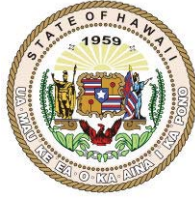

2016

Hawaii Labor Market Dynamics



September 2017

Research and Statistics Office
Department of Labor & Industrial Relations
State of Hawaii



State of Hawaii
David Y. Ige, Governor



Department of Labor and Industrial Relations

Linda Chu Takayama, Director

Research and Statistics Office

Phyllis Dayao, Chief

Labor Market Research Section

Vicki Lau, Section Supervisor

Melonie Ogata, Research Statistician

Jeri Arucan, Research Statistician



The report is available at www.hiwi.org

Contact us for questions and comments:

Research and Statistics Office

Department of Labor and Industrial Relations

830 Punchbowl Street, Room 304

Honolulu, HI 96813

Phone: 808-586-9025

Email: dlir.rs.hiwi@hawaii.gov



This workforce product was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The product was created by the recipient and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This product is copyrighted by the institution that created it. Internal use by an organization and/or personal use by an individual for non-commercial purposes is permissible. All other uses require the prior authorization of the copyright owner.

Table of Contents

Executive Summary	1
Introduction.....	2
Hawaii’s Labor Force Remains Strong.....	2
Labor Force Participation Nearly Identical to U.S.....	3
Unemployment Rate Continues Descent.....	4
Job Count Still Reaching New Heights	6
Five-Year Industry Trend Positive.....	8
State Average Wage Close to National Average	10
Dynamics Evident in Hires and Separations	12
Earnings Trend Upward	14
Short- and Long-Term Job Forecasts Remain Positive.....	16
Advertised Online Jobs Rise	20
More Labor Market Information Available on Hawaii Workforce Infonet Website.....	23

List of Figures

Figure 1. Civilian Labor Force, Hawaii vs. U.S., 2006-2016.....	2
Figure 2. Civilian Labor Force Growth Rate, 2006-2016.....	3
Figure 3. Civilian Labor Force Participation Rates, Hawaii vs. U.S., 2006-2016.....	3
Figure 4. Civilian Labor Force Participation Rate by Age, Hawaii and the U.S., 2006, 2011, and 2016	4
Figure 5. Unemployment Rate, Hawaii vs. U.S., 2006-2016.....	4
Figure 6. Unemployment Rates, Counties of Hawaii, 2006-2016	5
Figure 7. Non-Farm Job Count, Hawaii, 2006-2016	6
Figure 8. Job Count Over-the-Year Percent Change, Hawaii vs. U.S., 2006-2016	7
Figure 9. Job Count 10-Year Percent Change, Counties of Hawaii, 2006-2016	7
Figure 10. Job Count Over-the-Year Percent Change, Counties of Hawaii, 2006-2016.....	7
Figure 11. Industry Job Count Percent Change, State of Hawaii, 2011-2016	8
Figure 12. Average Mean Hourly Wage, U.S. vs Hawaii, May 2016.....	10
Figure 13. Average Mean Hourly Wage, U.S., State, and Counties of Hawaii, May 2016	11
Figure 14. Occupations with the Highest Average Mean Hourly Wages by County, May 2016	11
Figure 15. Hires vs. Separations, State of Hawaii, 2006-2016 (Second Quarter).....	12
Figure 16. Firm Net Job Change by Industry, State of Hawaii, 2006-2016 (Second Quarter)	13
Figure 17. Average Monthly Earnings and Growth by Industry, State of Hawaii, 2006 and 2016 (Second Quarter)	14
Figure 18. Average Monthly Earnings for Key Industries, State of Hawaii, 2006-2016 (Second Quarter).....	15

Table of Contents Continued

Figure 19. Projected Average Annual Job Growth by Industry for Short- and Long-Term	16
Figure 20. Projected Average Annual Total Job Openings by Occupation Group for Short- and Long-Term	18
Figure 21. Occupations with the Most Projected Average Annual Total Job Openings in the Short- and Long-Term	19
Figure 22. Distribution of Projected Average Annual Total Job Openings by Education, Work Experience, and Job Training Requirements, 2014-2024.....	20
Figure 23. Total Annual Advertised Openings for the State and Counties, 2011-2016	20
Figure 24. Ratio of Unemployed per Job Opening for the State and Counties, July 2017.....	21
Figure 25. Top 10 Advertised Job Openings by County	22

Executive Summary

This report provides a current overview of the local labor market and economy to inform those developing workforce development policies and making workforce investment decisions. The following are some of the significant findings for 2016:

- Among the 50 states, Hawaii ranked 14th highest in terms of labor force growth, expanding by 1.6 percent to 685,378.
- Labor force participation rose for the third year in a row, increasing to 62.7 percent which is slightly below the national rate of 62.8 percent.
- Hawaii's unemployment rate decreased by 0.6 percentage point to 3.0 percent, well below the U.S. rate of 4.9 percent, ranking the state third best in the nation. Unemployment in all four counties also dropped - Honolulu MSA posted the lowest rate (2.8 percent), followed by Maui County (3.2 percent), Kauai County (3.3 percent), and Hawaii County (3.8 percent).
- Hawaii's non-farm job count improved by 1.4 percent to 647,600, the sixth consecutive year of increases following the recession. All four counties reported job gains. Overall, the economy regained 55,200 jobs since bottoming out in 2010.
- All of the ten major industries posted job gains from 2011 to 2016. Four industries grew at faster than average rates during the five-year period: natural resources, mining, and construction; leisure and hospitality; professional and business services; and education and health services.
- In 2016, Hawaii workers earned \$23.76 per hour compared to \$23.86 per hour nationally, based on wages collected in the Occupational Employment Statistics (OES) program. At the county level, Honolulu County employees averaged \$24.56, followed by Kauai County at \$21.86, Maui County workers took home \$21.68 and Hawaii County trailed all counties with earnings of \$21.38 per hour.
- According to the Local Employment Dynamics program's Quarterly Workforce Indicators (QWI) data, from the second quarter of 2006 to the second quarter of 2016, the number of hires was eight percent lower, due to a significant dropoff during the recession, and separations were also down 11 percent.
- Average monthly earnings rose by 26.9 percent from 2006 to 2016, according to QWI data. Workers in more than half of Hawaii's 20 key industries fared well as wages outpaced the state's monthly average of \$3,932.
- The pace of job growth is expected to be better over the short-term with 1.1 percent average annual growth through 1st Quarter 2018 as the economy continues to expand, compared to the long-term period with 0.6 percent average annual growth through 2024. Industries with the most job growth will be leisure and hospitality; education and health services; trade, transportation, and utilities; and professional and business services.
- The volume of online job advertisements reversed course with a slight increase in 2016, after falling sharply in 2015.

Introduction

The Hawaii Labor Market Dynamics report focuses on significant labor market statistics and trends that affected Hawaii's economy in 2016. This report looks at the dynamics occurring in the labor force, employment, and earnings over the past ten years, and provides both short-and long-term employment forecasts for the state.

Whenever feasible, comparisons are made between the state and the nation as well as the state's counties. The workforce and economic analyses provided in this report supports Hawaii's workforce information system as directed by the U.S. Department of Labor's Employment and Training Administration.

Hawaii's Labor Force Remains Strong

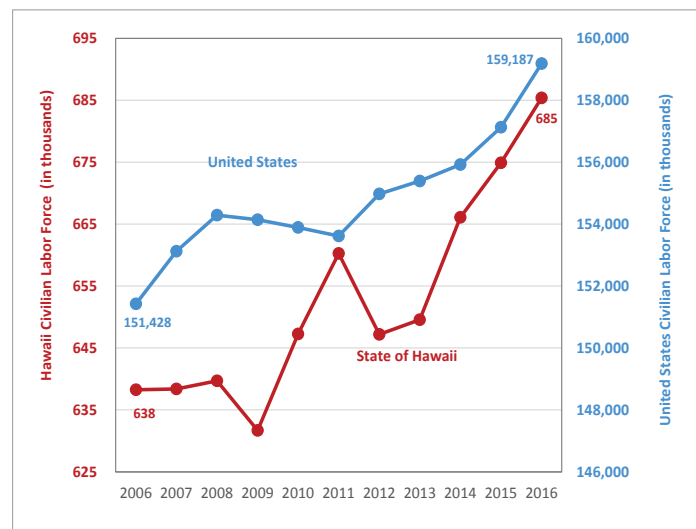
Continued strength in Hawaii's economy boosted the civilian labor force upward by 10,470 to 685,400 in 2016. For the fourth straight year, the number of employed moved upward, pushing the total to 664,700, whereas the number of unemployed fell by 3,450 to 20,700 over the year. Hawaii's annual percentage increase of 1.6 percent fared slightly better than the national labor force which grew by 1.3 percent. The number of employed in the U.S. advanced to 151,436,000, while the unemployed count dropped to 7,751,000.

For the second consecutive year, Hawaii's growth rate ranked 14th highest among the 50 states. Oregon surpassed all states with an expansion rate of 3.9 percent. At the opposite end, of the 10 states that reported declines, Louisiana reported the largest annual drop of 1.8 percent.

Over the past 10 years, Hawaii's labor force posted a net increase of approximately 47,150 for a gain of 7.4 percent. In comparison, the nation expanded its labor force by 5.1 percent during the same decade. From 2006 to 2008, Hawaii's economy, similar to the majority of the states, expanded during that two year span (Figure 1). The economic impact of the Great Recession in 2009 drove Hawaii's labor force down by 1.3

percent. This drop was fairly steep relative to the other states, accounting for the fifth largest percentage loss in the nation, and placing Hawaii 45th out of 50 in terms of over-the-year change. During the next two years, the state's civilian labor force turned around and grew by the fourth fastest rate in 2010 with a gain of 2.5 percent, and climbed another 2.0 percent in 2011, rank-

Figure 1. Civilian Labor Force, Hawaii vs. U.S., 2006-2016



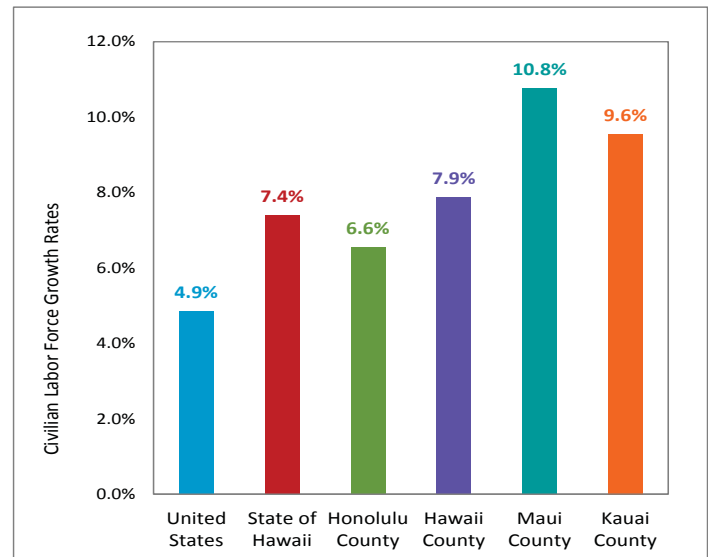
Source: U.S. Bureau of Labor Statistics

ing fifth fastest in the nation. Unfortunately, the labor force contracted in 2012 and Hawaii placed 49th among the states in terms of over-the-year change, dropping by 2.0 percent. Similar to the nation, Hawaii's civilian labor force remained relatively stagnant in 2013 with an increase of 0.4 percent, ranking 16th among the states

in terms of yearly change. Growth in Hawaii’s labor force picked up the following year and has exceeded the nation from 2014 to 2016.

From 2006 to 2016, Maui County’s civilian labor force recorded the greatest increase with an expansion rate of 10.8 percent (Figure 2). Kauai County was second fastest with 9.6 percent growth, followed by Hawaii County, which rose by 7.9 percent, both outpacing the state gain. Only Honolulu County lagged behind the state with growth that amounted to 6.6 percent over the same period.

Figure 2. Civilian Labor Force Growth Rate, 2006-2016

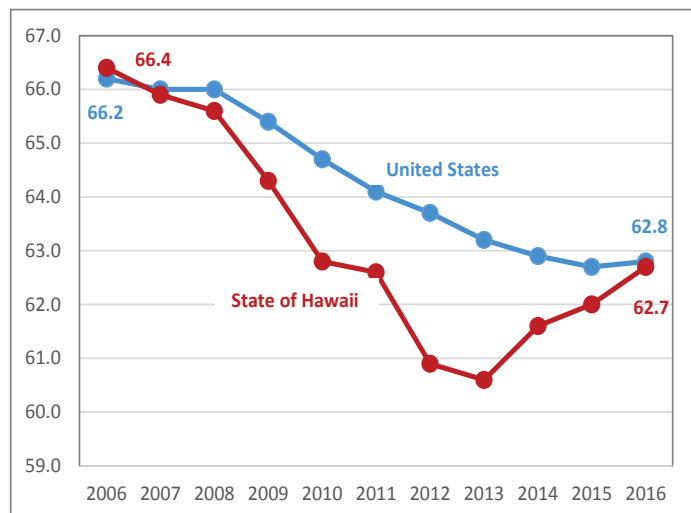


Source: U.S. Bureau of Labor Statistics.

Labor Force Participation Edges Closer to U.S.

Dividing the civilian labor force by the civilian noninstitutional population 16 years and older determines the labor force participation rate. In 2016, Hawaii’s labor force participation rate inched upward to 62.7 percent from 62.0 percent in 2015. After declining to a low of 60.6 percent in 2013, the statewide labor force participation ratio has improved for three straight years (Figure 3). This makes Hawaii’s participation rate nearly identical to the national rate of 62.8 percent in 2016.

Figure 3. Civilian Labor Force Participation Rates, Hawaii vs. U.S., 2006-2016



Source: U.S. Bureau of Labor Statistics.

The labor force participation rates for all states ranged from a high of 71.5 percent in North Dakota to 53.2 percent posted by West Virginia. Hawaii ranked 29th highest, an improvement over the 2015 rank of 33rd and well above the 2012 and 2013 ranks which dropped the state’s ranking to 39 for both years.

Looking at the breakout of the civilian labor force by age group for both Hawaii and the nation (Figure 4), certain trends were apparent:

- The youngest workers - those between 16 to 24 years old, have shown the largest percentage decline. One likely cause may be that more members in this group were attending school longer to obtain advanced degrees needed in today’s competitive workplace.
- Even within the prime age group - those 25 to 54 years old, labor force participation has fallen. However, the drop has been smaller compared to the other age groups and labor force participation

has remained at or above 80 percent throughout the 10-year period for all of the subgroups.

- As workers in the 55 to 64 year old age group reach retirement age, the participation rate has tapered off slightly for Hawaii and remained fairly consistent for the U.S.
- The biggest percentage jump in the workforce occurred in the oldest age group, those over

65 years old. As a greater percentage of this population segment remains active and healthy, Hawaii's workforce spiked upward by 52 percent, while the nation experienced a rise of 25 percent. However, since baby boomers constitute a sizable portion of the older workforce, the overall labor force participation rate will most likely continue on a downward path as this generation of workers ultimately retires.

Figure 4. Civilian Labor Force Participation Rate by Age, Hawaii and the U.S., 2006, 2011, and 2016

Age Group	Hawaii				United States			
	2006	2011	2016	% Change 2006-2016	2006	2011	2016	% Change 2006-2016
Total, All Ages	66.5%	63.5%	62.7%	-5.7%	66.2%	64.1%	62.8%	-5.1%
16 to 19 years	42.1%	26.8%	29.2%	-30.6%	43.7%	34.1%	35.2%	-19.5%
20 to 24 years	77.9%	72.6%	71.3%	-8.5%	74.6%	71.3%	70.5%	-5.5%
25 to 34 years	81.3%	82.8%	80.0%	-1.6%	83.0%	81.5%	81.6%	-1.7%
35 to 44 years	85.3%	85.6%	82.7%	-3.0%	83.8%	82.7%	82.4%	-1.7%
45 to 54 years	85.8%	82.2%	82.1%	-4.3%	81.9%	80.7%	80.0%	-2.3%
55 to 64 years	69.4%	69.4%	65.4%	-5.8%	63.7%	64.3%	64.1%	0.6%
65 years and over	15.2%	16.8%	23.1%	52.0%	15.4%	17.9%	19.3%	25.3%

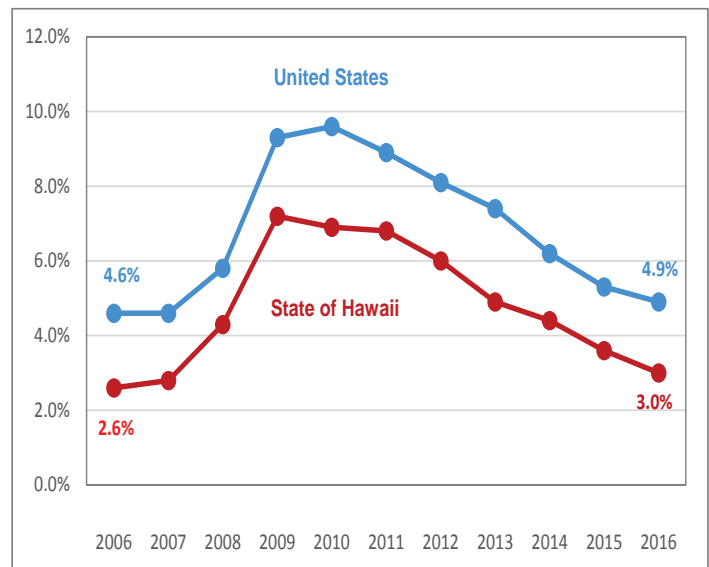
Source: U.S. Bureau of Labor Statistics.

Unemployment Rate Declines Further

Hawaii's unemployment rate continued to trickle downward, falling by 0.6 percentage point to 3.0 percent from 2015 to 2016. After climbing to 7.2 percent in 2009, the current rate marks the seventh straight year of improvement. However, since this series began in 1976, the current rate is still above Hawaii's record low which dipped to 2.5 percent in 1989. The national unemployment rate also improved to 4.9 percent in 2016. This is down 0.4 percentage point or 7.5 percent over the 2015 number.

Compared to the rest of the 50 states, only South Dakota and New Hampshire, both with a rate of 2.8 percent, recorded a lower ratio than Hawaii. Rounding

Figure 5. Unemployment Rate, Hawaii vs. U.S., 2006-2016



Source: U.S. Bureau of Labor Statistics

out the top five, North Dakota and Nebraska registered a rate of 3.2 percent. At the other end of the spectrum, New Mexico topped all states with an unemployment rate of 6.7 percent.

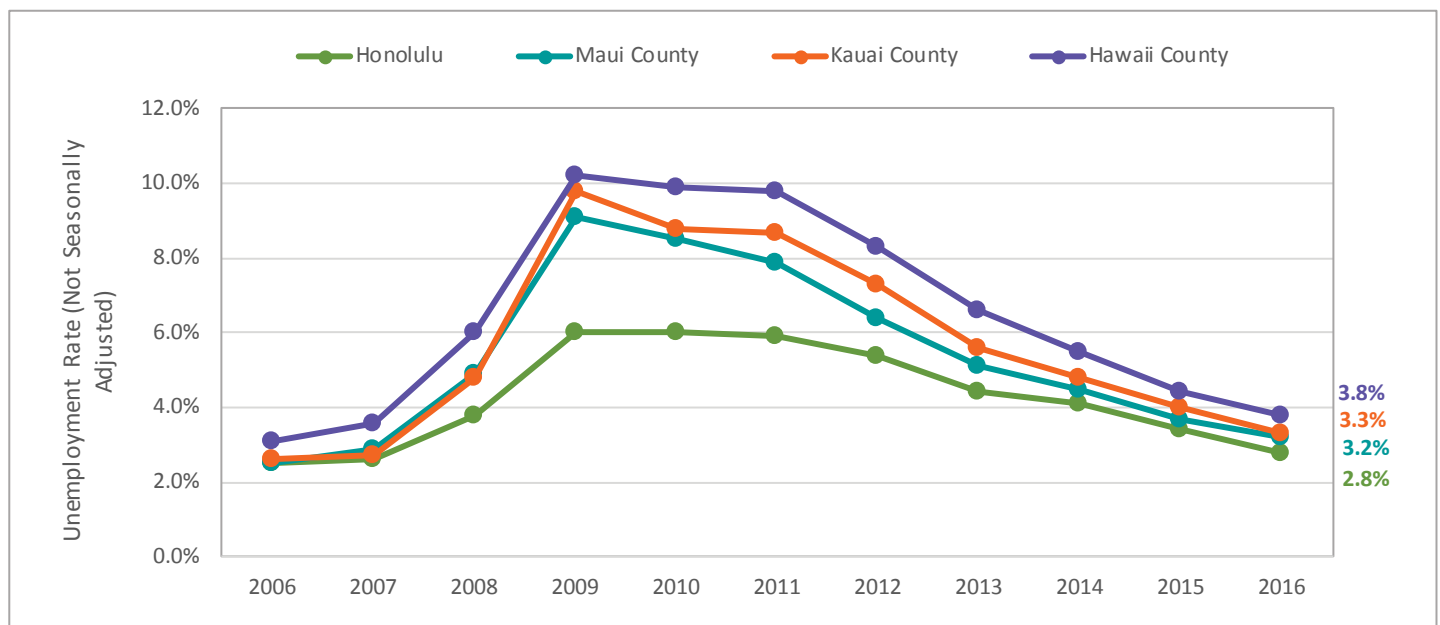
Throughout the past ten years, Hawaii’s unemployment rate has remained consistently lower than the national rate (Figure 5). The gap has ranged from at least 1.5 percentage points (in 2008) to 2.7 percentage points (in 2010) below the national rate. As a result, Hawaii was among the 10 states with the lowest unemployment ratio in seven out of the last 10 years. In fact, from 2005 to 2007 Hawaii ranked either first or second. However, in 2008 and 2009, Hawaii was nudged out of the Top 10 until returning in 2010. After falling to number 13 in 2011 and to 12 in 2012, Hawaii’s rate has ranked in the top 10 over the last four years.

Although the state’s unemployment rate has been relatively low, among the counties, unemployment has been uneven. Since more opportunities normally exist in urban areas, the unemployment rates in these areas generally tend to be lower than those of more rural regions.

In 2016, the over-the-year drop in the unemployment ratio of the four counties varied from 0.5 to 0.7 percentage point. (Figure 6). Honolulu MSA posted the lowest unemployment ratio, edging downward by 0.6 percentage point, followed by Maui County which averaged the next lowest rate of 3.2 percent. With a decline of 0.7 percentage point from a year ago, the drop in Kauai County’s ratio represented the biggest improvement among the four counties. This lowered the county’s average to 3.3 percent in 2016. Hawaii County posted the highest rate of 3.8 percent but this marks a vast improvement from the height of the recession when the ratio jumped to 10.2 percent in 2009.

In direct correlation to the state’s unemployment rate, from 2006-2016, Honolulu MSA has either posted the lowest rate or lingered near the low. Even throughout the economic slowdown from 2008 to 2010, the rate increase of 2.2 percentage points was the smallest among the counties. The annual unemployment rate of 2.8 percent in 2016, while below the other counties, was still 0.2 percentage point higher than the 2007 pre-recession unemployment rate.

Figure 6. Unemployment Rates, Counties of Hawaii, 2006-2016



Source: Hawaii State Department of Labor and Industrial Relations, Research and Statistics Office, LAUS program.

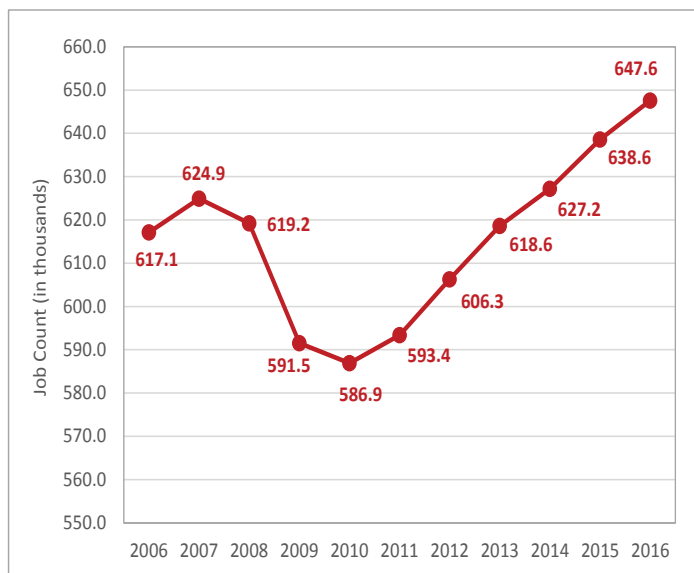
From 2006 to 2016, Maui County’s unemployment ratio has generally ranked second lowest of the counties. Even during the recession, although Maui’s unemployment rate nearly doubled, spiking to 9.1 percent in 2009, this still fell below Kauai and Hawaii County’s rate. In 2010, the ratio finally eased a bit and has continued to improve since then.

After hovering near the state’s unemployment ratio prior to the recession, Kauai County’s unemployment rate climbed the fastest, with a gain of 5.0 percentage points from 2008 to 2009. Since peaking at 9.8 percent in 2009, the ratio has also declined the most, falling by over 66 percent over the last seven years.

Job Count Still Growing

The state’s non-farm job count rose by 9,000 in 2016, increasing from 638,600 (Figure 7). Nationally, non-farm employment expanded by 1.7 percent to 144,306,000 in 2016. An additional 2,463,000 jobs were added to the 2015 job tally. Although non-farm

Figure 7. Non-Farm Job Count, Hawaii, 2006-2016



Source: Hawaii State Department of Labor and Industrial Relations, Research and Statistics Office, CES program.

At 10.2 percent, Hawaii County posted the highest unemployment rate of all the counties during the recession period. In fact, over the past 10 years, Hawaii County’s ratio has exceeded the other counties every year. Following the same trend as the other counties after three years of increases from 2007 to 2009, the ratio finally edged downward to 9.9 percent in 2010. This momentum has continued since that time, bringing the county rate down to 3.8 percent in 2016.

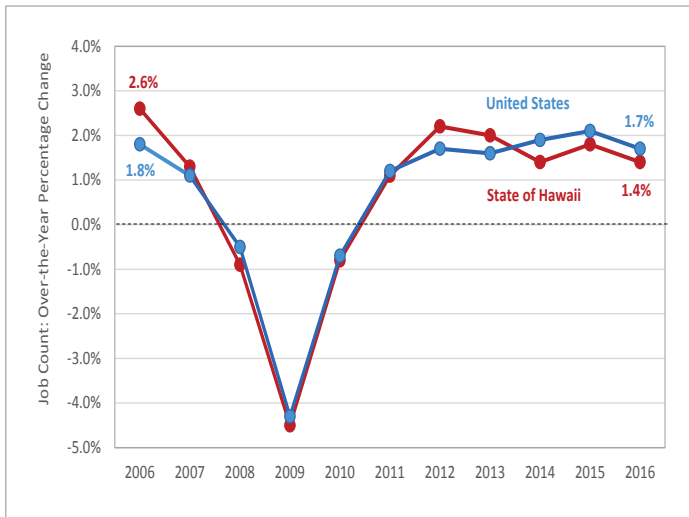
Further improvement remains possible in 2017. So far the unemployment rates for January and February 2017 are at the same level or lower than the 2016 rates across all counties.

employment has trended upward during the last six years for both Hawaii and the U.S., 2016 posted slower growth. Hawaii’s hike of 1.4 percent was slightly lower than the advance of 1.8 percent in 2015. Meanwhile, the national increase of 1.7 percent was preceded by growth of 2.1 percent during the previous year.

In relation to the rest of the nation, Hawaii’s growth tied for 24th fastest with two other states - Minnesota and Alabama. At the top of the rankings, Utah surged ahead with an increase of 3.6 percent. Among a handful of states posting declines, North Dakota, which had experienced the fastest growth from 2010 to 2014, slid the sharpest with a decline of 4.1 percent.

Over the past 10 years, Hawaii’s job count has grown by 30,500 jobs for an increase of 4.9 percent. The 2016 total of 647,600 jobs continued to set a new high for the third year in a row, exceeding the 2015 figure of 638,600. Preceding the slowdown from 2008 to 2010,

Figure 8. Job Count Over-the-Year Percent Change, Hawaii, vs. U.S., 2006-2016



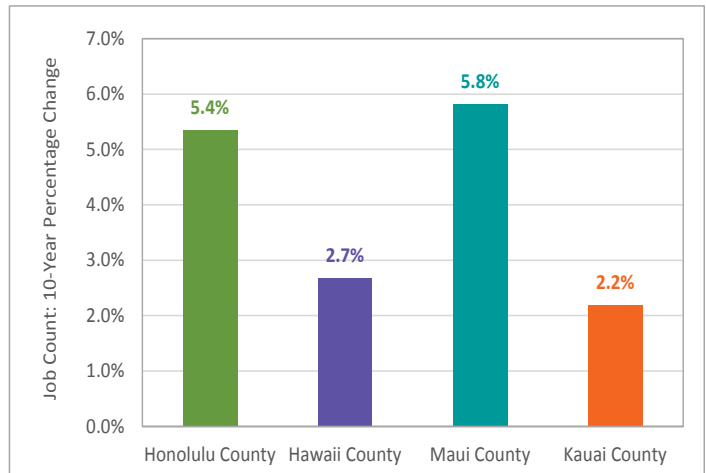
Source: U.S. Bureau of Labor Statistics; Hawaii State Department of Labor & Industrial Relations, Research & Statistics Office, CES program.

the state’s economy was booming following a succession of widespread gains. A slight decline in 2008 was followed by a large drop of 4.5 percent in 2009. Non-farm employment spiraled downward in 2010 to 586,900. Since bottoming out in 2010, the state’s economy started to recover in 2011 and has added jobs over the past six years. Based on 2016 figures, Hawaii along with 41 other states or more than four-fifths of the 50 states surpassed their 2007 pre-recession job totals.

Prior to 2008, Hawaii’s job growth outpaced the nation. During the downturn, from 2008 and into the early part of the recovery, up until 2011, Hawaii’s trend paralleled the nation. Over the last five years, although the job count has continued to expand for both Hawaii and the U.S., Hawaii advanced faster in 2012 and 2013, then slowed down from 2014 through 2016 (Figure 8).

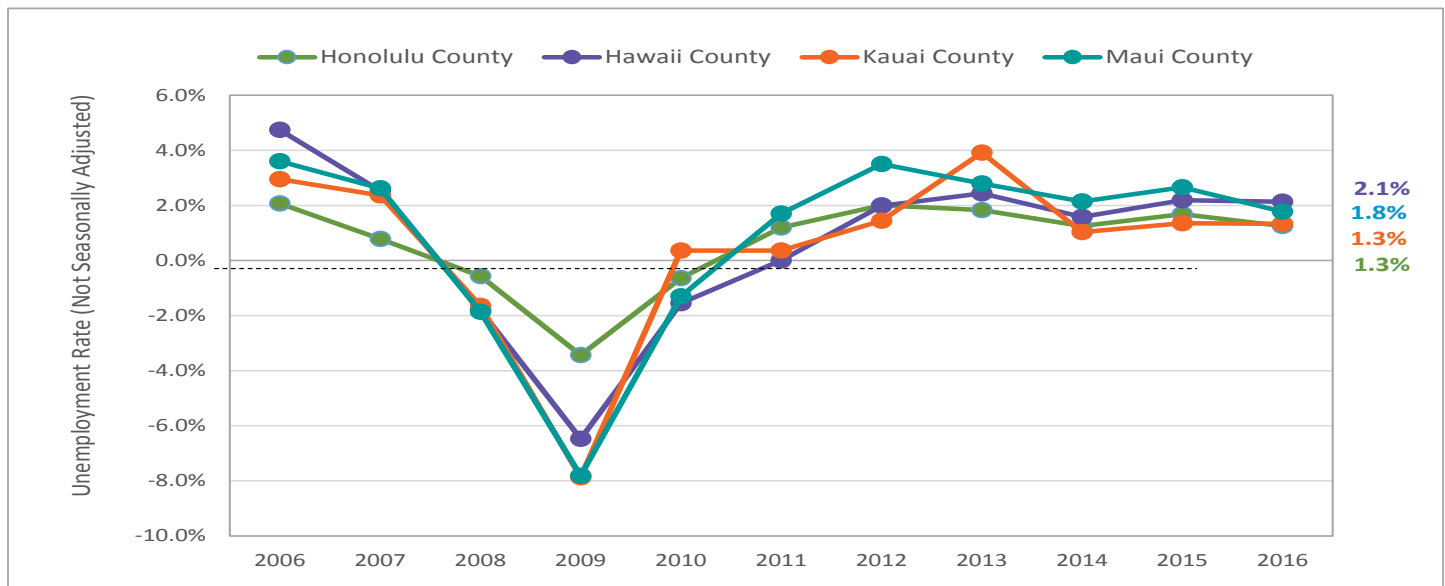
So far, given the available data for January through March 2017, Hawaii’s monthly job count is 0.9 percent higher than the same 3-month period in the prior year.

Figure 9. Job Count 10-Year Percent Change, Counties of Hawaii, 2006-2016



Source: Hawaii State Department of Labor and Industrial Relations, Research and Statistics Office, CES program.

Figure 10. Job Count Over-the-Year Percent Change, Counties of Hawaii, 2006-2016



Source: Hawaii State Department of Labor and Industrial Relations, Research and Statistics Office, CES program.

Meanwhile, the nation is doing better, averaging a 1.6 percent increase over the same time frame between 2016 and 2017.

While the state’s job count expanded by 4.9 percent from 2006 to 2016, two of the four counties generated gains in non-farm payroll jobs that exceeded the state-wide growth rate (Figure 9). Maui County advanced the fastest with growth of 5.8 percent. Honolulu County followed closely with a gain of 5.4 percent. Hawaii County ranked third, with a 2.7 percent growth rate in the number of jobs. Kauai County was up by 2.2 per-

cent, trailing the other counties.

Between 2006 and 2016, over-the-year growth rates for the Counties generally followed the same trend as the nation and the state - job losses in 2008 to 2010, followed by a rebounding job market in 2011 (Figure 10). Honolulu County posted the smallest growth rates, in general, but also experienced the smallest declines.

Based on data for the first three months of 2017, the job counts point to further improvement. The quarterly average for 2017 is ahead of the 2016 average in all counties.

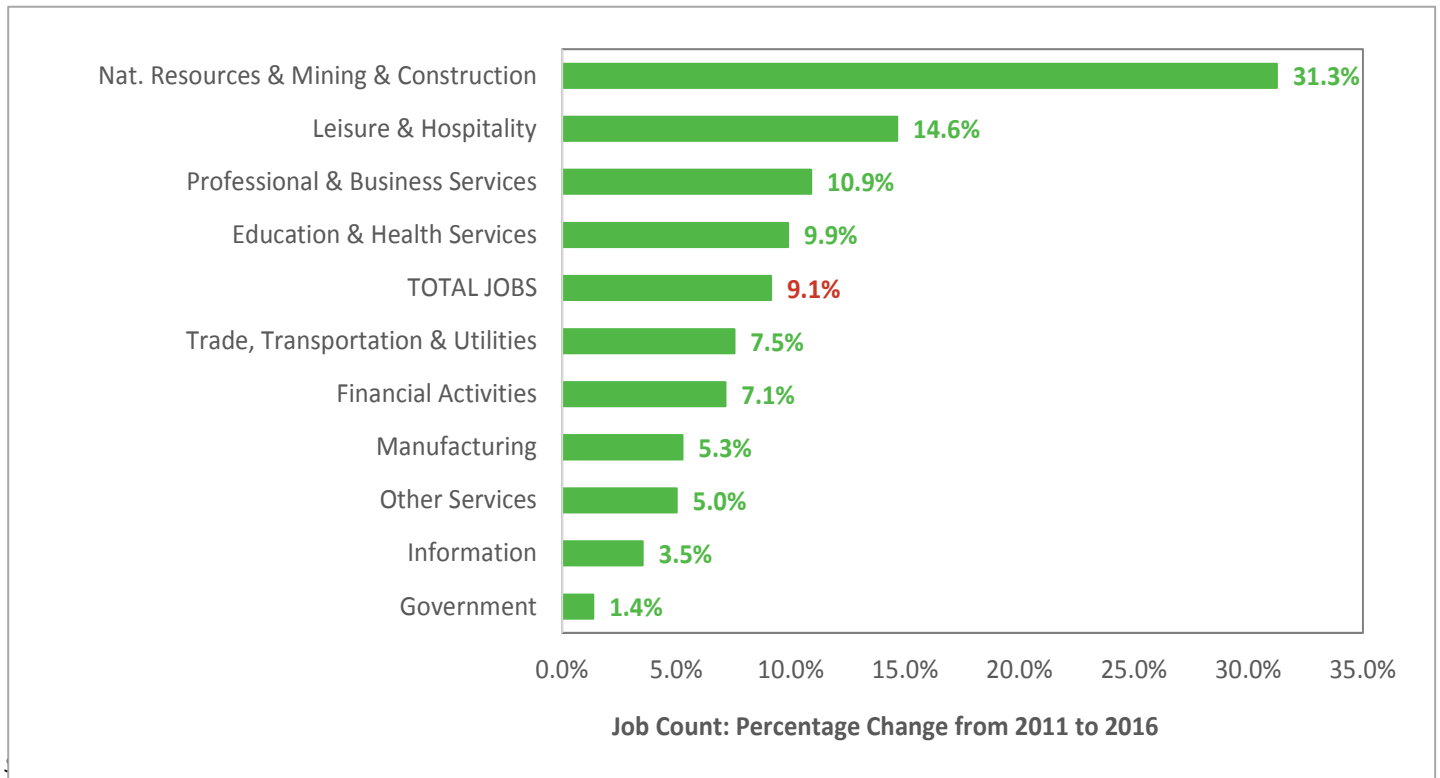
Five-Year Industry Trend Mainly Positive

After losing 38,000 jobs during the slowdown that extended from 2008 to 2010, Hawaii’s jobcount began to rebound in 2011. Over the next five years, the jobcount has expanded each successive year, adding a total of 54,200 jobs from 2011 to 2016. All of the ten major

industries have contributed to job growth after the end of the recession.

The overall statewide job gain following the downturn stood at 9.1 percent. Four industries exceeded

Figure 11. Industry Job Count Percent Change, State of Hawaii, 2011-2016



this growth rate and have rebounded strongly after the trough in 2010 (Figure 11).

The natural resources, mining, and construction sector expanded the fastest, climbing past the 2011 count by 31.3 percent. Special trades created more than half of the jobs, while 2,800 slots were in building construction.

Leisure and hospitality also showed strength with a gain of 14.6 percent and posted the largest overall numerical gain of 15,100 new jobs. Tourism continued to boost the accommodations and food services sub-sector upward with the addition of 13,700 positions.

The third fastest growing industry, professional and business services, with growth of 10.9 percent, added 8,200 new jobs from 2011 to 2016. The administrative and support and waste management and remediation services sub-sector was responsible for 6,700 new jobs and a large chunk totaling 5,100 positions was created in the employment services area. Management of companies and enterprises contributed about 1,500, with the remaining 100 distributed among professional, scientific, and technical services positions.

The education and health services industry grew a little faster than the average for all industries, with an expansion rate of 9.9 percent. This translated into 7,500 new

jobs over the five year period. Both sub-sectors posted gains, though the vast majority of the new jobs resulted from increased demand in health care and social assistance. Over 52 percent of the new healthcare jobs were in the ambulatory health care services sub-sector.

Trade, transportation, and utilities benefitted from a 7.5 percent hike, adding 8,400 jobs. The new jobs were mainly distributed between two sub-sectors. Various components of retail trade were responsible for the rise of 3,600 positions in that sector. Within transportation, warehousing, and utilities - transportation and warehousing contributed the bulk of the 4,400 new jobs .

In 2016, government, which remained Hawaii's largest industry, reported an increase of 1,700 from 2011 to 2016 for a modest rise of 1.4 percent. Over the last five years, the job count has fluctuated near the 2011 level. Combined growth in both State and Local government, offset cuts in the Federal branch.

There is reason for continued optimism that Hawaii's non-farm employment will improve further in 2017. Looking at the first quarter average, in 2017, the overall job count exceeds the year ago average by 0.9 percent. With the exception of a few industries, the figures show positive trends.

State Average Wage Close to National Average

Workers in Hawaii received an average wage of \$23.76 per hour as of May 2016, a difference of only \$.10 per hour less than national average of \$23.86 per hour. National earnings exceeded Hawaii's wages in 9 out of the 22 major occupational groups. These groups are highlighted in the table below that is sorted by the highest wages paid nationally (Figure 12).

Hawaii's wages for the majority of the groups at the top of the list are at the higher end of the pay scale, but are below the national hourly rate. Out of the top 10 high-

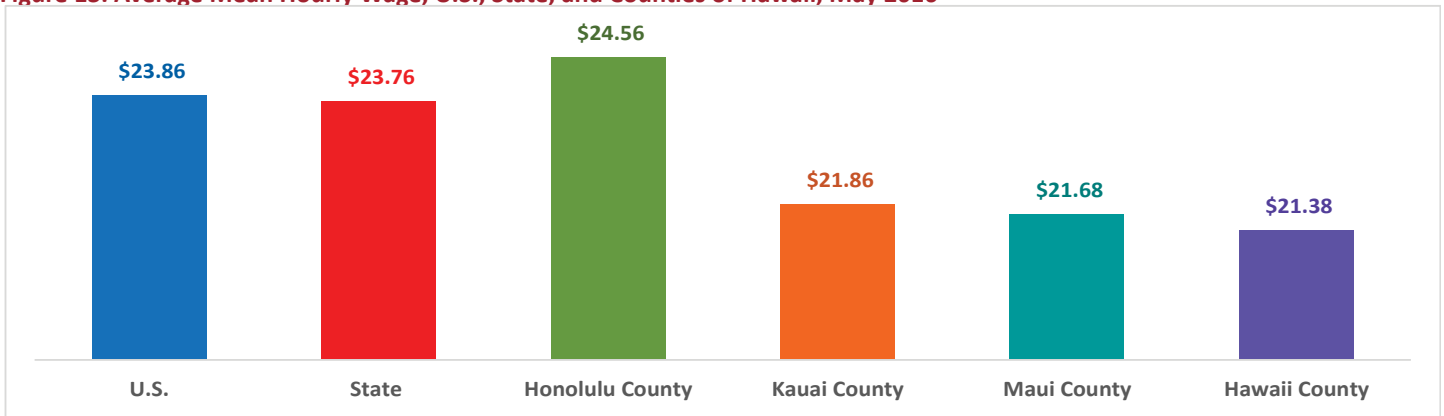
est paid occupational groups, Hawaii's wages topped the nation in only two occupational categories - healthcare practitioners and technical occupations and construction and extraction occupations. However, because of Hawaii's service-based economy, the concentration of workers in the higher paid occupational groups such as: legal; life, physical, and social science; arts, design, entertainment, sports, and media; computer and mathematical; and architecture and engineering occupations are relatively small compared to the other occupational groups. Instead, occupational groups that pay better

Figure 12. Average Mean Hourly Wage, U.S. vs Hawaii, May 2016 (Sorted by U.S. Hourly Wages)

Major Occupational Group	U.S.		Hawaii		Difference	
	Employment	Mean Hourly Wage, May 2016	Employment	Mean Hourly Wage, May 2016	Numerical	Percent
Management	7,090,790	\$56.74	36,410	\$47.19	-\$9.55	-16.8%
Legal	1,075,520	\$50.95	4,110	\$40.07	-\$10.88	-21.4%
Computer & Mathematical	4,165,140	\$42.25	9,300	\$37.50	-\$4.75	-11.2%
Architecture & Engineering	2,499,050	\$40.53	9,460	\$38.69	-\$1.84	-4.5%
Healthcare Practitioners & Technical	8,318,500	\$38.06	31,190	\$43.43	\$5.37	14.1%
Business & Financial Operations	7,281,190	\$36.09	26,340	\$31.54	-\$4.55	-12.6%
Life, Physical, & Social Science	1,152,840	\$35.06	6,610	\$32.95	-\$2.11	-6.0%
Arts, Design, Entertainment, Sports, & Media	1,902,970	\$28.07	9,210	\$24.18	-\$3.89	-13.9%
Education, Training, & Library	8,636,430	\$26.21	42,590	\$24.86	-\$1.35	-5.2%
Total, All Occupations	140,400,040	\$23.86	632,120	\$23.76	-\$0.10	-0.4%
Construction & Extraction	5,585,420	\$23.51	33,560	\$31.32	\$7.81	33.2%
Community & Social Service	2,019,250	\$22.69	10,500	\$24.46	\$1.77	7.8%
Installation, Maintenance, & Repair	5,456,640	\$22.45	23,990	\$25.60	\$3.15	14.0%
Protective Service	3,386,360	\$22.03	20,790	\$22.34	\$0.31	1.4%
Sales & Related	14,536,530	\$19.50	61,950	\$17.22	-\$2.28	-11.7%
Office & Administrative Support	22,026,080	\$17.91	91,040	\$18.57	\$0.66	3.7%
Production	9,105,650	\$17.88	16,070	\$19.02	\$1.14	6.4%
Transportation & Material Moving	9,731,790	\$17.34	41,830	\$21.55	\$4.21	24.3%
Healthcare Support	4,043,480	\$14.65	19,280	\$16.43	\$1.78	12.2%
Building & Grounds Cleaning & Maintenance	4,426,090	\$13.47	35,200	\$15.85	\$2.38	17.7%
Farming, Fishing, & Forestry	463,640	\$13.37	960	\$16.59	\$3.22	24.1%
Personal Care & Service	4,514,960	\$12.74	20,470	\$14.35	\$1.61	12.6%
Food Preparation & Serving Related	12,981,720	\$11.47	81,250	\$14.78	\$3.31	28.9%

Source: Occupational Employment Statistics Program.

Figure 13. Average Mean Hourly Wage, U.S., State, and Counties of Hawaii, May 2016



Source: Occupational Employment Statistics Program.

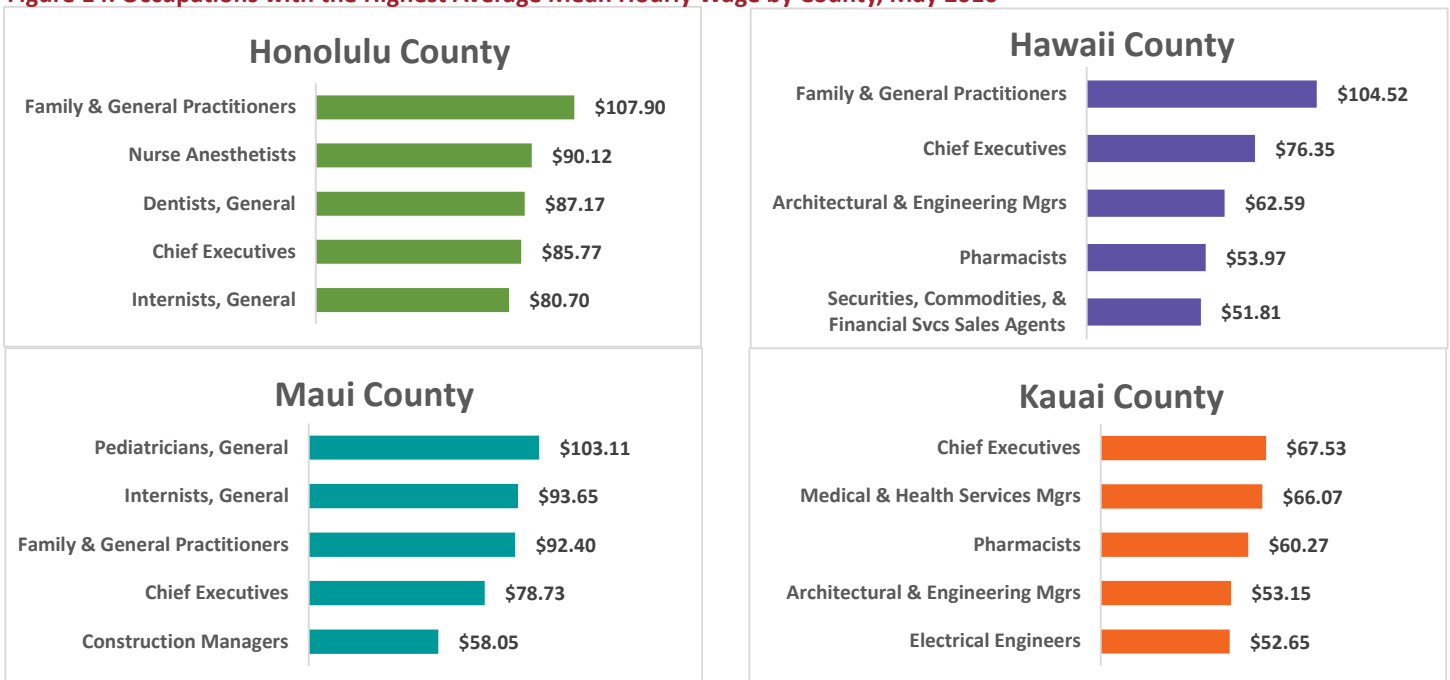
wages in Hawaii as compared to the nation such as: office and administrative support; food preparation and serving related; transportation and material moving; building and grounds cleaning and maintenance; and construction provide more jobs for the state.

At the county level, Honolulu County’s average wage of \$24.56 topped both the state’s and the national hourly rate (Figure 13). The average for the other three counties remained fairly close, with less than fifty cents difference in pay rates. Wage earners in Kauai County took home the next highest hourly rate of \$21.86 per

hour, while the average wage for Maui County at \$21.68 followed, and Hawaii County’s rate of \$21.38 ranked the lowest.

The top five occupations that pay the most in each of the counties typically fall under two categories - health-care professionals, and managers (Figure 14). Only two occupations - electrical engineers, which is categorized in the computer and mathematical occupational division; and securities, commodities, and financial services sales agents, part of the division that includes sales and related occupations, will fall outside of that path.

Figure 14. Occupations with the Highest Average Mean Hourly Wage by County, May 2016



Source: Occupational Employment Statistics Program.

Dynamics Evident in Hires and Separations

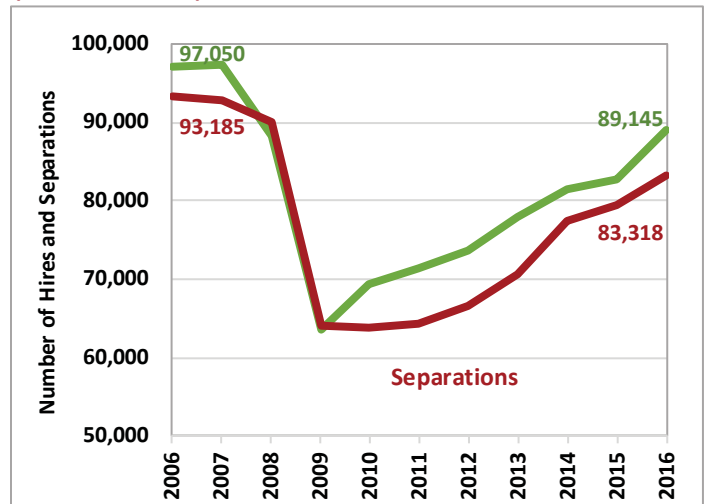
The U.S. Census Bureau's Local Employment Dynamic (LED) program produces Quarterly Workforce Indicators (QWI) that gives an overview of the State's workforce. The latest data available is for the second quarter of 2016 and comparisons against the same quarter of a prior ten year period illustrate some of the dynamics happening within the workforce. *Hires* are defined as the estimated number of workers who started a new job in the specified quarter - it is the sum of new hires and recalled hires. *Separations* are the estimated number of workers whose job with a given employer ended in the specified quarter.

Preceding the recession, hires outnumbered separations from 2006 to 2007 (Figure 15). After the number of hires peaked at 97,306 in 2007, this count began to dwindle in 2008 as the recession took hold and reached its lowest point of 63,702 in 2009. During this 2-year downturn, separations slightly outnumbered hires. However, beginning in 2010 hires partially rebounded as Hawaii entered the recovery phase. However, in 2016 the number of hires were still about 8 percent lower than they were ten years prior.

Separations in 2016 were also down by 11 percent from 2006. One interesting trend is that even during the recession period, there was a drop in separations. It most likely indicated that people hung onto their jobs during lean times, whereas during boom years, more people left their positions seeking to change, upgrade, or retire from their jobs.

Overall, Hawaii's economy performed favorably as hires outnumbered separations in all but two years during the last decade. Which industries fared better than others?

Figure 15. Hires vs. Separations, State of Hawaii, 2006-2016 (Second Quarter)



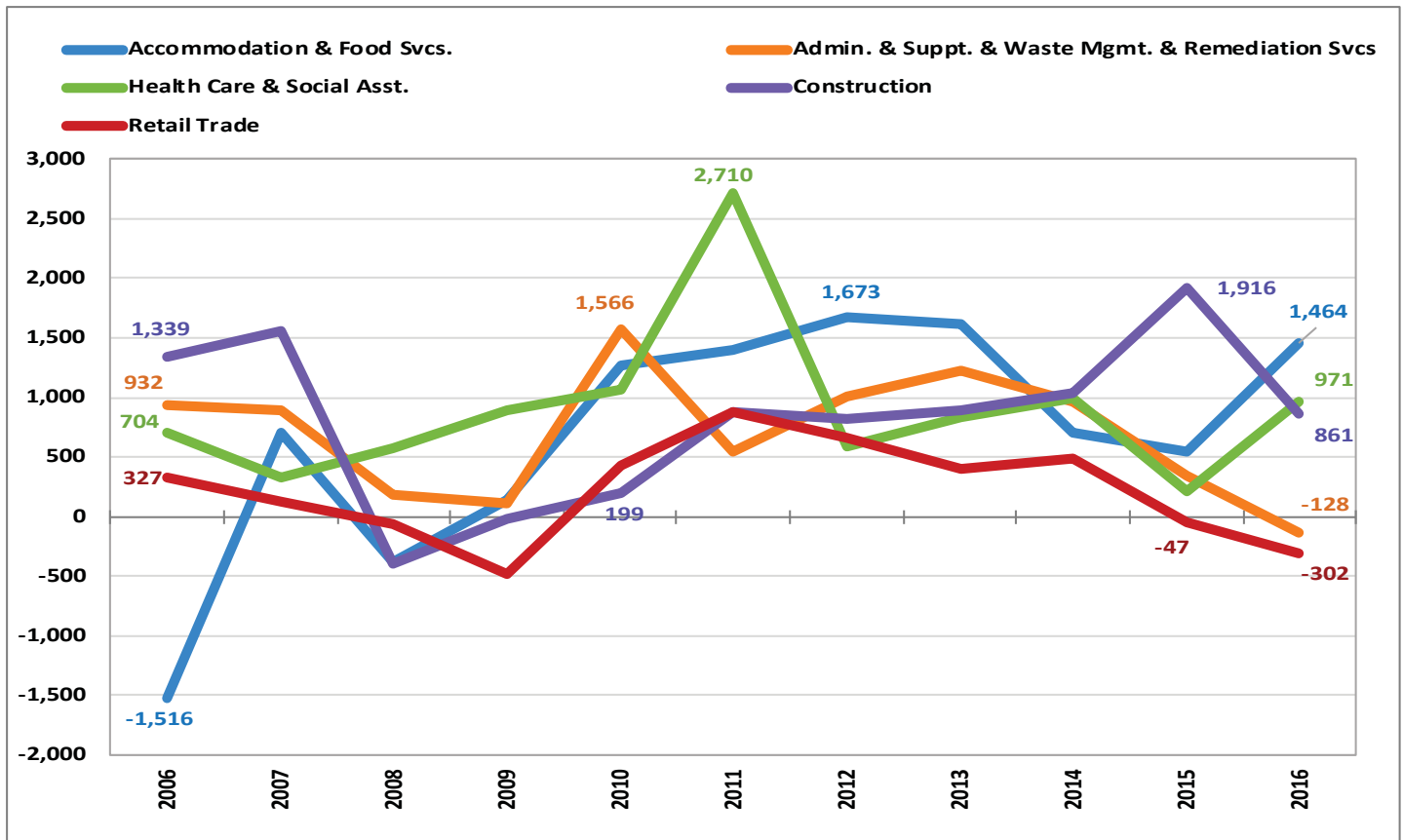
Source: U.S. Census Bureau, Local Employment Dynamics, Quarterly Workforce Indicators, LED Extraction tool, data as of 8/30/17.

In the LED program, there are many indicators that involve *firms* and not just *individuals* as was just previously addressed with the hires and separations.

Job creation is defined as the estimated number of jobs gained at firms throughout the quarter - a measure that counts total employment increase at firms that grew over the course of the quarter. *Job destruction*, on the other hand, is the estimated number of jobs lost at firms throughout the quarter - counts of employment decrease at firms that shrank over the course of the quarter. The difference between job creation and job destruction is the *firm net job change*, which can illustrate which industries moved in a positive direction over the last decade.

Looking at five of Hawaii's major industries, there is evidence that firm net job change fluctuated differently for various industries (Figure 16). It didn't always follow the job trend of the economic recession.

Figure 16. Firm Net Job Change by Industry, State of Hawaii, 2006-2016 (Second Quarter)



Source: U.S. Census Bureau, Local Employment Dynamics, Quarterly Workforce Indicators, LED Extraction tool, data as of 8/30/17

Firm net job change in accommodation and food services has shown the most volatility over the ten-year period. In 2006 the net job change plunged to -1,516 in 2006, then posted the largest increase of 1,464 in 2016.

Health care and social assistance also exhibited large swings, all of it in the positive range with a sharp peak in 2011 at 2,710. Since then, it settled down at 971 in 2016.

Surprisingly, the trend in retail trade, considered a high-turnover industry, was relatively stable compared to the other key industries. After the downturn in 2008 and 2009, retail trade remained in positive territory over the next five years. However job losses outnumbered job creation in 2015 and 2016, dropping to -47 and -302, respectively.

Administrative and support and waste management and remediation services exhibited a positive net change from 2006 to 2015. The net change climbed to 1,566 in 2010. Only in 2016 did the trend turn negative.

Prior to 2008, construction displayed the highest positive job change among the five industries. Then came a drop below zero in 2008 and 2009, followed by a recovery to 199 in 2010. Improvement continued over the next five years, reaching 1,916 in 2015. In 2016, the net job change tapered a bit, falling to 861.

What these firm net job changes illustrate is that there is a lot of churning going on within companies that are not visible in other data sets dealing with employment. While overall jobs could appear to be stable on the outside, the dynamics may be very active on the inside.

Earnings Climb Higher

Although Hawaii's workforce endured a significant amount of job losses during the recession, the good news is that average monthly earnings rose by 26.9 percent from 2006 to \$3,932 in 2016 (Figure 17) based on second quarter data from the Local Employment Dy-

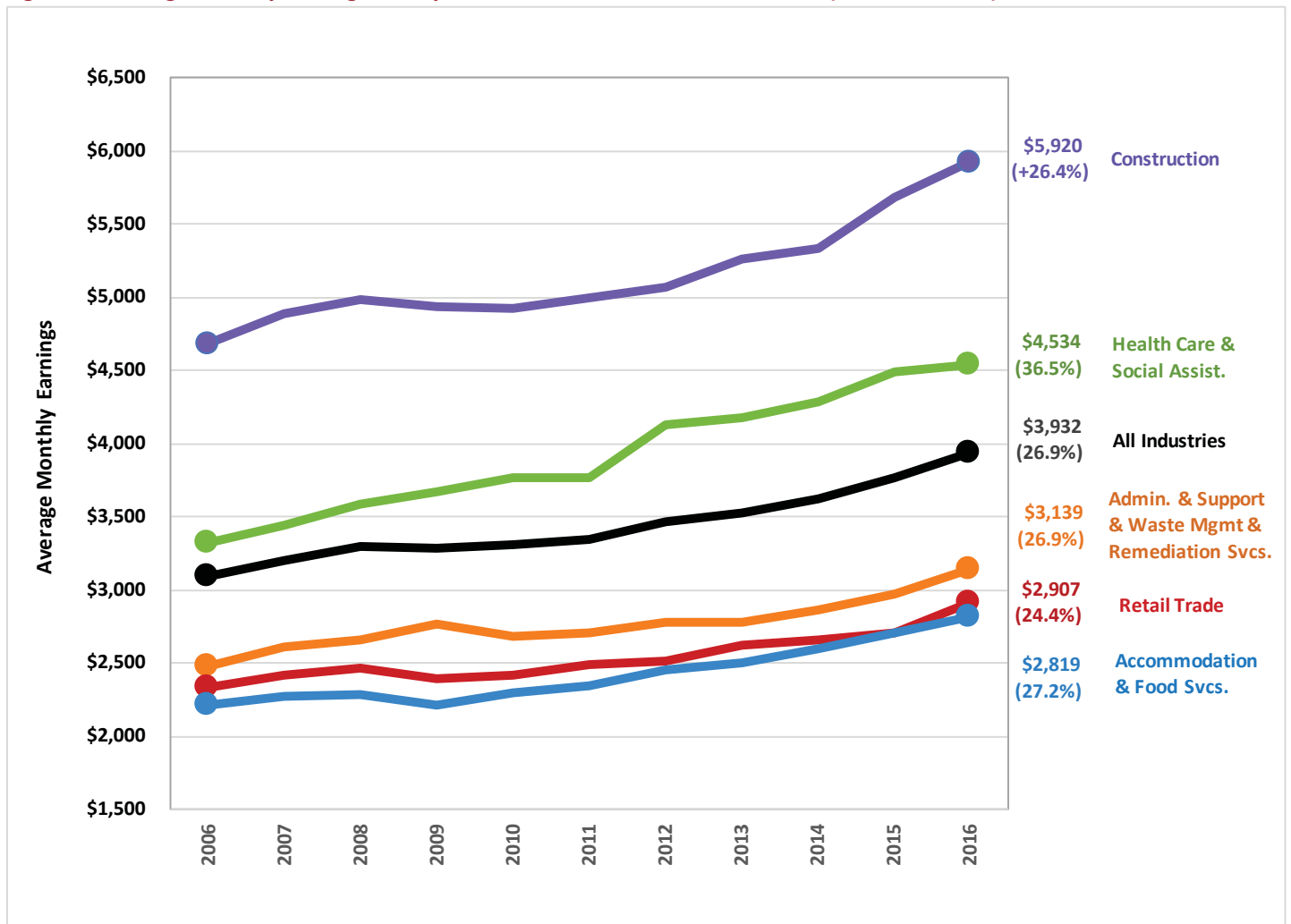
namics program. Average monthly earnings by industry discussed here include only employees with stable jobs (those that worked with the same firm throughout the quarter). In this respect, many of Hawaii's key industries fared well (Figure 18).

Figure 17. Average Monthly Earnings and Growth by Industry, State of Hawaii, 2006 and 2016 (Second Quarter)

Ranked by 2016 Earnings	2006	2016	Percent Growth
Utilities	\$5,831	\$7,769	33.2%
Mining, Quarrying, and Oil and Gas Extraction	\$6,655	\$7,443	11.8%
Finance and Insurance	\$4,621	\$5,939	28.5%
Construction	\$4,683	\$5,920	26.4%
Professional, Scientific, and Technical Services	\$4,676	\$5,717	22.3%
Management of Companies and Enterprises	\$4,038	\$5,633	39.5%
Public Administration	\$4,178	\$5,510	31.9%
Wholesale Trade	\$3,730	\$4,703	26.1%
Health Care and Social Assistance	\$3,321	\$4,534	36.5%
Transportation and Warehousing	\$3,160	\$4,258	34.7%
Real Estate and Rental and Leasing	\$3,423	\$4,201	22.7%
Information	\$4,270	\$3,969	-7.0%
All Industries	\$3,099	\$3,932	26.9%
Manufacturing	\$3,031	\$3,670	21.1%
Agriculture, Forestry, Fishing and Hunting	\$2,338	\$3,277	40.2%
Educational Services	\$2,773	\$3,248	17.1%
Admin. & Support & Waste Mgmt. & Remediation Services	\$2,473	\$3,139	26.9%
Other Services (except Public Administration)	\$2,326	\$2,974	27.9%
Retail Trade	\$2,337	\$2,907	24.4%
Accommodation and Food Services	\$2,217	\$2,819	27.2%
Arts, Entertainment, and Recreation	\$2,121	\$2,627	23.9%

Source: U.S. Census Bureau, Local Employment Dynamics, Quarterly Workforce Indicators, QWI Explorer, data as of 8/30/17.

Figure 18. Average Monthly Earnings for Key Industries, State of Hawaii, 2006-2016 (Second Quarter)



Source: U.S. Census Bureau, Local Employment Dynamics, Quarterly Workforce Indicators, QWI Explorer tool, data as of 8/30/17.

Construction industry average monthly earnings rose 26.4 percent in the ten year period from 2006 to 2016, slightly slower than the overall average. However, with \$5,920 monthly earnings in 2016, construction workers had higher average wages than many other workers.

Workers in the health care and social assistance industry benefited from a wage increase of 36.5 percent between 2006 and 2016, better than the average worker. Wages in this field at \$4,534 in 2016 were also higher than the average pay for all industries.

Administrative and support and waste management and remediation services employees realized an earnings in-

crease of 26.9 percent from 2006 to 2016, matching the overall average. Wages in this industry at \$3,139 in 2016 were below the average pay for all industries.

Retail trade employees earned an increase of 24.4 percent from 2006 to 2016, growing slower than the overall average. Wages in this industry, \$2,907 in 2016, were among the lowest of all industries.

Workers in the accommodations and food services industry benefitted from earnings growth of 27.2 percent between 2006 and 2016. But this faster than average growth rate still kept the low monthly pay at \$2,819 in 2016 lower than the all-industry average.

Short- and Long-Term Job Forecasts are Positive

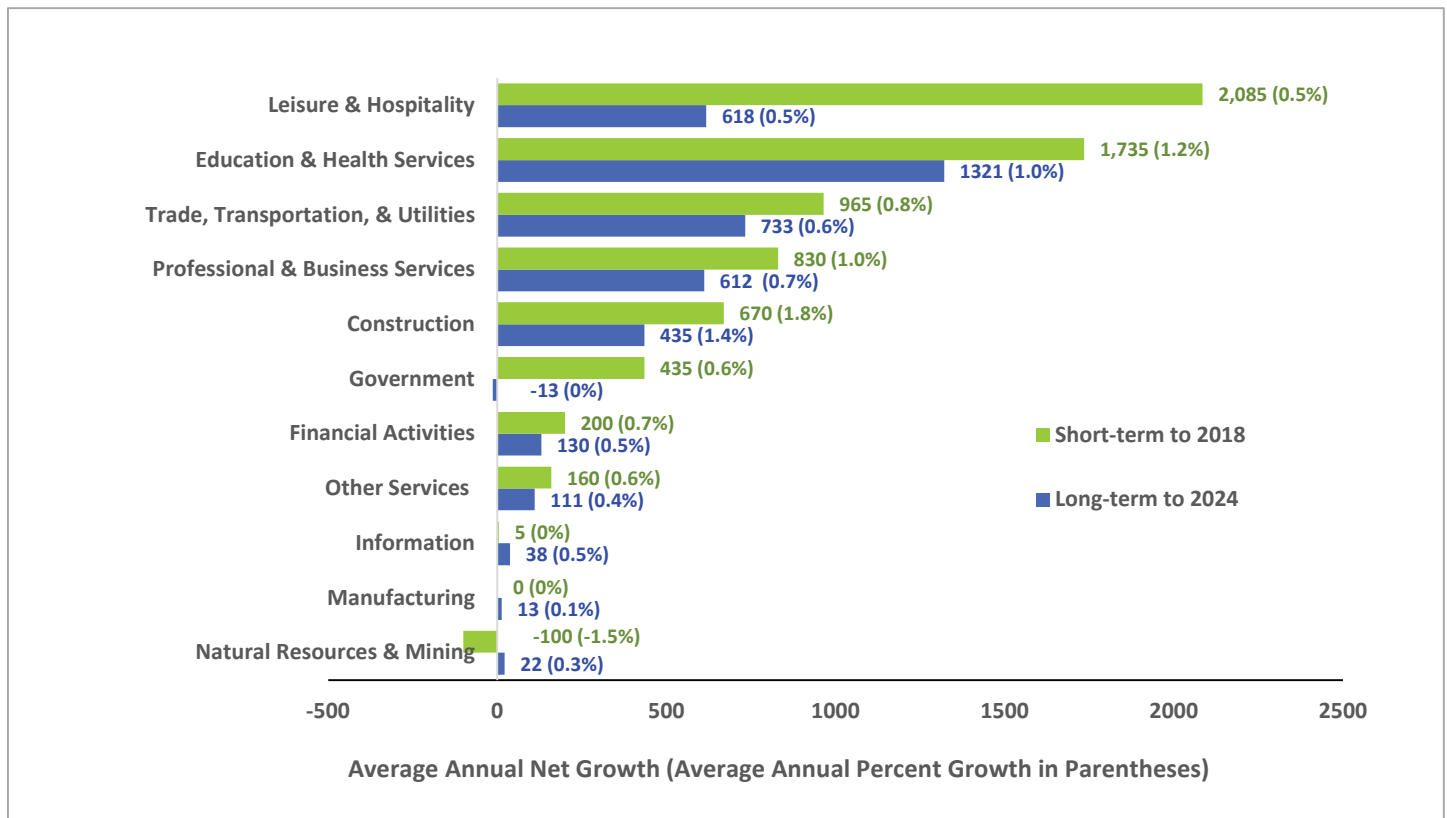
Future job growth in Hawaii for both the short-term and the long-term remains positive. The short-term forecast from 2016 to 2018 points to further improvement in the economy, growing at 1.1 percent per year. Growth over the longer term will average a more modest rate of increase at 0.6 percent annually from 2014 to 2024. Short- and long-term projections are calculated independently using different starting and ending periods, making direct comparisons difficult. In addition, the methodology for the short-term forecast attempts to incorporate the current business cycle, whereas the long-term projections assumes structural stability in the economy. This explains why growth rates may be higher in the short-term as Hawaii's current economy continues to expand following the recession compared to the

long-term which assumes full employment. Therefore, to lessen the impact of the differences between short- and long-term methodologies, average growth is presented on an annual basis.

In the near future, most of the job gains will be in the following major industries (Figure 19): leisure and hospitality; education and health services; trade, transportation, and utilities; and professional and business services. Since these are the four largest industries, it is not surprising that they will provide the most job growth in the coming years.

Leisure and hospitality will continue to benefit from the strength of tourism and is poised to lead all industry

Figure 19. Projected Average Annual Job Growth by Industry for Short- and Long-Term



Source: Hawaii State Department of Labor and Industrial Relations, Research and Statistics Office, Projections program.

gains over the short-term. Within this industry, the accommodation and food services sector will contribute the most new jobs. As far as the long-term, this industry will remain a major source of jobs and is anticipated to post the third largest increase over the ten-year projected period.

Also important to job expansion, the education and health services industry will incur the next largest gain over the short-term, and will top all long-term industry advances. Not surprisingly, the health care needs of an aging population will drive employment upward, particularly in ambulatory health care services.

Rounding out the top growing industries, the trade, transportation, and utilities industry is another industry positively impacted by high levels of visitor spending. Within professional and business services, the administrative and support services sector will help boost the job count higher.

On the flip side, government is a large industry that is expected to contract over the long-term despite positive growth forecasted for the short-term. Expected job losses in the federal branch will negate the anticipated gains in the local and state governments.

These forecasted new jobs are just one part of the future job openings, and are attributed to economic growth. However, when a current worker leaves the labor force or changes occupation, it also creates a job opening, which we refer to as replacement openings. The combined total of the openings due to growth and replacements represent the total openings.

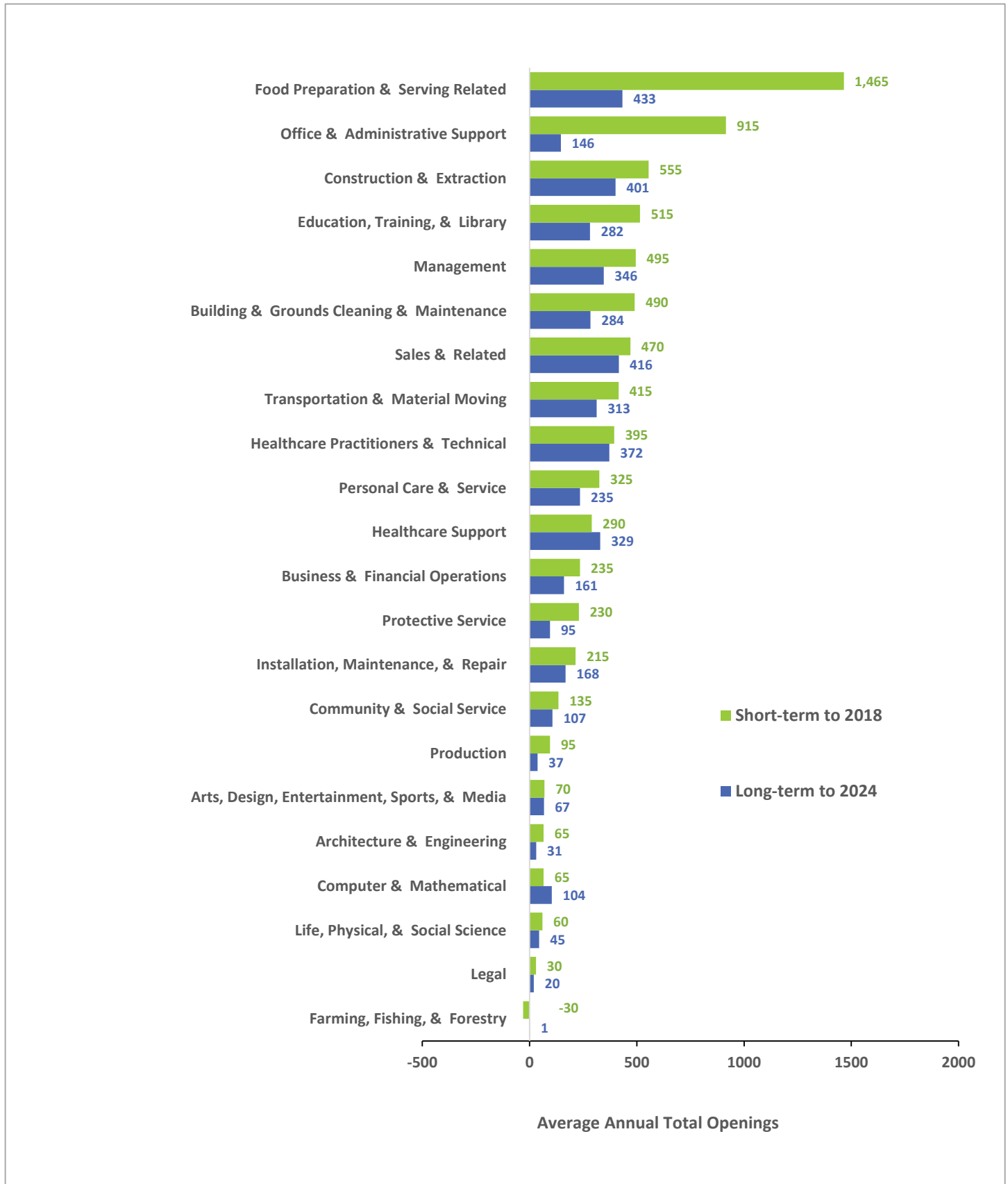
Many of the projected job openings will occur in entry level, transitional jobs in which there is a constant turn-

over of workers, such as those related to: food preparation and serving; and office and administrative support. In addition, sales and related occupations will provide numerous openings for long-term jobseekers. (Figure 20). Construction and extraction occupations will have many openings in the near future which will continue over the long-term, as construction projects continue to boost this occupational group. Jobs requiring advanced postsecondary education will also create numerous openings. These include education, training and library occupations for the short-term, while healthcare practitioners and technical occupations will provide employment opportunities over the long-term.

Figure 21 lists the 15 occupations projected to average the most job openings annually for the long-term as well as the short-term future. Waiters and waitresses and retail salespersons, two of the larger occupations, top the list for both the short-term and the long-term. In fact, the top four jobs with the most projected openings are identical for both time periods. Most of the positions listed are either directly or indirectly related to tourism. Three jobs are office-related - general office clerks, general and operations managers, and stock clerks and order fillers. Registered nurses is the only job within the healthcare field.

Not surprisingly, wages for most of the top 15 jobs are on the lower end of the payscale, with minimal education and training requirements. General and operations managers and registered nurses are the only two occupations that require a bachelor's degree and also earn more than the overall average of \$49,430 for all occupations. With the exception of general office clerks, which requires a high school diploma, the other 12 occupations do not have any formal educational requirement. However, either short-term or moderate-term on-the-job training is mandatory for 11 of these 12 jobs. Only

Figure 20. Projected Average Annual Total Job Openings by Occupation Group for Short- and Long-Term



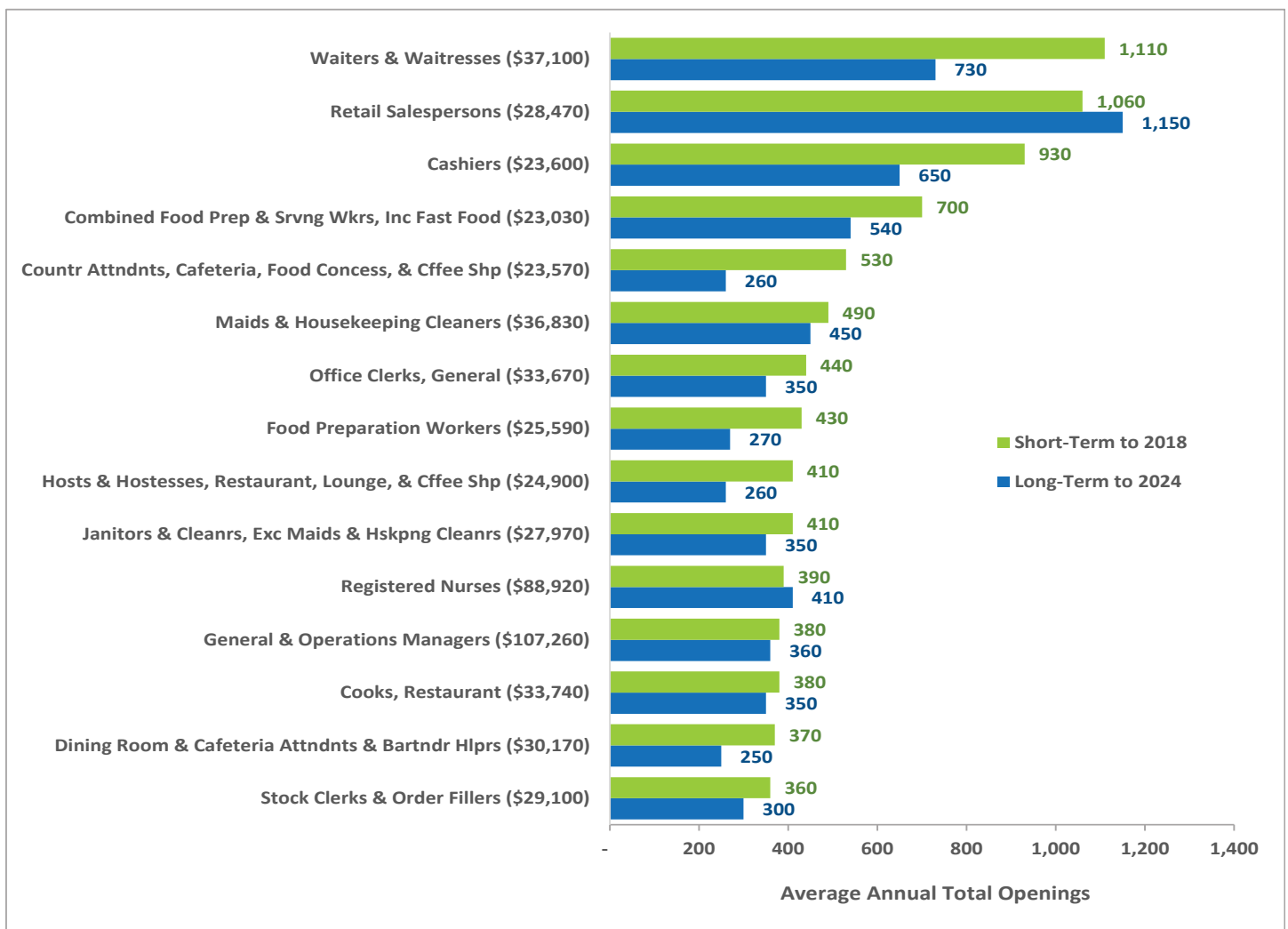
Source: Hawaii State Department of Labor and Industrial Relations, Research and Statistics Office, Projections program.

hosts and hostesses of restaurants, lounges, and coffee shops do not need to undergo any form of training. Overall, more than two-thirds or 69 percent of the state’s projected job openings through 2024 require only a high school diploma or less (Figure 22). About 18 percent of the future openings will require a Bachelor’s degree and another 2 percent will need an Associate’s degree. The prerequisite for almost 2 percent of all openings will be a Master’s degree, while another 2 percent will necessitate a Doctoral/Professional degree for employment. The remaining job opportunities call for a postsecondary certificate (5 percent) or some college (2 percent).

A significant portion of job openings, 84 percent, will not demand any related work experience. About 11 percent will require less than 5 years experience and the remaining 5 percent will need 5 or more years.

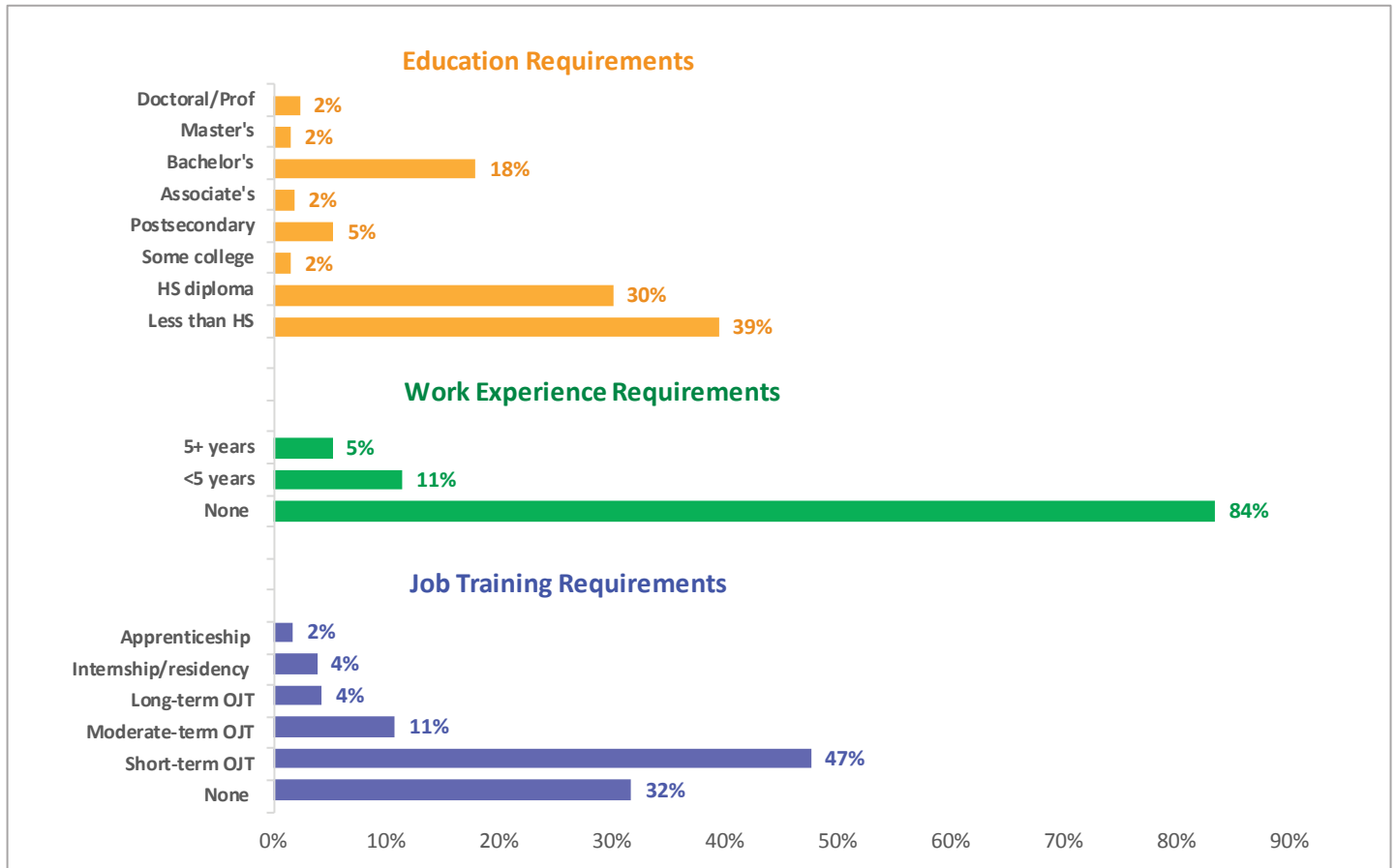
Around 32 percent of the job openings will not have any job training requirements. Nearly half or 47 percent will require short-term on-the-job training and another 11 percent will require moderate-term on-the-job training. Long-term on-the-job training will be needed for just 4 percent of job openings. The rest of the openings will need an internship/residency (4 percent) or an apprenticeship training program (2 percent).

Figure 21. Occupations with the Most Projected Average Annual Total Job Openings in the Short- and Long-Term



Source: Hawaii State Department of Labor and Industrial Relations, Research and Statistics Office, Projections program.

Figure 22. Distribution of Projected Average Annual Total Job Openings by Education, Work Experience, and Job Training Requirements, 2014-2024



Source: Hawaii State Department of Labor and Industrial Relations, Research and Statistics Office, Projections program.

Advertised Online Jobs

After a sharp decline in online job advertisements in 2015, all counties experienced an increase in 2016 (Figure 23). Kauai County’s increase, in particular, translated to a rise of 25 percent more jobs posted online by employers.

During the past five years, job advertisements in three out of the four counties continued to increase every year from 2012 to 2014. Only Honolulu County experienced a slight dip in 2012, followed by a pickup in employment opportunities over the next two years. The recovery was particularly evident between 2012

Figure 23. Total Annual Advertised Openings for the State and Counties, 2011-2016

Area	2011	2012	2013	2014	2015	2016
State of Hawaii	132,203	133,646	208,761	270,810	155,947	169,500
Hawaii County	11,038	12,832	19,136	24,688	18,075	19,206
Honolulu County	99,701	94,907	148,840	192,764	107,683	116,992
Kauai County	6,773	7,416	11,290	14,765	8,100	10,122
Maui County	14,677	16,551	28,129	38,295	21,239	23,180

Source: Online advertised jobs data, America’s Labor Market Analyzer (ALMA)

and 2013 when the number of job listings posted a pronounced rise in hiring throughout the state. Job postings peaked in 2014 and declined by more than 40 percent in 2015 for the state, Honolulu County, Maui County, and Kauai County. Hawaii County's decline was not as drastic, falling by 27 percent.

Another indicator of the strength of the labor market is the ratio of the total number of unemployed persons to the number of advertised job openings. (Figure 24). In fact, each county's ratio remained below one, meaning

there were more job openings than jobseekers. Kauai County posted the best ratio of 0.44, followed by Honolulu County with 0.53, while Maui County posted a ratio of 0.62 per opening. Hawaii County's ratio of 0.95 ranked highest.

The number of advertised jobs during the first seven months of 2017 is down in every county except Kauai County. Although the numbers are trending downward, the number of job openings still exceed the total unemployed count.

Figure 24. Ratio of Unemployed per Job Opening for the State and Counties, July 2017

	Number of Unemployed	Job Openings	Number of Unemployed Per Job Opening
State	18,650	30,140	0.62
Hawaii County	3,000	3,883	0.95
Maui County	2,400	3,963	0.62
Honolulu County	11,150	21,172	0.53
Kauai County	850	1,912	0.44

Source: Bureau of Labor Statistics, Local Area Unemployment Statistics program and Online Advertised Jobs data.

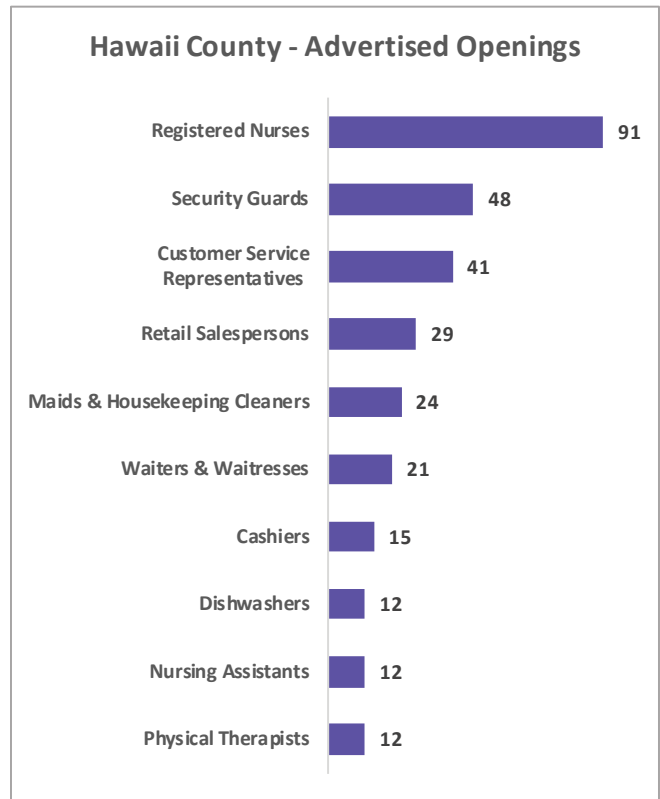
Top 10 Jobs with the Most Advertised Openings by County

As of September 22, 2017, the top advertised jobs within each county offer a mixture of opportunities for jobseekers. The following graphs (Figure 25) display the top 10 occupations with the most openings for each county.

Four of the occupations common to all counties include: retail salespersons, customer service representatives, security guards, and cashiers.

Although more than half of these jobs can be obtained with a high school diploma or less, employment for employees with postsecondary training also exist in every county except Kauai County. The following positions require education beyond high school: in Honolulu County, registered nurses; bookkeeping, accounting, and auditing clerks; and all other managers; in Maui County, registered nurses and physical therapists; in Hawaii County, registered nurses, nursing assistants, and physical therapists

Figure 25. Top 10 Advertised Job Openings by County



Source: Online Advertised Jobs Data as of September 22, 2017

More Labor Market Information Available on Hawaii Workforce Infonet Website

For more information, visit the Research and Statistics Office's website at www.hiwi.org. There you will find many publications that the Labor Market Research Section produces about the state of the local labor market as well as employment projections by industry and occupations and detailed analyses. Recently published reports include:

- Affirmative Action Programs – Labor Information tables for state and counties updated Table 1- Labor Force Information by Sex and Race with 2016 Annual Local Area Unemployment Statistics (LAUS) data and based on 2006-2010 Census.
- Employment Forecasts for the Short-Term Future provides short-term industry and occupational projections for Hawaii, using 1st Quarter 2016 employment data to forecast employment for the 1st Quarter 2018.
- Local Employment Dynamics reports can be generated for Hawaii private industries based on quarterly workforce indicators such as employment, job creation and flow via new hires and separations, worker turnover, and wages by industry, age, and gender.
- Long-Term Industry and Occupational Projections, State of Hawaii 2014-2024 tables contain state employment for industries and occupations and expected growth amounts for the designated time period as well as occupational openings based on growth and replacement needs.
- Long-Term Industry and Occupational Projections, Counties 2014-2024 tables contain county employment for industries and occupations and expected growth amounts for the designated time period as well as occupational openings based on growth and replacement needs.
- Occupational Employment and Wages in Hawaii 2016 is an annual report compiling the results of the Occupational Employment Statistics survey, collecting employment and wage data by occupation over a three-year period from approximately 3,500 establishments.



HIWI's features include:

Services for Job Seekers

Services for Employers

Data Dashboard and Tools

Publications and Tables

and much more!