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**WORKFORCE AND INDUSTRY TRENDS: DANE,
WALWORTH, JEFFERSON, DODGE, ROCK
COUNTIES**

by

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Executive Summary

The Fiscal and Economic Research Center of the University of Wisconsin Whitewater has reviewed data regarding location quotients (LQ), average wages for occupations and industries, employment trends in occupations and industries, and housing prices in Dane County, Walworth County, Jefferson County, Dodge County, and Rock County. There are three main areas of analysis.

This study was conducted to explore which occupations these counties rely heavily on. It also explores each county's average wages, housing prices, and imported employees. The FERC analyzed this data to see if surrounding counties are paying higher wages for similar occupations and if heavily concentrated occupations in each county are offering wages that support prevailing housing costs.

Summary of Major Findings and Conclusions

The results for Rock County show that occupations with a high concentration of employees in certain occupations (i.e., a high location quotient, high LQ) have lower average annual wages than employers offering employment in occupations at a smaller number (i.e., a low location quotient, low LQ). The results show that employment opportunities in Dane and Waukesha Counties for highly concentrated occupations and industries offer higher average annual wages than in Rock County. However, Rock County has lower home prices than many of the other counties analyzed.

The results for the other counties show that Jefferson and Columbia Counties experience an effect in which high home prices coupled with a majority of lower paying jobs lead to an exported workforce. Dane, Waukesha, and to some degree, Washington County have a higher concentration of occupations with higher average wages. These counties can support higher home costs, which is why they import workers from surrounding counties. Dodge, Fond du Lac, Green Lake, and Rock County have low average wages for occupations with a low LQ and high LQ.

Our results also show that housing prices in Walworth, Jefferson, Columbia, Waukesha, Washington, and Dane Counties are higher than in the other counties analyzed. Since Rock County is more reliant on workers with lower average wages (illustrated by higher LQ occupations in the county paying lower average annual wages), Rock County also has low home prices. This indicates that while Rock County relies on low paying occupations, these workers are able to find affordable housing in the County. Even so, due to low home prices and low wages, Rock County does not bring in imported workers.

Report Overview

Part 1: Major Occupation Groups

Part 1 of the report focuses on the major occupation groups in Dane, Walworth, Jefferson, Dodge, and Rock Counties and LQs of these groups. Major occupation groups are the broadest categorization of related occupations.

The results show that Dane County has a higher concentration of high paying major occupations, while the other counties rely on low paying major occupations. In all counties but Dane, the employees that the counties rely on the most are paid the least.

Part 2: Minor Occupation Groups

Part 2 of the report focuses on the minor occupation groups in Dane, Walworth, Jefferson, Dodge, and Rock Counties and LQs of these groups. Minor occupation groups are the narrow categorizations within major occupation groups.

The results show that Dane County has a higher concentration of high paying minor occupations, while the other counties rely on low paying minor occupations. In all counties but Dane, the employees that the counties rely on the most are paid the least.

Part 3: Housing Prices and Imported Workers

Part 3 of the report compares the income and LQ results from occupations in Dane, Walworth, Jefferson, Dodge, and Rock Counties. An analysis of how the results relate to the housing market in these counties is also made.

The results show that Dane County is the only county studied that has a positive percentage of imported workers. The results indicate that residents in low paying counties are exporting to work in Dane County in order to afford rising home prices.

What is a Location Quotient?

A location quotient (LQ) is a metric used to compare factors between a smaller geographic region (such as a county or state) and a larger geographical benchmark (such as a state or nation). The location quotient (LQ) is calculated by comparing the number of employees in a certain occupation or industry in one region to the number of employees in the same occupation or industry in a larger surrounding area. This creates two percentages and shows us the concentration of employees in both areas.

The LQ can be calculated using the following formula:

$$\text{LQ} = \frac{\text{County's [Industry/Occupation] Employment}}{\text{County's Total Employment}} \div \frac{\text{State's [Industry/Occupation] Employment}}{\text{State's Total Employment}}$$

LQ, as presented in this study, is focused more on occupations of workers than on types of industry. LQ demonstrates the skill strengths of the studied county's currently employed workers, but it does not reflect the skills of the residents of that county. It does, however, reflect the occupations that dominate the workers employed in that county. The LQ is an important basis of comparison that employers look at when evaluating whether an area might be able to provide the workforce necessary for the employer to locate or expand.

An LQ of 1 would indicate that the region's employment concentration is equal to the surrounding area's concentration and appropriate for the region's population. An LQ of over 1 indicates the subject region's reliance on that occupation and indicates that the subject region has more employees in that occupation than would be expected for the region. An LQ of less than 1 indicates that the region has fewer employees in that occupation than would be expected, and the region's employers do not rely on that occupation.

To illustrate: if 6% of Dane County's workforce is comprised of welders and only 3% of Wisconsin's workforce is comprised of welders, the LQ for welders in Dane County would be 2. ($6\%/3\% = 2$). This signifies that there is a larger concentration of welders in Dane County compared to Wisconsin as a whole. In other words, Dane County specializes in welding occupations and relies on that occupation.

In this report, the LQ method is used to compare both industry and occupation trends in Dane County, Jefferson County, Walworth County, Dodge County, and Rock County to the State of Wisconsin.

Methodology

Data collected through IMPLAN based on occupation data from the US Bureau of Labor Statistics (BLS) and US Census was analyzed for Dane County, Walworth County, Jefferson County, Dodge County, Rock County, and the State of Wisconsin.

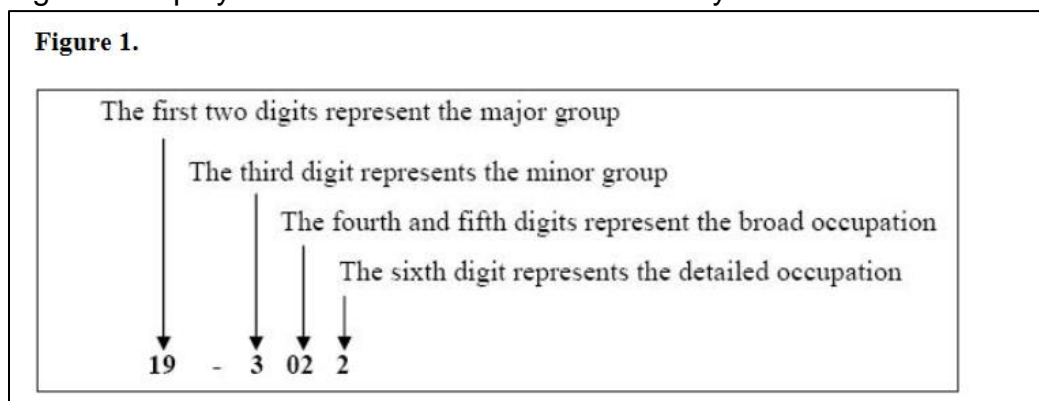
The Bureau of Labor Statistics (BLS) uses a four-step classification system to categorize occupations known as the Standard Occupational Classification system. In this report, the first two categories, the major and minor occupation groups, are analyzed for Dane, Walworth, Jefferson, Dodge, and Rock Counties. Metrics such as LQ, average wage, and total number of employees for each occupation group are presented.

The major occupation group in the Standard Occupational Classification system separates occupations in 23 categories. This classification provides a broad overview of the occupational structure in a geographical region. Major occupation groups include categories such as “Production Occupations,” “Sales and Related Occupations,” and “Management Occupations.”

The minor occupation group further divides the major occupation group into 98 categories providing a more detailed picture. For example, the major occupation group titled “Production Occupations” is further divided into the minor groups: “Supervisors of Production Workers,” “Assemblers and Fabricators,” “Food Processing Workers,” “Metal Workers and Plastic Workers,” “Printing Workers,” “Textile, Apparel, and Furnishings Workers,” “Woodworkers,” “Plant and System Operators,” and “Other Production Occupations.”

Occupation groups beyond the minor occupation group were not used in this report. The broad and detailed occupation levels stratify occupations into 449 and 821 groups respectively. Many of these groups have less than 50 workers and are not conducive to trend analysis or comparison between LQs and counties.

Figure 1 displays the classification method used by the BLS.



Part 1: Major Occupation Groups

By using LQ and average wage to compare occupation opportunities in Dane, Walworth, Jefferson, Dodge, and Rock Counties, insights are gained into how employers are competing for workers in key occupations from a wage perspective.

Using the BLS occupation classifications, a broad view of employment is analyzed and then further broken down into industries and occupations of note.

Major Occupation Group: Occupations are categorized by the BLS into 23 major groups.

Number of People Employed: Number of people in each major group employed in each county.

Location Quotient: The proportion of people employed in each major group in the county compared to the proportion of people employed in each major group in the State of Wisconsin.

Average Wage of Workers in Major Group: The average wage of workers reflects the average wage earned in each major occupation group based on the county's employment.

I. Dane County Major Occupation Groups

The major group division provides an overview of each employment sector. The LQ, average wage, and total number of employees for each major group in Dane County are presented below in table 1.

A. Major Occupation Group LQ

Referencing table 1, the major groups in Dane County that have an LQ of 1.2 or greater include "Computer and Mathematical Occupations," and "Life, Physical, and Social Sciences Occupations," and "Healthcare Practitioners and Technical Occupations." Compared to the State of Wisconsin, these are the areas where Dane County has a much higher concentration of employment. In other words, these are the areas that Dane County's economy heavily relies upon. As seen in table 1, all of these high LQ occupation groups have an average wage of more than \$74,000, two of them with an average of over \$92,000.

Major occupations in Dane County with an LQ below 0.7 include "Farming, Fishing, and Forestry Occupations," "Transportation and Material Moving Occupations," and "Military Occupations." These are the occupations that are underrepresented in Dane County when compared to the State of Wisconsin. As seen in table 1, two of these low LQ occupation groups have an average salary of less than \$40,000.

The results reveal that within the County, high LQ occupation workers earn more than low LQ occupation workers, who collectively earn lower wages. This level of detail

provides insight into why Dane County residents work in the County and why employees export to Dane County from surrounding counties.

Table 1: Dane County Major Occupation Groups			
Major Occupation Group	Number of People Employed	Location Quotient	Average Wage of Workers in Major Group
Computer and Mathematical Occupations	18,878	1.59	\$111,667
Life, Physical, and Social Science Occupations	6,227	1.49	\$74,656
Healthcare Practitioners and Technical Occupations	24,616	1.24	\$92,344
Architecture and Engineering Occupations	8,016	1.23	\$94,530
Business and Financial Operations Occupations	25,754	1.23	\$85,511
Protective Service Occupations	8,856	1.19	\$45,964
Management Occupations	23,267	1.18	\$141,545
Legal Occupations	3,110	1.12	\$117,413
Office and Administrative Support Occupations	51,453	1.04	\$44,713
Educational Instruction and Library Occupations	19,695	1.04	\$45,740
Arts, Design, Entertainment, Sports, and Media Occupations	5,287	1.03	\$59,963
Community and Social Service Occupations	7,651	1.01	\$49,293
Building and Grounds Cleaning and Maintenance Occupations	11,616	1.01	\$25,965
Sales and Related Occupations	30,332	0.99	\$47,164
Healthcare Support Occupations	15,301	0.95	\$31,020
Installation, Maintenance, and Repair Occupations	13,364	0.91	\$56,733
Food Preparation and Serving Related Occupations	30,369	0.88	\$18,863
Personal Care and Service Occupations	8,244	0.84	\$21,766
Construction and Extraction Occupations	14,179	0.84	\$55,711
Production Occupations	18,008	0.82	\$46,735
Farming, Fishing, and Forestry Occupations	1,886	0.64	\$46,098
Transportation and Material Occupations	23,827	0.59	\$39,363
Military Occupations	1,639	0.33	\$30,612
Total Employed	371,575	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

B. Major Occupation Groups: Average Wage Based on LQ

One important characteristic of the employment opportunities in Dane County to consider is the average wage employees are earning. A person's wage plays an important role in determining the lifestyle they will have and their ability to afford necessities. Wages also play an important role in determining a person's ability to support a family and afford housing.

The major occupation groups suggest that in Dane County, overrepresented occupations pay higher wages on average than underrepresented occupations. In other words, Dane County has a high number of high paying jobs and a low number of low paying jobs compared to the State of Wisconsin.

In table 2, the third row (>1) includes all major groups from table 1 with an LQ greater than 1 and the fourth row represents all the major groups with an LQ less than 1.

Each of the following three tables narrows in further on occupations most and least represented in Dane County.

People who work in overrepresented occupations in Dane County on average earn more. There is a large gap of \$35,981 between the average wage in overrepresented occupations compared to underrepresented occupations.

Table 2: Dane County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1	\$16,068,953,643	214,426	\$74,939
<1	\$6,122,337,127	157,150	\$38,958

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

When the parameters are adjusted to include only occupations with an LQ greater than 1.1 or less than 0.9, there remains a difference in average wages. The gap between over and underrepresented occupations nearly doubles to \$64,753, still favoring overrepresented occupations.

Table 3: Dane County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.1	\$11,871,654,578	118,724	\$99,993
<0.9	\$3,458,911	98,152	\$35,240

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

If the parameters are adjusted to include only occupations with an LQ greater than 1.4 or less than 0.8, the average wages increase. The gap between the average wages remains about the same at \$63,183 when comparing the industries with the highest concentrations in Dane to those with the lowest, favoring overrepresented occupations.

Table 4: Dane County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.4	\$2,572,927,807	25,105	\$102,486
<0.8	\$1,075,034,134	27,352	\$39,303

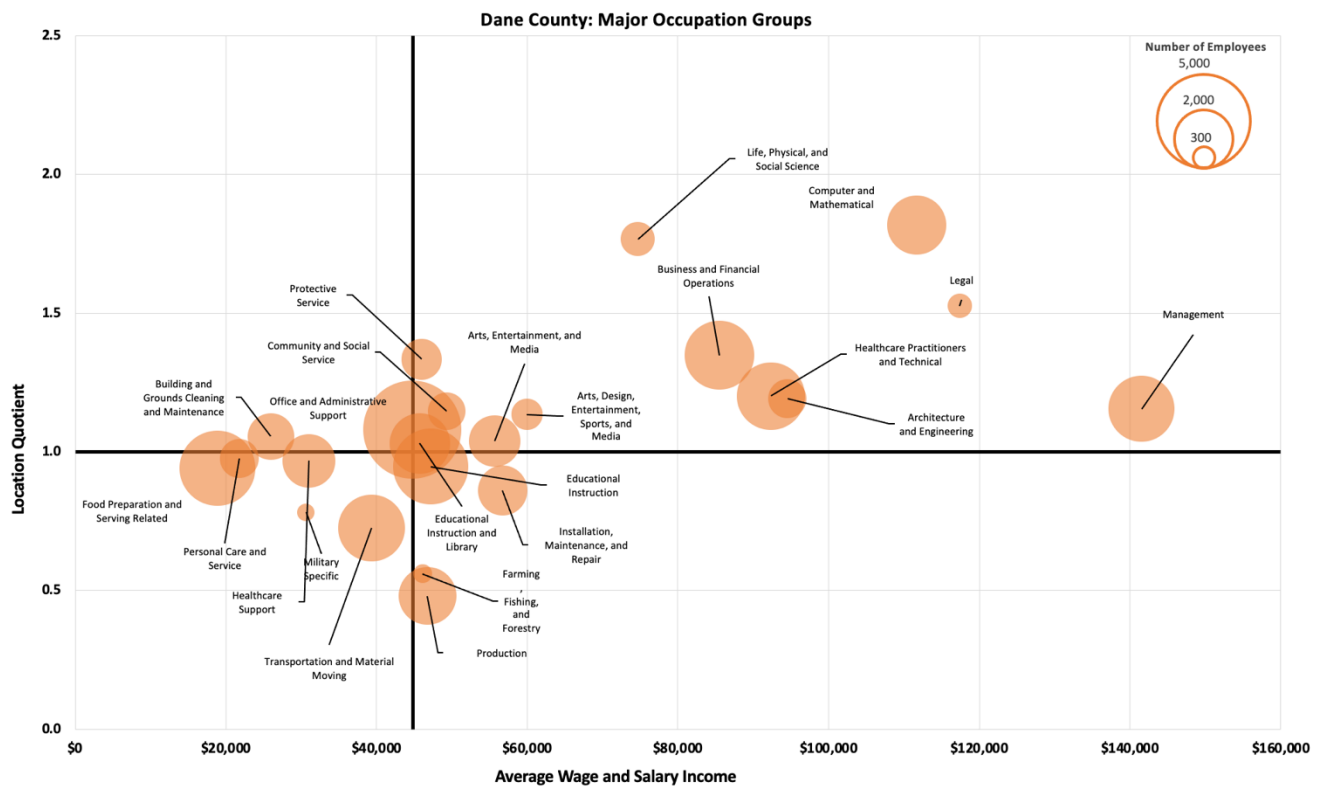
**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

The large difference in average wages in table 4 can be attributed to the fact that Dane County’s employers rely upon large numbers of high wage occupation workers. Stated another way, it can be said that the County’s employers are more reliant upon workers in higher wage occupations than on workers in lower wage occupations. The data bears this out. The average wage of workers in occupations with an LQ under 0.8 is pulled downwards by the 23,287 workers in “Transportation and Material Moving Occupations” making an average salary of \$39,363 (see Table 1), who represent nearly all workers in this LQ group (see Table 4).

The major occupation groups with LQ's over 1.2 are mostly computer and mathematical occupations and healthcare occupations, and the data suggests that these are two of Dane County's occupation specializations, along with life, physical, and social science. There are 18,878 computer and mathematical workers in the County with an average wage of \$111,667. Similarly, there are 24,616 healthcare practitioner and technical workers with an average wage of \$92,344. Specialized occupations have more employees and therefore more wages to make up the average, which is \$99,993 for occupations with an LQ of over 1.1 (see table 3).

Figure 2 displays occupation groups by LQ, average salary, and number of employees. If there is a large concentration of bubbles in the top right quarter, this means that the county mainly relies on high paying occupations. This typically indicates that residents in the county make enough money to afford higher housing costs.

Figure 2: Dane County: Major Occupation Groups



*Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.

II. Walworth County Major Occupation Groups

The major group division provides an overview of each employment sector. The LQ, average wage, and total number of employees for each major group in Walworth County are presented below in table 5.

A. Major Occupation Group LQ

Referencing table 5, the major groups in Walworth County that have an LQ of 1.4 or greater include “Community and Social Service Occupations,” “Production Occupations,” “Educational Instruction and Library Occupations,” and “Buildings, Grounds Maintenance, and Cleaning Occupations.” Compared to the State of Wisconsin, these are the areas where Walworth County has a much higher concentration of employment. In other words, these are the areas that Walworth County’s economy relies heavily upon. As seen in table 5, all of these high LQ occupation groups have an average wage of less than \$48,000.

Major occupations in Walworth County with an LQ below 0.6 include “Computer and Mathematical Occupations”, “Legal Occupations”, and “Military Occupations.” These are the occupations that are underrepresented in Walworth County when compared to the State of Wisconsin. As seen in table 5, two of these low LQ occupation groups have an average wage of over \$70,000.

The results reveal that within the County, high LQ occupation workers earn less than low LQ occupation workers, who collectively earn higher wages. This level of detail provides insights into why employed residents might leave Walworth County for work.

Table 5: Walworth County Major Occupation Groups

Major Occupation Group	Number of People Employed	Location Quotient	Average Wage of Workers in Major Group
Community and Social Service Occupations	1,184	1.82	\$42,311
Educational Instruction and Library Occupations	4,270	1.67	\$47,459
Production Occupations	5,680	1.66	\$41,735
Building and Grounds Cleaning and Maintenance Occupations	2,116	1.43	\$25,639
Protective Service Occupations	1,105	1.27	\$38,027
Personal Care and Service Occupations	1,385	1.21	\$19,180
Food Preparation and Serving Related Occupations	5,475	1.20	\$17,734
Arts, Design, Entertainment, Sports, and Media Occupations	696	0.99	\$44,470
Installation, Maintenance, and Repair Occupations	2,158	0.94	\$47,457
Life, Physical, and Social Science Occupations	510	0.93	\$50,731
Management Occupations	2510	0.90	\$101,989
Office and Administrative Support Occupations	5,763	0.87	\$34,807
Sales and Related Occupations	4,089	0.84	\$35,771
Architecture and Engineering Occupations	861	0.82	\$75,137
Farming, Fishing, and Forestry Occupations	414	0.80	\$34,665
Construction and Extraction Occupations	1,634	0.72	\$43,993
Healthcare Support Occupations	1,556	0.66	\$22,981
Healthcare Practitioners and Technical Occupations	1,405	0.63	\$70,829
Transportation and Material Moving Occupations	3,868	0.60	\$34,956
Business and Financial Operations Occupations	559	0.60	\$64,374
Computer and Mathematical Occupations	893	0.55	\$70,787
Legal Occupations	176	0.47	\$82,740
Military Occupations	285	0.43	\$25,408
Total Employed	48,559	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

B. Major Occupation Group LQ: Average Wage Based on LQ

One important characteristic of the employment opportunities in Walworth County to consider is the average wage employees are earning. A person's wage plays an important role in determining the lifestyle they will have and their ability to afford necessities. Wages also play an important role in determining a person's ability to support a family and afford housing.

The major occupation groups suggest that in Walworth County, overrepresented occupations pay lower wages on average than underrepresented occupations. In other words, Walworth County has a high number of low paying jobs and a low number of high paying jobs compared to the State of Wisconsin.

In table 6, the third row (>1) includes all major groups from table 5 with an LQ greater than 1 and the fourth row represents all the major groups with an LQ less than 1.

Each of the following three tables narrows in further on occupations most and least represented in Walworth County.

People who work in underrepresented occupations in Walworth County on average earn more. There is a gap of \$14,197 between the average wage in overrepresented occupations compared to underrepresented occupations.

Table 6: Walworth County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1	\$709,660,596	21,213	\$33,453
<1	\$1,304,924,667	27,385	\$47,650

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

When the parameters are adjusted to include only occupations with an LQ greater than 1.1 or less than 0.9, there remains a similar difference in average wages. The gap between over and underrepresented occupations is reduced to \$7,905, still favoring underrepresented occupations.

Table 7: Walworth County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.1	\$709,660,596	21,213	\$33,453
<0.9	\$889,620,002	21,510	\$41,358

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

If the parameters are adjusted to include only occupations with an LQ greater than 1.4 or less than 0.65, the average wages increase. The gap between the average wages increases to \$8,448 when comparing the industries with the highest concentrations in Walworth to those with the lowest, favoring underrepresented occupations.

Table 8: Walworth County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.4	\$544,091,744	13,250	\$41,060
<0.65	\$463,639,503	10,381	\$49,508

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

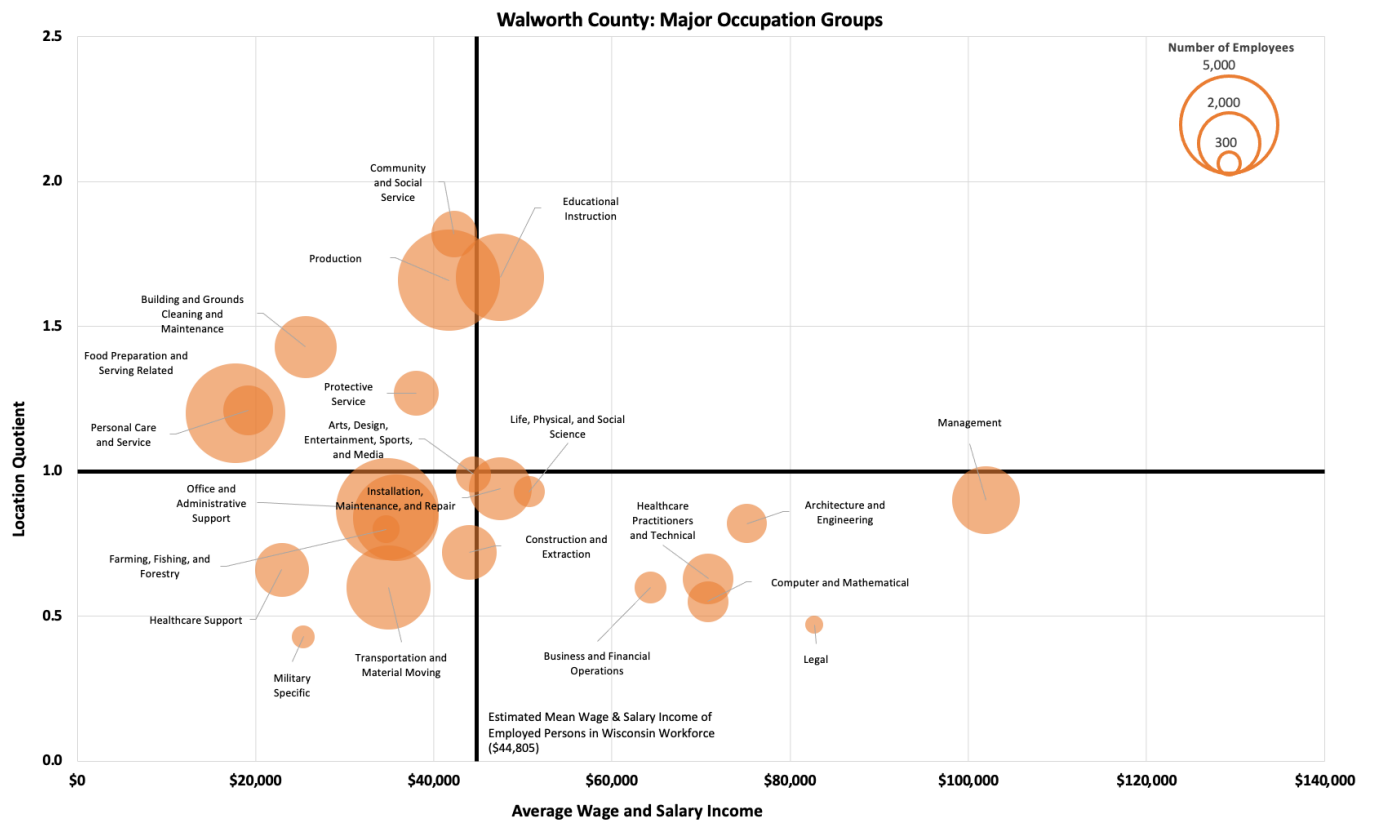
The large difference in average wages in table 8 can be attributed to the fact that Walworth County’s employers do not rely upon large numbers of high wage occupation workers. Stated another way, it can be said that the County’s employers are more reliant upon workers in lower wage occupations than on workers in higher wage occupations. The data bears this out. Walworth County has a low LQ and a small number of workers in higher wage occupations.

The major occupation groups with LQ’s over 1.2 are mostly production occupations, and the data suggests that production is one of Walworth County’s occupation specializations, along with educational instruction. There are 5,680 production workers

in the County with an average wage of \$41,735. Similarly, there are 4,270 educational instruction workers with an average wage of \$47,459. Specialized occupations have more employees and therefore more wages to make up the average, which is \$41,060 for occupations with an LQ of over 1.4 (see Table 8).

Figure 3 displays occupation groups by LQ, average salary, and number of employees. If there is a large concentration of bubbles in the top left quarter, this means that the county mainly relies on low paying occupations. Similarly, a large concentration in the bottom right quarter indicates that the county has a low amount of high paying occupations. Based on figure 2, Walworth County’s economy mainly consists of low paying occupations. This typically indicates that residents in the county cannot afford higher housing costs.

Figure 3: Walworth County: Major Occupation Groups



*Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.

III. Jefferson County Major Occupation Groups

The major group division provides an overview of each employment sector. The LQ, average wage, and total number of employees for each major group in Jefferson County are presented below in table 9.

A. Major Occupation Group LQ

Referencing table 9, the major groups in Jefferson County that have an LQ of 1.2 or greater include “Farming, Fishing, and Forestry Occupations”, “Production Occupations”, “Architecture and Engineering Occupations”, and “Transportation and Material Moving Occupations”. Compared to the State of Wisconsin, these are the areas where Jefferson County has a much higher concentration of employment. In other words, these are the areas that Jefferson County’s economy relies heavily upon. As seen in table 9, three of these high LQ occupation groups have an average wage of less than \$47,000.

Major occupations in Jefferson County with an LQ below 0.7 include “Computer and Mathematical”, “Legal”, and “Healthcare Practitioners”. These are the occupations that are underrepresented in Jefferson County when compared to the State of Wisconsin. As seen in table 9, these low LQ occupation groups all have an average wage of over \$70,000.

The results reveal that within the County, high LQ occupation workers earn less than low LQ occupation workers, who collectively earn higher wages. This level of detail provides insights into why employed residents might leave Jefferson County for work.

Table 9: Jefferson County Major Occupation Groups

Major Occupation Group	Number of People Employed	Location Quotient	Average Wage of Workers in Major Group
Farming, Fishing, and Forestry	576	1.82	\$38,593
Production	5,896	1.67	\$46,680
Architecture and Engineering	807	1.27	\$83,932
Transportation and Material Moving	3,727	1.20	\$35,289
Military Specific	233	1.18	\$25,408
Installation, Maintenance, and Repair	1,579	1.08	\$51,729
Sales and Related	3,182	1.05	\$33,066
Construction and Extraction	1,345	1.05	\$45,142
Building and Grounds Cleaning and Maintenance	1,039	1.00	\$27,772
Personal Care and Service	740	0.93	\$18,177
Food Preparation and Serving Related	2,789	0.92	\$14,820
Management	1,742	0.92	\$114,936
Arts, Design, Entertainment, Sports, and Media	388	0.88	\$38,619
Healthcare Support	1,273	0.85	\$23,235
Protective Service	534	0.85	\$39,876
Office and Administrative Support	3,834	0.85	\$36,893
Educational Instruction and Library	1,474	0.82	\$48,263
Life, Physical, and Social Science	272	0.82	\$68,642
Business and Financial Operations	1,418	0.79	\$65,678
Community and Social Service	476	0.76	\$39,812
Computer and Mathematical	650	0.66	\$72,403
Legal	95	0.50	\$81,689
Healthcare Practitioners and Technical	950	0.49	\$75,668
Total Employed	35,018	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

B. Major Occupation Group LQ: Average Wage Based on LQ

One important characteristic of the employment opportunities in Jefferson County to consider is the average wage employees are earning. A person’s wage plays an

important role in determining the lifestyle they will have and their ability to afford necessities. Wages also play an important role in determining a person’s ability to support a family and afford housing.

The major occupation groups suggest that in Jefferson County, overrepresented occupations pay lower wages on average than underrepresented occupations. In other words, Jefferson County has a high number of low paying jobs and a low number of high paying jobs compared to the State of Wisconsin.

In table 10, the third row (>1) includes all major groups from table 9 with an LQ greater than 1 and the fourth row represents all the major groups with an LQ less than 1.

Each of the following three tables narrows in further on occupations most and least represented in Jefferson County.

People who work in underrepresented occupations in Jefferson County on average earn more. There is a gap of \$4,288 between the average wage in overrepresented occupations compared to underrepresented occupations.

Table 10: Jefferson County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1	\$750,263,083	17,345	\$43,255
<1	\$790,840,026	16,634	\$47,543

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

When the parameters are adjusted to include only occupations with an LQ greater than 1.1 or less than 0.9, there remains a similar difference in average wages. The gap between over and underrepresented occupations is reduced to \$2,433, still favoring underrepresented occupations.

Table 11: Jefferson County Major Occupation Groups

Location Quotient	Total Wages	Total Workers	Average Wage
>1.1	\$502,643,503	11,239	\$44,723
<0.9	\$535,889,763	11,364	\$47,156

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

If the parameters are adjusted to include only occupations with an LQ greater than 1.2 or less than 0.8, the average wages increase. The gap between the average wages widens considerably to \$16,360 when comparing the industries with the highest concentrations in Jefferson to those with the lowest.

Table 12: Jefferson County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.2	\$365,215,832	7,279	\$50,171
<0.8	\$238,792,491	3,589	\$66,531

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

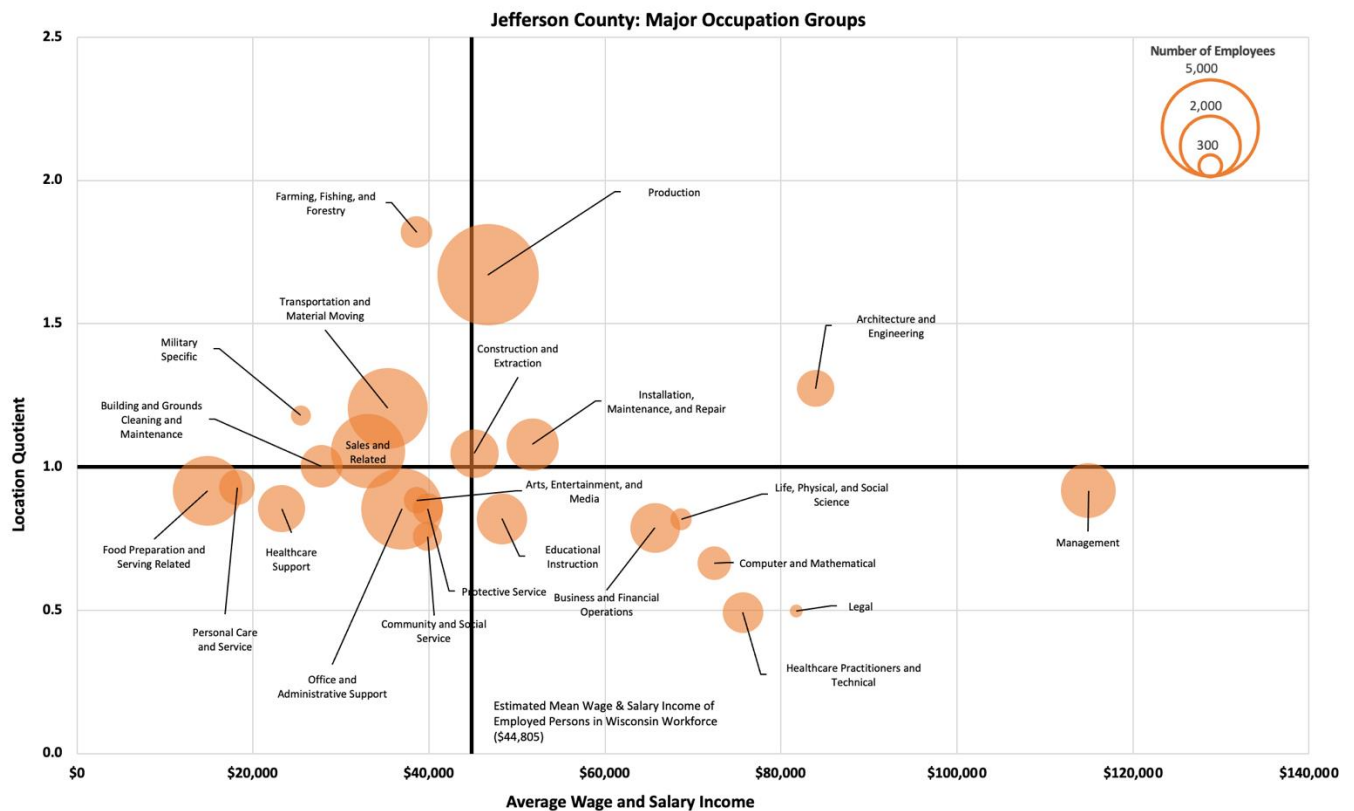
The large difference in average wages in table 12 can be attributed to the fact that Jefferson County’s employers do not rely upon large numbers of high wage occupation workers. Stated another way, it can be said that the County’s employers are much more reliant upon workers in lower wage occupations than on workers in higher wage occupations. The data bears this out. Jefferson County has a low LQ, and a small number of workers, in higher wage occupations. Because there are fewer employees in these occupations, the average is affected by those making higher wages.

The major occupation groups with LQ’s over 1.2 are mostly production occupations, and the data suggests that production is one of Jefferson County’s occupation specializations. While there are 5,896 production workers in the County with an average wage of \$46,680, the average wage for occupations with an LQ greater than 1.2 is

pulled upward by the 807 employees “Architecture and Engineering Occupations” group, which has an average wage of \$83,932. Specialized occupations will have more employees and therefore more wages to make up the average. This can be seen visually in figure 4.

Figure 4 displays occupation groups by LQ, average salary, and number of employees. If there is a large concentration of bubbles in the top left quarter, this means that the county mainly relies on low paying occupations. Similarly, a large concentration in the bottom right quarter indicates that the county has a low amount of high paying occupations. Based on figure 4, Jefferson County’s economy mainly consists of low paying occupations. This typically indicates that residents in the county cannot afford higher housing costs.

Figure 4: Jefferson County: Major Occupation Groups



*Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.

IV. Dodge County Major Occupation Groups

The major group division provides an overview of each employment sector. The LQ, average wage, and total number of employees for each major group in Dodge County are presented below in table 13.

A. Major Occupation Group LQ

Referencing table 13, the major groups in Dodge County that have an LQ of 1.2 or greater include “Farming, Fishing, and Forestry Occupations”, “Production Occupations”, “Construction and Extraction Occupations”, and “Transportation and Material Moving Occupations”. Compared to the State of Wisconsin, these are the areas where Dodge County has a much higher concentration of employment. In other words, these are the areas that Dodge County economy relies heavily upon. As seen in table 13, three of these occupations have an average wage of less than \$47,000, the fourth making \$56,193.

Major occupations in Dodge County with an LQ below 0.7 include “Community and Social Service”, “Computer and Mathematical”, “Legal”, “Arts, Design, Entertainment, Sports, and Media”, and “Personal Care and Service”. These are the occupations that are underrepresented in Dodge County compared to the State of Wisconsin. As seen in table 13, two of these occupations make over \$85,000. However, the other three make under \$47,000, similar to the high LQ occupations.

These details indicate that major occupations with a high LQ make lower wages in comparison to occupations with a low LQ that make higher wages; however, all high LQ and low LQ occupation groups in Dodge County make lower average wages than in surrounding counties. This level of detail provides insights into why employed residents might leave Dodge County for work.

Table 13: Dodge County Major Occupation Groups

Major Occupation Group	Number of People Employed	Location Quotient	Average Wage of Workers in Major Group
Farming, Fishing, and Forestry	894	2.73	\$33,648
Production	6,052	1.66	\$46,077
Construction and Extraction	1,715	1.29	\$56,193
Transportation and Material Moving	3,828	1.20	\$39,529
Military Specific	232	1.14	\$25,338
Installation, Maintenance, and Repair	1,696	1.12	\$53,949
Architecture and Engineering	719	1.10	\$86,327
Management	1,874	0.95	\$124,768
Protective Service	616	0.95	\$39,830
Healthcare Practitioners and Technical	1,891	0.95	\$68,924
Life, Physical, and Social Science	319	0.93	\$66,602
Healthcare Support	1,417	0.92	\$23,711
Sales and Related	2,711	0.87	\$36,535
Office and Administrative Support	4,031	0.87	\$39,548
Educational Instruction and Library	1,503	0.81	\$53,246
Business and Financial Operations	1,501	0.81	\$73,585
Food Preparation and Serving Related	2,434	0.77	\$15,590
Building and Grounds Cleaning and Maintenance	818	0.76	\$24,081
Community and Social Service	454	0.70	\$40,109
Legal	136	0.68	\$85,107
Personal Care and Service	537	0.65	\$18,336
Arts, Design, Entertainment, Sports, and Media	278	0.61	\$46,067
Computer and Mathematical	579	0.57	\$87,899
Total Employed	36,235	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

B. Major Occupation Group LQ: Average Wage Based on LQ

One important characteristic of the employment opportunities in Dodge County to consider is the average wage employees are earning. A person's wage plays an important role in determining the lifestyle they will have and their ability to afford necessities. Wages also play an important role in determining a person's ability to support a family and afford housing.

The major occupation groups suggest that in Dodge County, overrepresented occupations pay lower wages on average than underrepresented occupations. In other words, Dodge County has a high number of low paying jobs and a low number of high paying jobs compared to the state of Wisconsin.

In table 14, the third row (>1) includes all major groups from table 13 with an LQ greater than 1 and the fourth column represents all the major groups with an LQ less than 1.

Each of the following three tables narrows in further on occupations most and least represented in Dodge County.

People who work in underrepresented occupations in Dodge County on average earn more. There is a gap of \$2,618 between the average wage in overrepresented occupations compared to underrepresented occupations.

Table 14: Dodge County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1	\$716,080,937	15,136	\$47,309
<1	\$1,053,383,122	21,098	\$49,927

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

When the parameters are adjusted to include only occupations with a LQ greater than 1.1 or less than 0.9, the difference flips, and workers in occupations with an LQ of over 1.1 make more. There is a difference of \$4,655 between the average wage comparison in overrepresented occupations compared to underrepresented occupations, now favoring overrepresented.

Table 15: Dodge County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.1	\$654,034,830	14,417	\$45,364
<0.9	\$609,885,603	14,981	\$40,709

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

If the parameters are adjusted to include only occupations with a LQ greater than 1.2 or less than 0.8, the average wages for high LQ occupations increase. The gap between the average wages widens considerably to \$16,360 when comparing the industries with the highest concentrations in Dodge to those with the lowest.

Table 16: Dodge County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.2	\$405,346,602	8,662	\$46,798
<0.8	\$160,953,472	5,236	\$30,740

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

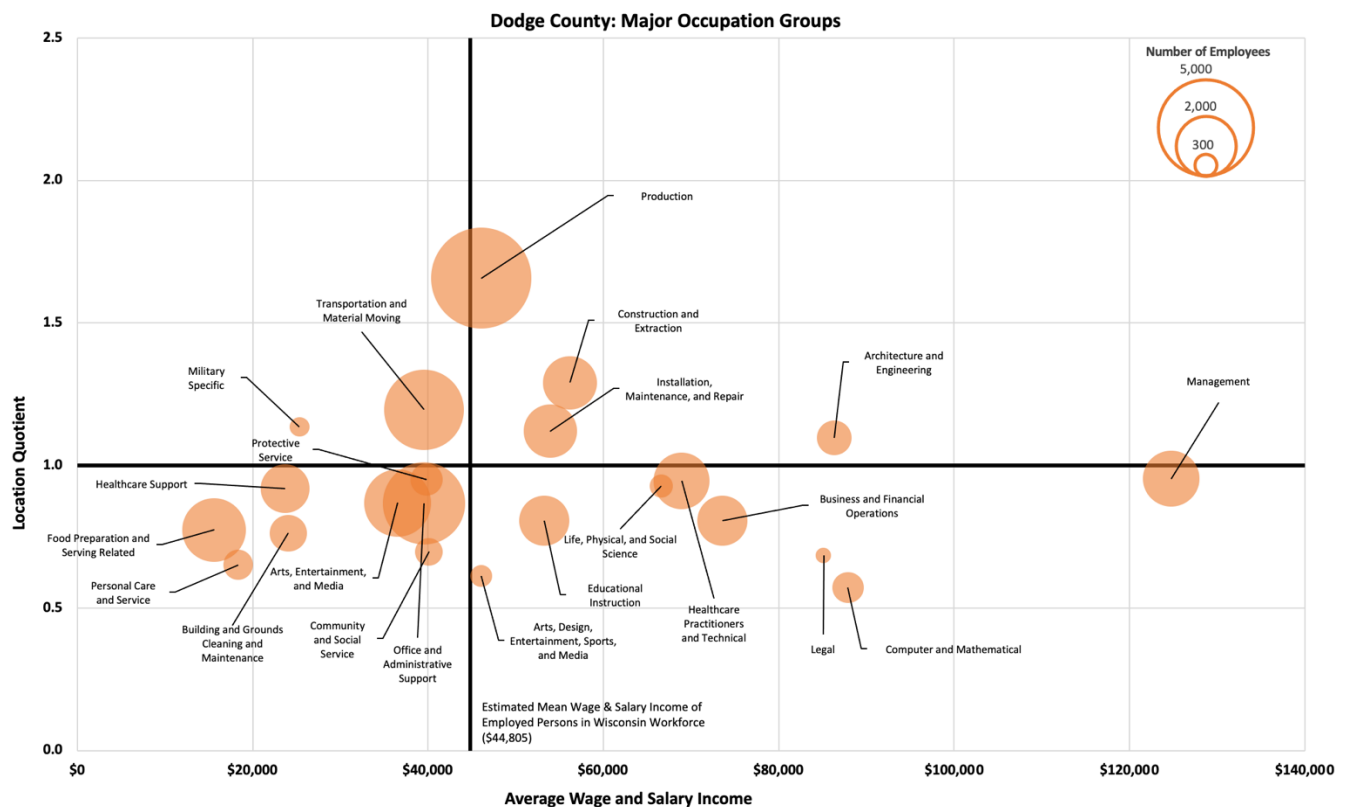
Despite high LQ jobs having higher wages, meaning that more employees are making higher wages, the average wage for these occupations is lower than in surrounding counties such as Waukesha or Dane Counties. The large difference in average wages in table 16 can be attributed to the fact that Dodge County’s employers do not rely upon large numbers of high wage occupation workers. Stated another way, it can be said that the County’s employers are much more reliant upon workers in lower wage occupations than on workers in higher wage occupations. The data bears this out. Dodge County has a low LQ and a small number of workers in higher wage occupations, with both high LQ and low LQ occupations in the County making low average wages.

Since there are less employees, the average wage is pulled downwards by small groups of employees working in less specialized occupations. The average wage for major occupation groups with an LQ of under 0.8 is pulled downwards by 537 employees in the “Personal Care and Service” group making \$18,336.

Since there are less employees, the average wage in low LQ occupations is pulled downwards by small groups of employees making lower wages in less specialized occupations.

Figure 5 displays occupation groups by LQ, average salary, and number of employees. If there is a large concentration of bubbles in the top left quarter, this means that the county mainly relies on low paying occupations. Similarly, a large concentration in the bottom right quarter indicates that the county has a low amount of high paying occupations. Based on figure 5, Dodge County’s economy mainly consists of low paying occupations, particularly production occupations. This typically indicates that residents in the county cannot afford higher housing costs.

Figure 5: Dodge County: Major Occupation Groups



*Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.

V. Rock County Major Occupation Groups

The major group division provides an overview of each employment sector. The LQ, average wage, and total number of employees for each major group in Dodge County are presented below in table 17.

A. Major Occupation Group LQ

Referencing table 17, the major groups in Rock County that have an LQ of 1.2 or greater include “Community and Social Service Occupations” and “Production Occupations.” Compared to the State of Wisconsin, these are the areas where Rock County has a much higher concentration of employment. In other words, these are the areas that Rock County’s economy heavily relies upon. As seen in table 17, all of these high LQ occupation groups have an average wage of less than \$54,000.

Major occupations in Rock County with an LQ below 0.7 include “Farming, Fishing, and Forestry Occupations,” “Computer and Mathematical Occupations”, “Legal Occupations”, and “Military Occupations.” These are the occupations that are underrepresented in Rock County when compared to the State of Wisconsin. As seen in table 17, two of these low LQ occupation groups have an average salary of over \$86,000.

The results reveal that within the County, high LQ occupation workers earn less than low LQ occupation workers, who collectively earn higher wages. This level of detail provides insights into why employed residents might leave Rock County for work.

Table 17: Rock County Major Occupation Groups

Major Occupation Group	Number of People Employed	Location Quotient	Average Wage of Workers in Major Group
Production Occupations	7,357	1.49	\$46,136
Community and Social Service Occupations	1,261	1.39	\$53,412
Installation, Maintenance, and Repair Occupations	3,393	1.06	\$53,140
Sales and Related Occupations	6,933	1.04	\$37,031
Food Preparation and Serving Related Occupations	7,113	1.02	\$16,597
Healthcare Practitioners and Technical Occupations	4,635	0.98	\$89,467
Office and Administration Support Occupations	8,998	0.97	\$41,301
Management Occupations	3,806	0.96	\$129,884
Educational Instruction and Library Occupations	3,913	0.91	\$50,760
Healthcare Support Occupations	2,727	0.90	\$28,165
Transportation and Material Moving Occupations	7,589	0.89	\$39,770
Building and Grounds Cleaning and Maintenance Occupations	2,089	0.88	\$26,026
Arts, Design, Entertainment, Sports, and Media Occupations	876	0.84	\$52,674
Protective Service Occupations	1,069	0.81	\$46,773
Construction and Extraction Occupations	2,881	0.80	\$54,984
Personal Care and Service Occupations	1,538	0.78	\$18,770
Business and Financial Operations Occupations	3,088	0.75	\$80,214
Life, Physical, and Social Science Occupations	531	0.71	\$73,316
Architecture and Engineering Occupations	1,089	0.70	\$95,396
Farming, Fishing, and Forestry Occupations	510	0.69	\$37,339
Computer and Mathematical Occupations	1,665	0.68	\$86,138
Military Occupations	456	0.46	\$25,351
Legal Occupations	250	0.45	\$97,133
Total Employed	73,767	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

B. Major Occupation Group LQ: Average Wage Based on LQ

One important characteristic of the employment opportunities in Rock County to consider is the average wage employees are earning. A person's wage plays an important role in determining the lifestyle they will have and their ability to afford necessities. Wages also play an important role in determining a person's ability to support a family and afford housing.

The major occupation groups suggest that in Rock County, overrepresented occupations pay lower wages on average than underrepresented occupations. In other words, Rock County has a high number of low paying jobs and a low number of high paying jobs compared to the State of Wisconsin.

In table 18, the third row (>1) includes all major groups from table 17 with an LQ greater than 1 and the fourth row represents all the major groups with an LQ less than 1.

Each of the following three tables narrows in further on occupations most and least represented in Rock County.

People who work in underrepresented occupations in Rock County on average earn more. There is a large gap of \$24,910 between the average wage in overrepresented occupations compared to underrepresented occupations.

Table 18: Rock County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1	\$961,999,338	21,213	\$33,453
<1	\$2,784,941,455	47,716	\$58,363

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

When the parameters are adjusted to include only occupations with an LQ greater than 1.1 or less than 0.9, there remains a similar difference in average wages. The gap between over and underrepresented occupations is reduced to \$4,785, still favoring underrepresented occupations.

Table 19: Rock County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.1	\$406,846,799	8,619	\$47,201
<0.9	\$1,228,731,198	23,635	\$51,986

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

If the parameters are adjusted to include only occupations with an LQ greater than 1.4 or less than 0.8, the average wages increase. The gap between the average wages increases to \$21,544 when comparing the industries with the highest concentrations in Rock to those with the lowest, favoring underrepresented occupations.

Table 20: Rock County Major Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.4	\$339,444,443	7,357	\$46,136
<0.8	\$617,899,039	9,129	\$67,680

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

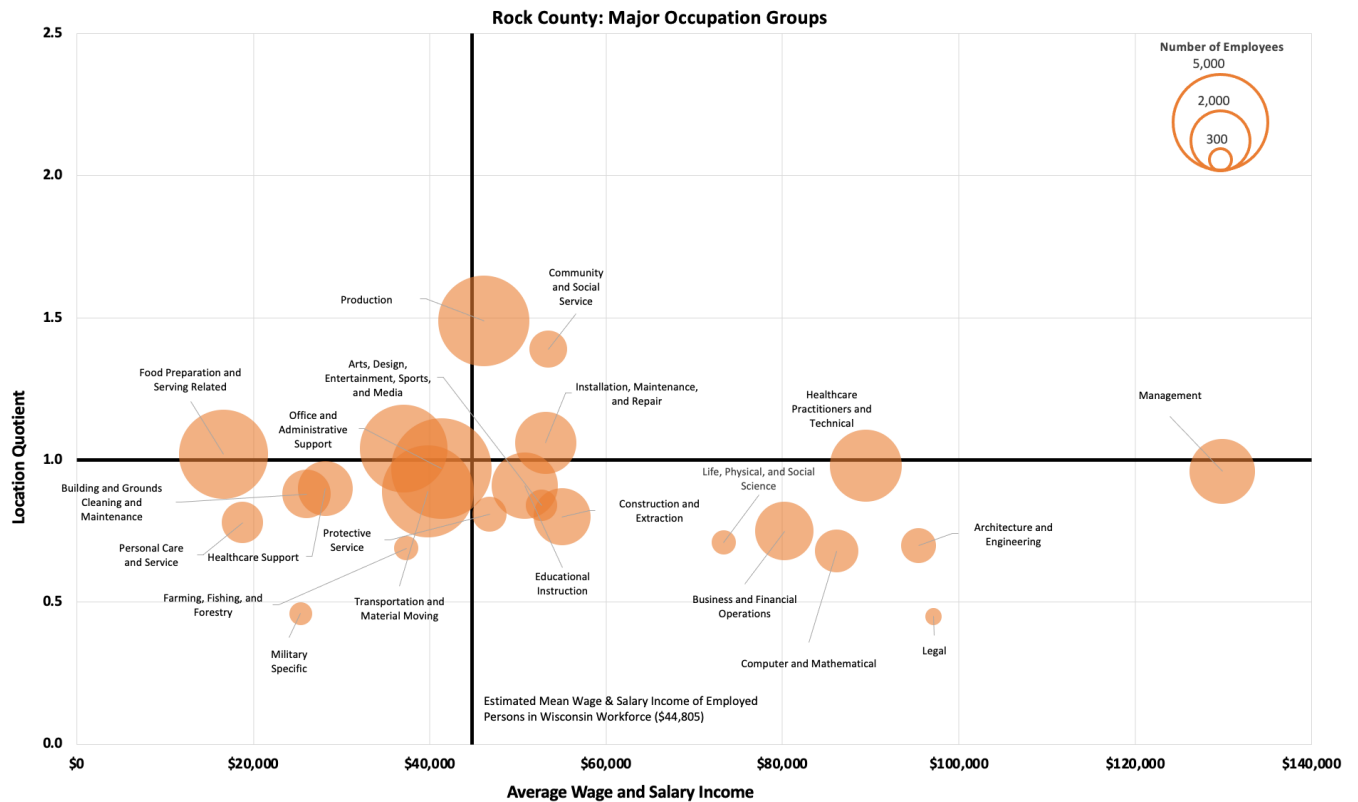
The large difference in average wages in table 20 can be attributed to the fact that Rock County’s employers do not rely upon large numbers of high wage occupation workers. Stated another way, it can be said that the County’s employers are more reliant upon workers in lower wage occupations than on workers in higher wage occupations. The data bears this out. Rock County has a low LQ and a small number of workers in higher wage occupations.

The major occupation groups with LQ’s over 1.2 are mostly production occupations, and the data suggests that production is one of Rock County’s occupation specializations,

along with community and social service. There are 7,357 production workers in the County with an average wage of \$46,136. Similarly, there are 1,261 educational instruction workers with an average wage of \$53,412. Specialized occupations have more employees and therefore more wages to make up the average, which is \$47,201 for occupations with an LQ of over 1.1 (see table 19).

Figure 6 displays occupation groups by LQ, average salary, and number of employees. If there is a large concentration of bubbles in the top left quarter, this means that the county mainly relies on low paying occupations. Similarly, a large concentration in the bottom right quarter indicates that the county has a low amount of high paying occupations. Based on figure 6, Rock County's economy mainly consists of low paying occupations, particularly production occupations. This typically indicates that residents in the county cannot afford higher housing costs.

Figure 6: Rock County: Major Occupation Groups



*Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.

Part 2: Minor Occupation Groups

I. Dane County Minor Occupation Groups

Minor occupation groups in Dane County with high LQs tend to have higher average wages compared to minor occupation groups with low LQs. This is consistent with the average wage trends seen on a major occupation group level.

A. Minor Occupation Group LQ

As seen in table 21 below, minor occupation groups within the life, physical, and social science and computer and mathematical major occupation groups are the ones with the highest LQ's and highest wages. This includes "Life Scientists," "Computer Occupations," "Physical Scientists." These minor occupation groups all have an LQ of over 1.6 and an average income of more than \$86,000.

Table 21: Dane - 10 Highest LQ Minor Occupation Groups			
Minor Occupation Group	Wage and Salary Employment	Location Quotient	Average Wage & Salary Income
Law Enforcement Workers	4,442	1.79	\$50,928
Life Scientists	2,056	1.73	\$88,889
Computer Occupations	18,089	1.63	\$111,816
Physical Scientists	1,183	1.62	\$86,306
Life, Physical, and Social Science Teachers	1,805	1.55	\$47,998
Mathematical Science Occupations	789	1.55	\$108,136
Postsecondary Teachers	4,716	1.46	\$46,639
Printing Workers	843	1.43	\$43,033
Social Science and Related Workers	862	1.37	\$80,320
Other Healthcare Practitioners and Technical Occupations	206	1.35	\$60,380
Total Employed	34,996	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

The table below shows minor occupation groups with the lowest LQs. These are the occupations that are underrepresented in Dane County compared to the State of Wisconsin. When adjusted to groups with more than 300 employees, we can see that the “Plant and System Operators” group has a low LQ and low average income. This suggest that jobs with lower wages are underrepresented in Dane County.

Table 22: Dane - 10 Lowest LQ Minor Occupation Groups

Minor Occupation Group	Wage and Salary Employment	Location Quotient	Average Wage & Salary Income
Food Processing Workers	1,309	0.62	\$69,373
Plant and System Operators	333	0.61	\$42,507
Woodworkers	24	0.57	\$30,861
Fishing and Hunting Workers	96	0.57	\$34,869
Funeral Service Workers	57	0.53	\$62,905
Water Transportation Workers	96	0.48	\$30,606
Military – Known and Unknown	1,638	0.33	\$30,607
Extraction Workers	186	0.29	\$55,733
Air Transportation Workers	167	0.25	\$82,231
Rail Transportation Workers	51	0.24	\$67,885
Total Employed	1,361	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

B. Minor Occupation Group LQ: Average Wage Based on LQ

The minor occupation groups, consistent with the major occupation groups, suggest that in Dane County, overrepresented occupations pay higher wages on average than underrepresented occupations. In other words, Dane County has a high number of high paying jobs and a low number of low paying jobs compared to the State of Wisconsin.

In table 23, the first row includes all minor groups with an LQ greater than 1 and the second row represents all the minor groups with an LQ less than 1.

Each of the following three tables narrows in further on occupations most and least represented in Dane County.

People who work in overrepresented occupations in Dane County on average earn more. There is a gap of \$42,700 between the average wage in overrepresented occupations compared to underrepresented occupations.

Table 23: Dane County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1	\$16,161,149,023	205,186	\$78,763
<1	\$5,553,183,435	153,984	\$36,063

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

When the parameters are adjusted to include only occupations with an LQ greater than 1.2 or less than 0.8, the difference in average wages widens. The gap between over and underrepresented occupations expands to \$55,017, still favoring overrepresented occupations.

Table 24: Dane County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.2	\$7,891,837,041	88,031	\$89,648
<0.8	\$4,001,212,370	115,537	\$34,631

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

If the parameters are adjusted to include only occupations with an LQ greater than 1.5 or less than 0.5, the average wages increase. The gap between the average wages lowers slightly to \$50,470 when comparing the industries with the highest concentrations in Dane to those with the lowest.

Table 25: Dane County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.5	\$2,705,870,347	28,366	\$89,648
<0.5	\$83,872,443	2,140	\$39,178

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

The large difference in average wages in table 25 can be attributed to the fact that Dane County’s employers do not rely upon large numbers of low wage occupation workers. Stated another way, it can be said that the County’s employers are much more reliant upon workers in higher wage occupations than on workers in lower wage occupations. The data bears this out. Dane County has a low LQ and a small number of workers in lower wage occupations. Because there are fewer employees in these occupations, the average is affected by those making lower wages.

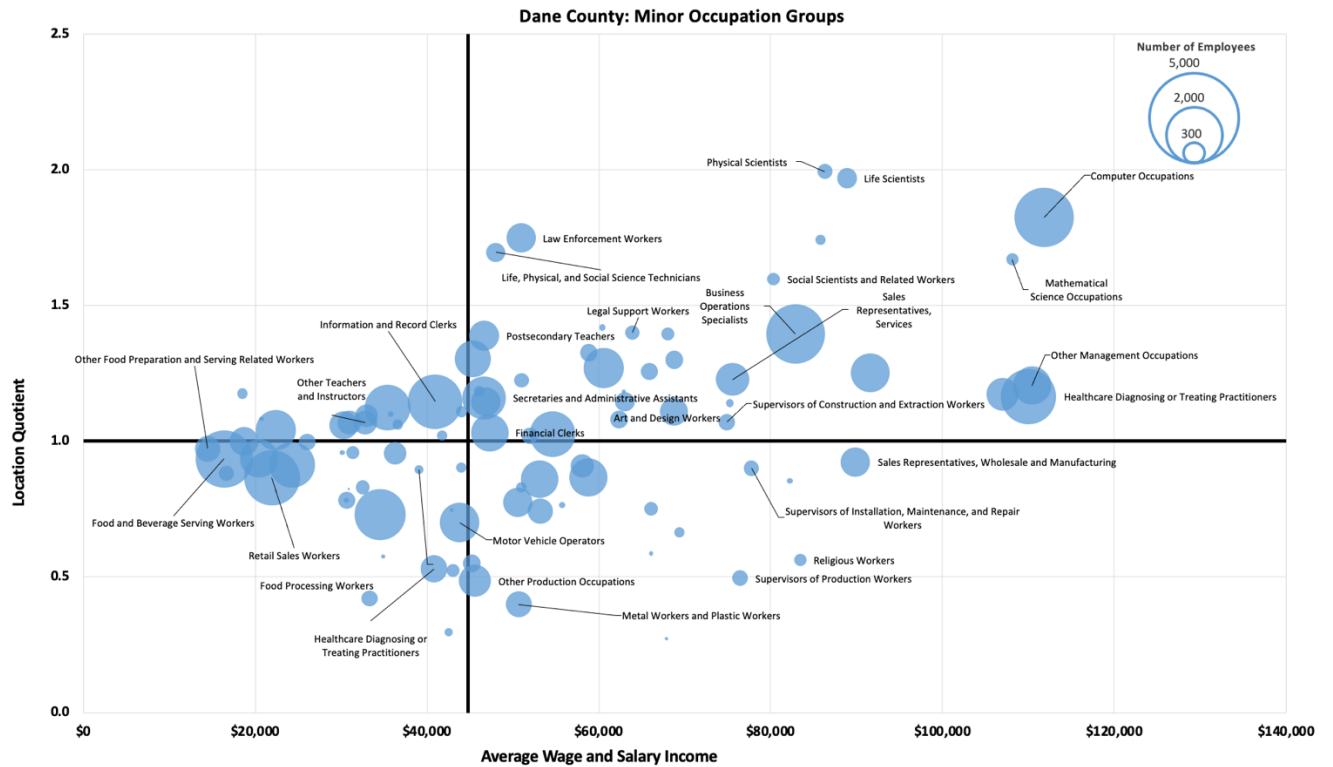
The minor occupation groups with LQ’s over 1.5 are mostly science occupations, and the data suggests that science is one of Dane County’s occupation specializations.

There are only 2,140 employees in Dane County working in minor occupation groups with an LQ of under 0.5, and these employees make an average wage of \$39,178 (Reference table 25). This average is pulled downwards by the 1,638 employees in the “Military – Unknown and Known” occupation with an average salary of \$30,607.

Since there are less employees, the average wage is pulled downwards by small groups of employees making lower wages in less specialized occupations.

Figure 7 displays minor occupation groups by LQ, average salary, and number of employees. If there is a large concentration of bubbles in the top right quarter, this means that the county mainly relies on high paying occupations. Similarly, a large concentration in the bottom left quarter indicates that the county has a low amount of low paying occupations. Based on figure 7, Dane County’s economy mainly consists of high paying occupations. This typically indicates that residents in the county can afford higher housing costs.

Figure 7: Dane County: Minor Occupation Groups



*Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.

II. Walworth County Minor Occupation Groups

Minor occupation groups in Walworth County with high LQs tend to have lower average wages compared to minor occupation groups with low LQs. This is consistent with the average wage trends seen on a major occupation group level.

A. Minor Occupation Group LQ

As seen in table 5 below, minor occupation groups within the production major occupation group are the ones with the highest LQ's and lowest wages. This includes "Religious Workers," "Metal Workers and Plastic Workers," "Postsecondary Teachers," and "Woodworkers." These minor occupation groups all have an LQ of over 2.0 but an average income of less than \$54,000.

Table 26: Walworth - 10 Highest LQ Minor Occupation Groups			
Minor Occupation Group	Wage and Salary Employment	Location Quotient	Average Wage & Salary Income
Religious Workers	500	3.11	\$46,982
Metal Workers and Plastic Workers	1,584	2.76	\$44,088
Postsecondary Teachers	1,131	2.6	\$53,818
Woodworkers	167	2.14	\$38,901
Entertainment Attendants and Related Workers	395	1.93	\$18,141
Supervisors of Production Workers	409	1.92	\$67,837
Other Production Occupations	1,694	1.92	\$39,685
Assemblers and Fabricators	1,057	1.86	\$37,386
Firefighting and Prevention Workers	154	1.78	\$38,534
Baggage Porters, Bellhops, and Concierges	40	1.7	\$28,340
Total Employed	7,134	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

The table below shows minor occupation groups with the lowest LQs. These are the occupations that are underrepresented in Walworth County compared to the State of Wisconsin. When adjusted to groups with more than 300 employees, we can see that the “Healthcare Diagnosing or Treating Practitioners” group has a low LQ but high average income. This suggest that jobs with higher wages are underrepresented in Walworth County.

Table 27: Walworth - 10 Lowest LQ Minor Occupation Groups			
Minor Occupation Group	Wage and Salary Employment	Location Quotient	Average Wage & Salary Income
Lawyers, Judges, and Related Workers	119	0.52	\$102,641
Architects, Surveyors, and Cartographers	25	0.44	\$55,081
Healthcare Diagnosing or Treating Practitioners	828	0.44	\$93,910
Military – Known and Unknown	285	0.43	\$25,410
Legal Support Workers	57	0.42	\$41,740
Forest, Conservation, and Logging Workers	5	0.36	\$41,231
Rail Transportation Workers	7	0.26	\$45,208
Extraction Workers	21	0.25	\$46,475
Water Transportation Workers	6	0.24	\$62,801
Air Transportation Workers	8	0.09	\$59,677
Total Employed	1,361	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

B. Minor Occupation Group LQ: Average Wage Based on LQ

The minor occupation groups, consistent with the major occupation groups, suggest that in Walworth County, overrepresented occupations pay lower wages on average than underrepresented occupations. In other words, Walworth County has a high number of low paying jobs and a low number of high paying jobs compared to the State of Wisconsin.

In table 7, the first row includes all minor groups with an LQ greater than 1 and the second row represents all the minor groups with an LQ less than 1.

Each of the following three tables narrows in further on occupations most and least represented in Walworth County.

People who work in underrepresented occupations in Walworth County on average earn more. There is a gap of \$8,977 between the average wage in overrepresented occupations compared to underrepresented occupations.

Table 28: Walworth County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1	\$946,950,902	25,239	\$37,518
<1	\$1,144,509,965	24,615	\$46,495

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

When the parameters are adjusted to include only occupations with an LQ greater than 1.2 or less than 0.8, the difference in average wages widens. The gap between over and underrepresented occupations expands to \$9,262, still favoring underrepresented occupations.

Table 29: Walworth County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.2	\$633,529,663	15,763	\$40,189
<0.8	\$481,557,137	9,737	\$49,451

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

If the parameters are adjusted to include only occupations with an LQ greater than 1.5 or less than 0.5, the average wages increase. The gap between the average wages widens considerably to \$31,956 when comparing the industries with the highest concentrations in Walworth to those with the lowest.

Table 30: Walworth County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.5	\$373,048,734	9,028	\$41,318
<0.5	\$91,306,539	1,246	\$73,274

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

The large difference in average wages in table 9 can be attributed to the fact that Walworth County’s employers do not rely upon large numbers of high wage occupation workers. Stated another way, it can be said that the County’s employers are much more reliant upon workers in lower wage occupations than on workers in higher wage occupations. The data bears this out. Walworth County has a low LQ and a small number of workers in higher wage occupations. Because there are fewer employees in these occupations, the average is affected by those making higher wages.

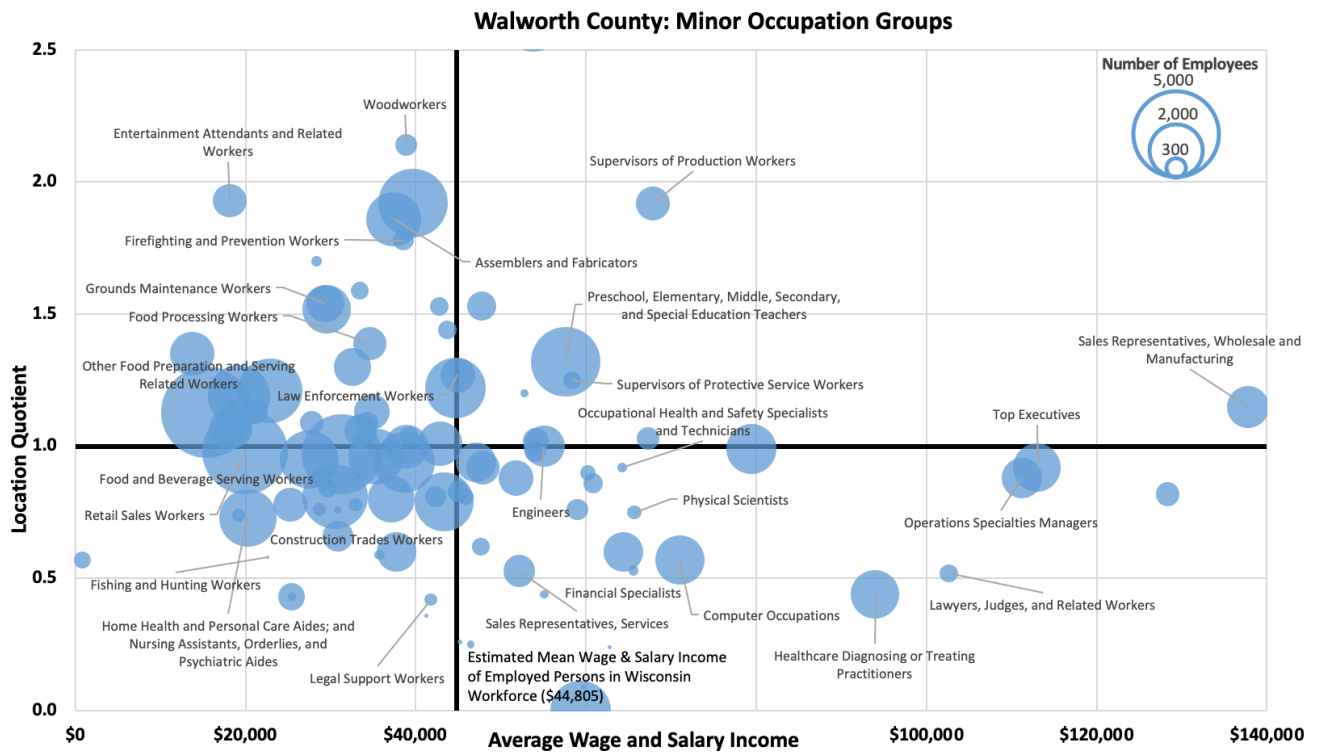
The minor occupation groups with LQ’s over 1.5 are mostly production occupations, and the data suggests that production is one of Walworth County’s occupation specializations.

There are only 1,246 employees in Walworth County working in minor occupation groups with an LQ of under 0.5, and these employees make an average wage of \$73,274 (Reference table 9). This average is pulled upwards by the 828 employees in the “Healthcare Diagnosing or Treating Practitioners” occupation with an average salary of \$93,910.

Since there are less employees, the average wage is pulled upwards by small groups of employees making higher wages in less specialized occupations.

Figure 8 displays occupation groups by LQ, average salary, and number of employees. If there is a large concentration of bubbles in the top left quarter, this means that the county mainly relies on low paying occupations. Similarly, a large concentration in the bottom right quarter indicates that the county has a low amount of high paying occupations. Based on figure 8, Walworth County’s economy mainly consists of low paying occupations. This typically indicates that residents in the county cannot afford higher housing costs.

Figure 8: Walworth County: Minor Occupation Groups



*Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.

III. Jefferson County Minor Occupation Groups

Minor occupation groups in Jefferson County with high LQs tend to have lower average wages compared to minor occupation groups with low LQs. This is consistent with the average wage trends seen on a major occupation group level.

A. Minor Occupation Group LQ

As seen in table 31 below, minor occupation groups within the production and agricultural major occupation groups are the ones with the highest LQ's and lowest wages. This includes "Food Processing Workers", "Assemblers and Fabricators", "Metal Workers and Plastic Workers", and "Agricultural Workers". These minor occupation groups all have an LQ of over 1.6, but an average income of less than \$48,000.

Table 31: Jefferson - 10 Highest LQ Minor Occupation Groups				
Minor Occupation Group	Wage and Salary Employment	Location Quotient	Average Wage & Salary Income	Average Hours per Year
Food Processing Workers	720	2.46	\$45,158	1,980
Supervisors of Farming, Fishing, and Forestry Workers	34	1.96	\$60,958	2,119
Assemblers and Fabricators	1,289	1.94	\$39,239	1,970
Agricultural Workers	533	1.86	\$37,386	1,739
Fishing and Hunting Workers	5	1.85	\$16,026	2,050
Funeral Service Workers	29	1.81	\$28,033	1,436
Other Production Occupations	1,735	1.65	\$45,493	1,986
Metal Workers and Plastic Workers	1,320	1.62	\$47,764	2,130
Supervisors of Production Workers	400	1.58	\$77,527	2,292
Woodworkers	154	1.45	\$44,909	1,975
Total Employed	6,218	-	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

The table below shows minor occupation groups with the lowest LQs. These are the occupations that are underrepresented in Jefferson County compared to the State of Wisconsin. When adjusted to groups with more than 250 employees, we can see that the “Healthcare Diagnosing or Treating Practitioners” group has a low LQ but high average income. This suggest that jobs with higher wages are underrepresented in Jefferson County.

Table 32: Jefferson - 10 Lowest LQ Minor Occupation Groups				
Minor Occupation Group	Wage and Salary Employment	Location Quotient	Average Wage & Salary Income	Average Hours per Year
Communications Equipment Operators	7	0.48	\$30,071	1,693
Other Healthcare Practitioners and Technical Occupations	7	0.48	\$46,075	1,883
Healthcare Diagnosing or Treating Practitioners	594	0.46	\$97,292	1,787
Printing Workers	67	0.44	\$40,383	1,892
Legal Support Workers	30	0.44	\$39,616	1,834
Forest, Conservation, and Logging Workers	4	0.41	\$40,492	1,823
Air Transportation Workers	5	0.27	\$83,315	1,939
Rail Transportation Workers	4	0.24	\$47,622	2,208
Postsecondary Teachers	60	0.19	\$85,563	1,681
Religious Workers	3	0.02	\$52,424	1,960
Total Employed	781	-	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

B. Minor Occupation Group LQ: Average Wage Based on LQ

The minor occupation groups, consistent with the major occupation groups, suggest that in Jefferson County, overrepresented occupations pay lower wages on average than underrepresented occupations. In other words, Jefferson County has a high number of low paying jobs and a low number of high paying jobs compared to the State of Wisconsin.

In table 33, the third row includes all minor groups with an LQ greater than 1 and the fourth column represents all the minor groups with an LQ less than 1.

Each of the following three tables narrows in further on occupations most and least represented in Jefferson County.

People who work in underrepresented occupations in Jefferson County on average earn more. There is a gap of \$2,513 between the average wage in overrepresented occupations compared to underrepresented occupations.

Table 33: Jefferson County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1	\$828,145,180	18,959	\$43,680
<1	\$741,816,879	16,059	\$46,193

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

When the parameters are adjusted to include only occupations with an LQ greater than 1.2 or less than 0.8, the difference in average wages widens. The gap between over and underrepresented occupations expands to \$7,992, still favoring underrepresented occupations.

Table 34: Jefferson County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.2	\$435,475,911	9,608	\$45,322
<0.8	\$257,203,998	4,824	\$53,314

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

If the parameters are adjusted to include only occupations with an LQ greater than 1.5 or less than 0.5, the average wages increase. The gap between the average wages widens considerably to \$41,456 when comparing the industries with the highest concentrations in Jefferson to those with the lowest.

Table 35: Jefferson County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.5	\$278,927,054	6,064	\$45,997
<0.5	\$68,320,830	781	\$87,453

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

The large difference in average wages in table 35 can be attributed to the fact that Jefferson County’s employers do not rely upon large numbers of high wage occupation workers. Stated another way, it can be said that the County’s employers are much more reliant upon workers in lower wage occupations than on workers in higher wage occupations. The data bears this out. Jefferson County has a low LQ and a small number of workers in higher wage occupations. Because there are fewer employees in these occupations, the average is affected by those making higher wages.

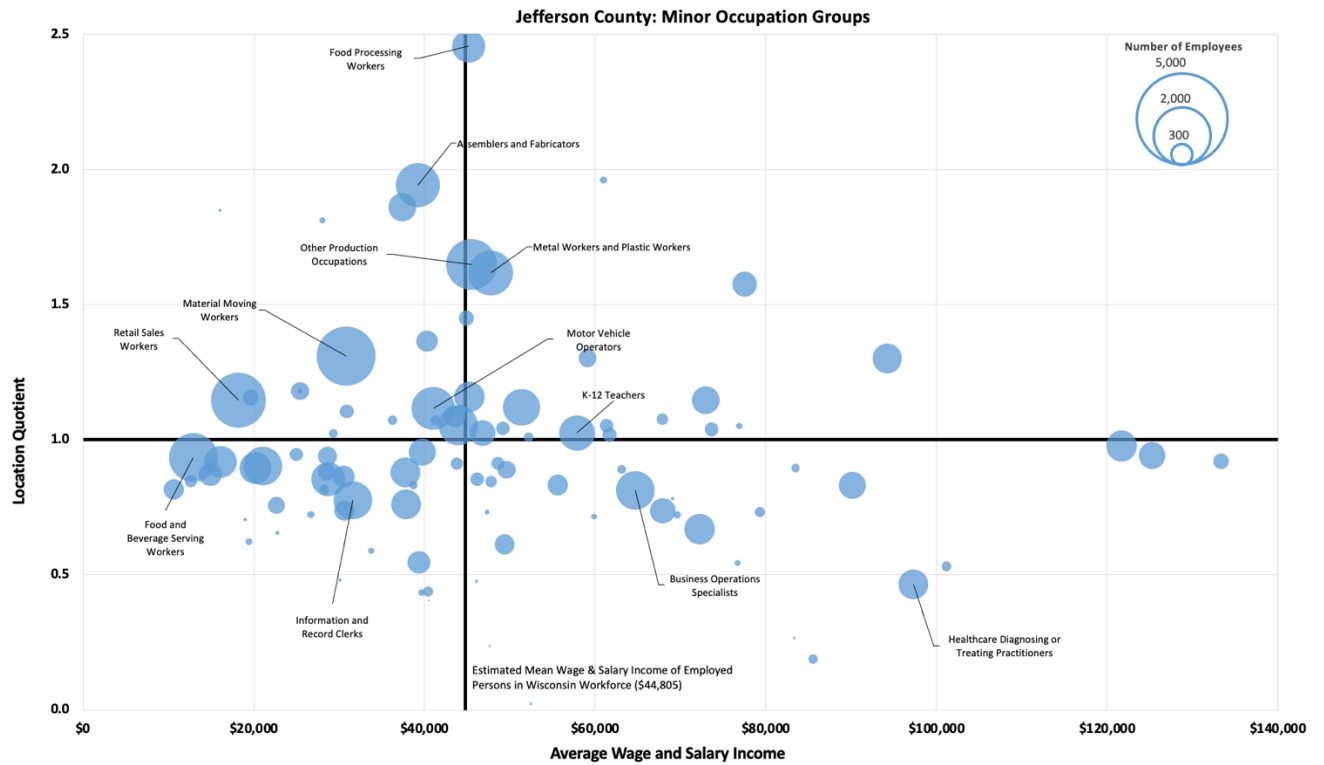
The minor occupation groups with LQ’s over 1.5 are mostly production occupations, and the data suggests that production is one of Jefferson County’s occupation specializations.

There are only 781 employees in Jefferson County working in minor occupation groups with an LQ of under 0.5, and these employees make an average wage of \$87,453 (Reference table 35). This average is pulled upwards by the 60 employees in the “Postsecondary Teachers” group making \$85,563.

Since there are less employees, the average wage is pulled upwards by small groups of employees making higher wages in less specialized occupations.

Figure 9 displays minor occupation groups by LQ, average salary, and number of employees. If there is a large concentration of bubbles in the top left quarter, this means that the county mainly relies on low paying occupations. Similarly, a large concentration in the bottom right quarter indicates that the county has a low amount of high paying occupations. Based on figure 9, Jefferson County’s economy mainly consists of low paying occupations. This typically indicates that residents in the county cannot afford higher housing costs.

Figure 9: Jefferson County: Minor Occupation Groups



*Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.

IV. Dodge County Minor Occupation Groups

Minor occupation groups in Dodge County with high LQs tend to have higher average wages compared to minor occupation groups with low LQs. However, average wages for occupations in both high and low LQs remain low compared to other counties. This is consistent with the average wage trends seen on a major occupation group level.

A. Minor Occupation Group LQ

As seen in table 36 below, minor occupation groups within the production and agricultural major occupation group are the ones with the highest LQs and lowest wages (similar to Jefferson County). This includes the “Printing Workers”, “Agricultural Workers”, “Metal Workers and Plastic Workers”, and “Food Processing Workers” groups. These minor occupations all have an LQ of over 1.8, but an average income of less than \$48,000.

Dodge County has a low average wage for both low LQ minor occupation groups and high LQ minor occupation groups. Minor occupation groups with an LQ of over 1.3 all have an average wage below \$74,000, with the lowest average being \$32,728. Minor occupation groups with an LQ of under 0.6 make similar average incomes. Most of these have average incomes of under \$59,000, with two outliers being the “Air Transportation Workers” and “Postsecondary Teachers” groups, with averages over \$95,000.

Table 36: Dodge - 10 Highest LQ Minor Occupation Groups				
Minor Occupation Group	Wage and Salary Employment	Location Quotient	Average Wage & Salary Income	Average Hours per Year
Printing Workers	504	3.21	\$38,226	1,901
Agricultural Workers	834	2.81	\$32,729	1,709
Supervisors of Farming, Fishing, and Forestry Workers	46	2.58	\$49,410	2,079
Metal Workers and Plastic Workers	1,570	1.86	\$47,537	2,129
Food Processing Workers	554	1.83	\$41,198	1,875
Supervisors of Production Workers	453	1.73	\$73,489	2,283
Other Production Occupations	1,802	1.65	\$45,852	1,989
Extraction Workers	39	1.62	\$67,338	2,516
Assemblers and Fabricators	947	1.38	\$39,757	1,973
Helpers, Construction Trades	68	1.33	\$36,819	1,684
Total Employed	6,817	-	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

Table 37 shows minor occupation groups with the lowest location quotients. These are the occupations that are underrepresented in Dodge County compared to the State of Wisconsin.

Table 37: Dodge - 10 Lowest LQ Minor Occupation Groups				
Minor Occupation Group	Wage and Salary Employment	Location Quotient	Average Wage & Salary Income	Average Hours per Year
Media and Communication Workers	72	0.57	\$50,190	1,824
Baggage Porters, Bellhops, and Concierges	8	0.56	\$27,665	1,717
Sales Representatives, Services	247	0.55	\$58,163	2,048
Legal Support Workers	37	0.52	\$42,385	1,830
Fishing and Hunting Workers	1	0.45	\$23,450	2,075
Media and Communication Equipment Workers	17	0.37	\$39,785	1,756
Entertainers and Performers, Sports and Related Workers	42	0.32	\$28,858	1,318
Air Transportation Workers	6	0.31	\$96,050	1,917
Postsecondary Teachers	62	0.19	\$95,172	1,692
Religious Workers	7	0.05	\$46,370	1,933
Total Employed	500	-	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

B. Minor Occupation Group LQ: Average Wage Based on LQ

Unlike Jefferson County, minor occupation groups with higher LQs make slightly higher wages than those with lower LQs. However, the difference is small, and all occupation groups in Dodge County make lower average wages than in surrounding counties, regardless of LQ.

In table 38, the third row includes all minor groups with an LQ greater than 1, and the fourth row represents all the minor groups with an LQ less than 1.

Each of the following three tables narrows in further on occupations most and least represented in Dodge County.

In table 38, overrepresented occupations are paid slightly more than those with an LQ of below 1, which is different from Jefferson County. There is a difference of \$4,828, favoring LQs of over 1.

Table 38: Dodge County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1	\$914,511,981	17,832	\$51,286
<1	\$854,955,750	18,403	\$46,458

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

When the parameters are adjusted to include only occupations with a LQ greater than 1.2 or less than 0.8, the difference in average wage widens. The gap between over and underrepresented occupations expands to \$9,747, still favoring overrepresented occupations. Interesting to note is that average wages for both over and underrepresented occupations fall when the parameters are narrowed.

Table 39: Dodge County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.2	\$564,135,401	12,319	\$45,794
<0.8	\$262,092,357	7,271	\$36,047

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

If the parameters are adjusted to include only occupations with a LQ greater than 1.5 or less than 0.5, the results seem to flip, suggesting underrepresented occupations in Dodge County have higher average wages than overrepresented occupations, differing from major occupation groups. This can be explained by the low number of workers employed in occupations with an LQ less than 0.5.

Table 40: Dodge County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.5	\$264,789,911	5,801	\$45,645
<0.5	\$8,773,652	136	\$64,365

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

Much like Dodge County’s major occupation groups, the large difference in average wages in table 40 can be attributed to the fact that Dodge County’s employers do not rely upon large numbers of high wage occupation workers. Stated another way, it can be said that the County’s employers are much more reliant upon workers in lower wage occupations than on workers in higher wage occupations. The data bears this out. Dodge County has a low LQ and a small number of workers in higher wage occupations, with both high LQ and low LQ occupations in the County making low average wages.

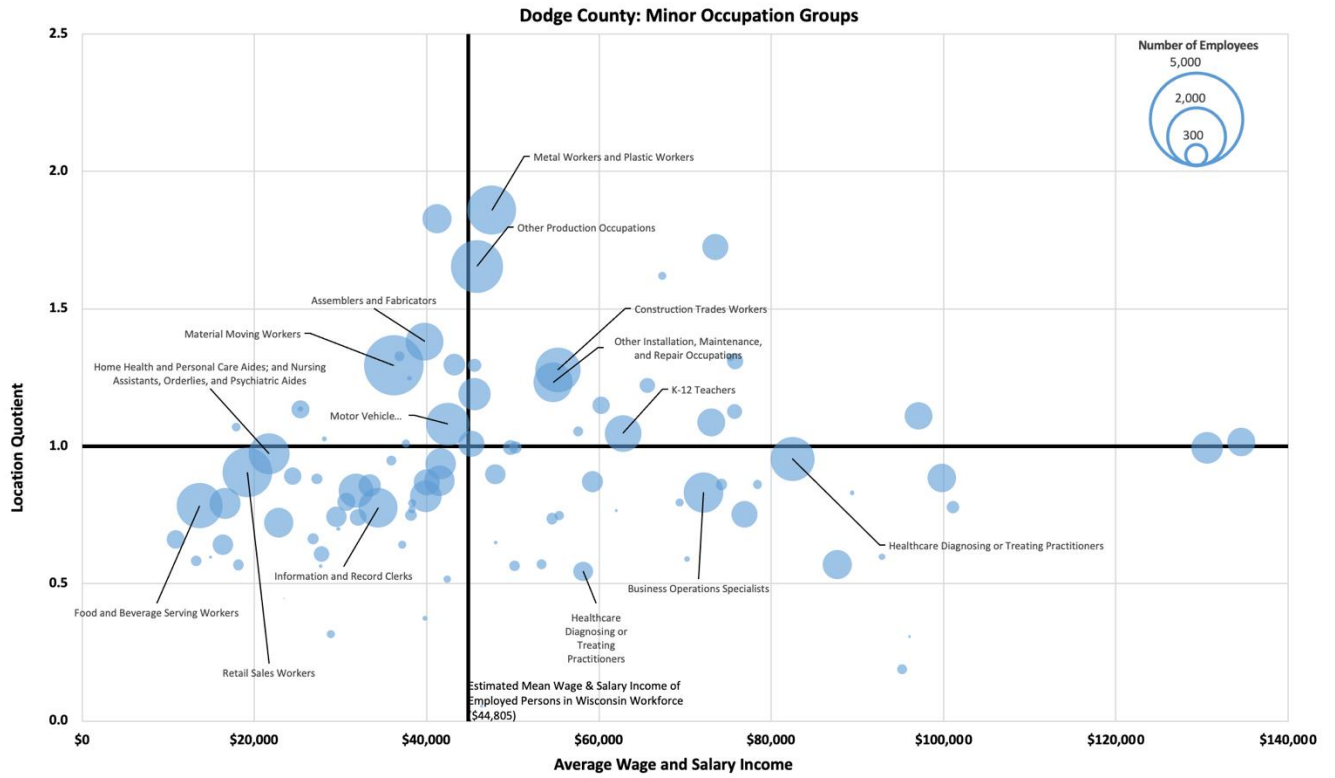
Since there are less employees, the average wage for minor occupation groups with an LQ less than 0.5 is pulled upwards by small groups of employees working in less specialized occupations. The average wage is pulled upwards by the 62 employees in the “Postsecondary Teachers” group making \$95,172.

Minor occupation groups with LQs over 1.3 are production and agricultural occupations, and the data suggests that these are two of Dodge County’s occupation specializations. While there are 6,052 production employees in Dodge County making an average wage of \$46,077, this average is pulled upwards by the 453 employees in the minor occupation group “Supervisors of Production Workers” making \$73,489.

Figure 10 displays minor occupation groups by LQ, average salary, and number of employees. If there is a large concentration of bubbles in the top left quarter, this means that the county mainly relies on low paying occupations. Similarly, a large concentration in the bottom right quarter indicates that the county has a low amount of high paying occupations. Based on figure 10, Dodge County’s economy mainly consists of low

paying occupations. This typically indicates that residents in the county cannot afford higher housing costs.

Figure 10: Dodge County: Minor Occupation Groups



*Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.

V. Rock County Minor Occupation Groups

Minor occupation groups in Rock County with high LQs tend to have lower average wages compared to minor occupation groups with low LQs. This is consistent with the average wage trends seen on a major occupation group level.

A. Minor Occupation Group LQ

As seen in table 41 below, minor occupation groups within the production major occupation group are the ones with the highest LQ's and lowest wages. This includes "Metal Workers and Plastic Workers" and "Assemblers and Fabricators." These minor occupation groups both have an LQ of over 1.8 but an average income of less than \$46,000.

Table 41: Rock - 10 Highest LQ Minor Occupation Groups			
Minor Occupation Group	Wage and Salary Employment	Location Quotient	Average Wage & Salary Income
Metal Workers and Plastic Workers	1,744	2.06	\$45,517
Religious Workers	471	1.99	\$62,964
Assemblers and Fabricators	1,509	1.80	\$39,933
Food Processing Workers	727	1.75	\$41,008
Supervisors of Production Workers	534	1.70	\$74,261
Sales Representatives, Wholesale and Manufacturing	1,306	1.64	\$69,420
Other Production Occupations	2,081	1.60	\$45,544
Motor Vehicle Operators	2,712	1.32	\$46,247
Vehicle and Motor Equipment Mechanics, Installers, and Repairers	1,144	1.27	\$48,201
Rail Transportation Workers	53	1.25	\$97,011
Total Employed	12,285	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

The table below shows minor occupation groups with the lowest LQs. These are the occupations that are underrepresented in Rock County compared to the State of Wisconsin. When adjusted to groups with more than 150 employees, we can see that the "Lawyers, Judges, and Related Workers" group has a low LQ but high average income. This suggest that jobs with higher wages are underrepresented in Rock County.

Table 42: Rock - 10 Lowest LQ Minor Occupation Groups			
Minor Occupation Group	Wage and Salary Employment	Location Quotient	Average Wage & Salary Income
Tour and Travel Guides	11	0.52	\$18,719
Other Protective Service Workers	417	0.44	\$29,151
Lawyers, Judges, and Related Workers	166	0.44	\$123,066
Military – Known and Unknown	455	0.43	\$25,351
Legal Support Workers	83	0.42	\$45,553
Architects, Surveyors, and Cartographers	32	0.36	\$86,696
Extraction Workers	39	0.26	\$54,836
Forest, Conservation, and Logging Workers	6	0.25	\$48,333
Water Transportation Workers	10	0.24	\$64,353
Air Transportation Workers	10	0.09	\$87,553
Total Employed	1,235	-	-

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

B. Minor Occupation Groups: Average Wage Based on LQ

The minor occupation groups, consistent with the major occupation groups, suggest that in Rock County, overrepresented occupations pay lower wages on average than underrepresented occupations. In other words, Rock County has a high number of low paying jobs and a low number of high paying jobs compared to the State of Wisconsin.

In table 43, the first row includes all minor groups with an LQ greater than 1 and the second row represents all the minor groups with an LQ less than 1.

Each of the following three tables narrows in further on occupations most and least represented in Rock County.

People who work in underrepresented occupations in Rock County on average earn more. There is a gap of \$4,934 between the average wage in overrepresented occupations compared to underrepresented occupations.

Table 43: Rock County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1	\$2,001,561,890	41,616	\$48,094
<1	\$1,556,783,181	29,357	\$53,028

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

When the parameters are adjusted to include only occupations with an LQ greater than 1.2 or less than 0.8, the difference in average wages widens. The gap between over and underrepresented occupations expands considerably to \$19,216, still favoring underrepresented occupations.

Table 44: Rock County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.2	\$804,565,652	17,879	\$44,999
<0.8	\$466,948,768	7,271	\$64,215

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

If the parameters are adjusted to include only occupations with an LQ greater than 1.5 or less than 0.5, the average wages increase. The gap between the average wages lowers to \$2,416 when comparing the industries with the highest concentrations in Rock to those with the lowest, still favoring underrepresented occupations.

Table 45: Rock County Minor Occupation Groups			
Location Quotient	Total Wages	Total Workers	Average Wage
>1.5	\$424,394,726	8,375	\$50,670
<0.5	\$42,813,418	806	\$53,086

**Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.*

The large difference in average wages in table 45 can be attributed to the fact that Rock County’s employers do not rely upon large numbers of high wage occupation workers. Stated another way, it can be said that the County’s employers are much more reliant upon workers in lower wage occupations than on workers in higher wage occupations. The data bears this out. Rock County has a low LQ and a small number of workers in higher wage occupations. Because there are fewer employees in these occupations, the average is affected by those making higher wages.

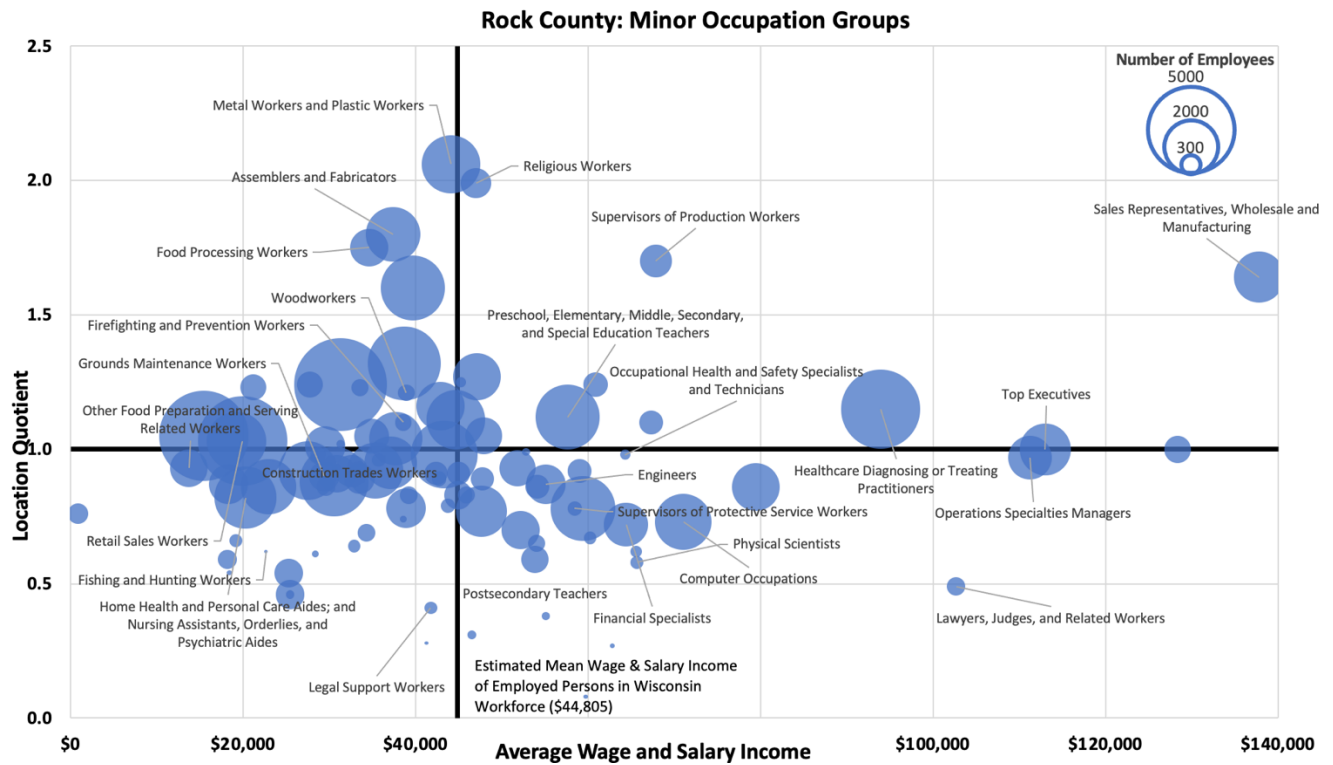
The minor occupation groups with LQ’s over 1.5 are mostly production occupations, and the data suggests that production is one of Rock County’s occupation specializations.

There are only 806 employees in Rock County working in minor occupation groups with an LQ of under 0.5, and these employees make an average wage of \$53,086. This average is pulled up by “Lawyers, Judges, and Related Workers” with only 166 employees but an average salary of \$123,066.

Since there are less employees, the average wage is pulled upwards by small groups of employees making higher wages in less specialized occupations.

Figure 11 displays minor occupation groups by LQ, average salary, and number of employees. If there is a large concentration of bubbles in the top left quarter, this means that the county mainly relies on low paying occupations. Similarly, a large concentration in the bottom right quarter indicates that the county has a low amount of high paying occupations. Based on figure 11, Rock County’s economy mainly consists of low paying occupations. This typically indicates that residents in the county cannot afford higher housing costs.

Figure 11: Rock County: Minor Occupation Groups



*Source: Bureau of Labor Statistics – Standard Occupation Classification Codes (Department of Defense classification codes used for military occupations). Data retrieved from IMPLAN, 2019 data.

Part 3: Home Prices and Imported Workers

I. Home Prices

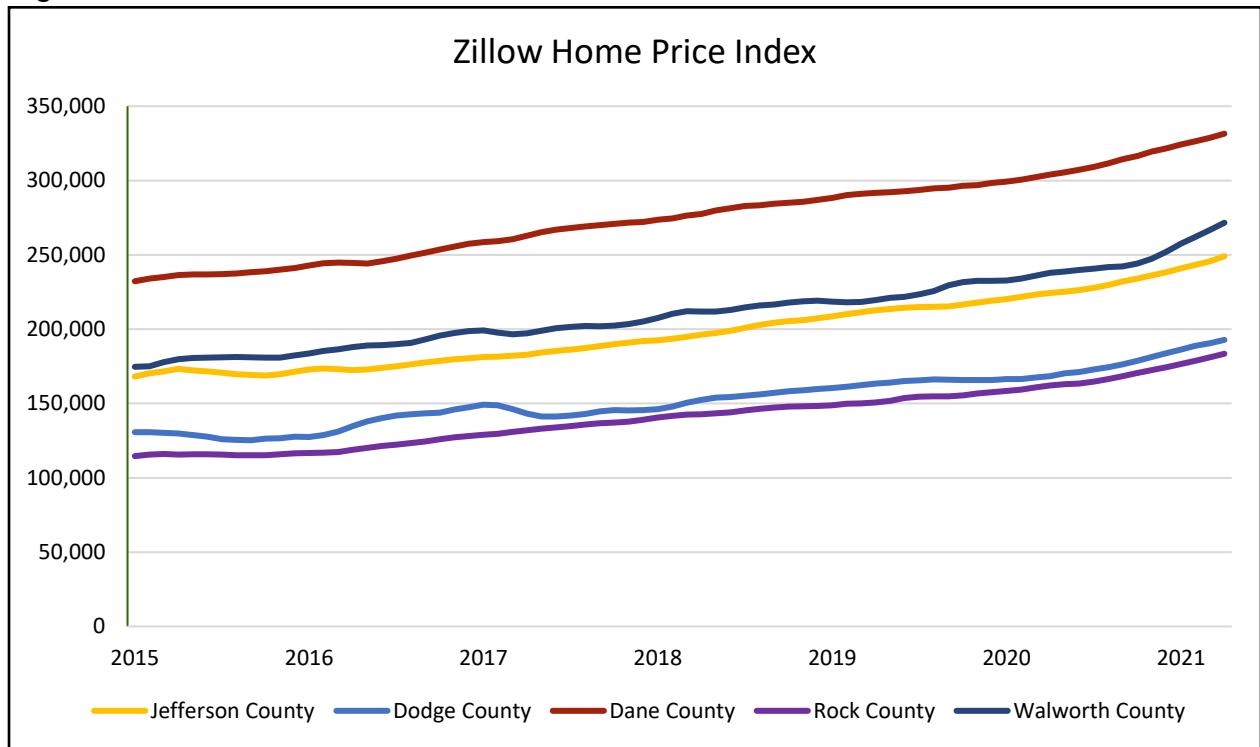
When thinking of the housing market, it is important to note the relationship between housing prices and concentrations in low or high paying occupations. In Dane County, the housing market has high prices, but the most heavily concentrated occupations have high average incomes. This indicates that pay in Dane County is sufficient for the high housing prices in Dane County. This may be why Dane County has a low amount of exported workers but a high amount of imported workers.

Oppositely, Rock County and Dodge County's housing markets have low prices, but the most heavily concentrated occupations have low average incomes. This indicates that pay in these counties is sufficient for the low housing prices. Even so, residents in these counties will still export to higher paying counties. Similarly, housing prices in Rock County and Dodge County are rising quickly, which will pressure residents to export to higher paying occupations in neighboring counties like Dane.

The counties of Jefferson and Walworth all have high housing prices and a high concentration of low paying occupations. This may be a reason why these counties have high amounts of exported workers.

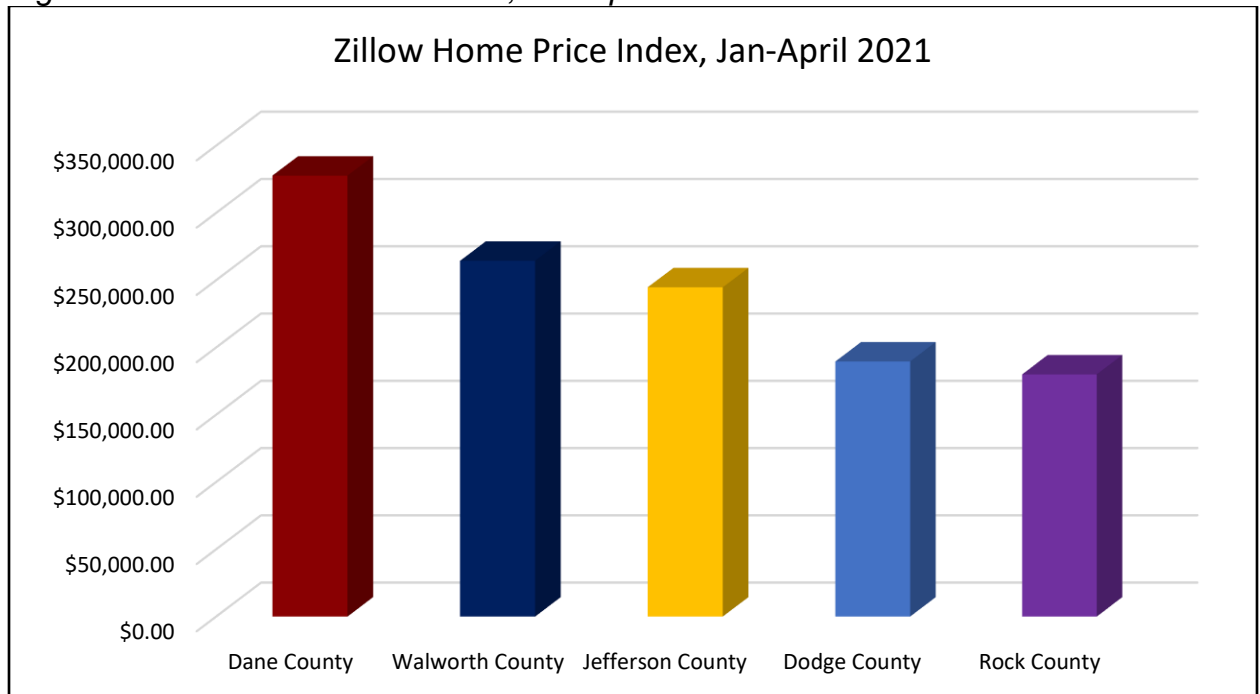
A comparison between county home prices and exported workers illustrates the point. Rock County and Dodge County have the lowest home prices and the lowest average wages, while Dane County has the highest home prices and highest average wages. These counties are more likely to rely on residential workers, and Dane County in particular is more likely to rely on imported workers. However, Rock and Dodge County home prices are appreciating quickly, which means workers will begin to export to counties like Dane (see figures 12 and 13). Jefferson and Walworth counties have high and rising home prices but low average wages. These counties will have the highest amount of exported workers; essentially, residents in these counties are working in higher paying counties in order to afford rising home prices.

Figure 12: Zillow Home Price Index



*Source: Zillow, 2021.

Figure 13: Zillow Home Price Index, Jan-April 2021



*Source: Zillow, 2021.

II. Occupation Group: Comparison of All Counties

When the counties are compared, it is shown that Rock County is most similar to Dodge County. These counties all have low housing prices and lower wages for the occupations with a heavy concentration of workers. This means that most employees working in these counties will be able to afford homes on the housing market, but they will not import workers from other counties due to their low wages. Dodge County does have lower average wages compared to Rock County.

Rock County displays an interesting trend of slightly higher average wages, yet more affordable homes than areas like Walworth and Jefferson. Even so, rising home prices may pressure workers in Rock County to export to higher paying counties.

Oppositely, Walworth and Jefferson Counties have less affordable homes, climbing upwards towards Dane County, with low wages similar to Dodge and Rock.

For Dane County, the results show that high LQ occupations make higher average wages and low LQ occupations make lower wages. This reflects the expensive housing market of the county, since most employees in the county will be able to afford homes. Higher wages also make these counties destinations for employees who are residents in surrounding counties where employers pay lower wages.

III. Comparison of Workers Imported VS. Home Value Across Neighboring Counties

Figure 14 illustrates each county by the percentage of workers imported and average housing value. An imported worker is defined as a person who holds a job in the county but lives in a different county. An exported worker is defined as a person who commutes for work out of their home county to a different county. For instance, a person who commutes from Rock County to Jefferson County for work is an imported worker to Jefferson County, and the same worker is an exported worker from Rock County.

Of the ten counties included in this analysis, only Dane County has a positive percentage of workers imported. Dane County has the highest median household income and average housing value. What can be observed is that this county is importing workers from other counties. Dane also has higher paying employers and a larger concentration of higher skilled jobs with higher wages.

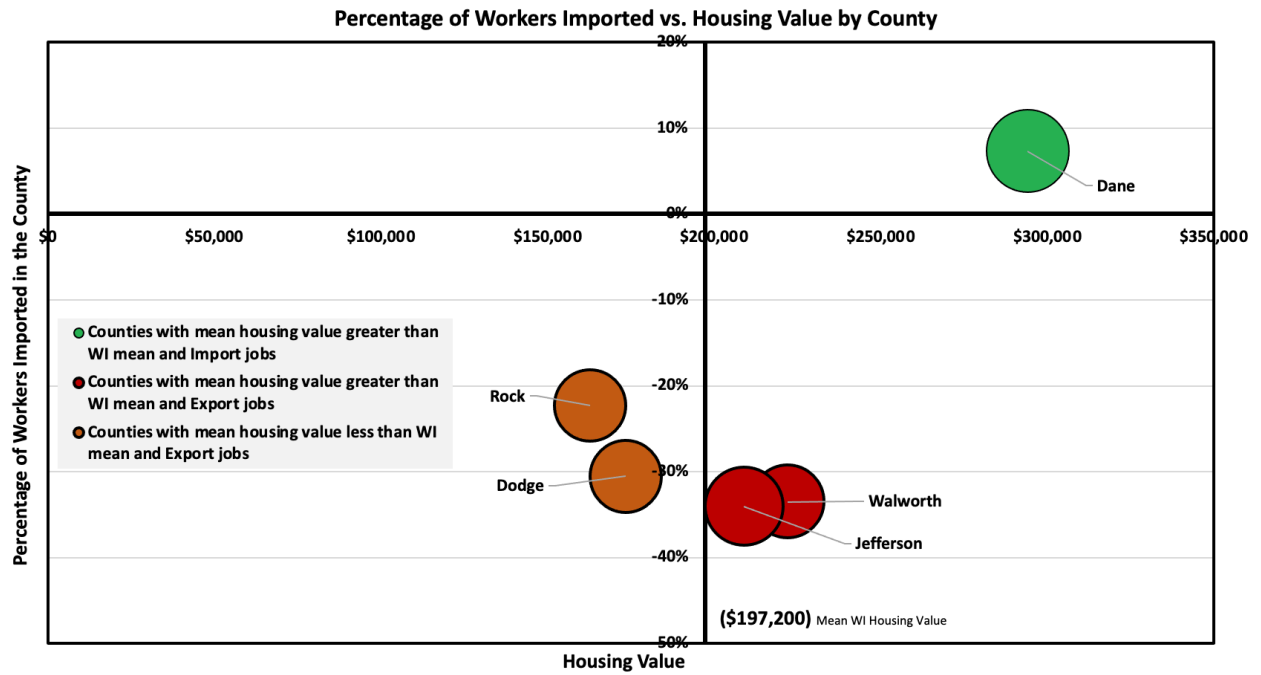
Walworth County and Jefferson County fall into a category where the average housing value is greater than the mean housing value in Wisconsin, yet they export workers to neighboring counties.

Dodge County and Rock County are categorized as counties that have a mean housing value less than the mean across Wisconsin and export workers to other counties. Of the total workforce in Dodge County, 56% of the workforce is employed within the county.

Figure 14 illustrates how the employment and wage trends shown by the LQs are affecting workers' behavior. Walworth and Jefferson Counties have housing prices higher than in the State of Wisconsin, but they have a higher concentration of lower paying jobs. People living in these counties are leaving the county, seeking employment from higher paying employers in other counties such as Dane, where jobs tend to pay higher on average, and jobs with higher average wages are more prevalent.

A similar effect is occurring with Dodge and Rock Counties. Rising home prices in these counties in conjunction with lower wage jobs are pressuring workers to seek employment in neighboring counties with higher paying jobs.

Figure 14: Percentage of Jobs Imported vs. Housing Value by County



*Source: Department of Workforce Development, Data retrieved from IMPLAN, 2019 data.

Conclusion

The results for all counties show that residents in counties with a lower concentration of high paying jobs are exporting to counties with a higher concentration. Dane County in particular is a likely destination for residents of Jefferson, Dodge, Walworth, and Rock Counties. Rising home prices in the other counties may be pressuring residents to seek employment in Dane County for similar occupations that pay higher wages.

Dodge County and Rock County specialize in production occupations, each with an LQ of over 1.4 but an average salary of less than \$47,000. This indicates that the employees that the economy of these counties relies on are being paid low wages. The results also show that these low wages are sufficient for the housing prices in Rock and Dodge, unlike in counties like Walworth and Jefferson. Even so, housing prices in Rock County and Dodge County are rising at a fast rate. This brings the conclusion that residents in these counties are being pressured to export to counties that rely on high paying occupations like Dane. Rock and Dodge Counties do not import many workers due to low wages.

Jefferson and Walworth Counties both rely on low paying occupations despite having high housing prices. Residents in these counties are likely exporting to work in counties like Dane where they are paid enough to afford housing prices. Walworth County in particular has the largest disparity between salaries in high LQ groups compared to housing prices.

These results indicate that employees living in Dane, Rock, and Dodge Counties may have an easier time finding affordable housing in relation to their wages compared to employees in Walworth and Jefferson Counties.

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