

# Rural Arts, Design, and Innovation in America

Research Findings from the Rural Establishment Innovation Survey



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**National  
Endowment  
for the Arts**  
arts.gov

November 2017  
National Endowment for the Arts  
400 7th Street, SW  
Washington, DC 20506  
202-682-5400  
**arts.gov**

This report uses findings from a forthcoming research article co-authored by Timothy Wojan of the Economic Research Service, U.S. Department of Agriculture, and Bonnie Nichols of the Office of Research & Analysis, National Endowment for the Arts (NEA). The report also draws from the NEA's online Arts Data Profile, "Rural Arts, Design, and Innovation," available here: <https://www.arts.gov/ADP15>

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Front cover photo: The conservation facility for Vollis Simpson's artworks in Wilson, North Carolina. Photo courtesy of Vollis Simpson Whirligig Park Project

Back cover photo: Longhorn cow, The Plains, Virginia. Photo by Bonnie Nichols



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# Preface

Economic impact studies of the arts have proliferated to such an extent that it's easy to overlook rural dynamics affecting this research. The studies may be intensely local or regional, but only in rare cases do they question prevailing assumptions about the components and drivers of economic value linked to art. Yet it would seem obvious that the types of jobs and industries representing “creative capital” should vary by cultural milieu, and that urban and rural traditions would differently shape this relationship.

Part of the reason for discounting rural dimensions of the creative economy has to do with what we might call the expediency of standardization. Persuasive theories about the arts and economic impact (e.g., the notion of a “creative class,” of agglomeration economies, or of economic multipliers) have had downstream effects on the models and metrics that many analysts use to explain the monetary value of arts organizations. This is only natural: Standard lexicons are good for messaging, but great for research.

In aggregate, these theories, models, and metrics have fostered a distinguished body of economic research, but mainly in urban settings, where such constructs were devised and tested in the first place. This too makes sense. Frequently, the data infrastructure for rural arts research projects has proved inadequate for elementary fact-finding, not to mention for generalizing about rural creative economies as a whole.

Into this climate, the Rural Establishment Innovation Survey (REIS) bursts as an unprecedented resource. This nationally representative survey, fielded in 2014 by the Economic Research Service (ERS) unit at the U.S. Department of Agriculture (USDA), asks rural businesses about the nature and extent of innovative processes within their operations. The survey permits analysis of arts organizations—in rural and also urban contexts—and it enables rural/urban comparisons of businesses that do or do not rely on design services and on innovative processes.

Combined with County Business Patterns (CBP) data from the U.S. Census Bureau, the REIS gives researchers an opportunity to a) compare rural with urban arts organizations in terms of location and distribution, use of innovative practices, and customer service; b) investigate the proximity of rural arts organizations to design-oriented and/or innovative businesses, using the performing arts as a proxy; and c) explore economic outcomes associated with design-integrated businesses.

These topics account for the tripartite structure of this report, which grew from a formal research collaboration between USDA/ERS and the National Endowment for the Arts (NEA). Most of the findings, in fact, are based on a forthcoming research paper authored primarily by Timothy Wojan, ERS. Other findings in the present report were made by the NEA's Bonnie Nichols, who has authored a series of research briefs that are available, along with an interactive graphic, on the NEA website. See <https://www.arts.gov/ADP15>.

This report does not propose a brand-new paradigm for relating the arts to economic impact. (It does provide much-needed descriptive statistics about rural arts organizations and, apparently for the first time, uses data at the business establishment level to explore the nexus of arts, design, and innovation in rural communities.) More in keeping with that aim, the NEA has established a Research Lab within the Rural Policy Research Institute (RUPRI) at the University of Iowa. The motivation of the lab is to develop and implement a research agenda to understand the relationship between rural arts, culture, entrepreneurship, and innovation, but within a comprehensive “rural wealth framework.” (See <http://www.rupri.org/wp-content/uploads/RUPRI-NEA-Lab-Conceptual-Design-September-22-2017-.pdf>.)

Regarding federal government data about the arts in general, the NEA has increased efforts to extract and report state-level data wherever possible, thus promoting further awareness of geographical differences in arts participation (see <https://www.arts.gov/artistic-fields/research-analysis/arts-data-profiles/arts-data-profile-11>) and in the arts' economic value (see <https://www.arts.gov/artistic-fields/research-analysis/arts-data-profiles/arts-data-profile-13>). Through these efforts and the current and future work of the NEA Research Lab at RUPRI, the NEA will build greater public knowledge about rural arts and design and their measurable contributions to innovation and economic growth in the United States.

Sunil Iyengar  
Director, Research & Analysis  
National Endowment for the Arts

## Related Resources

See the NEA Arts Data Profile, "Rural Arts, Design, and Innovation" (<https://www.arts.gov/ADP15>), for access to an interactive graphic and the following Research Briefs:

1. "Rural versus Urban Arts-and-Cultural Organizations: Some Defining Characteristics"
2. "Exploring Rural Communities by the Presence of Performing Arts Organizations"
3. "Innovation and Design Use by Small Manufacturers"
4. "Local Arts and Entertainment as a Draw for Businesses in Recruiting Workers"

Previous NEA research on industrial design appears in these reports:

- *Industrial Design: A Competitive Edge for U.S. Manufacturing Success in the Global Economy* (<https://www.arts.gov/publications/industrial-design-competitive-edge-us-manufacturing-success-global-economy>); and
- *Valuing the Art of Industrial Design* (<https://www.arts.gov/publications/valuing-art-industrial-design>).

# Terms and Definitions

## What is the Rural Establishment Innovation Survey (REIS)?

The 2014 REIS obtained responses from nearly 11,000 tradable business establishments (excluding the agricultural sector) with at least five paid employees. Respondents were people knowledgeable of the overall operation of the business, which included owners and CEOs in smaller establishments and often marketing or operations managers in large establishments. The response rate for this voluntary survey was 22.4 percent. “Tradable” refers to establishments whose production of goods and services are likely to be traded regionally or internationally. These sectors include mining, quarrying, and oil and gas extraction; manufacturing; wholesale trade; transportation and warehousing; information; finance and insurance; professional, scientific, and technical services; management of companies and enterprises; and performing arts and museums.

The REIS polled business establishments in both rural and urban areas about a wide range of business practices, including intellectual property protections, investments in design, use of design, and, notably, about whether they had engaged in innovative practices. The REIS also asked respondents about the distance their customers travel for services, and about competitive barriers.

## What additional data sources are used in this report?

This report also relies on the U.S. Census Bureau’s County Business Patterns, an annual series that provides subnational economic data by industry. The report examines performing arts organizations—classified by the North American Industrial Classification System (NAICS) as “7111,” including theaters and dance companies, musical groups and artists, and other performing arts establishments such as circuses—in rural counties, as defined below.

## How is “rural” defined?

Even within the federal government, numerous methods exist for identifying rural versus urban communities. For this report, counties falling outside metropolitan statistical areas are termed rural. This definition of rural, which is commonly used by researchers at the U.S. Department of Agriculture’s Economic Research Service (ERS), emphasizes the relative economic and social isolation of non-metropolitan areas.

Metropolitan statistical areas (metro areas) are geographic entities defined by OMB for use by federal statistical agencies in collecting, tabulating, and publishing statistics. A metro area includes one or more counties containing a core urban area of 50,000 or more people, together with any adjacent counties that have a high degree of social and economic integration with the urban core.

The definition of rural, as applied throughout this report, also includes OMB-designated micropolitan statistical areas.

### **Throughout this report, what does it mean to be a “substantive innovator”?**

Researchers at the ERS applied a statistical technique known as latent class analysis to reliably identify different capacities for innovation. Those practices may have included:

- Abandoning or leaving incomplete a previous innovation
- Engaging in trade secret protections
- Regularly fixing customer complaint problems
- Using surplus funds for innovative projects

### **Throughout this report, what does it mean to be “design-integrated”?**

Researchers at the ERS applied latent class analysis to rate the design orientation of businesses surveyed. A fully “design-integrated” business is likely to have taken several of the following steps:

- Used in-house or contracted design services
- Registered a trademark or design patent
- Produced copyright-eligible materials
- Borrowed funds for intangible investments such as product branding

### **Why does some of the report focus on performing arts organizations when exploring the nexus of arts, design, and innovation?**

The production of arts and culture in total contributes more than \$700 billion to the U.S. economy, or 4.2 percent of GDP (source: the U.S. Arts and Cultural Production Satellite Account (1998-2014). See <https://www.arts.gov/artistic-fields/research-analysis/arts-data-profiles/arts-data-profile-12>). In addition to its sheer size, the arts economy is diverse. Besides covering the performing arts, it includes museum exhibits; design and architectural services; arts-related publishing such as books and art prints; and sound recording and motion picture production. The arts economy even includes selected segments of manufacturing (e.g., musical instruments) and retail trade (e.g., art galleries), as well as parts of other sectors (e.g., advertising).

Although arts industries are diverse, the present analysis emphasizes the location of rural performing arts companies. While both museums and performing arts organizations are relatively rare in rural areas, only the latter have been shown, through the Rural Establishment Innovation Survey, to demonstrate a strong association with the design orientation of local firms. Also, the performing arts are more prevalent in rural areas than are many other types of arts establishments, such as architectural and design firms and arts-related publishers.

The performing arts are only one industry in the larger arts economy. Yet they serve as a direct and measurable proxy for the arts overall, and for the arts’ connections to design and innovation in rural areas.

# Key Findings

## A. Rural Arts Organizations and Communities: Some Defining Features

### 1. As a share of all U.S. arts organizations, museums and theaters are equally distributed in urban and rural counties.<sup>i</sup>

- Museums compose roughly 40 percent of all arts organizations in rural and urban areas alike. Theater companies make up 15-20 percent of arts organizations in both settings.
- Historical sites, zoos, and botanical gardens, as a share of all arts organizations, are equally prevalent in urban and rural areas.
- By contrast, nature parks account for 22 percent of rural and 6 percent of urban arts organizations. A rural/urban imbalance—in the opposite direction—is also observed for “other performing arts” industries: 7 percent of rural and 23 percent of urban arts organizations fall into this category.

### 2. Rural counties that host performing arts organizations often offer scenic beauty and other recreational attractions.

- 43 percent of rural counties with performing arts companies are located in or near a national park or forest.
- 25 percent of rural counties that overlap with national parks or forests have “recreation-dependent” economies, in contrast to 12 percent of rural counties nationwide.<sup>ii</sup>
- The statistical odds that a rural county will contain a performing arts company are nearly 60 percent greater if the county intersects with a national park or forest.<sup>iii</sup>

## Distribution of selected arts industries, by rural/urban status of the organizations: 2014

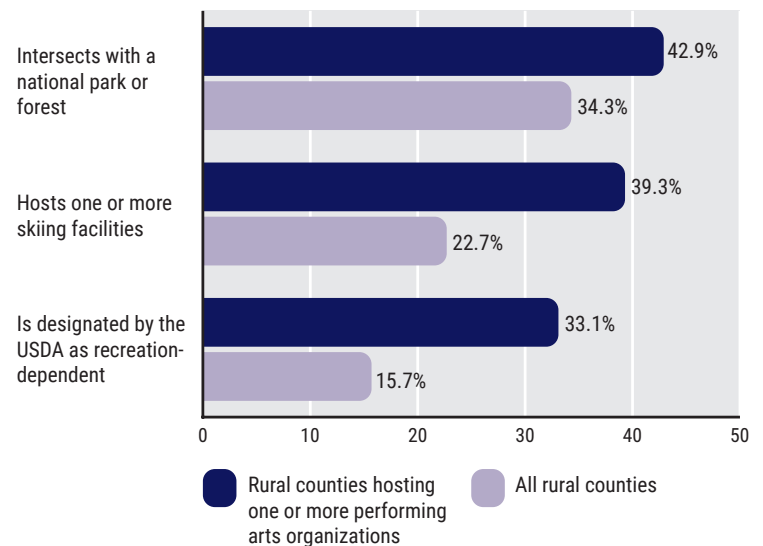
From NAICS Sector 71

Type of arts industry	Percent of all arts organizations		Percentage point (pp) difference	Statistically significant*
	Rural counties	Urban counties		
Museums	43.1%	39.1%	+4.0 pp	No
Theater companies	15.5%	21.7%	-6.2 pp	No
Historical sites, zoos, botanical gardens	12.8%	9.9%	+2.9 pp	No
Nature parks	22.1%	5.9%	+16.2 pp	Yes
Other performing arts, independent artists, and promoters/agents	6.5%	23.4%	-16.9 pp	Yes

\*Rural/urban differences were tested at 90 percent confidence.

Data source: Rural Establishment Innovation Survey (REIS), Economic Research Service, U.S. Department of Agriculture

## Percent of U.S. rural counties with access to recreational amenities, by presence of performing arts organizations: 2014



Calculated by the NEA Office of Research & Analysis

Data source: U.S. Census Bureau, National Park Service; U.S. Forest Service and Economic Research Service, U.S. Department of Agriculture



**3. Rural arts organizations are equally likely to rate as “substantive innovators” as are their urban counterparts.**

- Roughly 30 percent of both rural and urban arts organizations are substantive innovators, a term applied to businesses that engage in activities such as launching new products and services, making data-driven decisions, and creating intellectual property worth protecting.
- The rural/urban parity in innovation is not shown by other service industries.

**Percent of business establishments that are “substantive innovators,” by service sector and by rural/urban status: 2014**

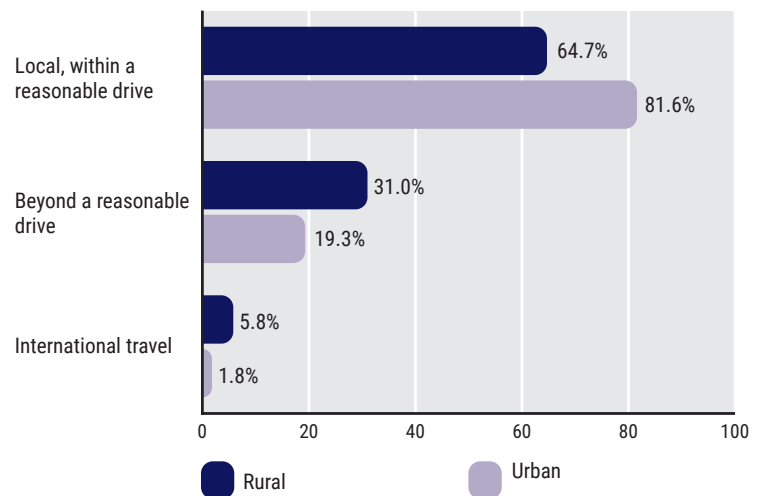
Type of service sector	Percent of business establishments that are substantive innovators:		Percentage point (pp) difference	Statistically significant*
	Rural	Urban		
Arts and culture	27.3%	32.3%	-5.0 pp	No
Information	24.7%	38.7%	-14.0 pp	Yes
Management of companies and enterprises	22.1%	36.9%	-14.8 pp	Yes
Professional, scientific, and technical services	19.8%	31.2%	-11.4 pp	Yes
Wholesale trade	20.9%	30.2%	-9.3 pp	Yes
Finance and insurance	18.1%	29.8%	-11.7 pp	Yes
Transportation	12.3%	22.6%	-10.3 pp	Yes

\*Rural/urban differences were tested at 90 percent confidence.  
Data source: Rural Establishment Innovation Survey (REIS), Economic Research Service, U.S. Department of Agriculture

**4. Rural arts organizations draw non-local audiences at higher rates than do urban arts organizations.**

- Rural arts organizations report that 31 percent of their audiences travel “beyond a reasonable distance” to attend events. The corresponding share reported by urban organizations is 19 percent.
- A greater share of rural than urban arts organizations report international audiences and visitors: 6 percent and 2 percent, respectively.
- Meanwhile, the populations of rural counties hosting performing arts companies have grown faster than the populations of rural counties overall. <sup>iv</sup>

**Percent of arts organizations, by distances that visitors travel and by rural/urban status of the organization: 2014**

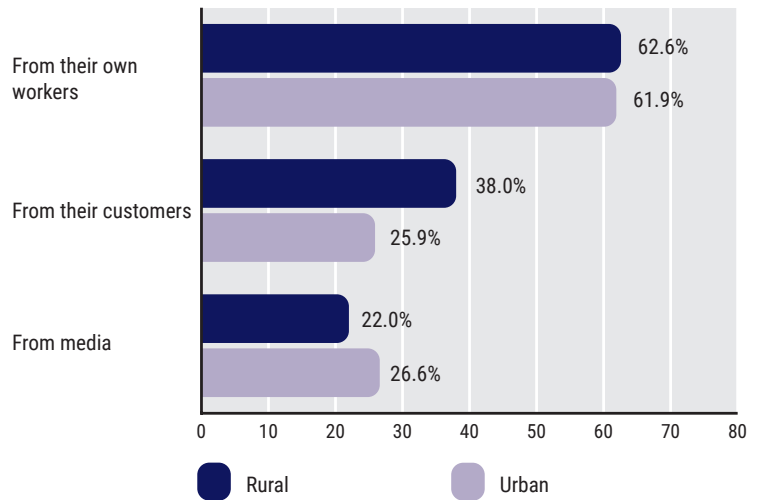


Data source: Rural Establishment Innovation Survey (REIS), Economic Research Service, U.S. Department of Agriculture

**5. Direct customer feedback and civic participation are important to the culture of many rural arts organizations.**

- Compared with their urban counterparts, rural arts organizations place more value on obtaining information directly from their customers about new opportunities: 38 percent of rural arts organizations do so, versus 26 percent of urban arts organizations.
- While 36 percent of rural arts organizations report providing “a lot” of civic leadership to their communities, only 24 percent of urban arts organizations report doing so.

**Percent of arts organizations that consider selected sources of information about new opportunities as “very valuable,” by rural/urban status: 2014**

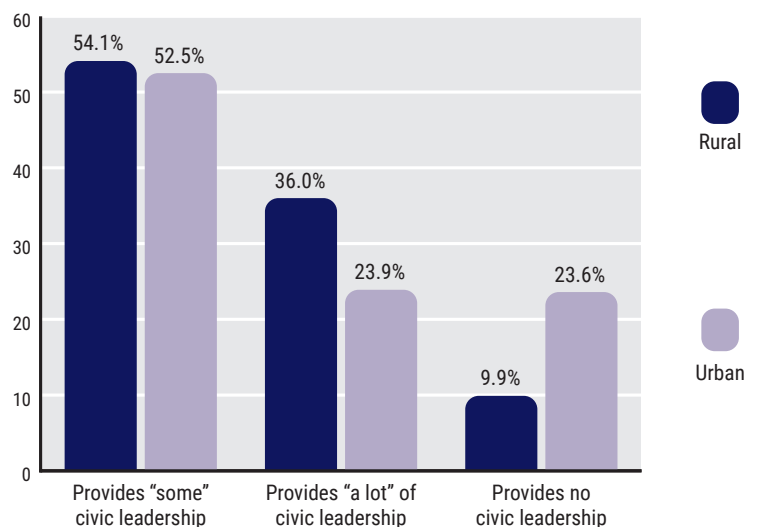


Data source: Rural Establishment Innovation Survey (REIS), Economic Research Service, U.S. Department of Agriculture



Pick and Bow Concert produced by arts nonprofit Appalshop in Whitesburg, Kentucky. Photo by Mimi Pickering

**Percent of arts and cultural organizations providing civic leadership in their communities, by rural/urban status: 2014**



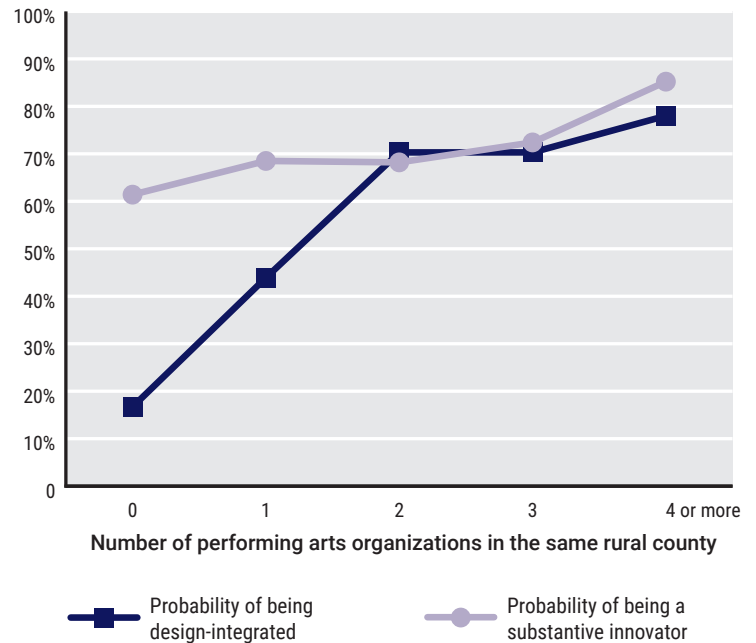
Data source: Rural Establishment Innovation Survey (REIS), Economic Research Service, U.S. Department of Agriculture

## B. Design and Innovation in Rural Arts Communities

### 1. In rural communities, the number of innovative and/or design-integrated businesses rises proportionately with the presence of performing arts organizations.

- The probability that a rural business will be design-integrated is shown to improve from 17 percent to 44 percent as the number of performing arts organizations county-wide increases from zero to one.<sup>v</sup> When the rural county hosts at least two performing arts organizations, the probability rises to 70 percent or more.<sup>vi</sup>
- The probability that a business will be a substantive innovator, based on REIS methodology, rises from 60 percent in rural counties hosting no performing arts organizations to nearly 70 percent for rural counties hosting two to three. If the rural county hosts four or more organizations, then the odds rise to 85 percent.

Probability of being classified as design-integrated or a substantive innovator, by number of performing arts organizations in the same rural county: 2014



Calculation by the Economic Research Service, U.S. Department of Agriculture  
Data source: Rural Establishment Innovation Survey (REIS), Economic Research Service, U.S. Department of Agriculture

### 2. Businesses located in rural communities that host performing arts organizations are more likely to be design-integrated than are businesses in rural communities lacking this cultural feature.

- Even after controlling for other factors, businesses in rural counties that host two or more performing arts organizations are at least 49 percent more likely to be design-integrated than are businesses in other rural counties.<sup>vii</sup>

If two or more performing arts organizations are present:

*Odds that businesses in a rural county will be characterized as design-integrated*

**≥49%**

**better than businesses in other rural counties**

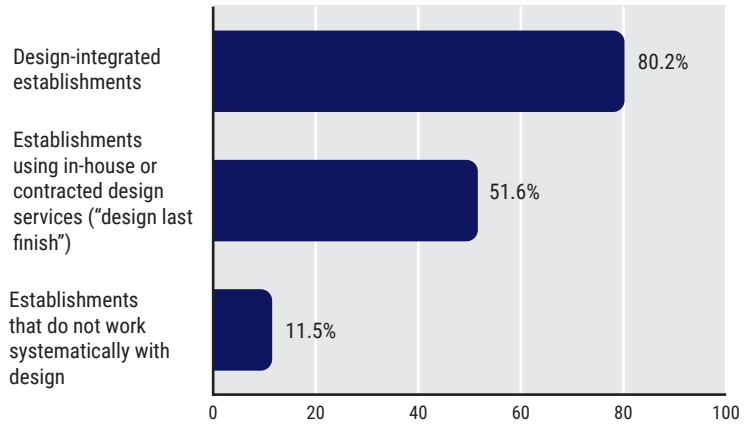
Calculation by the Economic Research Service, U.S. Department of Agriculture  
Data source: Rural Establishment Innovation Survey (REIS), Economic Research Service, U.S. Department of Agriculture

## C. Advantages of Design for U.S. Business Growth and Innovation

### 1. Business innovation rises sharply with design use.

- Businesses that fully integrate design with their practices are more than six times as likely to rate as “substantive innovators” as are businesses that do not make systematic use of design.
- This positive relationship between design and innovation is observed in urban and rural communities alike.
- Nevertheless, only 8 percent of businesses nationwide are design-integrated, and more than 60 percent do not systematically use design.<sup>viii</sup>

### Percent of business establishments classified as “substantive innovators”: 2014



Data source: Rural Establishment Innovation Survey (REIS), Economic Research Service, U.S. Department of Agriculture

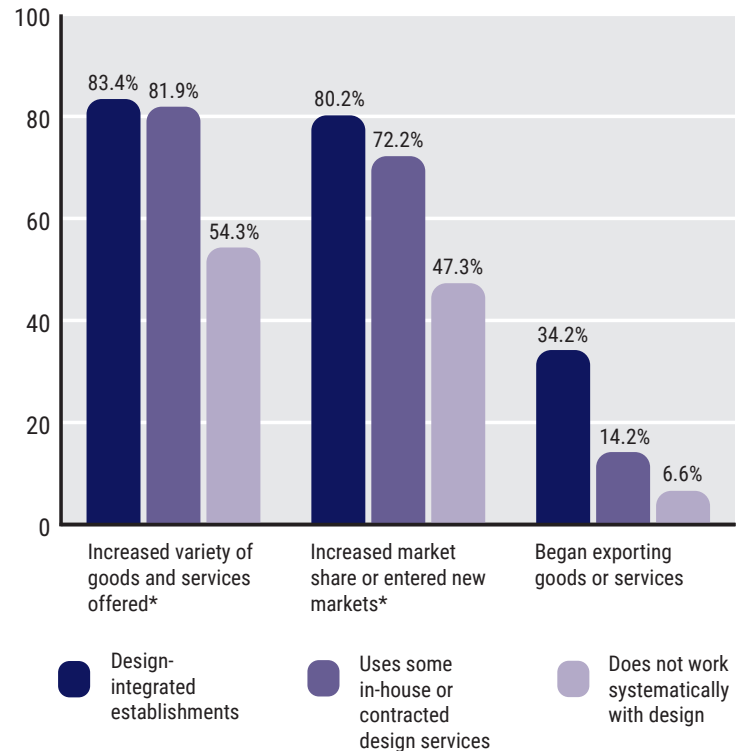


Chanel DeSilva at Jacob's Pillow Dance Festival in Becket, Massachusetts. Photo by Christopher Duggan

**2. Businesses that have fully integrated design within their practices report expanded offerings and access to new markets.**

- 80 percent of design-integrated businesses report growth in market share or having entered new markets. By contrast, 47 percent of businesses that do not systematically use design realized those outcomes.
- 34 percent of design-integrated businesses recently have begun to export goods and services, compared with 7 percent of businesses that do not systematically use design.
- Design-integrated businesses report 23 percent of sales coming from new and improved goods and services. For businesses that do not systematically use design, that figure is 10 percent.
- 83 percent of design-integrated businesses, versus 39 percent of businesses that do not systematically use design, offered new products or services over the last three years.

**Percent of business establishments that reported positively on selected performance indicators, by use of design: 2014**



\*Note: Difference between "design-integrated" and "uses some in-house or contracted design services" is not statistically significant at 90% confidence.  
 Data source: Rural Establishment Innovation Survey, Economic Research Service, U.S. Department of Agriculture



## Bonus Finding:

### Design Helped Rural Counties Recover More Quickly from Recession

Among other advantages, the Rural Establishment Innovation Survey (REIS) allows us to assess the pace at which communities containing different types of businesses recovered from the economic recession of 2007-2009. Specifically, by using REIS findings in conjunction with data from the U.S. Bureau of Labor Statistics' Quarterly Census of Employment and Wages, we learn that rural areas hosting design-integrated businesses witnessed faster growth in average weekly earnings from 2010 to 2014.

Taking this analysis a step further, a regression analysis shows that in a hypothetical scenario in which all businesses in a given rural county are classified as design-integrated, workers during 2010-2014 (the economic recovery period) would have earned an annual wage premium of \$2,600 over that of workers in rural counties that did not host a single design-integrated business. The regression model adjusted for factors such as population, natural amenities, rent prices, and the share of the rural area's population that was 25-44 years old and college-educated.

The 2017 signature event from Symphony in the Flint Hills in Kansas. Photo by Jeffrey McPheeters



# Conclusions

This NEA research report draws primarily from the U.S. Department of Agriculture’s (USDA) 2014 Rural Establishment Innovation Survey (REIS). Most of the findings are based on a forthcoming research article by Timothy Wojan of USDA’s Economic Research Service and Bonnie Nichols of the NEA’s Office of Research & Analysis. By identifying common and distinguishing features of rural arts organizations and by investigating the relationship of rural arts and design to innovation and economic growth, this report concludes:

1. Rural and urban arts organizations are equally likely to rate as “substantive innovators,” using REIS methodology. This parity is not reflected in other service sectors.
2. Rural arts organizations attest to more civic leadership, greater reliance on customer feedback, and a proportionally higher level of non-local attendees or visitors than do urban arts organizations.
3. In rural counties, the presence of performing arts organizations is positively associated with the co-location of businesses that are substantive innovators and/or that fully integrate design into their processes.
4. In both rural and urban settings, businesses that integrate design into their processes are far more likely to be substantive innovators than are businesses that do not systematically use design.
5. Design-integrated businesses report launching new products, increasing market share, and dealing in exports at higher rates than do other businesses.

Beyond offering basic descriptive statistics about rural arts organizations, this report invites closer scrutiny of the robust research findings that, in rural counties, highly design-oriented and innovative firms tend to cluster around performing arts centers. The pursuit and elaboration of new theories through mixed-methods research studies (i.e., both quantitative and qualitative data collection and analysis) would help to explain this positive relationship. Even with many questions still unanswered, the current results support the development of local and regional strategies to promote greater awareness about rural arts ecosystems and the vitality of proximal businesses as reflected by design and innovation.

## Endnotes:

<sup>i</sup> As defined by the Office of Management and Budget, metropolitan areas have core counties with one or more urban areas of at least 50,000 people, plus any adjacent outlying areas, which are determined by levels of commuters going to and from the core counties.

Non-metropolitan counties, considered here as rural, lie outside the boundaries of metropolitan counties.

Arts organizations are those classified as Sector 71, “Arts, Entertainment, and Recreation,” by the North American Industrial Classification System (NAICS).

<sup>ii</sup> The ERS determines “recreation-dependent” by the share of county employment and income related to recreation and associated businesses, and the share of housing units intended for occasional use only. See “ERS, Documentation: Non-Metro-Based Thresholds.”

<sup>iii</sup> Based on a logistic regression model, where the incidence of rural performing arts organizations was modeled as a function of the arts intersecting with a national park or forest. The odds ratio was 1.567, with a standard error of 0.1854, and a Z-score probability of less than 0.001.

<sup>iv</sup> Between 2010 and 2014, the average population increase in rural counties was just 0.6 percent. During the same period, rural counties with performing arts companies gained an average of 0.9 percent.

<sup>v</sup> The performing arts comprise theaters (including opera companies and dinner theaters); dance companies; music groups and artists (including symphony orchestras, choral groups, and bands); and other performing arts such as circuses and magic acts.



Members of the Downtown Plan Steering Committee take a ride with Epicenter via a mule-drawn cart to observe their town of Green River, Utah, from a new perspective and pace. Observations and ideas will be included in Epicenter's upcoming cultural asset mapping and downtown plan. Photo by Ryan Baxter

<sup>vi</sup> The probability estimates reported here were based on ERS calculations using latent class analysis of the REIS. Specifically, the model estimates the probability that an establishment is classified as design-integrated as a function of the number of performing arts organizations in a county, assessed at the 90th percentile of the design-integrated distribution. Because relatively few rural counties host performing arts organizations, the analysis assesses the 90th percentile (i.e., the tail) of the distribution. The probability that a business establishment will be design-integrated rises if the rural county hosts two or more performing arts organizations. A similar model applies to the probability of being classified as a substantive innovator.

<sup>vii</sup> The model controlled for the following rural county factors: percentage of the population composed of college-educated adults, ages 25-44; the county's natural amenities score; and population density.

Also of note, according to this model, if the share of a rural county's young (25-44 years old), college-educated residents is doubled, then the odds that the county will host a design-integrated business improve by a factor of three. This association occurs independent of the number of arts organizations in the area.

<sup>viii</sup> This pattern is likely due to the mix of U.S. industries in which some businesses benefit more directly from design use. For example, 15.6 percent of information establishments (e.g., motion picture and sound recording, broadcasting, and publishing) are classified as design-integrated. Many information industries are "copyright-intensive," and holding copyrights is a key determinant to being classified as design-integrated. But information industries compose just 6 percent of all U.S. non-agricultural, tradable businesses. On the other hand, establishments in wholesale trade account for 20 percent of business establishments. Yet only 7 percent of wholesale traders are classified as design-integrated; wholesale trade is not a copyright-intensive industry.



In the rural town of Ashfield, Massachusetts, a new performance and training facility was built on a 100-acre former dairy farm, the Double Edge Theatre Farm Center. Photo courtesy of Double Edge





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