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ECONOMIC DEVELOPMENT & TOURISM**
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December 22, 2023

The Honorable Ronald D. Kouchi,
President and Members
of the Senate
Thirty-second State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Scott K. Saiki,
Speaker and Members of the
House of Representatives
Thirty-second State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the report on *Hawaii's Targeted & Emerging Industries, 2023 Update Report*, as required by Sections §201-16, §201-19, and §202-10, Hawaii Revised Statutes. In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed electronically at: <http://dbedt.hawaii.gov/overview/annual-reports-reports-to-the-legislature/>.

Sincerely,



James Kunane Tokioka

Enclosure

c: Legislative Reference Bureau

Hawai‘i’s Targeted & Emerging Industries

2023 Update Report



In accordance with §201-16, §201-19, and §202-10 Hawai‘i Revised Statutes, this publication was produced by the Research and Economic Analysis Division (READ) of the Department of Business, Economic Development & Tourism (DBEDT), State of Hawai‘i which is responsible for its content and presentation.



This report was prepared by Karl Ekroth, Economist, under the direction of Dr. Eugene Tian, Division Administrator. Dr. Joseph Roos, Economic Research Program Manager, and Laura Meisinger, Senior Economist reviewed and provided valuable input for this report.

Hawai‘i Department of Business, Economic Development & Tourism

November 2023

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EXECUTIVE SUMMARY

In 2009 DBEDT Research compiled and published a performance review of Hawai‘i’s targeted & emerging (or ‘targeted’) industry portfolio.¹ The portfolio consisted of several dozen economic activities that had been suggested, proposed, or actively promoted over the past several decades as potential new growth industries. The purpose of the review was to better define those activities for measurement purposes and to find out which had performed best in recent years. This report is the 14th update of the 2009 report and covers the 2012-2022 period.

Targeted and emerging industries were grouped (“activities”) into four performance categories. *Base-growth* activities rated the highest based on state and national performance and were more concentrated in Hawai‘i’s economy than the nation overall. Industries in this category had developed a competitive national advantage and were probably exporting some proportion of industry output. *Emerging* activities also rated high on performance but had not reached a level of concentration that would as yet suggest a competitive advantage. *Transitioning* activities in the portfolio were showing growth in jobs over the measurement period (and in some cases impressive growth) but were outperformed by the same activity nationally, suggesting that Hawai‘i was not as competitive. Finally, *declining* activities lost jobs over the measurement period and in most cases (but not all) were less competitive than the nation’s comparable industries. This update report extends the performance measures through 2022.

Table 1 provides a comprehensive overview of performance among activities in the Targeted Industry Portfolio over the 2012 to 2022 period. In the body of this report, the activities will be examined in detail by their major sector groups such as Technology, Creative, and Agribusiness. Performance is measured by job growth. The jobs category includes wage and salary jobs, self-employed, and proprietors. Average annual growth rates in this report were calculated using the compound annual growth rate formula. Key observations from the updated examination of the portfolio are:

- Hawai‘i’s total targeted jobs reached 160,660 jobs in 2022, an increase of 12,378 jobs or an average annual growth rate of 0.8% from 2012; Hawai‘i’s average annual job growth rates were lower than the nation’s for both the civilian economies and targeted industries; and the concentration of targeted industries in Hawai‘i compared to the nation increased 2 percentage points to 84%. Hawai‘i’s average annual earnings for both civilian and targeted industries were lower than the nation’s comparable industries in 2022.
- Six Hawai‘i activities were high performing, with positive jobs growth combined with average annual job growth rates that were higher in Hawai‘i than the nation for the same activity. Between 2012 and 2022, Specialty Health Care Services gained the greatest number of jobs at 4,822 and Agriculture Support Services jobs increased at an average annual growth rate of 4.8%. The activity with the highest concentration compared to the nation was Pharmacies at 126%. Technology Equipment Distribution had the highest average annual earnings at \$154,242 in 2022 among all targeted jobs in Hawai‘i.

¹ *Benchmarking Hawai‘i’s Emerging Industries*, DBEDT, December 2009, http://dbedt.hawaii.gov/economic/reports_studies/emerging-industries/

- Seventeen Hawai‘i activities were in the Transitioning category. They gained jobs over the 2012 to 2022 period but did not keep up with national growth for the same activities, resulting in a loss of competitive national industry share. However, most of these activities had larger job number gains as a percentage of the workforce than the civilian economy as a whole. Between 2012 and 2022, for Hawai‘i, Health Practitioners gained the greatest number of jobs at 3,398; Technical Consulting Services had the highest average annual job growth rate at 3.1%; and the Music concentration of industry compared to the nation’s concentration was the highest at 141%. In 2022, Hawai‘i’s Chemical and Pharmaceutical Manufacturing had the highest average annual earnings at \$140,426.
- Sixteen Hawai‘i activities in the portfolio were in the Declining category as the result of net job losses for the 2012 to 2022 period. Higher Education jobs declined the most at 1,472, and Biotechnology had the largest average annual job *decline* rate at 6.1%.

Table 1. Overall Performance of the Targeted Industry Portfolio

Industry Group 2/	Jobs in Hawai‘i		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	HI	U.S.	2022	% Point Change 12-22	HI	U.S.
Civilian Total	841,332	40,788	0.5%	1.5%	100%	0%	\$66,971	\$71,873
Total Targeted without Overlap	160,660	12,378	0.8%	1.6%	84%	2%	\$73,688	\$89,508
Base-Growth Activities								
Pharmacies	4,937	391	0.8%	0.5%	126%	16%	\$42,640	\$47,955
Specialty Health Care Services	13,091	4,822	4.7%	3.2%	103%	22%	\$72,065	\$58,079
Emerging Activities								
Agriculture Support Services	2,177	811	4.8%	3.0%	76%	18%	\$68,069	\$64,935
Film, TV, Video Production/Distribution, Cable and Media Streaming	2,626	973	4.7%	2.3%	94%	27%	\$100,740	\$152,917
Hospitals and Nursing Facilities	20,444	1,420	0.7%	0.1%	77%	12%	\$100,824	\$87,771
Technology Equipment Distribution	940	180	2.1%	1.6%	38%	5%	\$154,242	\$156,951
Transitioning Activities								
Art Education	764	111	1.6%	1.7%	75%	6%	\$22,907	\$19,712
Music	1,305	147	1.2%	2.1%	141%	1%	\$42,836	\$48,113
Performing and Creative Arts	9,450	776	0.9%	1.8%	123%	1%	\$27,356	\$32,738
Business Consulting	6,188	1,334	2.5%	4.0%	62%	-3%	\$75,655	\$102,713
Computer Services and Software Publishers	5,730	1,053	2.1%	4.5%	42%	-6%	\$126,084	\$158,327
Design Services	1,974	30	0.2%	1.6%	95%	-4%	\$40,349	\$53,919
Engineering and Research and Development	5,988	225	0.4%	1.9%	80%	-4%	\$119,574	\$133,311
Marketing, Photography and Related	11,249	795	0.7%	2.0%	92%	-2%	\$37,081	\$68,302
Specialty Education	5,883	808	1.5%	1.8%	104%	8%	\$38,127	\$38,662
Health Practitioners	25,271	3,398	1.5%	2.1%	103%	4%	\$98,238	\$92,905
Technical Consulting Services	5,724	1,515	3.1%	4.1%	67%	1%	\$75,535	\$103,589
Chemical and Pharmaceutical Manufacturing	125	16	1.4%	2.0%	6%	0%	\$140,426	\$154,583
Computer System Design and Related Services	6,595	97	0.1%	3.6%	55%	-15%	\$115,279	\$144,399
Engineering and Related Services	6,822	741	1.2%	1.5%	97%	6%	\$116,233	\$113,949
Information and Telecom Technology	4,940	320	0.7%	2.6%	60%	-5%	\$116,308	\$157,682
Medical Labs and Imaging Centers	1,941	194	1.1%	2.7%	139%	-8%	\$80,950	\$91,452

Table 1. Overall Performance of the Targeted Industry Portfolio (cont'd)

Industry Group	Jobs in Hawai'i		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	HI	U.S.	2022	% Point Change 12-22	HI	U.S.
Declining Activities								
Agriculture Inputs	401	-15	-0.4%	0.7%	38%	0%	\$62,838	\$89,861
Agriculture Packaging and Warehousing	243	-21	-0.8%	1.8%	29%	-5%	\$62,857	\$69,425
Agriculture Processing	6,344	-339	-0.5%	2.0%	82%	-13%	\$55,828	\$69,586
Farm Production	13,207	-595	-0.4%	0.1%	101%	5%	\$38,506	\$43,544
Fishing, Forestry and Hunting	1,522	-93	-0.6%	0.1%	339%	12%	\$30,379	\$35,884
Publishing and Information	1,458	-586	-3.3%	-1.3%	60%	-7%	\$77,904	\$151,199
Radio and Television Broadcasting	801	-202	-2.2%	-1.2%	130%	-1%	\$78,074	\$96,107
Architecture	1,855	-56	-0.3%	1.4%	134%	-10%	\$99,385	\$92,867
Cultural Activities	2,912	-156	-0.5%	1.3%	349%	-29%	\$64,572	\$71,616
Higher Education	4,393	-1,472	-2.8%	-0.4%	58%	-9%	\$45,122	\$70,399
Apparel	1,003	-133	-1.2%	-1.6%	167%	22%	\$25,021	\$47,202
Call Centers	221	-57	-2.3%	0.0%	11%	-1%	\$28,628	\$54,902
Alternative Power Generation	252	-145	-4.4%	1.1%	82%	-48%	\$138,754	\$187,823
Biotechnology	367	-321	-6.1%	7.1%	31%	-73%	\$113,723	\$212,315
Other Technology Manufacturing	452	-161	-3.0%	0.6%	8%	-2%	\$82,237	\$130,865
R&D Services (except Biotechnology)	1,235	-586	-3.8%	2.2%	48%	-31%	\$103,612	\$154,598

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

2/ The sum of the individual industry groups ("activities") is greater than Total Targeted without Overlap since overlaps exist between groups.

Source: Lightcast™ and DBEDT calculation.

The industry performance measures are impacted by the time range in comparison. For example, many Hawai'i industries in 2022 were recovering from the COVID-19 pandemic, especially tourism-related; while these industries in 2012 may not carry impacts from the 2009 recession.

INTRODUCTION

In 2009, in accordance with Chapter 201-16 Hawai‘i Revised Statutes, DBEDT Research and Economic Analysis Division reviewed the range of economic activities that have been suggested over the years as candidates for diversifying the state’s economy. These activities were labeled *emerging, targeted, and growth* industries. The activities ranged from technology specialties to diversified agriculture and have been pursued by various stakeholders, including state and local governments, business groups, and community-based organizations.

The report of that review sought to improve the definition of the various activities that had been targeted for promotion in a way that would permit their performance to be measured. The result of the review was the construction of a targeted industry portfolio of around three dozen activities, and performance measures for 2002 to 2008. This is the 14th report that updates the review of targeted industry performance at the state level to 2022.

Defining Targeted Industries

Act 148 (2007) directed DBEDT to identify and measure systematically the performance of *emerging* industries in Hawai‘i’s economy. For the first report in 2009, more than a dozen major studies, reports, and efforts were reviewed to construct a list of sectors, industries, and activities that have been of interest over the last several decades. The activities were then defined for measurement purposes, and criteria were established to identify those that could justifiably be called *emerging* industries.

For this report, the term “targeted” simply means that at some point in the past, an activity was of interest for its potential contribution to growth and diversification by agencies, organizations, or stakeholders. These ranged from activities that had simply been suggested as having potential, to industries that had been actively pursued with public resources for their growth potential, like Biotechnology and the Film/TV industry.

Even if it appeared that an activity was no longer of significant development interest, it was still included in the portfolio. The portfolio was made broadly inclusive and detailed so that many specific activities could be assessed for their contribution to economic growth and diversification over the years. Some industries in the portfolio will show exceptional performance and others will show relatively poor performance over the periods measured. This range permits us to focus on weaknesses in the portfolio as well as strengths.

The Targeted Industry Portfolio

As seen in Table 2, the targeted industry groups (or “activities”) of the portfolio are listed under major areas of interest such as Technology, Creative, and Agribusiness. A detailed description of each portfolio industry was presented in the 2009 report, and readers can refer to that report for more details. For most of these industry groups, definitions for measurement purposes have been adopted from previous studies. Activities included in each sector are not necessarily mutually exclusive to each other. For example, a moderate overlap exists between the creative and technology sectors because of their mutually dependent relationship. The data used in this report is based on the NAICS Coding System. Every five years the NAICS definitions are updated. The Office of Management and Budget (OMB) charges the Economic Classification Policy Committee (ECPC) with the maintenance and review of NAICS, and this report uses the latest definitions from the 2022 update. See Appendix A for the full list of NAICS in the portfolio and the conversion of 2017 NAICS to 2022 NAICS that allow this report to be fulfilled.

Table 2. Targeted Industry Portfolio

Technology Sector	Agribusiness Sector
Alternative Power Generation	Agriculture Inputs
Biotechnology	Agriculture Packaging and Warehousing
Chemical and Pharmaceutical Manufacturing	Agriculture Processing
Computer System Design and Related Services	Agriculture Support Services
Engineering and Related Services	Farm Production
Information and Telecom Technology	Fishing, Forestry and Hunting
Medical Labs and Imaging Centers*	Health and Wellness Sector
Other Technology Manufacturing	Health Practitioners
R&D Services (except Biotechnology)	Hospitals and Nursing Facilities
Technical Consulting Services	Medical Labs and Imaging Centers*
Technology Equipment Distribution	Pharmacies
Creative Sector	Specialty Health Care Services
Architecture	Education (Private) Sector
Art Education	Higher Education
Business Consulting	Specialty Education
Computer Services and Software Publishers	Other Targeted Activities Sector
Cultural Activities	Apparel
Design Services	Call Centers
Engineering and Research and Development	
Film, TV, Video Production/Distribution, Cable and Media Streaming	
Marketing, Photography and Related	
Music	
Performing and Creative Arts	
Publishing and Information	
Radio and Television Broadcasting	

*Medical Labs and Imaging Centers industry group is fully represented in both the Technology and the Health and Wellness sectors
Source: DBEDT

Measuring Targeted Industries

In this update report, the industry groups of the targeted industry portfolio are presented by the major sectors shown in Table 2. The performance measures are the same as those developed for the 2009 report. However, they are presented in a slightly different way that will be clearer and intuitive to readers unfamiliar with economic performance measures. Average annual growth rates in this report were calculated using the compound annual growth rate.

One of the key performance measures is the change in job numbers over time. While most industries show some decline in a recession, we would expect promising industries to show a net increase in jobs over the entire business cycle. The job growth rate for each portfolio activity, relative to the rest of the state, has important implications for diversifying the state's economy. Activities that grow faster than the overall state economy could help increase economic diversification.




Another performance measure is Hawai'i's competitiveness and concentration of activities compared to the nation overall. If the respective activity is growing faster in Hawai'i than the nation, this suggests that the state has a competitive advantage in this activity. Also, if the activity has a greater employment concentration in the state than the nation (as measured by the percentage of total jobs), it is likely an activity in which Hawai'i has a competitive advantage. A higher concentration (as measured by the percentage of total jobs) also suggests that the activity has matured to the point that it is likely exporting a portion of its output directly or indirectly. Local concentration of an industry or group compared to national concentration of the same industry or group is also known as "location quotient." However, in this report we will use the term concentration.

The average annual earnings for workers in each activity were examined. Higher average annual earnings generally come from high-quality jobs. A relatively higher average earning suggests that the activity is creating high-quality jobs that can help keep Hawai'i's highly educated youth in the state.

By combining these performance measures, we attempt to group the portfolio activities into four performance categories as in Table 3. A popular framework in economic development research is the industry life cycle model. This model breaks down industries in the economy into four generalized stages. The first stage of the life cycle is usually called the emerging stage of an industry. This characterizes relatively new and rapidly growing activities that usually serve new markets inside or outside the local economy. The second stage identifies base-growth industries that have passed through the emerging stage and have become strong, competitive sources of economic growth in the economy. As base-growth industries mature, they reach their full market potential and growth slows. This represents the transition stage. A majority are relatively healthy but have slowed and have become less competitive over time. Declining industries lose jobs over time and shrink as a proportion of the economy. If an industry is unable to reinvent itself with new products and markets, it will continue to decline.

Not all industries or their evolution will fit nicely into the model, especially over short periods. Some industries may emerge but never rise to the level moving from weakly emerging to the transitioning or declining stage or moving back and forth among the different stages over time. Likewise, an industry that has slowed from a base-growth to a transitioning industry may have a revival and move back to base-growth status. In the short-term, business cycle fluctuations impact the forward and backward movements of the industry life cycle. In the long-term, the model should provide a fairly accurate picture of the performance of industries. In 2022, Hawai'i's economy was still recovering from the COVID-19 pandemic, which impacted industry sector performance and placement.

Table 3. Performance Map Criteria (Industry Life Cycle)

Emerging Activities		Base-Growth Activities
Positive job growth Increasing competitive national market share (outperforming the same activity nationally) Lower concentration in Hawai'i than nationally		Positive job growth Increasing competitive national market share (outperforming the same activity nationally) Higher concentration in Hawai'i than nationally
		
Declining Activities		Transitioning Activities
Negative job growth		Positive job growth Decreasing competitive national market share (underperforming the same activity nationally)

Data Sources

Jobs and earnings reported in this report include wage and salary jobs, self-employed, and proprietors. The data were obtained via a subscription to the databases of Lightcast™ (formerly EMSI). Lightcast™ uses data from the Bureau of Labor Statistics, the Bureau of Economic Analysis, and other data sources to construct very detailed industry data series regarding jobs, occupations, and earnings for the states and counties.

TECHNOLOGY SECTOR

A joint project in 2008 between DBEDT, the Hawai'i Science and Technology Association (HiSciTech) and other stakeholders, updated the definition of the technology sector for Hawai'i and established baseline measurements.² The project adopted a definition for technology established by the U.S. Bureau of Labor Statistics (BLS).³ The BLS approach classifies industries as being in the technology sector based on the proportion of highly trained technical workers in the industries. This update report adjusted the earlier definition by using the 2022 NAICS codes.

Size & Growth

With the adjustments described above, the technology sector accounted for 29,391 jobs in 2022, or 3.5% of all civilian jobs in Hawai'i. For the 2012 to 2022 period, the technology sector had an average annual job growth rate of 0.7%, 0.2 of a percentage point higher than the state's civilian economy's rate.

The 2022 estimate shows that the technology sector had an average annual job growth rate of 3.4% between 2020 and 2022, compared with 4.1% for the state's civilian economy's rate.

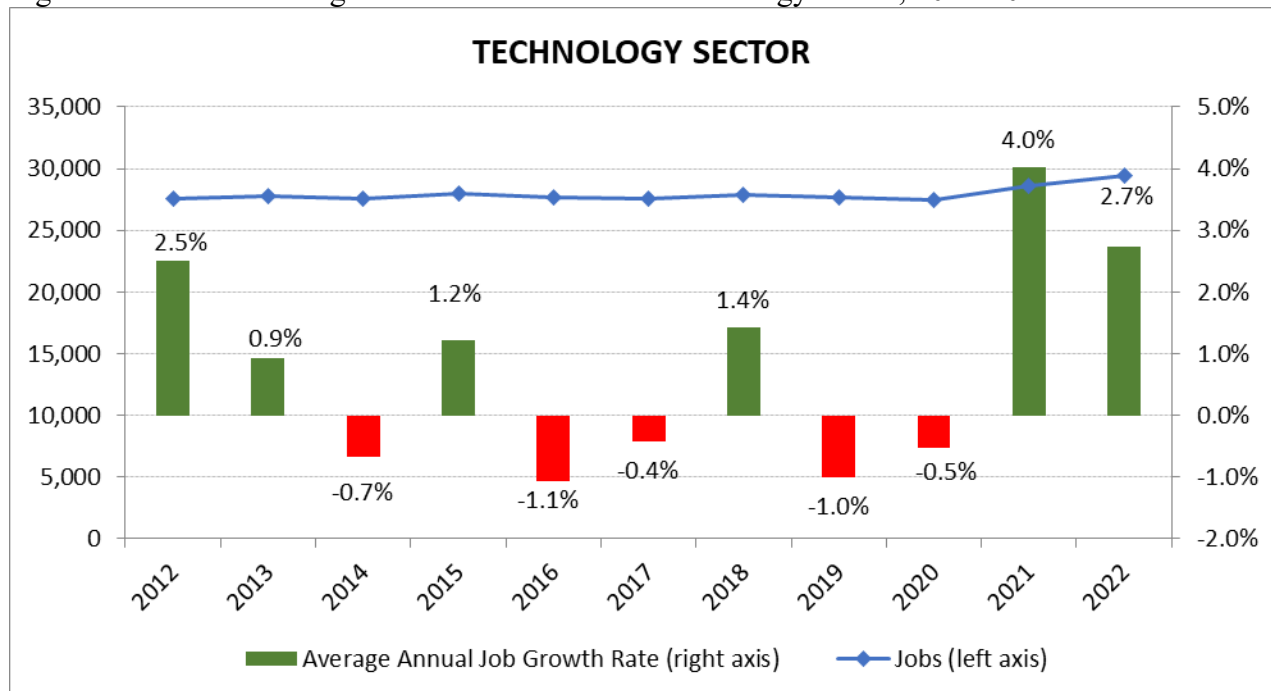
For the 2012 to 2022 period, Technical Consulting Services had the strongest average annual job growth rate among the technology industry groups, followed by Technology Equipment Distribution. Other activities in the technology sector with positive job growth over the 2012 to 2022 period were Medical Labs and Imaging Centers, Engineering and Related Services, Chemical and Pharmaceutical Manufacturing, Computer System Design and Related Services, and Information and Telecom Technology.

The four technology industry groups that lost jobs during the 2012 to 2022 period were Other Technology Manufacturing, R&D Services (except Biotechnology), Alternative Power Generation, and Biotechnology.

² Hawai'i Science & Technology Institute, *Innovation and Technology in Hawai'i: An Economic and Workforce Profile*, October 2008.

³ As yet there is no official or universally agreed upon definition for the technology sector.

Figure 1. Jobs and Average Annual Growth in the Technology Sector, 2012-2022

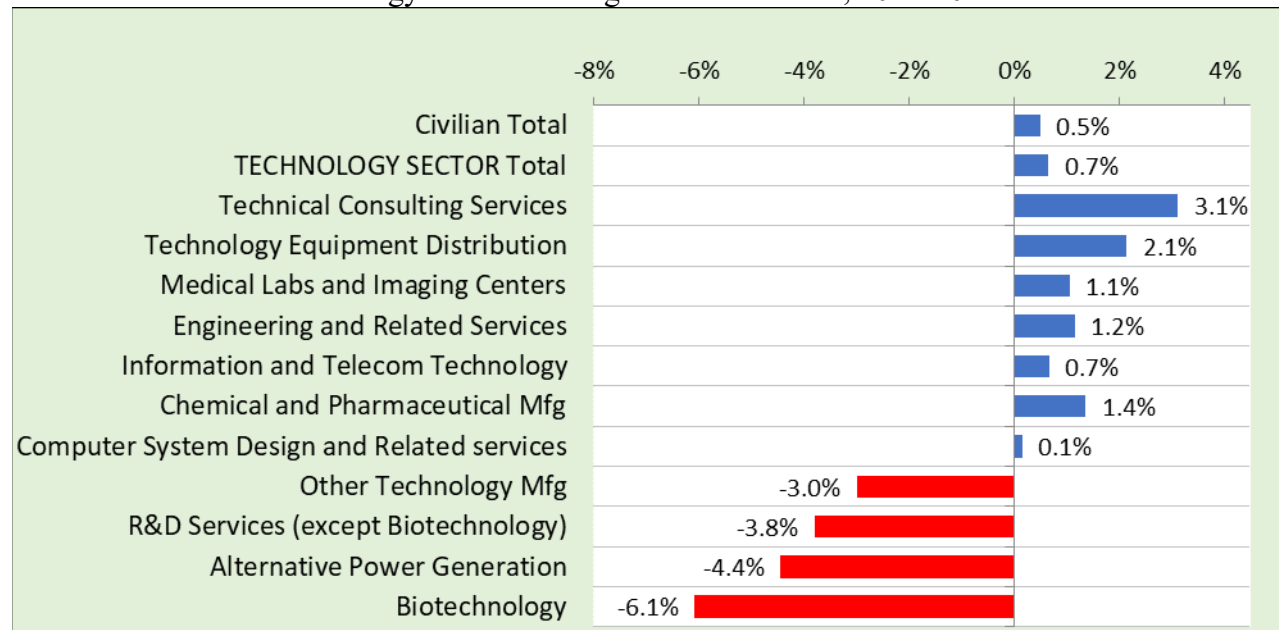


As a group, the technology sector's average annual job growth rate was 0.2 of a percentage point above the state's civilian economy's rate over the 2012 to 2022 period, 0.4 of a percentage point above the state's civilian economy's rate over the 2012 to 2020 period, and 0.7 of a percentage point below the state's civilian economy's rate over the 2020 to 2022 period.

Technical Consulting Services increased jobs at the highest average annual growth rate at 3.1% over the 2012 to 2022 period; followed by Technology Equipment Distribution at 2.1%.

Four groups in the sector, Other Technology Manufacturing, R&D Services (except Biotechnology), Alternative Power Generation, and Biotechnology lost jobs over the 2012 to 2022 period.

Table 4. Jobs in the Technology Sector: Average Annual Growth, 2012-2022



Industry Sector/Group	Average Annual Job Growth Rate			Jobs in 2022
	2012-2022	2012-2020	2020-2022	
Civilian Total	0.5%	-0.4%	4.1%	841,332
TECHNOLOGY SECTOR Total	0.7%	0.0%	3.4%	29,391
Technical Consulting Services	3.1%	3.1%	3.2%	5,724
Technology Equipment Distribution	2.1%	1.5%	4.7%	940
Medical Labs and Imaging Centers	1.1%	0.4%	3.7%	1,941
Engineering and Related Services	1.2%	1.1%	1.4%	6,822
Information and Telecom Technology	0.7%	-0.3%	4.5%	4,940
Chemical and Pharmaceutical Manufacturing	1.4%	-1.9%	15.7%	125
Computer System Design and Related Services	0.1%	-1.1%	5.2%	6,595
Other Technology Manufacturing	-3.0%	-4.2%	2.0%	452
R&D Services (except Biotechnology)	-3.8%	-5.2%	2.0%	1,235
Alternative Power Generation	-4.4%	-5.3%	-1.1%	252
Biotechnology	-6.1%	-7.4%	-0.5%	367

Source: Lightcast™ and DBEDT calculation.

Competitive Metrics

The sixth column of Table 5 shows the average annual job growth rate difference between Hawai‘i and the nation for the technology sector and its industry groups. Over the 2012-2022 period, Hawai‘i’s technology sector’s rate was 2 percentage points below the nation’s rate; for industry groups, only the local Technology Equipment Distribution’s rate outperformed the nation’s comparable industry rate by 0.5 of a percentage point; and all other industry groups in the Technology sector lost competitive share compared to the nation, with Biotechnology at 13.2 percentage points below the nation’s rate.

Table 5. Hawai'i Technology Sector Performance Compared with Nation

Industry Sector/Group	Jobs 2022	Jobs per Establis hment 2022	Avg Annual Earnings 2022	Avg Ann Job Growth Rate		When U.S. = 100%		
				2012- 2022	Above U.S.	Concentration 1/ Jobs per Establis hment	Avg Annual Earnings	
Civilian Total	841,332	16	\$66,971	0.5%	-1.0%	100%	89%	93%
TECHNOLOGY SECTOR	29,391	7	\$106,205	0.7%	-2.0%	57%	63%	78%
Engineering and Related Services	6,822	9	\$116,233	1.2%	-0.4%	97%	70%	102%
Computer System Design and Related Services	6,595	5	\$115,279	0.1%	-3.4%	55%	69%	80%
Technical Consulting Services	5,724	9	\$75,535	3.1%	-1.0%	67%	107%	73%
Information and Telecom Technology	4,940	6	\$116,308	0.7%	-1.9%	60%	45%	74%
Medical Labs and Imaging Centers	1,941	30	\$80,950	1.1%	-1.6%	139%	250%	89%
R&D Services (except Biotechnology)	1,235	7	\$103,612	-3.8%	-6.0%	48%	33%	67%
Technology Equipment Distribution	940	5	\$154,242	2.1%	0.5%	38%	44%	98%
Other Technology Manufacturing	452	12	\$82,237	-3.0%	-3.6%	8%	25%	63%
Biotechnology	367	6	\$113,723	-6.1%	-13.2%	31%	40%	54%
Alternative Power Generation	252	9	\$138,754	-4.4%	-5.6%	82%	42%	74%
Chemical and Pharmaceutical Manufacturing	125	10	\$140,426	1.4%	-0.7%	6%	19%	91%

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation.

In terms of concentration, most of Hawai'i's technology industry groups are still a relatively small percentage of Hawai'i's total economy, compared with the nation's technology industry groups. In 2022, Hawai'i's concentration of the state's workforce in technology was 57% compared to the concentration nationally. One noteworthy exception is Medical Labs and Imaging Centers, which was 39% more concentrated in Hawai'i than the nation overall.

In 2022, Hawai'i's technology sector average annual earnings of \$106,205 were 59% higher than Hawai'i's civilian economy average of \$66,971. The average annual earnings of all eleven technology industry groups exceeded the average for Hawai'i's civilian economy. Hawai'i's Engineering and Related Services average annual earnings exceeded the nation's comparable industry average by 2 percentage points. However, workers in most of the Hawai'i technology sector groups were not paid as much as the U.S. average for the same activities. The average annual earnings in Hawai'i's technology sector were only 78% of the average paid nationally. The largest earnings gaps between Hawai'i and the U.S. were found in Biotechnology and Other Technology Manufacturing.

Overall Performance

By combining the growth and competitive measures, the technology industry groups can be placed in performance categories, as seen in Table 6.

Only one technology industry group, Technology Equipment Distribution, was in the high-performing Base-Growth or Emerging categories by showing job growth and outperforming its national comparable industry. The only difference between the Base-Growth and Emerging categories is their level of concentration in the state's economy. Base-Growth industry groups have reached or exceeded national concentrations, while the Emerging industry groups have yet to reach national concentration levels. Beyond that, both categories are defined by positive and competitive growth in jobs.

Six groups in the technology sector were in the Transitioning category for the 2012 to 2022 period: Technical Consulting Services, Chemical and Pharmaceutical Manufacturing, Computer System Design and Related Services, Engineering and Related Services, Information and Telecom Technology, and Medical Labs and Imaging Centers. While job growth was positive in these industry groups, they still lost some competitive share to the national industry groups.

Alternative Power Generation, Biotechnology, Other Technology Manufacturing, and R&D Services (except Biotechnology) were in the Declining category due to job losses during the period. These groups also lost more jobs proportionately than the same activity nationally, resulting in the loss of competitive share to the U.S. economy.

Table 6. Performance Map Criteria for the Technology Sector

Emerging Activities	Base-Growth Activities
Technology Equipment Distribution	
Declining Activities	Transitioning Activities
Alternative Power Generation Biotechnology Other Technology Manufacturing R&D Services (except Biotechnology)	Technical Consulting Services Chemical and Pharmaceutical Manufacturing Computer System Design and Related Services Engineering and Related Services Information and Telecom Technology Medical Labs and Imaging Centers

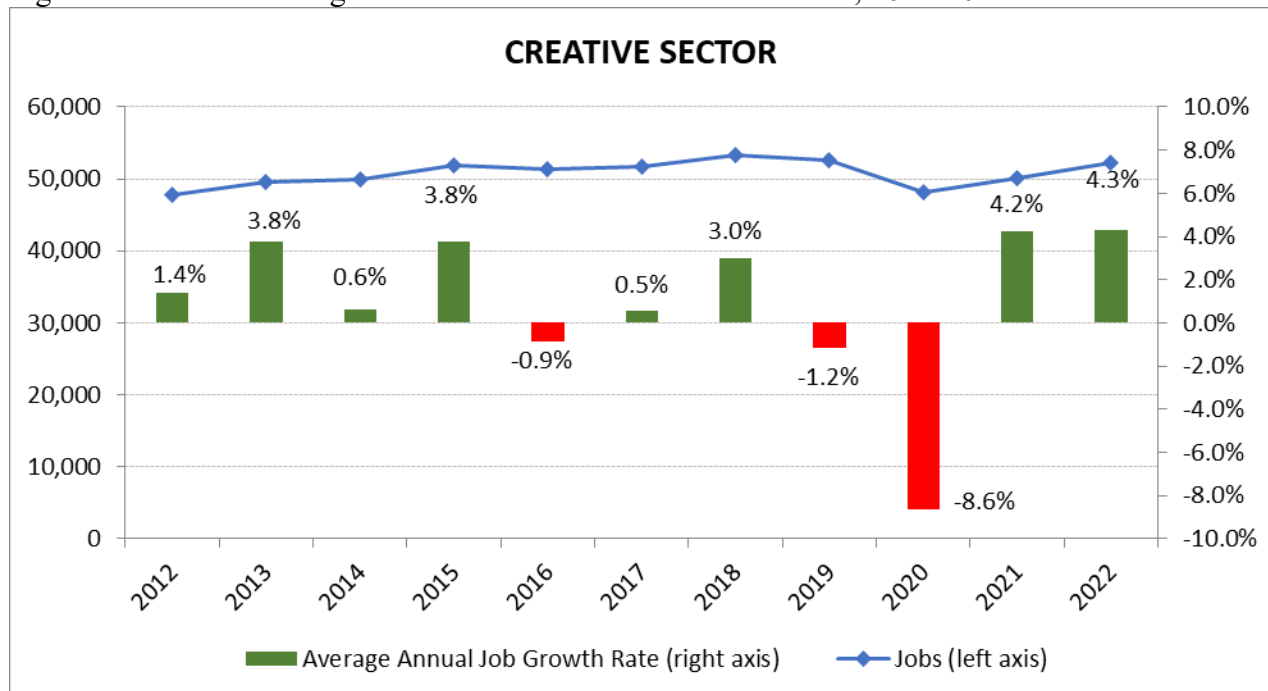
CREATIVE SECTOR

The DBEDT Research Division and Creative Industries divisions collaborated on an update of data and industry definitions for the Creative Sector, based on a review of models nationally.⁴

Size & Growth

The thirteen creative industry groups accounted for an estimated 52,301 jobs in 2022, about 6.2% of all civilian jobs in Hawai'i. Marketing, Photography and Related and Performing and Creative Arts were the two largest groups in the sector and combined accounted for about 40% of jobs in the sector in 2022.

Figure 2. Jobs and Average Annual Growth in the Creative Sector, 2012-2022



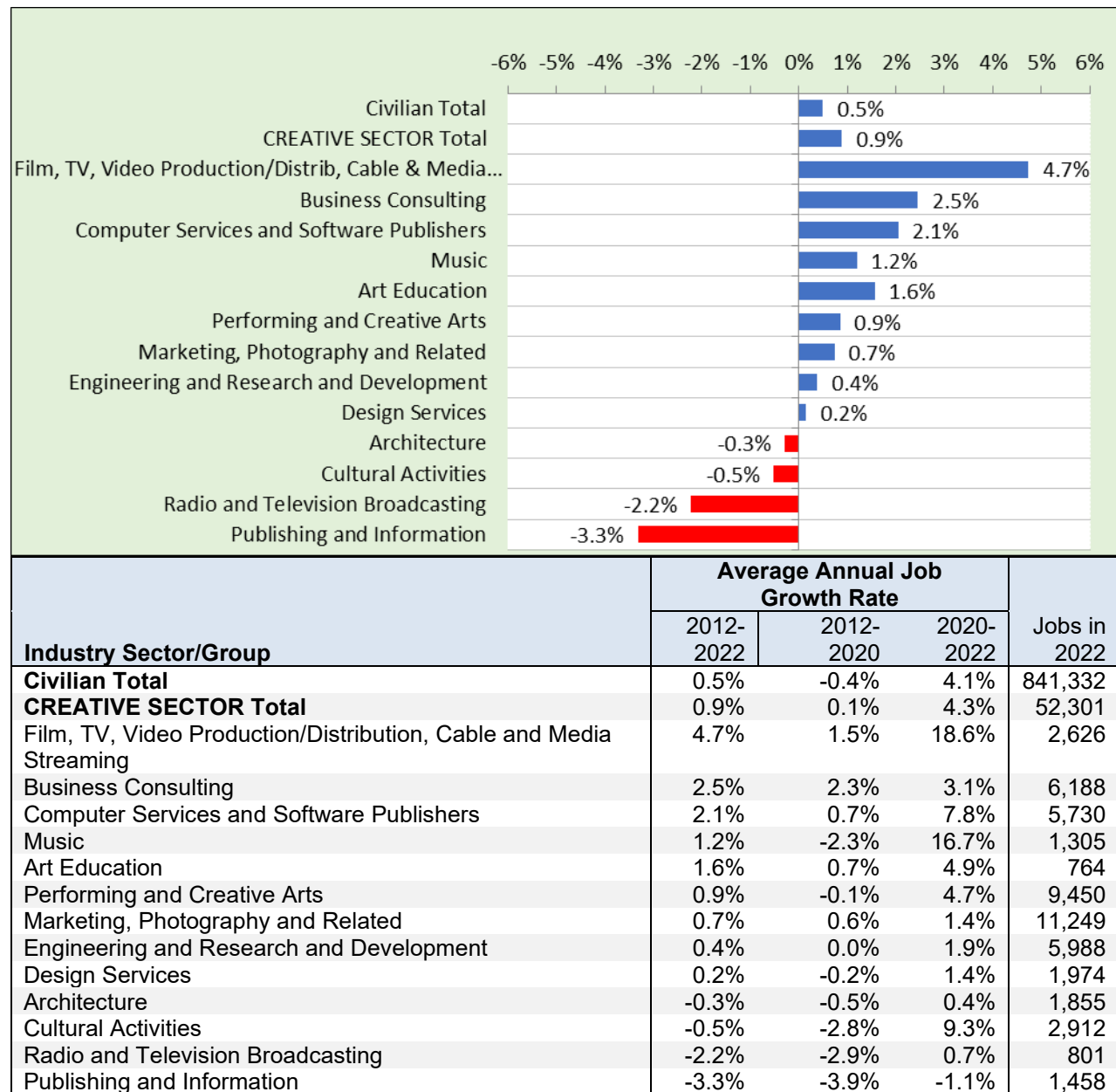
As seen in Table 7, the creative sector's average annual job growth rate was 0.4 of a percentage point above the state's civilian economy's rate over the 2012 to 2022 period, 0.5 of a percentage point above the state's civilian economy's rate over the 2012 to 2020 period, and 0.2 of a percentage point above the state's civilian economy's rate over the 2020 to 2022 period.

Film, TV, Video Production/Distribution, Cable and Media Streaming had the highest average annual job growth rate over the 2012 to 2022 period, at 4.7%, followed by Business Consulting at 2.5%.

Four groups in the sector, Publishing and Information, Radio/TV Broadcasting, Cultural Activities, and Architecture, failed to gain jobs over the 2012 to 2022 period.

⁴ DBEDT, *Hawai'i's Creative Industries: Update Report 2010*, June 2010. http://dbedt.hawaii.gov/economic/reports_studies/hawaii-creative-report/

Table 7. Jobs in the Creative Sector: Average Annual Growth, 2012-2022



Source: Lightcast™ and DBEDT calculation.

Competitive Metrics

Many activities in the creative sector lost competitive share to the U.S. economy over the 2012 to 2022 period. Only one (Film, TV, Video Production/Distribution, Cable and Media Streaming) among the thirteen groups outperformed its national comparable industry during this period.

Several creative industry groups have levels of concentration in the state's economy that exceed the nation. Cultural Activities are more than three times as concentrated in Hawai'i. Music, Architecture, Performing and Creative Arts, and Radio and Television Broadcasting also exceed national concentrations. In contrast, most business and technology-oriented activities in the sector,

such as Business Consulting, Computer Services and Software Publishers, and Publishing and Information, show a much lower concentration in Hawai‘i than in the same industries nationally.

In 2022, Hawai‘i’s creative sector average annual earnings, at \$67,847, were slightly higher than the state’s civilian economy’s, at \$66,971. However, the sector’s average annual earnings were only 66% of the national average for the same activities. The lower average annual earnings in Hawai‘i were found in both technology-oriented and artistic-oriented activities in the sector. Among the thirteen activities in the creative sector, only workers in Architecture and Art Education were paid slightly more in Hawai‘i than the nation overall. The activities that showed significant earnings gaps between Hawai‘i and the U.S. included Publishing and Information, Marketing/Photography and Related, and Film, TV, Video Production/Distribution, Cable and Media Streaming.

Table 8. Hawai‘i’s Creative Sector Performance Compared with the Nation

Industry Sector/Group	Jobs 2022	Jobs per Establishment 2022	Avg Annual Earnings 2022	Avg Ann Job Growth Rate		When U.S. = 100%		
				2012- 2022	above U.S.	Jobs per Concentration 1/ Area	Avg Annual Earnings	
Civilian Total	841,332	16	\$66,971	0.5%	-1.0%	100%	89%	93%
CREATIVE SECTOR	52,301	11	\$67,847	0.9%	-1.6%	83%	92%	66%
Marketing, Photography and Related	11,249	15	\$37,081	0.7%	-1.3%	92%	116%	54%
Performing and Creative Arts	9,450	27	\$27,356	0.9%	-0.9%	123%	90%	84%
Business Consulting	6,188	9	\$75,655	2.5%	-1.5%	62%	103%	74%
Engineering and Research and Development	5,988	9	\$119,574	0.4%	-1.5%	80%	57%	90%
Computer Services and Software Publishers	5,730	4	\$126,084	2.1%	-2.4%	42%	53%	80%
Cultural Activities	2,912	28	\$64,572	-0.5%	-1.8%	349%	239%	90%
Film, TV, Video Production/Distribution, Cable and Media Streaming	2,626	12	\$100,740	4.7%	2.5%	94%	76%	66%
Design Services	1,974	11	\$40,349	0.2%	-1.5%	95%	100%	75%
Architecture	1,855	8	\$99,385	-0.3%	-1.7%	134%	85%	107%
Publishing and Information	1,458	10	\$77,904	-3.3%	-2.1%	60%	72%	52%
Music	1,305	18	\$42,836	1.2%	-0.9%	141%	115%	89%
Radio and Television Broadcasting	801	21	\$78,074	-2.2%	-1.0%	130%	79%	81%
Art Education	764	10	\$22,907	1.6%	-0.2%	75%	60%	116%

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation.

Overall Performance

As seen in the performance categories in Table 9, only one group (Film, TV, Video Production/Distribution, Cable and Media Streaming) was rated as high-performing for growth and competitiveness.

Eight other groups (Marketing, Photography and Related, Performing and Creative Arts, Business Consulting, Engineering and Research and Development, Computer Services and Software Publishers, Design Services, Music, and Art Education) increased jobs over the period. However, these groups lost competitive share compared to the performance of the same industry groups nationally over the 2012 to 2022 period.

Architecture, Cultural Activities, Radio and Television Broadcasting, and Publishing and Information were in the lowest performance group. All lost jobs over the 2012 to 2022 period.

Table 9. Performance Map Criteria for the Creative Sector

Emerging Activities	Base-Growth Activities
Film, TV, Video Production/Distribution, Cable and Media Streaming	
Declining Activities	Transitioning Activities
Cultural Activities Architecture Publishing and Information Radio and Television Broadcasting	Marketing, Photography and Related Performing and Creative Arts Business Consulting Engineering and Research and Development Computer Services and Software Publishers Design Services Music Art Education

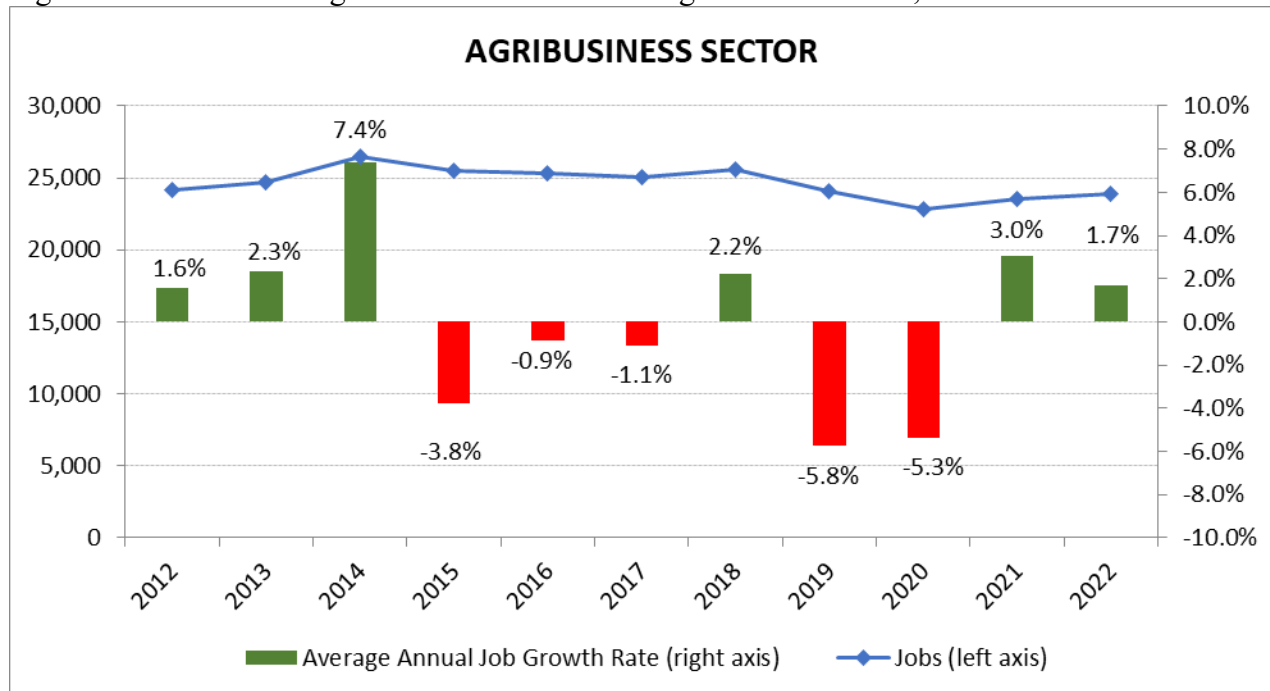
AGRIBUSINESS SECTOR

In 2022, 23,894 Agribusiness jobs were found in a range of inter-related industry groups that support the core farm sector. Most of the agribusiness jobs are in Farm Production (55%). The second largest industry group in the sector was Agricultural Processing at 27% of the sector's jobs.

Size & Growth

The agribusiness sector had an average annual job *decline* rate of 0.1% over the 2012 to 2022 period. Five of the six Agribusiness industry groups lost jobs over the period, whereas there were job gains in the Agricultural Support Services group. The largest activity in the agribusiness sector was Farm Production, which had an average annual job *decline* rate of 0.4% over the period.

Figure 3. Jobs and Average Annual Growth in the Agribusiness Sector, 2012-2022



The best-performing agribusiness industry group over the 2012 to 2022 cycle was the Agricultural Support Services, with a 4.8% average annual job growth rate.

Table 10. Jobs in the Agribusiness Sector: Average Annual Growth, 2012-2022

Industry Sector/Group	Average Annual Job Growth Rate			Jobs in 2022
	2012-2022	2012-2020	2020-2022	
Civilian Total	0.5%	-0.4%	4.1%	841,332
AGRIBUSINESS SECTOR Total	-0.1%	-0.7%	2.3%	23,894
Agriculture Support Services	4.8%	4.1%	7.7%	2,177
Farm Production	-0.4%	-0.7%	0.7%	13,207
Agriculture Inputs	-0.4%	-1.9%	6.0%	401
Agriculture Processing	-0.5%	-1.6%	4.0%	6,344
Fishing, Forestry and Hunting	-0.6%	-1.0%	1.2%	1,522
Agriculture Packaging and Warehousing	-0.8%	-3.7%	11.4%	243

Source: Lightcast™ and DBEDT calculation.

Competitive Metrics

Competitive metrics show that the comparable U.S. agricultural sector experienced a slight job loss over the 2012 to 2022 period. Only Agricultural Support Services outperformed the same activities for the nation by 1.8 percentage points per year.

Table 11. Hawai‘i Agribusiness Sector Performance Compared with Nation

Industry Sector/Group	Jobs per Establishment 2022	Avg Annual Earnings 2022	Avg Ann Job Growth Rate		When U.S. = 100%			
			2012- 2022	above U.S.	Concentration 1/ Area	Jobs per Area	Avg Annual Earnings	
Civilian Total	841,332	16	\$66,971	0.5%	-1.0%	100%	89%	93%
AGRIBUSINESS SECTOR	23,894	23	\$45,937	-0.1%	-1.1%	92%	74%	82%
Farm Production	13,207	29	\$38,506	-0.4%	-0.5%	101%	83%	88%
Agriculture Processing	6,344	18	\$55,828	-0.5%	-2.5%	82%	43%	80%
Agriculture Support Services	2,177	16	\$68,069	4.8%	1.8%	76%	103%	105%
Fishing, Forestry and Hunting	1,522	22	\$30,379	-0.6%	-0.6%	339%	72%	85%
Agriculture Inputs	401	11	\$62,838	-0.4%	-1.1%	38%	81%	70%
Agriculture Packaging and Warehousing	243	29	\$62,857	-0.8%	-2.6%	29%	79%	91%

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation.

Agribusiness had a lower concentration level in Hawai‘i than the nation for most activities. The clear exception was Fishing, Forestry and Hunting which was significantly more concentrated in Hawai‘i than the nation.

Overall Performance

From an overall performance standpoint, only Agricultural Support Services was in the Emerging category for the 2012 to 2022 period. The remaining five groups were in the Declining category over the same period.

Table 12. Performance Map Criteria for the Agribusiness Sector

Emerging Activities	Base-Growth Activities
Agriculture Support Services	
Declining Activities	Transitioning Activities
Agriculture Inputs Agriculture Packaging and Warehousing Agriculture Processing Farm Production Fishing, Forestry and Hunting	

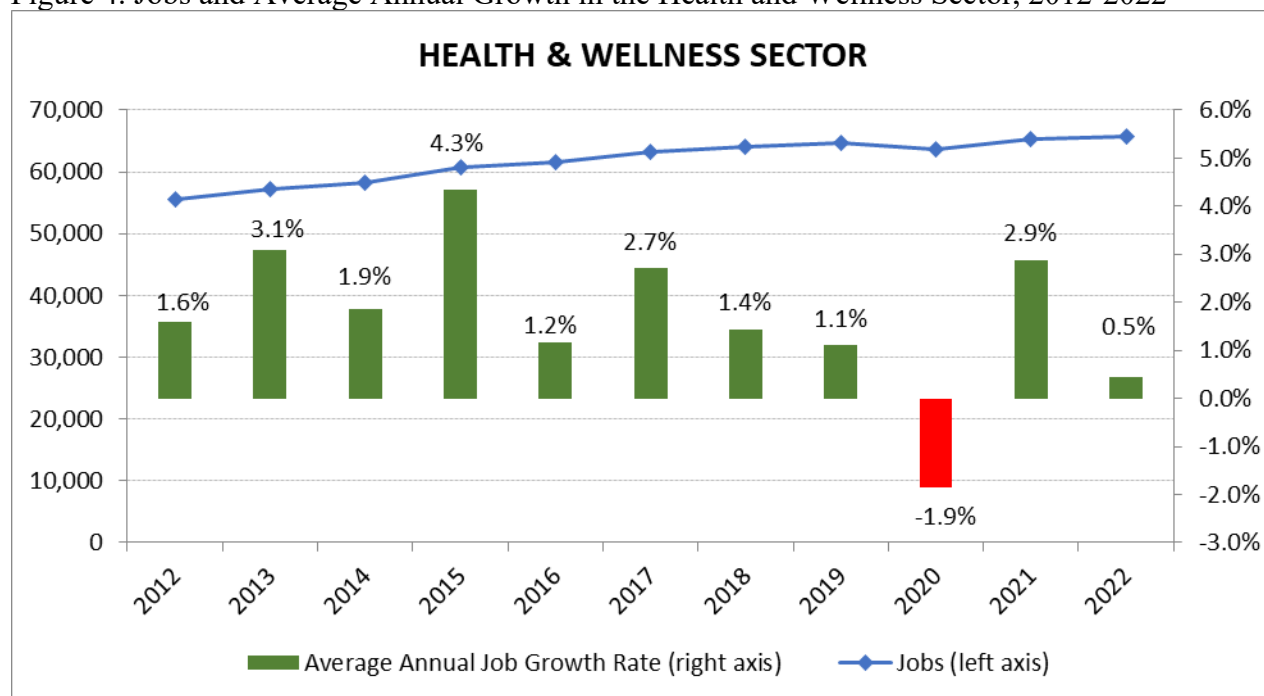
HEALTH AND WELLNESS SECTOR

Health and Wellness has been suggested as a potential export activity. To provide some underlying data to support future discussions on the topic of the Health and Wellness sector, DBEDT used a definition for Health and Wellness developed by researchers on Kaua'i for that county's Comprehensive Economic Development Strategy in 2005.⁵ This definition identifies the major industry groups of Hawai'i's health care sector.

Size & Growth

The Hawai'i Health and Wellness Sector accounted for an estimated 65,684 jobs in 2022. About 70% of the jobs were among Health Practitioners and Hospital & Nursing Facilities. All the industry groups in Health and Wellness increased jobs over the 2012 to 2022 period.

Figure 4. Jobs and Average Annual Growth in the Health and Wellness Sector, 2012-2022



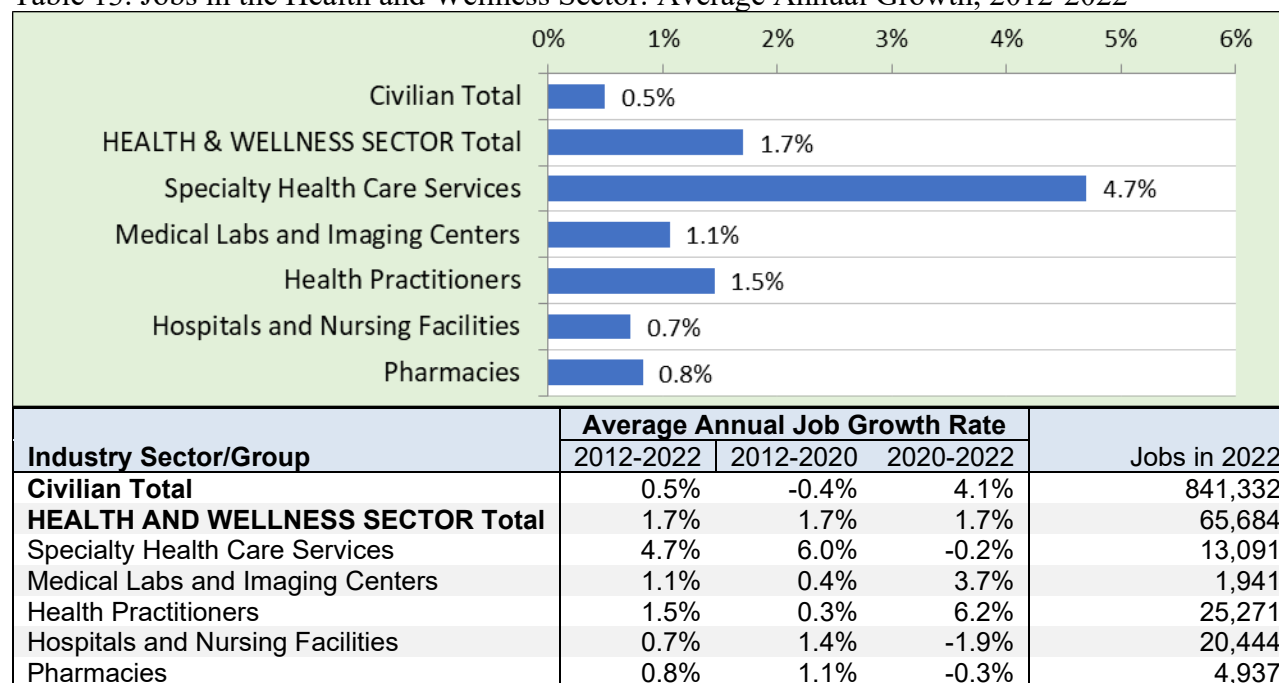
For Hawai'i overall, the Health and Wellness sector increased jobs faster than the rest of the economy during the 2012-2022 period. This sector had an average annual job growth rate of 1.7% from 2012 to 2020 and 1.7% from 2020 to 2022.

Hawai'i Health Practitioners showed modest growth. For the 2012 to 2022 period, this sector had an average annual job growth rate of 1.5%.

The highest average annual job growth rate was observed in Specialty Health Care Services, a relatively small industry group, at 4.7% over the 2012-2022 period.

⁵ Hawai'i Office of Planning, *Hawai'i Statewide Comprehensive Economic Development Strategy (CEDS)*, 2005. Modifications included translating from the 1997 to the 2002 NAICS industry codes. Report is at <http://hawaii.gov/dbedt/op/projects.htm>

Table 13. Jobs in the Health and Wellness Sector: Average Annual Growth, 2012-2022



Source: Lightcast™ and DBEDT calculation.

Competitive Metrics

Over the 2012 to 2022 period, the average annual job growth rate in Hawai‘i’s Health and Wellness Sector was above the national average for the same sector.

Table 14. Hawai‘i Health and Wellness Sector Performance Compared with Nation

Industry Sector/Group	Jobs 2022	Jobs per Establis hment 2022	Avg Annual Earnings 2022	Avg Ann Job Growth Rate		When U.S. = 100%		
				2012- 2022	above U.S.	Concentration 1/ Area	Jobs per Area	Avg Annual Earnings
Civilian Total	841,332	16	\$66,971	0.5%	-1.0%	100%	89%	93%
HEALTH AND WELLNESS SECTOR	65,684	18	\$89,137	1.7%	0.3%	95%	79%	109%
Health Practitioners	25,271	9	\$98,238	1.5%	-0.7%	103%	76%	106%
Hospitals and Nursing Facilities	20,444	241	\$100,824	0.7%	0.6%	77%	120%	115%
Specialty Health Care Services	13,091	37	\$72,065	4.7%	1.5%	103%	109%	124%
Pharmacies	4,937	21	\$42,640	0.8%	0.3%	126%	142%	89%
Medical Labs and Imaging Centers	1,941	30	\$80,950	1.1%	-1.6%	139%	250%	89%

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation.

At \$89,137, the average annual earnings for the Health and Wellness Sector as a whole, exceeded the national average in 2022 by about 9%. This was the only major sector in the targeted industry portfolio that had average annual earnings above the U.S. average for the same sector. Except for Medical Labs and Imaging Centers and Pharmacies, all other groups in the sector had average annual earnings above the nation’s comparable industries.

Overall Performance

Among the Health and Wellness industry groups, Specialty Health Care Services, Pharmacies, and Hospitals and Nursing Facilities performed the best in terms of growth and competitiveness.

Health Practitioners and Medical Labs and Imaging Centers were in the Transitioning category. These groups increased jobs but lost competitive national share due to better growth at the U.S. level.

Table 15. Performance Map Criteria for the Health and Wellness Sector

Emerging Activities	Base-Growth Activities
Hospitals and Nursing Facilities	Pharmacies Specialty Health Care Services
Declining Activities	Transitioning Activities
	Health Practitioners Medical Labs and Imaging Centers

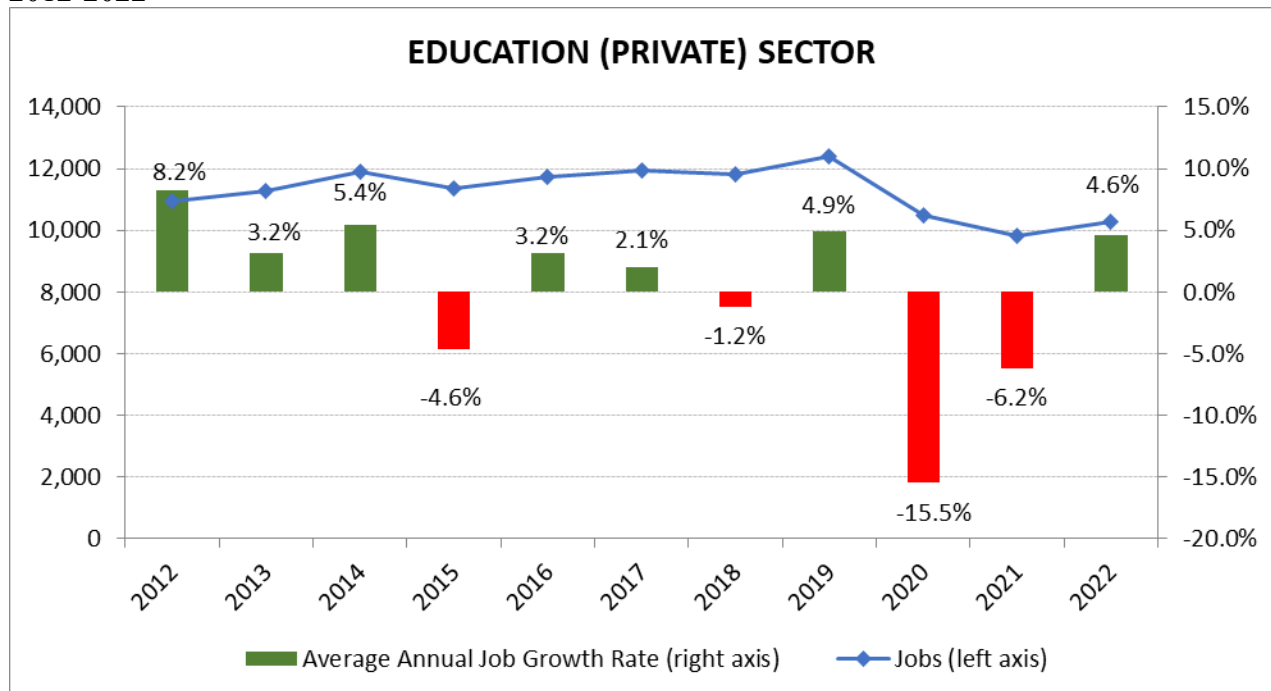
EDUCATION SECTOR

The private education sector, which includes private colleges and specialty schools, is an important segment of Hawai'i's economy. The following section examines the growth and performance of the education activity of private sector colleges and specialty schools.

Size & Growth

Private post-secondary and specialty education in Hawai'i accounted for 10,276 jobs in 2022. For the 2012 to 2022 period, it had an average annual job *decline* rate of 0.6%.

Figure 5. Jobs and Average Annual Growth in the Specialty & Higher Education Sector, 2012-2022



From 2012 to 2022, the average annual job growth rate for Specialty Education was 1.5% and for Higher Education was negative 2.8%. From 2012 to 2020, the average annual job growth rate for Specialty Education was 0.2%, and for Higher Education, it was negative 1.2%. From 2020 to 2022, the average annual job growth rate for Specialty Education was 6.8%, and for Higher Education, it was negative 9.1%.

Table 16. Jobs in the Higher and Specialty Education Sector: Average Annual Growth, 2012-2022

Industry Sector/Group	Average Annual Job Growth Rate			Jobs in 2022
	2012-2022	2012-2020	2020-2022	
Civilian Total	0.5%	-0.4%	4.1%	841,332
EDUCATION (PRIVATE) SECTOR Total	-0.6%	-0.5%	-0.9%	10,276
Specialty Education	1.5%	0.2%	6.8%	5,883
Higher Education	-2.8%	-1.2%	-9.1%	4,393

Source: Lightcast™ and DBEDT calculation.

Competitive Metrics

From 2012 to 2022 for Hawai‘i, both Specialty Education and Higher Education lost national competitive share and had average annual job growth rates below the nation’s comparable industries.

In 2022 for Hawai‘i, the average annual earnings of Specialty Education were \$38,127, which was about 57% of the state’s civilian economy’s average and about 99% of the nation’s average for the comparable industries.

In 2022 for Hawai‘i, the average annual earnings of Higher Education were \$41,117, which was about 61% of the state’s civilian economy’s average and about 64% of the nation’s average for the comparable industries.

Table 17. Hawai‘i Private Education Sector Performance Compared with Nation

Industry Sector/Group	Jobs per Establishment 2022	Avg Annual Earnings 2022	Avg Ann Job Growth Rate		When U.S. = 100%			
			2012- 2022	above U.S.	Concentration 1/ Area	Jobs per Area	Avg Annual Earnings	
Civilian Total	841,332	16	\$66,971	0.5%	-1.0%	100%	89%	93%
EDUCATION (PRIVATE) SECTOR	10,276	13	\$41,117	-0.6%	-1.1%	78%	47%	72%
Specialty Education	5,883	9	\$38,127	1.5%	-0.3%	104%	67%	99%
Higher Education	4,393	32	\$45,122	-2.8%	-2.4%	58%	23%	64%

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation.

Overall Performance

During the 2012 to 2022 period, the Specialty Education group was in the Transitioning category. The Higher Education group was in the Declining category.

Table 18. Performance Map Criteria for the Education Sector

Emerging Activities	Base-Growth Activities
Declining Activities	Transitioning Activities
Higher Education	Specialty Education

OTHER TARGETED ACTIVITIES SECTOR

The Apparel sector has been promoted due to Hawai‘i’s unique style and cultural heritage that brought Hawaiian/Aloha wear to worldwide prominence. However, over the years, a large portion of the garment manufacturing jobs have been outsourced overseas. While there is still some manufacturing of Hawaiian wear in the state, it is more common to find garments with labels that say designed in Hawai‘i but manufactured elsewhere. Call Centers have also been promoted based on Hawai‘i’s mid-Pacific location and multilingual resources.

Size & Growth

Both Apparel Manufacturing and Call Centers in Hawai‘i lost jobs in the past ten years. From 2012 to 2022, the average annual job growth rate for Apparel was negative 1.2% and for Call Centers was negative 2.3%. From 2012 to 2020, the average annual job growth rate for Apparel was negative 4.1% and for Call Centers was negative 2.1%. From 2020 to 2022, the average annual job growth rate for Apparel was negative 11.3%, and for Call Centers was negative 2.9%.

Figure 6. Jobs and Average Annual Growth in the Apparel Sector, 2012-2022

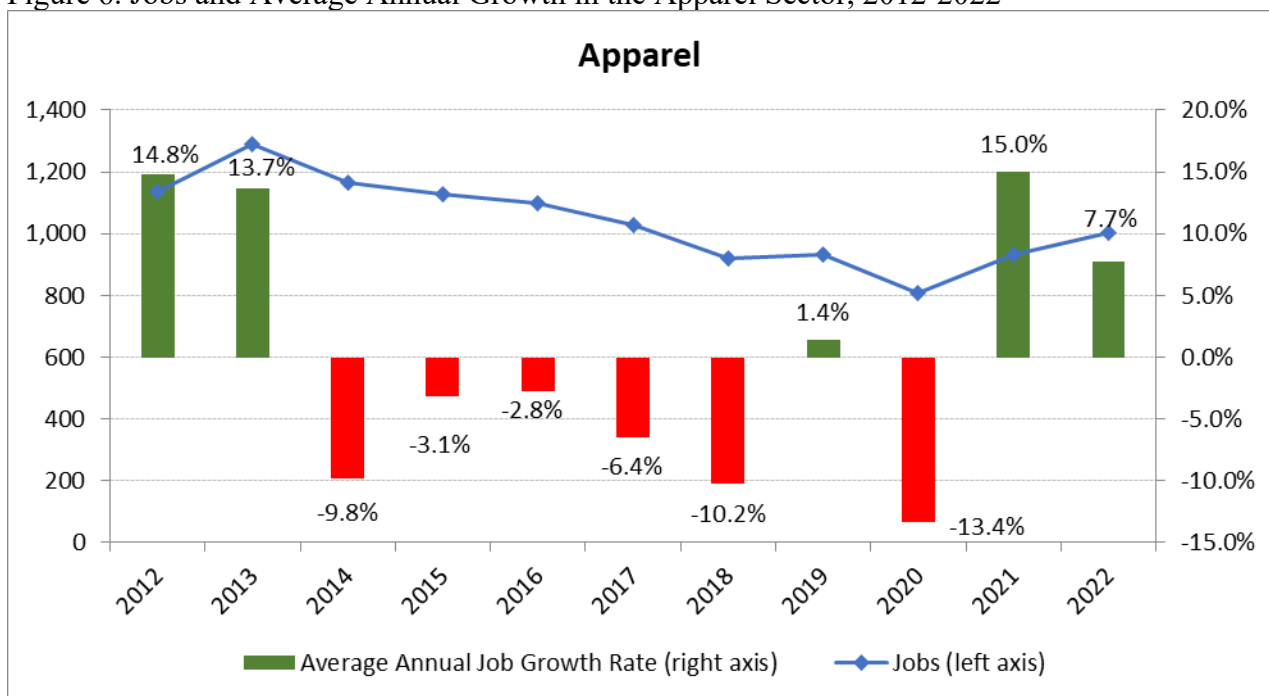


Figure 7. Jobs and Average Annual Growth in the Call Centers Sector, 2012-2022

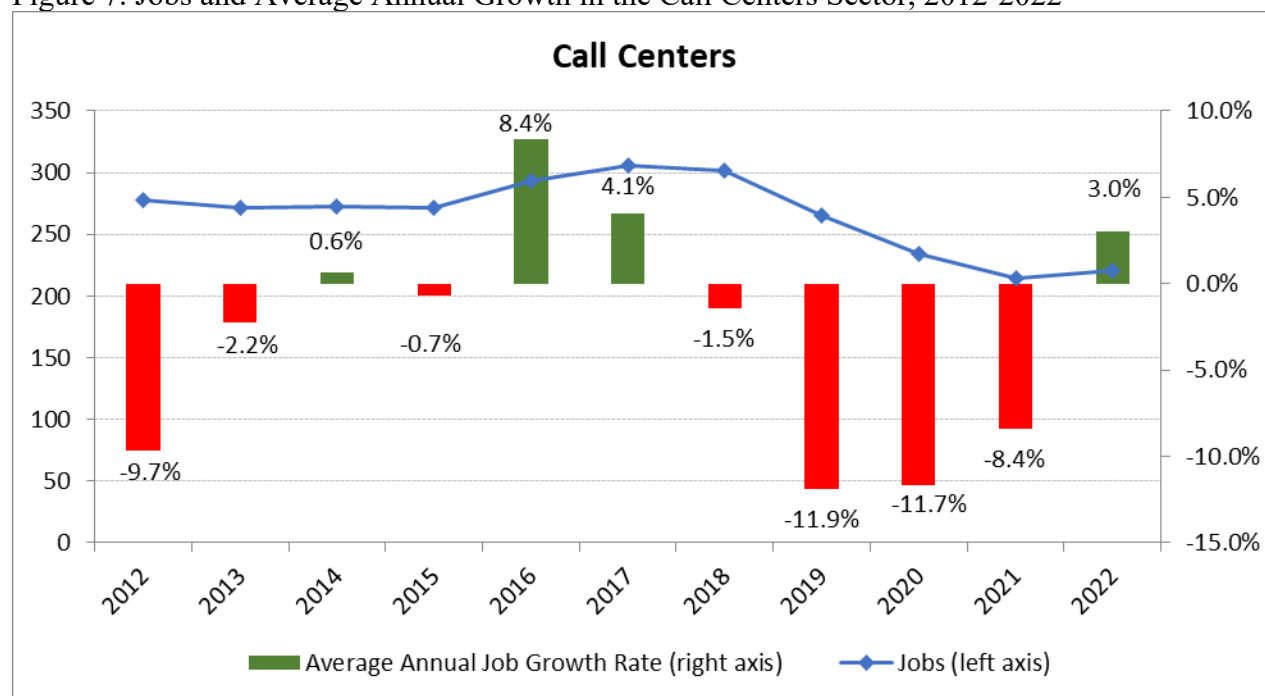


Table 19. Jobs in the Apparel and Call Centers Sectors: Average Annual Growth, 2012-2022

	-3%	-2%	-1%	0%	1%	2%
Civilian Total					0.5%	
OTHERS SECTOR Total			-1.4%			
Apparel			-1.2%			
Call Centers			-2.3%			

Industry Sector	Average Annual Job Growth Rate			Jobs in 2022
	2012-2022	2012-2020	2020-2022	
Civilian Total	0.5%	-0.4%	4.1%	841,332
Apparel	-1.2%	-4.1%	11.3%	1,003
Call Centers	-2.3%	-2.1%	-2.9%	221

Source: Lightcast™ and DBEDT calculation.

Competitive Metrics

In terms of average annual job growth rates, the Apparel sector declined in both Hawai'i and the nation. During the 2012-2022 period, the average annual job *decline* rate for Apparel in Hawai'i was 1.2% and in the U.S. was 1.6%. This partially reflects the global outsourcing trend for manufacturing in general.

During the 2012 to 2022 period, the U.S. Call Center industry had an average annual job growth rate of 0.04%. In contrast, the Call Center industry in Hawai'i experienced an average annual job *decline* rate of 2.3% during the same period.

In 2022, the job concentration of Apparel in Hawai‘i was 67% above the national concentration; in contrast, the job concentration of Call Centers in Hawai‘i was only 11% of the national concentration.

In 2022, the average annual earnings for Apparel and Call Centers in Hawai‘i were \$25,021 and \$28,628, respectively. These averages were about 53% and 52% of the nation’s averages, respectively.

Table 20. Hawai‘i Apparel and Call Centers Performance Compared with Nation

Industry Sector/Group	Jobs 2022	Jobs per Establishment 2022	Avg Annual Earnings 2022	Avg Ann Job Growth Rate		When U.S. = 100%		
				2012-2022	above U.S.	Concentration 1/	Jobs per Area	Avg Annual Earnings
Civilian Total	841,332	16	\$66,971	0.5%	-1.0%	100%	89%	93%
OTHERS SECTOR	1,224	13	\$25,673	-1.4%	-1.0%	48%	42%	48%
Apparel	1,003	19	\$25,021	-1.2%	0.4%	167%	80%	53%
Call Centers	221	6	\$28,628	-2.3%	-2.2%	11%	16%	52%

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation.

Overall Performance

Based on the performance metrics, during the 2012 to 2022 period, both the Apparel industry group and the Call Centers industry group were in the declining category, with an average annual job *decline* rate of 1.2% and 2.3% per year, respectively.

Table 21. Performance Map Criteria for the Other Sector

Emerging Activities	Base-Growth Activities
Declining Activities	Transitioning Activities
Apparel Call Centers	

PERFORMANCE BY COUNTY

The following tables summarize the 2012 to 2022 county performance of the statewide targeted & emerging industries. Performance has been ordered by Best Performing Targets (registering as base-growth & emerging activities) and Other Targeted Industry Performance (those that were in the transitioning and declining activities).

As shown in Table 22, the total number of jobs in Hawai‘i’s targeted & emerging industries without overlaps (“targeted”) was 160,660 in 2022. Honolulu accounted for about 69%, followed by Hawai‘i County at 13%, Maui County at 10%, and Kaua‘i County at 4%. Over the 2012 to 2022 period, adjusting for overlaps, total jobs in the targeted increased by 12,378 jobs. Honolulu gained 5,858 jobs, followed by Kaua‘i County at 193 jobs; Hawai‘i County lost 651 jobs; and Maui County lost 981 jobs.

Table 22. 2022 Jobs and Job Changes from 2012 to 2022 by County

Industry Sector	2022 Jobs				
	State 1/	Honolulu	Hawai‘i	Maui	Kaua‘i
Civilian Total	841,332	577,038	107,076	106,979	45,500
Total Targeted without Overlap	160,660	111,240	22,788	18,854	7,473
TECHNOLOGY SECTOR	29,391	23,524	2,530	2,145	1,017
CREATIVE SECTOR	52,301	37,768	5,597	6,452	2,302
AGRIBUSINESS SECTOR	23,894	9,693	8,883	3,488	1,820
HEALTH AND WELLNESS SECTOR	65,684	48,683	6,766	7,536	2,690
EDUCATION (PRIVATE) SECTOR	10,276	8,142	926	853	301
OTHERS	1,224	1,002	99	93	30
Industry Sector	% in State for 2022 Jobs				
	State 1/	Honolulu	Hawai‘i	Maui	Kaua‘i
Civilian Total	100%	69%	13%	13%	5%
Total Targeted without Overlap	100%	69%	14%	12%	5%
TECHNOLOGY SECTOR	100%	80%	9%	7%	3%
CREATIVE SECTOR	100%	72%	11%	12%	4%
AGRIBUSINESS SECTOR	100%	41%	37%	15%	8%
HEALTH AND WELLNESS SECTOR	100%	74%	10%	11%	4%
EDUCATION (PRIVATE) SECTOR	100%	79%	9%	8%	3%
OTHERS	100%	82%	8%	8%	2%
Industry Sector	Job Changes 2012 to 2022				
	State 1/	Honolulu	Hawai‘i	Maui	Kaua‘i
Civilian Total	40,788	10,083	11,609	10,585	4,398
Total Targeted without Overlap	12,378	5,858	2,484	3,093	722
TECHNOLOGY SECTOR	1,851	948	264	365	149
CREATIVE SECTOR	4,443	3,097	607	486	133
AGRIBUSINESS SECTOR	-250	-385	573	-564	116
HEALTH AND WELLNESS SECTOR	10,225	5,949	1,166	2,765	340
EDUCATION (PRIVATE) SECTOR	-664	-1,399	176	366	139
OTHERS	-189	-243	31	26	-3

1/ Sum of counties may not add up to state due to the exclusion of Kalawao County data and percentage rounding.

Source: Lightcast™ and DBEDT calculation.

City & County of Honolulu

As shown in Table 23 and referencing Table 1, Honolulu accounted for 111,240 or 69% of the state's 160,660 targeted jobs in 2022. In 2012, Honolulu's targeted average annual job growth rate of 0.5% was above Honolulu's civilian economy's rate of 0.2%, below the state's targeted rate of 0.8%, and below the nation's targeted rate of 1.6%. Average annual earnings for both Honolulu's civilian economy and targeted were higher than the state's comparable averages, but lower than the nation's comparable averages.

Among the six major sectors over the 2012 to 2022 period, zero sectors were high-performing Base-Growth or Emerging activities in Honolulu County. Three sectors were in the Transitioning category and three sectors were in the Declining category. The Health and Wellness Sector gained the greatest number of jobs at 5,949, had the highest average annual job growth rate at 1.3%, and had the highest concentration of industry compared to the nation's concentration at 103%. The Technology Sector had the highest average annual earnings in 2022 at \$109,136.

Table 23. Performance of the Major Groups of Honolulu Targeted Industry Portfolio

Industry Sector 2/	Jobs in Honolulu		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	Honolulu	U.S.	2022	% Point Change 12-22	Honolulu	U.S.
Civilian Total	577,038	10,083	0.2%	1.5%	100%	0.00%	\$71,116	\$71,873
Total Targeted without Overlap	111,240	5,858	0.5%	1.6%	85%	2.66%	\$80,727	\$89,508
Transitioning Activities								
TECHNOLOGY SECTOR	23,524	948	0.4%	2.6%	66%	-5.85%	\$109,136	\$136,035
CREATIVE SECTOR	37,768	3,097	0.9%	2.5%	87%	-2.56%	\$74,475	\$102,717
HEALTH AND WELLNESS SECTOR	48,683	5,949	1.3%	1.4%	103%	12.32%	\$93,644	\$81,930
Declining Activities								
EDUCATION (PRIVATE) SECTOR	8,142	-1,399	-1.6%	0.4%	90%	-6.32%	\$42,230	\$56,844
OTHERS SECTOR	1,002	-243	-2.2%	-0.4%	57%	-2.31%	\$26,567	\$53,095
AGRIBUSINESS SECTOR	9,693	-385	-0.4%	1.0%	54%	-0.16%	\$53,285	\$56,238

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

2/ The sum of the individual sectors is greater than Total Targeted without Overlap since overlaps exist between sectors.

Source: Lightcast™ and DBEDT calculation.

Table 24 shows the performance of detailed targeted & emerging industry groups in Honolulu. Eight activities were high-performing over the 2012 to 2022 period with an average annual job growth rate that was higher than the nation's rate for the comparable industries. Specialty Health Care Services gained the greatest number of jobs at 2,935; Film, TV, Video Production/Distribution, Cable and Media Streaming had the highest average annual job growth rate at 5.4%; and Music and Pharmacies had the highest concentration of industry compared to the nation's concentration, at 126%. Technology Equipment Distribution had the highest average annual earnings in 2022 at \$155,251.

Thirteen activities were in the Transitioning category over the 2012 to 2022 period. They gained jobs but did not keep up with national growth for the same activities resulting in a loss of competitive national industry share. Health Practitioners gained the greatest number of jobs at 2,499; Technical Consulting Services had the highest average annual job growth rate at 3.2%; and Medical Labs and Imaging Centers had the highest concentration of industry compared to the nation's

concentration, at 160%. Computer Services and Software Publishers had the highest average annual earnings in 2022 at \$127,322.

Eighteen activities in the portfolio were in the Declining industry category as the result of net job losses over the 2012 to 2022 period. Hospitals and Nursing Facilities lost the fewest number of jobs at five and had the lowest average annual job *decline* rate at 0.003%; and Cultural Activities had the highest concentration of industry compared to the nation's concentration, at 467%. Alternative Power Generation had the highest average annual earnings in 2022 at \$129,931.

Table 24. Performance of the Detailed Honolulu Targeted Industry Portfolio

Industry Group	Jobs in Honolulu		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	Honolulu	U.S.	2022	% Point Change 12-22	Honolulu	U.S.
Base-Growth Activities								
Music	857	270	3.9%	2.1%	135%	35%	\$50,469	\$48,113
Film, TV, Video Production/Distribution, Cable and Media Streaming	2,325	946	5.4%	2.3%	121%	42%	\$100,661	\$152,917
Pharmacies	3,634	381	1.1%	0.5%	135%	24%	\$42,770	\$47,955
Specialty Health Care Services	9,297	2,935	3.9%	3.2%	106%	19%	\$76,010	\$58,079
Emerging Activities								
Agriculture Inputs	253	50	2.2%	0.7%	35%	8%	\$65,704	\$89,861
Agriculture Support Services	1,380	495	4.5%	3.0%	70%	17%	\$68,297	\$64,935
Technology Equipment Distribution	896	166	2.1%	1.6%	52%	9%	\$155,251	\$156,951
Chemical and Pharmaceutical Manufacturing	33	8	2.8%	2.0%	2%	0%	\$80,079	\$154,583
Transitioning Activities								
Art Education	553	53	1.0%	1.7%	79%	5%	\$22,286	\$19,712
Performing and Creative Arts	4,836	222	0.5%	1.8%	91%	0%	\$29,856	\$32,738
Business Consulting	4,861	1,045	2.5%	4.0%	71%	-1%	\$82,418	\$102,713
Computer Services and Software Publishers	4,495	538	1.3%	4.5%	48%	-9%	\$127,322	\$158,327
Design Services	1,296	57	0.5%	1.6%	91%	2%	\$40,544	\$53,919
Engineering and Research and Development	4,978	287	0.6%	1.9%	98%	0%	\$120,894	\$133,311
Marketing, Photography and Related	7,764	527	0.7%	2.0%	93%	0%	\$38,034	\$68,302
Specialty Education	3,950	177	0.5%	1.8%	102%	1%	\$39,626	\$38,662
Health Practitioners	17,677	2,499	1.5%	2.1%	105%	8%	\$105,810	\$92,905
Technical Consulting Services	4,501	1,231	3.2%	4.1%	76%	4%	\$83,260	\$103,589
Engineering and Related Services	5,908	678	1.2%	1.5%	122%	12%	\$119,169	\$113,949
Medical Labs and Imaging Centers	1,527	138	0.9%	2.7%	160%	-6%	\$83,465	\$91,452
Declining Activities								
Agriculture Packaging and Warehousing	211	-39	-1.7%	1.8%	37%	-9%	\$66,521	\$69,425
Agriculture Processing	4,212	-701	-1.5%	2.0%	79%	-19%	\$57,391	\$69,586
Farm Production	2,934	-133	-0.4%	0.1%	33%	3%	\$39,962	\$43,544
Fishing, Forestry and Hunting	704	-57	-0.8%	0.1%	229%	11%	\$46,378	\$35,884
Publishing and Information	1,060	-349	-2.8%	-1.3%	64%	-2%	\$72,928	\$151,199
Radio and Television Broadcasting	647	-194	-2.6%	-1.2%	153%	-1%	\$82,340	\$96,107
Architecture	1,428	-125	-0.8%	1.4%	150%	-14%	\$106,569	\$92,867
Cultural Activities	2,668	-180	-0.7%	1.3%	467%	-30%	\$65,002	\$71,616
Higher Education	4,192	-1,576	-3.1%	-0.4%	81%	-12%	\$44,684	\$70,399
Hospitals and Nursing Facilities	16,548	-5	-0.003%	0.1%	91%	11%	\$102,666	\$87,771
Apparel	806	-193	-2.1%	-1.6%	196%	16%	\$25,741	\$47,202
Call Centers	196	-51	-2.3%	0.0%	15%	-1%	\$29,965	\$54,902
Alternative Power Generation	124	-112	-6.2%	1.1%	58%	-50%	\$129,931	\$187,823
Biotechnology	193	-299	-8.9%	7.1%	24%	-81%	\$128,706	\$212,315
Computer System Design and Related Services	5,467	-209	-0.4%	3.6%	66%	-19%	\$118,366	\$144,399
Information and Telecom Technology	3,797	-24	-0.1%	2.6%	67%	-9%	\$113,421	\$157,682
Other Technology Manufacturing	385	-96	-2.2%	0.6%	10%	-2%	\$89,849	\$130,865
R&D Services (except Biotechnology)	692	-534	-5.6%	2.2%	39%	-36%	\$95,190	\$154,598

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation.

Hawai‘i County

As shown in Table 25 and referencing Table 1, Hawai‘i County accounted for 22,788 or 14% of the state’s 160,660 targeted jobs in 2022. In 2012, Hawai‘i County’s targeted average annual job growth rate of 1.2% was equal to the overall Hawai‘i County civilian economy’s rate of 1.2%, above the state’s targeted rate of 0.8%, and below the nation’s targeted rate of 1.6%. In 2022, average annual earnings for both the Hawai‘i County civilian economy and targeted groups were lower than the state’s comparable averages and nation’s comparable averages.

Among the six major sectors over the 2012 to 2022 period, three sectors were in the high-performing Emerging activities and three sectors were in the Transitioning activities. The Health and Wellness Sector gained the greatest number of jobs at 1,166; the Others Sector had the highest average annual job growth rate at 3.8%; and the Agribusiness Sector had the highest concentration of industry compared to the nation’s concentration, at 268%. The Technology Sector had the highest average annual earnings in 2022 at \$83,653.

Table 25. Performance of the Major Groups of Hawai‘i County Targeted Industry Portfolio

Industry Sector 2/	Jobs in HI County		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	HI County	U.S.	2022	% Point Change 12-22	HI County	U.S.
Civilian Total	107,076	11,609	1.2%	1.5%	100%	0.00%	\$54,795	\$71,873
Total Targeted without Overlap	22,788	2,484	1.2%	1.6%	93%	-0.37%	\$51,317	\$89,508
Emerging Activities								
HEALTH AND WELLNESS SECTOR	6,766	1,166	1.9%	1.4%	77%	6.59%	\$69,895	\$81,930
EDUCATION (PRIVATE) SECTOR	926	176	2.1%	0.4%	55%	10.22%	\$38,864	\$56,844
OTHERS SECTOR	99	31	3.8%	-0.4%	30%	11.15%	\$15,438	\$53,095
Transitioning Activities								
TECHNOLOGY SECTOR	2,530	264	1.1%	2.6%	39%	-4.58%	\$83,653	\$136,035
CREATIVE SECTOR	5,597	607	1.2%	2.5%	70%	-7.10%	\$47,190	\$102,717
AGRIBUSINESS SECTOR	8,883	573	0.7%	1.0%	268%	1.48%	\$38,455	\$56,238

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

2/ The sum of the individual sectors is greater than Total Targeted without Overlap since overlaps exist between sectors.

Source: Lightcast™ and DBEDT calculation.

Table 26 shows the performance of detailed targeted & emerging industry groups in Hawai‘i County. Sixteen activities were high-performing, with positive job growth combined with a job growth rate that was higher than the nation for the same activity over the 2012 to 2022 period. Specialty Health Care Services gained the greatest number of jobs at 719; Agriculture Packaging and Warehousing jobs had the highest average annual job growth rate at 13.7%; and Farm Production had the highest concentration of industry compared to the nation’s concentration, at 400%. Technology Equipment Distribution had the highest average annual earnings in 2022 at \$111,554.

Twelve activities were in the Transitioning category over the 2012 to 2022 period. They gained jobs but did not keep up with national growth for the same activities resulting in a loss of competitive national industry share. Health Practitioners gained the greatest number of jobs at 472; Computer System Design and Related Services jobs had the highest average annual job growth rate at 3.6%; and Performing and Creative Arts had the highest concentration of industry compared to the nation’s concentration, at 157%. Information and Telecom Technology had the highest average earnings in 2022 at \$114,688.

Eleven activities in the portfolio were in the Declining industry category as the result of net job losses over the 2012 to 2022 period. Agriculture Inputs lost the fewest number of jobs at nearly 0 and had the lowest average annual job *decline* rate at 0.04%; and Fishing, Forestry and Hunting had the highest concentration of industry compared to the nation's concentration, at 817%. Alternative Power Generation had the highest average annual earnings in 2022 at \$149,101.

Table 26. Performance of the Detailed Hawai'i County Targeted Industry Portfolio

Industry Group	Jobs in HI County		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	HI		% Point Change		HI County	U.S.
			County	U.S.	2022	12-22		
Base-Growth Activities								
Agriculture Processing	1,246	305	2.8%	2.0%	126%	14%	\$53,692	\$69,586
Agriculture Support Services	396	168	5.7%	3.0%	108%	27%	\$59,234	\$64,935
Farm Production	6,649	107	0.2%	0.1%	400%	18%	\$35,455	\$43,544
Music	237	67	3.4%	2.1%	202%	29%	\$26,243	\$48,113
Architecture	178	33	2.1%	1.4%	101%	9%	\$72,898	\$92,867
Cultural Activities	133	48	4.6%	1.3%	126%	38%	\$68,677	\$71,616
Specialty Education	842	169	2.3%	1.8%	117%	10%	\$38,324	\$38,662
Specialty Health Care Services	1,729	719	5.5%	3.2%	107%	24%	\$57,848	\$58,079
Apparel	89	34	5.0%	-1.6%	117%	58%	\$15,500	\$47,202
Emerging Activities								
Agriculture Packaging and Warehousing	26	19	13.7%	1.8%	24%	17%	\$44,751	\$69,425
Art Education	66	13	2.3%	1.7%	51%	4%	\$25,173	\$19,712
Radio and Television Broadcasting	65	15	2.6%	-1.2%	83%	28%	\$51,901	\$96,107
Computer Services and Software Publishers	442	195	6.0%	4.5%	26%	4%	\$95,188	\$158,327
Film, TV, Video Production/Distribution, Cable and Media Streaming	97	25	3.1%	2.3%	27%	3%	\$73,578	\$152,917
Higher Education	84	7	0.9%	-0.4%	9%	1%	\$44,272	\$70,399
Technology Equipment Distribution	21	9	6.2%	1.6%	7%	3%	\$111,554	\$156,951
Transitioning Activities								
Performing and Creative Arts	1,538	206	1.4%	1.8%	157%	1%	\$23,598	\$32,738
Business Consulting	597	95	1.8%	4.0%	47%	-9%	\$47,833	\$102,713
Design Services	316	33	1.1%	1.6%	119%	-2%	\$38,611	\$53,919
Marketing, Photography and Related	1,245	8	0.1%	2.0%	80%	-14%	\$29,631	\$68,302
Health Practitioners	3,261	472	1.6%	2.1%	105%	-2%	\$79,363	\$92,905
Pharmacies	543	25	0.5%	0.5%	109%	4%	\$40,108	\$47,955
Technical Consulting Services	548	96	1.9%	4.1%	50%	-9%	\$44,362	\$103,589
Computer System Design and Related Services	389	115	3.6%	3.6%	25%	1%	\$72,134	\$144,399
Engineering and Related Services	385	33	0.9%	1.5%	43%	-1%	\$91,929	\$113,949
Information and Telecom Technology	469	102	2.5%	2.6%	45%	1%	\$114,688	\$157,682
Medical Labs and Imaging Centers	215	10	0.5%	2.7%	121%	-24%	\$71,660	\$91,452
Declining Activities								
Agriculture Inputs	99	0	0.0%	0.7%	74%	-3%	\$60,270	\$89,861
Fishing, Forestry and Hunting	467	-25	-0.5%	0.1%	817%	-17%	\$17,894	\$35,884
Publishing and Information	123	-120	-6.6%	-1.3%	40%	-27%	\$47,920	\$151,199
Engineering and Research and Development	561	-12	-0.2%	1.9%	59%	-11%	\$110,104	\$133,311
Hospitals and Nursing Facilities	1,018	-60	-0.6%	0.1%	30%	-1%	\$75,551	\$87,771
Call Centers	10	-3	-3.0%	0.0%	4%	-1%	\$14,857	\$54,902
Alternative Power Generation	33	-56	-9.4%	1.1%	84%	-159%	\$149,101	\$187,823
Biotechnology	13	-12	-6.4%	7.1%	9%	-24%	\$27,410	\$212,315
Chemical and Pharmaceutical Manufacturing	63	-9	-1.4%	2.0%	23%	-8%	\$74,341	\$154,583
Other Technology Manufacturing	26	-16	-4.6%	0.6%	4%	-2%	\$20,247	\$130,865
R&D Services (except Biotechnology)	368	-7	-0.2%	2.2%	112%	-25%	\$113,818	\$154,598

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation.

Maui County

As shown in Table 27 and referencing Table 1, Maui County accounted for 18,854 or 12% of the state's 160,660 targeted & emerging industry jobs in 2022. In 2012, Maui County's targeted average annual job growth rate of 1.8% was above Maui's civilian economy's rate of 1.0%, above the state's targeted rate of 0.8%, and the nation's targeted rate of 1.6%. In 2022, average annual earnings for both Maui's civilian economy and targeted were lower than the state's comparable averages and the nation's comparable averages.

Among the six major sectors over the 2012 to 2022 period, three sectors were in the high-performing Emerging activities, two were in the Transitioning activities, and one was in the Declining activities. The Health and Wellness Sector gained the greatest number of jobs at 2,765; the Education Sector jobs had the highest average annual job growth rate at 5.8%; and the Agribusiness Sector had the highest concentration of industry compared to the nation's concentration at 105%. The Technology Sector had the highest average annual earnings in 2022 at \$99,148.

Table 27. Performance of the Major Groups of Maui County Targeted Industry Portfolio

Industry Sector 2/	Jobs in Maui		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	Maui County	U.S.	2022	% Point Change 12-22	Maui County	U.S.
Civilian Total	106,979	10,585	1.0%	1.5%	100%	0.00%	\$59,265	\$71,873
Total Targeted without Overlap	18,854	3,093	1.8%	1.6%	77%	5.26%	\$63,605	\$89,508
Emerging Activities								
HEALTH AND WELLNESS SECTOR	7,536	2,765	4.7%	1.4%	86%	26.43%	\$81,279	\$81,930
EDUCATION (PRIVATE) SECTOR	853	366	5.8%	0.4%	51%	21.92%	\$35,771	\$56,844
OTHERS SECTOR	93	26	3.3%	-0.4%	29%	9.72%	\$26,117	\$53,095
Transitioning Activities								
TECHNOLOGY SECTOR	2,145	365	1.9%	2.6%	33%	-0.84%	\$99,148	\$136,035
CREATIVE SECTOR	6,452	486	0.8%	2.5%	81%	-10.52%	\$51,733	\$102,717
Declining Activities								
AGRIBUSINESS SECTOR	3,488	-564	-1.5%	1.0%	105%	-23.38%	\$45,956	\$56,238

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

2/ The sum of the individual sectors is greater than Total Targeted without Overlap since overlaps exist between sectors.

Source: Lightcast™ and DBEDT calculation.

Table 28 shows the performance of detailed targeted & emerging industry groups in Maui County. Sixteen activities were high-performing, with positive job growth combined with a job growth rate that was higher than the nation for the same activity over the 2012 to 2022 period. Hospitals and Nursing Facilities gained the greatest number of jobs at 1,525; Alternative Power Generation jobs had the highest average annual job growth rate at 22.3%; and Specialty Education had the highest concentration of industry compared to the nation's concentration, at 111%. Chemical and Pharmaceutical Manufacturing had the highest average annual earnings in 2022 at \$371,440.

Nine activities were in the Transitioning category over the 2012 to 2022 period. They gained jobs but did not keep up with national growth for the same activities resulting in a loss of competitive national industry share. Marketing, Photography and Related gained the greatest number of jobs at 234; Computer System Design and Related Services jobs had the highest average annual job growth rate at 2.9%; and Performing and Creative Arts had the highest concentration of industry compared

to the nation's concentration, at 239%. Technology Equipment Distribution had the highest average annual earnings in 2022 at \$147,253.

Fourteen activities in the portfolio were in the Declining industry category as the result of net job losses for the 2012 to 2022 period. Agriculture Packaging and Warehousing lost the fewest number of jobs at nearly 0; Pharmacies had the lowest average annual job *decline* rate at 0.2%; and Fishing, Forestry and Hunting had the highest concentration of industry compared to the nation's concentration, at 358%. Publishing and Information had the highest average annual earnings in 2022 at \$124,130.

Table 28. Performance of the Detailed Maui County Targeted Industry Portfolio

Industry Group	Jobs in Maui County		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	Maui County	U.S.	2022	% Point Change 12-22	Maui County	U.S.
Base-Growth Activities								
Specialty Education	796	321	5.3%	1.8%	111%	36%	\$31,699	\$38,662
Specialty Health Care Services	1,623	994	10.0%	3.2%	100%	49%	\$68,641	\$58,079
Apparel	77	23	3.6%	-1.6%	101%	43%	\$27,299	\$47,202
Emerging Activities								
Agriculture Support Services	280	99	4.5%	3.0%	77%	13%	\$72,546	\$64,935
Art Education	95	19	2.3%	1.7%	73%	7%	\$26,214	\$19,712
Computer Services and Software Publishers	562	219	5.1%	4.5%	33%	3%	\$133,897	\$158,327
Cultural Activities	59	8	1.5%	1.3%	55%	4%	\$52,448	\$71,616
Film, TV, Video Production/Distribution, Cable and Media Streaming	143	45	3.9%	2.3%	40%	7%	\$132,465	\$152,917
Higher Education	56	44	16.6%	-0.4%	6%	5%	\$93,184	\$70,399
Hospitals and Nursing Facilities	2,071	1,525	14.3%	0.1%	61%	46%	\$101,980	\$87,771
Call Centers	16	3	2.2%	0.0%	6%	1%	\$20,286	\$54,902
Alternative Power Generation	31	27	22.3%	1.1%	80%	68%	\$131,348	\$187,823
Chemical and Pharmaceutical Manufacturing	27	16	9.2%	2.0%	10%	5%	\$371,440	\$154,583
Information and Telecom Technology	450	127	3.4%	2.6%	43%	5%	\$126,007	\$157,682
Medical Labs and Imaging Centers	133	35	3.1%	2.7%	75%	6%	\$74,333	\$91,452
Transitioning Activities								
Performing and Creative Arts	2,345	198	0.9%	1.8%	239%	-10%	\$25,396	\$32,738
Architecture	173	15	0.9%	1.4%	98%	0%	\$66,405	\$92,867
Business Consulting	475	90	2.1%	4.0%	38%	-5%	\$41,269	\$102,713
Marketing, Photography and Related	1,588	234	1.6%	2.0%	102%	1%	\$38,080	\$68,302
Health Practitioners	3,185	223	0.7%	2.1%	102%	-10%	\$80,733	\$92,905
Technical Consulting Services	430	81	2.1%	4.1%	39%	-6%	\$40,917	\$103,589
Technology Equipment Distribution	18	2	1.5%	1.6%	6%	0%	\$147,253	\$156,951
Computer System Design and Related Services	523	131	2.9%	3.6%	34%	-1%	\$118,003	\$144,399
Engineering and Related Services	359	12	0.3%	1.5%	40%	-3%	\$91,879	\$113,949
Declining Activities								
Agriculture Inputs	40	-40	-6.7%	0.7%	29%	-31%	\$52,097	\$89,861
Agriculture Packaging and Warehousing	4	0	-0.8%	1.8%	4%	-1%	\$9,572	\$69,425
Agriculture Processing	581	-58	-1.0%	2.0%	59%	-16%	\$51,622	\$69,586
Farm Production	2,378	-553	-2.1%	0.1%	143%	-26%	\$44,182	\$43,544
Fishing, Forestry and Hunting	204	-12	-0.6%	0.1%	358%	-5%	\$13,575	\$35,884
Music	151	-208	-8.3%	2.1%	128%	-232%	\$33,848	\$48,113
Publishing and Information	211	-68	-2.8%	-1.3%	68%	-8%	\$124,130	\$151,199
Radio and Television Broadcasting	63	-16	-2.2%	-1.2%	81%	-4%	\$67,855	\$96,107
Design Services	275	-30	-1.0%	1.6%	104%	-25%	\$43,882	\$53,919
Engineering and Research and Development	312	-23	-0.7%	1.9%	33%	-8%	\$112,917	\$133,311
Pharmacies	524	-12	-0.2%	0.5%	105%	-3%	\$43,718	\$47,955
Biotechnology	8	-7	-6.2%	7.1%	5%	-14%	\$113,610	\$212,315
Other Technology Manufacturing	38	-39	-6.8%	0.6%	5%	-6%	\$49,598	\$130,865
R&D Services (except Biotechnology)	128	-19	-1.4%	2.2%	39%	-14%	\$110,968	\$154,598

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation.

Kaua‘i County

As shown in Table 29 and referencing Table 1, Kaua‘i County accounted for 7,473 or 5% of the state’s 160,660 targeted & emerging industry jobs in 2022. In 2012, Kaua‘i County’s targeted average annual job growth rate of 1.0% was equal to the overall Kaua‘i civilian economy’s rate of 1.0%, above the state’s targeted rate of 0.8%, and below the nation’s targeted rate of 1.6%. Average annual earnings for both Kaua‘i County’s civilian and targeted were lower than the state’s comparable averages and lower than the nation’s comparable averages.

Among the six major sectors over the 2012 to 2022 period, one sector was in the high-performing Emerging activities, four sectors were in the Transitioning activities, and one was in the Declining activities. The Health and Wellness Sector gained the greatest number of jobs at 340; The Technology Sector had the highest average annual job growth rate at 1.6%; and the Agribusiness Sector had the highest concentration of industry compared to the nation’s concentration, at 129%. The Technology Sector had the highest average annual earnings in 2022 at \$95,946.

Table 29. Performance of the Major Groups of Kaua‘i County Targeted Industry Portfolio

Industry Sector 2/	Jobs in Kaua‘i		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	Kaua‘i County	U.S.	2022	% Point Change 12-22	Kaua‘i County	U.S.
Civilian Total	45,500	4,398	1.0%	1.5%	100%	0.00%	\$56,416	\$71,873
Total Targeted without Overlap	7,473	722	1.0%	1.6%	72%	-0.33%	\$59,283	\$89,508
Emerging Activities								
EDUCATION (PRIVATE) SECTOR	301	139	6.4%	0.4%	42%	19.58%	\$36,617	\$56,844
Transitioning Activities								
TECHNOLOGY SECTOR	1,017	149	1.6%	2.6%	36%	-1.92%	\$95,946	\$136,035
CREATIVE SECTOR	2,302	133	0.6%	2.5%	68%	-10.07%	\$44,558	\$102,717
AGRIBUSINESS SECTOR	1,820	116	0.7%	1.0%	129%	2.24%	\$42,769	\$56,238
HEALTH AND WELLNESS SECTOR	2,690	340	1.4%	1.4%	72%	3.41%	\$77,950	\$81,930
Declining Activities								
OTHERS SECTOR	30	-3	-0.9%	-0.4%	22%	0.18%	\$28,178	\$53,095

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

2/ The sum of the individual sectors is greater than Total Targeted without Overlap since overlaps exist between sectors.

Source: Lightcast™ and DBEDT calculation.

Table 30 shows the performance of detailed targeted & emerging industry groups in Kaua‘i County. Fifteen activities were high-performing, with a job growth rate that was higher than the nation for the same activity over the 2012 to 2022 period. Specialty Health Care Services gained the greatest number of jobs at 169; Technology Equipment Distribution jobs had the highest average annual job growth rate at 8.7%; and Performing and Creative Arts had the highest concentration of industry compared to the nation’s concentration, at 175%. Technology Equipment Distribution had the highest average annual earnings in 2022 at \$172,688.

Eight activities were in the Transitioning category over the 2012 to 2022 period. They gained jobs but did not keep up with national growth for the same activities resulting in a loss of competitive national industry share. Health Practitioners gained the greatest number of jobs at 202; Computer Services and Software Publishers jobs had the highest average annual job growth rate at 4.2%; and Fishing, and Forestry and Hunting had the highest concentration of industry compared to the nation’s

concentration, at 607%. In 2022, Computer Services and Software Publishers had the highest average annual earnings in 2022 at \$117,236.

Fifteen activities in the portfolio were in the Declining industry category as the result of net job losses over the 2012 to 2022 period. Agriculture Packaging and Warehousing lost the fewest number of jobs at nearly 0; Pharmacies and Farm Production had the lowest average annual job *decline* rate at 0.1%; and Alternative Power Generation had the highest concentration of industry compared to the nation's concentration, at 383%, and had the highest average annual earnings in 2022 at \$154,129.

Table 30. Performance of the Detailed Kaua'i County Targeted Industry Portfolio

Industry Group	Jobs in Kaua'i County		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	Kaua'i County	U.S.	2022	% Point Change 12-22	Kaua'i County	U.S.
Base-Growth Activities								
Music	60	19	3.8%	2.1%	120%	23%	\$21,939	\$48,113
Performing and Creative Arts	731	151	2.3%	1.8%	175%	18%	\$25,010	\$32,738
Architecture	76	21	3.2%	1.4%	102%	20%	\$101,013	\$92,867
Emerging Activities								
Agriculture Processing	306	116	4.9%	2.0%	73%	21%	\$50,989	\$69,586
Agriculture Support Services	113	42	4.7%	3.0%	73%	14%	\$78,340	\$64,935
Art Education	50	25	7.0%	1.7%	91%	38%	\$20,475	\$19,712
Higher Education	13	6	5.9%	-0.4%	3%	2%	\$74,215	\$70,399
Specialty Education	288	133	6.4%	1.8%	94%	37%	\$34,897	\$38,662
Specialty Health Care Services	438	169	5.0%	3.2%	64%	13%	\$56,743	\$58,079
Apparel	30	3	0.9%	-1.6%	94%	25%	\$28,178	\$47,202
Technical Consulting Services	212	73	4.3%	4.1%	46%	3%	\$46,371	\$103,589
Technology Equipment Distribution	4	2	8.7%	1.6%	3%	2%	\$172,688	\$156,951
Computer System Design and Related Services	176	53	3.6%	3.6%	27%	1%	\$96,136	\$144,399
Information and Telecom Technology	143	42	3.6%	2.6%	32%	4%	\$126,838	\$157,682
Agriculture Processing	306	116	4.9%	2.0%	73%	21%	\$50,989	\$69,586
Transitioning Activities								
Fishing, Forestry and Hunting	147	0	0.0%	0.1%	607%	28%	\$16,827	\$35,884
Business Consulting	220	69	3.8%	4.0%	41%	1%	\$46,576	\$102,713
Computer Services and Software Publishers	155	53	4.2%	4.5%	21%	1%	\$117,236	\$158,327
Marketing, Photography and Related	621	3	0.1%	2.0%	94%	-15%	\$32,294	\$68,302
Health Practitioners	1145	202	2.0%	2.1%	87%	3%	\$83,858	\$92,905
Engineering and Related Services	156	7	0.5%	1.5%	41%	-2%	\$113,132	\$113,949
Medical Labs and Imaging Centers	65	12	2.0%	2.7%	86%	-1%	\$66,282	\$91,452
Declining Activities								
Agriculture Inputs	9	-24	-12.5%	0.7%	15%	-43%	\$57,544	\$89,861
Agriculture Packaging and Warehousing	1	0	-0.6%	1.8%	3%	-1%	\$11,182	\$69,425
Farm Production	1244	-19	-0.1%	0.1%	176%	5%	\$40,513	\$43,544
Publishing and Information	48	-53	-7.2%	-1.3%	37%	-28%	\$43,157	\$151,199
Radio and Television Broadcasting	26	-7	-2.4%	-1.2%	77%	-6%	\$61,984	\$96,107
Cultural Activities	51	-34	-5.0%	1.3%	112%	-92%	\$42,533	\$71,616
Design Services	86	-31	-3.0%	1.6%	77%	-40%	\$32,504	\$53,919
Engineering and Research and Development	123	-37	-2.6%	1.9%	30%	-15%	\$113,907	\$133,311
Film, TV, Video Production/Distribution, Cable and Media Streaming	55	-44	-5.7%	2.3%	36%	-42%	\$57,155	\$152,917
Hospitals and Nursing Facilities	807	-39	-0.5%	0.1%	56%	0%	\$91,970	\$87,771
Pharmacies	235	-3	-0.1%	0.5%	111%	-1%	\$43,688	\$47,955
Alternative Power Generation	64	-5	-0.7%	1.1%	383%	-55%	\$154,129	\$187,823
Biotechnology	151	-4	-0.3%	7.1%	233%	-221%	\$101,480	\$212,315
Other Technology Manufacturing	2	-5	-13.2%	0.6%	1%	-2%	\$18,838	\$130,865
R&D Services (except Biotechnology)	44	-27	-4.7%	2.2%	32%	-29%	\$110,799	\$154,598

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation.

CONCLUSIONS

This report is the 14th update of the performance measures of Hawai‘i’s Targeted Industry Portfolio that was developed in 2009. The 2009 report, which initially established and measured the targeted industry portfolio, showed that some industry groups performed well during the expansion phase (as measured by changes in jobs). The 2012 - 2022 update reports extended those measurements through the contraction phase, providing an analysis of how targets performed over the ups and downs of the business cycle. This update report updated NAICS codes to the latest 2022 definitions and used the 2022 data to illustrate how targeted industries have been performing during the 2012 to 2022 period.

Table 31 summarizes the best-performing targeted industry groups for the 2012 to 2022 period in terms of average growth and national competitiveness. They all showed growth and at the same time outperformed the same activities nationally over the measurement period. Among the six best-performing industry groups, five groups had average earnings above the average for Hawai‘i’s civilian economy.

Table 31. Highest Performing Targeted Activities, 2012 to 2022

Industry Group	Jobs in Hawai‘i		Avg. Annual Job Growth Rate 2012-2022		Concentration 1/		Avg. Annual Earnings 2022	
	2022	Change 12-22	Hawai‘i	U.S.	2022	% Point Change 12-22	Hawai‘i	U.S.
Civilian Total	841,332	40,788	0.5%	1.5%	100%	0%	\$66,971	\$71,873
Total Targeted without Overlap	160,660	12,378	0.8%	1.6%	84%	2%	\$73,688	\$89,508
Base-Growth and Emerging Activities								
Above Average State Earnings								
Technology Equipment Distribution	940	180	2.1%	1.6%	38%	5%	\$154,242	\$156,951
Hospitals and Nursing Facilities	20,444	1,420	0.7%	0.1%	77%	12%	\$100,824	\$87,771
Film, TV, Video Production/Distribution, Cable and Media Streaming	2,626	973	4.7%	2.3%	94%	27%	\$100,740	\$152,917
Specialty Health Care Services	13,091	4,822	4.7%	3.2%	103%	22%	\$72,065	\$58,079
Agriculture Support Services	2,177	811	4.8%	3.0%	76%	18%	\$68,069	\$64,935
Below Average State Earnings								
Pharmacies	4,937	391	0.8%	0.5%	126%	16%	\$42,640	\$47,955

1/ Proportion of jobs in the activity in region compared to the proportion nationally.

Source: Lightcast™ and DBEDT calculation

APPENDIX A

Table A1. Conversion of 2017 NAICS to 2022 NAICS

2017 NAICS	Changed to →	2022 NAICS	2022 Industry Description
111		111000	Crop Production
112		112000	Animal Production
31522		315250	Cut and Sew Apparel Manufacturing (except Contractors)
31524		315250	Cut and Sew Apparel Manufacturing (except Contractors)
31528		315250	Cut and Sew Apparel Manufacturing (except Contractors)
31599		315990	Apparel Accessories and Other Apparel Manufacturing
333314		333310	Commercial and Service Industry Machinery Manufacturing
333316		333310	Commercial and Service Industry Machinery Manufacturing
333318		333310	Commercial and Service Industry Machinery Manufacturing
334614		334610	Manufacturing and Reproducing Magnetic and Optical Media
446110		456110	Pharmacies and Drug Retailers
451140		459140	Musical Instrument and Supplies Retailers
453920		459920	Art Dealers
511110		513110*	Newspaper Publishers
511120		513120	Periodical Publishers
511130		513130	Book Publishers
511140		513140	Directory and Mailing List Publishers
511191		513191	Greeting Card Publishers
511199		513199	All Other Publishers
511210		513210	Software Publishers
515111		516210**	Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers
515112		516110	Radio Broadcasting Stations
515120		516120	Television Broadcasting Stations
515210		516210**	Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers
517311		517111	Wired Telecommunications Carriers
517312		517112	Wireless Telecommunications Carriers (except Satellite)
517919		517810	All Other Telecommunications
519110		516210**	Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers
519130		513110*	Newspaper Publishers
519190		519290	Web Search Portals and All Other Information Services
523130		523160	Commodity Contracts Intermediation
523140		523160	Commodity Contracts Intermediation

* NAICS Code: 513110 Newspaper Publishers. (n.d.). NAICS Association. Retrieved September 26, 2023, from <https://www.naics.com/naics-code-description/?v=2022&code=513110>

** NAICS Code: 516210 Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers. (n.d.). NAICS Association. Retrieved September 26, 2023, from <https://www.naics.com/naics-code-description/?v=2022&code=516210>

Source: DBEDT, United States Census Bureau (2023) <https://www.census.gov/naics/>

Table A2. Additional 2022 NAICS Included Which Were Not Included in the Conversions

NAICS	Industry Description	2022 Industry Group Name, Abbreviation
311213	Malt Manufacturing	Agriculture Processing, AG3
311422	Specialty Canning	Agriculture Processing, AG3
325315	Compost Manufacturing	Agriculture Inputs, AG1

Source: DBEDT

Table A3. Detailed Industry Groupings⁶

NAICS	Industry Description	Industry Group Name	Industry Group Abbreviation
111000	Crop Production	Farm Production	AG5
112000	Animal Production	Farm Production	AG5
113110	Timber Tract Operations	Fishing, Forestry and Hunting	AG6
113210	Forest Nurseries and Gathering of Forest Products	Fishing, Forestry and Hunting	AG6
114111	Finfish Fishing	Fishing, Forestry and Hunting	AG6
114112	Shellfish Fishing	Fishing, Forestry and Hunting	AG6
114210	Hunting and Trapping	Fishing, Forestry and Hunting	AG6
115112	Soil Preparation, Planting, and Cultivating	Farm Production	AG5
115113	Crop Harvesting, Primarily by Machine	Farm Production	AG5
115114	Postharvest Crop Activities (except Cotton Ginning)	Farm Production	AG5
115115	Farm Labor Contractors and Crew Leaders	Farm Production	AG5
115116	Farm Management Services	Farm Production	AG5
115210	Support Activities for Animal Production	Agric. Support Services	AG4
115310	Support Activities for Forestry	Agric. Support Services	AG4
221111	Hydroelectric Power Generation	Alternative Power Generation	TS1
221113	Nuclear Electric Power Generation	Alternative Power Generation	TS1
221114	Solar Electric Power Generation	Alternative Power Generation	TS1
221115	Wind Electric Power Generation	Alternative Power Generation	TS1
221116	Geothermal Electric Power Generation	Alternative Power Generation	TS1
221117	Biomass Electric Power Generation	Alternative Power Generation	TS1
221118	Other Electric Power Generation	Alternative Power Generation	TS1
311111	Dog and Cat Food Manufacturing	Agric. Processing	AG3
311119	Other Animal Food Manufacturing	Agric. Processing	AG3
311211	Flour Milling	Agric. Processing	AG3
311212	Rice Milling	Agric. Processing	AG3
311221	Wet Corn Milling	Other Technology Mfg	TS8
311224	Soybean and Other Oilseed Processing	Other Technology Mfg	TS8
311224	Soybean and Other Oilseed Processing	Agric. Processing	AG3
311314	Cane Sugar Manufacturing	Agric. Processing	AG3
311340	Nonchocolate Confectionery Manufacturing	Agric. Processing	AG3
311351	Chocolate and Confectionery Manufacturing from Cacao Beans	Agric. Processing	AG3
311352	Confectionery Manufacturing from Purchased Chocolate	Agric. Processing	AG3
311411	Frozen Fruit, Juice, and Vegetable Manufacturing	Agric. Processing	AG3
311412	Frozen Specialty Food Manufacturing	Agric. Processing	AG3
311421	Fruit and Vegetable Canning	Agric. Processing	AG3
311423	Dried and Dehydrated Food Manufacturing	Agric. Processing	AG3
311511	Fluid Milk Manufacturing	Agric. Processing	AG3
311513	Cheese Manufacturing	Agric. Processing	AG3
311520	Ice Cream and Frozen Dessert Manufacturing	Agric. Processing	AG3
311611	Animal (except Poultry) Slaughtering	Agric. Processing	AG3
311612	Meat Processed from Carcasses	Agric. Processing	AG3
311613	Rendering and Meat Byproduct Processing	Agric. Processing	AG3
311615	Poultry Processing	Agric. Processing	AG3
311710	Seafood Product Preparation and Packaging	Agric. Processing	AG3
311812	Commercial Bakeries	Agric. Processing	AG3
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing	Agric. Processing	AG3
311821	Cookie and Cracker Manufacturing	Agric. Processing	AG3
311824	Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour	Agric. Processing	AG3
311830	Tortilla Manufacturing	Agric. Processing	AG3
311213	Malt Manufacturing	Agric. Processing	AG3
311422	Specialty Canning	Agric. Processing	AG3
311911	Roasted Nuts and Peanut Butter Manufacturing	Agric. Processing	AG3
311919	Other Snack Food Manufacturing	Agric. Processing	AG3
311920	Coffee and Tea Manufacturing	Agric. Processing	AG3
311930	Flavoring Syrup and Concentrate Manufacturing	Agric. Processing	AG3
311942	Spice and Extract Manufacturing	Agric. Processing	AG3
311991	Perishable Prepared Food Manufacturing	Agric. Processing	AG3
311999	All Other Miscellaneous Food Manufacturing	Agric. Processing	AG3
312111	Soft Drink Manufacturing	Agric. Processing	AG3

⁶ An industry may be counted in more than one sector or industry group.

Table A3. Detailed Industry Groupings (cont'd)

NAICS	Industry Description	Industry Group Name	Industry Group Abbreviation
312112	Bottled Water Manufacturing	Agric. Processing	AG3
312113	Ice Manufacturing	Agric. Processing	AG3
312120	Breweries	Agric. Processing	AG3
312130	Wineries	Agric. Processing	AG3
312140	Distilleries	Agric. Processing	AG3
315210	Cut and Sew Apparel Contractors	Apparel	OT1
315250	Cut and Sew Apparel Manufacturing (except Contractors)	Apparel	OT1
315990	Apparel Accessories and Other Apparel Manufacturing	Apparel	OT1
321920	Wood Container and Pallet Manufacturing	Agric. Packaging and Warehsg	AG2
325193	Ethyl Alcohol Manufacturing	Chemical and Pharmaceutical Mfg	TS3
325199	All Other Basic Organic Chemical Manufacturing	Chemical and Pharmaceutical Mfg	TS3
325211	Plastics Material and Resin Manufacturing	Chemical and Pharmaceutical Mfg	TS3
325220	Artificial and Synthetic Fibers and Filaments Manufacturing	Chemical and Pharmaceutical Mfg	TS3
325311	Nitrogenous Fertilizer Manufacturing	Chemical and Pharmaceutical Mfg	TS3
325311	Nitrogenous Fertilizer Manufacturing	Agric. Inputs	AG1
325312	Phosphatic Fertilizer Manufacturing	Chemical and Pharmaceutical Mfg	TS3
325314	Fertilizer (Mixing Only) Manufacturing	Agric. Inputs	AG1
325315	Compost Manufacturing	Agric. Inputs	AG1
325320	Pesticide and Other Agricultural Chemical Manufacturing	Chemical and Pharmaceutical Mfg	TS3
325320	Pesticide and Other Agricultural Chemical Manufacturing	Agric. Inputs	AG1
325411	Medicinal and Botanical Manufacturing	Chemical and Pharmaceutical Mfg	TS3
325412	Pharmaceutical Preparation Manufacturing	Chemical and Pharmaceutical Mfg	TS3
325413	In-Vitro Diagnostic Substance Manufacturing	Chemical and Pharmaceutical Mfg	TS3
325414	Biological Product (except Diagnostic) Manufacturing	Chemical and Pharmaceutical Mfg	TS3
326160	Plastics Bottle Manufacturing	Agric. Packaging and Warehsg	AG2
332431	Metal Can Manufacturing	Agric. Packaging and Warehsg	AG2
333111	Farm Machinery and Equipment Manufacturing	Agric. Inputs	AG1
333242	Semiconductor Machinery Manufacturing	Other Technology Mfg	TS8
333310	Commercial and Service Industry Machinery Manufacturing	Other Technology Mfg	TS8
334290	Other Communications Equipment Manufacturing	Other Technology Mfg	TS8
334310	Audio and Video Equipment Manufacturing	Other Technology Mfg	TS8
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	Other Technology Mfg	TS8
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	Other Technology Mfg	TS8
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	Other Technology Mfg	TS8
334516	Analytical Laboratory Instrument Manufacturing	Other Technology Mfg	TS8
334517	Irradiation Apparatus Manufacturing	Other Technology Mfg	TS8
334610	Manufacturing and Reproducing Magnetic and Optical Media	Film, TV, Video Production/Distrib, Cable & Media Streaming	CS8
335921	Fiber Optic Cable Manufacturing	Other Technology Mfg	TS8
336411	Aircraft Manufacturing	Other Technology Mfg	TS8
336412	Aircraft Engine and Engine Parts Manufacturing	Other Technology Mfg	TS8
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	Other Technology Mfg	TS8
336414	Guided Missile and Space Vehicle Manufacturing	Other Technology Mfg	TS8
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	Other Technology Mfg	TS8
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	Other Technology Mfg	TS8
339112	Surgical and Medical Instrument Manufacturing	Other Technology Mfg	TS8
339113	Surgical Appliance and Supplies Manufacturing	Other Technology Mfg	TS8
339114	Dental Equipment and Supplies Manufacturing	Other Technology Mfg	TS8
339115	Ophthalmic Goods Manufacturing	Other Technology Mfg	TS8
339116	Dental Laboratories	Other Technology Mfg	TS8
423420	Office Equipment Merchant Wholesalers	Technology Equipment Distribution	TS11
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	Technology Equipment Distribution	TS11
423450	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	Technology Equipment Distribution	TS11
424520	Livestock Merchant Wholesalers	Agric. Inputs	AG1
424590	Other Farm Product Raw Material Merchant Wholesalers	Agric. Inputs	AG1
424910	Farm Supplies Merchant Wholesalers	Agric. Inputs	AG1
456110	Pharmacies and Drug Retailers	Pharmacies	HW4
459140	Musical Instrument and Supplies Retailers	Music	CS10
459920	Art Dealers	Performing and Creative Arts	CS11
493120	Refrigerated Warehousing and Storage	Agric. Packaging and Warehsg	AG2

Table A3. Detailed Industry Groupings (cont'd)

NAICS	Industry Description	Industry Group Name	Industry Group Abbreviation
512110	Motion Picture and Video Production	Film, TV, Video Production/Distrib, Cable & Media Streaming	CS8
512120	Motion Picture and Video Distribution	Film, TV, Video Production/Distrib, Cable & Media Streaming	CS8
512191	Teleproduction and Other Postproduction Services	Film, TV, Video Production/Distrib, Cable & Media Streaming	CS8
512230	Music Publishers	Music	CS10
512240	Sound Recording Studios	Music	CS10
512250	Record Production and Distribution	Music	CS10
512290	Other Sound Recording Industries	Music	CS10
513110	Newspaper Publishers	Publishing and Information	CS12
513120	Periodical Publishers	Publishing and Information	CS12
513130	Book Publishers	Publishing and Information	CS12
513140	Directory and Mailing List Publishers	Publishing and Information	CS12
513191	Greeting Card Publishers	Publishing and Information	CS12
513199	All Other Publishers	Publishing and Information	CS12
513210	Software Publishers	Information and Telecom Technology	TS6
513210	Software Publishers	Computer Services and Software Publishers	CS4
516110	Radio Broadcasting Stations	Radio and Television Broadcasting	CS13
516120	Television Broadcasting Stations	Radio and Television Broadcasting	CS13
516210	Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers	Film, TV, Video Production/Distrib, Cable & Media Streaming	CS8
517111	Wired Telecommunications Carriers	Information and Telecom Technology	TS6
517112	Wireless Telecommunications Carriers (except Satellite)	Information and Telecom Technology	TS6
517410	Satellite Telecommunications	Information and Telecom Technology	TS6
517810	All Other Telecommunications	Information and Telecom Technology	TS6
518210	Data Processing, Hosting, and Related Services	Information and Telecom Technology	TS6
519290	Web Search Portals and All Other Information Services	Publishing and Information	CS12
523160	Commodity Contracts Intermediation	Agric. Support Services	AG4
541310	Architectural Services	Engineering and Related Services	TS5
541310	Architectural Services	Architecture	CS2
541320	Landscape Architectural Services	Engineering and Related Services	TS5
541320	Landscape Architectural Services	Architecture	CS2
541330	Engineering Services	Engineering and Related Services	TS5
541330	Engineering Services	Engineering and Research and Development	CS7
541340	Drafting Services	Design Services	CS6
541360	Geophysical Surveying and Mapping Services	Engineering and Related Services	TS5
541380	Testing Laboratories	Engineering and Related Services	TS5
541410	Interior Design Services	Design Services	CS6
541420	Industrial Design Services	Design Services	CS6
541430	Graphic Design Services	Design Services	CS6
541490	Other Specialized Design Services	Design Services	CS6
541511	Custom Computer Programming Services	Computer System Design and Related services	TS4
541511	Custom Computer Programming Services	Computer Services and Software Publishers	CS4
541512	Computer Systems Design Services	Computer System Design and Related services	TS4
541512	Computer Systems Design Services	Computer Services and Software Publishers	CS4
541513	Computer Facilities Management Services	Computer System Design and Related services	TS4
541519	Other Computer Related Services	Computer System Design and Related services	TS4
541611	Administrative Management and General Management Consulting Services	Technical Consulting Services	TS10
541611	Administrative Management and General Management Consulting Services	Business Consulting	CS3
541612	Human Resources Consulting Services	Business Consulting	CS3
541613	Marketing Consulting Services	Marketing, Photography and Related	CS9
541614	Process, Physical Distribution, and Logistics Consulting Services	Technical Consulting Services	TS10
541614	Process, Physical Distribution, and Logistics Consulting Services	Business Consulting	CS3
541618	Other Management Consulting Services	Business Consulting	CS3
541620	Environmental Consulting Services	Technical Consulting Services	TS10
541620	Environmental Consulting Services	Business Consulting	CS3

Table A3. Detailed Industry Groupings (cont'd)

NAICS	Industry Description	Industry Group Name	Industry Group Abbreviation
541690	Other Scientific and Technical Consulting Services	Technical Consulting Services	TS10
541690	Other Scientific and Technical Consulting Services	Business Consulting	CS3
541714	Research and Development in Biotechnology (except Nanobiotechnology)	Biotechnology	TS2
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	R&D Services (except Biotechnology)	TS9
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	Engineering and Research and Development	CS7
541720	Research and Development in the Social Sciences and Humanities	R&D Services (except Biotechnology)	TS9
541720	Research and Development in the Social Sciences and Humanities	Engineering and Research and Development	CS7
541810	Advertising Agencies	Marketing, Photography and Related	CS9
541820	Public Relations Agencies	Marketing, Photography and Related	CS9
541830	Media Buying Agencies	Marketing, Photography and Related	CS9
541840	Media Representatives	Marketing, Photography and Related	CS9
541850	Outdoor Advertising	Marketing, Photography and Related	CS9
541860	Direct Mail Advertising	Marketing, Photography and Related	CS9
541870	Advertising Material Distribution Services	Marketing, Photography and Related	CS9
541890	Other Services Related to Advertising	Marketing, Photography and Related	CS9
541910	Marketing Research and Public Opinion Polling	Marketing, Photography and Related	CS9
541921	Photography Studios, Portrait	Marketing, Photography and Related	CS9
541922	Commercial Photography	Marketing, Photography and Related	CS9
541940	Veterinary Services	Agric. Support Services	AG4
541990	All Other Professional, Scientific, and Technical Services	Marketing, Photography and Related	CS9
561421	Telephone Answering Services	Call Centers	OT2
561422	Telemarketing Bureaus and Other Contact Centers	Call Centers	OT2
611210	Junior Colleges	Higher Education	ED1
611310	Colleges, Universities, and Professional Schools	Higher Education	ED1
611410	Business and Secretarial Schools	Specialty Education	ED2
611420	Computer Training	Computer System Design and Related services	TS4
611420	Computer Training	Specialty Education	ED2
611430	Professional and Management Development Training	Specialty Education	ED2
611511	Cosmetology and Barber Schools	Specialty Education	ED2
611512	Flight Training	Specialty Education	ED2
611519	Other Technical and Trade Schools	Specialty Education	ED2
611610	Fine Arts Schools	Art Education	CS1
611610	Fine Arts Schools	Specialty Education	ED2
611620	Sports and Recreation Instruction	Specialty Education	ED2
611630	Language Schools	Specialty Education	ED2
611699	All Other Miscellaneous Schools and Instruction	Specialty Education	ED2
611710	Educational Support Services	Specialty Education	ED2
621111	Offices of Physicians (except Mental Health Specialists)	Health Practitioners	HW1
621112	Offices of Physicians, Mental Health Specialists	Health Practitioners	HW1
621210	Offices of Dentists	Health Practitioners	HW1
621310	Offices of Chiropractors	Health Practitioners	HW1
621320	Offices of Optometrists	Health Practitioners	HW1
621330	Offices of Mental Health Practitioners (except Physicians)	Health Practitioners	HW1
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists	Health Practitioners	HW1
621391	Offices of Podiatrists	Health Practitioners	HW1
621399	Offices of All Other Miscellaneous Health Practitioners	Health Practitioners	HW1
621410	Family Planning Centers	Specialty Health Care Services	HW5
621420	Outpatient Mental Health and Substance Abuse Centers	Specialty Health Care Services	HW5
621491	HMO Medical Centers	Specialty Health Care Services	HW5
621492	Kidney Dialysis Centers	Specialty Health Care Services	HW5
621493	Freestanding Ambulatory Surgical and Emergency Centers	Specialty Health Care Services	HW5
621498	All Other Outpatient Care Centers	Specialty Health Care Services	HW5
621511	Medical Laboratories	Medical Labs and Imaging Centers	TS7
621511	Medical Laboratories	Medical Labs and Imaging Centers	HW3
621512	Diagnostic Imaging Centers	Medical Labs and Imaging Centers	TS7
621512	Diagnostic Imaging Centers	Medical Labs and Imaging Centers	HW3
621610	Home Health Care Services	Specialty Health Care Services	HW5
622110	General Medical and Surgical Hospitals	Hospitals and Nursing Facilities	HW2
622210	Psychiatric and Substance Abuse Hospitals	Hospitals and Nursing Facilities	HW2
622310	Specialty (except Psychiatric and Substance Abuse) Hospitals	Hospitals and Nursing Facilities	HW2

Table A3. Detailed Industry Groupings (cont'd)

NAICS	Industry Description	Industry Group Name	Industry Group Abbreviation
623110	Nursing Care Facilities (Skilled Nursing Facilities)	Hospitals and Nursing Facilities	HW2
711110	Theater Companies and Dinner Theaters	Performing and Creative Arts	CS11
711120	Dance Companies	Performing and Creative Arts	CS11
711130	Musical Groups and Artists	Music	CS10
711190	Other Performing Arts Companies	Performing and Creative Arts	CS11
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities	Performing and Creative Arts	CS11
711320	Promoters of Performing Arts, Sports, and Similar Events without Facilities	Performing and Creative Arts	CS11
711410	Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures	Performing and Creative Arts	CS11
711510	Independent Artists, Writers, and Performers	Performing and Creative Arts	CS11
712110	Museums	Cultural Activities	CS5
712120	Historical Sites	Cultural Activities	CS5
712190	Nature Parks and Other Similar Institutions	Cultural Activities	CS5
813211	Grantmaking Foundations	Cultural Activities	CS5

Source: DBEDT