

2017



UNDERSTANDING
UNEMPLOYMENT
IN THE REGION –
A STRUCTURAL
ANALYSIS

The **INSTITUTE** for
Public Policy & Economic Development
at Wilkes University

*A partnership among Geisinger Commonwealth School of
Medicine Keystone College, King's College, Lackawanna College,
Luzerne County Community College, Marywood University,
Misericordia University, Penn State Wilkes-Barre,
The Wright Center, University of Scranton & Wilkes University*

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Table of Contents

Acknowledgements.....	4
Introduction	5
Research Methodology	5
Executive Summary.....	6
Unemployment Filers by Occupation	9
Unemployment by Occupation (6-digit SOC Codes).....	11
Unemployment Filers by Educational Attainment.....	13
Level of Education by Occupation.....	15
Unemployment and Advertised Job Postings	17
Conclusions	20
Data Sources	22

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Introduction

In 2016, both Lackawanna and Luzerne Counties saw a higher unemployment rate than the United States and the Commonwealth of Pennsylvania. The rate was .8 percent higher than the nation for Lackawanna County and for Luzerne County, it was 1.6 percent higher. The two counties have also seen a slower and less pronounced recovery in the unemployment rate after the recession compared with Pennsylvania and the United States. As a result, this research was designed to help understand the nature of unemployment in Northeastern Pennsylvania by analyzing data on filers for Unemployment Compensation (UC) from 2016. Data was available on filers' educational attainment and previous work experience. When analyzed collectively, this data helps shed light on education, training, and skills issues that are connected with unemployment.

Research Methodology

Analysis for this report was conducted using data provided by the Pennsylvania Department of Labor and Industry. The data was collated from the applications for unemployment compensation (UC) filed by unemployed workers in Luzerne and Lackawanna Counties in 2016. The data revealed that 2,141 workers applied for unemployment compensation in Lackawanna County while 4,554 workers filed in Luzerne County. The data on the number of job postings in both counties was obtained from JobsEQ, a leading job search resource which compiles data from online job boards around the internet. The data source attempts to remove postings duplications as much as possible, though it is likely that some duplicate postings remain. The data regarding the work history of the unemployed workers was coded using the Bureau of Labor Statistics standard occupational Classification (SOC) codes. The two-digit- and three-digit SOC codes were employed in the analysis. The two-digit SOC codes describes the classification of unemployed workers by very broad categories whereas the three-digit SOC codes indicates more specific occupational groups.

It is important to note that the findings in this report are based primarily on one data source, and primary data gathering (such as a survey or interviews) has not been conducted. Approximately 19 percent of the filers were unclassified due to insufficient information provided by the filers. About 30 percent did not provide sufficient information on their educational attainment. Unemployment data was evaluated by County, educational attainment and the most recent employment of the unemployed workers and compared to job postings during the period to identify structural issues in unemployment.

Executive Summary

In 2016, both Lackawanna and Luzerne Counties saw a higher unemployment rate than the Country and the Commonwealth of Pennsylvania. This analysis was undertaken using data on unemployment filers provided by the Pennsylvania Department of Labor and Industry in order to fully understand the region’s labor market and structural issues surrounding unemployment, as well as education and job training gaps that may exist. The data represents information collected from filers in both counties during calendar year 2016. This represents a total sample size of 6,695. Data on educational attainment and past employment was self-reported by filers and coded by The Institute. Filers’ previous occupations were coded at the 3-digit SOC code level, a standardized system for classifying occupations. The data contained in this report reflects only workers for whom a prior occupation could be classified. About 20 percent of occupations were unable to be classified. Additionally, job postings data was sourced from JobsEQ, a proprietary labor market data source.

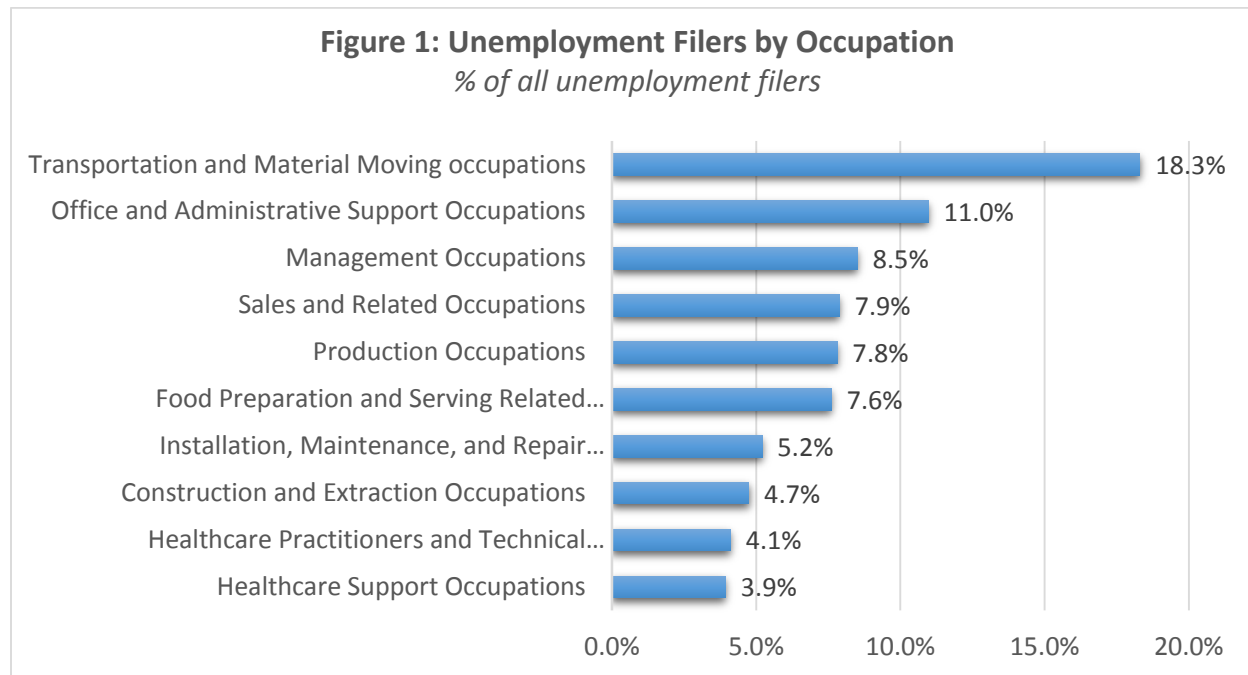
As shown in Table 1 below, high school graduates make up the highest percentage in the working-age population in both counties while bachelors and higher degree holders are the second most populated category. High school graduates, some college and associate degree holders are disproportionately represented among 2016 unemployment filers than in the working age population, making up 62.1 percent and 67.4 percent of Lackawanna and Luzerne Counties’ working age population but 66.1 percent and 70.1 percent of filers in those counties, respectively. Persons with less than high school education are also more represented in the number of unemployed workers, particularly in Luzerne County. Bachelors and higher degree holders are less likely to file for unemployment, but still make up a substantial portion of 2016 filers.

Table 1: Population and Unemployment by Educational Attainment				
Level of Education	Lackawanna		Luzerne	
	Population ages 25 - 64	Unemployed	Population ages 25 - 64	Unemployed
No High School Diploma	8.1%	8.2%	8.7%	11.3%
High school graduate, some college & Associate degree	62.1%	66.1%	67.4%	70.1%
Bachelor's degree or higher	29.9%	25.7%	24.0%	18.6%

Source: Pennsylvania Department of Labor and Industry

Figure 1 shows the top 10 occupations with the highest number of unemployed workers. Transportation and material moving occupations, including general warehouse workers, have the most unemployed workers in both counties, making up about 18 percent of all unemployment

filers from 2016. The office and administrative support occupations, management occupations, sales and related occupations have the second, third and fourth highest number of unemployed persons respectively.



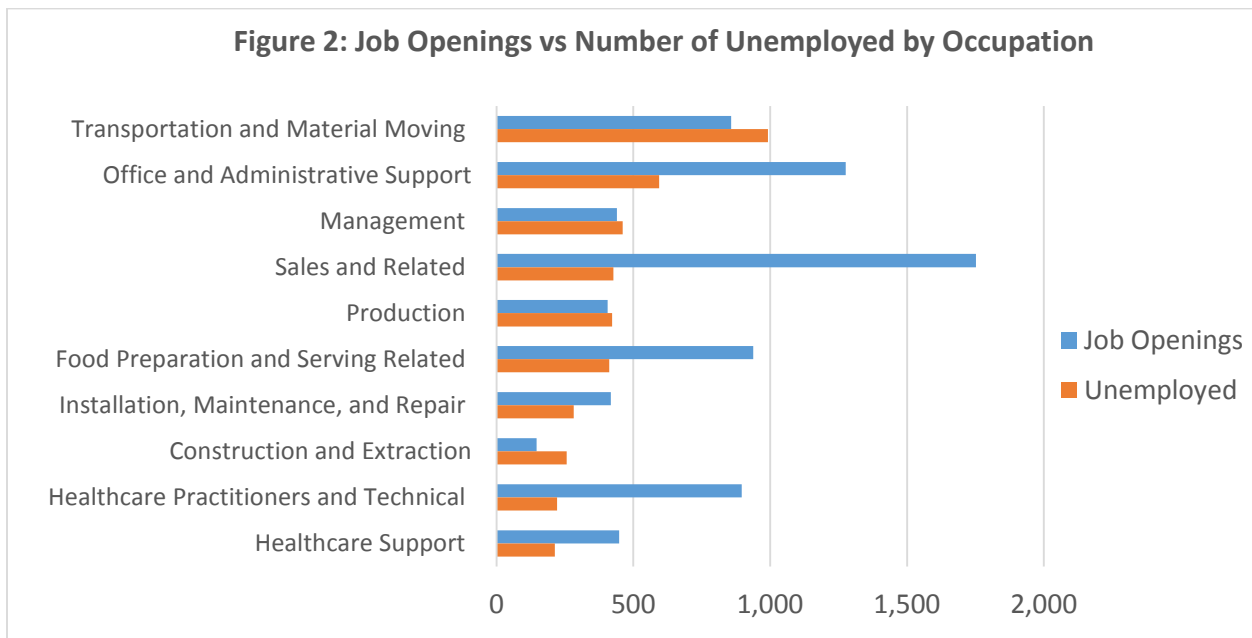
Source: Pennsylvania Department of Labor and Industry

White collar jobs have a significant number of unemployed bachelors and higher degree holders. This is unsurprising because a larger percentage of workers in many white collar occupations have a higher education background. Blue collar and service occupations are highly populated by high school graduates and others without bachelors or advanced degrees, and hence represent the bulk of the unemployed persons in these fields.

Additionally 30-day job postings data were analyzed. Because postings were sourced from a different time period than the unemployment filers data, it is insufficient to definitively show workforce shortages or surpluses, but is useful for comparing with the unemployed workforce in order to identify areas for potential intervention to match unemployed workers with openings in the labor force. The sales and retail occupation category had the highest number of job announcements while the agricultural occupation group had the fewest in both counties. As presented in Figure 2, the transportation and material moving occupations had the highest number of unemployment workers despite a large number of job openings. This suggests that there may be a workforce skills set gap that has made it difficult for positions to be filled in this segment of the workforce, despite a high number of openings shown here as well as anecdotal evidence of employers' difficulty in filling openings. A high number of openings as well as a high

number of unemployed workers suggests that jobs in this field are subject to a relatively high rate of turnover. Specific workforce-related issues that would explain high unemployment in the field despite continued hiring in the logistics industry could include lack of job skills, insufficient soft skills like punctuality and reliability, and inability to pass drug tests or background checks required for employment. Seasonal business cycles in some employers may also contribute to high workforce turnover.

The number of unemployed workers in the production, construction and extraction occupations is also disproportionate to the number of openings in those fields. The sales, food preparation and serving, and healthcare practitioners occupation groups have a disproportionate number of job openings compared with the number of unemployment filers from those areas. The healthcare practitioners occupation group includes many healthcare providers with advanced degrees, including physicians, physical and occupational therapists, dentists, and pharmacists, as well as many associate’s degree and bachelor’s degree level jobs such as nurses, ultrasound technicians, x-ray technicians, and athletic trainers. Healthcare support occupations, which also appear to have a disproportionate ratio of openings to unemployment filers, include nursing assistants, home health aides, physical and occupational therapy assistants, phlebotomists, and message therapists. This occupation category draws from a variety of educational backgrounds, from high school graduates to bachelor’s degree holders.



Source: Pennsylvania Department of Labor and Industry

Unemployment Filers by Occupation

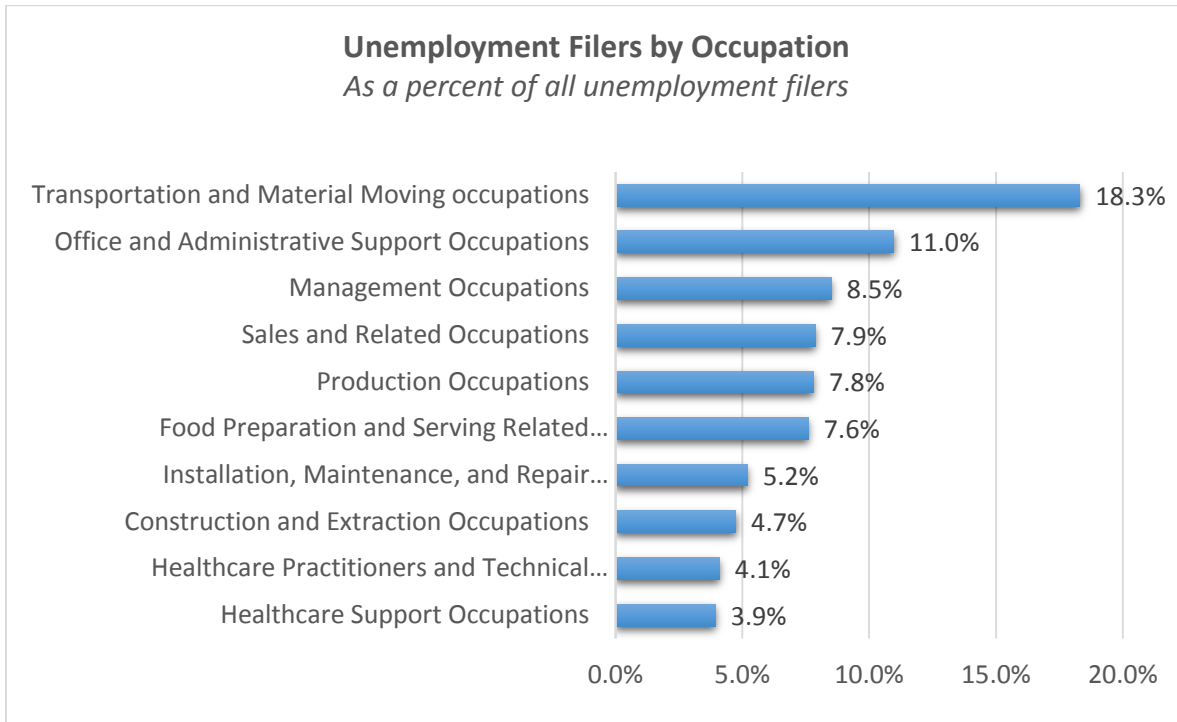
The data below provides data on filers broken down at the 2-digit SOC code level. The Transportation and Material Moving occupation group has the most unemployed workers in both counties. Transportation and material moving workers include: warehouse workers, air, motor, rail, water and other transportation related workers. The office and administrative support occupations, management occupations, sales and related occupations have the second, third and fourth highest number of unemployed persons, respectively. The agricultural related occupations and the military specific occupations have the lowest number of unemployed workers in both counties combined.

Unemployment by Occupation – 2016

SOC	Occupation	Lackawanna	Luzerne	Total	Percentage
11	Management Occupations	182	279	461	8.5%
13	Business and Financial Operations Occupations	71	111	182	3.4%
15	Computer and Mathematical Occupations	12	26	38	0.7%
17	Architecture and Engineering Occupations	29	36	65	1.2%
19	Life, Physical, and Social Science Occupations	8	12	20	0.4%
21	Community and Social Service Occupations	31	42	73	1.4%
23	Legal Occupations	8	15	23	0.4%
25	Education, Training, and Library Occupations	49	82	131	2.4%
27	Arts, Design, Entertainment, Sports, and Media Occupations	36	41	77	1.4%
29	Healthcare Practitioners and Technical Occupations	98	124	222	4.1%
31	Healthcare Support Occupations	71	142	213	3.9%
33	Protective Service Occupations	40	67	107	2.0%
35	Food Preparation and Serving Related Occupations	148	264	412	7.6%
37	Building and Grounds Cleaning and Maintenance	49	117	166	3.1%
39	Personal Care and Service Occupations	66	137	203	3.8%
41	Sales and Related Occupations	142	285	427	7.9%
43	Office and Administrative Support Occupations	186	408	594	11.0%
45	Farming, Fishing, and Forestry Occupations	3	17	20	0.4%
47	Construction and Extraction Occupations	100	157	257	4.7%
49	Installation, Maintenance, and Repair Occupations	84	198	282	5.2%
51	Production Occupations	116	307	423	7.8%
53	Transport and Material Moving Occupations	190	802	992	18.3%
55	Military Specific Occupations	7	10	17	0.3%
		1,734	3,686	5,420	

Source: Pennsylvania Department of Labor and Industry

The following data depicts a graphic representation of the top 10 unemployment filers by occupation as a percentage of all unemployment filers.



Source: Pennsylvania Department of Labor and Industry

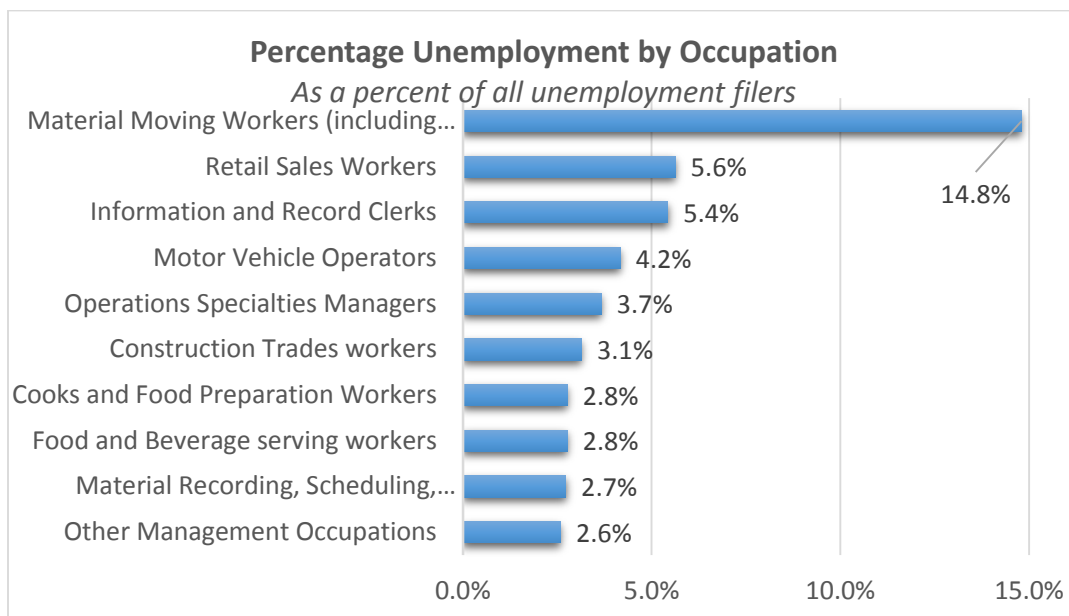
Unemployment by Occupation (6-digit SOC Codes)

This shows the number of unemployed persons by their specific job type from the highest to the lowest for sixteen occupations with a high number of filers in both counties. Material moving workers (which includes many general warehouse workers) ranked first as having the highest number of unemployed persons in both counties combined, with a percentage that is about two and half times the occupation that is second highest, retail sales workers. Another transportation-related occupation, motor vehicle operators, had the fourth highest total of all three-digit occupations. However, this listing of occupations with 100 or more filers in both counties includes a variety of occupation groups represented various sectors of the economy and levels of education.

Unemployment by Occupation - 2016					
SOC	Occupation	Lackawanna	Luzerne	Total	Percentage
53-7000	Material Moving Workers (including Warehouse Workers)	113	626	739	14.8%
41-2000	Retail Sales Workers	92	189	281	5.6%
43-4000	Information and Record Clerks	85	186	271	5.4%
53-3000	Motor Vehicle Operators	61	147	208	4.2%
11-3000	Operations Specialties Managers	69	114	183	3.7%
47-2000	Construction Trades workers	67	90	157	3.1%
35-2000	Cooks and Food Preparation Workers	48	90	138	2.8%
35-3000	Food and Beverage serving workers	50	88	138	2.8%
43-5000	Material Recording, Scheduling, Dispatching, and Distributing Workers	27	109	136	2.7%
11-9000	Other Management Occupations	63	66	129	2.6%
29-2000	Health Technologists and Technicians	56	68	124	2.5%
37-2000	Building Cleaning and Pest Control workers	37	86	123	2.5%
49-3000	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	32	90	122	2.4%
31-1000	Nursing, Psychiatric, and Home Health Aides	33	89	122	2.4%
39-9000	Other Personal Care and Service workers	38	76	114	2.3%
13-1000	Business Operations Specialists	40	71	111	2.2%

Source: Pennsylvania Department of Labor and Industry

The following data depicts a graphic representation of the top 10 unemployment filers by occupation as a percentage of all unemployment filers in a more granular fashion – three digit SOC codes.



Source: Pennsylvania Department of Labor and Industry

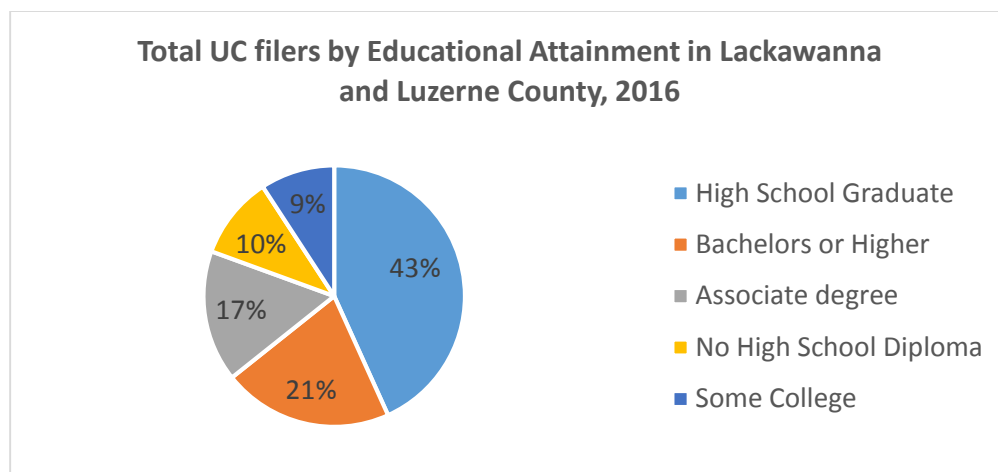
Unemployment Filers by Educational Attainment

In both counties, the highest percentage of unemployed workers are high school graduates, followed by Bachelors and higher degree holders. These two categories represent more than half of the population. In both counties together, those without a high school diploma accounted for just over ten percent of UC filers.

Unemployment by Educational Attainment - 2016						
Level of Education	Lackawanna		Luzerne		Overall Total	
	Number	Percentage	Number	Percentage	Number	Percentage
No High School Diploma	132	8.2%	346	11.3%	478	10.2%
High School Graduate	660	41.1%	1,360	44.4%	2,020	43.2%
Some College	147	9.2%	283	9.2%	430	9.2%
Certificate or associate degree	254	15.8%	506	16.5%	760	16.3%
Bachelors and higher	413	25.7%	571	18.6%	984	21.1%
Total	1,606		3,066		4,672	

Source: Pennsylvania Department of Labor and Industry

Regionally, the average of those with a Bachelors or higher is 21 percent and those with an Associate degree is 17 percent. Higher education attainment has improved over the past decade.



Source: Pennsylvania Department of Labor and Industry

The table below shows educational attainment for the overall population age 25 and older. High school graduates had the highest percentage in the total population in both counties while bachelors and higher degree holders are the second most populated category. Persons with associate degrees as their highest level of education are the least represented in the population.

Population 25 years and above by Educational Attainment - 2015						
Level of Education	Lackawanna		Luzerne		Overall Total	
	Number	Percentage	Number	Percentage	Number	Percentage
No High School Diploma	15,134	10.1%	25,136	11.1%	40,270	10.7%
High School Graduate	56,390	37.7%	89,729	39.5%	146,119	38.8%
Some College	26,087	17.4%	42,781	18.8%	68,868	18.3%
Associate degree	13,328	8.9%	20,801	9.2%	34,129	9.1%
Bachelors or Higher	38,756	25.9%	48,536	21.4%	87,292	23.2%
Total	149,695		226,983		376,678	

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

The population of persons between the ages of 25 to 64 was considered as a basis to compare the educational attainment of unemployment filers with the overall workforce. This was done because older individuals make up a disproportionate share of those with lower educational attainment, including those without high school diplomas. However, only three educational level groupings were available for the working age population age 25 to 64. The percentages of that population at each level of educational attainment are presented in the table below, along with the corresponding percentage of the UC filers. In Luzerne County, 11 percent of filers had no high school diploma, compared to less than 9 percent of the workforce. Those with high school diplomas, some college, or an associate’s degree or technical certification as their highest level of education were slightly overrepresented among filers, making up more than two-thirds of UC filers in the region. Bachelor’s degree holders were underrepresented among the unemployed in both counties: less than 26 percent of filers versus nearly 30 percent overall in Lackawanna County, and 18.6 percent of filers versus 24 percent in Luzerne County. However, Bachelor’s degree holders still make up a substantial portion of filers overall.

Population and Unemployment by Educational Attainment				
Level of Education	Lackawanna		Luzerne	
	Population ages 25 - 64	Unemployed	Population ages 25 - 64	Unemployed
No High School Diploma	8.1%	8.2%	8.7%	11.3%
High school graduate, some college & Associate degree	62.1%	66.1%	67.4%	70.1%
Bachelor's degree or higher	29.9%	25.7%	24.0%	18.6%

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

Level of Education by Occupation

Among those who had last worked in most of the traditionally “white collar” occupation groups, bachelor’s degree holders made up the largest share of unemployment filers. This generally reflects the workforce in those occupations, which typically require higher levels of education.

Those unemployed from the farming, fishing and forestry occupation group were disproportionately made up of those without a high school diploma. Other blue collar occupations varied in the educational attainment of the unemployed, but for most, the largest share of the unemployed were high school graduates. In each occupation category, those with at least a high school diploma made up at least 80 percent of UC filers, with the exception of building and grounds cleaning and maintenance workers, an occupation where those without a high school diploma are overrepresented in the workforce.

The occupations with the most filers with an associate’s degree as their highest level of education were healthcare practitioners and technical occupations (38 percent), legal occupations (37 percent), and healthcare support workers (27 percent).

Education Attainment Among Filers by Occupation						
SOC	Occupation	Level of Education				
		No HS Diploma	HS Graduate	Some College	Associate degree	Bachelors or Higher degrees
White Collar Occupations						
11	Management Occupations	2.2%	20.7%	10.1%	16.5%	50.4%
13	Business and Financial Operations Occupations	1.3%	17.9%	8.6%	14.6%	57.6%
15	Computer and Mathematical Occupations	3.4%	3.4%	10.3%	24.1%	58.6%
17	Architecture and Engineering Occupations	3.4%	17.2%	1.7%	25.9%	51.7%
19	Life, Physical and Social Science Occupations	0.0%	5.9%	0.0%	5.9%	88.2%
21	Community and Social Service Occupations	3.2%	17.5%	20.6%	7.9%	50.8%
23	Legal Occupations	5.3%	10.5%	5.3%	36.8%	42.1%
25	Education, Training and Library Occupations	4.5%	11.8%	4.5%	10.9%	68.2%
27	Arts, Design, Entertainment, Sports and Media Occupations	3.2%	11.3%	3.2%	12.9%	69.4%
29	Healthcare Practitioners and Technical Occupations	2.4%	16.6%	7.1%	37.9%	36.1%
43	Office and Administrative Support Occupations	6.1%	45.9%	12.7%	19.1%	16.2%
Blue Collar Occupations						
31	Healthcare Support Occupations	7.3%	43.7%	4.6%	27.2%	17.2%
37	Building, Grounds Cleaning and Maintenance	21.4%	54.1%	9.2%	7.1%	8.2%
45	Farming, Fishing and Forestry Occupations	45.5%	36.4%	0.0%	9.1%	9.1%
47	Construction and Extraction Occupations	14.0%	60.8%	7.0%	13.4%	4.8%
49	Installation, Maintenance and Repair Occupations	10.2%	55.4%	6.2%	20.3%	7.9%
51	Production Occupations	18.7%	49.1%	7.7%	17.2%	7.3%
53	Transportation and Material Moving Occupations	18.2%	58.9%	7.2%	10.1%	5.6%
Service Occupations						
33	Protective Service Occupations	9.00%	44.90%	9.00%	20.50%	16.70%
35	Food Preparation and Serving Related Occupation	13.00%	53.60%	12.30%	11.90%	9.20%
39	Personal Care and Service Occupations	12.20%	54.10%	6.10%	16.20%	11.50%
41	Sales and Related Occupations	10.50%	48.90%	14.40%	11.20%	15.00%

Source: Pennsylvania Department of Labor and Industry

Unemployment and Advertised Job Postings

In the data available to The Institute, there was a total of 5,840 job postings in Luzerne County and a total of 4,214 in Lackawanna County in a 30-day window in 2016. This data was procured from JobsEQ, a leading online job search resource that compiles job openings data from job boards around the internet. The data source attempts to remove duplications as much as possible, but some duplications may remain. The data represents a sample of job postings rather than the complete universe of job opportunities available; as a result, the ratio of job openings to unemployment filers is a more important metric than the total number of openings.

Job Openings by Occupation - 2016				
Occupation	Luzerne County		Lackawanna County	
	Job Openings	Unemployed workers	Job Openings	Unemployed workers
Management	266	279	174	182
Business and Financial Operations	179	111	116	71
Computer and Mathematical	179	26	147	12
Architecture and Engineering Occupations	54	36	77	29
Life, Physical, and Social Science	75	12	70	8
Community and Social Service	126	42	119	31
Legal	10	15	19	8
Education, Training, and Library	218	82	118	49
Arts, Design, Entertainment, Sports, and Media	79	41	47	36
Healthcare Practitioners and Technical	463	124	433	98
Healthcare Support	271	142	177	71
Protective Service Occupations	92	67	51	40
Food Preparation and Serving Related	539	264	399	148
Building and Grounds Cleaning and Maintenance	215	117	176	49
Personal Care and Service	169	137	126	66
Sales and Related	988	285	764	142
Office and Administrative Support	730	408	546	186
Farming, Fishing, and Forestry	10	17	3	3
Construction and Extraction	85	157	62	100
Installation, Maintenance, and Repair	271	198	147	84
Production	265	307	141	116
Transportation and Material Moving	556	802	302	190
Total	5,840	3,669	4,214	1,719

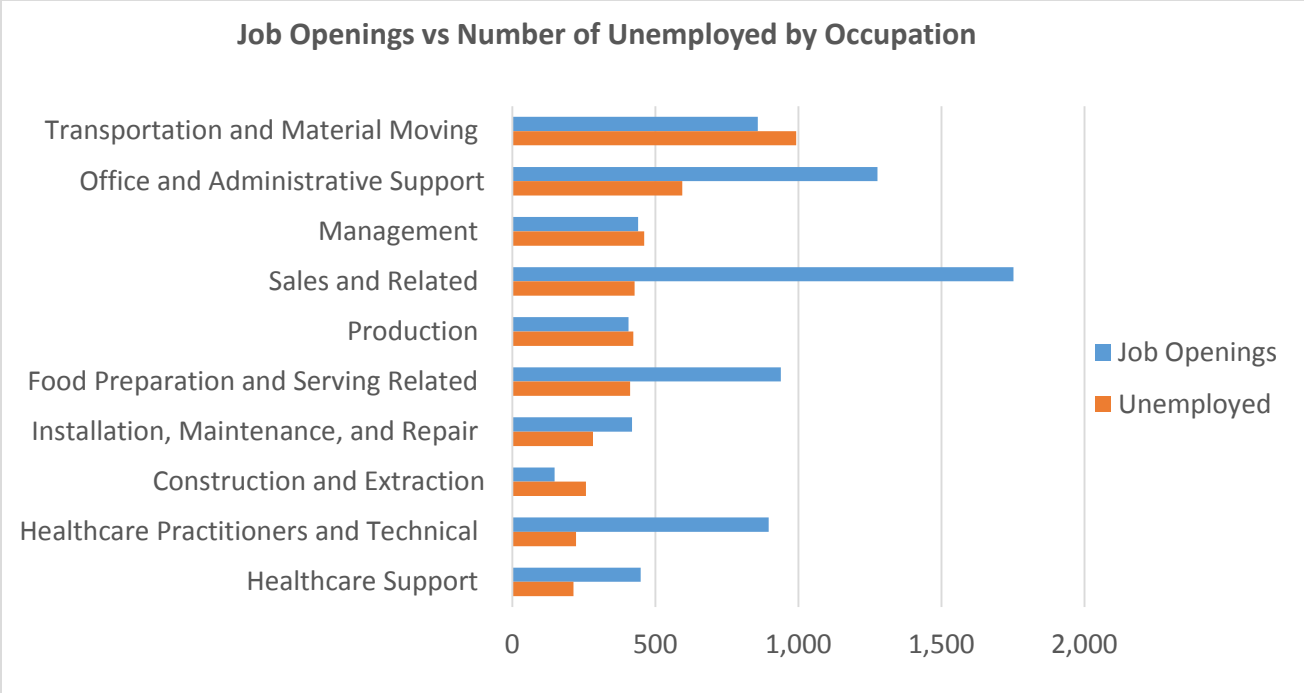
The largest number of openings were in sales and related occupations, followed by office and administrative support occupations. Fewer occupations were available for farming, fishing, and forestry occupations, legal occupations, and science occupations. Among “blue collar” occupation categories, transportation and material moving occupations had far more openings than installation, maintenance, and repair occupations, production occupations, or construction occupations. This is congruent with anecdotal reports of steady hiring by the logistics industry in the region, which employs a large number of transportation and material moving workers.

The transportation and material moving occupation has the highest number of UC filers and also a large number of job openings according to the data set. A high number of unemployed persons in this occupation despite a large number of job openings suggests that there may be a workforce skills set gap that has made it difficult for positions to be filled in this industry or workers lack of soft skills like punctuality and reliability. This could also be as a result of high rate of worker turnover in the industry which could be due to the nature of the job or the seasonal nature of some employers. It has also been suggested that some workers who would otherwise be able to fill openings in the transportation, material moving and warehouse occupations may be unable to complete required background checks or drug screenings. The production, construction and extraction occupations also have a high number of unemployed workers compared with number of job openings; this could be as a result of the reasons stated above.

The sales, food preparation and serving, health, installation, maintenance and repair industries have a greater ratio of job openings compared to the number of unemployed persons. This shows that there is a likelihood that there are more job opportunities in these fields which would probably make job search easier. However, unemployment in these industries could be due to a skill gap between the workers skills and the required skills for the available jobs in addition to factors outside the labor market such as geographic mismatch and lack of transportation.

Job Openings to Filers Comparison – Both Counties Combined, 2016

SOC	Occupation	Job Openings	Unemployed workers	Difference
11	Management	440	461	-21
13	Business and Financial Operations	295	182	113
15	Computer and Mathematical	326	38	288
17	Architecture and Engineering Occupations	131	65	66
19	Life, Physical, and Social Science	145	20	125
21	Community and Social Service	245	73	172
23	Legal	29	23	6
25	Education, Training, and Library	336	131	205
27	Arts, Design, Entertainment, Sports, and Media	126	77	49
29	Healthcare Practitioners and Technical	896	222	674
31	Healthcare Support	448	213	235
33	Protective Service Occupations	143	107	36
35	Food Preparation and Serving Related	938	412	526
37	Building and Grounds Cleaning and Maintenance	391	166	225
39	Personal Care and Service	295	203	92
41	Sales and Related	1,752	427	1,325
43	Office and Administrative Support	1,276	594	682
45	Farming, Fishing, and Forestry	13	20	-7
47	Construction and Extraction	147	257	-110
49	Installation, Maintenance, and Repair	418	282	136
51	Production	406	423	-17
53	Transportation and Material Moving	858	992	-134
Total		10,054	5,388	4,666



Source: Pennsylvania Department of Labor and Industry

Conclusions

There are several major findings that this analysis can provide that are important for the region’s economic development and workforce training efforts.

First, unemployment filers come from a variety of educational attainment levels and occupational backgrounds. Though workers with lower educational attainment levels and workers in certain industries are overrepresented among unemployment compensation (UC) filers, there is no occupation that is “unemployment-proof” and no level of education or skills provides perfect insurance against becoming unemployed. Workforce development efforts and guidance to the unemployed population should account for the diverse needs of the unemployed. Most unemployment filers hold at least a high school diploma, so those unemployment filers who need or want to acquire additional career skills may be well served by technical training programs or postsecondary degree programs that align with regional economic strengths.

White collar jobs have a significant number of unemployed bachelors and higher degree holders. This is unsurprising because a larger percentage of workers in many white collar occupations have a higher education background. Blue collar and service occupations are highly populated by high school graduates and others without bachelors or advanced degrees, and hence represent the bulk of the unemployed persons in these fields.

Transportation and material moving workers had the highest number of unemployment filers despite a large number of job openings. This suggests that there may be a workforce skills set gap that has made it difficult for positions to be filled in this industry, despite a high number of openings shown here as well as anecdotal evidence of employers' difficulty in filling openings. A high number of openings as well as a high number of unemployed workers suggests that jobs in this field are subject to a relatively high rate of turnover. The number of unemployed workers in the production, construction and extraction occupations is also disproportionate to the number of openings in those fields. This illustrates that a tight job market continues to exist for some blue collar workers despite improvement in overall measures of unemployment in the region.

The sales and retail, food preparation and serving, and healthcare practitioners occupation groups have a disproportionate number of job openings compared with the number of unemployment filers from those areas. The healthcare practitioners occupation group includes many healthcare providers with advanced degrees, including physicians, physical and occupational therapists, dentists, and pharmacists, as well as many associate's degree and bachelor's degree level jobs such as nurses, ultrasound technicians, x-ray technicians, and athletic trainers. Healthcare support occupations, which also appear to have a disproportionate ratio of openings to unemployment filers, include nursing assistants, home health aides, physical and occupational therapy assistants, phlebotomists, and message therapists. This occupation category draws from a variety of educational backgrounds, from high school graduates to bachelor's degree holders. Sales and retail occupations also shows significant employment opportunities, but for workers previously employed in blue collar occupations which have a lower ratio of openings to filers, these customer-service oriented jobs may prove unacceptable and the lower wages paid by these occupations may represent a significant pay cut for workers displaced from other occupations.

Data Sources

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