analysis of rural creative economic development in California)
- Dun & Bradstreet (which Americans for the Arts used for its Creative Industry Reports)
- InfoUSA (which was used for Philadelphia's Culture Blocks project).

In addition, there are a number of other private data collection firms, such as Claritas, that often cater to large businesses trying to understand markets through data.

All of the above sources can be segmented by rural areas. Creative Vitality Suite data from Economic Modeling Specialists, Inc. are available down to the ZIP Code level, while Dun & Bradstreet and InfoUSA data provide the addresses of and other information about business establishments.

This report is for the sole purpose of informing the National Governor's Association Center for Best Practices in its work on arts based economic development in rural communities. All referenced links and sources were accessed in December 2017 and January 2018. For more information or questions, contact NASAA research director Ryan Stubbs.