

# **Lincoln's Entrepreneurial Ecosystem**

Prepared for the Lincoln Partnership for Economic Development

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## **Executive Summary**

Entrepreneurship is a key driver of regional economic development. An entrepreneurial region provides more economic opportunity, faster economic growth and a wider array of goods and services to its residents. Entrepreneurship also can be cultivated within a local economy, through building out an entrepreneurial ecosystem. Such an ecosystem provides a wealth of peers with a variety of entrepreneurial experiences, a supportive set of potential mentors and sponsors, and an economy that thrives on change.

This report by the University of Nebraska-Lincoln Bureau of Business Research assesses the state of Lincoln's entrepreneurial ecosystem. The report examines the entrepreneurial ecosystem as it is defined by the Kauffman Foundation in its document *Measuring an Entrepreneurial Ecosystem* (Stangler and Bell-Masterson, 2015). The Kauffman approach defines the entrepreneurial ecosystem through four characteristics: entrepreneurial density, fluidity, connectivity and diversity.

The entrepreneurial ecosystem in Lincoln, Nebraska is found to have areas of strength and weakness.

• Areas of strength include the density of entrepreneurship

Entrepreneurial density is the concentration of entrepreneurial firms within the economy. Lincoln has a greater share of the population involved in entrepreneurship than the nation. Lincoln-area businesses have a higher survival rate, which leads to a higher level of participation in entrepreneurship, even if Lincoln's startup rate is at the national average. Another implication of Lincoln's higher business survival rate is that Lincoln areas businesses tend to be somewhat older and larger. Relative to the nation, Lincoln has a larger share of businesses with 10 to 49 employees but fewer businesses with 0 to 4 employees.

• Areas of weakness include entrepreneurial fluidity

Entrepreneurial fluidity refers to the rate of change within the economy. Of interest is the amount of "churn" between businesses and industries as entrepreneurs shift economic resources – labor, machinery and building space – towards new industries and as talent flows into and out of the region. Lincoln consistently demonstrates less entrepreneurial fluidity than the United States as a whole.

Areas of both strength and weakness include entrepreneurial connectivity and diversity.

In terms of entrepreneurial connectivity, the Lincoln MSA is home to nearly one dozen organizations which train, advise and invest in entrepreneurs, and there were numerous reported cases of angel or venture capital investment in innovative local businesses.

In terms of entrepreneurial diversity, the Lincoln MSA has broad set of industrial specializations, including in both goods and service producing industries. The broad set of industrial specializations reflects an ecosystem of entrepreneurs experienced in operating in a variety of

business environments. Women-owned businesses are as common in the Lincoln MSA as nationwide but minority-owned businesses are less common.

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#### 1. Introduction

Entrepreneurship is a key resource for a regional economy. Entrepreneurship creates both a higher standard of living and a higher quality of life. Further, entrepreneurship can be cultivated through the development of the local entrepreneurial ecosystem. Such an entrepreneurial ecosystem supports local entrepreneurs by providing a wealth of peers with a variety of entrepreneurial experiences, a supportive set of potential mentors and sponsors, and an economy that thrives on change.

This report assesses the state of the entrepreneurial ecosystem in the Lincoln Metropolitan Area utilizing a framework established by the Kauffman Foundation in its research document *Measuring an Entrepreneurial Ecosystem* (Stangler and Bell-Masterson, 2015). That paper identified four components of the entrepreneurial ecosystem: density, fluidity, connectivity and diversity. Density refers to concentration of entrepreneurial activity within the economy, while fluidity refers to the rate of change in the economy. Connectivity refers to the links between entrepreneurs and entrepreneurial advisors, while diversity refers to the variety of entrepreneurial perspectives and experiences.

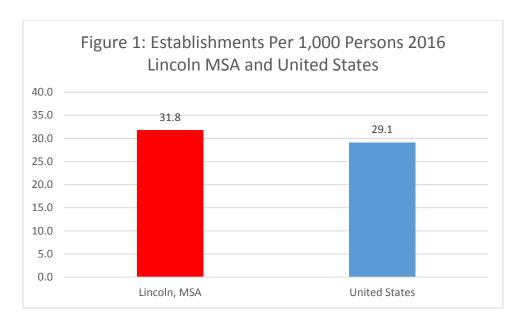
This report examines all four components of the entrepreneurial ecosystem in Lincoln, Nebraska, comparing the Lincoln MSA with the nation. The report relies on data maintained by a wide variety of sources including the U.S. Bureau of Labor Statistics and the U.S. Bureau of Census. Data from each of these sources will be used to develop a snapshot of Lincoln's entrepreneurial ecosystem based on information available as of mid-2017. The results are meant as a first benchmark measurement of the entrepreneurial ecosystems in Lincoln which will allow the Lincoln Partnership for Economic Development and other interested parties to track the development of that system over time.

## 2. Entrepreneurial Density

Entrepreneurial density, which refers to the concentration of entrepreneurial firms within the economy, is a relative measure. Density refers less to the number of entrepreneurial businesses in the economy and more to their share of the economy. What share of the economy is engaged in entrepreneurship or working at a new or young firm?

The most basic measure of entrepreneurship density is to gauge the share of the population engaged in operating and managing a business. The number of employer establishments per person is a measure for this type of density. Year 2016 data is available for establishment counts and is presented in Figure 1. Figure 1 shows that there were 31.8 employer establishments per 1,000 persons in the Lincoln Metropolitan Statistical Area (MSA) in 2016 compared to 29.1 per 1,000 persons in the United States. By this measure, entrepreneurial density is higher in the Lincoln MSA than the United States.

<sup>&</sup>lt;sup>1</sup> Data on establishment counts is available from the *Quarterly Census of Employment and Wages* of the U.S. Bureau of Labor Statistics while population data is available from the U.S. Bureau of Census.

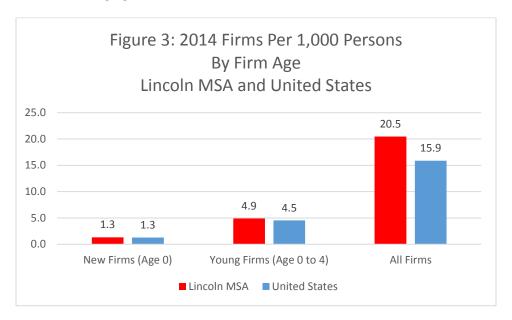


Entrepreneurship density also has been rising more rapidly in the Lincoln MSA during the decade. Figure 2 shows the cumulative increase in the number of establishments per 1,000 persons in the Lincoln MSA and the United States between 2010 and 2016. Between 2010 and 2016, the ratio rose by 4.7 establishments per 1,000 persons in the Lincoln MSA while it rose by just 1.0 establishments nationwide.



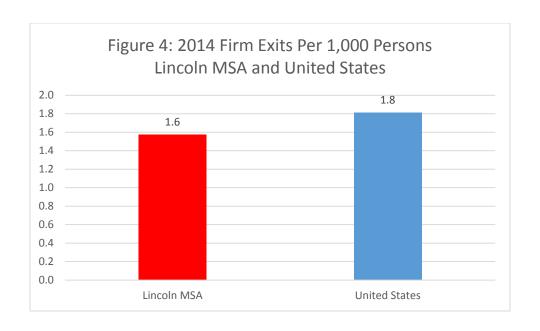
Another measure of the density of entrepreneurial activity is to focus on new and young firms. The U.S. Bureau of Labor Statistics provides data on the number of number of firms by age within each metropolitan area around the country, as well as data for states and the country as a whole. These data, however, are released with a lag and the most recent information is available for the year 2014. Figure 3 shows the number of new firms (age 0) born during 2014 per 1,000 persons for the Lincoln MSA and the United States. The Figure also shows the number of young firms, age 0 to 4, per 1,000 persons. This second measure reflects both new firm formation over the last 5 years and whether new firms have survived. Finally, Figure 3 shows the number of firms of all ages per 1,000 persons. This ratio is smaller than the ratio presented in Figure 1 due to differences in the source of the data and the presence of

multi-establishment firms. However, the Lincoln Metropolitan Areas continues to maintain a higher ratio than the United States. Lincoln had 20.5 firms per 1,000 persons during 2014 compared to 15.9 nationwide. The higher ratio in the Lincoln MSA suggests that there was a higher density of Lincoln residents involved in managing firms in 2014.



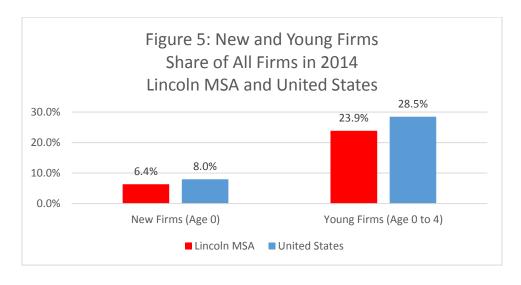
Results are somewhat less pronounced regarding the density of new or young firms. Ratios in Figure 3 indicate that Lincoln in 2014 maintained a slight advantage relative to the United States in the share of the population engaged in managing a young firm age 0 to 4, and little advantage in regards to new firms. In particular, the Lincoln area does not appear to have an advantage over the United States in terms of start-up density. This could mean that Lincoln will lose its advantage in entrepreneurial density over time. If Lincoln residents start new firms at the same rate as all United States residents, eventually the density of local residents involved in operating a business will fall to the national average. However, an alternative explanation is that Lincoln's entrepreneurs are simply more successful at maintaining their businesses. In other words, there are fewer firm exits in Lincoln. Figure 4 shows the number of firm exits during 2014 per 1,000 persons in both the Lincoln MSA and the United States. The Lincoln MSA had 1.6 firm exits during 2014 for each 1,000 persons while the United States had 1.8 firm exits.

Note that a comparison of results in Figures 3 and 4 also points to a worrying trend. The rate of new firm formation was lower in 2014 than the rate of firm exit in both the Lincoln MSA and the nation.



Results presented in Figures 1 through 4 indicate above-average entrepreneurial density in the Lincoln MSA when entrepreneurship is defined to refer to share of the population engaged in managing a firm or establishment of any age or size. The Lincoln MSA, however, was not found to have greater entrepreneurial density when entrepreneurship is defined to refer to the share of the population engaged in starting a new firm. Taken together, these two sets of findings suggest an "older" age profile for Lincoln MSA firms.

Figure 5 looks at the share of new (age 0) and young (age 0-4) firms in the Lincoln MSA. In this measure the number of new and young firms in 2014 is compared with the total number of firms, rather than with the population of the Lincoln area. As would be expected given results in Figures 1 through 4, the Lincoln MSA has a much lower share of firms of new or young firms. The universe of entrepreneurs in the Lincoln MSA are more focused on managing established rather than new and young firms.



A related issue is whether entrepreneurs in the Lincoln MSA are also focused on managing larger businesses. Table 1 examines the establishments in the Lincoln MSA and the United States by size, and in particular, by number of employees. Counts of the number of establishments by size come from the *County Business Patterns* dataset maintained by the U.S. Bureau of Census. This information is only available for 2015. Lincoln has a smaller share of establishments in the smallest employment class size, businesses with 4 or less employees. However, Lincoln has a larger share of establishments in the 10 to 19 employee and 20 to 49 employee size class. At least among businesses with few than 50 employees, these data further suggest that entrepreneurs in Lincoln are more involved with established businesses with a larger number of employees.

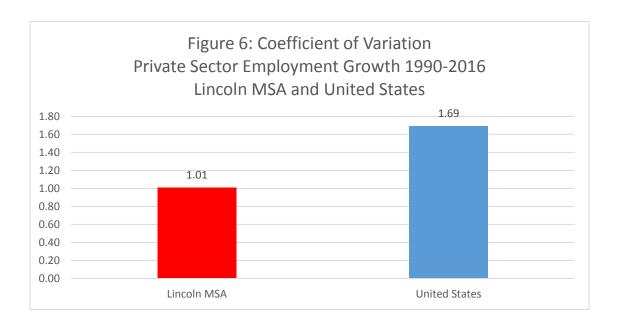
| Table 1: Share of Establishments By Employment Size 2015 |             |                      |  |  |  |
|--|-------------|----------------------|--|--|--|
| Lincoln MSA and United States                            |             |                      |  |  |  |
| Employment   | Lincoln MSA | <b>United States</b> |  |  |  |
| 0-4  | 52.2%       | 54.5%                |  |  |  |
| 5-9  | 18.5%       | 18.4%                |  |  |  |
| 10-19  | 13.5%       | 12.6%                |  |  |  |
| 20-49  | 10.4%       | 9.0%                 |  |  |  |
| 50-99  | 2.9%        | 3.0%                 |  |  |  |
| 100-249  | 1.7%        | 1.7%                 |  |  |  |
| 250-499  | 0.5%        | 0.4%                 |  |  |  |
| 500-999  | 0.2%        | 0.2%                 |  |  |  |
| 1,000+   | 0.1%        | 0.1%                 |  |  |  |

## 2. Entrepreneurial Fluidity

Entrepreneurial fluidity refers to the rate of change within the economy. Of interest is the amount of "churn" beneath the surface of the economy. Are businesses and industries stable, or is their rapid growth and decline beneath the surface; the type of ongoing creative destruction which signals an economy that is rapidly reacting to new and better opportunities in a rapidly changing economy. Evidence of churn would suggest an economic environment, or ecosystem, which is flourishing with entrepreneurship.

The most basic measure is the variability of the regional economy. While there are benefits to a stable economy, a regional economy which fluctuates more over the business cycle has larger and more frequent periods with unemployed resources such as labor, machinery and building space for entrepreneurs to employ in new businesses. To examine variability over the business cycle, total private sector employment was gathered for the 1990 to 2016 period for both the Lincoln MSA and the United

States. A coefficient of variation was calculated for private sector employment growth in each region.<sup>2</sup> Coefficient of variation values for the Lincoln MSA and United States are reported in Figure 6. Results indicate that private sector growth is more stable over the business cycle in the Lincoln area than in the United States. Since business cycles are less severe in the Lincoln area, there are fewer opportunities for entrepreneurs to capitalize on periods of high unemployment of workers, machinery and commercial and industrial space. Interestingly, this result holds for Lincoln's private sector economy and is not an artifact of normally more stable public sector employment.



While recessions offer opportunities for entrepreneurs, creative destruction is always found throughout the economy. The next measures of fluidity track creative destruction by looking at the churn of economic activity between industries of the economy and between individual businesses. Churn is the movement of resources out of struggling businesses and industries and into growing counterparts. An economy with greater churn is exhibiting more entrepreneurial fluidity.

The churn between industries is measured by the coefficient of variation of industry growth. Economies where all industries grow at about the same rate have a small coefficient of variation. Economies where industries grow at very different rates – as economic resources are readily reallocated among industries – have a higher coefficient of variation. The coefficient of variation for industry employment growth was estimated using employment growth in 11 major industry groups in the Lincoln MSA economy, and the same 11 industry groups in the United States economy. Cumulative growth was measured over the 1990

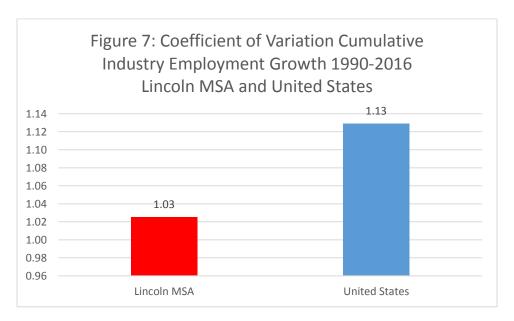
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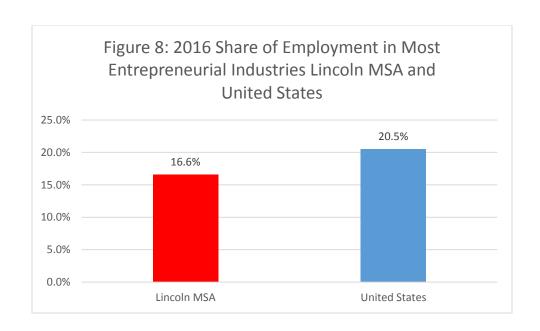
<sup>&</sup>lt;sup>2</sup> A coefficient of variation is the ratio of the standard deviation of the growth rate to the mean growth rate. Dividing by the mean growth rates allows for truer comparisons of variability between two regions which may have different underlying growth rates.

to 2016 period. The calculations relied on employment data from the *Current Employment Survey* of the U.S. Bureau of Labor Statistics.

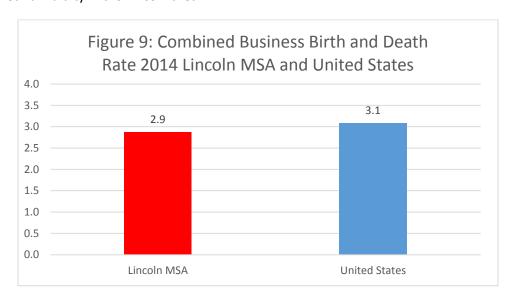
Coefficient of variation values for the Lincoln MSA and United States are reported in Figure 7. While coefficient of variation values are closer than in Figure 6, results continue to indicate that there is greater evenness in industry growth in Lincoln than the United States. In other words, the United States economy has shown a greater tendency to allocate workers more sharply to opportunities in the fastest growing industries.



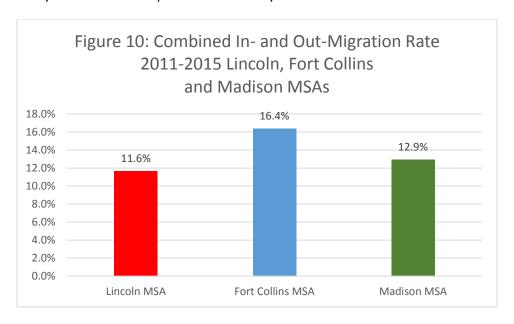
Another measure of entrepreneurial fluidity is the share of the economy in the most entrepreneurial sectors. National data was analyzed to determine the industries with the highest establishment start-up rate and the fastest employment growth. Required data were gathered from the U.S. Bureau of Labor Statistics with data on start-up rates taken from the Business Employment Dynamics database and employment growth data taken from the Current Employment Survey. Analysis revealed that the information, business and professional services and construction industries each were among the top 3 (of 13) major industry groups for the business start-up rate. Business and professional services and construction also were among the top 4 for cumulative employment growth; however, the information industry had a slower employment growth rate as technological change and rapid productivity growth limited job growth in this industry. Figure 8 shows the share of employment during 2016 in these three most dynamic major industry groups in both the Lincoln MSA and the United States. Results show that Lincoln has a significantly smaller share of its employment in these most entrepreneurial industries with 16.6% versus 20.5% nationwide. The implication is that Lincoln does not appear to specialize in the types of business activity where entrepreneurship is most prevalent. At the same time, Lincoln has an opportunity. Lincoln can take steps to further enhance the fluidity of its entrepreneurial ecosystem by allocating more of its economic resources to the most entrepreneurial parts of the economy – the information sector, the business and professional services sector (especially professional, scientific and technical services) and construction.



The most direct evidence of creative destruction is found in the birth and death rates of individual firms. Information on firm birth and death rates from the *Business Employment Dynamics* dataset of the U.S. Bureau of Labor Statistics was presented in Figures 3 and 4 above. But the strongest measure of churn in the economy Is the combined birth and death rate. The combined birth and death rate, derived from adding the birth rate to the death rate, precisely measures fluidity, by showing the rate at which entrepreneurs in an economy move capital and workers away from underperforming businesses and towards new opportunities. Business deaths are a key step in freeing up resources to be reallocated to new businesses. Figure 9 shows the combined firm birth and death rate in the Lincoln MSA and United States during 2014, the most recent year for which this data is available. The combined birth and death rate is slightly lower in the Lincoln MSA than in the United States, providing yet another indicator of less entrepreneurial fluidity in the Lincoln area.



The Kauffman Foundation report Measuring an Entrepreneurial Ecosystem (Stangler and Bell-Masterson, 2015) also argues that talent flow is a key component of entrepreneurial fluidity. More specifically, the combined migration rate of individuals into and out of a region is the churn of talent in the economy. A greater combined flow of talent into and out of the region implies a dynamic workforce able to partner with dynamic new firms. Such migration also reflects a workforce willing to embrace new challenges and find the greatest opportunity even if it involves a change in location. Figure 10 shows the combined migration rate into and out of the Lincoln MSA over the 2011 to 2015 period. The estimate is based on county-to-county migration flows gathered through the American Community Survey. The combined measure captures migration both between U.S. counties and between U.S. counties and foreign countries. County level data was aggregated in order to determine the combined migration flow into and out of metropolitan areas. The combined migration flow was then divided by total metropolitan population to yield the combined in- and out-migration rate. Figure 10 shows the combined migration rate for the Lincoln MSA and for two other nearby metropolitan areas which host large universities, given that the flows of university students into and out of the metropolitan area can influence migration rates.3 The Lincoln MSA had a combined in- and out-migration rate of 11.6% over the 2011 to 2015 period. This combined rate was slightly less than in the Madison MSA and significantly less than in the Fort Collins MSA. Talent flow is another measure of entrepreneurial fluidity where the Lincoln MSA is somewhat less dynamic than other parts of the country.



### 4. Entrepreneurial Connectivity

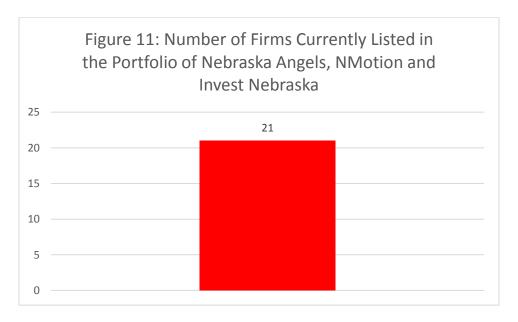
Entrepreneurial connectivity reflects the expertise and financial resources available to entrepreneurs within the local economy. Unlike entrepreneurial density, connectivity is not a measure of whether others entrepreneurs are present, rather it is measure of interaction. Connectivity is a measure of the number organizations actively devoted to working with entrepreneurs, the resources of those

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<sup>&</sup>lt;sup>3</sup> Combined national migration flow data would be a poor comparison since it would only reflect international migration.

organizations and the level of investment which is taking place. Connectivity is often difficult to measure, as there are fewer widely available data sets to call upon. As a result, connectivity is most frequently measured by primary (first hand) data collection.

Angel and venture capital investment are key services for young and rapidly growing businesses. Comprehensive data on these types of investments are not typically available for mid-size cities but it is possible to gather primary data on the activity of angel and venture capital investors. Figure 11 shows the total number of entrepreneurial firms located in Lincoln, Nebraska which are reported to have received support from trackable local sources of angel or venture capital investment: Nebraska Angels, Invest Nebraska and NMotion. Figure 11 refers to Lincoln-based companies currently listed as in the portfolio of Nebraska Angels or Invest Nebraska or that were in the summer 2016 Cohort at NMotion. There are a total of 21 such reported firms located in the Lincoln MSA as of 2017.



Angel and venture capital investment makes a critical contribution to regional entrepreneurs but local institutions make additional contributions through training, collaboration opportunities and collaboration space. Table 2 provides a list of organizations which support entrepreneurs in the Lincoln Metropolitan Area. The Center for Entrepreneurship and Engler Agribusiness Entrepreneurship Program at the University of Nebraska-Lincoln provide education and training to students at the University. Nebraska Innovation Campus is a research campus designed promote collaboration between the University and the private sector while Nutech Ventures provides intellectual property and commercialization opportunities from the University. Turbine Flats provides a space in Lincoln designed for collaboration and innovation among entrepreneurs, while NMotion provides funding, space and training to accelerate the growth of startups. The Nebraska Business Development Center provides training opportunities and assistance to entrepreneurs and potential entrepreneurs from the throughout the Lincoln region. The Lincoln Partnership for Economic Development and Prosper Lincoln bring entrepreneurs together for learning and networking opportunities.

| Table 2: List of Lincoln-Area | <b>Organizations</b> | Working With | Entrepreneurs |
|-------------------------------|----------------------|--------------|---------------|
|                               |                      |              |               |

Center for Entrepreneurship

Engler Center for Entrepreneurship

Entrepreneurship Focus Program

Invest Nebraska

Lincoln Partnership for Economic Development

Nebraska Angels

Nebraska Business Development Center

**Nebraska Innovation Campus** 

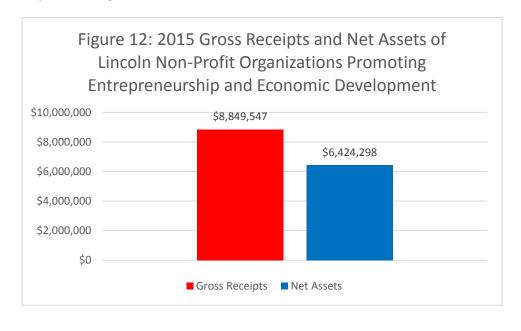
Nmotion

**Nutech Ventures** 

Prosper Lincoln

**Turbine Flats** 

A measure of potential connectivity is the resources available to local non-profits which promote entrepreneurship and economic development (these organizations often specifically promote entrepreneurship) and business associations. Data is gathered regarding the 2015 annual gross receipts of these organizations as well as net assets at the end of 2015. These measures reflect the resources that the non-profits have available to develop programs to train and promote new entrepreneurs and entrepreneurs who operate existing businesses. Data is gathered from copies of the 990 Tax Forms of these non-profit organizations which are available from the Guidestar web site (www.guidestar.org). Data is widely available for the year 2015. Examples of non-profit organizations which are included include the Lincoln Chamber Economic Development Corporation, NMotion, Inc. and the Downtown Lincoln Association. The 2015 gross receipts of non-profit organizations involved in entrepreneurship and economic development was \$8.8 million, while the net assets of these organizations was \$6.4 million, as is reported in Figure 12.



## 5. Entrepreneurial Diversity

Entrepreneurial diversity is a measure of the variety of entrepreneurial experiences and perspectives present in a regional economy. A diverse background means entrepreneurs with experience working in a variety of industries, rather than a single, dominant industry. Other factors include geographic diversity, and gender and racial diversity. People who have achieved the status of entrepreneurs can draw on these diverse backgrounds to provide a regional economy with a wealth of approaches to understanding markets, raising capital, inspiring a workforce and solving the operational challenges of running a business.

The Kauffman Foundation research paper *Measuring an Entrepreneurial Ecosystem* (Stangler and Bell-Masterson, 2015) recommends two measures of diversity which are examined below: 1) industry diversity and 2) share of foreign born population. Industry diversity refers to the number of leading industries found within a metropolitan economy. In other words, industrial diversity does not mean the regional economy has no specialization but instead that the economy has multiple specializations. Areas of industrial specialization were evaluated using the *Quarterly Census of Employment and Wages* database on the U.S. Bureau of Labor Statistics and the *County Business Patterns* database of the U.S. Bureau of Census. Industrial specialization was measured via a location quotient, which is the ratio of the share of local employment in an industry to the share of national employment in that industry. If a location quotient has a value above 1.0, the local economy specializes in that industry. Location quotient values well above 1.0 provide evidence of a strong specialization. For entrepreneurial specialization, it is also necessary that the local economy have many establishments in the industry rather than a single, large employer.

Table 3 shows five areas of industrial specialization for the Lincoln MSA economy. Location quotient values and establishment counts are reported from the *Quarterly Census of Employment and Wages*, since this data is available for 2016. However, similar results were found using the *County Business Patterns* database, which is available for 2015. The findings regarding location quotients are robust across these alternative sources for employment data. For one industry, Publishing, the location quotient in Table 3 is calculated using *County Business Pattern* data for 2015. Lincoln MSA employment in the publishing industry was not reported in the *Quarterly Census of Employment and Wages*.

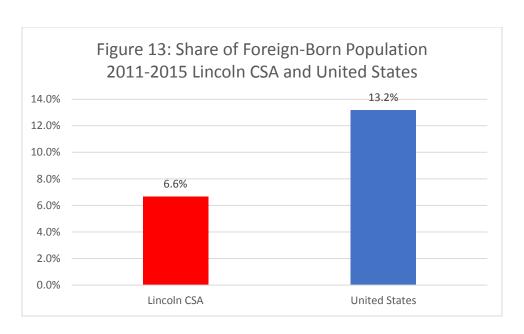
Table 3 reports those industries where the Lincoln area had a location quotient of well above 1.0 and also a significant number of individual establishments operating locally. Results in Table 3 show that Lincoln has industrial specializations in both service and goods producing industries. There is a significant specialization in the insurance carriers industry, with a location quotient of 2.46 in 2016. There is also significant specialization in both publishing and custom computer programming services. Each of these sectors employs a significant number of computer programmers. The location quotient for custom computer programming services is 1.58 and there are 130 establishments, indicating a significant number of individual entrepreneurs. The location quotient for publishing is 2.55 with 45 individual establishments. Software publishing accounts for a significant portion of employment in the publishing industry. Further, labor-saving computer technology is a critical component for the balance of the industry involved in newspaper, periodical and book publishing.

The Lincoln MSA also has a significant specialization in long-haul trucking with 49 individual establishments and a location quotient of 5.91. Within manufacturing, Lincoln also has a specialization in plastic and rubber products with a location quotient of 1.26. There are 10 individual establishments which is a significant number in manufacturing and indicates that Lincoln's specialization results from a set of mid-size establishments rather than a single, large employer. Overall, it can be said that Lincoln has a diverse set of strong industries, reflecting an ecosystem of entrepreneurs experienced in operating in a variety of business environments.

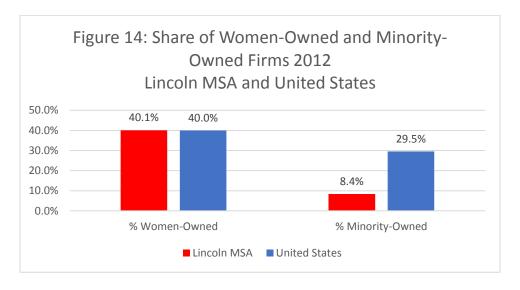
| Table 3: Areas of Industrial Specialization 2016 |                   |                          |  |  |  |
|--|-------------------|--------------------------|--|--|--|
| Industrial Specialization                        | Location Quotient | Number of Establishments |  |  |  |
| Plastic and Rubber Products                      | 1.26              | 10                       |  |  |  |
| Long-Haul Trucking                               | 5.91              | 49                       |  |  |  |
| Publishing <sup>1</sup>                          | 2.55              | 45                       |  |  |  |
| Insurance Carriers                               | 2.46              | 56                       |  |  |  |
| <b>Custom Computer Programming Services</b>      | 1.58              | 130                      |  |  |  |

<sup>&</sup>lt;sup>1</sup> 2015 data was from *County Business Patterns* was used due to missing data in the *Quarterly Census of Employment and Wages*.

The share of foreign born population is another measure of diversity recommended by the Kauffman document. Foreign born businesspeople bring a different cultural perspective to the role of the entrepreneur. Further, as is emphasized in *Measuring the Entrepreneurial Ecosystem* (Stangler and Bell-Masterson, 2015), foreign born individuals often have higher rates of entrepreneurship. The U.S. Bureau of Census generates data on the number and share of foreign born individuals throughout the United States on an ongoing basis through the *American Community Survey*. Figure 13 shows the share of the population which is foreign born both in the Lincoln Consolidated Metropolitan Area (which includes Lancaster, Seward and Gage counties) and the United States for the years 2011 and 2015. *American Community Survey* data over 5 years and for the entire consolidated metropolitan area are needed to yield sufficient sample sizes to measure the foreign born population. Results show just 6.6% of the Lincoln CSA population is foreign born. This is half the share found for the United States as a whole.



There is insufficient data in the *American Community Survey* or other potential sources to estimate the number of Lincoln area businesses owned by foreign born residents. However, data is available on the share of women-owned and minority-owned firms in the Lincoln MSA from the *Survey of Business Owners and Self Employed Persons* which is carried out by the U.S. Bureau of Census every 5 years. Data is currently available for the 2012 survey and the 2017 survey is underway. Data from the 2017 survey should be available by 2019, meaning that it will be possible to track patterns in women and minority-owned entrepreneurship over time. Figure 14 shows the share of businesses owned by women and minorities in both the Lincoln MSA and the United States during 2012. The Lincoln MSA has essentially the same share of women-owned businesses as the United States, and a significantly lower share of minority-owned businesses.



#### 6. Conclusion

This report analyzed the state of the entrepreneurial ecosystem in the Lincoln Metropolitan Area utilizing the framework outlined in the Kauffman Foundation document *Measuring an Entrepreneurial Ecosystem* (Stangler and Bell-Masterson, 2015). Kauffman identified four components of that ecosystem: density, fluidity, connectivity and diversity.

Entrepreneurial density is an area of strength for Lincoln's entrepreneurial ecosystem. Entrepreneurial density is the concentration of entrepreneurial firms within the economy. Lincoln has a greater share of the population involved in entrepreneurship than the nation. Lincoln's start-up rate is similar to the national average but Lincoln-area businesses have a higher survival rate. The total number of businesses per person is therefore greater in the Lincoln MSA and Lincoln areas businesses tend to be older as well as larger. Relative to the nation, Lincoln has a larger share of businesses with 10 to 49 employees but fewer businesses with 0 to 4 employees.

Entrepreneurial fluidity is an area of weakness in Lincoln's entrepreneurial ecosystem. Entrepreneurial fluidity refers to the rate of change within the economy. Of interest is the amount of "churn" between businesses and industries as entrepreneurs shift economic resources – labor, machinery and building space – towards new industries. The flow of talent into and out of the region is also an important component of fluidity. Lincoln consistently demonstrates less entrepreneurial fluidity than the United States as a whole.

Lincoln has more of a mixed record in the case of entrepreneurial connectivity and diversity. In terms of entrepreneurial connectivity, the Lincoln MSA is home to nearly one dozen organizations which train, advise and invest in entrepreneurs, and there were numerous reported cases of angel or venture capital investment in innovative local businesses. Further, the nonprofit organizations involved in supporting entrepreneurship and economic development in the Lincoln area have millions of dollars in gross receipts and net assets to support their activities.

In terms of entrepreneurial diversity, the Lincoln MSA has a broad group of industrial specializations, rather than a single key industry, which implies that the local entrepreneurial community brings expertise from a variety of industries. Specifically, Lincoln has industrial specializations in both goods and service producing industries, including service industries emphasizing computer science. Womenowned businesses also are as common in the Lincoln MSA as nationwide. Minority-owned businesses, however, are less common in the Lincoln area and Lincoln has a smaller foreign born population.