SEMCOG Quick Facts
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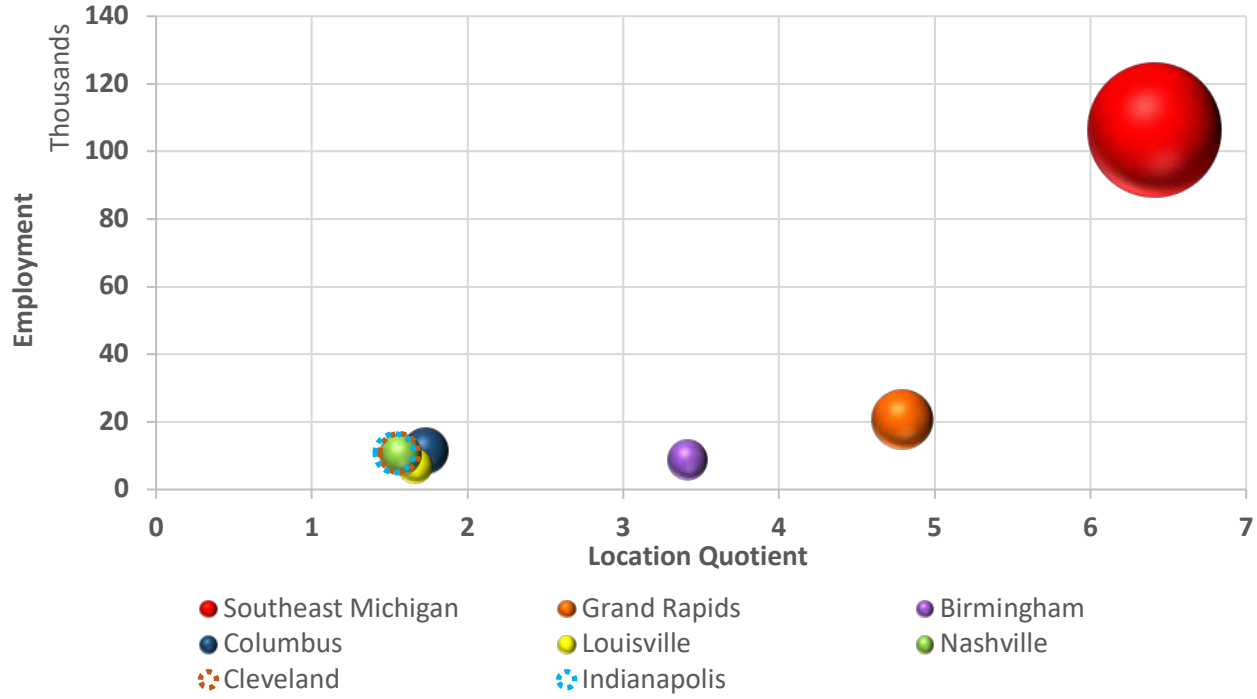
Economic Concentrations in Southeast Michigan and Other Regions

A regional economy usually specializes in one or two economic clusters, which are concentrations of related industries. These clusters drive growth and output for a region. The primary cluster for Southeast Michigan is the development and manufacturing of automobiles. Figure 1 illustrates the importance of the automotive cluster to Southeast Michigan.

Figure 1
Automotive



Note – bubbles are in proportion to the number of employees, also expressed on the vertical (Y) axis.
Source: SEMCOG analysis of U.S. Cluster Mapping data.

According to data from the U.S. Cluster Mapping Project, Southeast Michigan has 106,000 jobs tied to the automotive cluster. Our region's concentration of automotive employment, as measured by location quotient (LQ), has a value of 6.4. This means Southeast Michigan has six times as many jobs in the automotive cluster than the national average.

Other major metropolitan regions (Figure 1) with high location quotients include Grand Rapids with an LQ of 4.8 and the Birmingham, Alabama metro area with a LQ of 3.4. The Columbus, Louisville, Nashville, Cleveland, and Indianapolis regions also have significant automotive presence, each with a LQ of around 1.6.

Along with Southeast Michigan's rich automotive supplier economy, the region has high location quotients in clusters closely linked to automotive, including metalworking technology (4.4), plastics (1.7), and upstream metal manufacturing (1.6) (please see Appendix B).

The brightest future for our region will feature continued success in automotive and mobility sectors. This means retaining, attracting, and growing companies that develop automobiles and other methods of mobility. Preserving all these interrelated job clusters in our region will be challenging. Electric vehicles (EVs) require fewer components, and other regions are competing hard to attract EV manufacturing.

SEMCOG has also examined economic clusters in other regions to identify opportunities to diversify the region's economy and attract new growth.

For this exercise, SEMCOG referenced the U.S. Cluster Mapping Project's list of traded clusters, which are clusters that facilitate economic growth. Clusters were selected if they have industries that align with our region's engineering and manufacturing history or because they realized increased growth in recent years (e.g., finance and distribution). Such clusters could pave a way towards economic diversification.

Economic concentrations are measured using location quotient (or LQ) which illustrate the importance of a cluster to a region's economy. LQs for an employment cluster are calculated by dividing a region's share of employment by the national share. At the national level, all LQs are "1." If a region's cluster LQ is greater than 1, that cluster is considered an area of relative strength for that region's economy; but if the LQ is less than 1, then the cluster is not a strength. For example, Southeast Michigan's automotive employment cluster LQ is 6.4, meaning our region's share of automotive jobs is more than six times higher than the U.S. average; but our region's share of the aerospace and defense jobs is 0.3, meaning we have less than one-third of the share of national average.

SEMCOG analyzed location quotients using 2019 employment data from U.S. Cluster Mapping. Here are some noteworthy clusters to consider:

Aerospace and Defense (Figure 2)

- Southeast Michigan's LQ is 0.3
- The Seattle region leads the nation with a LQ of 8.3.
- Leading Midwest regions include Cincinnati (2.2) and Kansas City (1.7)

Construction Products and Services (construction services and material manufacturing)

- Southeast Michigan's LQ is 0.6
- The San Antonio region lead the nation with a LQ of 4.3.
- Leading Midwest regions include St. Louis (1.4) and Pittsburgh (1.3)

Distribution and E-commerce

- Southeast Michigan's LQ is 0.8
- Riverside (CA) lead the nation with a LQ of 2.6
- Leading Midwest regions include Indianapolis (1.7), Columbus (1.6), Kansas City (1.6), Cincinnati (1.4), and Chicago (1.3)

Financial Services (Figure 3)

- Southeast Michigan's LQ is 1.1
- New York leads the nation with a LQ of 2.4
- Chicago leads the Midwest with a LQ of 1.3

Information Technology and Analytical Instruments (Figure 4)

- Southeast Michigan's LQ is 0.8
- San Jose leads the nation with a LQ of 5.9
- Minneapolis leads the Midwest with a LQ of 2.1

Marketing, Design, and Publishing

- Southeast Michigan's LQ is 1.0
- San Francisco leads the nation with a LQ of 3.5
- Leading Midwest regions include Chicago (1.6) and Minneapolis (1.3)

Medical Devices (Figure 5)

- Southeast Michigan's LQ is 0.4
- Kalamazoo leads the nation with a LQ of 11.5
- Numerous Midwest regions have high LQs, including: Minneapolis (4.2), Rochester, NY (3.2), Grand Rapids (1.9), St. Louis (1.3), Pittsburgh (1.3), Cleveland (1.3), Indianapolis (1.2)
- With Kalamazoo and Grand Rapids having high LQs, there may be an opportunity to push for a Michigan-centric cluster of Medical Devices if Southeast Michigan can attract more of these employers.

Production Technology and Heavy Machinery

- Southeast Michigan's LQ is 1.05
- Tulsa leads the nation with a LQ of 4.3
- Leading Midwest regions include: Milwaukee (2.5), Grand Rapids (2.2), and Cleveland (2.1)

The complete list of regions for these target clusters is found in Appendix A. Regions with a LQ of 1.2 and a population of one million or greater are selected for comparison (Kalamazoo under Medical Devices is the lone exception).

In Appendix B, we provide more tables comparing Southeast Michigan's primary clusters of automotive, metalworking technology, plastics, and upstream metal manufacturing, to other leading regions.

Figure 2
Aerospace and Defense

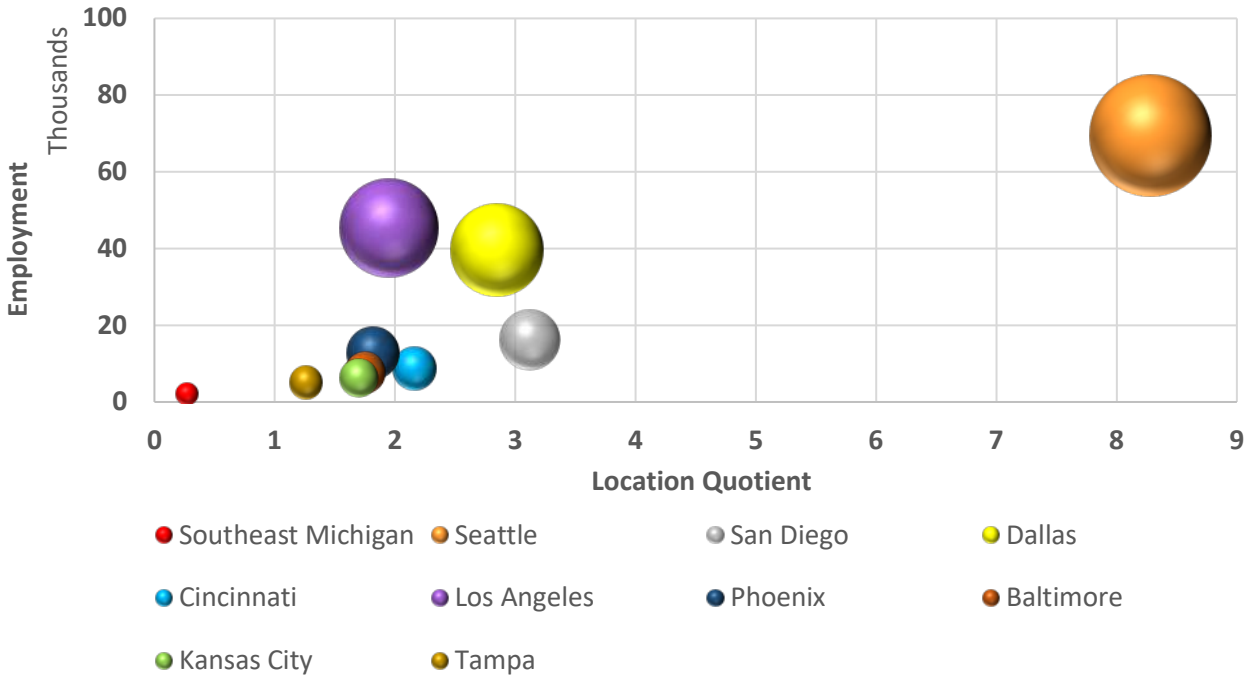
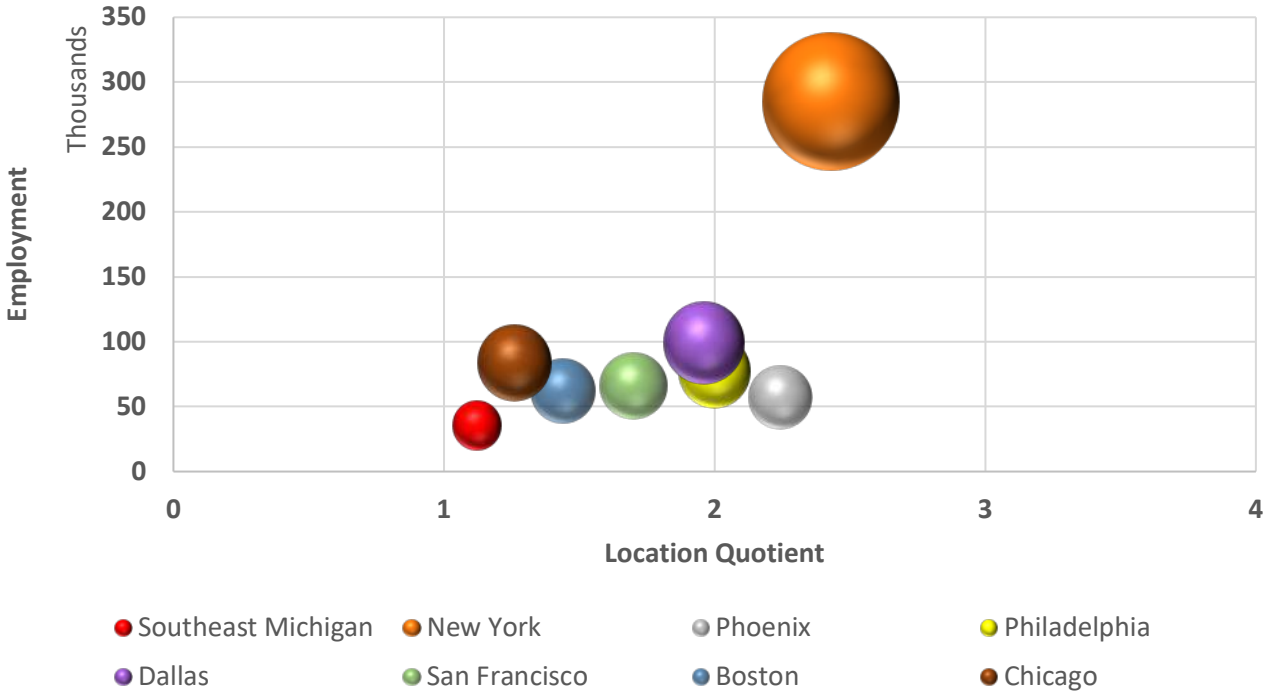


Figure 3
Financial Services



Note – bubbles are in proportion to the number of employees, also expressed on the vertical axis.
Source: SEMCOG analysis of U.S. Cluster Mapping data.

Figure 4
Information Technology and Analytical Instruments

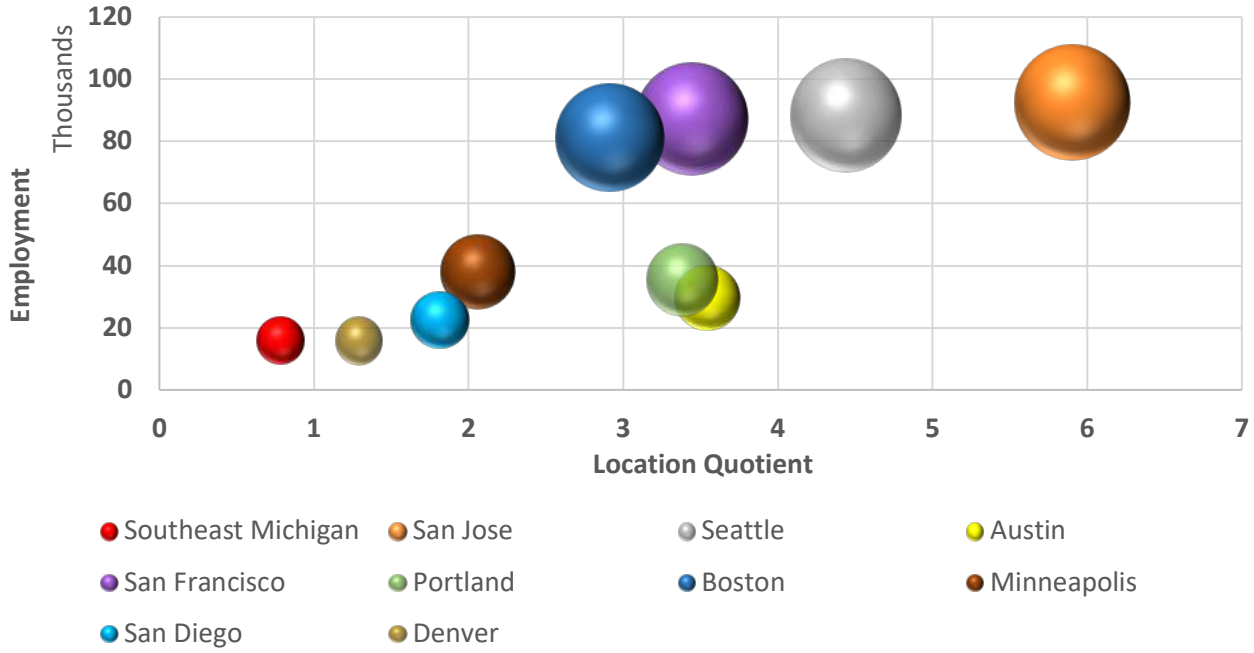
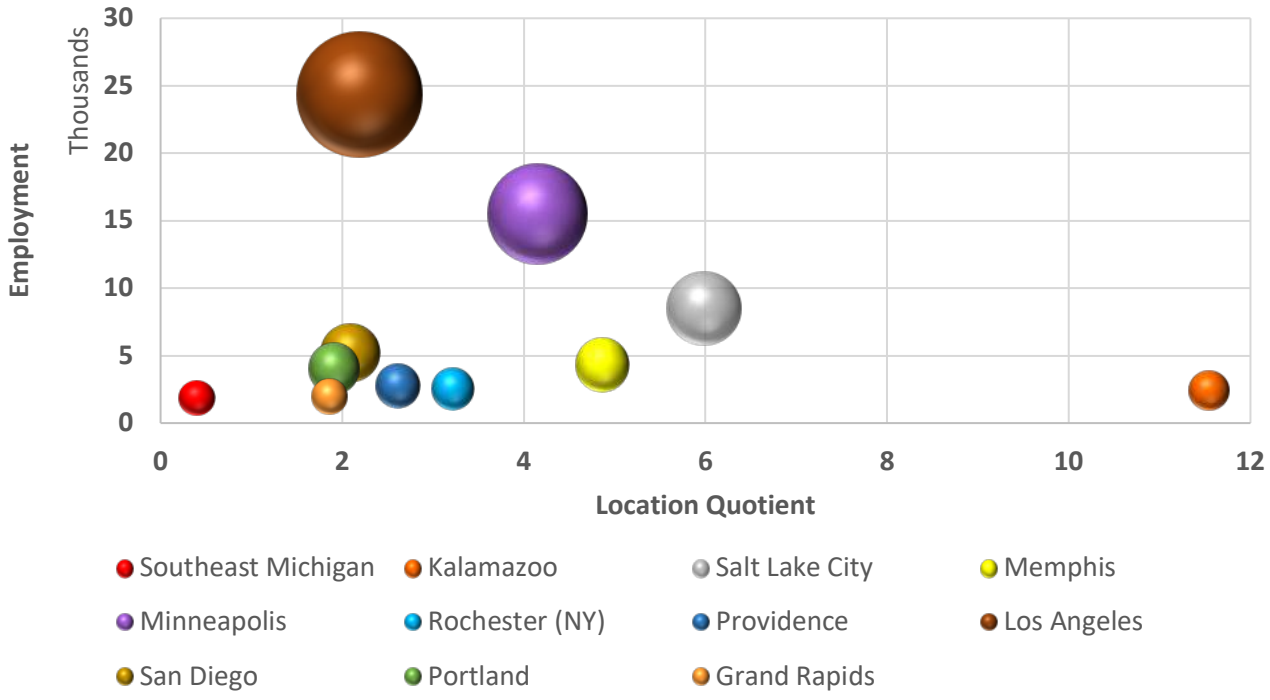


Figure 5
Medical Devices



Note – bubbles are in proportion to the number of employees, also expressed on the vertical axis.

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Appendix A – Regions with Economic Clusters To Target

Aerospace and Defense, 2019

	Location Quotient	Employment
Southeast Michigan	0.27	2,096
Seattle, WA Metropolitan Area	8.28	69,552
San Diego, CA Metropolitan Area	3.12	16,348
Dallas, TX Metropolitan Area	2.85	39,685
Cincinnati, OH Metropolitan Area	2.16	8,711
Los Angeles, CA Metropolitan Area	1.95	45,288
Phoenix, AZ Metropolitan Area	1.82	12,780
Baltimore, MD Metropolitan Area	1.75	7,649
Kansas City, MO Metropolitan Area	1.70	6,407
Tampa, FL Metropolitan Area	1.26	5,078

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Construction Products and Services, 2019

	Location Quotient	Employment
Southeast Michigan	0.63	8,721
San Antonio, TX Metropolitan Area	4.30	23,139
Houston, TX Metropolitan Area	3.54	65,135
Tulsa, OK Metropolitan Area	3.53	9,271
Riverside, CA Metropolitan Area	1.55	10,204
St. Louis, MO Metropolitan Area	1.42	11,223
Pittsburgh, PA Metropolitan Area	1.34	9,500
Denver, CO Metropolitan Area	1.28	10,999

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Distribution and Ecommerce, 2019

	Location Quotient	Employment
Southeast Michigan	0.75	71,721
Riverside, CA Metropolitan Area	2.58	113,797
Memphis, TN Metropolitan Area	2.18	44,862
Indianapolis, IN Metropolitan Area	1.72	69,141
Columbus, OH Metropolitan Area	1.60	60,719
Kansas City, MO Metropolitan Area	1.59	66,458
Sacramento, CA Metropolitan Area	1.47	36,594
Miami, FL Metropolitan Area	1.40	122,913
Cincinnati, OH Metropolitan Area	1.39	62,460
Charlotte, NC Metropolitan Area	1.33	60,364
Los Angeles, CA Metropolitan Area	1.32	338,051
Chicago, IL Metropolitan Area	1.29	263,576
Dallas, TX Metropolitan Area	1.26	194,816
New York, NY Metropolitan Area	1.26	449,168
Atlanta, GA Metropolitan Area	1.23	143,925

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Financial Services, 2019

	Location Quotient	Employment
Southeast Michigan	1.12	35,511
New York, NY Metropolitan Area	2.43	284,811
Phoenix, AZ Metropolitan Area	2.24	57,275
Philadelphia, PA Metropolitan Area	2.00	77,600
Dallas, TX Metropolitan Area	1.96	99,432
San Francisco, CA Metropolitan Area	1.70	66,254
Boston, MA Metropolitan Area	1.44	61,892
Chicago, IL Metropolitan Area	1.26	84,161

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Information Technology and Analytical Instruments, 2019

	Location Quotient	Employment
Southeast Michigan	0.78	15,744
San Jose, CA Metropolitan Area	5.90	92,749
Seattle, WA Metropolitan Area	4.44	88,469
Austin, TX Metropolitan Area	3.54	29,601
San Francisco, CA Metropolitan Area	3.44	87,345
Portland, OR Metropolitan Area	3.38	35,482
Boston, MA Metropolitan Area	2.91	81,276
Minneapolis, MN Metropolitan Area	2.06	38,133
San Diego, CA Metropolitan Area	1.81	22,580
Denver, CO Metropolitan Area	1.29	15,885

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Marketing, Design, and Publishing, 2019

	Location Quotient	Employment
Southeast Michigan	1.03	23,396
San Francisco, CA Metropolitan Area	3.50	97,804
San Jose, CA Metropolitan Area	3.45	59,690
New York, NY Metropolitan Area	2.71	227,350
Los Angeles, CA Metropolitan Area	1.64	98,986
Chicago, IL Metropolitan Area	1.57	75,320
Washington, DC Metropolitan Area	1.50	44,608
Atlanta, GA Metropolitan Area	1.48	40,577
Boston, MA Metropolitan Area	1.43	43,832
Miami, FL Metropolitan Area	1.43	29,647
Seattle, WA Metropolitan Area	1.28	28,069
Minneapolis, MN Metropolitan Area	1.26	25,659

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Medical Devices, 2019

	Location Quotient	Employment
Southeast Michigan	0.40	1,846
Kalamazoo, MI Metropolitan Area	11.54	2,397
Salt Lake City, UT Metropolitan Area	5.98	8,486
Memphis, TN Metropolitan Area	4.86	4,316
Minneapolis, MN Metropolitan Area	4.15	15,512
Rochester, NY Metropolitan Area	3.21	2,595
Providence, RI Metropolitan Area	2.61	2,775
Los Angeles, CA Metropolitan Area	2.19	24,380
San Diego, CA Metropolitan Area	2.09	5,248
Portland, OR Metropolitan Area	1.91	4,035
Grand Rapids, MI Metropolitan Area	1.86	1,982
Riverside, CA Metropolitan Area	1.46	2,786
San Jose, CA Metropolitan Area	1.44	4,575
St. Louis, MO Metropolitan Area	1.32	3,008
Pittsburgh, PA Metropolitan Area	1.31	2,674
Tampa, FL Metropolitan Area	1.29	2,491
Boston, MA Metropolitan Area	1.29	7,283
Cleveland, OH Metropolitan Area	1.27	2,164
Indianapolis, IN Metropolitan Area	1.20	2,089

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Production Technology and Heavy Machinery, 2019

	Location Quotient	Employment
Southeast Michigan	1.05	16,189
Tulsa, OK Metropolitan Area	4.28	12,339
Milwaukee, WI Metropolitan Area	2.51	15,644
Grand Rapids, MI Metropolitan Area	2.18	8,847
Cleveland, OH Metropolitan Area	2.14	13,947
Kansas City, MO Metropolitan Area	1.66	11,433
Cincinnati, OH Metropolitan Area	1.42	10,477
St. Louis, MO Metropolitan Area	1.40	12,150
Minneapolis, MN Metropolitan Area	1.21	17,241

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Appendix B – Southeast Michigan's Primary Clusters (to retain, attract, and grow)

Automotive, 2019

	Location Quotient	Employment
Southeast Michigan	6.41	106,270
Grand Rapids, MI Metropolitan Area	4.79	20,737
Birmingham, AL Metropolitan Area	3.41	8,863
Columbus, OH Metropolitan Area	1.73	11,561
Louisville/Jefferson , KY Metropolitan Area	1.66	6,963
Nashville, TN Metropolitan Area	1.57	10,258
Cleveland, OH Metropolitan Area	1.56	10,812
Indianapolis, IN Metropolitan Area	1.53	10,770

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Metalworking Technology, 2019

	Location Quotient	Employment
Southeast Michigan	4.36	36,211
Cleveland, OH Metropolitan Area	5.14	16,941
Grand Rapids, MI Metropolitan Area	4.82	9,879
Milwaukee, WI Metropolitan Area	2.82	8,881
Minneapolis, MN Metropolitan Area	1.66	11,932
Cincinnati, OH Metropolitan Area	1.63	6,087
Chicago, IL Metropolitan Area	1.63	27,723
Los Angeles, CA Metropolitan Area	1.30	27,723

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Plastics, 2019

	Location Quotient	Employment
Southeast Michigan	1.69	20,686
Grand Rapids, MI Metropolitan Area	3.97	11,998
Louisville/Jefferson , KY Metropolitan Area	2.15	6,314
Riverside, CA Metropolitan Area	1.84	9,983
Charlotte, NC Metropolitan Area	1.66	9,263
Cleveland, OH Metropolitan Area	1.55	7,513
Columbus, OH Metropolitan Area	1.52	7,075
Chicago, IL Metropolitan Area	1.35	33,672
Milwaukee, WI Metropolitan Area	1.30	6,040
Houston, TX Metropolitan Area	1.29	19,401
Atlanta, GA Metropolitan Area	1.23	17,684

Source: SEMCOG analysis of U.S. Cluster Mapping data.

Upstream Metal Manufacturing, 2019

	Location Quotient	Employment
Southeast Michigan	1.62	9,929
Pittsburgh, PA Metropolitan Area	4.38	13,371
Cleveland, OH Metropolitan Area	2.69	6,846
Chicago, IL Metropolitan Area	2.32	30,444
Milwaukee, WI Metropolitan Area	1.87	4,557
Riverside, CA Metropolitan Area	1.82	5,168
Cincinnati, OH Metropolitan Area	1.53	4,426

Source: SEMCOG analysis of U.S. Cluster Mapping data.