LinkUp
JOB MARKET DIVERSIFICATION REPORT: Q1 2018

Overview

LinkUp has created a new, proprietary metric that calculates the diversity of job openings in a given geographic region. The Job Market Diversification Report does not measure diversity in terms of demographics of the population, but rather the diversification of the job openings within the geography. The Report provides a composite score for each geography using the following parameters:

- Distribution of industries with job openings (based on 3-digit NAICS codes)
- Distribution of companies with job openings (based on companies in the LinkUp Index)
- Distribution of job categories (based on LinkUp's job category classification)

Methodology

The diversification of a metropolitan statistical area (MSA) is calculated by adding the number of rows (i.e. industries, companies, or job categories) with >0 job openings and then breaking that count into quintiles. The number of job openings are then summed within each quintile and divided by the total number of job openings to determine the percent of job openings in each quintile (Figure 1). The quintile percentages are then compared to the variance from "perfect distribution" (i.e. 20% Ex. 1 in Figure 1 and 2) for each quintile. Finally, the sum of the variance is subtracted from 160 to invert the final score so the higher number indicates a better score (Figure 2).

Figure 1

Job Openings in Each Quintile as % of Total Job Openings

Quintiles	Ex 1	Ex 2	Ex 3	Ex 4	Ex 5	Ex 6
Top Quintile	20%	30%	40%	60%	80%	100%
2nd Quintile	20	25	30	15	10	0
3rd Quintile	20	20	15	15	6	0
4th Quintile	20	15	10	5	3	0
Bottom Quintile	20	10	5	5	1	0
Total	100	100	100	100	100	100

Figure 2

Absolute Difference from "Perfect Distribution"

Quintiles	Ex 1	Ex 2	Ex 3	Ex 4	Ex 5	Ex 6
Top Quintile	0pp	10pp	20pp	40pp	60pp	80pp
2nd Quintile	0	5	10	5	10	20
3rd Quintile	0	0	5	5	14	20
4th Quintile	0	5	10	15	17	20
Bottom Quintile	0	10	15	15	19	20
Total	0	30	60	80	120	160
SCORE	160	130	100	80	40	0

Figure 3 shows an example of how the composite score for the San Francisco MSA is calculated. A diversification score is calculated for each parameter and then those three scores are averaged for a composite diversification score of 50 for San Francisco.

Figure 3

Example Calculation For San Francisco

Parameters	Categories		Industries		Companies	
	% of Job Openings in each Quintile	Variance from 20%	% of Job Openings in each Quintile	Variance from 20%	% of Job Openings in each Quintile	Variance from 20%
Top 20%	76%	56pp	70%	50pp	79%	59pp
21-40%	15	5	19	1	12	8
41-60%	6	14	8	12	6	14
61-80%	2	18	3	17	2	18
81-100%	1	19	0	20	1	19
Sum of Variances:		112		99		118
Parameter Scores (160-Sum of Variances):		48		61		42
Diversification Score:	50					

Results

LinkUp has calculated the job market diversification for the top 150 MSAs in the United States for the period of January 2018 through March 2018 (Q1). The 150 MSAs have been grouped into large markets (population > 1,000,000), mid markets (population 500,000-999,999), and small markets (population 250,000-499,999).

In addition to measuring the diversification scores in relation to population, LinkUp compared the diversification score with unemployment rates by MSA to see if there are any correlations between unemployment and job market diversification.

Large Markets:

For the large markets, Salt Lake City, Louisville, Austin, San Francisco, and Memphis have the most diversified job markets, while St. Louis, Cleveland, Birmingham, Detroit, and Las Vegas have the least diverse job markets (Figure 4)

The ranking of cities is based on the variance of job openings across categories, industries and companies. The smaller the variance across the quintiles, the higher the diversification score. In Salt Lake City, for example, the top five industries based on job openings account for about 30% of all job openings. On the other hand, in Las Vegas, the top five industries account for half of all job openings. Salt Lake City has a more diversified job market than Las Vegas because Salt Lake City's job openings are spread more evenly across many industries.

The LinkUp Job Market Diversification Report is highly correlated to unemployment rate in the large market MSAs in that MSAs with the highest scores are among the MSAs with the lowest unemployment rates. San Francisco, for example, has the 4th highest diversification score and has the 2nd lowest unemployment rate among large market MSAs.

*Figure 4*

LARGE MARKETS
(MSA POPULATION: > 1,000,000)

MOST DIVERSIFIED JOB MARKETS

	MSA	UNEMPLOYMENT
1	Salt Lake City, UT	3.2%
2	Louisville, KY	3.9%
3	Austin, TX	3.0%
4	San Francisco, CA	2.9%
5	Memphis, TN	4.1%

LEAST DIVERSIFIED JOB MARKETS

	MSA	UNEMPLOYMENT
46	St. Louis, MO	3.8%
47	Cleveland, OH	5.7%
48	Birmingham, AL	3.8%
49	Detroit, MI	4.6%
50	Las Vegas, NV	5.2%

JOB MARKET DIVERSIFICATION SCORE BY POPULATION

Source: LinkUp

JOB MARKET DIVERSIFICATION SCORE BY UNEMPLOYMENT RATE

Source: LinkUp
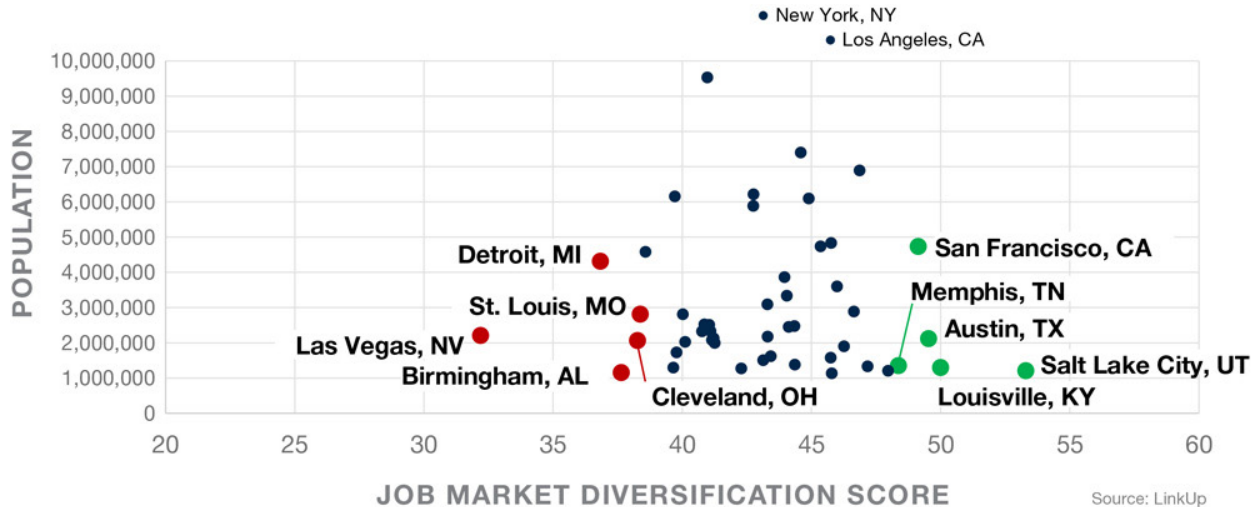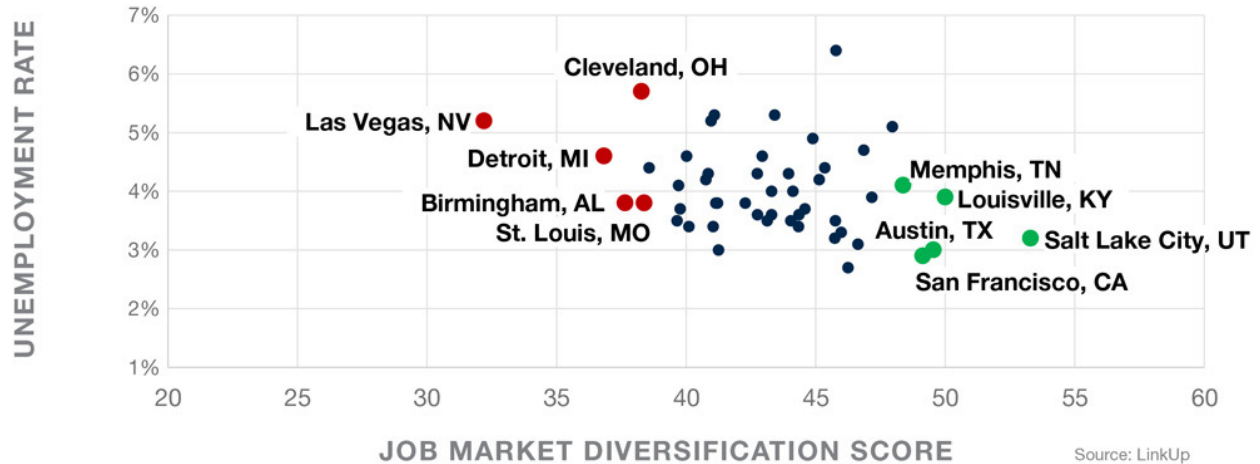
Mid Markets:

Among the mid-market MSAs, the top five MSAs are Provo, Bridgeport, Springfield, Oxnard, and New Haven. The bottom five are Omaha, Winston-Salem, Allentown, Harrisburg, and Columbia (Figure 5).

Among the mid markets, the number of job openings by job category is a key driver in a higher versus lower score. In Columbia, South Carolina, 45% of job openings are in healthcare categories. Columbia is home to several major healthcare facilities such as Palmetto Health, Dorn VA Medical Center, and Lexington Medical Center which drive the high number of job openings in healthcare related fields. Compare that to Oxnard, California, where the job categories with the most openings are spread across a variety of roles including Retail, Healthcare, Food Service, Education, and Sales Development. While there may be many job openings in Columbia for job seekers in the medical field, job seekers looking outside the medical field may have limited opportunities.

The correlation between unemployment rate and diversification scores is not as strong in the mid markets compared to the large markets. Provo, Utah has the highest diversification score among the mid markets and ranks #3 out of 50 for it's unemployment rate of 3.0%. Honolulu, on the other hand, has the lowest unemployment rate in the entire country at 1.8% but its diversification score ranks it #20 out of 50.
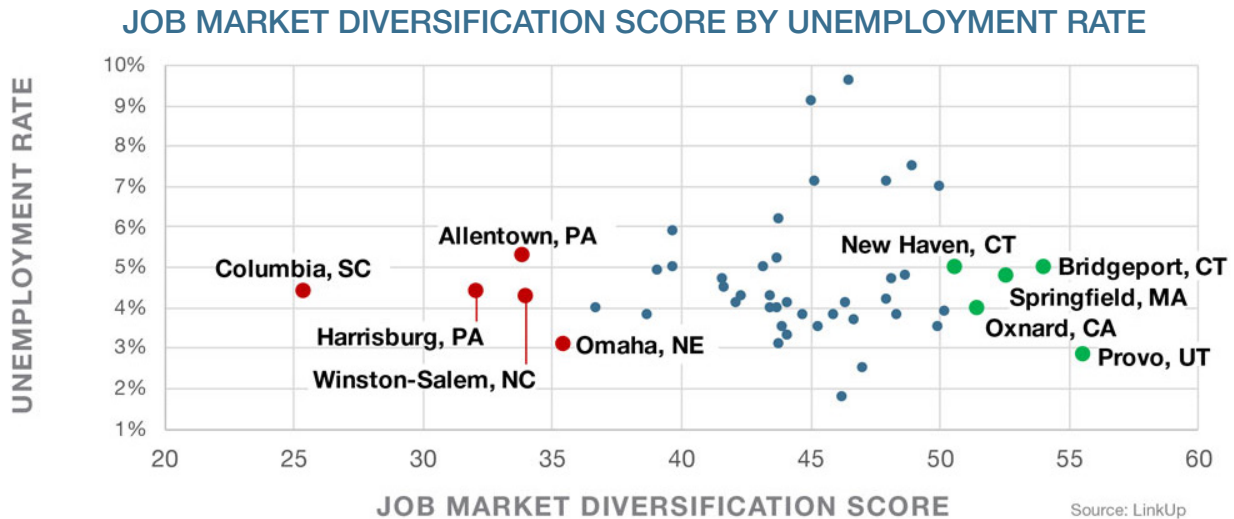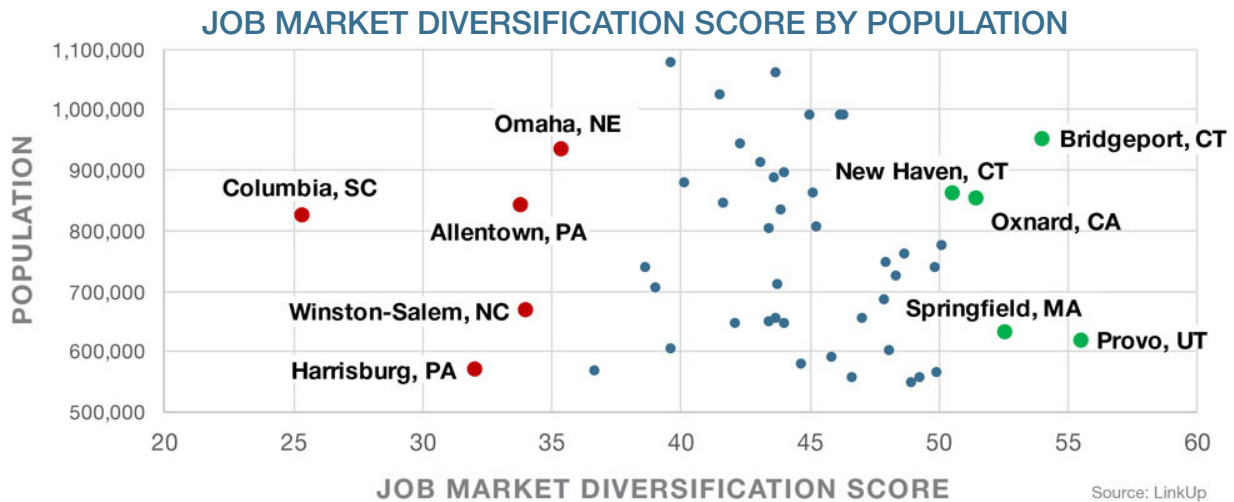
Figure 5

MID MARKETS
(MSA POPULATION: 500,000 - 999,999)

MOST DIVERSIFIED JOB MARKETS

	MSA	UNEMPLOYMENT
1	Provo, UT	2.9%
2	Bridgeport, CT	5.0%
3	Springfield, MA	4.8%
4	Oxnard, CA	4.0%
5	New Haven, CT	5.0%

LEAST DIVERSIFIED JOB MARKETS

	MSA	UNEMPLOYMENT
46	Omaha, NE	3.1%
47	Winston-Salem, NC	4.3%
48	Allentown, PA	5.3%
49	Harrisburg, PA	4.4%
50	Columbia, SC	4.4%

JOB MARKET DIVERSIFICATION SCORE BY POPULATION

JOB MARKET DIVERSIFICATION SCORE BY UNEMPLOYMENT RATE

Source: LinkUp

Small Markets:

Among the small markets, Santa Barbara, Santa Rosa, Beaumont, Savannah, and Naples are the most diversified while Fayetteville, Youngstown, Lexington, Ann Arbor, and Springfield are the least diversified. (Figure 6).

In small markets, the diversification score is heavily influenced by how many employers are in the local job market. In the top scoring small markets such as Santa Barbara, Santa Rosa, and Beaumont, the top five companies with job openings only account for 15-20% of all job openings. If Perdue Farms, for example, decides to close its chicken processing plant in Petaluma, California, the Santa Rosa MSA which includes Petaluma would only lose about 7% of its current job openings. On the other hand, several of the bottom-ranked small markets are college towns such as Lexington and Ann Arbor where the universities account for 24% and 40% respectively of all current job openings.

In the small markets, unemployment rate and the LinkUp diversification score show the most divergence. Only Santa Rosa, California and Naples, Florida even make the top 10 MSAs based on lowest unemployment rates. Santa Barbara, California has the highest diversification score among the small market MSAs but with an unemployment rate of 4.8%, it ranks #33 out of 50.
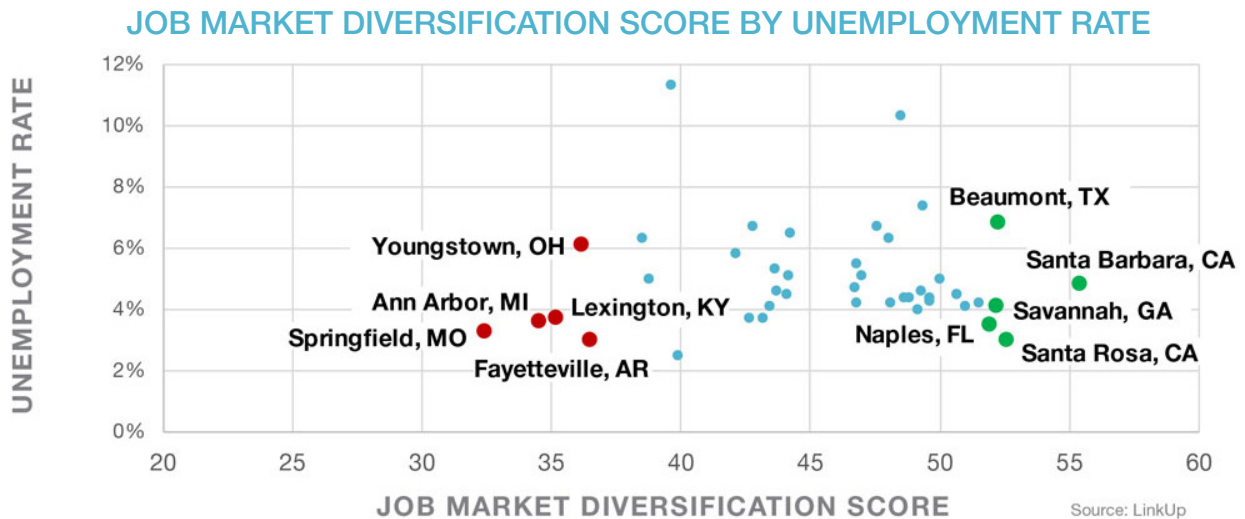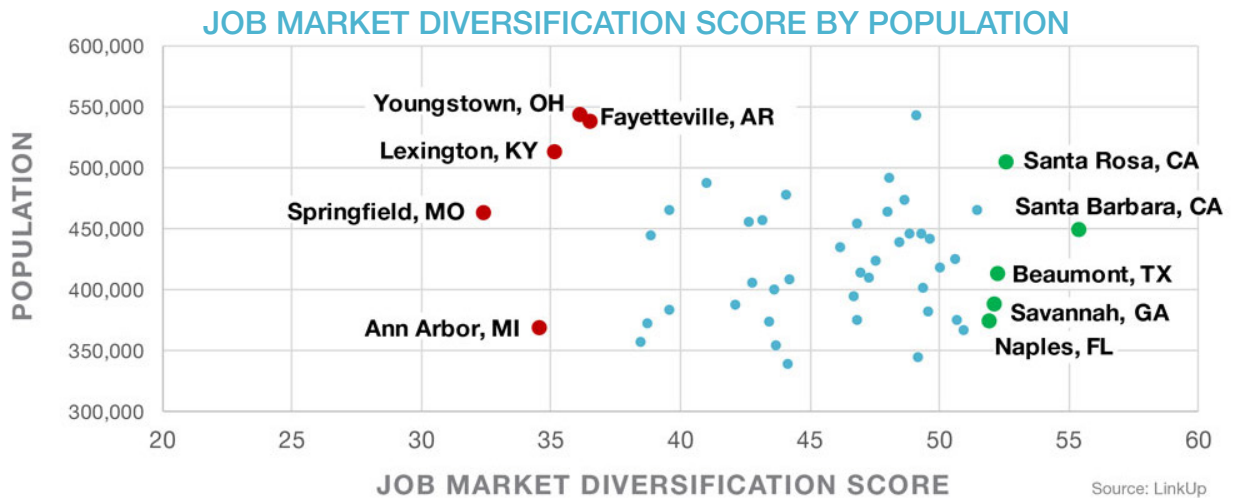
Figure 6

SMALL MARKETS
(MSA POPULATION: 250,000 - 499,999)

MOST DIVERSIFIED JOB MARKETS			LEAST DIVERSIFIED JOB MARKETS		
MSA		**UNEMPLOYMENT**	**MSA**		**UNEMPLOYMENT**
1	Santa Barbara, CA	4.8%	46	Fayetteville, AR	3.0%
2	Santa Rosa, CA	3.0%	47	Youngstown, OH	6.1%
3	Beaumont, TX	6.8%	48	Lexingtown, KY	3.7%
4	Savannah, GA	4.1%	49	Ann Arbor, MI	3.6%
5	Naples, FL	3.5%	50	Springfield, MO	3.3%

JOB MARKET DIVERSIFICATION SCORE BY POPULATION

Source: LinkUp

JOB MARKET DIVERSIFICATION SCORE BY UNEMPLOYMENT RATE

Source: LinkUp

About LinkUp

LinkUp is a leading job search engine empowering people with knowledge obtained from the largest, highest quality database of global job listings. Through our proprietary and sophisticated technology, we index millions of job openings every day directly from employer websites. We leverage that unique, predictive dataset to power our candidate sourcing and job market data solutions, forever progressing towards our vision of delivering perfect job market information.