

Iowa State University

Profiles Using Socio-Economic Data for Economic and Community Development Decision Making

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Accessible and up-to-date socio-economic data are important for sound community decision making in a variety of settings. Effective economic and community development projects rely on relevant and available data to assess readiness and need for projects, to analyze feasibility of possible strategies and to evaluate impacts of the efforts. This project illustrates and documents how secondary data sets produced and/or maintained by public agencies can be used to better inform community decision making for a variety of alternative economic and community development projects.

This report describes the design goals, analytical steps, and data sources utilized to develop a prototype economic development profile. In addition, three case studies of ongoing community-based projects in Iowa illustrate how the data profiles can be used to engage communities and facilitate community development programming. The case study projects include: a) neighborhood housing development projects, b) minority business development in rural communities, and c) sustainability efforts for rural communities. Because we rely on publicly accessible data sets to illustrate these applications, the results should be readily transferable to rural communities in other regions.

Objectives

In their quest for economic growth, community leaders are frequently tempted or pressured to rush headlong after the latest development fads. In reality, such strategies may not align well with a community's unique mix of physical, financial, and human capital.

Local officials who question whether a popular strategy is suitable or feasible for their own region run the risk of being labeled as naysayers. Promoters of a particular strategy may be viewed as naïve. In order to bolster their positions, local officials frequently espouse the need for "data-driven" decision-making. This term, while likely overstating the role that data can play in group planning processes, reveals a desire for objective information that both informs and supports strategic planning decisions.

A classic "SWOT" analysis, which identifies an entity's strengths, weaknesses, opportunities, and threats, can be a valuable tool in helping communities design realistic economic development strategies. Unfortunately, the SWOT methodology can be at odds with rural development practices, which often focus greater attention on opportunities than threats, and which occasionally gloss over the relevance of regional strengths and weaknesses.

This project's objective was to develop a data profile that (1) aids local decision-makers in taking stock of their regional strengths and weaknesses, and (2) helps create a shared understanding of those strengths and weaknesses across a diverse group of stakeholders.

Design Principles

The first step in designing the prototype profile was to identify specific attributes that would facilitate community engagement and decision-making. First and foremost, the profile should contain information that is considered relevant to community leaders. Next, the information must be presented in a way that allows local leaders to draw meaningful conclusions from the data. Finally, the information must be easily understood by a variety of stakeholders.

The next step was to identify specific design principles for the actual format of the profile. These design principles followed naturally from the list of desired attributes. The following design principles were adopted: (1) the profile should be **issue-based** so as to engage local decision-makers, (2) the profile should be **evaluative** in order to help local leaders draw conclusions, and (3) the profile should be **accessible** so that it can be used by a diverse audience, and so that it can be replicated or updated by others if the need arises.

Design Principle 1: Issue-based

The careful selection of indicators that are relevant to a particular issue or development goal can help to engage local leaders and to stimulate debate and problem-solving. The Iowa State University (ISU) prototype profile was developed to address a broad range of issues. Examples include indicators of growth, business vitality, family well-being, schools, air quality, physical infrastructure quality, and many others. Appendix A lists more than 100 candidate indicators that may be used in various combinations to explore a particular issue. Source information for each indicator is included.

If a profile is issue-based, it must also be flexible so that it does not become obsolete as attention shifts from one issue to the next. The ISU profile was developed using a modular format to make it more flexible. This modular design allows for the profile to be adapted to various development scenarios. Groups of indicators may be included or excluded, expanded or contracted as needed depending on the particular issue at hand.

New issue-based modules can be easily developed as the need arises. For example, if a community were interested in a local foods strategy, a new module might include indicator measuring the percentage of crop acres currently in grain production, the number of acres and farm operations engaged in fruit and vegetable production, a measure of access to nearby metropolitan markets, and many others.

The case studies included in this report illustrate the application of the modular format in practice. This project sought input from three economic development specialists in order to identify measures that would be useful in their field work with communities. A unique profile was designed for each specialist.

Design Principle 2: Evaluative

A statistic in isolation provides very little information for decision-making. Therefore, a good data profile not only presents indicators, it also provides context for interpreting those indicators, allowing users to evaluate their position and draw conclusions. The ISU profile uses three approaches for providing context to the indicators. First, the subject area's indicator values are compared to benchmark measures for other regions. Second, the indicators are summarized in a format that allows comparison of one indicator to another. Third, when applicable, information is provided to help users judge the reliability of the indicators.

Selecting Benchmark Measures

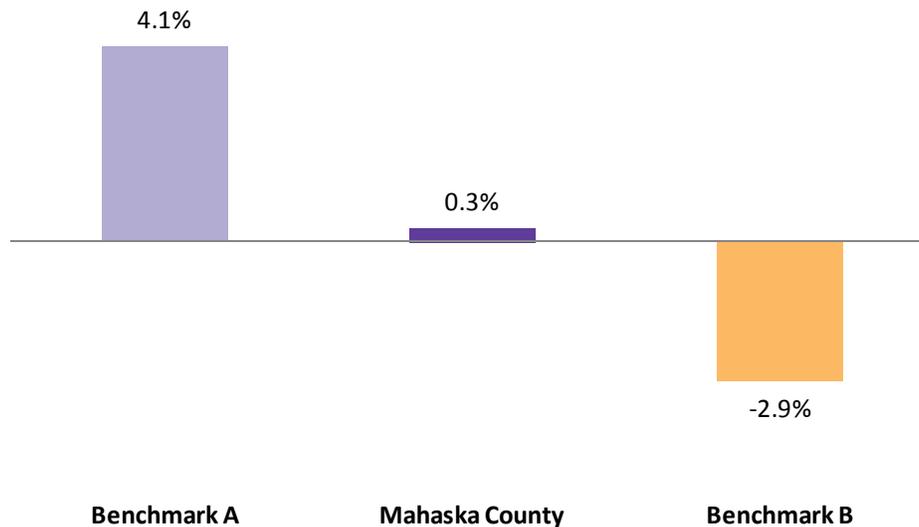
Traditional data profiles frequently compare a subject region to a single reference region. For example, a county's per capita income value might be compared to the statewide average per capita income. This type of comparison is convenient, especially when preparing multiple profiles for sets of counties or other regions.

Another option in a data profile is to compare the subject region's values to values from a relevant peer group. In this case, one might compare the county's per capita income value to the median per capita income for all other counties in the state. This type of comparison is more labor-intensive because it requires compiling data for the entire peer group in order to obtain the median value.

In some instances, the choice of statewide mean or peer group median can make a notable difference in the conclusions one might draw about a particular county's performance. The case of county population change in Iowa provides a good example. Iowa's statewide average population change from 2000-2010 was a gain of 4.1 percent. The median population change for Iowa's 99 counties was a decline of 2.9 percent. Which of these two values provides a better benchmark measure for a particular county?

The significance of the choice can be illustrated using the case of a slow-growing county in Iowa. Mahaska County experienced less than one percent growth in population during the last decade. Figure 1 shows the county's performance relative to Benchmark A, the statewide average rate of population change, and Benchmark B, which shows the median rate of population change for all of Iowa's 99 counties. In comparison to the statewide mean, Mahaska County's performance looks subpar. In contrast, comparison with the county median value shows that Mahaska County outperformed more than half the counties in the state of Iowa. Its growth, although slight, might be viewed in a positive light considering that two thirds of Iowa's counties experienced population loss.

Figure 1. Benchmarking Population Growth in Mahaska County



Both the mean and median values contribute important information, which makes it difficult to choose one over the other as a benchmark measure. Therefore, the ISU prototype profile employs comparisons to a regional mean as well as a peer group median.

A shortcoming of both the mean and median comparisons is that they don't reveal much about the range of values within the peer group. In the example above, we do not know how the county growth values were distributed. Were a few counties clustered at the extreme ends of the distribution, or was there a normal distribution of values? A key consideration for design of the ISU prototype template was to find an effective way to illustrate the distribution of values for the peer group.

The decision to utilize peer group comparisons for a data profile raises another issue: which particular areas to include within the comparison peer group. The default option is to include all counties within a state or set of states. Another option is to create peer groups based on other characteristics such as the county's level of urbanization. For example, comparing population growth rates of a remote, rural county with a county in a metropolitan statistical area is not likely to yield new or useful information to local officials. Comparing the rural county with a group of like counties would probably yield greater insights. Consequently, the ISU profile was designed so that particular counties could be easily included or excluded from the peer group, depending on the circumstances.

Grouping related measures

Another way to create context for individual indicator values is by arranging the measures into topical groupings. Careful selection and arrangement of indicators can help users detect possible patterns and relationships that they might not otherwise have observed. The ISU profile groups and summarizes individual indicators into an "overview" table that allows users to easily compare their performance across a range of indicators.

Disclosing reliability of the data

The inherent quality of the data underlying economic development indicators is a topic that is easy to overlook. Although many public data sources include information about the reliability of their data, this information does not always find its way into economic development profiles for broad public consumption.

The issue of data quality has become harder to ignore with the introduction of the American Community Survey (ACS) by the U.S. Census Bureau. The ACS, which has replaced the traditional long form from the decennial census, now serves as the primary source of socioeconomic data for counties, cities, and other small areas. ACS estimates are published with an associated margin of error (MOE) estimate for each value. In many cases, the MOE values can be quite large.

The MOE statistics do not easily lend themselves to portrayal in graphical format. While it is tempting to ignore them when compiling a data profile, there are more responsible options for regional analysts and educators. One option is to impose a data quality threshold so that data are simply not disclosed if they exceed a specified coefficient of variation. Another option is to disclose all data values, but to provide some way to convey the level of uncertainty associated with a particular estimate. The ISU profile employs the latter option.

Design Principle 3: Accessible

All the effort of developing a data profile can be wasted if the final product is not easily understood by target users. Making sure that a data profile is accessible to users of varying backgrounds and interests requires careful consideration of both the content and graphic design of the instrument.

Content

Thanks to advances in information technology, we now have easy access to abundant secondary data covering a wide range of topics. In the quest to be comprehensive, it is easy to load down a profile with irrelevant or redundant information. A data profile with too many indicators is likely to overwhelm users. The modular design of the ISU profile makes it easier to keep the number of indicators to a manageable level.

Another important content issue relates to the types of data sources utilized to construct the profile indicators. Ideally, local leaders will continue to monitor the indicators to gauge their performance over time. Their job will be easier if the indicator data are derived from secondary public data sources such

as federal or state government agencies.¹ In some cases, however, proprietary data sources or software programs may be required to develop indicators that cannot be obtained from public data sources. For example, the ISU profile database includes indicators constructed from county industrial accounts that were obtained from IMPLAN² input-output models. Other ISU profile indicators were developed by applying analysis tools available in ArcGIS³ software to publicly-available geographic information systems shapefiles.

Graphic Design

The graphic design of an economic development profile should not be an afterthought. Well-designed information graphics can quickly and efficiently convey a large amount of information. Poorly-designed graphics can muddle or even distort information.

There are abundant materials describing good design principles for displaying quantitative information. Well-known among these are the writings of Edward R. Tufte.⁴ Tufte advises that ideally, every bit of ink appearing in a graphic should contribute new information. He warns that many of the devices frequently employed to “jazz up” a graphic can actually distort information. Examples include the use of three-dimensional graphics to convey 2-dimensional information, the use of exploding pie charts, and bubble charts.

According to Tufte, a table may convey information more effectively than a chart when there is a large quantity of information to display. The prototype profile developed for this project employs a combination of tables and information graphics to illustrate the data.

Color choice is another important design consideration for an economic development profile. According to the National Institutes of Health, ten percent of the male population experiences some form of color blindness. Red-green colorblindness is more prevalent, although some individuals have difficulty distinguishing between blue and yellow. Several online resources are available to assist in color selection for colorblind-safe information graphics.⁵ The colors utilized for the ISU profile were chosen so that contrasts should be evident to persons with colorblindness.

The Prototype Profile

The ISU prototype profile uses the popular “dashboard” concept to display multiple indicators. Individual indicators are illustrated using charts that resemble gauges. A tabular overview serves as the dashboard to summarize all of the indicators on one page. These two component parts are illustrated in Exhibits A and B.

The individual indicator displays include descriptive text with information about the definition, data source, and relevance of the indicator. Each indicator is illustrated using a “speedometer” chart that shows the quartile ranges for the peer group distribution. The chart also shows the peer group

¹ Local leaders are often eager to share data that they have collected via resident satisfaction surveys, consultants’ reports, and other sources. Unless similar data can be obtained for other regions in the comparison peer group, they are probably not good candidates for inclusion in the type of data profile developed for this project.

² IMPLAN is a proprietary input-output modeling system produced by MIG, Inc.

³ ArcGIS is a proprietary geographic information system produced by ESRI, Inc.

⁴ See, for example, Edward R. Tufte, “The Visual Display of Quantitative Information,” Graphics Press, Cheshire, CT, 2001, 2nd edition.

⁵ An example is “Color Brewer” (<http://colorbrewer2.org/>), which provides color recommendations for cartographic applications. Users may select the type of data they are portraying (diverging, continuous, etc.), number of classes, they are portraying, and the particular sensitivity they wish to address (colorblind safe, print-friendly, or photocopy-able).

minimum and maximum values. The indicator value for the subject county is shown using the needle of the speedometer. These charts allow local officials can quickly ascertain their relative position within the comparison peer group.

The speedometer charts are constructed using a combination of a donut chart, which shows the quartile ranges, an X-Y chart, which creates the needle illustrating the subject county value, and a bar chart, which serves as a chart legend. Speedometer charts can be constructed using Excel or compatible spreadsheet software.⁶ Alternatively, the same information could easily be conveyed using bar charts or other types of charts.

For indicators that rely on American Community Survey estimates or other data with associated margins of error, additional information is included in speedometer chart. Confidence intervals for the subject area value are displayed with dashed lines on either side of the of the speedometer needle. In this way, users can quickly ascertain the level of uncertainty associated with a particular estimate and make their own determination about whether to rely on the indicator. See the bottom chart in Exhibit A for an example of how the confidence intervals are displayed.

The tabular overview, shown in Exhibit B, groups the indicators by topic and summarizes the indicator scores. The overview table lists the name of each indicator, the unit of measure, the statewide average value, the peer group median value, the subject county value, and a color-coded symbol to indicate which peer group quartile the subject county value falls within.⁷ From the overview table, users of the data profile can quickly determine if there are particular areas of strength or weakness in their community.

The indicators listed in Exhibit B are part of a larger database of county-level indicators that were compiled for a project funded by the U.S. Economic Development Administration (EDA). This project was coordinated by the Center for Industrial Research and Service through its EDA University Center at Iowa State University. For this project, titled the Sustainable Economies Program, ISU researchers developed a framework for using county-level indicators to engage community and business leaders in sustainability planning. The appendix to this report contains a complete listing of the indicators and data sources that were utilized for the Sustainable Economies Program.

Many of the indicators used in the ISU Sustainable Economies Program were derived from data published by Federal statistical and regulatory agencies. As such, they could easily be replicated for any county in the United States.

Another subset of the indicators, listed in italics in the appendix, were derived using data from various state government agencies in Iowa. Sources for these indicators include the Departments of Revenue, Education, Public Health, Natural Resources, Management, and others. Because each state will vary in the type of data available from its state government agencies, some of these indicators may not be available in other states. For example, Iowa is fortunate to have access to detailed retail sales tax collection data at the city and county level. Other states may not have access to this retail indicator, especially in states with no state sales tax.

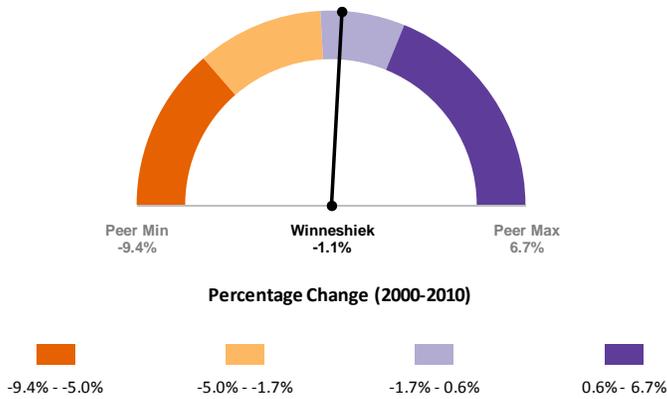
States are likely to be more consistent in their published educational and vital statistics. Examples include information on school enrollments, graduation rates, eligibility for free and reduced school meals, and vital statistics such as births and deaths.

⁶ Instructions for creating speedometer charts may be located in numerous online sources. Readers may also contact the authors to obtain a spreadsheet file for use as a template.

⁷ For Exhibit B, the column that identifies the unit of measure was excluded in order to fit the table on one page.

Exhibit A

Long-Term Population Trend

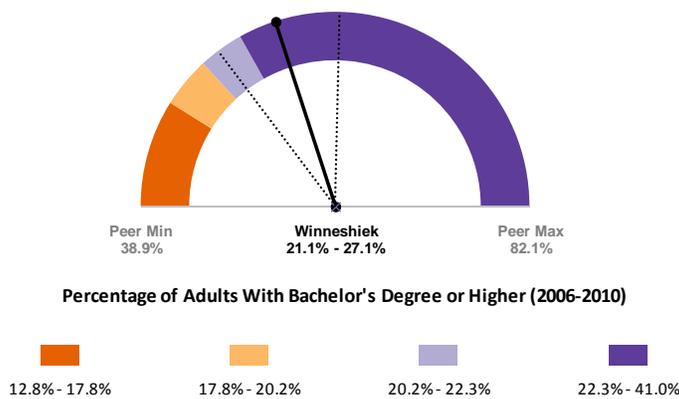


Population is officially measured every 10 years as part of the constitutionally mandated U.S. Census. Based on 2000 and 2010 Census counts, this indicator shows the percentage rate of total population change during the last decade.

Relevance: Knowing whether your population is growing, stable, or declining is key to many local planning efforts. Beyond that, large amounts of governmental assistance are allocated based on population. There are population thresholds that when crossed may make communities or counties eligible for higher levels of governmental assistance or allow greater autonomy in the use of resources.

Context: Total population change does not tell us much about the composition of an area's population. Decennial changes, in addition, may significantly mask fluctuations in the local populations that occur between census years.

Educational Attainment



This indicator shows the estimated percentage of adults ages 25 and older who have at least a bachelors degree. These values are derived from the five-year American Community Survey. A 90 percent confidence interval for the estimate is also illustrated.

Relevance: The capacity of an economy to both grow and to diversify over time is related to the education level of its workforce. Communities with college graduate levels tend to have higher levels of professional, educational, health, and business services. Communities with lower college graduate levels tend to have higher employment in manufacturing, transportation, and in entertainment and recreation.

Context: Regional education levels are determined from survey data and are thus subject to error. Depending on the sample size for the region, the reported levels may be lower or higher than the published estimates. Smaller regions, by virtue of smaller sample sizes, will have wider possible margins of error than larger communities.

Exhibit B

Economy		Indicator	Statewide Average	County Median	Winneshiek County	Peer-Based Rating
Growth Rates	Population	Long-Term Population Trend	4.1%	-1.7%	-1.1%	■
		Natural Population Change	3.4	0.0	-0.4	●
		International Net Migration	1.0	0.3	0.2	●
		Domestic Net Migration	-0.5	-4.3	-1.3	■
	Jobs	Pre-Recession Employment Trend	3.6%	-0.6%	1.5%	■
		Recent Employment Change	-2.3%	-4.4%	-5.0%	●
Financial Stability	Income & Earnings	Average Personal Income	\$38,039	\$36,245	\$36,759	■
		Transfer Payment Dependence	17.9%	20.2%	18.3%	■
		Average Wages & Salaries	\$37,409	\$31,969	\$30,611	●
		Average Proprietors' Income	\$24,226	\$18,679	\$29,592	■
	Finance & Lending	Bankruptcy Rate	3.0	2.6	1.0	■
		Large Bank Presence	43.3%	14.6%	15.0%	■
		Small Business Lending	\$7,570	\$3,768	\$2,456	●
Regional Linkages	Local Proprietors	Incidence of Self-Employment	17.5%	19.0%	20.0%	■
		Owner-Operated Farms	88.8%	88.2%	91.0%	■
	Trade Capture	Retail Sales Surplus or Leakage	100.0%	77.7%	85.0%	■
		Hospital Utilization Rate	3.7	3.3	2.8	●
		Manufacturing Sector Linkages	32.7	17.5	16.6	●
		Agricultural Production Diversity	81.2	75.3	84.3	■
Economic Drivers	Key Industry Performance	Export Sales Focus	NA	55.3%	62.9%	■
		National Growth Projections	NA	18.0%	21.4%	■
		Productivity	NA	\$63,625	\$48,023	●
	Innovation	Patenting Activity	3.3	1.2	0.4	●
		Demand for High-Tech Workers	4.2%	3.4%	4.0%	■
		Establishment Churn Rate	68.5%	65.9%	64.1%	●
Labor Force	Workforce Constraints	Educational Attainment	24.7%	20.2%	21.1% - 27.1%	■
		Aging Workforce	15.8%	17.3%	18.1%	●
		Disability Incidence	56.0	59.4	33.8	■
	Labor Utilization	Workforce Turnover	0.0%	8.1%	8.1%	■
		Area Demand for Local Workers	58.1%	57.1%	58.0%	■
		Unemployment	5.9%	6.1%	4.9%	■

●	Concern - bottom quartile of counties
●	Caution - below median for all counties
■	Fair - above median for all counties
■	Good - top quartile of counties

Case Studies

Three case studies illustrate how the prototype economic development profile may be tailored to specific applications in the field. The first case study, which focuses on housing-related indicators, shows how the template may be applied at sub-county levels of geographic detail. The second and third case studies, which focus on Latino business development and community sustainability, illustrate county-level profiles. For the sake of brevity, each case study profile is illustrated using only the overview tables that summarize all of the selected indicators. The individual speedometer graphics for each indicator are not included.

Case Study 1: Local Housing Trust Funds

Better, more affordable housing choices, more attractive neighborhoods, and a stronger sense of community are just some of the benefits of establishing a local housing trust fund. The Iowa General Assembly created a state housing trust fund administered by the Iowa Finance Authority (IFA) that offers forgivable loans to rehabilitate existing housing. Unfortunately, many Iowa communities do not have the structure in place to apply for and administer such loans.

Through an agreement between Iowa State University Extension and Outreach Community and Economic Development and IFA, Frank Owens, ISU Extension and Outreach community development specialist, has been helping communities, counties and regions establish housing trust funds, with which they can apply for seed money from the state to use for affordable housing.

Data Needs

Establishing a housing trust fund is a time consuming and labor-intensive process that begins with establishing a need for affordable housing in the community, which can be done effectively by analyzing secondary data. ISU Extension community development specialists develop a picture of the local population with data from the US Census, including household income, households at and below the poverty level, and family size.

Based on a recent collaboration with citizens in Waterloo, Iowa, other data requirements were identified. These include information on the number of households that own homes, the number of households that rent homes and apartments, the number of homeless persons, and the age of housing stock. This information begins to describe the housing need and issue for participants and is also useful in any subsequent grant proposal work.

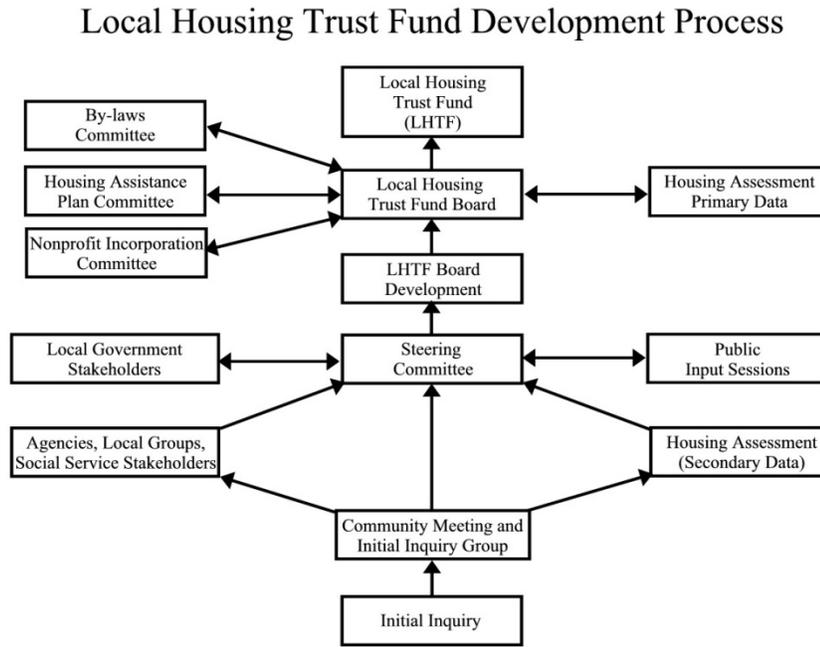
In addition to U.S. Census Bureau data, Owens relies on other data sources that providing demographic and housing data including the county assessor's office, Woods & Poole Economics, councils of government and any other organizations that receive assistance from HUD. Local lenders can provide information with which to identify borrowing patterns among home buyers, while realtors can provide information to aid in determining patterns in buying and renting. Utility costs are also a factor in determining whether or not housing is affordable.

Once the need for affordable housing is established, the community forms a steering committee that includes representatives from the neighborhood and the local government. The committee uses a public input process to obtain feedback from residents. Information gathered from secondary data sources, primary data sources, and residents are used to establish a housing trust fund board.

Housing trust fund boards are representatives from nonprofits and local governments, city and county officials, realtors, bankers, and attorneys. The board is responsible for developing bylaws and housing

assistance plan(s) based on the identified need. The data help in determining the need for affordable housing, who needs assistance, the benefits of affordable housing to the community or region, and whether it would be better to fund new construction or rehabilitation of existing stock.

Figure 2



Housing Profile

Based on input from Owens, a data profile was designed to assist neighborhoods in the process of developing a local housing trust fund. Census tract-level data were deemed more useful than county-level data for this particular application because most of the planning is coordinated at the neighborhood level. Figure 3 illustrates the indicators that were selected for the housing profile. The subject of the profile is Census Tract 3, which is located within the city of Waterloo in Black Hawk County, Iowa. The peer group includes all census tracts within Black Hawk County.

Because this profile was prepared using tract-level data, the margins of error for most of the indicator values are quite large. The high MOE values warrant careful scrutiny, and additional fact-finding at the community level would be help to validate the information contained in the profile.

That said, the profile reveals several areas of potential concern relative to local housing market conditions. First, the area has a comparatively high fraction of residents in groups that are frequently identified as having unmet housing needs. These include a high fraction of large families, single-person households, racial and ethnic minority groups, low-income households, and persons with limited access to transportation.

Tract 3 scores better on measures of affordable housing, including the median value of owner-occupied homes, costs of home ownership, and median gross rents. Despite the low costs of housing in the area, the profile indicates that a high fraction of residents may still be experiencing difficulty in meeting their monthly housing expenses.

In terms of its housing stock, Tract 3 appears to have a relatively large quantity of rental housing. Home ownership rates are low, and housing units are comparatively older in Tract 3 compared to other census tracts in Black Hawk County. More than half of the existing housing stock in Iowa was built before 1979, the year that lead paint was banned. This fraction appears to be even higher in Tract 3.

Case Study 2: Latino Entrepreneurship

Starting a new business in any market is risky, and many new businesses fail, regardless of the economic situation. To successfully launch a new business, an understanding of the market potential for a product or service is critical. Obtaining this information can be more difficult for immigrant entrepreneurs because they may not be aware of or have access to resources needed to develop a business plan.

Since 2006, ISU Extension and Outreach community development specialist Himar Hernández has been assisting Latino entrepreneurs who want to start their own small businesses. Hernández helps new Latino business owners create business plans and access the capital and technical assistance they need to open their doors.

Data Needs

Hernández begins by gathering secondary data to better understand the potential market in a region. From the US Census, he obtains the size of the Latino population in a given market and the existing number businesses owned by Latinos to measure whether or not there is room for growth.

In the past, Hernández has relied upon information from the local school district to estimate the number of Latino families in a community. For example, according to American Fact Finder, the average Latino family has 3.52 children. By dividing the total number of Latino students enrolled by 3.52, he can obtain an estimate of Latino families in a community. School enrollment data for the past five years can also be used to identify growth trends.

Evaluating, tracking, and measuring performance of Latino businesses are difficult because Latino business owners tend not to use the Internet and e-mail; rather, they prefer to use paper. Therefore, it is necessary to make personal contact with businesses through business network meetings, paper surveys, and phone calls. Hernández also gathers information from local newspapers to get a sense of what is happening in a particular area. He also relies on word-of-mouth referrals because some immigrants need to build a strong sense of trust. The language barrier and a lack of trust of the government can prevent immigrants from seeking assistance.

To better serve his clients, Hernández would like to include market analysis data on the supply side, such as the number of grocery stores or restaurants in the area and the estimated number of customers they serve. On the demand side, information about market area socioeconomic characteristics, such as per capita income, age, and education would also be useful.

Data that are more difficult to obtain include indicators specifically describing socio-economic characteristics of the Latino population. For example, information about the income of Latino households is not readily available for all counties. It is also difficult to obtain current information on the number of Latino businesses in Iowa. Many Latinos operate home-based businesses, for which data are unavailable.

Latino Entrepreneurship Profile

With input from Hernández, a profile was developed to highlight key demographic and economic indicators that are relevant to his work in assisting Latino entrepreneurs. Figure 4 illustrates the indicators that were selected for the Latino business development profile. The example profile displays conditions in Wapello County, which contains the city of Ottumwa. The comparison peer group includes all other counties in Iowa with 500 or more Hispanic or Latino residents.

It is quickly evident from the profile that the county's demographic characteristics present a more favorable outlook for Latino business development than the economic conditions. The county has a large and growing Latino population. Overall racial and ethnic diversity in the county is high, which may indicate a welcoming environment that encourages continued in-migration. Estimates suggest that a slightly higher than average percentage of the county's foreign-born population are relative newcomers, having arrived during the last two decades. These newcomers may retain greater attachment to their traditional foods and cultures than longer-term residents, which presents opportunities for ethnic-oriented businesses.

The county's economic conditions are less promising from a business development standpoint. Income levels are comparatively low, and the county has experienced greater employment losses in the post-recession period than many of its peer counties. Wage levels in the county are lower-than-average and eroding, and the unemployment rate is high. For Hispanic households, the median income values appear to rank among the top half of the peer group; however, the margin of error associated with this indicator is particularly high. This indicator provides a good example of how more in-depth research at the community level might augment the information provided by the profile.

Small business indicators for the county are mixed. The overall incidence of self-employment is low, which could indicate that workers find more security in the region's wage and salary jobs. The indicators for business churn rate, bankruptcy rate, and small business lending rate all suggest high levels of turnover in small businesses. For successful proprietors, however, average earnings rank in the top half of the peer group.

The assessment of market opportunities in selected business segments suggest that there may be market saturation in several business categories that are generally attractive to Latino entrepreneurs. Based on the number of existing firms relative to the county's population size, there appear to be lower than average opportunities for new specialty trade contractors, landscape and other firms providing services to buildings, personal care services such as beauty and barber shops, drycleaning and laundry shops, and grocery and specialty food stores. The competitive environment for an entrepreneur seeking to start a new full-service restaurant appears to be slightly less intense in comparison.

Case Study 3: Sustainable Communities

In 2009, ISU Extension and Outreach CED and the City of Fairfield, Iowa, created a shared position for a community development specialist with expertise in sustainability. Scott Timm is based in the Jefferson County Extension Office and is responsible for encouraging and facilitating community sustainability initiatives in Fairfield and throughout Southeast Iowa.

One of Timm's recent projects has involved assistance to the city of Fairfield and other communities participating in the Alliant Energy Hometown Rewards program. This is an Iowa-only, two-year grant partnership that urges communities to reduce energy use by adopting energy-efficient behaviors and investing in energy-efficient upgrades.

As the city of Fairfield rolls out its Hometown Rewards Program, a grassroots energy efficiency campaign, there are many sources of secondary data that would aid in outreach efforts and program design. In addition, Alliant Energy and ISU Extension and Outreach have discussed the possibility of using the Fairfield model in other communities. If regional sustainability indicators could be developed from secondary data at the community level, they would assist those communities in developing effective energy efficiency initiatives that zero in on their actual needs.

Data Needs

To create effective sustainability programs at the community level, Timm needs to understand the client community and its population. Much of the data required to make a thorough assessment is available from secondary data sources. For instance, the US Census provides relevant data about the local population, including ethnic and racial diversity, average personal income, unemployment rates, number of households living below the poverty level, and the number of low-income elderly residents.

A starting point for community level energy efficiency initiatives is information about the age of local housing stock. Other useful information related to energy efficiency includes greenhouse gas emissions; daily water use; consumption of fuel, electricity, coal and natural gas; manufacturing dependence; and density of road systems. Additional indicators to help to assess energy needs and uses by the agricultural, residential, business and industry sectors would also be useful.

An effective energy efficiency initiative requires cooperation, communication, and investment by local entities. At the community level, data on broadband availability, library use, employment trends, business lending trends, and presence of local environmental organizations can help indicate a community's readiness to embark on a successful initiative.

Energy Efficiency Initiative Profile

Timm's input was used to design an economic development profile to help engage community and business leaders in sustainability and energy efficiency planning. Since much of the data that are useful in developing community sustainability projects are not available for cities, the profile utilizes county-level data. The profile illustrates indicators for Jefferson County, which contains the city of Fairfield. The peer group includes a select group of Iowa counties that are anchored by a regional trade center with 5,000 or more residents.

Figure 5 lists the indicators comprising the energy efficiency initiative profile. The profile highlights various aspects of community readiness, area household well-being, and energy requirements. The community readiness indicators for Jefferson County suggest promising levels of engagement in a community-led initiative. The small business lending indicator suggests willingness by local banks to invest in worthy projects. The broadband access indicator suggests that the county's communications infrastructure is solid. A comparatively high level of racial and ethnic diversity could indicate a community that is willing to embrace change. The library use and environmental organization indicators seem to suggest a high level of community engagement among residents.

The county's household well-being indicators reveal that some area residents may be experiencing financial stresses that inhibit their participation in energy reduction efforts, even if those efforts could ultimately save them money. Residents of the county have comparatively low personal income levels and a higher incidence of poverty, including elderly residents. The county's unemployment rates are higher than the peer group median and the statewide average.

Energy requirements in Jefferson County appear to be low relative to the peer group and the state as a whole. For all indicators related to energy use, the county ranks better than half of its peer counties, suggesting lower than average energy requirements in agriculture, manufacturing, and other sectors.

Figure 3. Local Housing Trust Fund Profile

	Indicator	Unit of Measure	Black Hawk County	Median for All Census Tracts	Tract 3	Peer-Based Rating
Resident Characteristics	Elderly Population	% of the Population Ages 62 Years or Older	16.9%	16.6%	10.3%	Good
	Minority Population	% of the Population Other Than Non-Hispanic White Alone	16.1%	10.2%	41.4%	Concern
	Large Families	Family Households With 6 or More Residents as a % of Households	2.7%	2.3%	6.4%	Concern
	Single Person Households	Percentage 1-Person Households	28.8%	27.8%	39.2%	Concern
	Household Income Level	Median Annual Household Income	\$44,178	\$42,315	\$22,652 - 28,044	Concern
	Family Poverty	Percentage of Families in Poverty	10.7%	8.7%	20.6% - 46.2%	Concern
	Individual Poverty	Percentage of Individuals in Poverty	16.9%	14.8%	22.3% - 43.5%	Concern
	Transportation Limitations	Percentage of Households With No Vehicle Available	7.1%	6.9%	9.1% - 25.5%	Concern
Housing Affordability	Home Values	Median Value of Owner-Occupied Homes	\$118,600	\$118,350	\$70,976 - 81,624	Good
	Home Ownership Rate	Percentage Owner-Occupied Homes*	67.9%	69.3%	32.3% - 32.3%	Concern
	Mortgage Lending Activity	HMDA Loan Originations Per 1,000 Households	95.5	94.0	26.7	Concern
	Ownership Costs for Units With a Mortgage	Selected Monthly Owner Costs (\$)	\$1,074	\$1,021	\$872 - 1,108	Fair
	Cost-Burdened Owner Households (With Mortgage)	Estimated % With Monthly Housing Costs >30% of Income	23.7%	23.5%	18.9% - 52.5%	Concern
	Rental Costs	Median Gross Rent	\$617	\$616	\$539 - 689	Fair
	Cost-Burdened Renter Households	Estimated % With Monthly Housing Costs >30% of Income	52.7%	49.5%	52.0% - 80.2%	Concern
Housing Stock	Vacancy rate	Percentage Vacant Units*	6.1%	5.1%	18.1%	Concern
	Multi-Family Housing	Percentage Multi-Family Units	24.2%	16.1%	34.4% - 57.4%	Good
	Mobile Homes	Percentage Mobile Home Units	3.0%	0.7%	0.0% - 2.4%	Caution
	Older Homes	Percentage of Units Built Before 1940	21.9%	25.6%	41.7% - 61.9%	Concern
	Lead-Based Paint Risk	Percentage of Units Built Before 1980	79.8%	85.8%	80.5% - 100.0%	Concern
	Percentage over-crowded units	Percentage of Units With >1.0 Persons Per Room	1.1%	0.4%	0.0% - 3.5%	Concern

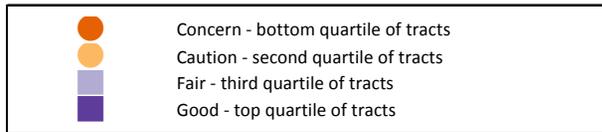


Figure 4. Latino Entrepreneurship Profile

	Indicator	Unit of Measure	Statewide Average	County Median	Wapello County	Peer-Based Rating
Population Characteristics	Total Population Growth	Percentage Change (2000-2010)	4.1%	0.1%	-1.2%	●
	Hispanic/Latino Population Growth	Percentage Change (2000-2010)	83.7%	98.1%	304.8%	■
	Hispanic/Latino Student Enrollment Growth	% Change in Public School Enrollment (2007-2011)	39.4%	37.6%	16.0%	●
	Recent Immigrants	Estimated % Foreign-Born Entering 1990 or Later	3.0%	2.9%	2.8% - 4.4%	■
	International Net Migration	Rate Per Thousand Population)	1.0	0.9	0.7	●
	Population Diversity	Minority Group % of the Total Population	11.3%	10.7%	12.5%	■
	Hispanic/Latino Population Share	Percentage of the Total Population	5.0%	5.1%	9.1%	■
	Hispanic/Latino Households	Number of Households	37,187	331	790	■
Local Economic Conditions	Average Personal Income	Per Capita Income from All Sources	\$38,039	\$36,398	\$30,591	●
	Household Income - All Households	Median Household Income	\$48,872	\$46,238	\$38,017 - 42,169	●
	Hispanic/Latino Household Income	Median Household Income	\$38,388	\$38,985	\$28,465 - 56,231	■
	Pre-Recession Employment Trend	% Change in Total Employment (2000-2007)	3.6%	1.6%	2.9%	■
	Recent Employment Trend	% Change in Covered Employment (2007-2011)	-2.3%	-3.5%	-6.5%	●
	Unemployment	Average Annual Unemployment Rate	5.9%	6.1%	7.6%	●
	Average Wages & Salaries	Annual Wages & Salaries Per Job	\$37,409	\$34,056	33,536.0	●
Small Business Activity	Overall Incidence of Self-Employment	Proprietors Employment as a % of Nonfarm Jobs	17.5%	17.1%	12.8%	●
	Hispanic Self-Employment	Self-Employed % of Hispanic Civilian Workforce	3.3%	2.8%	0.0% - 2.4%	●
	Average Proprietors' Income	Average Income Per Nonfarm Proprietor	\$24,226	\$18,892	18,985.0	■
	Business Churn Rate	% of Establishments With Job Gains or Losses	68.5%	67.5%	70.5%	■
	Small Business Lending	CRA Small Business Lending Activity (\$) per Small Firm	\$7,570	\$6,132	\$6,822	■
	Bankruptcy Rate	Chapter 7, 11, and 13 Filings Per 1,000 Population	3.0	2.9	4.1	●
Market Opportunities in Selected Segments	Specialty trade contractors	NAICS 238 Average Residents Per Firm	126	177	77	●
	Services to buildings and dwellings	NAICS 5617 Average Residents Per Firm	285	548	182	●
	Personal care services	NAICS 8121 Average Residents Per Firm	328	576	276	●
	Drycleaning and laundry services	NAICS 8123 Average Residents Per Firm	7,253	14,206	2,969	●
	Grocery Stores	NAICS 4451 Average Residents Per Firm	3,318	4,524	3,958	●
	Specialty Food Stores	NAICS 4452 Average Residents Per Firm	5,705	11,834	5,938	●
	Full-Service Restaurants	NAICS 7221 Average Residents Per Firm	1,087	1,259	1,319	■

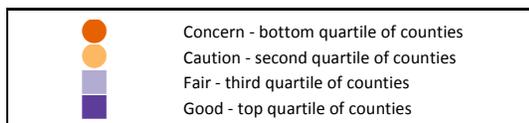
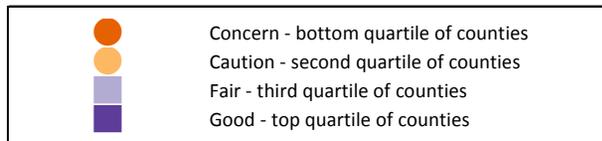


Figure 5. Energy Efficiency Initiative Profile

	Indicator	Unit of Measure	Statewide Average	County Median	Jefferson County	Peer-Based Rating
Community Readiness	Long-Term Population Trend	Percentage Change (2000-2010)	4.1%	-1.7%	4.1%	■
	Pre-Recession Employment Trend	Percentage Change in Total Employment (2000-2007)	3.6%	-0.6%	-2.8%	●
	Recent Employment Trend	% Change in Covered Employment (2007-2011)	-2.3%	-4.0%	-9.6%	●
	Small Business Lending	CRA Small Business Lending Activity (\$) per Small Firm	\$7,570	\$3,768	\$4,685	■
	Owner-Operated Farms	Percentage of Farms Operated by Full or Part-Owners	88.8%	88.2%	95.0%	■
	Broadband Availability	Estimated Percentage of Households Served	93.5%	94.1%	96.8%	■
	Racial and Ethnic Diversity	Minority Group % of the Total Population	11.3%	5.0%	13.7%	■
	Library Usage	Circulation Transactions Per Capita	9.6	7.7	12.2	■
	Environmental Organizations	Registered Organizations per 1,000 Residents	0.2	0.2	0.4	■
Household Well-Being	Average Personal Income	Per Capita Income from All Sources	\$38,039	\$36,245	\$30,406	●
	Poverty Rate	Estimated Percentage of the Population in Poverty	12.5%	12.8%	11.2% - 18.6%	●
	Low-Income Elderly Residents	Elderly SSI Recipients Per 1,000 Elderly	7.1	6.3	10.8	●
	Housing Affordability Index	Ratio of Median Housing Value to Median Hhld Income	2.4	2.2	1.8 - 2.4	■
	Unemployment	Average Annual Unemployment Rate	5.9%	6.2%	7.3%	●
Energy Requirements	Greenhouse Gas Emissions	Annual Air Emissions in Tons Per Capita	23.3	9.1	6.7	■
	Daily Water Use	Withdrawals in Gallons Per Capita, Excl. Thermoelectric	282	264	140	■
	Aging Housing Stock	Estimated Percentage Built Before 1940	28.3%	35.8%	28.8% - 35.2%	■
	Fuel Consumption for Farm Operations	Purchased Gasoline, Fuels, and Oils (\$) Per Acre	\$22	\$21	\$16	■
	Manufacturing Dependence	Percentage of Total Employment	10.6%	11.5%	9.1%	■
	Coal Inputs for Industry	Direct Input Purchases Per Job	\$122	\$82	\$76	■
	Natural Gas Inputs for Industry	Direct Input Purchases Per Job	\$314	\$251	\$174	■
	Electricity Inputs for Industry	Direct Input Purchases Per Job	\$1,196	\$1,099	\$979	■
	Density of Major Road Systems	Major Road Miles Per 100 Square Miles of Land Area	52.7	52.6	51.3	■
	Long-Distance Commuting	Percentage of Commuting Flows >50 Miles	16.4%	18.7%	16.5%	■



Appendix: ISU Sustainable Communities County-Level Indicators

		Category	Indicator	Unit of Measure	Data Source
Economy	Growth Rates	Population	Long-Term Population Trend	Percentage Change (2000-2010)	Decennial Census, U.S. Census Bureau
			Natural Population Change	Rate Per Thousand Population (2010-2011)	Population Estimates Program, U.S. Census Bureau
			International Net Migration	Rate Per Thousand Population (2010-2011)	Population Estimates Program, U.S. Census Bureau
			Domestic Net Migration	Rate Per Thousand Population (2010-2011)	Population Estimates Program, U.S. Census Bureau
		Jobs	Pre-Recession Employment Trend	Percentage Change in Total Employment (2000-2007)	State and Local Personal Income, U.S. Bureau of Economic Analysis
			Recent Employment Change	% Change in Covered Employment (December 2007 - December 2011)	Quarterly Census of Employment and Wages, U.S. Bureau of Labor Statistics
	Financial Stability	Income & Earnings	Average Personal Income	Average Personal Income from All Sources (\$) Per Capita (2010)	State and Local Personal Income, U.S. Bureau of Economic Analysis
			Transfer Payment Dependence	Percentage of Personal Income from Current Transfer Receipts (2009)	State and Local Personal Income, U.S. Bureau of Economic Analysis
			Average Wages & Salaries	Annual Wages & Salaries (\$) Per Job (2010)	State and Local Personal Income, U.S. Bureau of Economic Analysis
		Finance & Lending	Average Proprietors' Income	Average Income (\$) Per Nonfarm Proprietor (2010)	State and Local Personal Income, U.S. Bureau of Economic Analysis
			Bankruptcy Rate	Chapter 7, 11, and 13 Filings Per 1,000 Population (2009-2011)	U.S. Bankruptcy Court, Northern and Southern Districts of Iowa
			Large Bank Presence	% of Deposits in Institutions With \$1 Billion or More in Assets (2011)	Summary of Deposits, Federal Deposit Insurance Corporation
	Regional Linkages	Local Proprietors	Small Business Lending	CRA Small Business Lending Activity (\$) per Small Firm (2008-2010)	Community Reinvestment Act Aggregate Reports, Federal Financial Institutions Examination Council
			Incidence of Self-Employment	Proprietors Employment as a Percentage of Nonfarm Jobs (2010)	State and Local Personal Income, U.S. Bureau of Economic Analysis
		Trade Capture	Owner-Operated Farms	Percentage of Farms Operated by Full or Part-Owners (2007)	Census of Agriculture, U.S. Department of Agriculture
			Retail Sales Surplus or Leakage	Actual Sales as a Percentage of Expected Sales (FY2011)	Iowa State University and Iowa Department of Revenue and Finance
	Economic Drivers	Key Industry Performance	Hospital Utilization Rate	Outpatient Visits and Acute Admissions Per Capita (2008-2010)	Iowa Hospital Association
			Manufacturing Sector Linkages	Supply Chain Jobs Per 100 Manufacturing Jobs (2009)	Iowa State University (ISU), using IMPLAN models and data
			Agricultural Production Diversity	Value of 100 Implies Equal Distribution of Sales Across All Commodities (2009)	Census of Agriculture, U.S. Department of Agriculture
			Export Sales Focus	Percentage of Jobs Producing for Export (2010)	Iowa State University (ISU), using IMPLAN models and data
Innovation		National Growth Projections	Projected 10-Year Employment Growth Rate (2010-2020)	Employment Projections, U.S. Bureau of Labor Statistics	
		Productivity	Average Value Added Per Job (2010)	Iowa State University (ISU), using IMPLAN models and data	
		Patenting Activity	Average Utility Patents Per 10,000 Jobs (2006-2010)	State Patenting Breakout Reports, U.S. Patent and Trademark Office	
		Demand for High-Tech Workers	Estimated % of Jobs Requiring High-Tech Occupations (2010)	ISU estimates using IMPLAN and U.S. Bureau of Labor Statistics data	
Labor Force	Workforce Constraints	Establishment Churn Rate	% of Establishments Contributing to Job Gains and Losses (2008-2009)	Statistics of U.S. Businesses, U.S. Census Bureau	
		Educational Attainment	Percentage of Adults With Bachelor's Degree or Higher (2006-2010)	American Community Survey, U.S. Census Bureau	
	Labor Utilization	Aging Workforce	Percentage of Workers Ages 55 or Older (2009-2010)	Quarterly Workforce Indicators, U.S. Census Bureau	
		Disability Incidence	DI and SSI Recipients Per 1,000 Population Ages 18-64 (2010)	U.S. Social Security Administration	
		Workforce Turnover	Average Percentage of New Employees (2008-2010)	Quarterly Workforce Indicators, U.S. Census Bureau	
		Area Demand for Local Workers	Percentage of Jobs Filled by Resident Workers (2009)	Local Employment Dynamics, U.S. Census Bureau	
		Unemployment	14-Month Average Unemployment Rate (Apr 2011 - May 2012)	Local Area Unemployment Statistics, U.S. Census Bureau	

	Category	Indicator	Unit of Measure	Data Source	
	Category	Indicator	Unit of Measure	Data Source	
Society	Schools	Student Performance	High School Graduation Rate	2010 Graduates as % of 2005-2006 Freshmen (Net of Transfers)	Iowa Department of Education
			High School Graduates With College Intentions	% of Graduates Planning to Attend 2-Year or 4-Year College (2010-11)	Iowa Department of Education
			Adequate Yearly Progress in Math	Percentage Testing Proficient in Grades 3-8 (2010-11)	Iowa Department of Education
			Adequate Yearly Progress in Reading	Percentage Testing Proficient in Grades 3-8 (2010-11)	Iowa Department of Education
			Classroom Language Barriers	Percentage of Students With Limited Proficiency in English (2010-11)	Iowa Department of Education
		Staffing & Funding	Student-Computer Ratios	Enrolled Students Per Computer (2010-11)	Iowa Department of Education
			Student-Teacher Ratios	Enrolled Students Per Full-Time Teacher (2010-11)	Iowa Department of Education
			Teacher Education Levels	Percentage of Full-Time Teachers With Advanced Degree (2010-11)	Iowa Department of Education
			School District Property Tax Capacity	Per-Pupil Valuation as a Percentage of Average (2010)	Iowa State University and Iowa Department of Management
			School District Property Tax Effort	Per-Pupil Levy as a Percentage of Average, Adjusted for Capacity (2010)	Iowa State University and Iowa Department of Management
	Households	Access to Health Care	Hospital Access	Hospital Beds Per 1,000 Population (2009)	Iowa Department of Inspections and Appeals
			Nursing Home and Residential Care Access	Nursing Home & Residential Care Facility Beds Per 1,000 Population (2009)	Iowa Department of Inspections and Appeals
			Primary Medical Care Access	Primary Care Physicians Per 100,000 Population (2008)	Health Resources and Services Administration, U.S. Department of Health & Human Services
			Dental Care Access	Dentists Per 100,000 Population (2007)	Community Health Status Indicators, U.S. Department of Health and Human Services
		Child & Family Well-Being	Uninsured Population	Estimated Percentage of the Population Without Health Insurance (2009)	Small Area Health Insurance Estimates, U.S. Census Bureau
			Teen Mothers	Births To Mothers Under Age 20 Per 1,000 Live Births (2008-2010)	Iowa Department of Public Health
			Low Birthweight Births	Percentage of Live Births Weighing < 5.5 Pounds (2007-2009)	Iowa Child & Family Policy Center
			Young Children Living With a Single Parent	Percentage of Children Under 6 Years of Age (2006-2010)	Decennial Census, U.S. Census Bureau
		Poverty & Income Inequality	Juvenile Delinquency	Delinquency Allegations Per 1,000 Youths (2009)	Iowa Division of Criminal & Juvenile Justice Planning
			Child Maltreatment	Abused or Neglected Children Per 1,000 Population >18 Years (2010)	Iowa Department of Human Services
			Lead Poisoning - Confirmed Cases	% of Children With Elevated Levels of Blood Lead (2006-2008)	Centers for Disease Control and Prevention
			Poverty Rate	Estimated Percentage of the Population in Poverty (2010)	Small Area Income and Poverty Estimates, U.S. Census Bureau
	Housing Affordability	Low-Income Elderly Residents	Elderly SSI Recipients Per 1,000 Elderly (2010)	U.S. Social Security Administration	
		Food Assistance Program Recipients	Average Monthly Recipients Per 1,000 Population (2010)	Iowa Department of Human Services	
		Family Investment Program (TANF)	Average Monthly Cases Per 1,000 Households With Children (2010)	Iowa Department of Human Services	
		Free and Reduced School Lunch	Eligible Percentage of Enrolled Students (2010)	Iowa Department of Education	
	Community Culture	Arts & Recreation	Income Inequality	"Robin Hood" Index (2006-2010)	ISU and American Community Survey, U.S. Census Bureau
			Housing Affordability Index	Ratio of Median Housing Value to Median Household Income (2006-2010)	ISU and American Community Survey, U.S. Census Bureau
			Cost-Burdened Renter Households	Estimated % With Monthly Housing Costs >30% of Income (2006-2010)	American Community Survey, U.S. Census Bureau
			Cost-Burdened Owner Households (With Mortgage)	Estimated % With Monthly Housing Costs >30% of Income (2006-2010)	American Community Survey, U.S. Census Bureau
			Arts, Cultural, and Environmental Organizations	Registered Organizations Per 1,000 Residents (2010-2012)	National Center for Charitable Statistics
		Civic Engagement	Natural Amenities	Midwestern Amenities Index (Based on ERS-USDA Amenities Index, 1999)	Economic Research Service, U.S. Department of Agriculture
			Public Spending on Parks and Recreation	Current Operations Expenditures Per Capita (2007)	Census of Governments, U.S. Census Bureau
Access to Parks			Percentage of Population Within One Mile of a Park	Iowa State University GIS analysis	
Recreational Trails			Miles Per 1,000 Population (2011)	ISU GIS analysis of Iowa Department of Natural Resources data	
Voting Rate			Voters as a Percentage of the Population 18+ Years (2010 General Election)	Iowa Secretary of State	
Diversity		Census Participation Rate	Percentage of Forms Mailed Back by Households (2010)	2010 Census Mail Participation Rates, U.S. Census Bureau	
		Assets of Public Charities	Reported Assets (\$) Per Capita (2011-2012)	National Center for Charitable Statistics	
		Library Usage	Circulation Transactions Per Capita (2008)	Public Libraries in the United States Survey, Institute of Museum and Library Services	
		Religious Adherence	Adherents of All Religions as a Percentage of the Population (2000)	Religious Congregation and Membership Survey, Association of Statisticians of American Religious Bodies	
		Religious Diversity	Value of 100 Implies Equal # of Congregations Across Religions (2000)	Religious Congregation and Membership Survey, Association of Statisticians of American Religious Bodies	
		Racial and Ethnic Diversity	% of the Population Other Than Non-Hispanic White Alone (2010)	Decennial Census, U.S. Census Bureau	
		Recent Immigrants	Estimated % Foreign-Born Entering 1990 or Later (2006-2010)	American Community Survey, U.S. Census Bureau	
Political Party Balance	Percentage of Active Registrations in Dominant Party (2010)	Iowa Secretary of State			

	Category	Indicator	Unit of Measure	Data Source	
	Category	Indicator	Unit of Measure	Data Source	
Environment	Natural Environment	Air	Lead Emissions	Air Emissions in Pounds Per Job (2008)	ISU analysis of U.S. Environmental Protection Agency data
			Carbon Monoxide Emissions	Air Emissions in Pounds Per Job (2008)	ISU analysis of U.S. Environmental Protection Agency data
			Ammonia Emissions	Air Emissions in Pounds Per Job (2008)	ISU analysis of U.S. Environmental Protection Agency data
			Nitrogen Oxide Emissions	Air Emissions in Pounds Per Job (2008)	ISU analysis of U.S. Environmental Protection Agency data
			Particulate Matter (≤ 10 microns) Emissions	Air Emissions in Pounds Per Job (2008)	ISU analysis of U.S. Environmental Protection Agency data
			Particulate Matter (≤ 2.5 microns) Emissions	Air Emissions in Pounds Per Job (2008)	ISU analysis of U.S. Environmental Protection Agency data
			Sulfur Dioxide Emissions	Air Emissions in Pounds Per Job (2008)	ISU analysis of U.S. Environmental Protection Agency data
			Volatile Organic Compound Emissions	Air Emissions in Pounds Per Job (2008)	ISU analysis of U.S. Environmental Protection Agency data
		Hazardous Air Pollutant Emissions	Air Emissions in Pounds Per Job (2008)	ISU analysis of U.S. Environmental Protection Agency data	
		Greenhouse Gas Emissions	Air Emissions in Tons Per Capita (2008)	ISU analysis of U.S. Environmental Protection Agency data	
		Daily Water Use	Withdrawals in Gallons Per Capita, Excl. Thermoelectric (2005)	U.S. Geological Survey	
		Treated Wastewater Discharge Facilities	Permitted Facilities Per 1,000 Residents	ISU analysis of U.S. Environmental Protection Agency data	
		Impaired Rivers and Streams	Percentage of Assessed Waters with One or More Impairments	ISU analysis of Iowa Department of Natural Resources data	
		Manure Spill Incidence	Reported Incidents Per 100 Square Miles (2000-2009)	ISU analysis of Iowa Department of Natural Resources data	
	Water & Soil	Contaminated Sites	Number of Sites Per 100 Square Miles (2011)	ISU analysis of Iowa Department of Natural Resources data	
		Leaking Underground Storage Tanks	LUST Sites Per 100 Square Miles (2011)	ISU analysis of Iowa Department of Natural Resources data	
		Agricultural Fertilizer Usage	Purchased Fertilizer, Lime, and Soil Conditioners (\$) Per Acre (2007)	Census of Agriculture, U.S. Department of Agriculture	
		Agricultural Chemical Usage	Purchased Chemicals (\$) Per Acre (2007)	Census of Agriculture, U.S. Department of Agriculture	
		Conservation & Ecosystems	Conservation Practice Utilization	Percentage of Farms Reporting Use of Conservation Practices (2007)	Census of Agriculture, U.S. Department of Agriculture
			Conservation Program Participation	Percentage of Farm Acres in CRP & Related Programs (2007)	Census of Agriculture, U.S. Department of Agriculture
			Conservation/Recreation Lands	Percentage of County Land in Acres (2011)	ISU analysis of Iowa Department of Natural Resources data
	Historic Forest Stand Acreage		Percentage of County Land in Acres (Circa 2005)	ISU analysis of Iowa Department of Natural Resources data	
	Wetland Acreage		Percentage of County Land in Acres (2011)	ISU analysis of Iowa Department of Natural Resources data	
	Wildlife Diversity - Presence of Rare Species	Number of Distinct Species Recorded (2011)	Iowa Department of Natural Resources		
	Built Environment	Housing	Aging Housing Stock	Estimated Percentage Built Before 1940 (2006-2010)	American Community Survey, U.S. Census Bureau
			Housing Unit Vacancy Rate	Percentage Vacant Units (2010)	Decennial Census, U.S. Census Bureau
			Unsewered Communities	Percentage of Housing Units in County (Circa 2003)	Iowa Department of Natural Resources
		Transportation & Communications	Broadband Availability	Estimated Percentage of Households Served (2012)	Connect Iowa and Iowa Utilities Board
			Density of Major Road Systems	Major Road Miles Per 100 Square Miles of Land Area (2010)	ISU analysis of Iowa Department of Transportation Data
			Road Utilization	Vehicle Miles Traveled Per Major Road Mile (2010)	Iowa Department of Transportation
			Deficient Bridges	Percentage of Bridges Rated Deficient (2009)	National Bridge Inventory, Federal Highway Administration
Energy Use		Fuel Consumption for Farm Operations	Purchased Gasoline, Fuels, and Oils (\$) Per Acre (2007)	Census of Agriculture, U.S. Department of Agriculture	
		Petrochemical Inputs for Industry	Direct Input Purchases (\$) Per Job (2010)	ISU, using IMPLAN models and data	
		Coal Inputs for Industry	Direct Input Purchases (\$) Per Job (2010)	ISU, using IMPLAN models and data	
Natural Gas Inputs for Industry	Direct Input Purchases (\$) Per Job (2010)	ISU, using IMPLAN models and data			
Electricity Inputs for Industry	Direct Input Purchases (\$) Per Job (2010)	ISU, using IMPLAN models and data			
Long-Distance Commuting	Percentage of Commuting Flows >50 Miles (2009)	ISU analysis of On the Map data from U.S. Census Bureau			