MICHIGAN'S 2019 JOB VACANCY SURVEY 2ND QUARTER

STATE OF MICHIGAN Department of Technology, Management and Budget Bureau of Labor Market Information and Strategic Initiatives

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IT'S BIGGER THAN DATA.

The Bureau of Labor Market Information and Strategic Initiatives is your one-stop shop for information and analysis on Michigan's population, labor market, and more.

- Our Federal-State Programs division runs the state's cooperative agreements with the U.S. Bureau of Labor Statistics and the U.S. Census Bureau, making us the official source for this information.
- Our Research and Evaluation division conducts workforce research and program evaluation, giving you the insight you need to make smarter decisions.

ACKNOWLEDGMENTS

We would like to thank Robert Walkowicz and Kevin Doyle of the Bureau of Labor Market Information and Strategic Initiatives for their assistance in SOC coding, drawing our sample, and producing estimates. Additionally, we would especially like to thank all participating Michigan employers who took the time to fill out and return our survey. We hope this study can help employers and job seekers find the greatest fit for every job vacancy.

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About the Survey

The Bureau of Labor Market Information and Strategic Initiatives (LMISI) is Michigan's official source for state and regional demographic and labor market information. As part of its mission to provide high-quality, comprehensive labor market insights and analysis, LMISI conducted the second quarter 2019 Job Vacancy Survey (JVS). The primary goal of the JVS is to analyze the demand side of the state's labor market by looking at the number and nature of current Michigan job vacancies. While other sources of information on vacancies are available, directly asking employers with open positions about their vacancies in this survey can provide a more accurate and comprehensive picture of the demand side of the state's labor market.

Results of the survey have a variety of uses. They include

Assisting employers and human resources departments when making hiring decisions and setting wage levels.

Helping educators and workforce developers when identifying the education and training programs that lead to high-demand jobs.

3.

2.

Guiding policymakers when developing and prioritizing workforce and economic development initiatives and programs.

Providing residents—including parents, students, and job seekers—vital information when investigating career options.

Executive Summary





Methodology

Sample Design

Information on job vacancies for the second quarter of 2019 came from a survey of 11,734 establishments. LMISI randomly selected these employers from a universe of about 249,000 establishments maintained by Michigan's Quarterly Census of Employment and Wages (QCEW) program. The selected establishments were based on a sampling procedure that stratified by 20 North American Industry Classification (NAICS) industry sectors, three employment size classes, and 10 Michigan prosperity regions. The sampling process excluded private households, personnel service industries, and establishments with no reported employees. Out-of-business establishments and establishments that could not be located were removed from the sample through data processing.

The overall response rate for the second quarter 2019 JVS was 53 percent. This was higher than the 2018 JVS pilot response rate of 37 percent,

and lower than the 62 percent response rate from the 2015 JVS.

Survey Instrument, Mailing, and Results

Employers were asked to provide information on their current job vacancies, including the number of vacancies; the job titles for open positions; the education and experience required for open positions; and the compensation for vacancies (for all questions posed, see Appendix 4). Positions reserved for consultants, outside contractors, and others not considered employees were excluded. Establishments without job vacancies were also asked to return the survey reporting that information.

The survey proceeded in three mailing waves, from April through June (second quarter) 2019. In each mailing, establishments were given a survey instrument and a cover letter explaining the survey and soliciting a response. In addition to the physical surveys, online data collection and mining, telephone calls, fax, and email were used to obtain survey responses through the beginning of August 2019.

Following a review of the survey results, the data was weighted to produce estimates representative of Michigan's labor market.

Coding Job Titles

Employers provided job titles in an open field on the survey instrument. Economic analysts reviewed these job titles and matched them to appropriate 2018 Standard Occupational Classification (SOC) titles. Along with the job title, additional information on the position such as the job description, wage, education, and work experience were used to link the employer job title with an occupation title from the 2018 SOC title structures. This is the official coding structure used by the U.S. Bureau of Labor Statistics and U.S. Census Bureau to standardize reported job titles.



Michigan Vacancies and Employment Trends

The second quarter 2019 Job Vacancy Survey asked employers to provide information on any current job vacancies that existed at their locations. Based on employer responses, the JVS estimated 179,000 Michigan vacancies in the second quarter of 2019. In order to provide context, LMISI compared results from the second quarter 2019 JVS to the second quarter 2015 JVS.

Total Job Vacancies

The 179,000 Michigan vacancies estimated in the second quarter 2019 JVS is an increase of 23 percent from the 145,000 vacancies estimated in the second quarter 2015. This expansion of openings suggests an improvement in the labor market over that time period.

Job Vacancy Rate

Comparing Michigan's estimated 179,000 vacancies to the 4.3 million filled positions (Occupational Employment Statistics, 2019) produced a job vacancy rate of 4.2 vacancies for every 100 positions filled. This is also an increase from 2015, when the job vacancy rate was 3.5. A higher vacancy rate also indicates that labor market demand has risen, and at a faster pace than total statewide employment.

Supply-Demand Rate

Comparing Michigan's job vacancies to the 199,000 unemployed residents in the second quarter of 2019 (Local Area Unemployment Statistics, 2019) resulted in a supply-demand rate of 1.1, meaning there was a little more than one jobseeker per job opening. This is down sharply from the estimated 2.4 supply-demand rate in 2015, reflecting a tightening labor market as job openings rose while the number of unemployed fell.

Results from the second quarter 2019 JVS were also compared to other sources of labor demand, including estimates from the Job Openings and Labor Turnover Survey (JOLTS) and online job ad data from The Conference Board Help Wanted OnLine® data series.

Job Openings and Labor Turnover Survey (JOLTS)

JOLTS is a monthly survey administered by the Bureau of Labor Statistics to provide data on job openings, hires, and separations. In 2019, the JOLTS survey began publishing experimental statelevel estimates as three-month moving averages. This includes publishing a job openings rate, which is somewhat comparable to the JVS job vacancy rate.¹ Like Michigan's job vacancy rate of 4.2, final state-level JOLTS estimates for the second quarter of 2019 indicated an average openings rate of 4.9 for Michigan. Both measures are an increase from the second quarter of 2015, when the JVS job vacancy rate and JOLTS openings rate were estimated to be 3.5 and 3.6 for Michigan, respectively.

The Conference Board Help Wanted OnLine® (HWOL)

Job vacancies from the second quarter 2019 survey were below the number of online job ads from HWOL. In the second quarter of 2019, HWOL reported 253,000 new job ads, which was 74,000 or 41 percent more ads than vacancies measured by the JVS. This discrepancy likely exists because of HWOL's tendency to over count existing job ads relative to actual vacancies. Additionally, given that HWOL is not a scientific survey, the JVS provides a more accurate estimate of existing openings.

¹ The Q2 2019 JVS estimated the Michigan Job Vacancy Rate by taking the number of total estimated job vacancies and dividing by the total employment from the Occupational Employment Statistics (OES) program. In contrast, the BLS calculated the JOLTS job openings rates for the state, region, and nation by dividing the estimated number of job openings by the sum of employment from the Current Population Survey (CPS) program and job openings

FIGURE 1: MICHIGAN JOB VACANCIES BY REQUIRED EDUCATION AND MEDIAN WAGE OFFER, 2015 VS. 2018



Michigan Job Vacancy Survey, 2nd Quarter 2015; Michigan Job Vacancy Survey, 2nd Quarter 2019; Bureau of Labor Market Information and Strategic Initiatives; Michigan Department of Technology, Management & Budget

Wages, Education and Experience

Median Wage

The second quarter 2019 JVS asked employers to list the wage or salary offer for any job vacancies they had. Based on employer responses, the statewide median hourly wage estimate for all Michigan vacancies was \$15.00 in the second quarter of 2019. While this was less than Michigan's 2018 median hourly wage of \$18.08, it was nearly \$4.00 per hour greater than the 2018 statewide entry-level wage of \$11.06.² Overall, the median hourly wage estimate for all Michigan vacancies was up from the \$14.00 estimated from the 2015 JVS.

Education

Assessing the educational requirements of Michigan vacancies can give the state's jobseekers and policymakers a sense of what is needed to meet employers' skill and knowledge needs. In the second quarter of 2019, most Michigan vacancies called for lower levels of education, as expected.

- Nearly two-thirds of openings required a high school diploma or less, with 15 percent of total vacancies requiring no education.
- Of the remaining vacancies, about one in 10 required a postsecondary certificate or associate degree, nearly two in 10 required a bachelor's degree, and nearly one in 10 required an advanced degree (see Figure 1).
- Compared to 2015, the proportion of vacancies that required no prior education dropped by nearly one quarter, while those requiring a high school diploma rose 10 percentage points to cover half of all vacancies in 2019. Interestingly, while the proportion of vacancies requiring an advanced degree did rise, the figures for postsecondary certificate, associate degree, and bachelor's degrees all declined.
- The JVS also examined wage offers of vacancies by educational attainment. In 2019, there was a clear correlation between higher levels of preferred education and median wage offers, as illustrated in Figure 1. Vacancies requiring an advanced degree had a median wage offer of \$30.82, two and a half times higher than those requiring no education (\$12.00).
- The largest wage difference between educational attainment occurred between vacancies requiring bachelor's degrees (\$24.04) and advanced degrees (\$30.82). At the same time, the smallest wage difference occurred between vacancies requiring no education (\$12.00) and those requiring a high school diploma (\$13.00).
- Figure 1 shows that the 2019 JVS median wage estimates by preferred education were \$2.00 to \$2.50 higher in most categories when compared to the 2015 survey.

² The entry-level wage was computed as the average of the bottom third of wages from the Occupational Employment Statistics (OES) program.

FIGURE 2: MICHIGAN VACANCIES BY REQUIRED EXPERIENCE AND MEDIAN WAGE OFFER, 2015 VS. 2018



Michigan Job Vacancy Survey, 2nd Quarter 2015; Michigan Job Vacancy Survey, 2nd Quarter 2019; Bureau of Labor Market Information and Strategic Initiatives; Michigan Department of Technology, Management & Budget

Experience

Like education, an examination of the experience requirements of Michigan vacancies can provide key insights into how to meet current and future labor market demand. As expected, a majority of vacancies in 2019 requested little to no experience as a prerequisite for employment.

- Around six out of every 10 job openings required less than one year of experience, and about half of that number sought one to three years. Those calling for four or more years of experience made up just 7 percent of the total number of vacancies (see Figure 2).
- Relative to 2015, these vacancy proportions represent a shift. As illustrated by Figure 2, the experience requirements of most vacancies appeared to drop, as the share of vacancies requiring less than one year of experience rose from 41 percent of the total to 62 percent.
- Simultaneously, vacancies requiring greater levels of experience—both one to three years and more than four years—registered a drop in their proportions compared to 2015.
- Figure 2 shows that there was a positive correlation between required experience and wage offers. Vacancies requiring four or more

years of experience had a median wage of \$25.20, more than double the median wage of those requiring less than one year of experience (\$12.00).

 Vacancies with lower levels of required experience exhibited the greatest dollar growth in median wages. Compared to the 2015 survey, second quarter 2019 vacancies requiring less than one year of experience saw wage growth of \$2.00/ hour. In contrast, wage growth for one to three years was \$0.48, followed by just \$.20 for greater than four years of experience.

"[We're looking for people skilled with] multitasking, communication, leadership, [and] problem solving."

- Employer in Manufacturing



Other Characteristics of Job Vacancies

The second quarter 2019 JVS questionnaire asked employers to provide additional information regarding the characteristics of their job vacancies. Understanding these characteristics is important when helping jobseekers prepare for these and other vacancies.

Full-time or Part-time and Permanent or Temporary or Seasonal

- Sixty-three percent of Michigan job vacancies were for full-time positions, while the remaining 37 percent were for part-time vacancies. These figures were unchanged from the 2015 survey. Leading full-time positions included *Heavy and tractor-trailer truck drivers* and *Retail salespersons*. Part-time openings were also seen in *Retail salespersons*, as well as occupations such as *Fast food and counter workers*.
- Most vacancies (89 percent) were for permanent positions, while the other 11 percent were for seasonal or temporary jobs. These figures were nearly identical to the 2015 estimates. The largest number of vacancies for permanent positions were found for

Retail salespersons and Fast food and counter workers. Occupations topping the list of the most temporary or seasonal openings again included Fast food and counter workers, along with Waiters and waitresses.

Benefits

 Results indicate that 68 percent of Michigan vacancies offered health insurance, 70 percent offered paid leave, and 62 percent offered a retirement savings plan or pension. These numbers are consistent with results from the 2015 survey, though there was a slight increase in paid time off, from 61 percent in 2015 to 70 percent in 2019.

Replacement vs. Growth

 The need to replace workers drove an estimated 56 percent of the vacancies, while the other 44 percent of vacancies were due to business growth. These figures are unchanged relative to the 2015 survey.

Vacancy Duration

• Employers recruited for less than 90 days for three-fourths of total job vacancies. The remaining 25 percent of vacancies were open for more than 90 days, suggesting employers were struggling to fill some vacancies. These figures were nearly identical to the results of the 2015 survey.

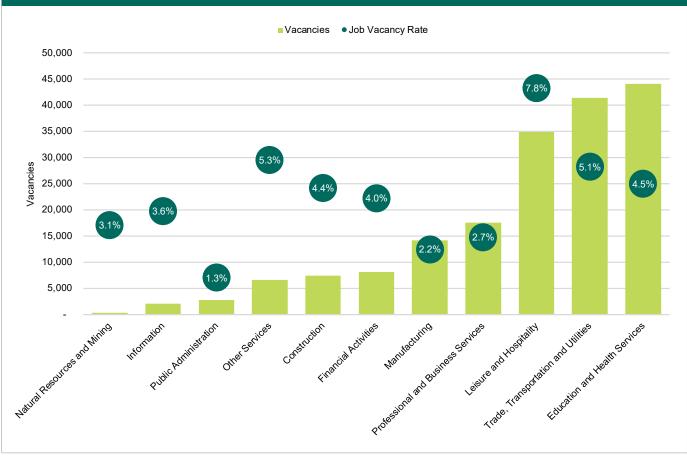
Establishment Size

 Overall, more than half of vacancies (56 percent) occurred in small establishments with less than 50 employees, highlighting their importance to the state's economy. Less than one in three vacancies originated from medium establishments with between 50 and 499 employees, and large establishments with 500 or more employees accounted for just 13 percent of vacancies.

Licenses, Certifications, and Apprenticeships

An estimated 25,900 vacancies (20 percent) required an occupational license, which nearly matches the 2015 figure. An almost equal number of vacancies (26,600) required a professional certification. The JVS estimated that only 3,200 vacancies (2 percent) required an apprenticeship.

FIGURE 3: MICHIGAN JOB VACANCIES BY INDUSTRY SUPERSECTOR, Q2 2019



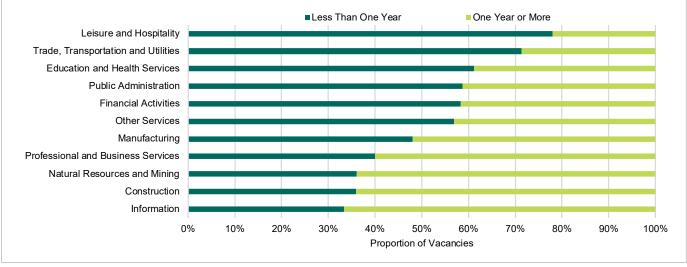
Michigan Job Vacancy Survey, 2nd Quarter 2019; Bureau of Labor Market Information and Strategic Initiatives; Michigan Department of Technology, Management & Budget

Job Vacancies by Industry

Analyzing vacancies by industry is particularly useful because it provides industry-specific information such as number of openings and required education and experience. In 2019, nearly half (48 percent) of vacancies were concentrated in two industry super sectors: *Education and health services* and *Trade, transportation, and utilities*. This was only slightly higher than the 42 percent of recent occupational employment in these same industries.

- Education and health services had the largest number of vacancies. Some high-demand occupations in the super sector were Home health and personal care aides and Registered nurses.
- Industries with high turnover rates may report more job vacancies. For example, *Leisure and hospitality* had the highest job vacancy rate (8 percent), which is consistent with the high turnover rate in that industry (Local Employment-Household Dynamics, 2016). Conversely, *Public administration* had the lowest job vacancy rate (1 percent) and a low turnover rate (Ibid.).
- After Leisure and hospitality, Other services displayed the highest vacancy rate (5 percent). A popular detailed occupation within this industry super sector is Hairdressers, hairstylists, and cosmetologists.
- Industry super sectors with the lowest vacancy counts were Natural resources and mining and Information. Together, these categories accounted for around 1 percent of total vacancies. These results are not surprising considering these two sectors combined were responsible for less than 2 percent of total statewide employment.
- Since the second quarter 2015 JVS, the industries that added the most vacancies were Education and health services and Trade, transportation, and utilities. However, also significant were the industries that decreased their number of openings since second quarter 2015: Professional and business services and Public administration.

FIGURE 4: PREFERRED LEVEL OF EXPERIENCE IN MICHIGAN JOB VACANCIES BY INDUSTRY SUPERSECTOR, Q2 2019



Michigan Job Vacancy Survey, 2nd Quarter 2019; Bureau of Labor Market Information and Strategic Initiatives; Michigan Department of Technology, Management & Budget

Education and Experience by Industry

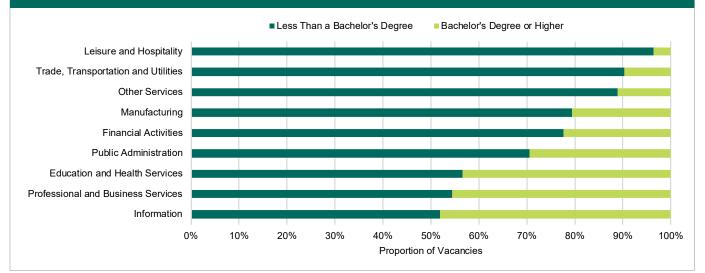
Education and training requirements vary significantly by industry. Overall, one out of every four job openings (25 percent) preferred a candidate with a bachelor's degree or higher, and 38 percent of vacancies preferred a candidate with more than one year of experience.

 Information and Professional business services both had some of the most selective experience preferences for candidates, each preferring more than 60 percent of vacancies to have more than a year of experience and around half of vacancies to have a bachelor's degree or higher.

 Leisure and hospitality and Trade, transportation, and utilities were much less selective, requiring less than 30 percent of vacancies to have more than one year of experience and less than 10 percent of vacancies to have a bachelor's degree or higher.

 Surprisingly, Education and health services displayed a relatively high preference for bachelor's degrees or higher (43 percent) but lower preference for more than one year of experience (39 percent).





Michigan Job Vacancy Survey, 2nd Quarter 2019 Bureau of Labor Market Information and Strategic Initiatives; Michigan Department of Technology, Management & Budget

FIGURE 6: TOP 10 DETAILED OCCUPATIONS BY JOB VACANCY RATE IN MICHIGAN, Q2 2019

TITLE	SHARE OF VACANCIES
Retail Salespersons	7%
Fast Food and Counter Workers	6%
Cashiers	4%
Waiters and Waitresses	3%
Heavy and Tractor-Trailer Truck Drivers	2%
Home Health and Personal Care Aides	2%
Registered Nurses	2%
First-Line Supervisors of Retail Sales Workers	2%
Customer Service Representatives	2%
Cooks, Restaurant	2%

Michigan Job Vacancy Survey, 2nd Quarter 2019 Bureau of Labor Market Information and Strategic Initiatives; Michigan Department of Technology, Management & Budget

Job Vacancies by Occupation

While industry analysis reveals specific characteristics about industry employers, occupational data provides workforce developers with the specific on-the-job, cross-industry information they need to make datadriven decisions. Almost half (46 percent) of vacancies fell into two intermediate aggregations: Service and Sales and related. This was significantly more than the 30 percent of recent employment in these same occupational aggregations.

- Service occupations had almost twice the vacancies of any other occupation. However, this group is also the largest intermediate aggregation for Michigan employment. Demand in this group was led by Fast food and counter workers and Waiters and waitresses.
- Sales and related had the highest vacancy rate (7 percent), where demand was led by Retail salespersons. Conversely, Office and administrative; Production; and Management, business and financial had the lowest vacancy rates, each with around 2 percent.

- Surprisingly, while Office and administrative ranked second for aggregations by employment, it only ranked sixth for job openings. Education, legal, community service, arts, and media displayed the opposite trend, ranking sixth for aggregations by employment but third for aggregations by vacancies.
- The intermediate occupational aggregations with the lowest vacancy counts were *Farming*, *fishing*, *and forestry* occupations and *Installation*, *maintenance*, *and repair* occupations. These results are not surprising as these two occupational groups employ less workers than most other groups.
- When compared with the second quarter 2015 JVS, *Sales and related* and *Service* occupations increased by the most vacancies, while three aggregations decreased their number of vacancies: *Computer, engineering, and science; Office and administrative; and Management, business, and financial.*

Top Ten Detailed Job Vacancies

Nearly one in every three (32 percent) job vacancies came from just 10 detailed occupations. This was significantly more than the 18 percent of recent employment in these same detailed occupations. Typically, detailed occupations with the most vacancies tend to require less education and experience.

- Two of the top 10 detailed occupations with vacancies appear in the LMISI publication *Michigan's Hot 50 Through* 2026: *Michigan's High-Demand, High-Wage Careers: Heavy and tractor-trailer truck drivers* and *Registered nurses*.
- Four occupations appear in all 10 regions that make up the LMISI publication Michigan's Regional Career Outlooks Through 2026: Fast food and counter workers, Heavy and tractortrailer truck drivers, Home health and personal care aides and Registered nurses. Two other occupations, Customer service representatives and First-line supervisors of retail sales workers appear in four regions.
- Only one of the top 10 occupations typically required a bachelor's degree: *Registered nurses*. The other nine occupations required less formal education.

MICHIGAN JOB VACANCIES BY PROSPERITY REGION, Q2 2019

REGION	EMPLOYED	UNEMPLOYED	VACANCIES	VACANCY RATE	JOB SEEKERS PER VACANCY	MEDIAN WAGE OF VACANCIES
Detroit Metro	1,848,700	82,000	66,400	4%	1.2	\$16.00
West Michigan	739,700	26,900	32,200	4%	0.8	\$14.00
Southeast Michigan	410,500	17,500	18,200	4%	1.0	\$14.00
East Michigan	253,700	19,500	13,600	5%	1.4	\$15.00
Southwest	299,900	14,400	15,300	5%	0.9	\$13.00
East Central Michigan	208,700	11,600	8,300	4%	1.4	\$12.00
South Central	215,300	8,200	7,400	3%	1.1	*
Northwest	122,900	6,500	7,100	6%	0.9	\$13.00
Upper Peninsula	112,200	7,200	4,600	4%	1.6	\$15.00
Northeast	58,600	4,800	2,900	5%	1.7	\$12.00

Michigan Job Vacancy Survey, 2nd Quarter 2019 Bureau of Labor Market Information and Strategic Initiatives; Michigan Department of Technology, Management & Budget

Job Vacancies by Region

Information on vacancies by region can help provide insight for local employers and job seekers. The West Michigan and Detroit Metro regions, which are the most densely populated areas in Michigan, comprise more than half of Michigan's employment. This is consistent with the 55 percent of vacancies that were in these areas.

 The Northwest, West Michigan, and Southwest regions were the only areas where the number of vacancies exceeds the number of unemployed individuals, which produces a job seeker per vacancy rate of just under one person per vacancy. The highest rates of job seekers per vacancy were in the Upper Peninsula and Northeast regions, with 1.6 and 1.7 job seekers per vacancy, respectively.

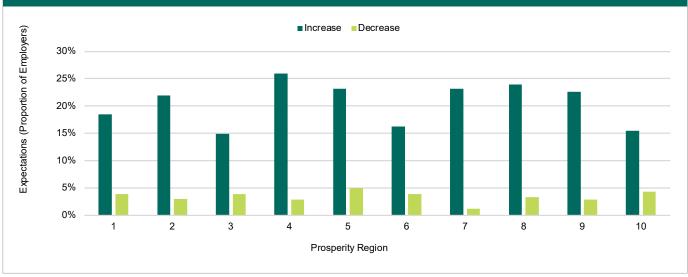
- The highest job vacancy rate was in the Northwest region (6 percent), which has one of the smallest labor forces in Michigan. The lowest job vacancy rates were in the South Central, Detroit Metro, and East Central regions.
- Compared to the second quarter of 2015, most areas had more vacancies, with the West Michigan region growing by the greatest number of openings. However, the Northwest and Northeast regions have decreased the number of vacancies since 2015.

 Vacancies in Detroit Metro region offered the highest median hourly vacancy wage (\$16.00), while East Central and Northeast regions started at \$4.00 less (\$12.00).

"[We're seeking people who are] able to learn daily...motivated...[have a] great attitude...[and are] willing to work hard."

- Employer in Administrative, Support, Waste Management, and Remediation Services

FIGURE 4: PREFERRED LEVEL OF EXPERIENCE IN MICHIGAN JOB VACANCIES BY INDUSTRY SUPERSECTOR, Q2 2019



Michigan Job Vacancy Survey, 2nd Quarter 2019 Bureau of Labor Market Information and Strategic Initiatives; Michigan Department of Technology, Management & Budget

Optimism by Region

Employer expectations about increasing, decreasing, maintaining, or being uncertain about hiring prospects in the next six months directly impact the number of vacancies that are available for job seekers. These employment sentiments vary by region in Michigan.

- The West Michigan region had the highest level of optimism regarding future hiring prospects, with 26 percent of employers expecting an increase in employment within the next six months.
- The East Central and Detroit Metro regions had the highest number of employers that expected a decrease in employment within the next six

months. However, the regions with the most uncertainty were East Michigan and Southeast Michigan.

 The Northeast and Upper Peninsula Regions had the highest proportion of employers that expect employment levels to stay the same within the next six months.

Conclusion

The second quarter 2019 Michigan Job Vacancy Survey provides valuable insights into the demand-side of the state's labor market, including its condition, trends, and key characteristics of existing openings at the regional and state level. With this information, we hope that employers, jobseekers, educators/workforce developers, and policymakers can make informed decisions when setting wage levels, searching for jobs, prioritizing training, and crafting workforce and economic development programs to best assist in matching labor supply with employment demand.



CATHERINE CLOSNER ECONOMIC ANALYST



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APPENDIX 1: NAICS TITLES AND INDUSTRY SUPER SECTORS

SUPERSECTOR	INDUSTRY	DESCRIPTION
Natural Resources and	Agriculture, Forestry, Fishing, and Hunting	Establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats.
Mining	Mining, Quarrying, and Oil and Gas Extraction	Establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases, such as natural gas.
Construction	Construction	Establishments primarily engaged in the construction of buildings or engineering projects, in the preparation of sites for new construction, and in subdividing land for sales as building sites.
Manufacturing	Manufacturing	Establishments engaged in the mechanical, physical or chemical transformation of materials, substances, or components into new products.
	Wholesale Trade	Establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.
Trade, Transportation	Retail Trade	Establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.
and Utilities	Transportation and Warehousing	Establishments that provide transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation.
	Utilities	Establishments engaged in the provision of electric power, natural gas, steam supply, water supply, and sewage removal.
Information	Information	Establishments engaged in producing and distributing information and cultural products, providing the means to transmit or distribute these products as well as data or communications, and processing data.
Financial	Finance and Insurance	Establishments primarily engaged in financial transactions and/or facilitation financial transactions. Financial transactions are further defined as transactions involving the creation, liquidation, or change in ownership of financial assets.
Activities	Real Estate and Rental and Leasing	Establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services.
	Professional, Scientific, and Technical Services	Establishments that specialize in performing professional, scientific, and technical activities for others.
Professional and Business Services	Management of Companies and Enterprises	Establishments that hold the securities (or other equity investors) of companies and enterprises for the purpose of owning a controlling interest or influencing management decisions or establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision making role of the company or enterprise.
	Administrative and Support and Waste Management and Remediation Services	Establishments performing routine support activities for the day-to-day operations of other organizations.
Education and	Educational Services	Establishments that provide instruction and training in a wide variety of subjects.
Health Services	Health Care and Social Assistance	Establishments providing health care and social assistance for individuals.
Leisure and Hospitality	Arts, Entertainment, and Recreation	Establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons.
	Accommodation and Food Services	Establishments providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.
Other Services	Other Services (except Public Administration)	Establishments engaged in providing services not specifically provided for elsewhere in the classification system including equipment and machinery repairing, promoting or administering religious activities, grant making, advocacy, and providing dry cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.
Public Administration	Public Administration	Establishments of federal, state, and local government's agencies that administer, oversee, and manage public programs and have executive, legislative, or judicial authority over other institutions in a given area.

APPENDIX 2: OCCUPATIONAL GROUP SOC CODES BY INTERMEDIATE AGGREGATION

INTERMEDIATE AGGREGATION	MAJOR OCCUPATIONAL GROUP	SOC	SAMPLE OCCUPATIONS
Management, Business,	Management Occupations	11-0000	Medical and Health Services Managers, Sales Managers, Construction Managers
and Financial Occupations	Business and Financial Operations Occupations	13-0000	Accountants, Personal Financial Managers, Loan Officers
	Computer and Mathematical Occupations	15-0000	Computer Systems Analysts, Computer Programmers, Web Developers
Computer, Engineering, and Science Occupations	Architecture and Engineering Occupations	17-0000	Landscape Architects, Electrical Engineers, Industrial Engineers
	Life, Physical, and Social Science Occupations	19-0000	Epidemiologists, Economists, Psychologists
	Community and Social Service Occupations	21-0000	Substance Abuse and Behavioral Disorder Counselors, Healthcare Social Workers, Probation Officers and Correctional Treatment Specialists
Education, Legal, Community	Legal Occupations	23-0000	Lawyers, Paralegals and Legal Assistants, Title Examiners, Abstractors, and Searchers
Service, Arts, and Media Occupations	Educational Instruction and Library Occupations	25-0000	Environmental Science Teachers (Postsecondary), Librarians and Media Collections Specialists, Teaching Assistants (Special Education)
	Arts, Design, Entertainment, Sports, and Media Occupations	27-0000	Art Directors, Coaches and Scouts, Photographers
Healthcare Practitioners and Technical Occupations	Healthcare Practitioners and Technical Occupations	29-0000	Dental Hygienists, Registered Nurses, Psychiatrists
Service Occupations	Healthcare Support Occupations	31-0000	Nursing Assistants, Home Health Aides, Medical Assistants
	Protective Service Occupations	33-0000	Firefighters, Correctional Officers and Jailers, Security Guards
	Food Preparation and Serving Related Occupations	35-0000	Bartenders, Chefs and Head Cooks, Waiters and Waitresses
	Building and Grounds Cleaning and Maintenance Occupations	37-0000	Landscaping and Groundskeeping Workers, Maids and Housekeeping Cleaners, Pest Control Workers
	Personal Care and Service Occupations	39-0000	Gambling Dealers, Barbers, Animal Trainers
Sales and Related Occupations	Sales and Related Occupations	41-0000	Retail Salespersons, Cashiers, Real Estate Brokers
Office and Administrative Support Occupations	Office and Administrative Support Occupations	43-0000	Billing and Posting Clerks, Customer Service Representatives, Payroll and Timekeeping Clerks
Farming, Fishing, and Forestry Occupations	Farming, Fishing, and Forestry Occupations	45-0000	Animal Breeders, Forest and Conservation Workers, Agricultural Inspectors
Construction and Extraction Occupations	Construction and Extraction Occupations	47-0000	Boilermakers, Electricians, Pipelayers
Installation, Maintenance, and Repair Occupations	Installation, Maintenance, and Repair Occupations	49-0000	Millwrights, Industrial Machinery Mechanics, Mechanical Door Repairers
Production Occupations	Production Occupations	51-0000	Team Assemblers, Stationary Engineers and Boiler Operators, Tool and Die Makers
Transportation and Material Moving Occupations	Transportation and Material Moving Occupations	53-0000	Taxi Drivers, Commercial Pilots, Heavy and Tractor-Trailer Truck Drivers
Military Specific Occupations	Military Specific Occupations	55-0000	Infantry, Air Crew Officers, Special Forces

APPENDIX 3: MICHIGAN PROSPERITY REGIONS

REGION	REGION NAME	COUNTIES
1	Upper Peninsula Prosperity Alliance	Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon, Schoolcraft
2	Northwest Prosperity Region	Antrim, Benzie, Charlevoix, Emmet, Grand Traverse, Kalkaska, Leelanau, Manistee, Missaukee, Wexford
3	Northeast Prosperity Region	Alcona, Alpena, Cheboygan, Crawford, Iosco, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon
4	West Michigan Prosperity Alliance	Allegan, Barry, Ionia, Kent, Lake, Mason, Mecosta, Montcalm, Muskegon, Newaygo, Oceana, Osceola, Ottawa
5	East Central Michigan Prosperity Region	Arenac, Bay, Clare, Gladwin, Gratiot, Isabella, Midland, Saginaw
6	East Michigan Prosperity Region	Genesee, Huron, Lapeer, St. Clair, Sanilac, Shiawassee, Tuscola
7	South Central Prosperity Region	Clinton, Eaton, Ingham
8	Southwest Prosperity Region	Berrien, Branch, Calhoun, Cass, Kalamazoo, St. Joseph, Van Buren
9	Southeast Michigan Prosperity Region	Hillsdale, Jackson, Lenawee, Livingston, Monroe, Washtenaw
10	Detroit Metro Prosperity Region	Macomb, Oakland, Wayne

Appendix 4: Survey Instrument

< T	chnolo	CTMB gy, Management & Budget	State of Michigan Job Va	acancy Survey	,	
	•	Iocation. Please respond within ten (10) business days If you have zero (0) or less than five (5) Michig telephone. Surveys can be returned by mail, email or fax. DTMBJobVacancySurvey@michigan.gov. Summary results will be available on the intern If you have any questions about the Michigan DTMBJobVacancySurvey@michigan.gov.	gan job vacancies, you may call us at 844-587-4587 and complete y I freturned by fax, please fax to 844-587-6654 ; if by email, please net at www.michigan.gov/lmi . Job Vacancy Survey, please call us at 844-587-4587 or email us at ete Part B (on the back) if applicable to your business.	your survey over the scan and send to	«Contact_Nime» «Legal_Nime» Report for «Unit_Dese» Vacancies «Address2» «Address2» «City», «State» «Zip»	Thank you for your participation! Please respond within ten (10) business days. Doing so will allow us to complete this survey on-time and under- budget.
	Pa	art A – About Your Business	TUEBOR		Survey ID number: «Si	ırveyID»
	tim	Total number of employees (full and part- e, permanent, and temporary) at this cation:	2: Who is responding to this survey? Name: Title: Email Address: Phone Number:		next six months, do you expect t this location will: ncrease Decrease day the same Jncertain	nat employment
-		that clearly lists this location's curr below and return your questionnair Website: O No There is no need to complete Pa	ther side of this questionnaire. If your business has a website ent job vacancies, you may provide us with the website address	5. Comments:		

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