Better Planning Through Better Data

A Closer Look at the StatsAmerica Innovation Index 2.0

April 4, 2017
The NADO Research Foundation

Founded in 1988, the **NADO Research Foundation** is the non-profit research affiliate of NADO.

Shares **best practices** in latest developments and trends in small metropolitan areas and rural America through training, peer exchanges, publications, and other resources.

**Focus Areas:**
- Rural Transportation
- Regional Resilience
- Sustainable Communities
- Capacity Building
- Leadership Development
**Stronger CEDS, Stronger Regions**

**Program Overview**

Three-year capacity building and technical assistance program funded through the US Economic Development Administration to:

- Enhance and expand NADO RF’s resources on CEDS planning, development, and implementation

- Provide customized trainings and technical assistance to EDDs and other regional organizations on all things CEDS

- Amplify EDA’s message about the value of the CEDS in promoting broader regional economic and community development goals
NADO RF will continue to assist EDDs as they undertake regionally-owned planning processes to craft impactful, technically-sound strategies guiding economic development that will also position them to serve as leaders at the forefront of regional and national resilience efforts:

- Best practices guide / case studies of innovative approaches to the CEDS
- Customizable materials to better promote the CEDS in your region to your stakeholders
- Training on latest data tools and other resources
- In-person and remote training (webinars and conference calls)
- Regional convenings and workshops
- Information exchange
Thanks for Joining Our Webinar!

➢ Thank you to the US Economic Development Administration for its generous support of this work

➢ Please type any questions directly into the chat box and we’ll try to get to as many as we can

➢ A recording of the webinar and copy of the slides will be made available shortly at www.nado.org

➢ Please contact Brett Schwartz at bschwartz@nado.org if you have any general questions about NADO RF or the Stronger CEDS, Stronger Regions program
Today’s Presenters

➢ Brett Schwartz
Program Manager, NADO Research Foundation

➢ Ryan Smith
Program Analyst, US Economic Development Administration

➢ Carol Rogers
Deputy Director and CIO, Indiana Business Research Center, Kelley School of Business at Indiana University

➢ Timothy Slaper
Director of Economic Analysis, Indiana Business Research Center, Kelley School of Business at Indiana University
STATS AMERICA

Innovation 2.0

KELLEY SCHOOL OF BUSINESS

Indiana Business Research Center

Timothy F. Slaper
Director of Economic Analysis

Carol O. Rogers
Deputy Director and CIO
With support from the Economic Development Administration, we have developed a unique and useful set of tools and reports, as well as providing access to other EDA-funded projects.

We obtain thousands of data items from hundreds of data sets from dozens of federal and state sources, along with some commercial or private source data.

While StatsAmerica adds value to these data through easy access and functionality, we acknowledge the direct agency source of the data on every table, profile or map.

And speaking of adding value, you will see it in the form of calculations, graphs, comparisons of time or geography, time series and maps. These data are updated as they are released and arrive from the sources.

Feel free to contact us with specific questions about the data that you may have that aren’t covered through resources on our site.
Purpose Driven Analytic Tools

II2 comprises a powerful set of analytic tools that can help:

✓ regional leaders reach a strong consensus on regional strategic direction.

✓ find and understand a region’s weaknesses, strengths and potential.

In this way, data and analysis can inform stakeholders’ collective action toward a common vision and can guide complex decision-making at a regional-level by analyzing a region’s assets or liabilities in detail.
What’s new in Innovation 2.0

More than 50 new measures: Innovation 2.0 expands on the previous index by adding more than 50 new measures. These measures reflect contemporary research on understanding and measuring innovation. For example, the new version of the Innovation Index includes measures that take into account regional knowledge spillovers, technology diffusion and foreign direct investment. The index and its many components and building blocks have a significantly longer time series of data items than the previous index. With the new longitudinal data, there are several new measures of change over time.
50+ Measures

- Human Capital and Knowledge Creation Index
  - "Salad Days" Population Growth (Ages 25-44)
  - Educational Attainment Core Index
  - High School Attainment (Ages 18-24)
  - Some College, No Degree (Age 25+)
  - Associate Degree (Age 25+)
  - Bachelor's Degree (Age 25+)
  - Graduate Degree (Age 25+)
  - Knowledge Creation and Technology Diffusion Core Index
  - Patent Technology Diffusion
  - University-Based Knowledge Spillovers
  - Business Incubator Spillovers
  - STEM Education and Occupations Core Index
  - STEM Degree Creation (per 1,000 Population)
  - Technology-Based Knowledge Occupation Clusters
  - High-Tech Industry Employment Share

- Employment and Productivity Index
  - Job Growth to Population Growth Rate
  - Change in Share of High-Tech Industry Employment
  - Industry Performance Core Index
  - Cluster Diversity
  - Cluster Strength

- Cluster Growth Factor
  - Gross Domestic Product Core Index
  - GDP per Worker
  - Change in GDP per Worker
  - Patents Core Index
  - Change in Average Patenting Rate
  - Patent Diversity

- Business Dynamics Index
  - Establishment Formation Core Index
  - Establishment Births to All Establishments Ratio
  - Traded Sector Establishments
  - Births to All Establishments
  - Ratio
  - Jobs Attributed to Establishments
  - Births to Total Employment Ratio
  - Change in Establishments
  - Births to All Establishments Ratio

- Business Profile Index
  - Foreign Direct Investment Attractiveness Core Index
  - FDI Employment Index, Foreign Source
  - FDI Employment Index, National Source
  - FDI $ Investment Index, Foreign Source
  - FDI $ Investment Index, National Source
  - Connectivity Core Index
  - Residential High-Speed Connection Density
  - Change in Residential High-Speed Connections
  - Farm Operators with Internet Access
  - Dynamic Industry Profile Core Index
  - Small Establishments (Average)
  - Large Establishments (Average)
  - High-Tech, Early-in-Life-Cycle Establishment Ratio

- Proprietary Core Index
  - Proprietary Rate
  - Change in Proprietary Rate
  - Proprietor Income to Total Wages and Salaries
  - Availability of Capital from All Banks

- Economic Well-Being Index
  - Per Capita Personal Income Growth
  - Income Inequality (Mean to Median Ratio)
  - Poverty Rate (Average)
  - Unemployment Rate (Average)
  - Dependency Based on Income Sources (Ratio)
  - Net Migration (Average)
  - Compensation Core Index
  - Growth in Wage/Salary Earnings per Worker (Average Annual)
  - Change in Proprietors' Income per Proprietor (Average Annual)
The “headline” index

- What we’ve dubbed the “headline” Innovation Index is calculated from five major index categories (three based on innovation inputs and two based on innovation outputs).

- The structure and the calculation of the index is hierarchical. It is built up, pyramid-like, from a large foundation of data to the single headline index.
The 5 Core Indexes

- The headline number combines the five major categorical indexes.
- Each index is weighted equally, by 20 percent each.
- The measures for inputs and outputs in the headline and major index categories are theoretically linked.
- The fact that the innovation inputs and outputs in an earlier version of the index tend to move together offers statistical support for joining the two concepts into a single composite, headline index.
Overview
Select a region and drill into all of its innovation components.

Explore index »

Compare regions
Choose multiple regions for a single-year comparison.

Compare now »

Map
Interactive map of every measure, with the ability to see peers.

View map »

Download the data
Want it all? Get the entire data set or just an area of interest.

Go to downloads »
Innovation 2.0
A Tale of Four Regions (EDDs)

Headwaters Regional Development Commission

Lake Cumberland Area Development District

Southeast Washington Economic Development Association

Centralina Economic Development Commission
Auto-fill: just start typing a name of a city or county
The Overview

**Innovation Index for Economic Development Districts**

**Headwaters Regional Development Commission, MN**

**85.6**

Headline Index

This area has low relative capacity for innovation.

**317**

Rank of 384 EDDs

**About this Area**

<table>
<thead>
<tr>
<th>Largest City/Town</th>
<th>Benefit City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>84,930</td>
</tr>
<tr>
<td>Per Capita Income</td>
<td>$38,768</td>
</tr>
</tbody>
</table>

**Dominant Sector:** Health Care and Social Services

Drill into the underlying data for each major index category:

**Innovation Inputs**

- **Human Capital and Knowledge Creation Index**: 92.8
  - Explore the population and labor force's ability to innovate.

- **Business Dynamics Index**: 91.0
  - Gauge the region's competitiveness by looking at entry and exit of individual firms.

- **Business Profile Index**: 78.8
  - Assess local business conditions and resources available to entrepreneurs.

**Innovation Outputs**

- **Employment and Productivity Index**: 73.2
  - Measure economic improvement and the direct outcomes of innovation.

- **Economic Well-Being Index**: 111.0
  - Evaluate economic well-being and standard of living for residents.
The Overview

Innovation Index for Economic Development Districts

Headwaters Regional Development Commission, MN

85.6

Headline Index

317

Rank of 384 EDDs

This area has low relative capacity for innovation.

About this Area

Largest City/Town: Bemidji
Population: 84,930
Per Capita Income: $36,708
Dominant Sector: Health Care and Social Services

Legend:

- Blue = Index Value
- Green = Median Value
The Overview

Drill into the underlying data for each major index category:

**Innovation Inputs**

- **HUMAN CAPITAL AND KNOWLEDGE CREATION INDEX**
  Explore the population and labor force’s ability to innovate.
  \[92.8\]

- **BUSINESS DYNAMICS INDEX**
  Gauge the region’s competitiveness by looking at entry and exit of individual firms.
  \[91.0\]

- **BUSINESS PROFILE INDEX**
  Assess local business conditions and resources available to entrepreneurs.
  \[78.8\]

**Innovation Outputs**

- **EMPLOYMENT AND PRODUCTIVITY INDEX**
  Measure economic improvement and the direct outcomes of innovation.
  \[73.2\]

- **ECONOMIC WELL-BEING INDEX**
  Evaluate economic well-being and standard of living for residents.
  \[111.0\]
Drill in for details on the 5 categories

Lake Cumberland Area Development District (KY DLG/Gold), KY

83.7
Human Capital and Knowledge Creation Index

323
Rank of 384 EDDs

This area has a low human capital and knowledge creation level.

About this Area

Largest City/Town: Somerset
Population: 208,199
Per Capita Income: $31,238
Dominant Sector: Health Care and Social Services

This major index is composed of the following measures:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Index</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Salad Days&quot; Population Growth (Ages 25-44)</td>
<td>89.7</td>
<td>211</td>
</tr>
<tr>
<td>Educational Attainment Core Index</td>
<td>68.9</td>
<td>368</td>
</tr>
<tr>
<td>High School Attainment (Ages 18-24)</td>
<td>90.0</td>
<td>228</td>
</tr>
<tr>
<td>Some College, No Degree (Age 25+)</td>
<td>54.3</td>
<td>372</td>
</tr>
<tr>
<td>Associate Degree (Age 25+)</td>
<td>72.6</td>
<td>286</td>
</tr>
<tr>
<td>Bachelor's Degree (Age 25+)</td>
<td>53.4</td>
<td>381</td>
</tr>
<tr>
<td>Graduate Degree (Age 25+)</td>
<td>74.3</td>
<td>277</td>
</tr>
</tbody>
</table>

Select a different index:

- Headline Index
- Human Capital and Knowledge Creation Index
- Business Dynamics Index
- Business Profile Index
- Employment and Productivity Index
- Economic Well-Being Index
This major index is composed of the following measures:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Index</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Growth to Population Growth Ratio</td>
<td>70.0</td>
<td>317</td>
</tr>
<tr>
<td>Change in Share of High-Tech Industry Employment</td>
<td>78.9</td>
<td>282</td>
</tr>
<tr>
<td><strong>Industry Performance Core Index</strong></td>
<td><strong>120.8</strong></td>
<td><strong>114</strong></td>
</tr>
<tr>
<td>1. Cluster Diversity</td>
<td>179.6</td>
<td>37</td>
</tr>
<tr>
<td>2. Cluster Strength</td>
<td>107.4</td>
<td>130</td>
</tr>
<tr>
<td>3. Cluster Growth Factor</td>
<td>75.5</td>
<td>281</td>
</tr>
<tr>
<td><strong>Gross Domestic Product Core Index</strong></td>
<td><strong>87.2</strong></td>
<td><strong>252</strong></td>
</tr>
<tr>
<td>1. GDP per Worker</td>
<td>94.6</td>
<td>183</td>
</tr>
<tr>
<td>2. Change in GDP per Worker</td>
<td>79.7</td>
<td>274</td>
</tr>
<tr>
<td><strong>Patents Core Index</strong></td>
<td><strong>121.3</strong></td>
<td><strong>169</strong></td>
</tr>
<tr>
<td>1. Change in Average Patenting Rate</td>
<td>79.3</td>
<td>271</td>
</tr>
<tr>
<td>2. Patent Diversity</td>
<td>163.3</td>
<td>64</td>
</tr>
</tbody>
</table>

**Industry Performance Core Index**

This "place your eggs in many baskets" measure quantifies whether a region is relatively concentrated in just a few industries or whether the region has a broad assortment of industries by comparing the evenness of a region's industrial employment mix against a national value of industry diversity.

**Rationale:** Industrial diversification provides a more stable economic outlook for regional economies since they are less dependent on a single industry. Dependence on a particular industry cluster implies vulnerability to the economic gains and losses of that cluster. In order to be less susceptible to the "ups and downs" of a key regional cluster, policymakers often advocate a strategy of regional industrial diversification.

# Innovation 2.0 Comparison

View multiple areas side-by-side to compare index values or rankings. You must select a geography type first because different geography types are not directly comparable.

## Choose geography type

- Counties
- Metro Areas
- Economic Development Districts

## Enter geography name:

Clear All

Compare by: Index Value  Rank

## Economic Development District (EDD) Index Value

<table>
<thead>
<tr>
<th>EDD Name</th>
<th>Innovation Index</th>
<th>Human Capital and Knowledge Creation Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headwaters Regional Development Commission, MN</td>
<td>85.6</td>
<td>92.8</td>
</tr>
<tr>
<td>Southeast Washington Economic Development Association, WA</td>
<td>101.8</td>
<td>150.4</td>
</tr>
<tr>
<td>Lake Cumberland Area Development District (KY DLG/Gold), KY</td>
<td>82.1</td>
<td>83.7</td>
</tr>
<tr>
<td>Centrailina Economic Development Commission, NC</td>
<td>123.5</td>
<td>134.1</td>
</tr>
<tr>
<td>Innovation Index</td>
<td>Headwaters Regional Development Commission, MN</td>
<td>Southeast Washington Economic Development Association, WA</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>Human Capital and Knowledge Creation Index</td>
<td>92.8</td>
<td>150.4</td>
</tr>
<tr>
<td>Salad Days Population Growth (Ages 25-44)</td>
<td>100.6</td>
<td>161.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>128.4</th>
<th>173.3</th>
<th>68.9</th>
<th>125.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Attainment (Ages 18-24)</td>
<td>93.6</td>
<td>198.4</td>
<td>90.0</td>
<td>92.6</td>
</tr>
<tr>
<td>Some College, No Degree (Age 25+)</td>
<td>137.9</td>
<td>153.6</td>
<td>54.3</td>
<td>97.8</td>
</tr>
<tr>
<td>Associate Degree (Age 25+)</td>
<td>187.8</td>
<td>140.9</td>
<td>72.6</td>
<td>96.3</td>
</tr>
<tr>
<td>Bachelor's Degree (Age 25+)</td>
<td>131.3</td>
<td>176.0</td>
<td>53.4</td>
<td>192.4</td>
</tr>
<tr>
<td>Graduate Degree (Age 25+)</td>
<td>91.5</td>
<td>197.7</td>
<td>74.3</td>
<td>149.5</td>
</tr>
<tr>
<td>Business Profile Index</td>
<td>Headwaters Regional Development Commission, MN</td>
<td>Southeast Washington Economic Development Association, WA</td>
<td>Lake Cumberland Area Development District (KY DLG/Gold), KY</td>
<td>Centralina Economic Development Commission, NC</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>--------------------------------------------------------</td>
<td>-----------------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Foreign Direct Investment Attractiveness</td>
<td>49.7</td>
<td>0.0</td>
<td>95.2</td>
<td>105.0</td>
</tr>
<tr>
<td>FDI Employment Index, Foreign Source</td>
<td>100.9</td>
<td>0.0</td>
<td>103.1</td>
<td>97.0</td>
</tr>
<tr>
<td>FDI Employment Index, National Source</td>
<td>98.2</td>
<td>0.0</td>
<td>97.3</td>
<td>97.3</td>
</tr>
<tr>
<td>FDI $ Investment Index, Foreign Source</td>
<td>0.0</td>
<td>0.0</td>
<td>87.6</td>
<td>131.7</td>
</tr>
<tr>
<td>FDI $ Investment Index, National Source</td>
<td>0.0</td>
<td>0.0</td>
<td>93.0</td>
<td>94.1</td>
</tr>
<tr>
<td>Connectivity</td>
<td>101.8</td>
<td>100.8</td>
<td>88.6</td>
<td>118.6</td>
</tr>
<tr>
<td>Residential High-Speed Connection Density</td>
<td>138.8</td>
<td>74.9</td>
<td>63.7</td>
<td>95.5</td>
</tr>
<tr>
<td>Change in Residential High-Speed Connections</td>
<td>67.9</td>
<td>73.3</td>
<td>139.2</td>
<td>134.5</td>
</tr>
<tr>
<td>Farm Operators with Internet Access</td>
<td>98.5</td>
<td>154.3</td>
<td>62.8</td>
<td>125.7</td>
</tr>
<tr>
<td>Employment &amp; Productivity Index</td>
<td>73.2</td>
<td>127.4</td>
<td>94.5</td>
<td>130.7</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------</td>
<td>-------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>Job Growth to Population Growth Ratio</td>
<td>77.1</td>
<td>130.4</td>
<td>87.9</td>
<td>179.9</td>
</tr>
<tr>
<td>Change in Share of High-Tech Industry Employment</td>
<td>57.6</td>
<td>199.7</td>
<td>128.4</td>
<td>95.0</td>
</tr>
<tr>
<td>Industry Performance</td>
<td>75.1</td>
<td>106.6</td>
<td>109.2</td>
<td>113.7</td>
</tr>
<tr>
<td>Cluster Diversity</td>
<td>63.7</td>
<td>74.8</td>
<td>95.7</td>
<td>88.1</td>
</tr>
<tr>
<td>Cluster Strength</td>
<td>87.2</td>
<td>94.4</td>
<td>113.7</td>
<td>84.6</td>
</tr>
<tr>
<td>Cluster Growth Factor</td>
<td>74.3</td>
<td>150.5</td>
<td>118.3</td>
<td>168.4</td>
</tr>
<tr>
<td>Gross Domestic Product</td>
<td>71.3</td>
<td>119.3</td>
<td>77.1</td>
<td>131.7</td>
</tr>
<tr>
<td>GDP per Worker</td>
<td>68.0</td>
<td>98.2</td>
<td>66.0</td>
<td>187.5</td>
</tr>
<tr>
<td>Change in GDP per Worker</td>
<td>74.6</td>
<td>140.4</td>
<td>88.2</td>
<td>75.8</td>
</tr>
<tr>
<td>Economic Well Being Index</td>
<td>Headwaters Regional Development Commission, MN</td>
<td>Southeast Washington Economic Development Association, WA</td>
<td>Lake Cumberland Area Development District (KY DLG/Gold), KY</td>
<td>Centralina Economic Development Commission, NC</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Per Capita Personal Income Growth</td>
<td>162.1</td>
<td>99.5</td>
<td>100.8</td>
<td>62.6</td>
</tr>
<tr>
<td>Income Inequality (Mean to Median Ratio)</td>
<td>148.1</td>
<td>52.4</td>
<td>65.3</td>
<td>60.6</td>
</tr>
<tr>
<td>Poverty Rate (Average)</td>
<td>86.0</td>
<td>53.3</td>
<td>53.5</td>
<td>130.4</td>
</tr>
<tr>
<td>Unemployment Rate (Average)</td>
<td>111.0</td>
<td>131.6</td>
<td>62.0</td>
<td>89.1</td>
</tr>
<tr>
<td>Dependency Based on Income Sources (Ratio)</td>
<td>64.7</td>
<td>105.7</td>
<td>50.4</td>
<td>175.0</td>
</tr>
<tr>
<td>Net Migration (Average)</td>
<td>146.3</td>
<td>198.8</td>
<td>95.0</td>
<td>137.1</td>
</tr>
<tr>
<td>Compensation</td>
<td>84.8</td>
<td>103.2</td>
<td>82.4</td>
<td>78.3</td>
</tr>
<tr>
<td>Growth in Wage/Salary Earnings per Worker (Average Annual)</td>
<td>85.1</td>
<td>119.2</td>
<td>91.5</td>
<td>87.5</td>
</tr>
<tr>
<td>Change in Proprietors' Income per Proprietor (Average Annual)</td>
<td>84.5</td>
<td>87.3</td>
<td>73.3</td>
<td>69.1</td>
</tr>
</tbody>
</table>
Innovation Mapping

Use the standard map view to explore the innovation measures. Use the comparative view to select a geography on the map and see how other areas compare to it.

Choose geography type
- Counties
- Metro Areas
- Economic Development Districts

Choose a thematic view
- Standard
- Comparative

Select a map to view
- Innovation Index
- Human Capital and Knowledge Creation Index
- Business Dynamics Index
- Business Profile Index
- Employment and Productivity Index
- Economic Well-Being Index

The Innovation Index includes both innovation inputs and outputs in order to measure both innovation capacity and innovation outcomes.

Rationale: N/A
Source: N/A for years 2009 to 2014
Change in Residential High-Speed Connections
Technology-Based Knowledge Occupation Clusters
The comparative view

**Per Capita Personal Income Growth Compared to 100**

The average annual rate of change in PCPI from 2002 to the latest year available.

**Rationale:** As an alternative to measuring compensatory-based on place of work, per capita personal income (PCPI) measures income by place of residence. Personal income is the broadest measure of a person’s income because it includes rental income, dividends and interest payments, in addition to salary, wages and benefits. As a result, it is probably the best measure of overall well-being. On the other hand, the measure is based on the location of residence, not the location of work. Thus, high personal income may or may not reflect the economic returns to innovation within a county or region with a large number of people who commute to work.

**Source:** U.S. Bureau of Economic Analysis for years 2002 to 2014.
The comparative view – the “red” region is now the center point against which all regions shown are compared.
Driving Regional Innovation: The Innovation Index 2.0
This report explains how the index is constructed and calculated. The major index categories are described in detail, including the basis for why the individual measures were chosen and specifies regarding how they are calculated.

Theory and Measurement in Social Capital Research
An academic paper explaining the social capital measures used in the Innovation Index.

Additional Files
Several reference tables are helpful to those seeking to understand the data used within the Innovation Index.

- Occupation cluster definitions
- Industry cluster definitions
Let’s finish the story online ...