The State of Workforce In The Finger Lakes

A comprehensive report on current and future workforce trends in

Ontario, Seneca, Yates and Wayne counties

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Table of Contents

Demographic Characteristics:

Highlights:

- All four counties have poverty levels that lie below the national average, but lag behind in both median household income and per capita income

- Seneca and Wayne Counties have negative population growth rate, whereas Ontario County, the largest county, is growing

	Ontario County	Seneca County	Yates County	Wayne County	Four County Total/ Avg	U.S Comparison
Median Age	43.3	43.4	41.5	43.4	42.9	37.7
Male	49.10%	49.5%	48.2%	49.5%	49.1%	49.2%
Female	50.90%	50.5%	51.8%	50.5%	50.9%	50.8%
Population	109,450	91,874	25,106	91,874	79,576	
Population Growth	0.50%	-0.3%	0.0%	-0.3%	-0.025%	0.30%
Labor Force Participation Rate	64%	62.9%	60.7%	62.9%	62.6%	63.30%
Median Household Income	$58,070	$51,627	$50,105	$51,627	$52,857.25	$60,741
Per Capita Income	$31,524	$26,209	$26,001	$26,209	$27,485.75	$34,212
Poverty Level	10.3%	11.9%	13.9%	11.9%	12%	15.1%

County Summaries

Ontario:

- ○ Best industries in Ontario County in terms of growth in employment and livable wages: Healthcare and Construction
- ○ Accommodation and Food Services has the most significant growth relative to its size
- ○ Healthcare has the highest average annual growth rate, and the highest total growth demand
- ○ Construction has positive annual growth rates, with higher average wages than Healthcare, and more recent positive employment trends

Seneca:

- ○ While Accommodation and Food Services dominates the majority of the categories, Healthcare and Information has the highest sustained projected growth
- ○ Accommodation and Food Services has higher recent wage growth and employment growth than any other sector, but negative annual growth percentages
- ○ Healthcare and Information have both had positive employment growth as well as projected growth

Wayne:

○ While Healthcare has taken major employment hits in the past five years, its positive forecasted growth rate and recent employment trends indicate this is the strongest sector for investment in Wayne County

○ Information has also exponentially increased its employment, but its small size makes this sector less of an employment opportunity

○ Based upon employment forecast rates, the only jobs that are projected to grow in Wayne County are those requiring postgraduate degrees

Yates:

○ Healthcare and Construction are again the industries that demonstrate the most promise for Yates County

○ Despite recent positive employment trends for many of the industries, Healthcare, Construction and Information are the only industries to have both positive growth demand and positive average annual growth percentages

○ Manufacturing, while having extremely high wages and continued wage growth, has negative projected average annual growth percentages, indicating a growth slowdown

○ Occupational gaps additionally indicate that jobs within Healthcare and Construction are those that will be in short supply and high demand in the coming years

Finger Lakes: A 9 County Summary by Monroe Community College

Manufacturing

Occupational group hourly wages: This chart provides entry, median and high wage data for the workforce cluster in the Finger Lakes region. It is the average wage for the manufacturing group.

|	Entry-Level Wage (10th Percentile)	Median Wage (50th Percentile)	High Wage (90th Percentile)
	$14.73	$22.36	$31.89

**$25 is the self-sufficiency standard for 2 adults + 1 preschooler & 1 school age child (Monroe County)

**$18 is the self-sufficiency standard for 1 adult + 1 preschooler (Monroe County)

Gap Analysis: The estimated deficit or surplus of workers in an occupational grouping or workforce cluster, as defined by the report, compares the number of individuals who completed a formal training or education program against the estimated demand for entry-level occupations relevant to a program's workforce focus.

Middle-Skill Education Provider	July 2015- June 2016 Completions	Estimated Annual Job Openings	Estimated Gap (Δ)
Aggregate Middle-Skills Education Providers	326	1935	-1609
Total	326		

Top Skills: Determined by Job Postings between October 1st, 2014 and September 30, 2017
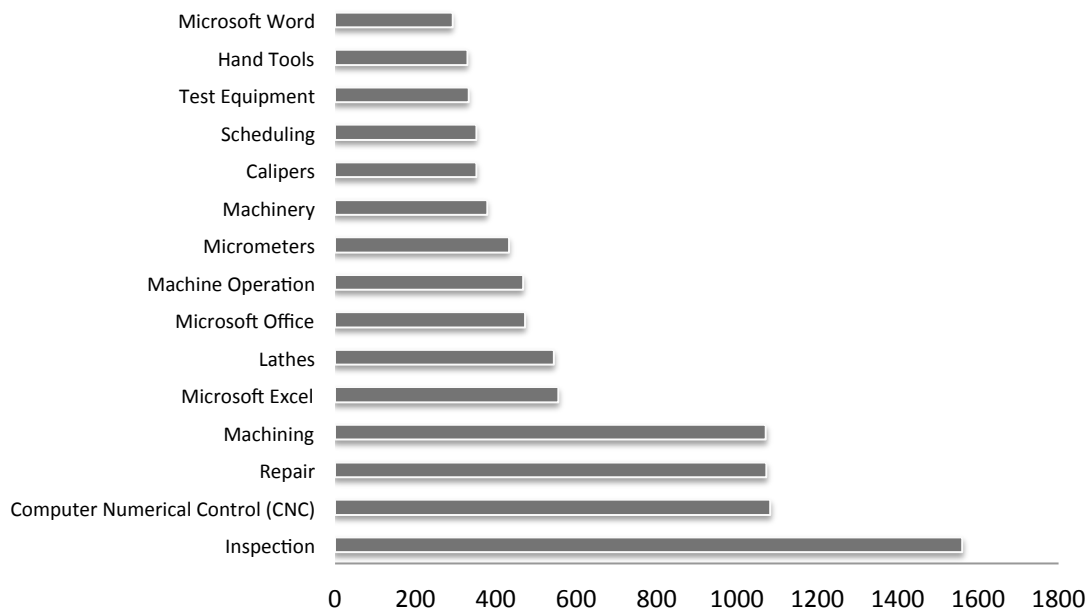
Information & Computer Technology

Occupational group hourly wages: This chart provides entry, median and high wage data for the workforce cluster in the Finger Lakes region. It is the average wage for the Information and Computer Technology group.

Entry-Level Wage	Median Wage	High Wage
(10th Percentile)	(50th Percentile)	(90th Percentile)

Chart data points: $20.31, $32.69, $51.05

**$25 is the self-sufficiency standard for 2 adults + 1 preschooler & 1 school age child (Monroe County)
**$18 is the self-sufficiency standard for 1 adult + 1 preschooler (Monroe County)

Gap Analysis: The estimated deficit or surplus of workers in an occupational grouping or workforce cluster, as defined by the report, compares the number of individuals who completed a formal training or education program against the estimated demand for entry-level occupations relevant to a program's workforce focus.
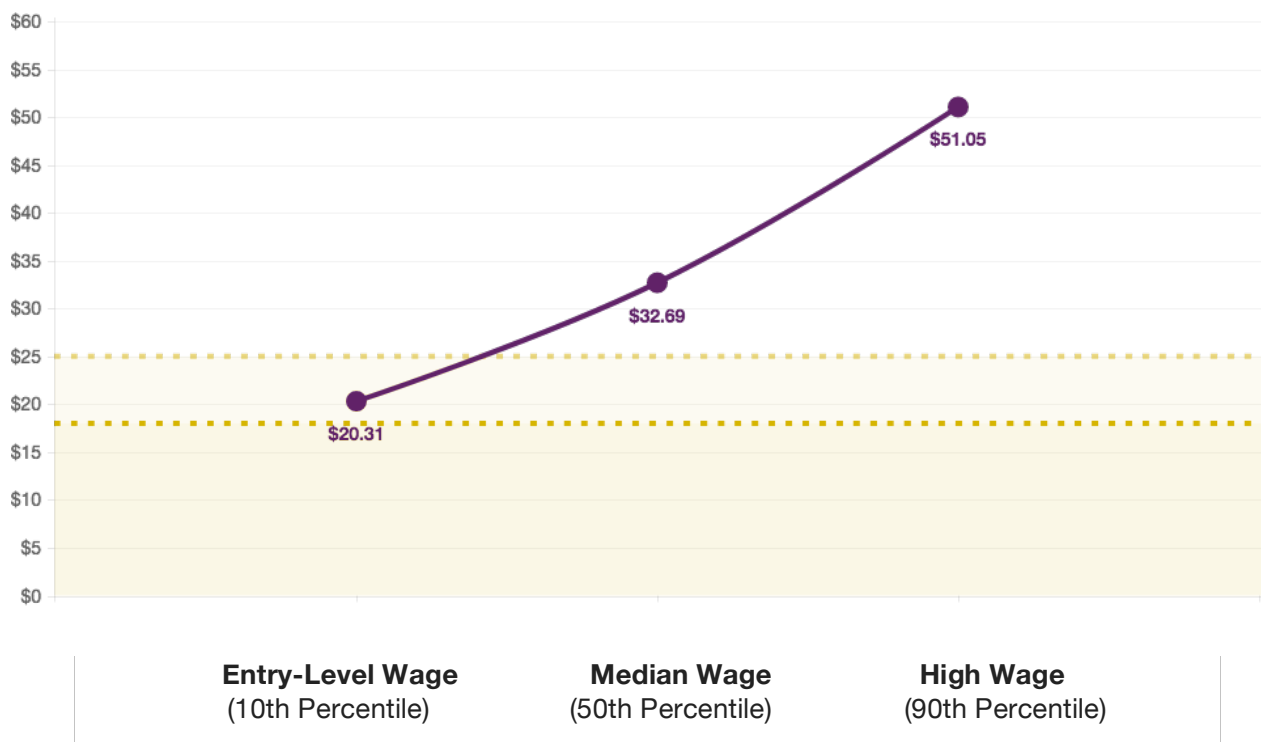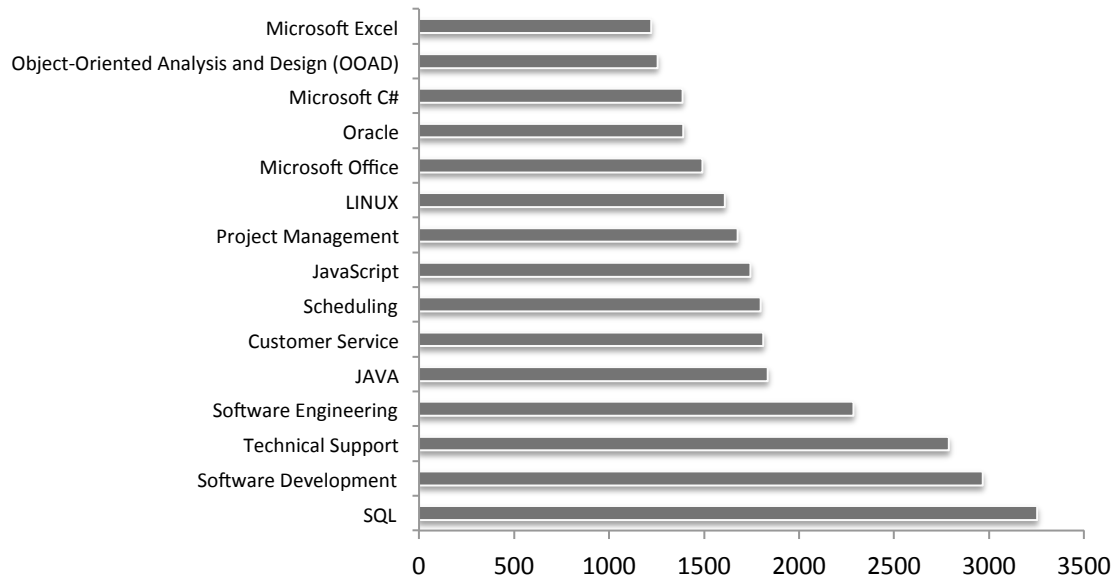
Middle-Skill Education Provider	July 2015- June 2016 Completions	Estimated Annual Job Openings	Estimated Gap (Δ)
Aggregate Middle-Skills Education Providers	251	1475	-1224
Total	251		

Top Skills: Determined by Job Postings between October 1st, 2014 and September 30, 2017

Healthcare

Occupational group hourly wages: This chart provides entry, median and high wage data for the workforce cluster in the Finger Lakes region. It is the average wage for the Healthcare group.

$27.98

$20.34

$15.38

| Entry-Level Wage | Median Wage | High Wage |
| (10th Percentile) | (50th Percentile) | (90th Percentile) |

**$25 is the self-sufficiency standard for 2 adults + 1 preschooler & 1 school age child (Monroe County)
**$18 is the self-sufficiency standard for 1 adult + 1 preschooler (Monroe County)

Gap Analysis: The estimated deficit or surplus of workers in an occupational grouping or workforce cluster, as defined by the report, compares the number of individuals who completed a formal training or education program against the estimated demand for entry-level occupations relevant to a program's workforce focus.
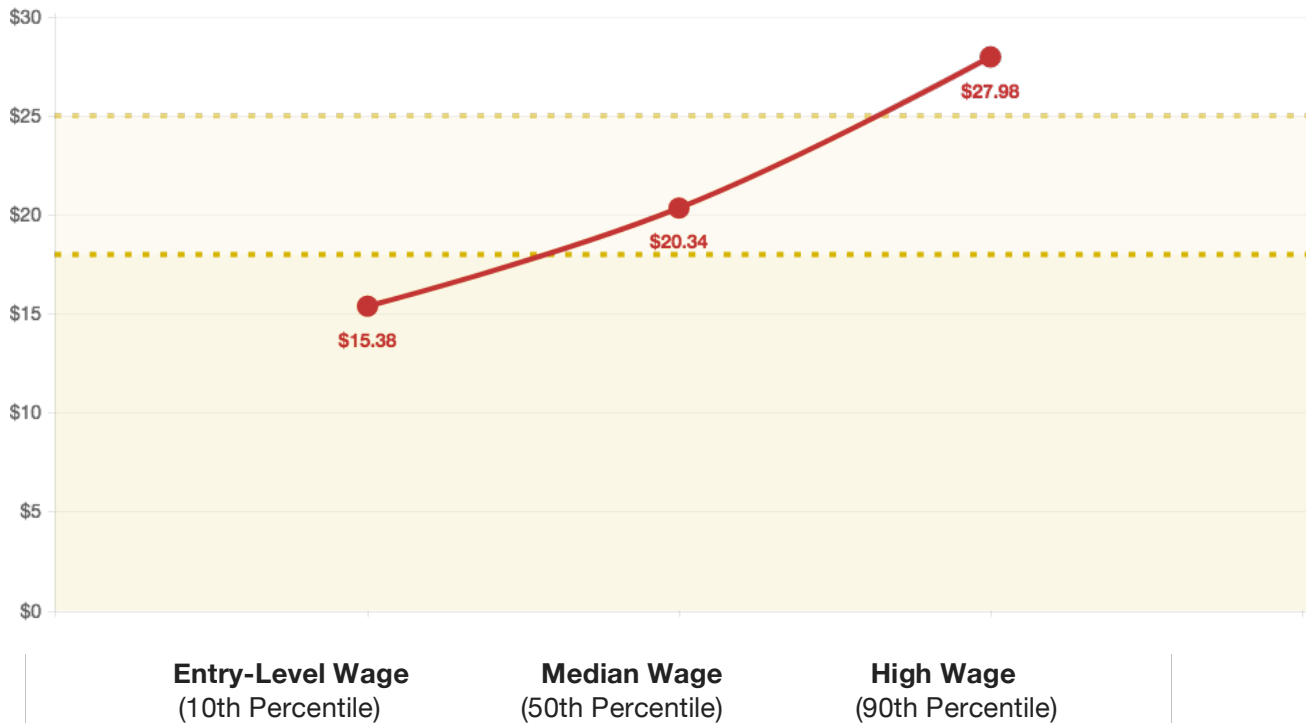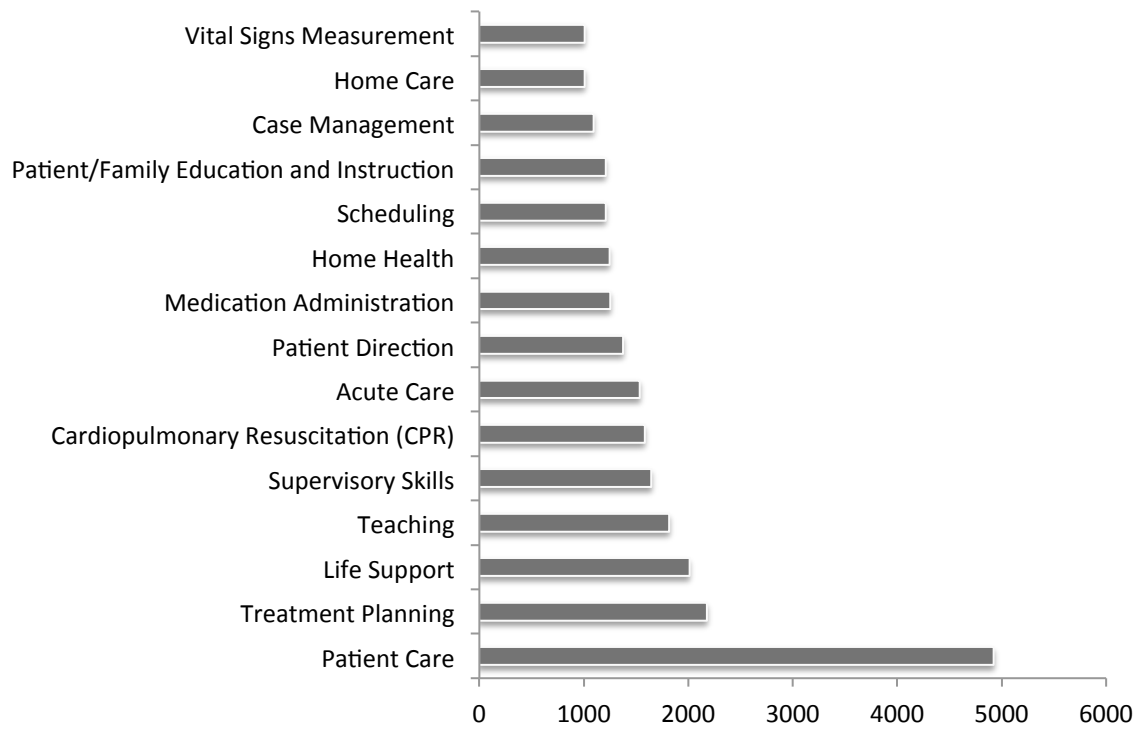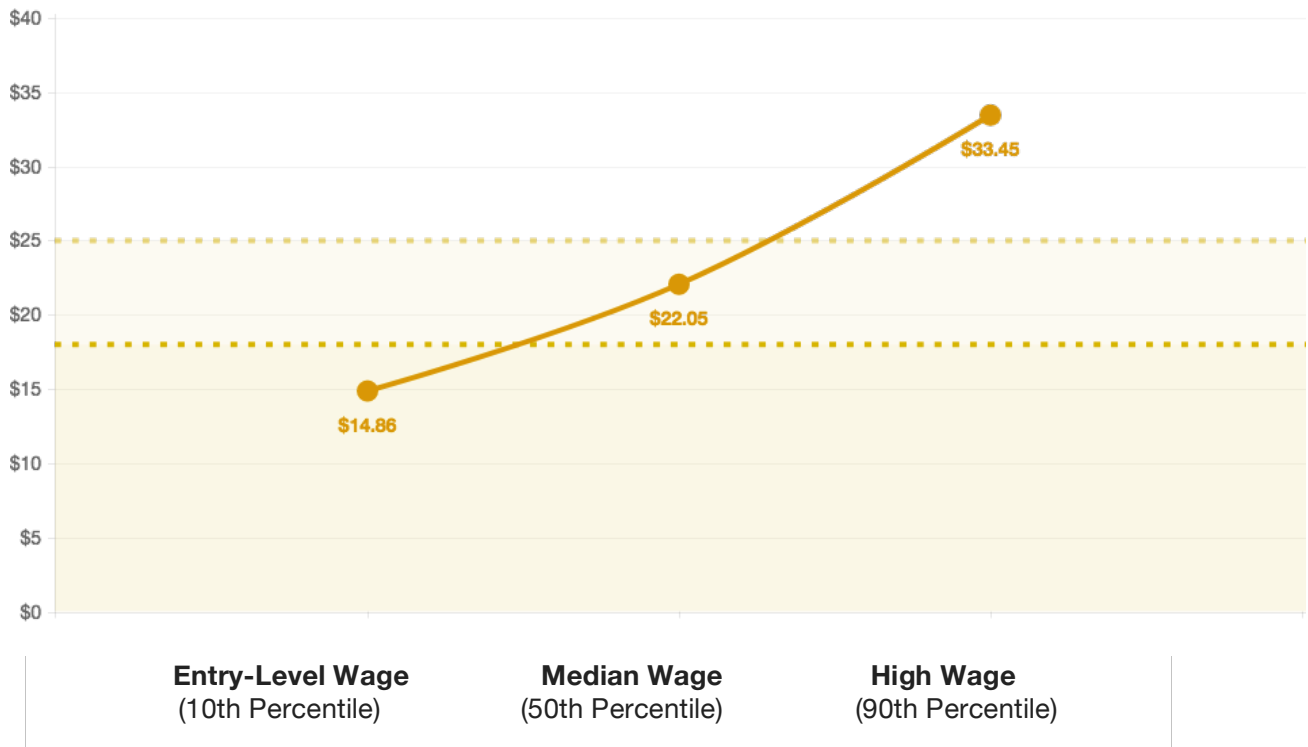
Middle-Skill Education Provider	July 2015 - June 2016 Completions	Estimated Annual Job Openings	Estimated Gap (Δ)
Aggregate Middle-Skills Education Providers	1,579	5,454	-3,875**
Total	1,579*		

Top Skills: Determined by Job Postings between October 1st, 2014 and September 30, 2017

Bar chart of top skills by job postings (approximate values):

- Patient Care: ~4900
- Treatment Planning: ~2150
- Life Support: ~2000
- Teaching: ~1800
- Supervisory Skills: ~1600
- Cardiopulmonary Resuscitation (CPR): ~1550
- Acute Care: ~1500
- Patient Direction: ~1350
- Medication Administration: ~1250
- Home Health: ~1250
- Scheduling: ~1200
- Patient/Family Education and Instruction: ~1200
- Case Management: ~1100
- Home Care: ~1000
- Vital Signs Measurement: ~1000

Applied Technologies

Occupational group hourly wages: This chart provides entry, median and high wage data for the workforce cluster in the Finger Lakes region. It is the average wage for the Applied Technologies group.


$14.86 Entry-Level Wage (10th Percentile)
$22.05 Median Wage (50th Percentile)
$33.45 High Wage (90th Percentile)

$40 **$35** **$30** **$25** **$20** **$15** **$10** **$5** **$0**

| | Entry-Level Wage (10th Percentile) | Median Wage (50th Percentile) | High Wage (90th Percentile) |

**$25 is the self-sufficiency standard for 2 adults + 1 preschooler & 1 school age child (Monroe County)
**$18 is the self-sufficiency standard for 1 adult + 1 preschooler (Monroe County)

Gap Analysis: The estimated deficit or surplus of workers in an occupational grouping or workforce cluster, as defined by the report, compares the number of individuals who completed a formal training or education program against the estimated demand for entry-level occupations relevant to a program's workforce focus.

Middle-Skill Education Provider	July 2015 - June 2016 Completions	Estimated Annual Job Openings	Estimated Gap (Δ)
Aggregate Middle-Skills Education Providers	487	2,506	-2,019**
Total	487*		

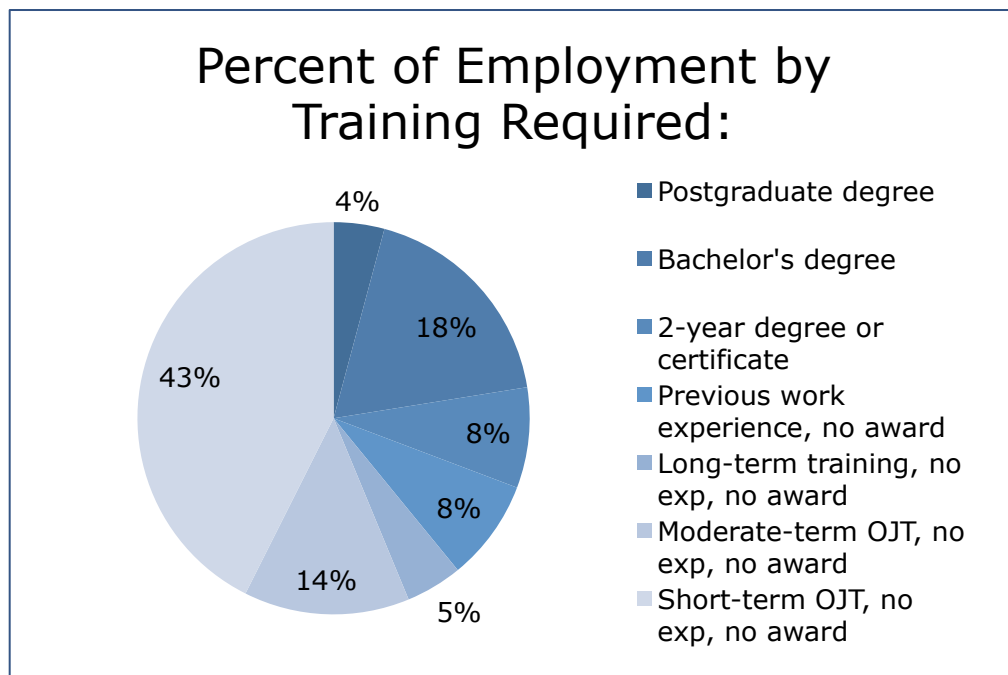# Top Skills: Determined by Job Postings between October 1st, 2014 and September 30, 2017
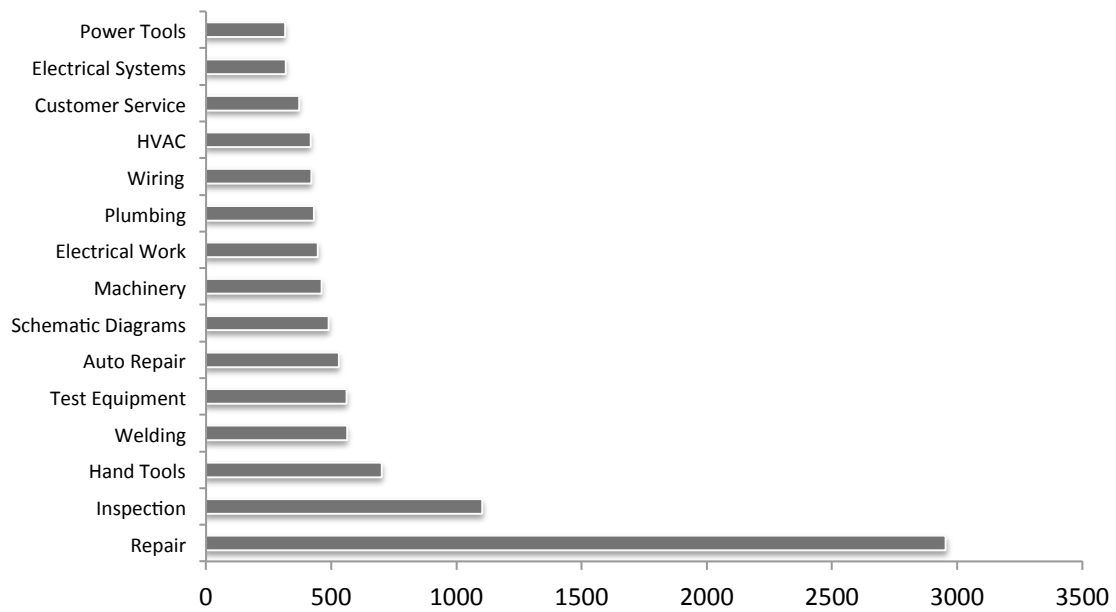
Ontario County

Educational Characteristics:

HIGHLIGHTS:

- The largest proportion of Ontario County employment only requires short-term on-the-job training.

- Ontario County lags behind the U.S. in all education ranges except for postgraduate degree and Associate's degree.

- Those with postgraduate degrees are in the highest demand over the next ten years, with the employment forecast rate over 1.2%.

- Only those employees with moderate on-the-job training with no experience have negative employee forecasts.

CHARTS:

Percent of Employment by Training Required:

4%
18%
8%
8%
5%
14%
43%

- Postgraduate degree
- Bachelor's degree
- 2-year degree or certificate
- Previous work experience, no award
- Long-term training, no exp, no award
- Moderate-term OJT, no exp, no award
- Short-term OJT, no exp, no award

The above graph demonstrates the jobs in Ontario County, categorized by the training required to obtain them. As seen here, jobs with short-term on-the-job training comprise the majority of the jobs in Ontario County, while the next highest are those requiring a Bachelor's degree and those with moderate-term on-the-job training. This demonstrates that those with only

high school diplomas, as are 25.4% of the workforce of Ontario County, have ample job selections that require little training. The educational breakdown below elaborates more on Ontario County's educational standing as compared to the United States.

Educational Breakdown
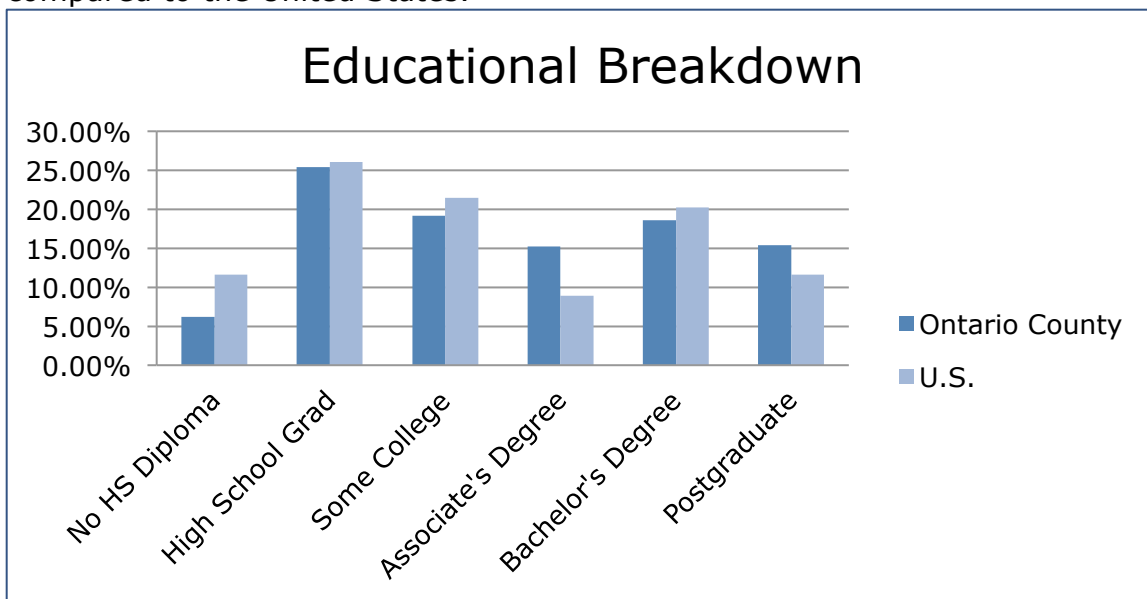
Interestingly enough, Ontario County surges ahead of the U.S. in just two categories: Associate's Degree and Postgraduate degrees. Ontario County is comprised mostly of high school graduates and those who have some college.

Average Annual Employment Forecast Rate(%) 2017Q1-2027Q1
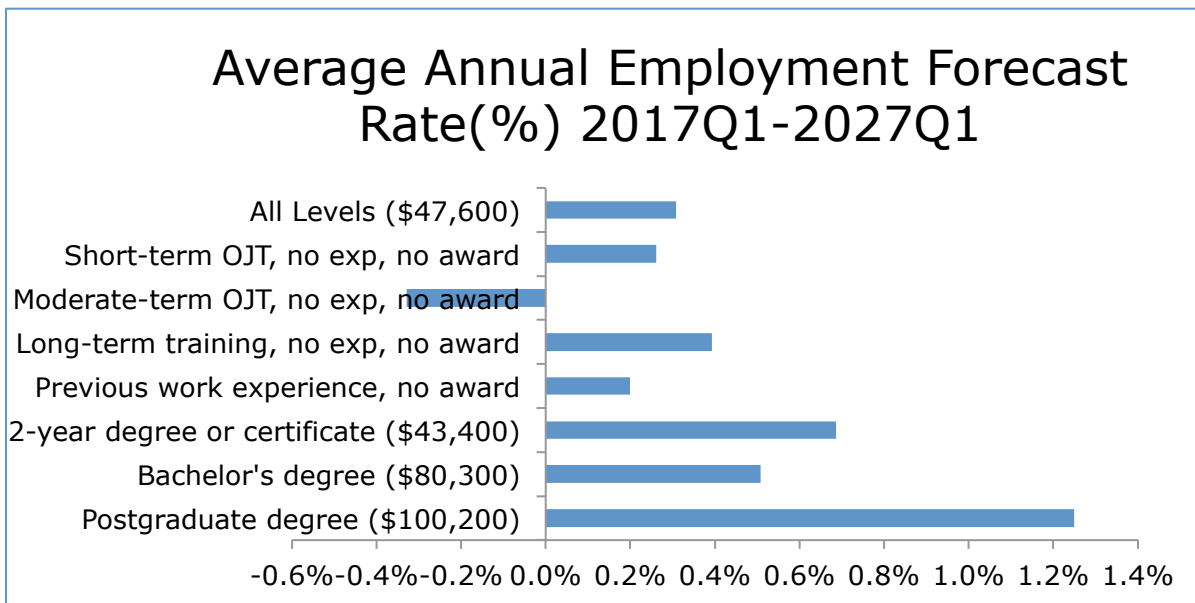
The employment forecast above indicates the growth of jobs among those with postgraduate degrees is the highest out of any job-training requirement. However, all job training requirements have positive employment forecasts over the next ten years with the exception of moderate-term on-the-job training.

Growing Economy:
## The Top Industries

Highlights:

- Healthcare is the largest industry, with 16.23% of all Ontario County employees and 11.73% of all new hires.

- The Travel and Tourism Industries are the industries that have the most new hires as a percentage of their total employment (~26% each), but they have the highest turnover percentage over 16% and the lowest average earnings.

- Construction and Manufacturing have the highest average earnings, 104% and 140% of the industry average.

- Accommodation and Food has the largest positive five-year employment growth with 894, and Retail Trade has the largest negative five-year employment growth with -428.

Workforce Characteristics	Healthcare	Construction	Manufacturing	Agriculture, Forestry, Fishing, Hunting
Employment	8556	2650	6670	654
as a % of all industries	16.23%	5.03%	12.65%	1.24%
New Hires	851	439	497	125
as a % of all industries	11.73%	6.05%	6.85%	1.72%
Growth of employment via new hires %	9.95%	16.57%	7.45%	19.11%
as a % of all industries	72.26%	120.36%	54.14%	138.87%
Separations	916	498	595	184
as a % of all industries	10.10%	5.49%	6.56%	2.03%
New Hires-Separations:	-65	-59	-98	-59
Turnover %	7.60%	9.90%	5.90%	14.70%
as a % of all industries	79.17%	103.13%	61.46%	153.13%
Average Annual Earnings	$41,156.00	$56,048.00	$75,054.00	$33,093.00
as a % of all industries	76.68%	104.42%	139.84%	61.66%

The above and below charts demonstrate workforce characteristics among the industries of focus. It shows each characteristic, and then looks at the share that industry has as a percentage of all industries, so we can see how much each industry contributes in terms of employment, new hires, etc. to Ontario County.

Workforce Characteristics	Arts, Entertainment, and Recreation	Accommodation and Food Services	Retail Trade	Information	All Industries
Employment	1260	5476	8700	807	52718
as a % of all industries	2.39%	10.39%	16.50%	1.53%	
New Hires	330	1425	1518	88	7256
as a % of all industries	4.55%	19.64%	20.92%	1.21%	
Growth of employment via new hires %	26.19%	26.02%	17.45%	10.90%	13.76%
as a % of all industries	190.29%	189.07%	126.77%	79.23%	
Separations	600	1623	1688	111	9066
as a % of all industries	6.62%	17.90%	18.62%	1.22%	
New Hires-Separations:	-270	-198	-170	-23	-1810
Turnover %	21.80%	16.30%	11.30%	9.30%	9.60%
as a % of all industries	227.08%	169.79%	117.71%	96.88%	
Average Annual Earnings	$26,012	$17,869	$30,232	$44,169	$53,673
as a % of all industries	48.46%	33.29%	56.33%	82.29%	52718

Interesting to note in these charts is the growth of employment via new hires, where both of the travel and tourism industries are increasing their employment by over 26%. As far as the largest shares of employment, Manufacturing, Healthcare and Retail Trade together constitute nearly half of all employment in Ontario County. Also interesting to note is only two of these industries have average annual earnings that surpass the average annual earnings of all industries.
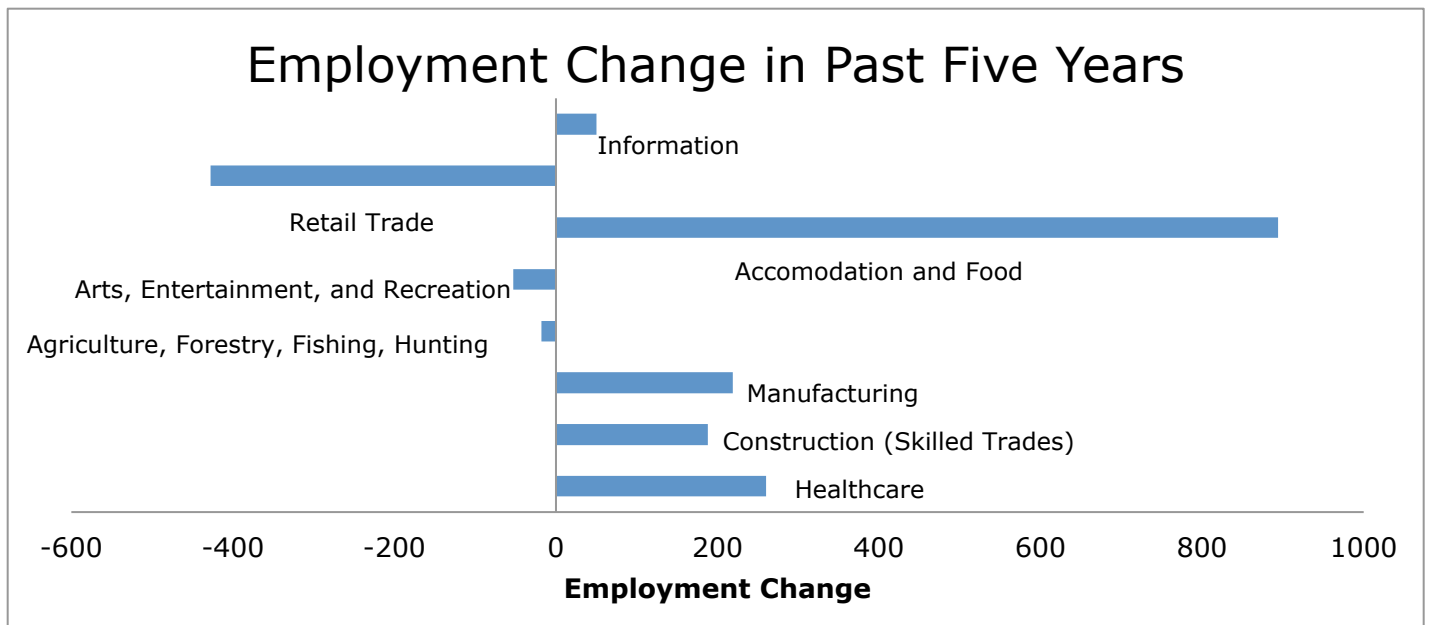
While the Accommodation and Food industry has grown rapidly over the past five years, Retail Trade has had large decreases in employment. Other negative employment changes have been relatively mild, while Healthcare, Manufacturing and Construction have had relatively large employment gains.

Forecasts & Projections

Highlights:

- Retail Trade had the highest separation demand, with a forecast of 1168 demanded in the next year and 5828 demanded in the next five years.

- Information had the smallest separation, but manufacturing had the biggest losses in total growth demand. In the 1-year projections, growth demand will decrease by 69 for manufacturing, and in the next five years, it will decrease by 336.

- Manufacturing similarly had negative average annual growth percentages, the worst of all industries, projected to decrease by 1 percent per year.

Charts:

Separation Demand
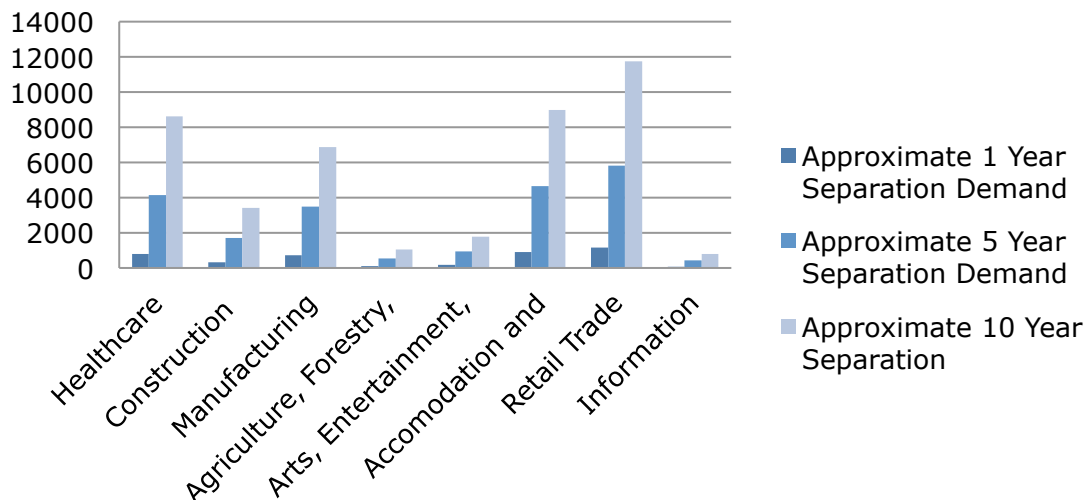
Legend:
- Approximate 1 Year Separation Demand
- Approximate 5 Year Separation Demand
- Approximate 10 Year Separation

Separation demand is the number of jobs demanded due to separations in a particular industry resulting from exit from the labor force or changing occupations. Retail Trade and Accommodation and Food have the largest one year separation demand, followed closely by Healthcare and Manufacturing. Information has the lowest separation demand, indicating possibly a young workforce, or limited occupation changes, a problem that seems to be affecting other industries.

Total Growth Demand
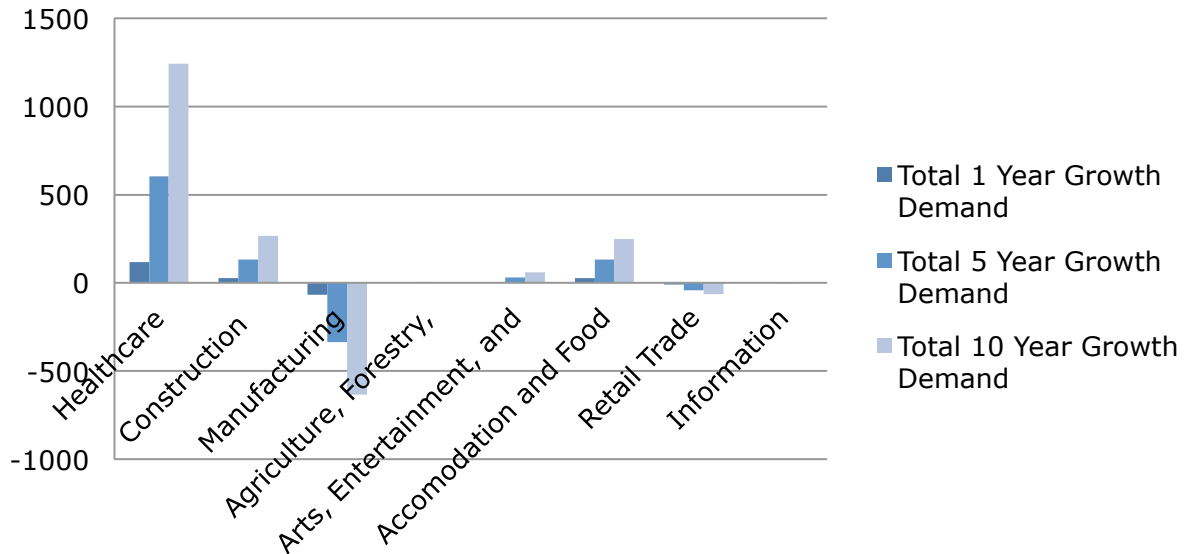
The largest 5-year growth demand occurs in Healthcare, with no other industry even coming close to its growth. The rest have relatively mild total growth demand, with manufacturing having the largest negative growth demand, with its 5-year growth demand at -336.

## Avg. Annual Growth Percentage
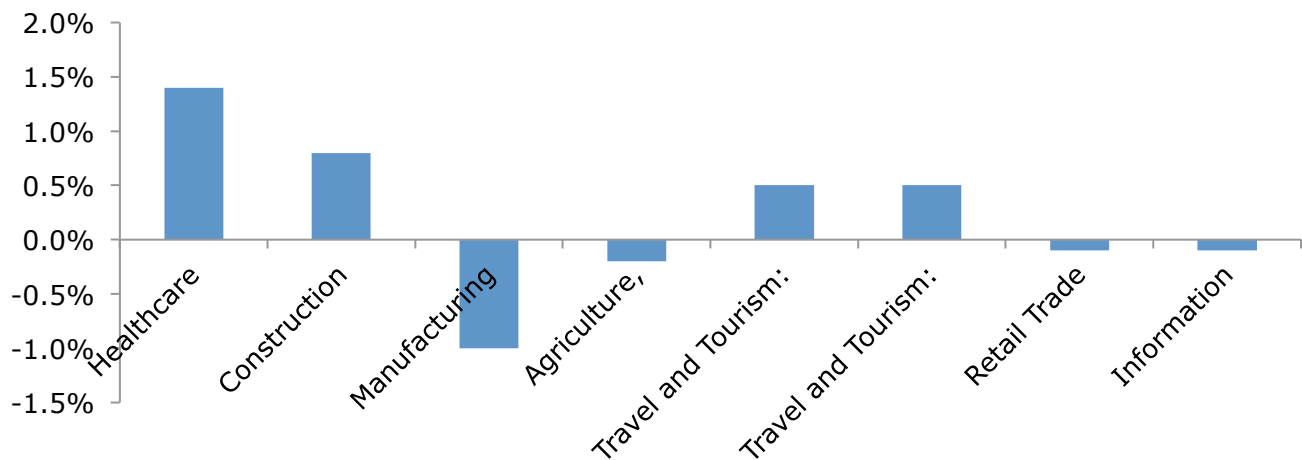
Concurrent with the previous graph, manufacturing has the largest negative growth percentage of -1% per year. Healthcare has the largest annual growth percentage of 1.4%, with the Travel and Tourism and Construction industries also having positive annual growth rates.

Wage Trends:

Highlights:

- The health industry had the highest average annual employment forecast rate, while Electrics and Electronics Manufacturing had the negative employment forecast rate.

- Professional Services had the highest average wage while still maintain positive employment forecasting rate.

- In the past five years, nearly all industries exhibited positive wage growth for the majority of the years.

- The information industry is the only industry that is currently exhibiting negative wage growth.

- Agriculture, Forestry and Hunting have illustrated massive wage growth in the past 2 years.

Charts:
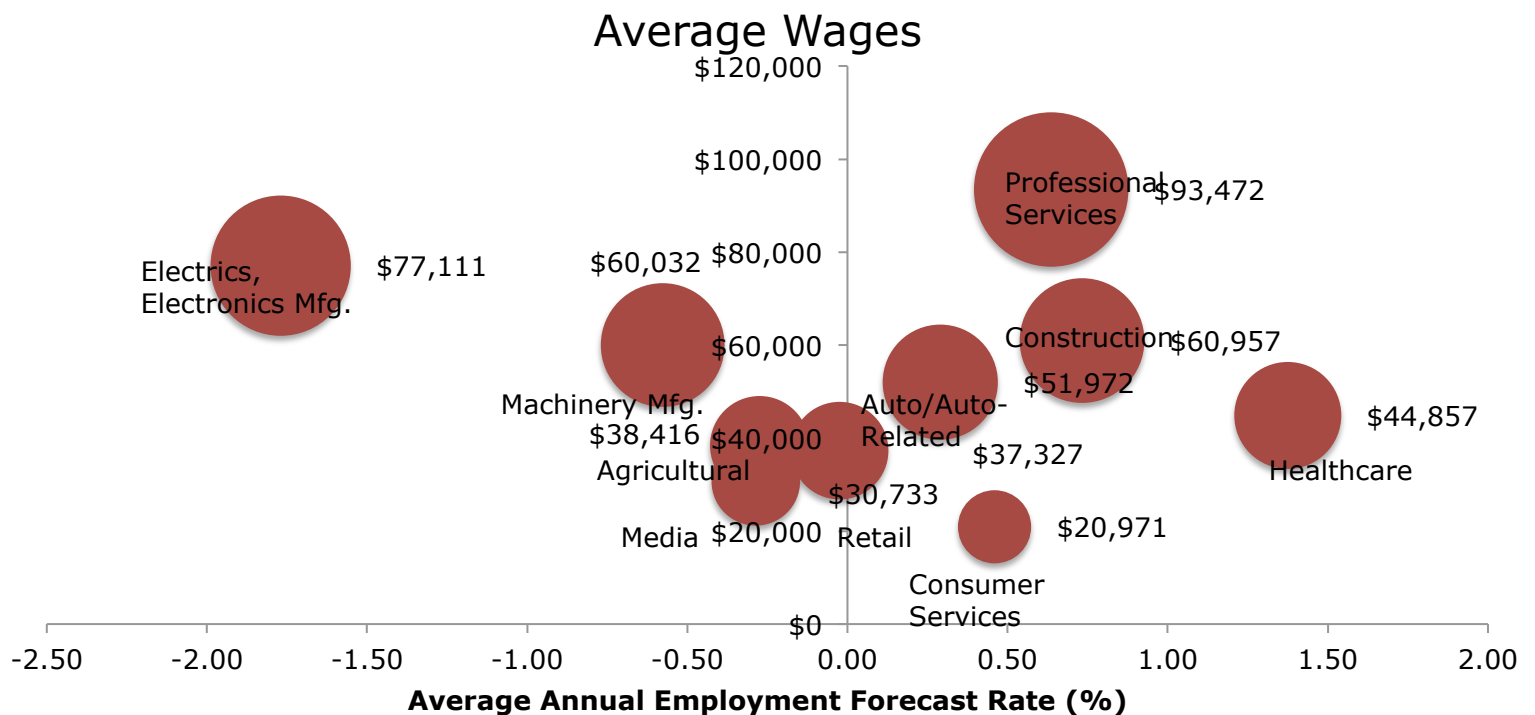
Average Wages

Average Annual Employment Forecast Rate (%)

The cluster plot above portrays industries with their employment forecasting rate and their relative average salaries. The size of each bubble is relative to the size of the average salary.
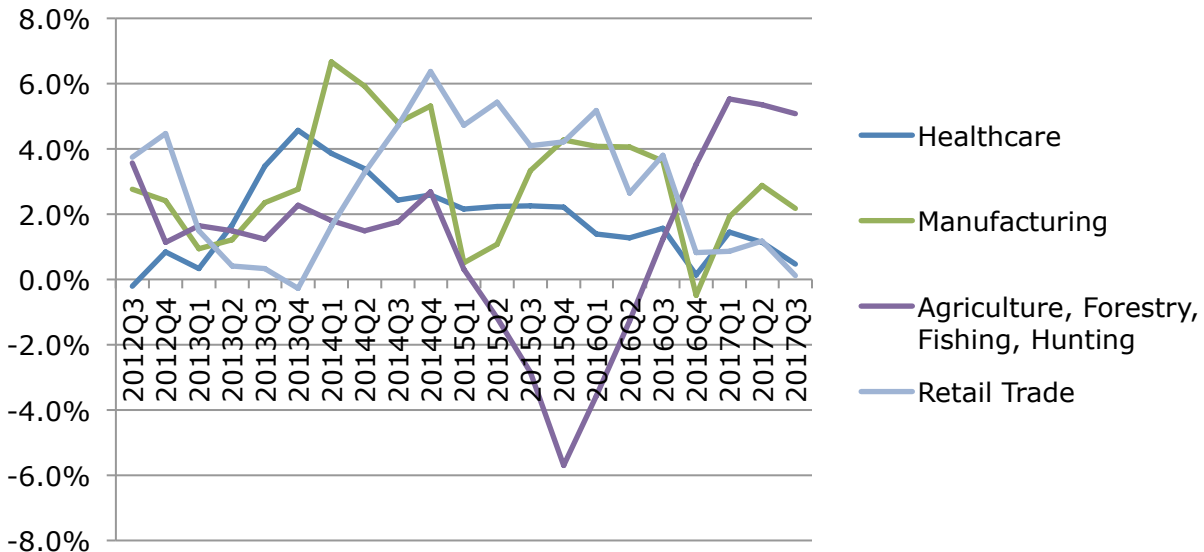
The graphs below demonstrate the average wage changes in the past five

Average Wage Change
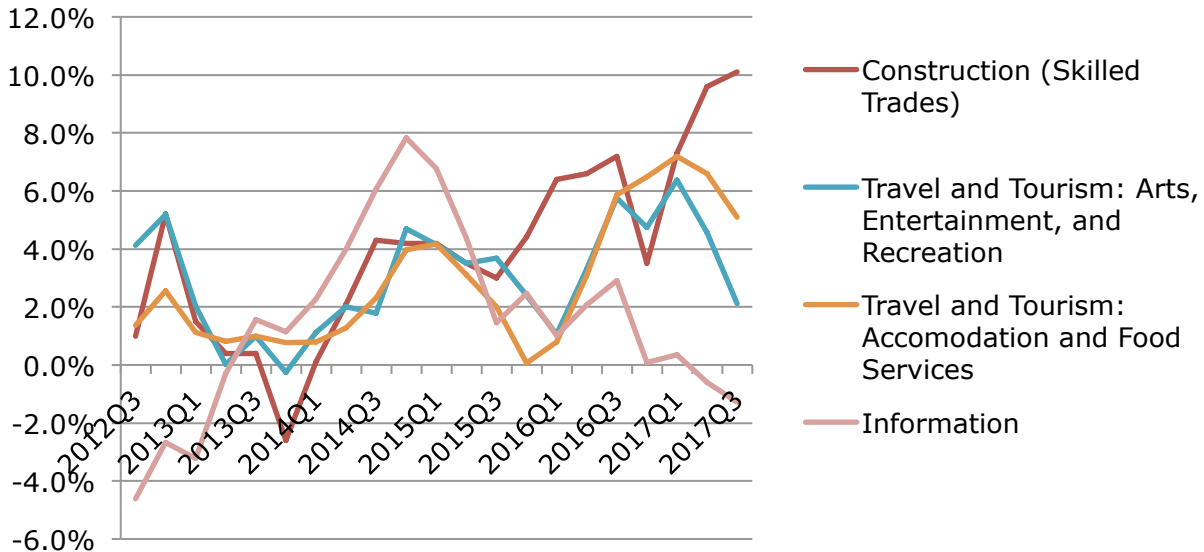
years. Information is the only industry that has recently demonstrated negative wage growth. Construction has shown significant positive wage growth, reaching 10% in the most recent quarter that data is available.

Average Wage Change 2

This graph shows the wage trends of the other four industries of interest. Agriculture has recently been growing exponentially since the end of 2015. The other three industries have been exhibiting positive wage growth through these past five years.
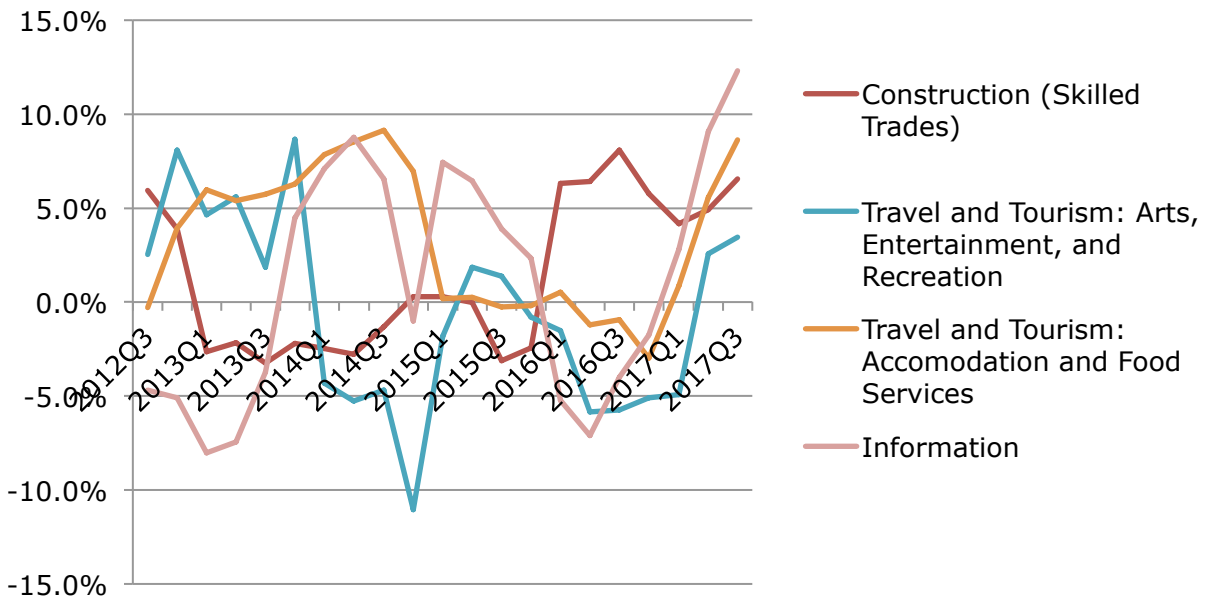
Employment Trends:

Highlights:

- Healthcare, Manufacturing, Agriculture and Retail Trade all ended the third quarter of 2017 with negative percentage change in employment.

- Information and the two Travel and Tourism sectors exhibited major employment growth rates.

Charts:

Employment Trends
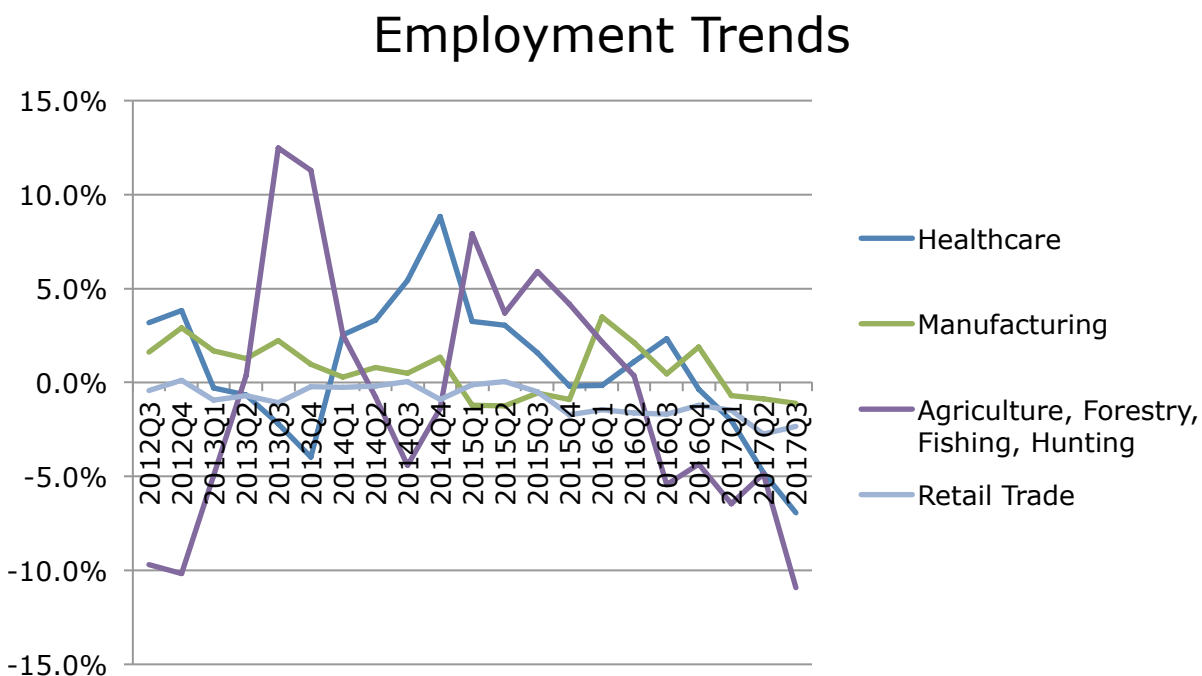
These graphs are divided by industries that have recently demonstrated negative growth in employment in the past three quarters, while the other four industries examined have exhibited positive growth. All of the industries above also have negative 1 and 5-year growth demand. All of the industries above with the exception of Healthcare also have had negative employment changes in the past five years.

Employment Trends

Construction (Skilled Trades)

Travel and Tourism: Arts, Entertainment, and Recreation

Travel and Tourism: Accomodation and Food Services

Information

These four industries are those that have exhibited positive employment growth in the past three quarters. As stated above, these four industries have positive 1 and 5-year growth demand, and all have positive employment changes in the past five years.
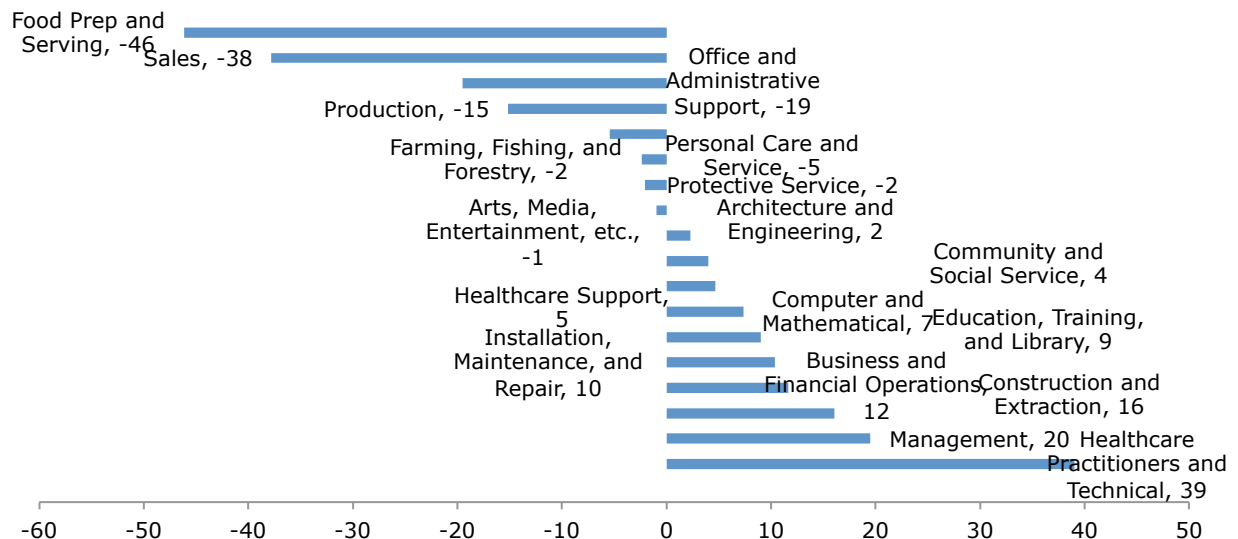
Occupational Gaps:

Highlights:

- Food Preparation and Serving Related Occupations have the largest oversupply of workers, by 46.

- The largest demand for workers occurs in the Healthcare industry, as shown additionally average annual forecast rate.

Charts:
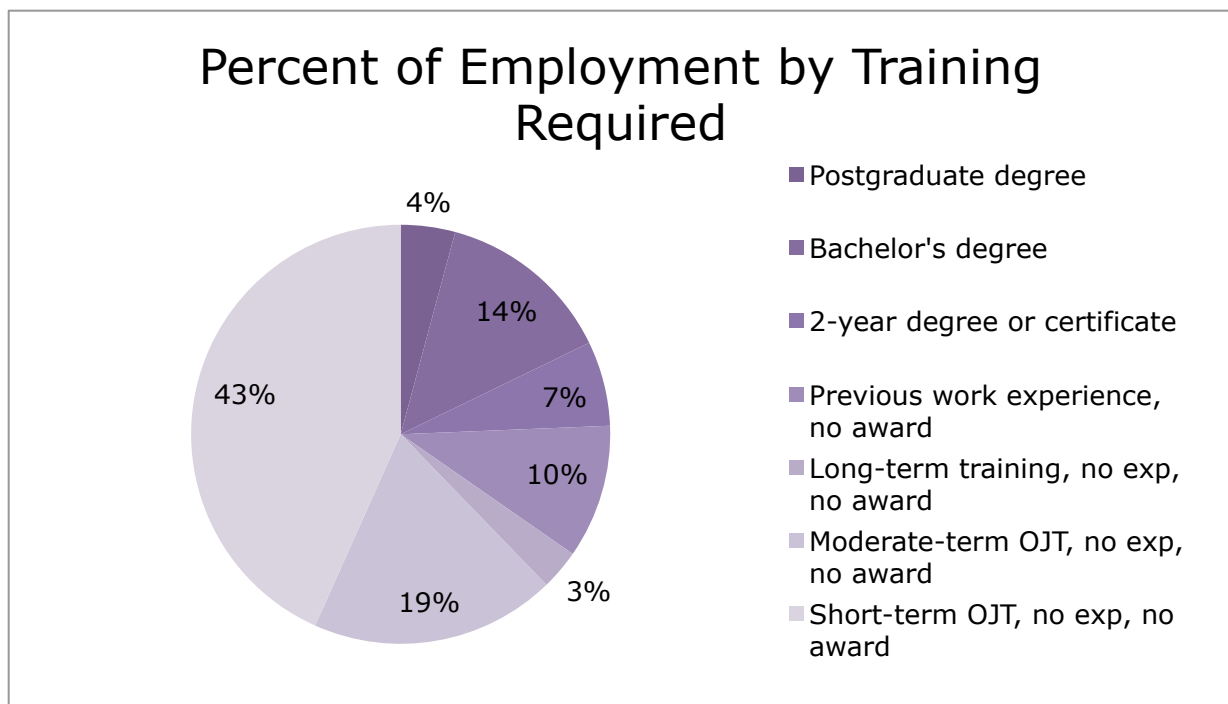
Average Occupational Gaps over 10 Years

Occupational gaps are important in determining what type of jobs, in comparison to type of industries, are in high demand of employment. Here, we see that Healthcare jobs are in high demand, and occupations including management, construction, and business operations are similarly desired. Analyses such as these are useful to determine which jobs within industries are in higher demand (i.e. Healthcare Practitioners and Construction and Extraction workers) as opposed to professions in industries that are not in high demand.

Seneca County

Educational Characteristics:

HIGHLIGHTS:

- As with Ontario County and Wayne County, Seneca County's employees with only short-term on-the-job training.

- Seneca County exceeds the U.S. only in percentage of high school graduates, high school dropouts, and those with associate's degrees.

- Employment forecasted to grow the most are those positions requiring postgraduate degrees, with forecasts at 1.1% over the next 10 years, and the next two highest categories being 2-year degrees and Bachelor's degrees.

Percent of Employment by Training Required

Legend:
- Postgraduate degree
- Bachelor's degree
- 2-year degree or certificate
- Previous work experience, no award
- Long-term training, no exp, no award
- Moderate-term OJT, no exp, no award
- Short-term OJT, no exp, no award

Pie chart values: 4%, 14%, 7%, 10%, 3%, 19%, 43%

The above graph demonstrates the jobs in Seneca County, categorized by the training required to obtain them. As is typical for the four counties, short-term OJT jobs are the largest percent of jobs offered in Seneca County. The next two largest categories are jobs requiring moderate-term OJT and

bachelor's degree. Over half of the workforce in Seneca County does not have any college degree, and 75% of the employment opportunities do not require any college degree. Seneca County has a larger percentage of residents that have no high school, high school diplomas, and associate's degrees than the United States. The average annual employment forecast rate for the next ten years indicates growth by training required. Those jobs

Educational Breakdown
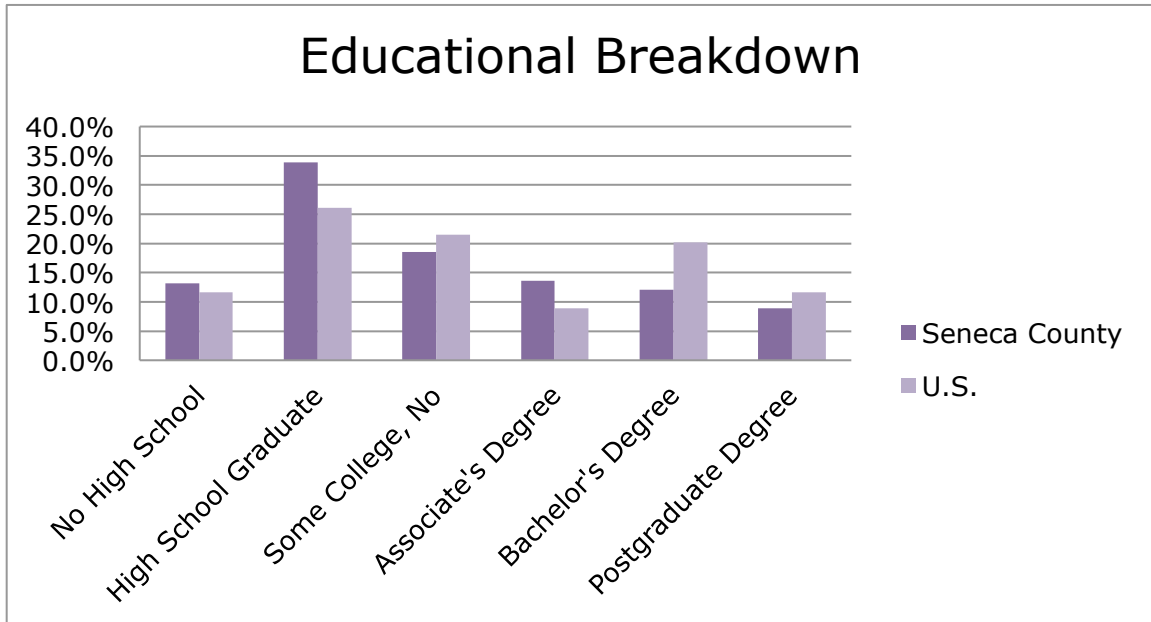
that require postgraduate degrees have the largest growth rate, followed by jobs requiring bachelor's degrees and associate's degrees. Therefore, the majority of employment that is forecasted to grow in the next ten years requires higher levels of education.

Average Annual Employment Forecast Rate(%) 2017Q1-2027Q1
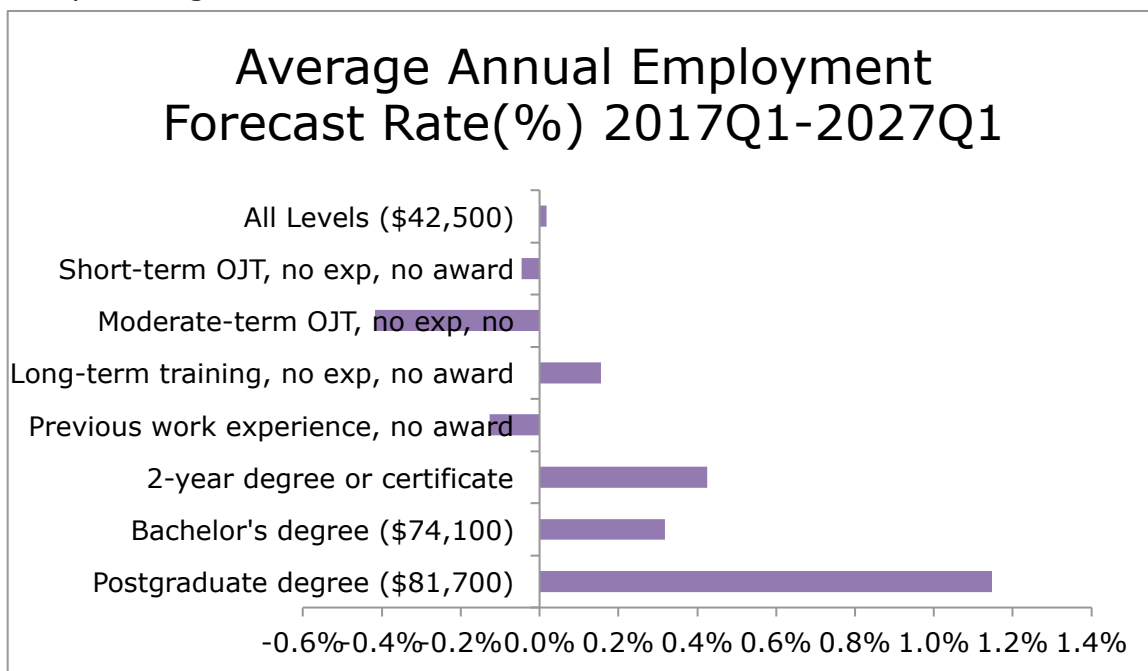
Growing Economy:
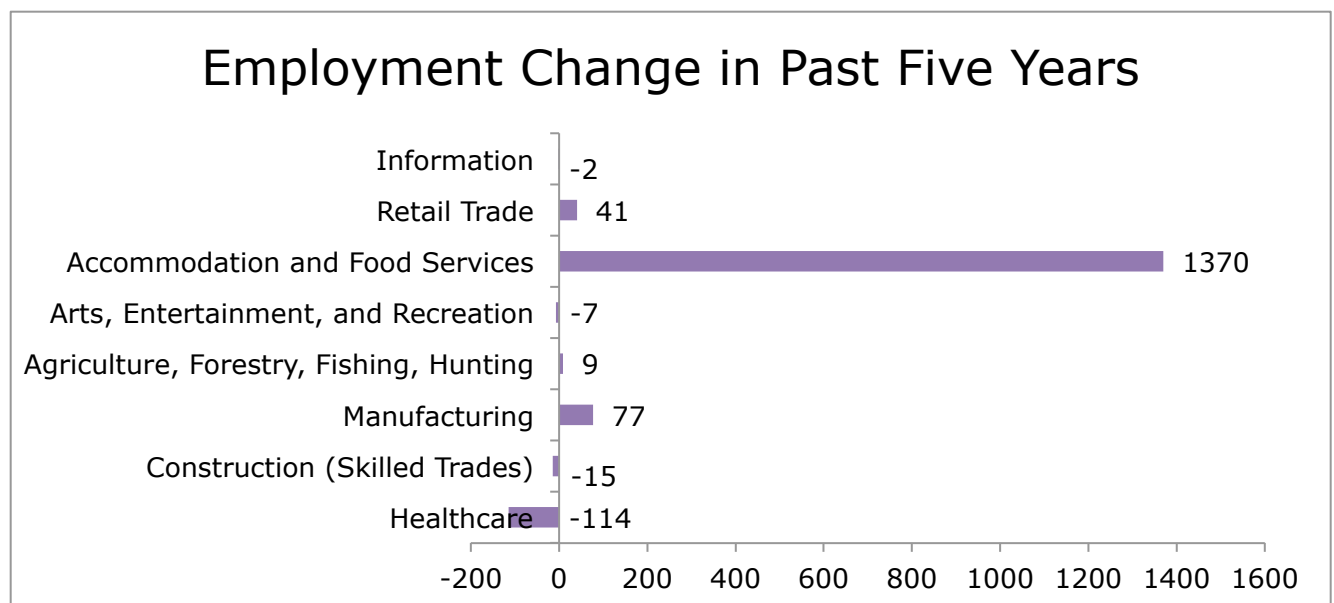## The Top Industries

Highlights:

- Manufacturing and Retail Trade are the largest industries in terms of employment for Seneca County.

- Accommodation and Food Services and Construction are the industries that have the largest employment growth, primarily because they also have the highest turnover rate percentage.

- Construction, Manufacturing and Arts and Entertainment have the highest average annual earnings, all above the average of all industries.

- The Accommodation and Food Services industry demonstrated massive growth in the past five years. Manufacturing and Retail Trade also had noticeable positive growth.

Workforce Characteristics	Healthcare	Construction (Skilled Trades)	Manufacturing	Agriculture, Forestry, Fishing, Hunting
Employment	1054	213	2228	118
as a % of all industries	9.1%	1.8%	19.1%	1.0%
New Hires	100	70	215	23
as a % of all industries	6.5%	4.6%	14.1%	1.5%
Growth of employment via new hires %	9.5%	32.9%	9.6%	19.5%
as a % of all industries	72.2%	250.0%	73.4%	148.3%
Separations	110	83	288	31
as a % of all industries	6.0%	4.5%	15.6%	1.7%
New Hires-Separations:	-10	-13	-73	-8
Turnover %	7.5%	14.3%	7.7%	13.9%
as a % of all industries	83.3%	158.9%	85.6%	154.4%
Average Annual Earnings	$37,126.00	$47,914.00	$75,336.00	$27,959.00
as a % of all industries	82.0%	105.9%	166.5%	61.8%

The above and below charts demonstrate workforce characteristics among the industries of focus. It shows each characteristic, and then looks at the share that industry has as a percentage of all industries, so we can see how much each industry contributes in terms of employment, new hires, etc. to Seneca County.

Workforce Characteristics	Arts, Entertainment, and Recreation	Accommodation and Food Services	Retail Trade	Information	All Industries
Employment	111	908	2197	28	11638
as a % of all industries	1.0%	7.8%	18.9%	0.2%	
New Hires	24	284	418	6	1530
as a % of all industries	1.6%	18.6%	27.3%	0.4%	
Growth of employment via new hires %	21.6%	31.3%	19.0%	21.4%	13.1%
as a % of all industries	164.5%	237.9%	144.7%	163.0%	
Separations	27	315	432	7	1843
as a % of all industries	1.5%	17.1%	23.4%	0.4%	
New Hires-Separations:	-3	-31	-14	-1	-313
Turnover %	17.4%	17.9%	11.7%	0.0%	9.0%
as a % of all industries	193.3%	198.9%	130.0%	0.0%	
Average Annual Earnings	$45,669.00	$16,302.00	$27,257.00	$16,585.00	$45,251.00
as a % of all industries	100.9%	36.0%	60.2%	36.7%	

Positive aspects to note about Seneca County's employment characteristics are that its largest employment industry, Manufacturing, also has one of its highest average annual earnings. The tourism industries of Arts and Entertainment and Accommodation and Food Services also have noticeably high turnover percentages, the highest of any of the eight industries of interest. The graph below demonstrates employment changes in the past five years among the eight industries. Clearly the story below is the massive growth in the Accommodation and Food Services industry – no other industry

Employment Change in Past Five Years

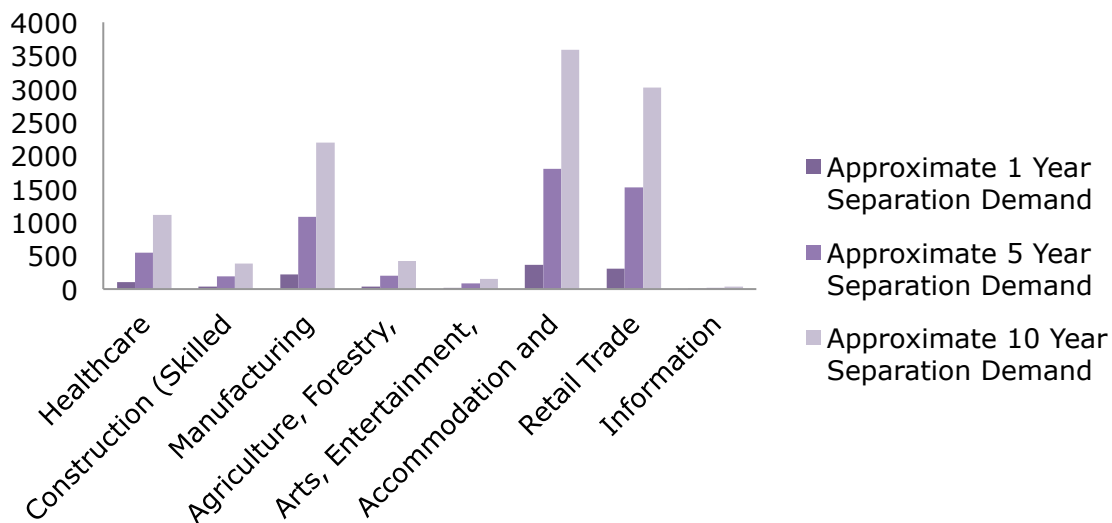| Industry	Change
Information	-2
Retail Trade	41
Accommodation and Food Services	1370
Arts, Entertainment, and Recreation	-7
Agriculture, Forestry, Fishing, Hunting	9
Manufacturing	77
Construction (Skilled Trades)	-15
Healthcare	-114

in any of the four counties has exhibited growth such as this. There have been smaller yet significant negative employment changes in Healthcare, and smaller significant positive employment changes in Retail Trade and Manufacturing.

Forecasts & Projections

Highlights:

- Accommodation and Food Services and Retail Trade have the largest separation demand through the next ten years, with Arts and Entertainment having the smallest separation demand.

- Healthcare had the largest growth demand, whereas Manufacturing had the most negative growth demand through the next ten years.

- Information had the largest average annual growth percentage at 3.3%, most likely due to the small size of this industry.

Separation Demand

Separation demand is the number of jobs demanded due to separations in a particular industry resulting from exit from the labor force or changing occupations. Accommodation and Food Services and Retail Trade have the largest separation demands, meaning most likely there are significant labor force exits in these two industries.

Growth Demand
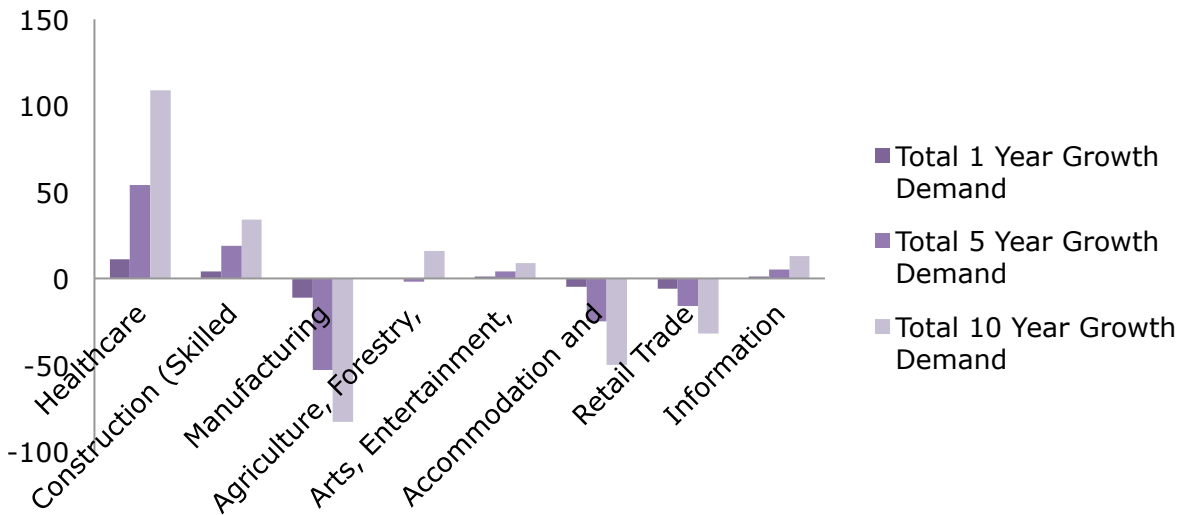
The above graph demonstrates demand for employment from the growth of the industry. This in combination with separation demand creates the total demand for employment in each industry. The growth demand is greatest in the Healthcare industry, and is positive in Construction, Agriculture, Arts and Entertainment, and Information. In Manufacturing, Accommodation and Food Services, and Retail Trade there has been negative growth demand for 1, 5 and 10-year projections. Both Manufacturing and Retail Trade also have negative annual growth percentages, whereas Information, Healthcare, Construction and Arts and Entertainment have positive forecasted growth percentages.

Avg. Annual Growth Percent
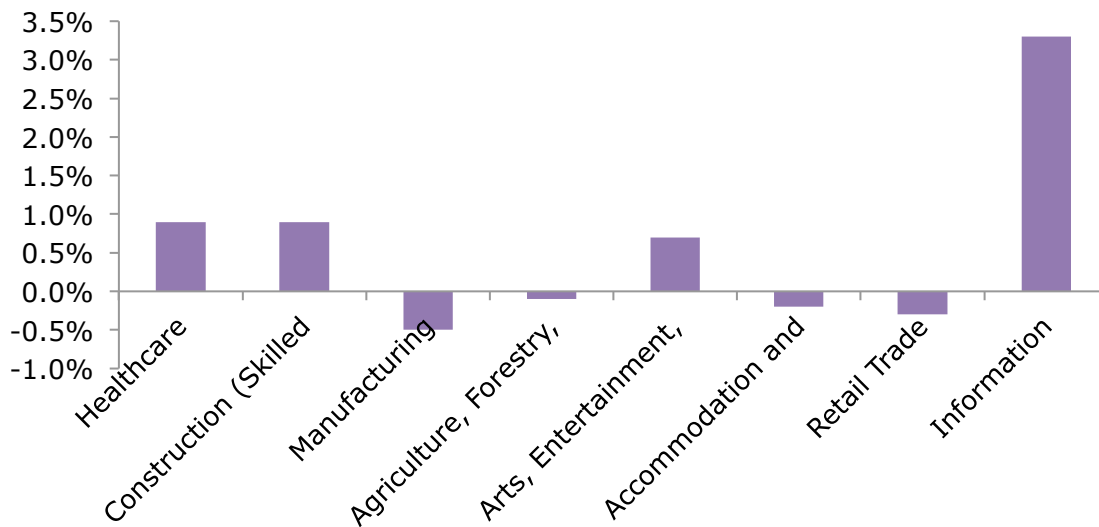
Wage Trends:

Highlights:

- The Health industry, as is typical in the other counties, has the highest employment forecast rate, but has a relatively low average wage.

- Machinery Manufacturing has the highest average wages but has negative employment forecasting.

- Many industries are not expected to grow at all, ranging from Public Administration to Retail.

- Accommodation and Food Services, in addition to seeing large employment changes in the past five years, also has seen significant wage growth.
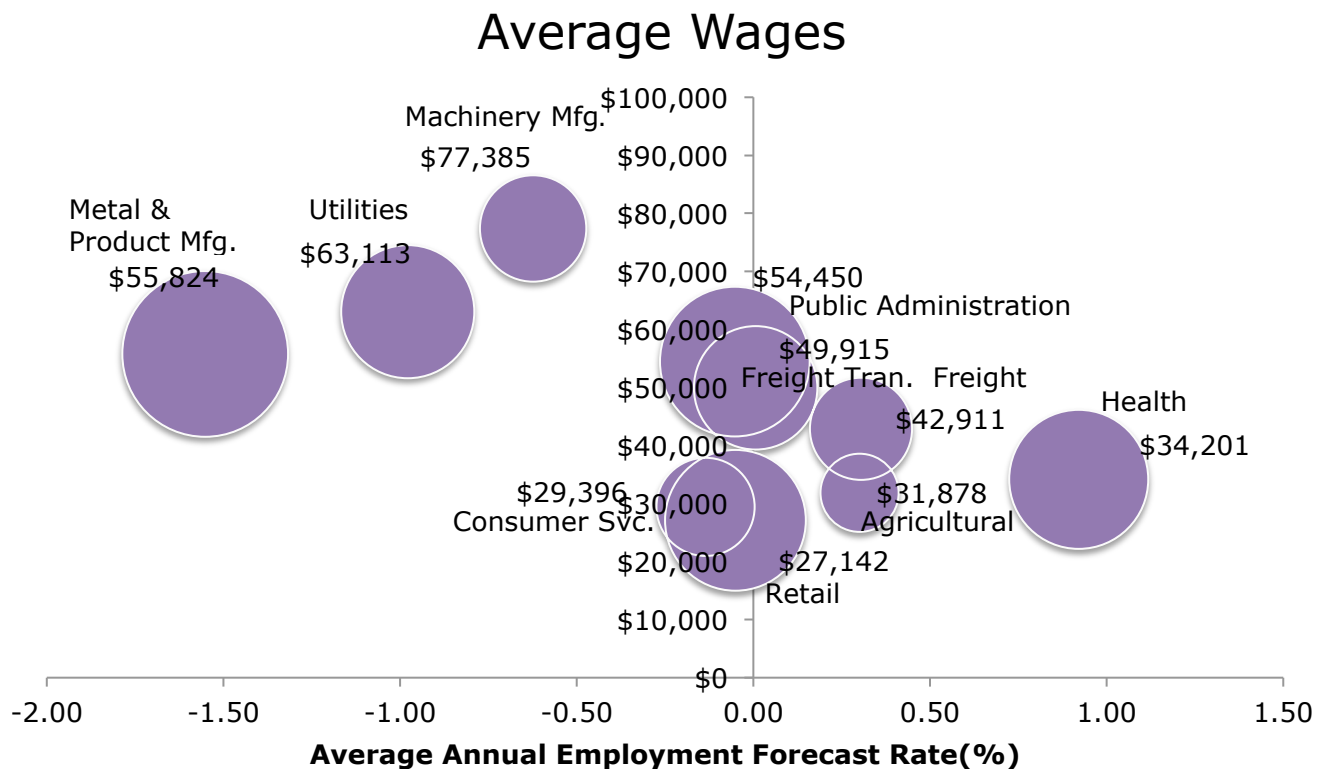
Average Wages

The cluster plot above portrays industries with their employment forecasting rate and their relative average salaries. The size of each bubble is relative to the size of the average salary.

Average Wage Change
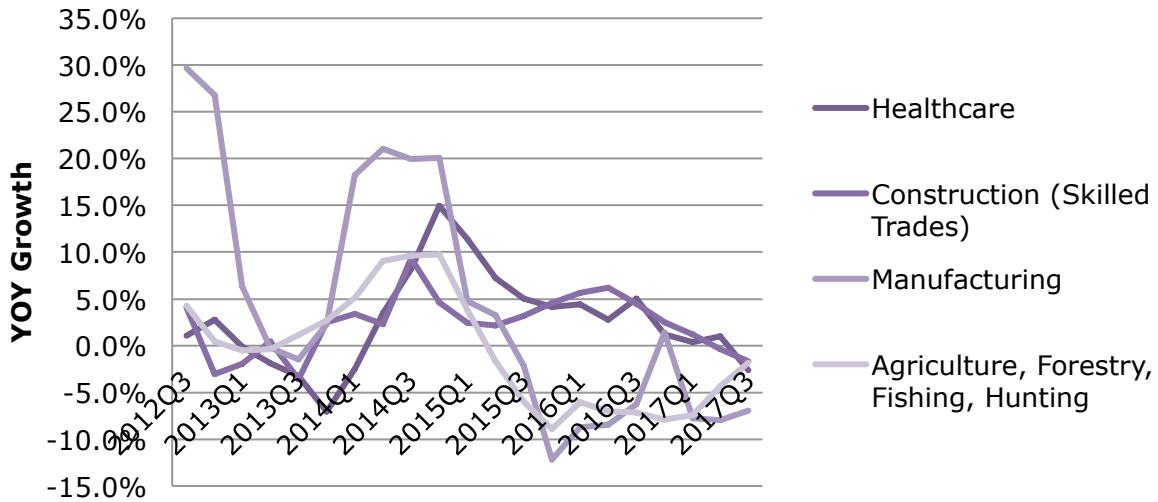
The graphs above and below show the wage changes among the eight industries of focus over the past five years, by quarter. Most industries are currently at wage growth close to zero, with the exception of Accommodation and Food Services. Manufacturing and Information have shown more volatility in their wages as opposed to other industries. The large YOY growth for Accommodation and Food Services is a beneficial change for Seneca County because of the large employment growth occurring in this industry recently. The stagnant/ declining wages of the other industries is more worrisome, but given the volatility demonstrated, this may not be an issue for much longer.

Average Wage Change 2
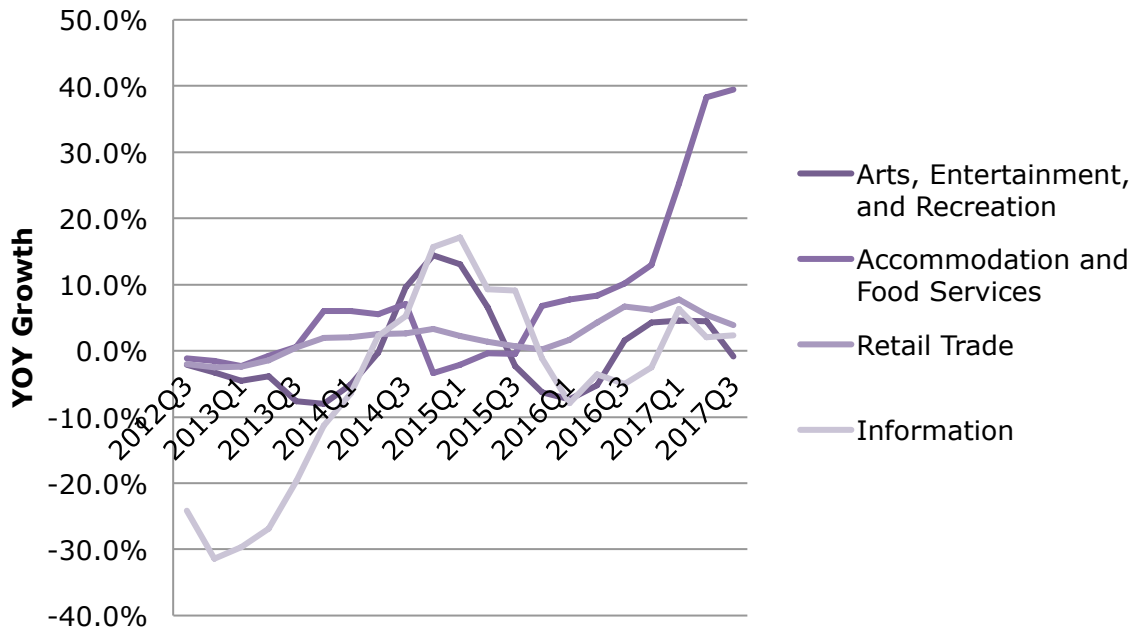
Employment Trends:

Highlights:

- As shown in the past five years of employment graph above, Accommodation and Food Services have seen significant employment growth just in the past year.

- Healthcare has shown significant volatility in the past five years but has since balanced out.

- Arts, Entertainment and Recreation is the only industry to have recently exhibited significant negative employment trends.

Employment Trends
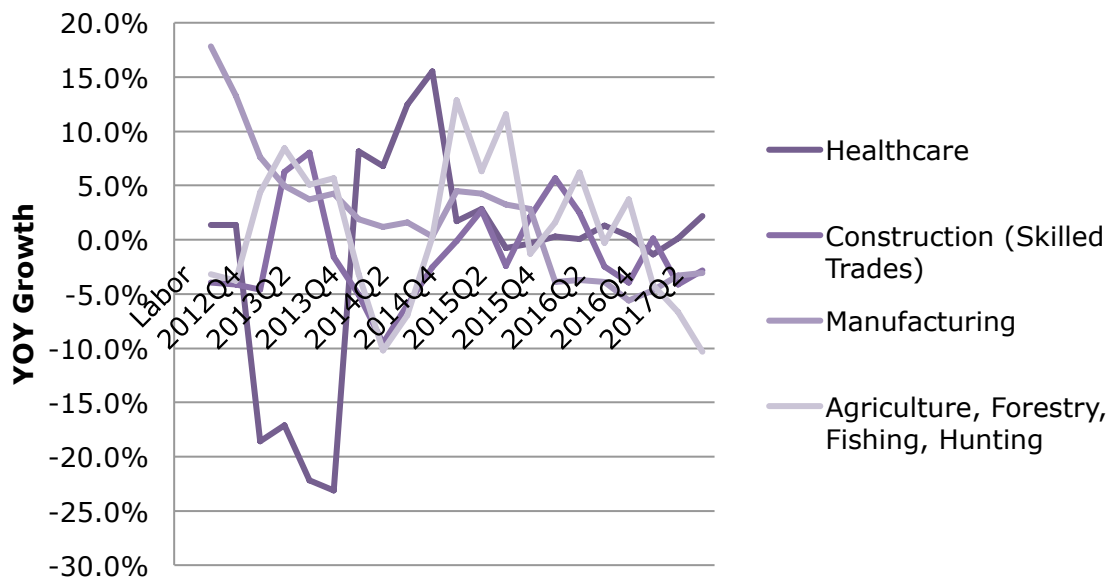
The main story demonstrated in these graphs is, as has been mentioned before, the extreme growth of employment of the Accommodation and Food Services industry, which has been accompanied by large wage growth as well. Other notable trends displayed by these graphs are the volatility of Healthcare, and the recent decline of employment in Arts, Entertainment and Recreation.
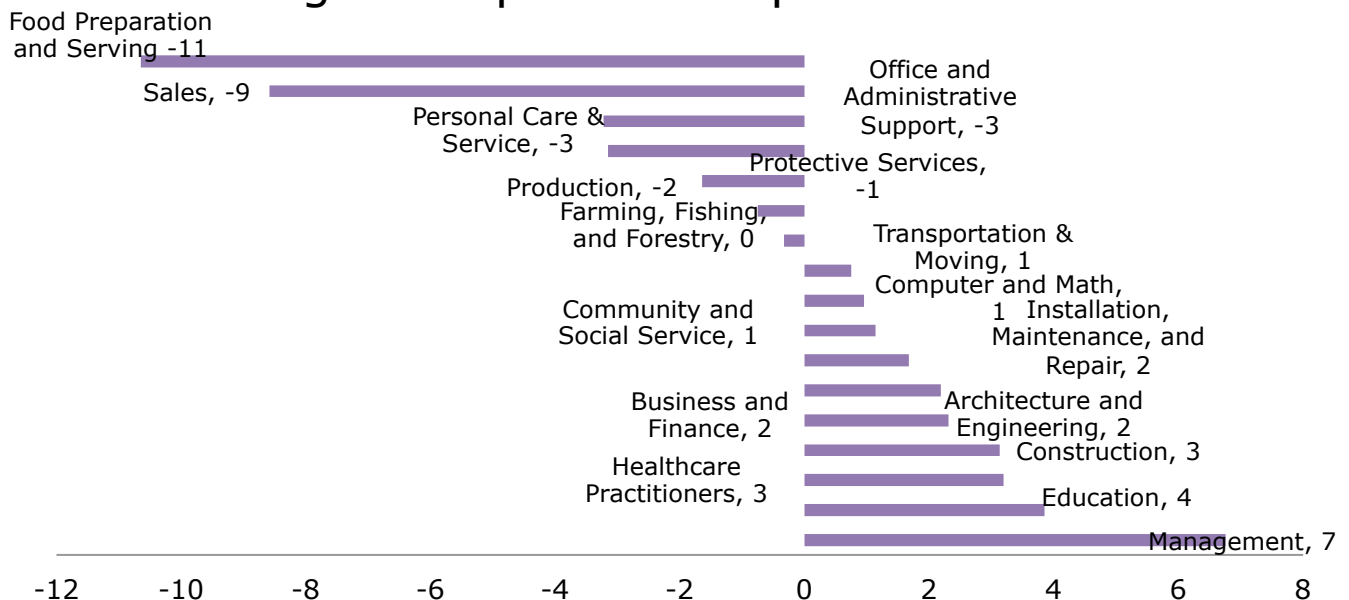
Employment Trends 2
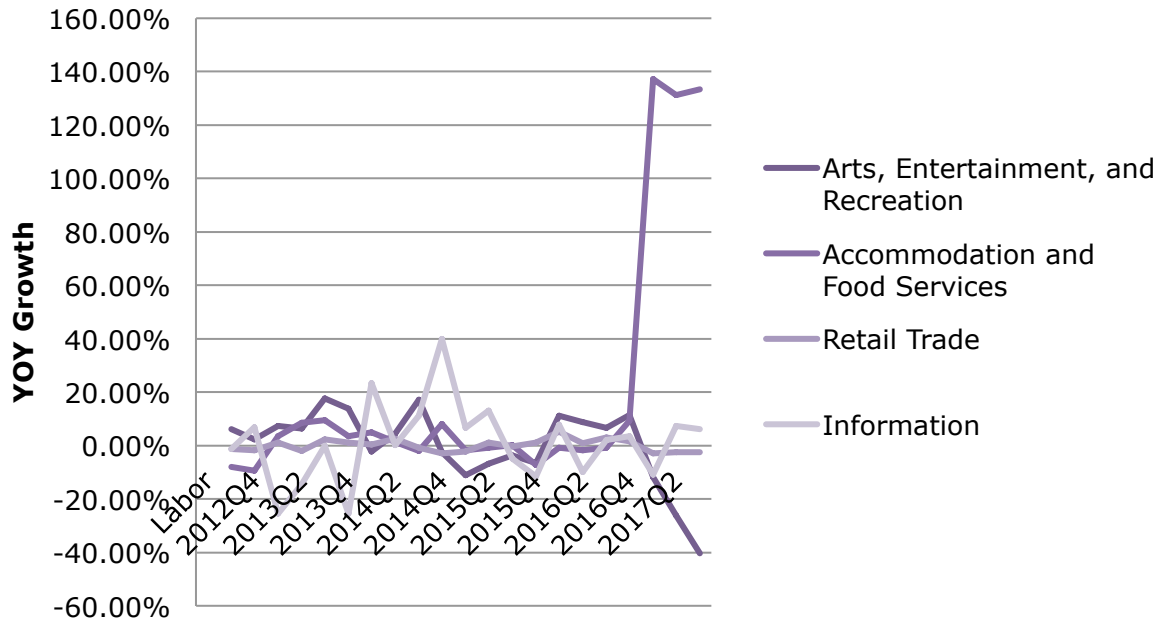
Important to note, however, are the differences in scale between these two graphs. Information has also been relatively volatile, even more so than the Healthcare industry. However, Information's relatively small size exaggerates these changes.

Occupational Gaps:

Highlights:

- Food Preparation and Serving has the most occupations with large negative occupational gaps, indicating perhaps that the large boom of the Accommodation and Food Services industry has caused too many residents to shift industries.

- Management positions are the most needed over the next ten years, with positions in both Construction and Healthcare close behind.

Average Occupational Gaps Over 10 Years

Food Preparation and Serving -11
Sales, -9
Personal Care & Service, -3
Office and Administrative Support, -3
Protective Services, -1
Production, -2
Farming, Fishing, and Forestry, 0
Transportation & Moving, 1
Community and Social Service, 1
Computer and Math, 1
Installation, Maintenance, and Repair, 2
Business and Finance, 2
Architecture and Engineering, 2
Construction, 3
Healthcare Practitioners, 3
Education, 4
Management, 7

-12 -10 -8 -6 -4 -2 0 2 4 6 8

Occupational gaps are important in determining what type of jobs, in comparison to type of industries, are in high demand of employment. Although these are broken up by occupation and not industry, there are still some trends within individual industries that can be garnered from this graph. First, there are definite occupational gaps within Healthcare, as well as Construction. Second, is that the Agriculture, Forestry, Fishing and Hunting industry seem to have no occupational gaps. Third, is that the Accommodation and Food Services appear to have negative occupational gaps from Food Preparation and Serving data. With this in mind, this data can be used to help determine not just which industries are growing in the next ten years, but which positions specifically are in need.
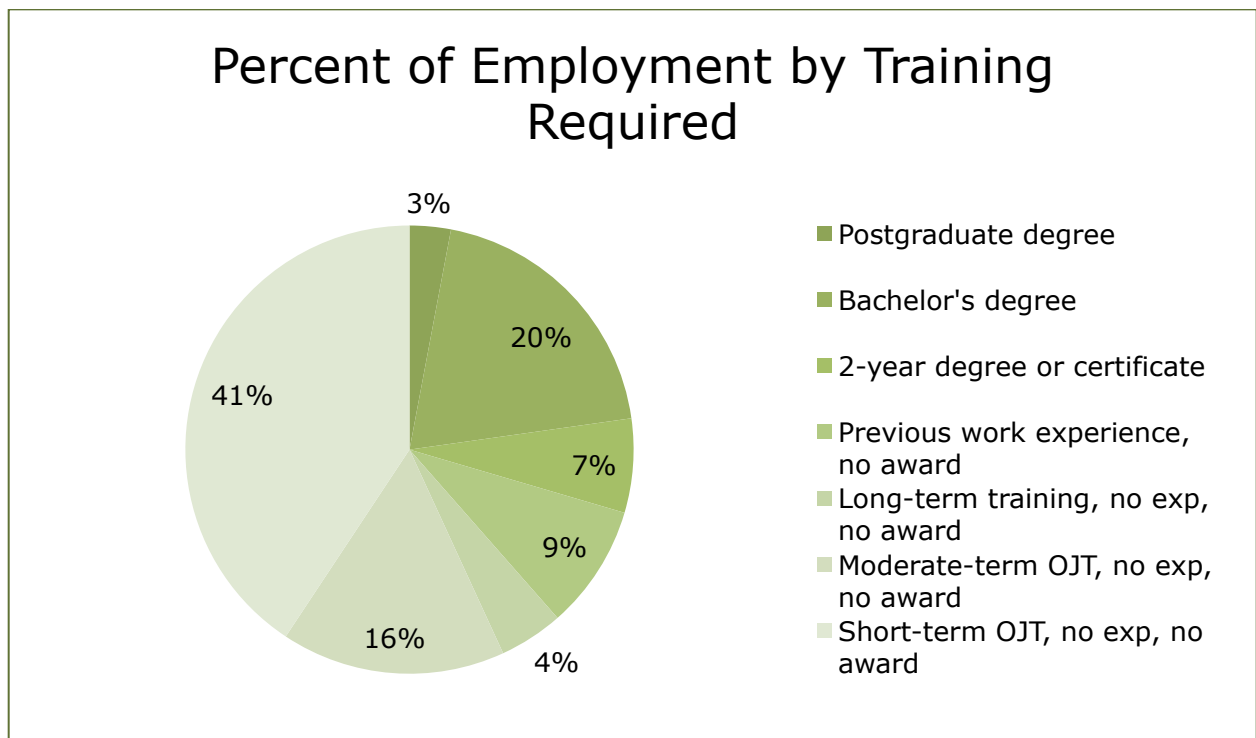
# Wayne County

Educational Characteristics:

HIGHLIGHTS:

- As with Ontario County, Wayne County's employment is comprised mostly of employees with only short-term on-the-job training.

- Wayne County has a high proportion of labor force participants with only a high school education, and lags behind the U.S. in percentage of population with Bachelor's and Postgraduate degrees.

- Moderate-term on-the-job training has the largest negative 10-year job growth, but all training levels have negative growth with the exception of Postgraduate degrees.

CHARTS:

Percent of Employment by Training Required

3%
20%
41%
7%
9%
16%
4%

- Postgraduate degree
- Bachelor's degree
- 2-year degree or certificate
- Previous work experience, no award
- Long-term training, no exp, no award
- Moderate-term OJT, no exp, no award
- Short-term OJT, no exp, no award

The above graph demonstrates the jobs in Wayne County, categorized by the training required to obtain them. As seen here, over 40% of the jobs in Wayne County require short-term on-the-job training, with the next closest

being Bachelor's degrees at 20%. However the percentage of Bachelor's degrees in Wayne County falls short of this 20%, with only 13.8% of Wayne County's population having Bachelor's degrees. Elaborating on the graph below, Wayne County lags behind the U.S. in all educational areas aside from graduated high school and those who have an Associate's Degree.

Educational Breakdown
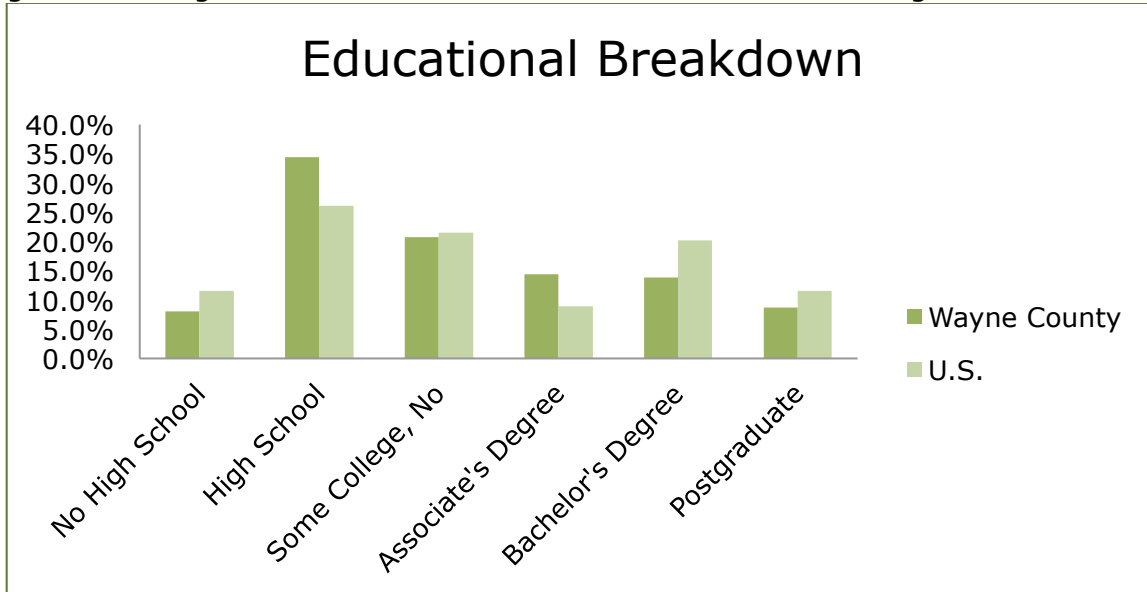
The Average Annual Employment Forecast Rate below shows the 10-year rate of growth of each area of employment by training required. As seen here, the only area that is expected to grow is the postgraduate degree positions. All other areas, with moderate-term on-the-job training being the most negative, have negative growth projections for the next 10 years.

Average Annual Employment Forecast Rate(%) 2017Q1-2027Q1
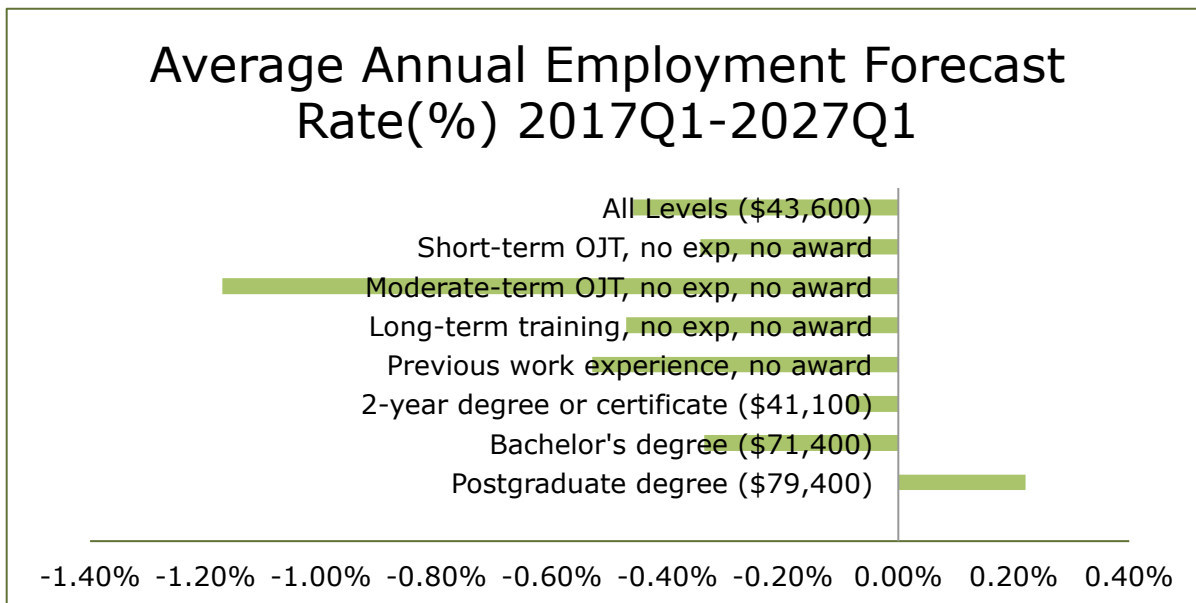
Growing Economy:
## The Top Industries

Highlights:

- Manufacturing is the main source of employment in Wayne County, while also having the highest average annual earnings that are 120% of the average of all industries.

- Agriculture, Forestry, Fishing and Hunting has the most new hires as a percentage of their total employment.

- The Agriculture industry also has the largest positive employment change in the past five years, with Manufacturing and Healthcare having large negative employment changes.

Workforce Characteristics	Healthcare	Construction (Skilled Trades)	Manufacturing	Agriculture, Forestry, Fishing, Hunting
Employment	3401	1146	5830	1786
as a % of all industries	11.7%	3.9%	20.0%	6.1%
New Hires	290	339	389	806
as a % of all industries	7.4%	8.6%	9.9%	20.5%
Growth of employment via new hires %	8.5%	29.6%	6.7%	45.1%
as a % of all industries	63%	219%	49%	334%
Separations	348	438	464	887
as a % of all industries	6.7%	8.4%	8.9%	17.0%
New Hires-Separations:	-58	-99	-75	-81
Turnover %	6.9%	12.7%	5.4%	13.7%
as a % of all industries	79.3%	146.0%	62.1%	157.5%
Average Annual Earnings	$39,044.00	$43,390.00	$51,121.00	$33,824.00
as a % of all industries	91.5%	101.7%	119.8%	79.2%

The above and below charts demonstrate workforce characteristics among the industries of focus. It shows each characteristic, and then looks at the share that industry has as a percentage of all industries, so we can see how much each industry contributes in terms of employment, new hires, etc. to Wayne County. Interesting to note from these charts, is that Manufacturing, Healthcare and Retail Trade constitute nearly half of all employment in Wayne County. Additionally, only Construction and Manufacturing have average earnings above the average earnings of all industries. The Arts, Entertainment and Recreation industry has extremely high turnover rate, of over 30%, but its small role of employment in Wayne County will diminish

Workforce Characteristics	Arts, Entertainment, and Recreation	Accommodation and Food Services	Retail Trade	Information	All Industries
Employment	265	1724	3348	187	29096
as a % of all industries	0.9%	5.9%	11.5%	0.6%	
New Hires	155	508	575	12	3929
as a % of all industries	3.9%	12.9%	14.6%	0.3%	
Growth of employment via new hires %	58.5%	29.5%	17.2%	6.4%	13.5%
as a % of all industries	433%	218%	127%	48%	
Separations	168	603	582	22	5230
as a % of all industries	3.2%	11.5%	11.1%	0.4%	
New Hires-Separations:	-13	-95	-7	-10	-1301
Turnover %	31.8%	17.9%	10.9%	6.6%	8.7%
as a % of all industries	365.5%	205.7%	125.3%	75.9%	
Average Annual Earnings	$16,869.00	$15,503.00	$28,413.00	$22,848.00	$42,684.00
as a % of all industries	39.5%	36.3%	66.6%	53.5%	

the effects of this. Construction, Agriculture, and the Travel and Tourism industries have new hires as a significant percentage (over 20%) of their total employment, demonstrating large growth in these sectors.


Employment Change in Past Five Years
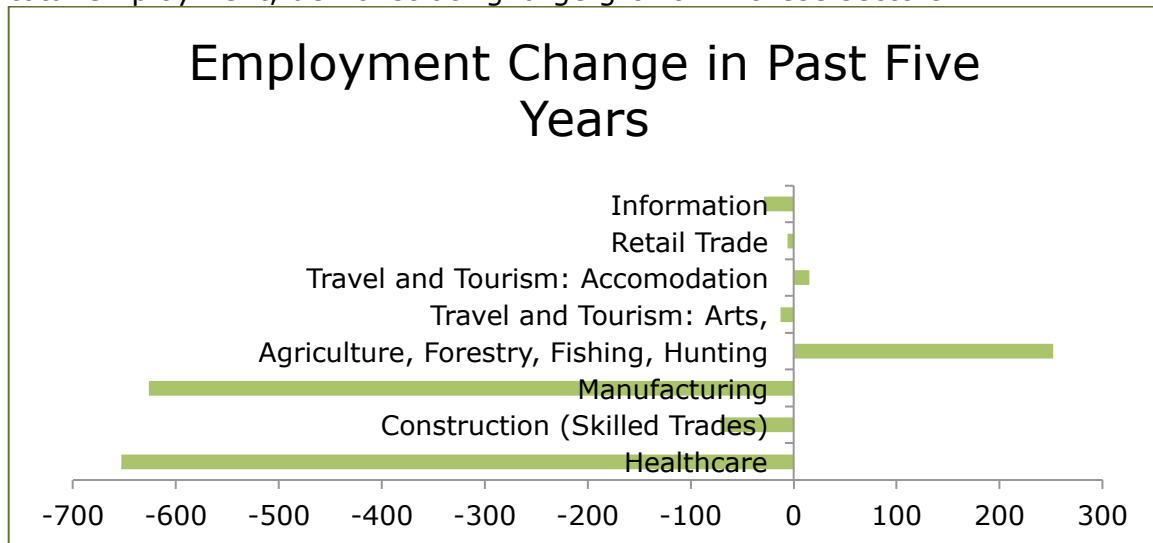
The majority of industries do not have significant positive or negative employment changes. Agriculture is the only industry that has significant positive employment. Manufacturing and Healthcare both have very significant negative employment changes, which is concerning as these are two out of the three largest industries of interest for employment in Wayne County.

# Forecasts & Projections

Highlights:

- Manufacturing and Retail Trade have the largest separation demand through the next ten years, with Manufacturing demanding 5020 over ten years, and Retail Trade demanding 4609.

- Manufacturing has the largest negative total growth demand however, with -845 demanded over ten years. This partially balances out its high separation demand.

- Although Information has low separation demand and low total growth demand, its small size causes it to have the largest average annual growth percentage of 1.4%.

Charts:
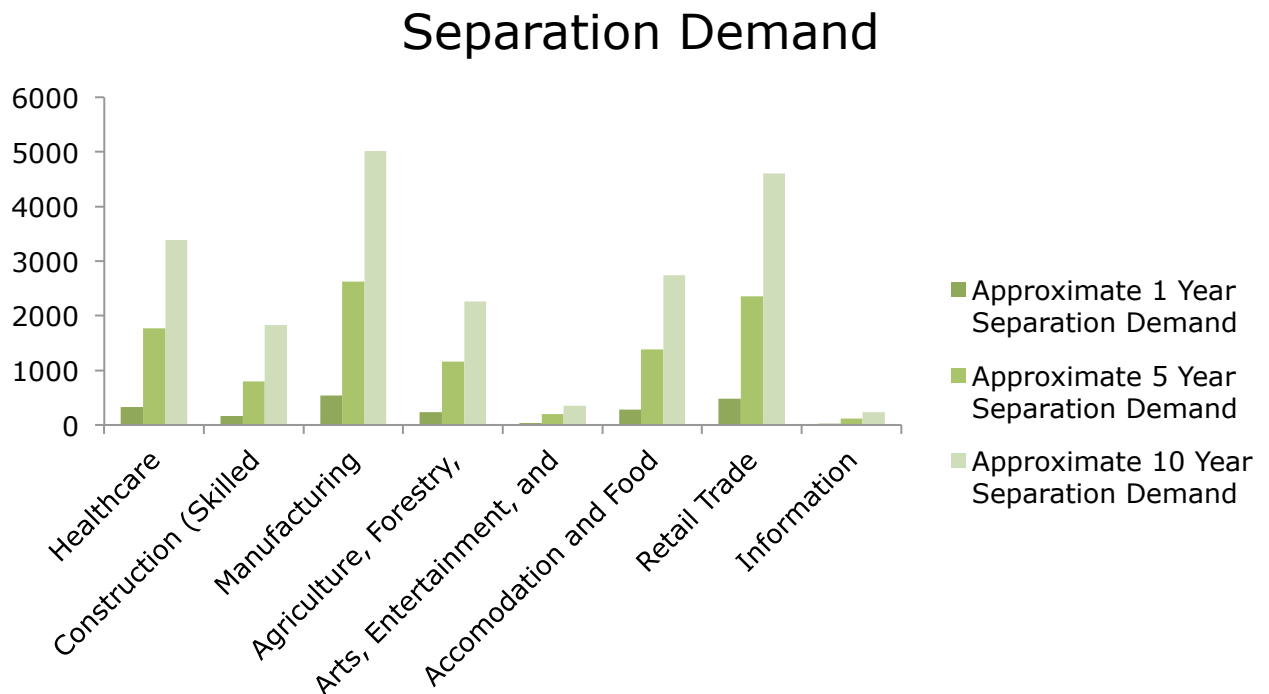
Separation Demand

Separation demand is the number of jobs demanded due to separations in a particular industry resulting from exit from the labor force or changing occupations. Manufacturing and Retail Trade have the largest separation demand, followed by the Accommodation and Food industry. Information has the lowest separation demand, but it has the highest average annual growth percentages, most likely due to its small size (it employs only 187 people).

Total Growth Demand

Legend:
- Total 1 Year Growth Demand
- Total 5 Year Growth Demand
- Total 10 Year Growth Demand
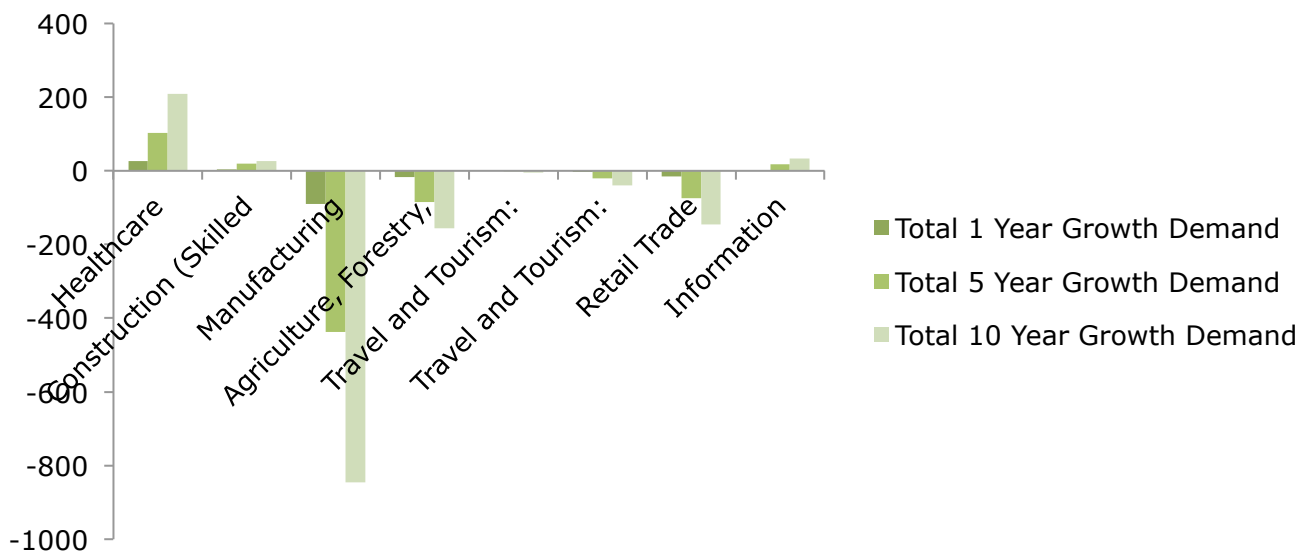
The majority of the industries have negative total growth demand, with the exception of Healthcare, whose total 10-year growth demand is 209. Manufacturing has significantly large negative growth demand, with its 10-year growth demand equal to -845.

Avg. Annual Growth Percent
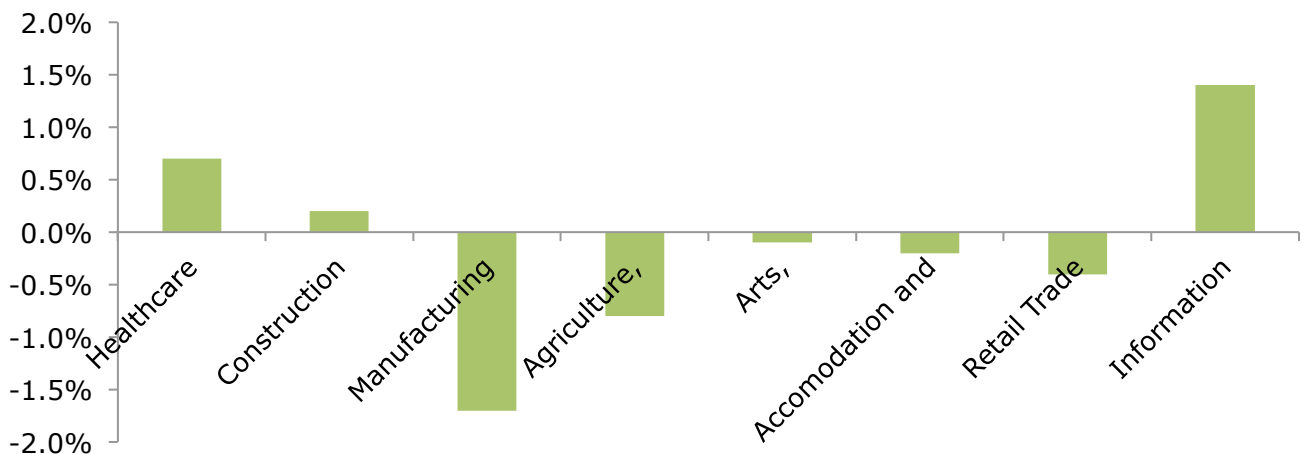
Manufacturing has the largest negative annual growth percentage, while information and healthcare have the two highest. With Manufacturing being such a dominant portion of Wayne County's employment and earnings, its apparent future decline is an area of concern. Healthcare and Construction are two bright spots, however, as they employ a significant number of people and have higher wages.

Wage Trends:

Highlights:

- While electric and electronic manufacturing has the highest average wages, they have the most negative employment forecast rate.

- Only Construction and Health have positive employment rates, with average wages slightly below the industry average.

- All average wages have been increasing at a decreasing rate in the past few quarters, but all industries have recently had positive wage growth with the exception of Construction and Information.
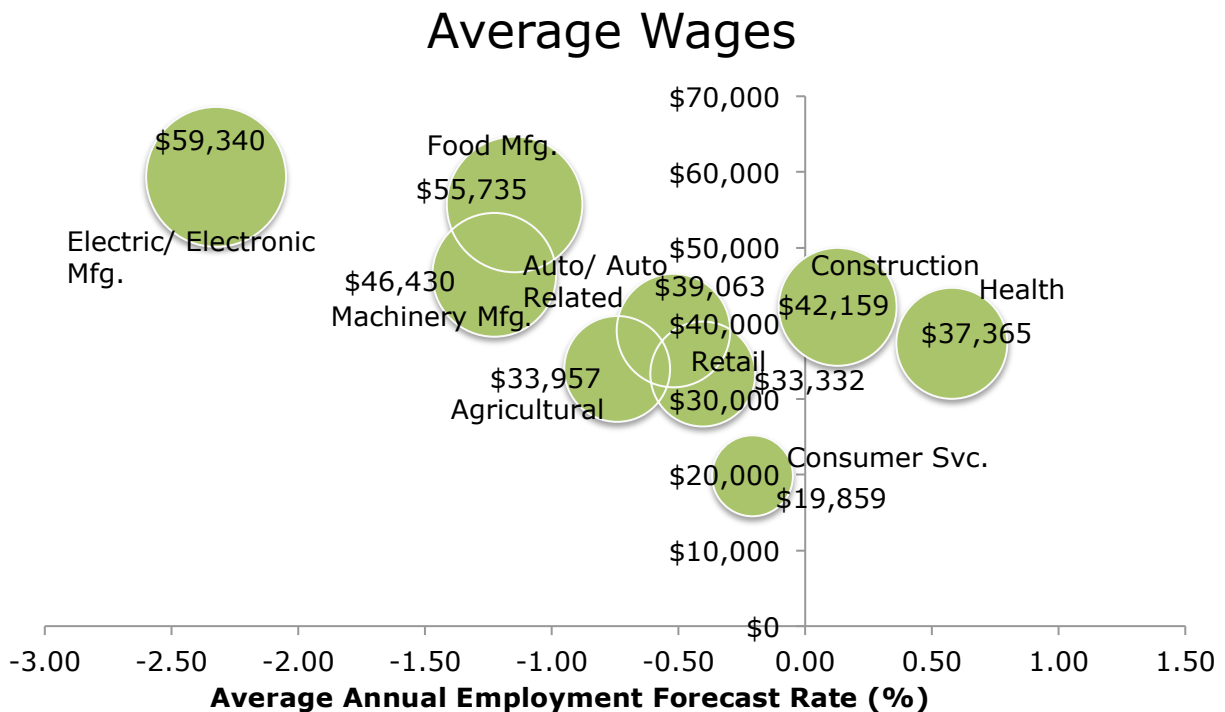
Average Wages

The cluster plot above portrays industries with their employment forecasting rate and their relative average salaries. The size of each bubble is relative to the size of the average salary.

Average Wage Change
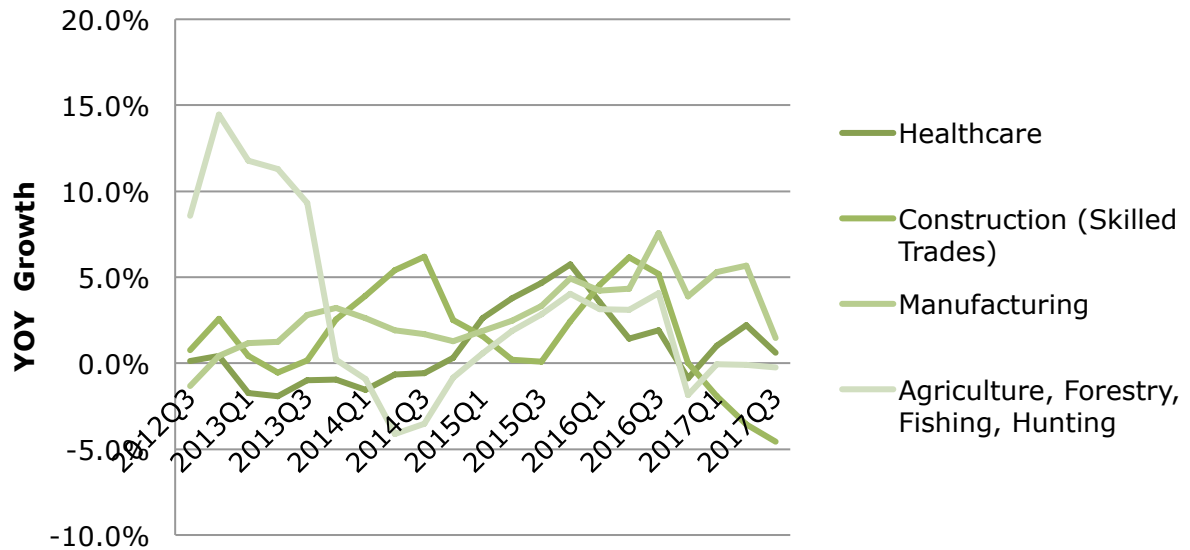
These two graphs demonstrate the average wage changes in all industries of focus. Important to note here is the recent relative decline in YOY growth among all industries. It is comforting to see that all but essentially two industries have exhibited positive wage growth in the past few quarters, with the exceptions being Construction and Information. Information has historically been extremely volatile in its YOY wage growth movements, however. All wage growth recently has been occurring at relatively low rates.
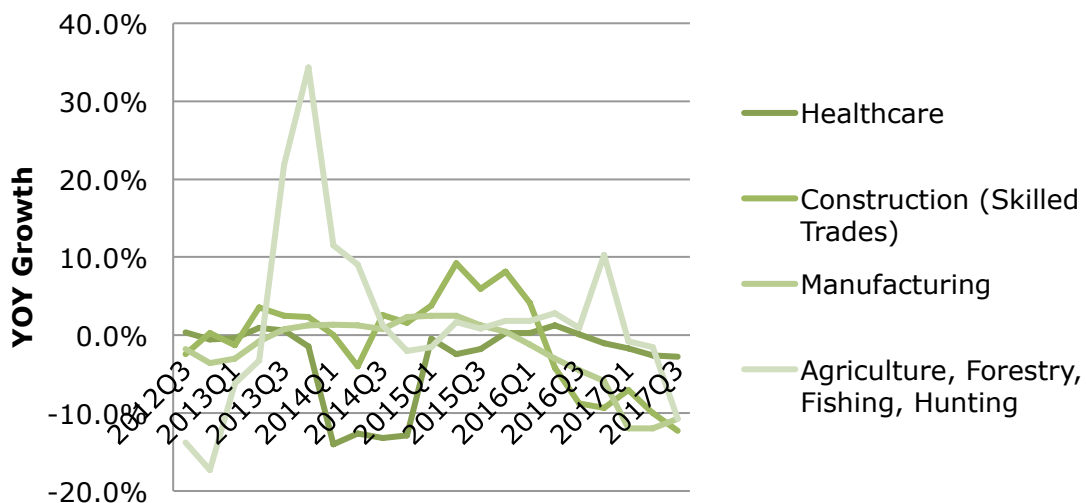
Average Wage Change 2
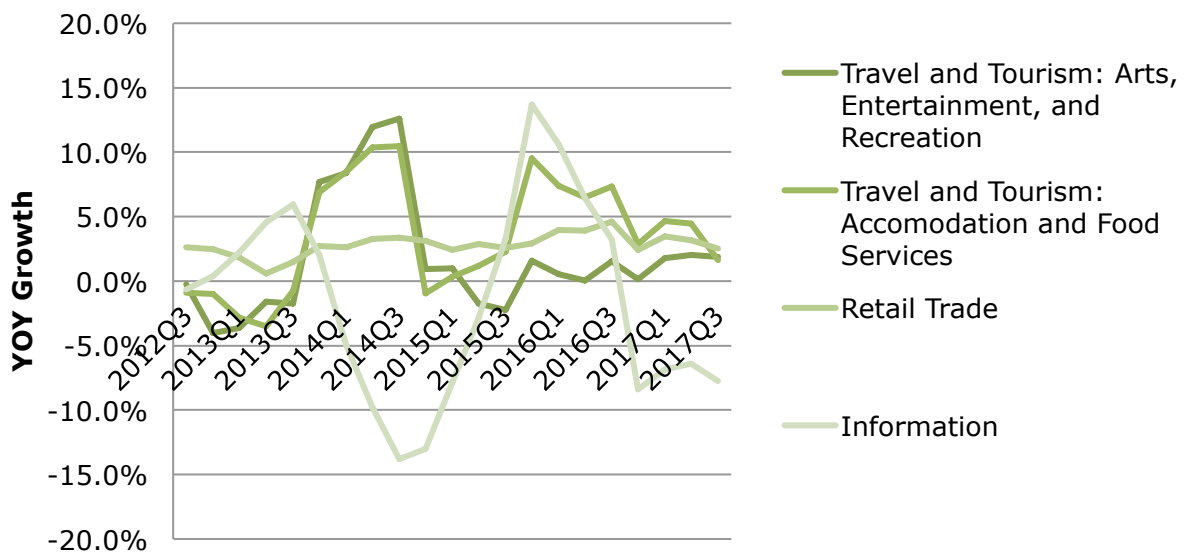
Employment Trends:

Highlights:

- All industries, with the exception of information, have recently exhibited negative employment growth.

- The Arts, Entertainment and Recreation industry had the steepest employment decline.

Employment Trends

Recently, Wayne County and their industries of interest have exhibited relatively low, if not negative employment YOY growth rates. However, these industries have tended to fluctuate in the past five years, leading us to believe that these fluctuations may be more cyclical. Agriculture especially has been extremely volatile in the past.
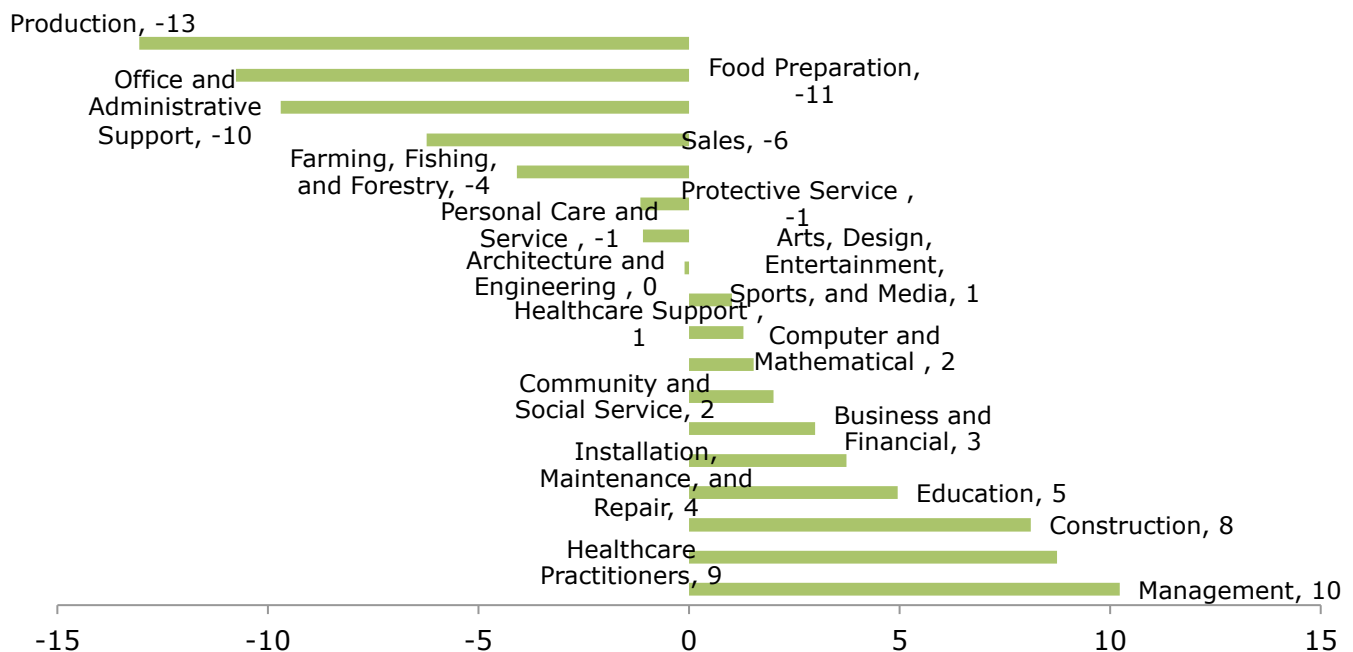
Employment Trends
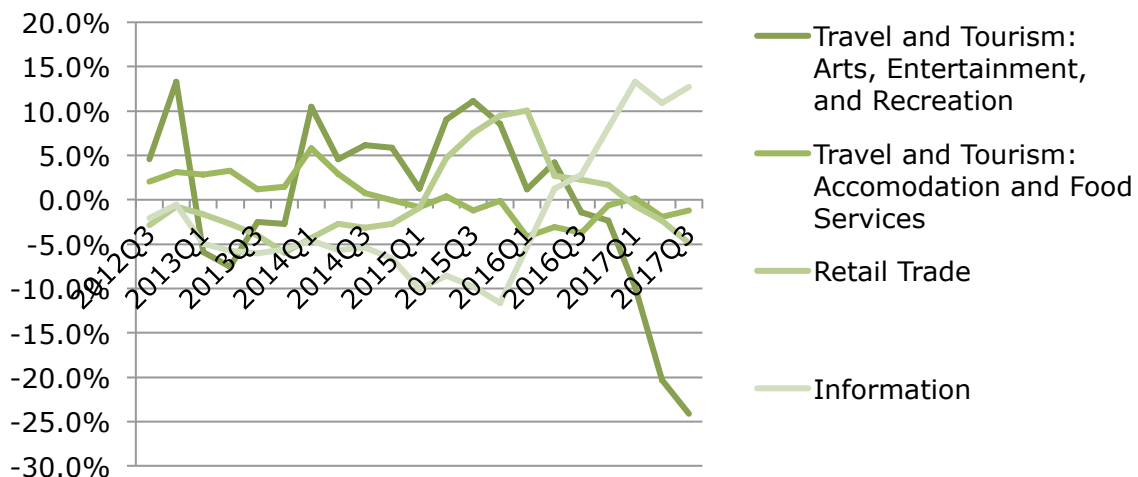
Occupational Gaps:

Highlights:

- Production has the largest negative occupational gap, with a 10-year forecast of -13 jobs demanded.

- Healthcare practitioners and support both have positive demand in the next 10 years, with a gap of 10 total positions. Construction is also an industry of interest that has positions with positive occupational gaps.

- Farming, Fishing and Forestry occupations, as well as food preparation are two occupations within industries of interest that have negative occupational gaps.

Average Occupational Gap Over 10 Years

Production, -13
Office and Administrative Support, -10
Food Preparation, -11
Sales, -6
Farming, Fishing, and Forestry, -4
Protective Service, -1
Personal Care and Service, -1
Arts, Design, Entertainment, Sports, and Media, 1
Architecture and Engineering, 0
Healthcare Support, 1
Computer and Mathematical, 2
Community and Social Service, 2
Business and Financial, 3
Installation, Maintenance, and Repair, 4
Education, 5
Construction, 8
Healthcare Practitioners, 9
Management, 10
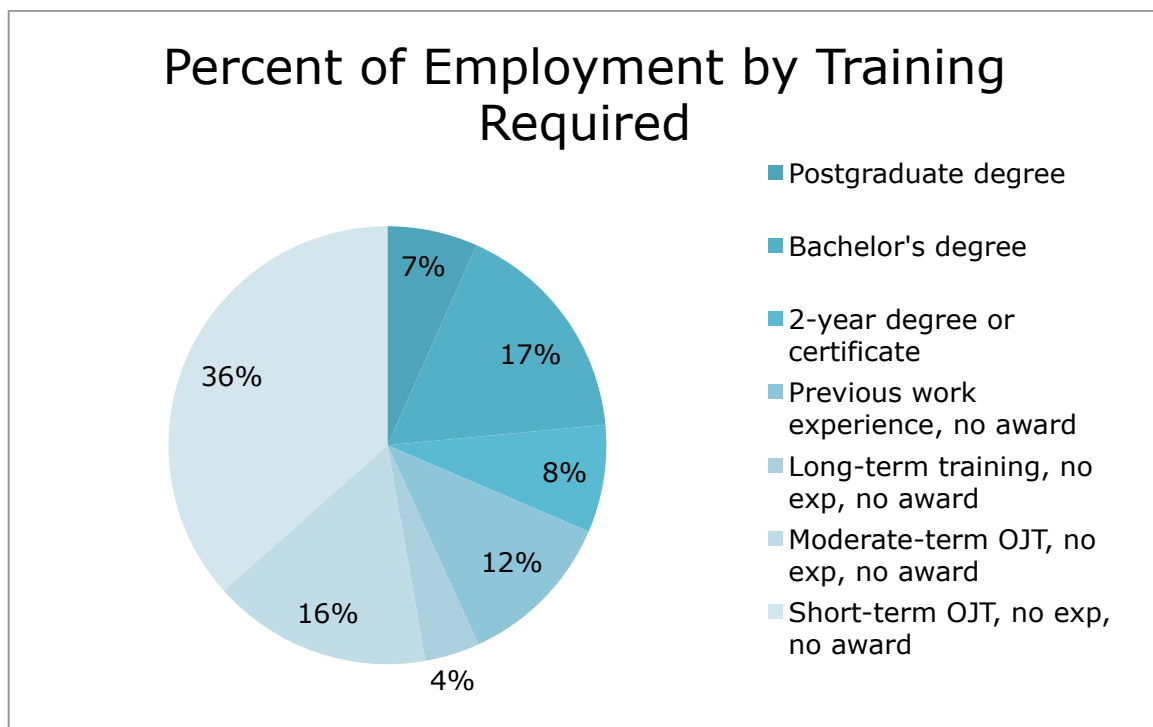
-15   -10   -5   0   5   10   15

Occupational gaps are important in determining what type of jobs, in comparison to type of industries, are in high demand of employment after analyzing both the demand and future supply of workers. Here, Healthcare, Construction and the Travel and Tourism industries all have occupations with positive occupational gaps, with Healthcare leading the charge. The Agriculture and Accommodation and Food industries, however, both have negative occupational gaps. This helps indicate that there are larger gaps in certain industries, and can help shift focus on these industries.

Yates County

Educational Characteristics:

HIGHLIGHTS:

- Yates County, as compared with Ontario, Seneca, and Wayne, has a lower percentage of short-term OJT employment, but this still is the largest employment category.

- Yates, as the same with the other counties, has a percentage higher than the national average in high school graduates and those with associate's degrees.

- Yates County has the largest percentage growth for the next 10 years in employment that requires a postgraduate degree, and the most negative growth occurs in the moderate-term OJT employment.

Percent of Employment by Training Required

Legend:
- Postgraduate degree
- Bachelor's degree
- 2-year degree or certificate
- Previous work experience, no award
- Long-term training, no exp, no award
- Moderate-term OJT, no exp, no award
- Short-term OJT, no exp, no award

Values: 7%, 17%, 8%, 12%, 4%, 16%, 36%

The above graph demonstrates the jobs in Yates County, categorized by the training required to obtain them. The largest employment category in Yates County is, as with the other counties, is the short-term OJT, while the next highest are those requiring a Bachelor's degree and those with moderate-

term on-the-job training, similar to the other three counties. Therefore Yates County, where 33.5% of residents are high school graduates, have ability to obtain over 50% of the employment opportunities in Yates County. However, a larger percentage of Bachelor degree positions exist than exist those with Bachelor's degrees in Yates County. These statistics are obtained with the

Educational Breakdown
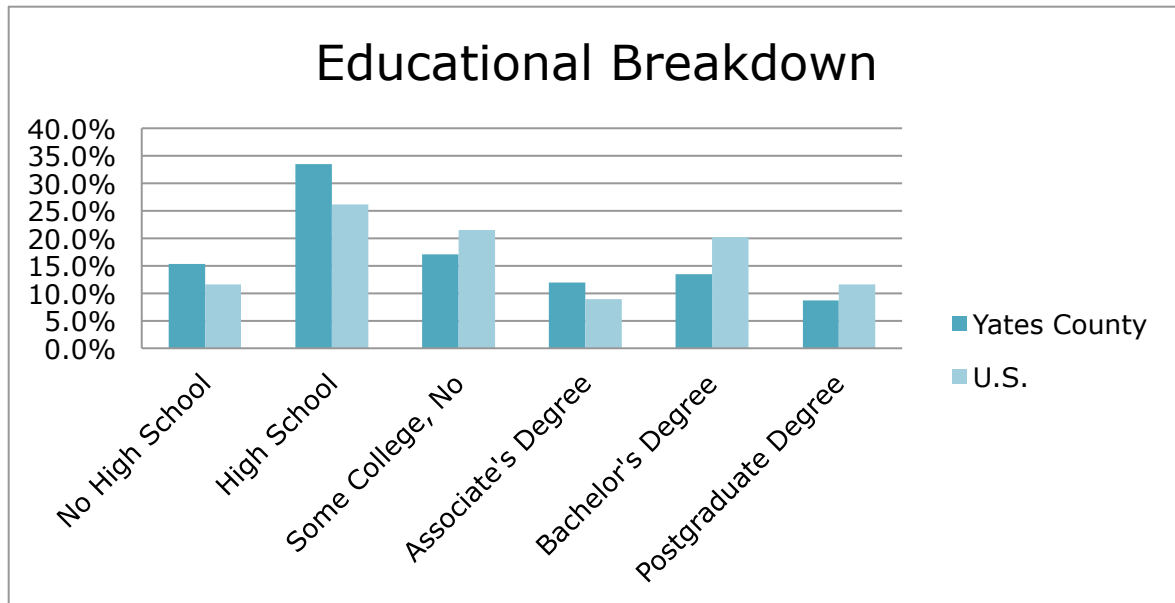
help of the educational breakdown of Yates County, as compared to the entirety of the U.S. As is typical of the other three counties, Yates exceeds the U.S. only in percentages of those with a high school diploma or a bachelor's degree. The employment forecast above indicates jobs requiring

Average Annual Employment Forecast Rate(%) 2017Q1-2027Q1
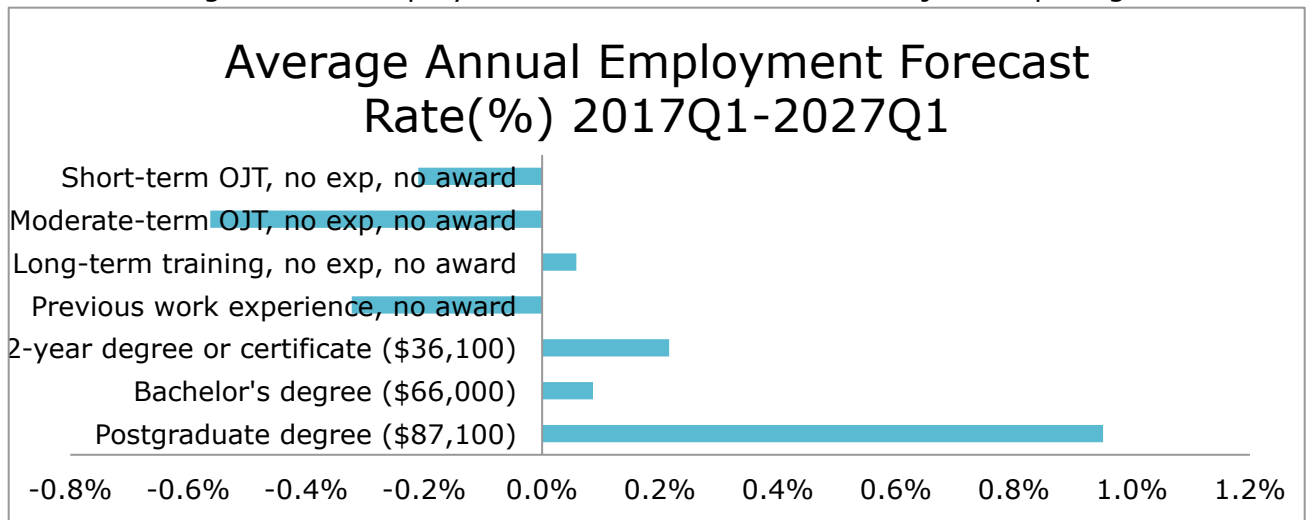
postgraduate have a higher 10-year growth rate than any other sector. 2-year degrees, Bachelor's degrees and jobs requiring long-term training are the only other positions with positive growth. Moderate-term OJT jobs have the largest decline in the next 10 years, and short-term OJT jobs also are declining, which could be an area of potential concern, given that these two categories comprise over 50% of the workforce in Yates County.

Growing Economy:
The Top Industries

Highlights:

- Healthcare and Manufacturing are the two sectors that provide the most employment for Yates County, comprising nearly 35% of all employment

- The Agriculture, Forestry, Fishing and Hunting sector has the most new hires as a percentage of their total employment, but have the second highest turnover percentage, behind Arts, Entertainment and Recreation.

- Healthcare, Construction and Manufacturing have the highest earnings, and have earnings that are in excess of the average earnings for all industries.

- Healthcare and Manufacturing have the most positive employment growth by a wide margin in the past five years.

Workforce Characteristics	Healthcare	Construction (Skilled Trades)	Manufacturing	Agriculture, Forestry, Fishing, Hunting
Employment	1155	313	1057	217
as a % of all industries	16.4%	4.4%	15.0%	3.1%
New Hires	102	49	128	72
as a % of all industries	10.8%	5.2%	13.5%	7.6%
Growth of employment via new hires %	8.8%	15.7%	12.1%	33.2%
as a % of all industries	65.8%	116.6%	90.2%	247.2%
Separations	115	62	150	111
as a % of all industries	9.3%	5.0%	12.1%	9.0%
New Hires-Separations:	-13	-13	-22	-39
Turnover %	7.3%	11.5%	7.6%	20.1%
as a % of all industries	76.8%	121.1%	80.0%	211.6%
Average Annual Earnings	$34,296.00	$34,453.00	$40,826.00	$26,343.00
as a % of all industries	105.0%	105.5%	125.0%	80.7%

Workforce Characteristics	Travel and Tourism: Arts, Entertainment, and Recreation	Travel and Tourism: Accommodation and Food Services	Retail Trade	Information	All Industries
Employment	61	520	708	55	7040
as a % of all industries	0.9%	7.4%	10.1%	0.8%	
New Hires	15	145	118	2	945
as a % of all industries	1.6%	15.3%	12.5%	0.2%	
Growth of employment via new hires %	24.6%	27.9%	16.7%	3.6%	13.4%
as a % of all industries	183.2%	207.7%	124.2%	27.1%	
Separations	16	179	133	2	1237
as a % of all industries	1.3%	14.5%	10.8%	0.2%	
New Hires-Separations:	-1	-34	-15	0	-292
Turnover %	29.1%	18%	12.1%	7.3%	9.5%
as a % of all industries	306.3%	191.6%	127.4%	76.8%	
Average Annual Earnings	$28,983.00	$16,085.00	$27,046.00	$21,660.00	$32,653.00
as a % of all industries	88.8%	49.3%	82.8%	66.3%	

The above charts characterize the workforce in these industries of focus in Yates County. It shows each characteristic, and then looks at the share that industry has as a percentage of all industries, so we can see how much each industry contributes in terms of employment, new hires, etc. to Yates County.

Employment Change in Past Five Years
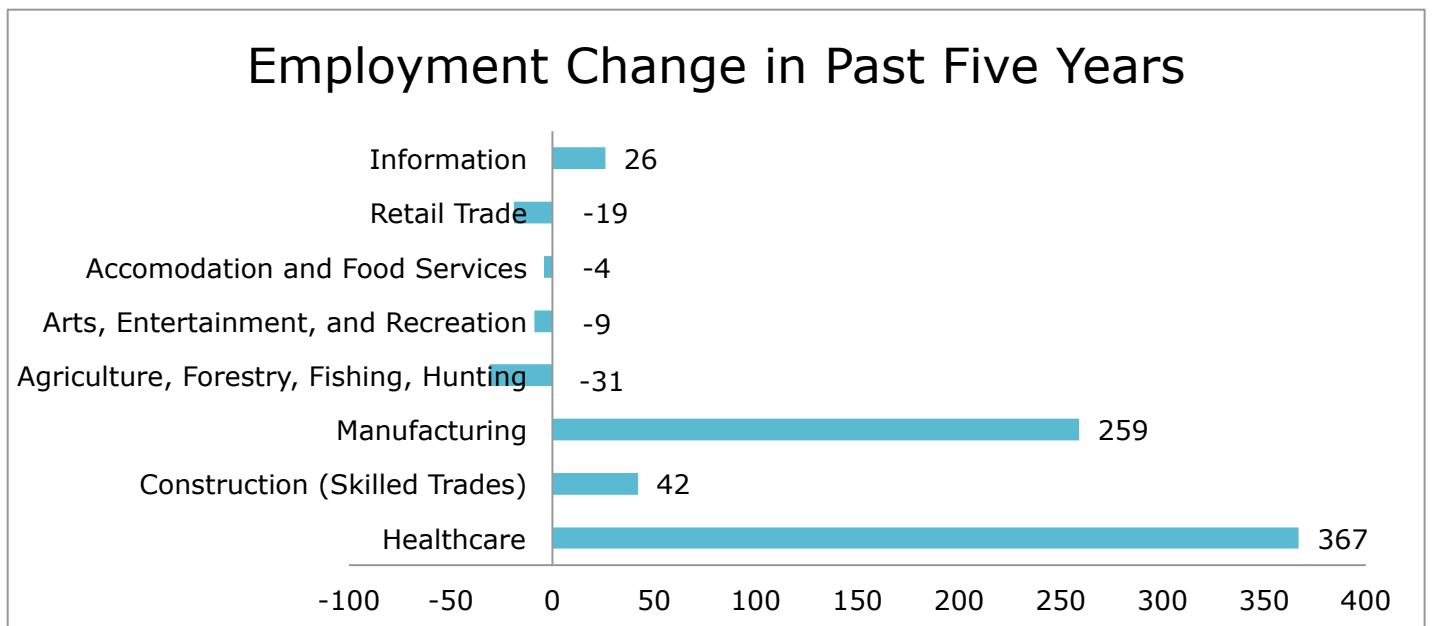
The above graph shows the employment change in each sector over the past five years. Manufacturing, Construction, and Healthcare, the three sectors with the highest wages, all have had the most positive employment growth in the past five years. No sector has had significantly large negative growth, which differentiates it from other counties. It is important to note that the past employment changes do not dictate future employment forecasts.

Forecasts & Projections

Highlights:

- Manufacturing has the highest separation demand for 1, 5 and 10-year estimates, with Information having almost negligible separation demand.

- Healthcare, Construction and Information were the only sectors of interest that had positive growth demand, whereas Manufacturing has significantly large negative growth demand.

- The Manufacturing, Agriculture, and Arts and Entertainment industries all have negative average annual growth percentage, while Information and Healthcare have the highest annual growth percentage.

Separation Demand
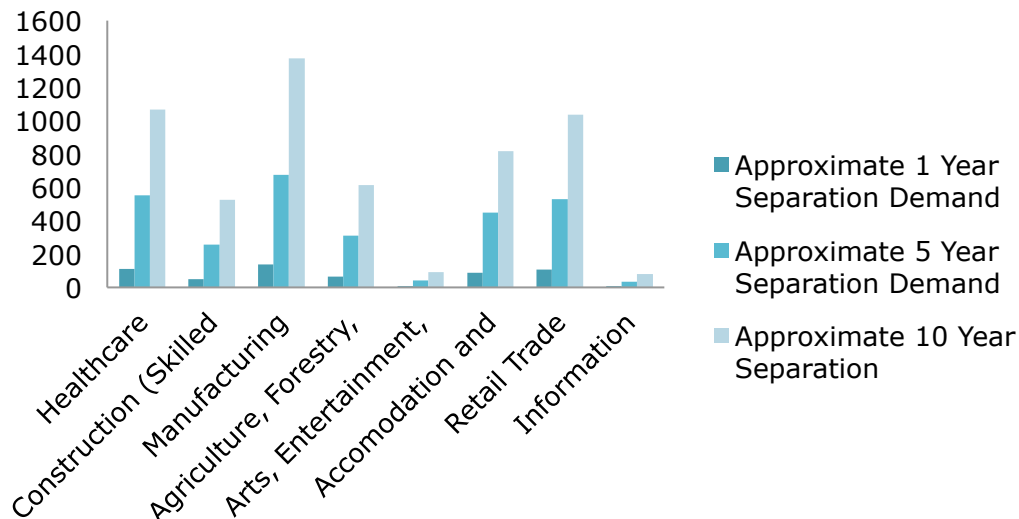
Separation demand is the number of jobs demanded due to separations in a particular industry resulting from exit from the labor force or changing occupations. Therefore, those sectors with high separation demand, like Manufacturing, Healthcare and Retail Trade, have a significant amount of employees leaving this sector or the labor force. But this indicates that there will be more demand for workers in these sectors, as opposed to Arts and Entertainment and Information.

Growth Demand
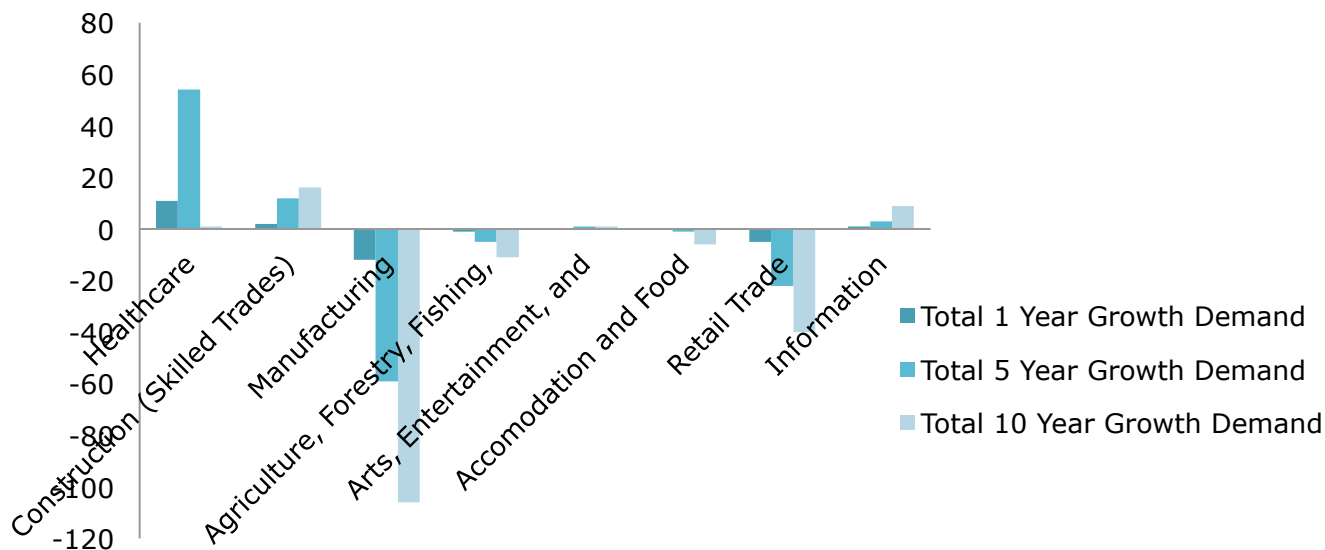
Growth demand comprises the other section of total demand for workers within each sector. Healthcare, Construction and Information are the only three sectors that have positive growth demand- Manufacturing, which had the highest separation demand, had by far the most negative growth demand of -106 for 10 years. This could indicate, in conjunction with the graph below, that sectors with large negative growth demand and negative average annual growth percentages are shrinking industries and may need to be avoided. Industries like Manufacturing or Agriculture or Retail Trade, because they have negative growth demand and negative average annual growth percentages, look to be shrinking as compared to industries like Healthcare and Information which have large annual growth percentages and positive growth demands. Therefore we should look to invest in these industries in Yates County.
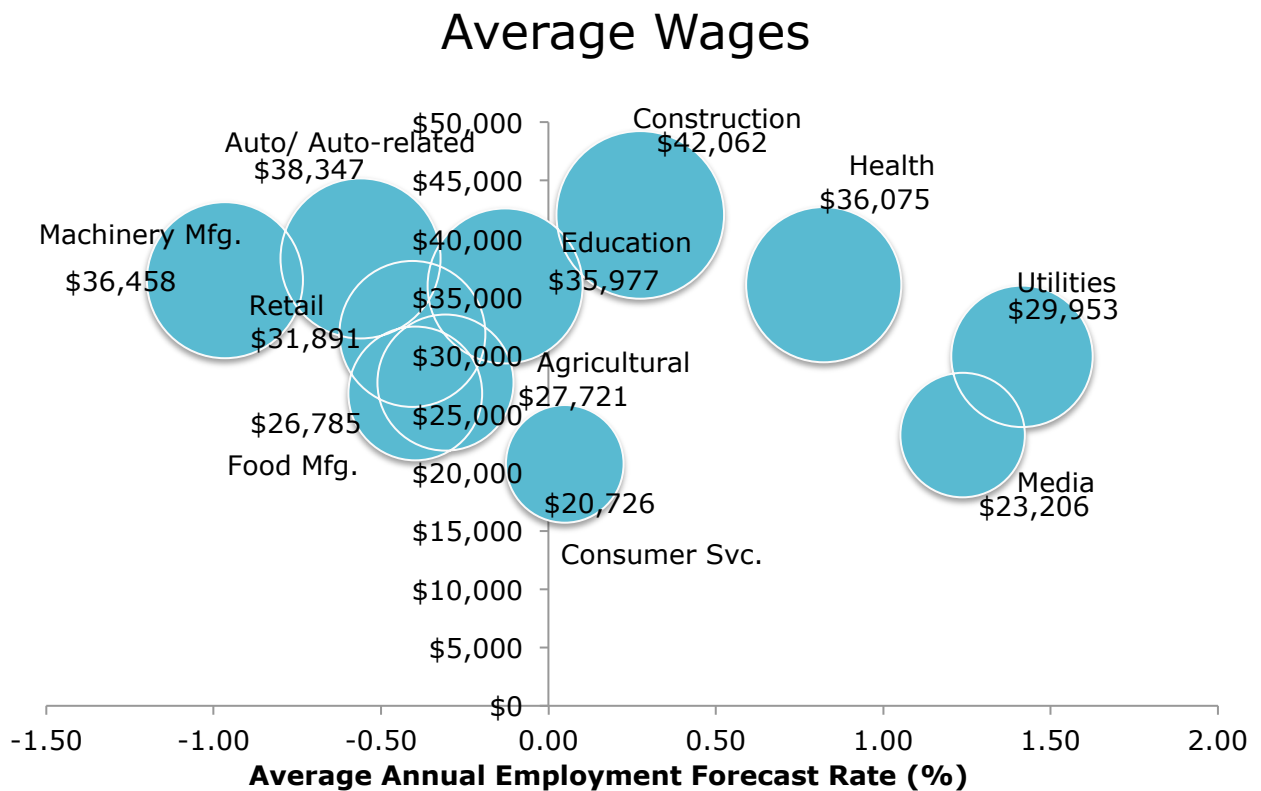
## Avg. Annual Growth Percentage
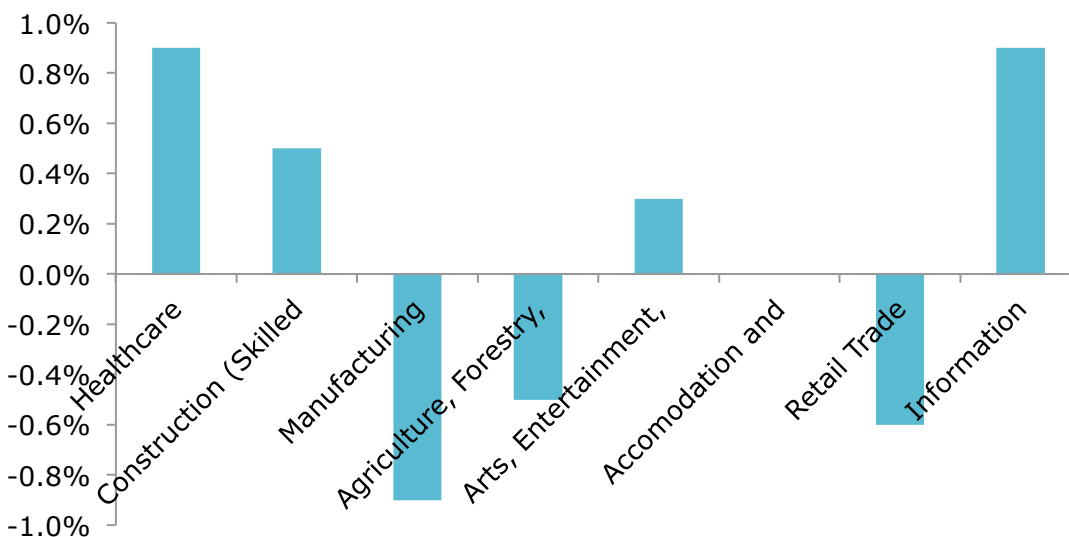
Wage Trends:

Highlights:

- The Media and Utilities industries have the highest average annual employment forecast rates, while Machinery Manufacturing had the most negative employment forecast rate.

- Construction and Manufacturing are the only industries that have positive wage growth in the most recent quarters.

Average Wages

The cluster plot above portrays industries with their employment forecasting rate and their relative average salaries. The size of each bubble is relative to the size of the average salary. The graphs below demonstrate the average wage changes in the past five years.

Average Wage Change
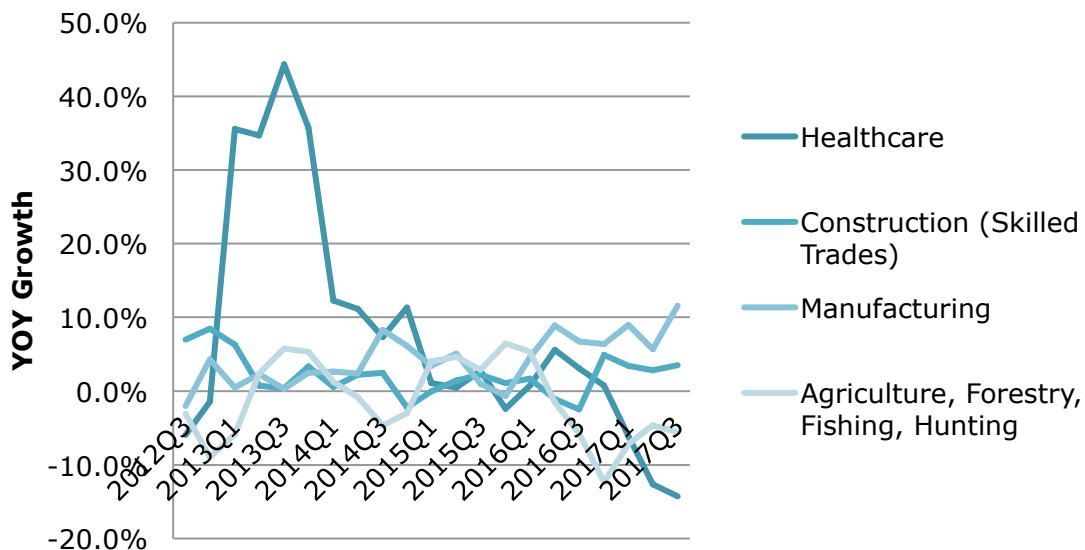
Manufacturing and Healthcare are the only industries that have recently exhibited positive wage growth. Both Healthcare and Information have demonstrated extreme volatility in the past five years, while most other industries have stayed within YOY growth of 40%.

Average Wage Change 2
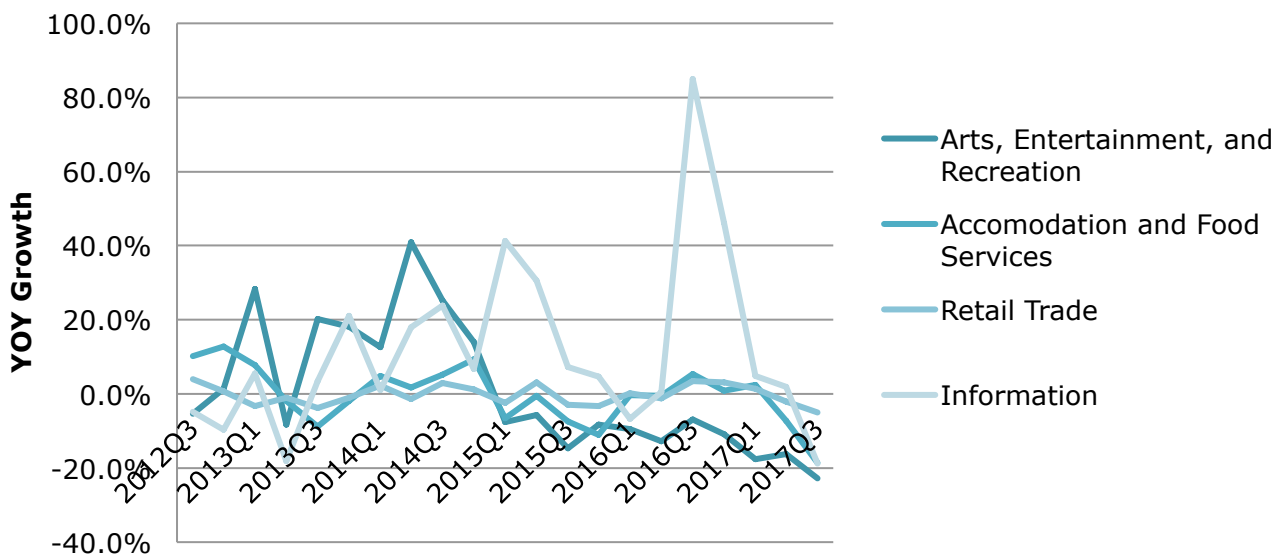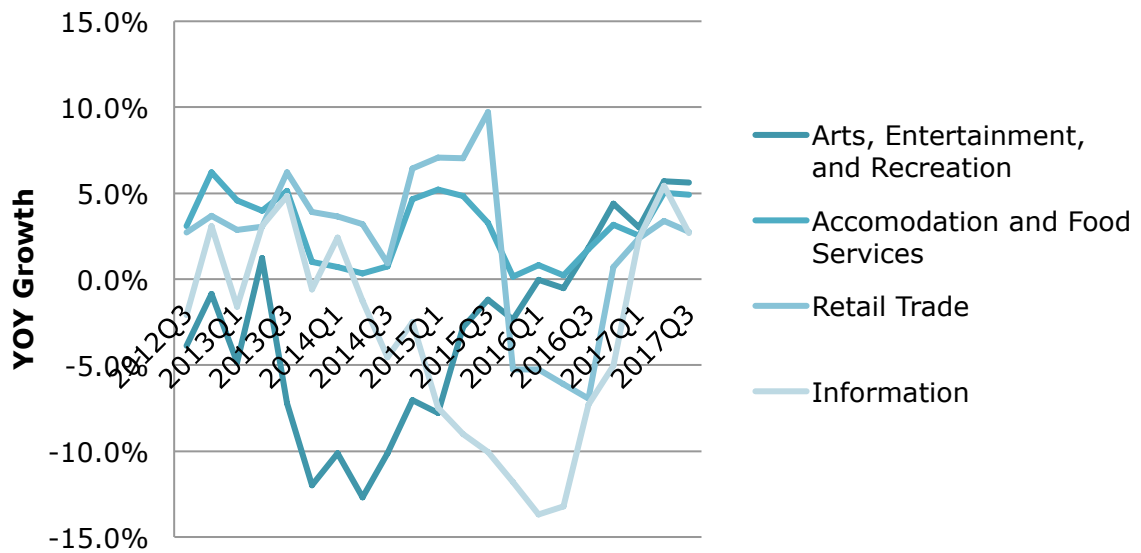
Employment Trends:

Highlights:

- Nearly all industries of interest, with the exception of Manufacturing and Healthcare, are currently exhibiting positive employment growth.

- All eight industries have, for the majority of the time, had continued positive employment growth over the past five years.

- Agriculture, Information, and the Arts and Entertainment industries have experienced more volatile negative employment trends in the past five years.

Employment Trends
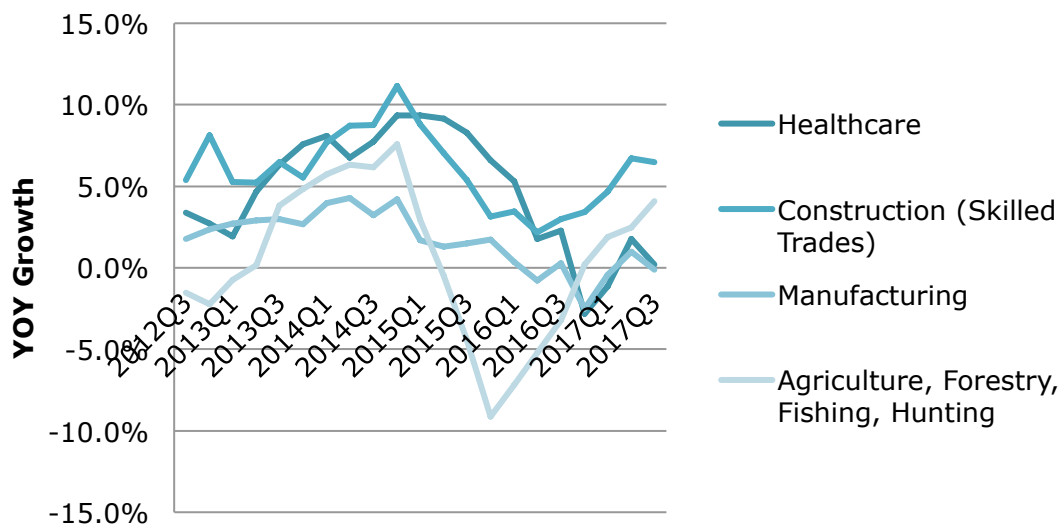
This graph and the graph below show the employment growth of the eight industries of interest. Generally, it demonstrates a positive picture; with the exception of Arts and Entertainment and Information, there has been continued positive employment growth of the eight. This is especially promising for Healthcare, Construction and Manufacturing because of their higher than average wages.

Employment Trends

YOY Growth

Legend:
- Arts, Entertainment, and Recreation
- Accomodation and Food Services
- Retail Trade
- Information

Occupational Gaps:

Highlights:

- As compared with Ontario County, there are relatively small occupational gaps over 10 years in Yates County. Management positions have the largest gap, with 4, and Food Preparation and Administrative Support have the largest negative occupational gaps.
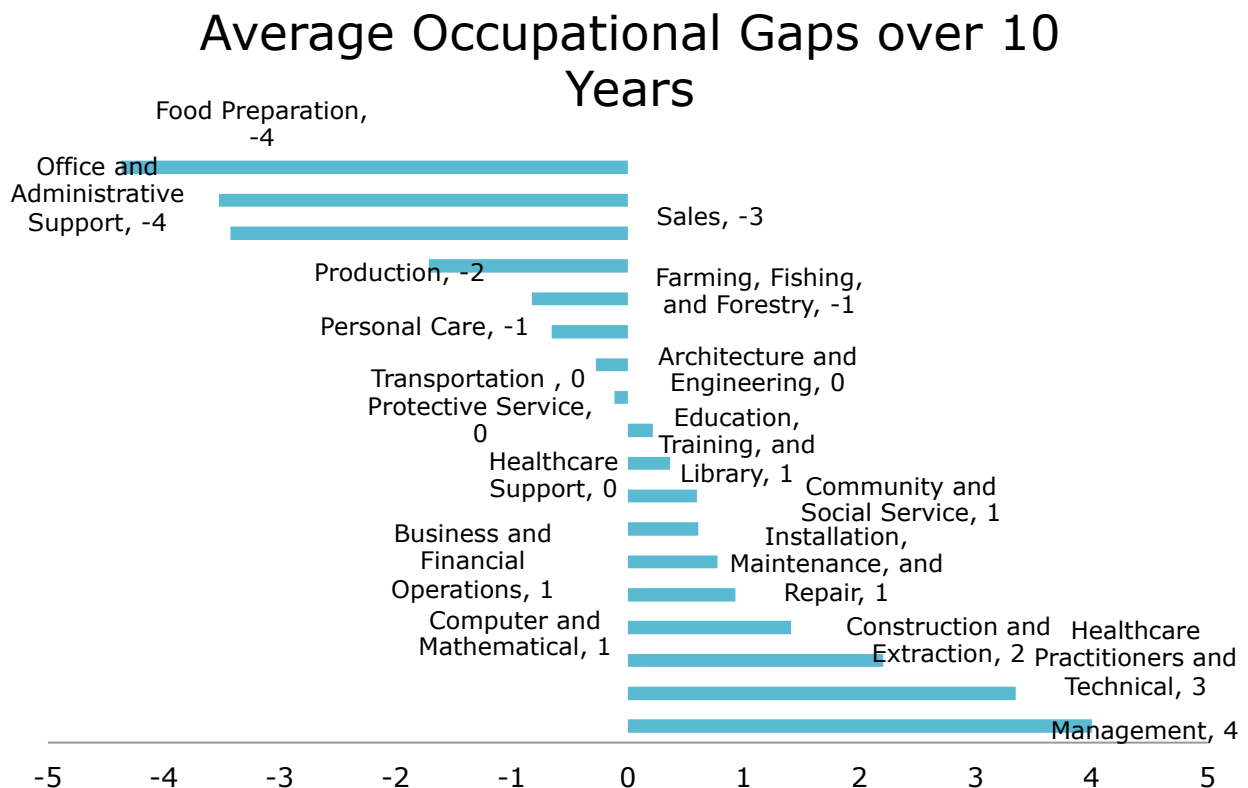
Average Occupational Gaps over 10 Years

Occupational gaps are important in determining what type of jobs, in comparison to type of industries, are in high demand of employment after analyzing both the demand and future supply of workers. There are relatively small occupational gaps in Yates County, which could be demonstrative of allocative efficiency. Healthcare positions and Construction positions have positive occupational gaps, which aligns generally with the employment trends above and is promising as these industries have large earning potential. Using the occupational gap analysis in combination with employment trends can help determine which industries have the best growth potential and can help shift focus to these industries.

About This Report:

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