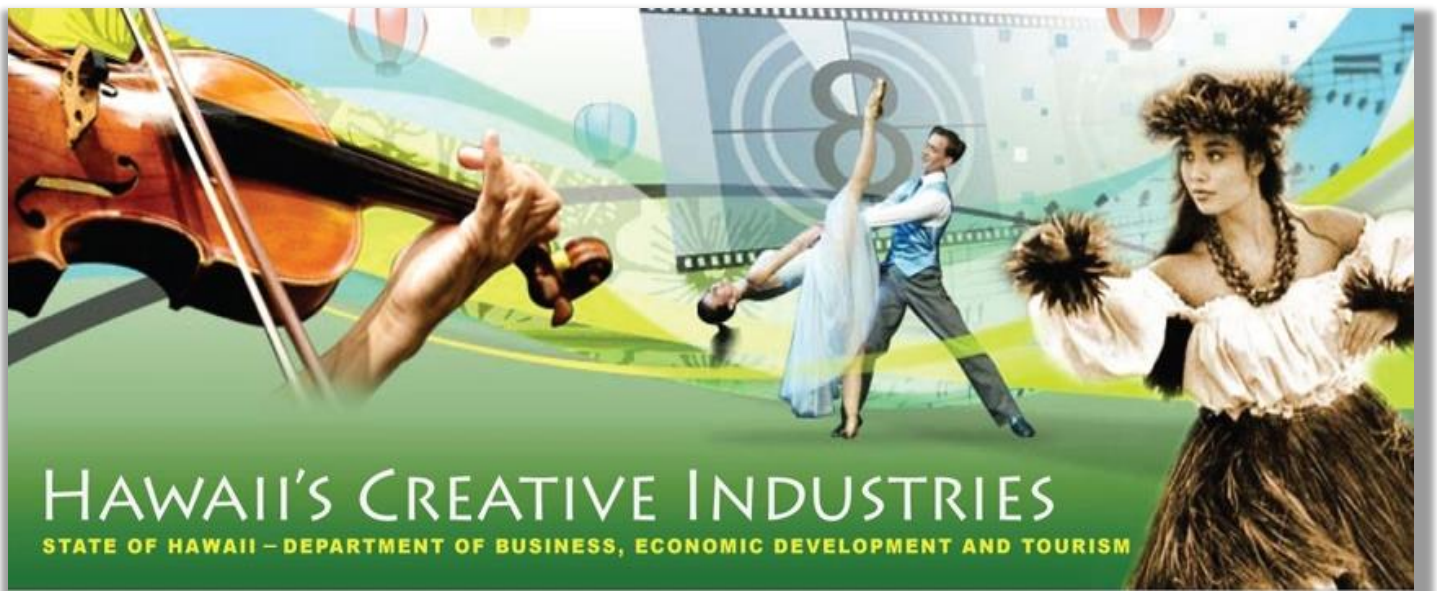


# Hawai'i's Creative Industries

## *Update Report 2024*





# FilmHawai'i

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**Hawai'i Department of Business, Economic Development & Tourism**

**March 2024**

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## CREATIVE INDUSTRIES HAWAI'I OVERVIEW

The State of Hawai'i's **Creative Industries Division (CID)** in the Department of Business, Economic Development and Tourism (DBEDT) is the lead agency which advocates and expands business opportunities for those sectors which comprise Hawai'i's creative economy.

Comprised of the **Hawai'i Film Office (HFO)** responsible for the overall management of the state's off-shore and local film industry development and the **Arts and Culture Development Branch (ACDB)**, CID is responsible for initiatives which support talent, infrastructure, policy development and investment strategies for the statewide creative industries spectrum, increasing the capacity for entrepreneurial success while maintaining Hawai'i's global reputation as a premiere location filming destination.

Through CID/DBEDT initiatives such as **Creative Lab**, coupled with state-of-the-art infrastructure development, the agency is further strengthening Hawai'i's creative sector in film, arts, culture, music, design, literary arts, publishing, creative and interactive media – all integral components of Hawai'i's creative and innovation economy.

CID/DBEDT is positioning Hawai'i to be a national and global leader in creative sector development as well as a hub for creative media and film production in the Pacific.

### **Hawai'i's Creative Industries Metrics 2022 (GDP Data in 2022):**

- 52,301 jobs, 4,933 businesses
- 6.2% of the state's total civilian jobs
- \$5.1 billion Gross Domestic Product (GDP) = 5.4% of State of Hawai'i total civilian GDP
- + 9.3% job growth rate between 2012 and 2022

## EXECUTIVE SUMMARY

Developing Hawai'i's creative industries has become an important economic development strategy. Hawai'i's cultural diversity and its Hawaiian host culture are brand differentiators, attracting millions of visitors to the state while supporting thriving creative industries. Hawai'i's creative, artistic, and cultural industries occupy a unique niche that allows Hawai'i's creative products to compete in worldwide markets and support visitor spending while developing the foundation of Hawai'i's creative economy. In addition, the creative industries and their workforce represent key sources of ideas, create content creation for global export, and provide talent for Hawai'i's other industries.

In 2007, the Research and Economic Analysis Division teamed up with the DBEDT Creative Industries Division to define Hawai'i's creative industries using North American Industry Classification codes (NAICS). The framework that was developed was based on work done by the State of Massachusetts. The term and definition of "Creative Industries" in this report's title is synonymous with the "Creative Sector" term and definition in DBEDT's Targeted and Emerging Industries reports.<sup>1</sup> A sector comprises individual industry groups which comprise 2022 industries.

This report updates the 2022 Creative Sector performance using the final data from Lightcast. The data used in the previous report (Update 2023) were Lightcast's preliminary data. The data used in this report are consistent with those used in the report Hawai'i's Targeted & Emerging Industries: 2023 Update.

### Industry Groups in the Creative Sector

Table E1 provides an overview of the 13 industry groups in the updated Creative Sector based on the current definition of the sector. In 2022, the Hawai'i Creative Sector had 52,301 jobs, a Job Growth Rate of 9.3% from 2012, and average annual earnings of \$67,847. The jobs category includes wage and salary jobs, self-employed, and proprietors.

**Table E1. Creative Sector and Creative Sector Industry Groups, 2022**

Sector / Industry Group	2022 Jobs
<b>Total Creative Sector</b>	<b>52,301</b>
Marketing, Photography and Related	11,249
Performing and Creative Arts	9,450
Business Consulting	6,188
Engineering and Research and Development	5,988
Computer Services and Software Publishers	5,730
Cultural Activities	2,912
Film, TV, Video Production/Distribution, Cable & Media Streaming	2,626
Design Services	1,974
Architecture	1,855
Publishing and Information	1,458
Music	1,305
Radio and Television Broadcasting	801
Art Education	764

Source: Lightcast™ and DBEDT calculation.

<sup>1</sup> Hawai'i's Targeted & Emerging Industries, December 2023, DBEDT. [http://dbedt.hawaii.gov/economic/reports\\_studies/emerging-industries/](http://dbedt.hawaii.gov/economic/reports_studies/emerging-industries/)

In 2022, the Creative Sector accounted for 6.2% of the state's total civilian jobs. Not only does this sector create jobs directly, but it also spawns innovations that drive job creation in other industries.

**Table E2. Creative Sector Jobs Compared with Other Industries, 2022**

Sector/Industry	2022 State Jobs	% of Civilian Jobs
<b>Total Civilian</b>	<b>841,332</b>	<b>100%</b>
Accommodation and Food Services	106,758	12.7%
State and Local Government	89,040	10.6%
Health Care and Social Assistance	85,666	10.2%
Retail Trade	83,631	9.9%
<b>Creative Sector</b>	<b>52,301</b>	<b>6.2%</b>
Administrative and Support and Waste Management and Remediation Services	50,912	6.1%
Construction	49,942	5.9%
Other Services (except Public Administration)	47,003	5.6%
Real Estate and Rental and Leasing	45,271	5.4%
Transportation and Warehousing	42,533	5.1%
Federal Government - Civilian	34,893	4.1%
Finance and Insurance	32,765	3.9%
Wholesale Trade	20,678	2.5%
Educational Services	19,943	2.4%
Manufacturing	16,606	2.0%
Agriculture, Forestry, Fishing and Hunting	15,087	1.8%
Professional, Scientific, and Technical Services	14,458	1.7%
Arts, Entertainment, and Recreation	10,574	1.3%
Management of Companies and Enterprises	9,499	1.1%
Information	5,142	0.6%
Utilities	4,121	0.5%
Unclassified Industry	3,914	0.5%
Mining, Quarrying, and Oil and Gas Extraction	599	0.1%

Source: Lightcast™ and DBEDT calculation.

As shown in the following table, in 2022, the Creative Sector accounted for \$5.1 billion of GDP, or 5.4% of the state total.

**Table E3. Creative Sector GDP Compared with Other Industries, 2022**

Sector/Industry	2022 GDP (\$M)	% of 2022 Civilian GDP
<b>Total Civilian 1/</b>	<b>95,478</b>	<b>100.0%</b>
Real Estate and Rental and Leasing	17,419	18.2%
Accommodation and Food Services	9,699	10.2%
State and Local Government	8,553	9.0%
Retail Trade	7,607	8.0%
Health Care and Social Assistance	7,467	7.8%
Construction	5,715	6.0%
Federal Government - Civilian	5,616	5.9%
Transportation and Warehousing	5,137	5.4%
<b>Creative Sector</b>	<b>5,126</b>	<b>5.4%</b>
Finance and Insurance	4,078	4.3%
Wholesale Trade	3,258	3.4%
Administrative and Support and Waste Management and Remediation Services	2,949	3.1%
Utilities	2,519	2.6%
Other Services (except Public Administration)	2,320	2.4%
Manufacturing	1,708	1.8%
Professional, Scientific, and Technical Services	1,462	1.5%
Management of Companies and Enterprises	1,255	1.3%
Information	1,176	1.2%
Educational Services	1,098	1.2%
Arts, Entertainment, and Recreation	712	0.7%
Agriculture, Forestry, Fishing and Hunting	517	0.5%
Mining, Quarrying, and Oil and Gas Extraction	87	0.1%

1/ Lightcast's "Unclassified Industry", as seen in Table E2, is not defined to match BEA's GDP codes, so is excluded from GDP calculations.

Source: Lightcast™, BEA, and DBEDT calculation.

## Performance of the Creative Industries Portfolio

The primary purpose of this report is to measure the performance of the industry groups within the Creative Sector. For each of the industry groups in the Creative Sector, a performance profile was constructed composed of three primary performance measures: job growth, change in competitive national industry share, and level of concentration (or specialization) in Hawai'i's economy. The first two measures help assess the strength and competitiveness of the activity, while the third identifies likely export industries in the portfolio.

Combining the measures into a Performance Map Framework allows the Creative Sector industry groups to be placed into four performance groups, known as quadrants. (The full report explains this mapping process in more detail.)

**Table E4: Creative Sector Industry Groups Mapped by Performance, 2012-2022**

Total Creative Sector Jobs, 2022: 52,301					
Average Annual Earnings, 2022: \$67,847					
Job Growth Rate, 2012-2022: 9.3%					
<b>Emerging Group: 5.0% of Sector Jobs</b>			<b>Base-Growth Group: 0% of Sector Jobs</b>		
Industry Group	Job Growth Rate	Average Annual Earnings, 2022	Industry Group	Job Growth Rate	Average Annual Earnings, 2022
Film, TV, Video Production/ Distribution, Cable & Media Streaming	58.9%	\$100,740			
<b>Declining Group: 13.5% of Sector Jobs</b>			<b>Transitioning Group: 81.5% of Sector Jobs</b>		
Industry Group	Job Growth Rate	Average Annual Earnings, 2022	Industry Group	Job Growth Rate	Average Annual Earnings, 2022
Architecture	-2.9%	\$99,385	Business Consulting	27.5%	\$75,655
Cultural Activities	-5.1%	\$64,572	Computer Services and Software Publishers	22.5%	\$126,084
Radio and Television Broadcasting	-20.2%	\$78,074	Art Education	16.9%	\$22,907
Publishing and Information	-28.7%	\$77,904	Music	12.7%	\$42,836
			Performing and Creative Arts	8.9%	\$27,356
			Marketing, Photography and Related	7.6%	\$37,081
			Engineering and Research and Development	3.9%	\$119,574
			Design Services	1.6%	\$40,349

Source: Lightcast™ and DBEDT calculation.

*Emerging* and *Base-Growth* industry groups are considered high-performing industries. They have not only grown jobs over the period but have outperformed the same comparable industry groups nationally, suggesting that they are gaining in competitiveness. Emerging groups are not as concentrated in Hawai'i's civilian economy as Base-Growth groups, but they are candidates for becoming economic drivers in the future.

*Declining* and *Transitioning* industry groups face challenges. Transitioning industry groups are still growing or holding steady in terms of job count. However, they are growing more slowly than their national counterparts. This suggests that they have reached a plateau in terms of competitiveness. Finally, Declining industry groups have lost jobs during the period of the analysis. In some cases, this may be the result of unusual factors. In other cases, like information and broadcasting, it may reflect outsourcing of services beyond Hawai'i and/or significant increases in productivity arising from emerging technology, which reduces labor needs. In either case, these industry groups warrant closer study to understand the challenges and barriers to growth that they are facing.

Overall, the Creative Sector industry groups added 4,443 jobs to the state's civilian economy between 2012 and 2022. This amounted to a jobs growth rate of 9.3%, higher than the 5.1% rate in Hawai'i's civilian economy jobs over the period. The leading performer of the Creative Sector was the Film, TV, Video Production/Distribution, Cable & Media Streaming group. The 2022 average annual earnings for the Creative Sector were \$67,847, which was higher than the state's civilian economy average of \$66,971.

## Creative Sector Industry Groups' Performance

Only one Creative Sector industry group, Film, TV, Video Production/Distribution, Cable & Media Streaming, registered as high-performing (Emerging) in Hawai'i for the 2012 to 2022 period.



*The Henry Kapono & Friends Home In the Islands (HITI) concert was developed in 2020/21 through a partnership between the Henry Kapono Foundation, Hawaii Tourism Authority (HTA), Native Hawaiian Hospitality Association (NaHHA) and the Creative Industries Division DBEDT (CID). Photo credit: Henry Kapono Foundation*

Eight of the Creative Sector industry groups were in the Transitioning quadrant for the 2012 to 2022 period. These ranged from Design Services, which had a 1.6% Job Growth Rate, to Business Consulting, which had a 27.5% rate. However, while these industry groups grew jobs, their growth rates were below the same industries nationally. As a result, they lost some ground to the nation in terms of competitive industry share.


Finally, the four Creative Sector industry groups that lost jobs during the 2012 to 2022 period fell into the Declining quadrant of the performance maps; these were Architecture, Cultural Activities, Radio and Television Broadcasting, and Publishing and Information.

The independence of these Creative Sector industry groups is not clear. For instance, the high performance of cultural activities in the performance map may reflect the strong tourism demand over the period, rather than a specific local or export market for cultural products. Likewise, some targets may perform poorly because they are tied to another industry that has experienced difficulties.

## Conclusions and Next Steps

Work should continue to flesh out the dimensions and opportunities of the commercial markets served by the Creative Sector industry groups. This is especially important for the digital media and the broader film industry group, which are only partially captured in the NAICS film production industry.


Also needing closer study is the link between specific Creative Sector activity and emerging technologies in information, communications, entertainment, and the broad range of commercial applications that are being driven by innovation. Learning how Creative Sector activity supports and utilizes emerging technology can help clarify the skill sets and educational elements that will help make Hawai'i a leader in innovation.



## Generating & Collecting Music Revenues for Hawaii Artists


with

## United States Senator Mazie K. Hirono



**U.S. Senator Mazie K. Hirono**  
(D-Hawaii)


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Chief Officer  
Creative Industries Division




**Nalani Jenkins**  
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**Kris Ahrend**  
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(The MLC)




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*CID hosted a webinar conversation with US Senator Mazie K. Hirono, who has been instrumental in introducing legislation to address IP protections and improvements at the U.S. Copyright Office. The event will explore opportunities for local singer/songwriters, composers, and lyricists to generate, collect and access digital audio royalties and new revenue streams for their work.*

## I. INTRODUCTION

Development of Hawai'i's key Creative Sector activities has become an important focus of the state's economic development efforts in recent years for several reasons. First, Hawai'i's cultural diversity and the unique heritage of its Hawaiian host culture are major attractions for the millions of visitors that inject billions of dollars into Hawai'i's economy each year. Second, the depth of Hawai'i's creative and cultural talent and unique artistic content helps Hawai'i's creative products compete in global markets. The visitor market helps arts and culture activities to maintain critical mass. Visitors absorb the creative products of Hawai'i and share their discoveries with others. Third, the Creative Sector industries and their workforce are key sources of ideas, content, and talent for Hawai'i's emerging technology sector. Advances in science and technology have made it possible for the development and delivery of new and valuable intellectual property, such as computer animation, mini-applications for mobile devices, and even 3D modeling of potential new products. While the property rights to new technologies like smartphones, tablets, and 3D TVs may be owned and licensed by a few, or even just a single company, content development stemming from, or using these technologies has no limit in terms of products and number of companies that can benefit from content development.

### The Definition of the Creative Sector

In 2007 DBEDT's Research and Economic Analysis Division (READ), in conjunction with DBEDT's Creative Industries Division (CID), developed a measure for the Creative Sector that focused on key industry groups, highlighted by film and TV, music, and performing arts.<sup>2</sup>

Since that report, several emerging areas have been added to that focus of interest, in particular emerging types of intellectual property based on new technologies for developing and delivering content through digital media and the internet. The priority focus by Hawai'i on the Creative Sector is now on several key activities for which it has an established competitive advantage as well as areas based on emerging technology that can generate valuable exports and high-paying jobs including:

- Film and TV
- Music
- Digital media products (such as games and mobile applications)
- Animation

To support the evolving development focus, CID and READ determined that a broader definition of the sector was needed. More current definitions of the Creative Sector were reviewed, and the scope of the activities was revised in large part based on a similar study in Massachusetts.<sup>3</sup> The definition is also consistent with DBEDT's Targeted & Emerging Industries reports for the sector.

In addition to including more technology-based Creative Sector activities, the newer Massachusetts definition also broadens the scope of industries to include such industry groups as Advertising and Marketing, Design Services, Architecture, Engineering and Research and Development.

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<sup>2</sup> *The Creative Industry in Hawaii*, April 2007, DBEDT.

<sup>3</sup> Specifically the *North Shore Creative Economy, Market Analysis and Action Plan*, ConsultEcon, Inc., Economic Research and Management Consultants. Prepared for: the Enterprise Center at Salem State College, the Salem Partnership, and the Creative Economy Association of the North Shore, April 2009.

Reports based on that framework continue to be updated.<sup>4</sup> This report is a continuation of a series of reports, updating Hawai'i's Creative Industries Report with the latest data.

## Data Sources

A major feature of Creative Sector reports is measurability and comparability. Industries have been defined using the North American Industrial Classification System, or *NAICS*, which provides a rich source of standard data at a detailed level and permits the comparison of Hawai'i industries against the same activities nationally, allowing for better measures of performance. Without that standard data, we would be faced with the need to do special surveys and compilations, which are costly and usually not comparable with similar activity elsewhere. 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; this report uses the latest definitions from the 2022 update. See the Appendix for the full list of NAICS in this report and the conversion of 2017 NAICS to 2022 NAICS.

The data for this report were developed by DBEDT for Hawai'i's Targeted and Emerging Industries report, which includes the Creative Sector.<sup>5</sup> Data consist primarily of jobs and labor earnings that are available annually for detailed industries.<sup>6</sup> Other measures such as sales, output, and gross product are not available as frequently or in as much detail.



*Noted Hollywood actor, Cliff Curtis, mentoring participants of the International Cultural Arts Network participants actor's workshop, sponsored by Creative Industries Division. Photo credit: @yourmug*

<sup>4</sup> *Hawai'i's Creative Industries*. The Creative Industry in Hawai'i.  
[https://dbedt.hawaii.gov/economic/reports\\_studies/hawaii-creative-report/](https://dbedt.hawaii.gov/economic/reports_studies/hawaii-creative-report/).

<sup>5</sup> The framework was developed by DBEDT for the evaluation of emerging industry performance. See *Hawai'i's Targeted and Emerging Industries*, [https://dbedt.hawaii.gov/economic/reports\\_studies/emerging-industries/](https://dbedt.hawaii.gov/economic/reports_studies/emerging-industries/).

<sup>6</sup> The basic data are compiled by Lightcast™ (formerly EMSI) and processed by DBEDT. Lightcast™ supplements data from the Federal Departments of Labor and Commerce by including estimates of proprietors and self-employed jobs, and by estimating data for very small industries that are not reported by the Federal agencies due to disclosure issues.

## II. OVERVIEW OF HAWAII'S CREATIVE SECTOR

Between 2012 and 2022, Hawai'i saw Creative Sector jobs spread across 13 industry groups increase by 9.3%, reaching 52,301 jobs and average annual earnings of \$67,847 in 2022.

The estimate of jobs is based on NAICS classifications which tend to identify producers and their output. NAICS data is less focused on major commercial markets for Creative Sector products such as digital media, computer animation, and games. It doesn't measure many of the likely industries creating products for these markets, such as computer programming, engineering, and film and video production. While there are shortcomings with the NAICS data, it makes comparisons with national levels possible.

**Table 1. Creative Sector Industry Groups, 2022**

Sector / Industry Group	2022 Jobs
<b>Total Creative Sector</b>	<b>52,301</b>
Marketing, Photography and Related	11,249
Performing and Creative Arts	9,450
Business Consulting	6,188
Engineering and Research and Development	5,988
Computer Services and Software Publishers	5,730
Cultural Activities	2,912
Film, TV, Video Production/Distribution, Cable & Media Streaming	2,626
Design Services	1,974
Architecture	1,855
Publishing and Information	1,458
Music	1,305
Radio and Television Broadcasting	801
Art Education	764

Source: Lightcast™ and DBEDT calculation.

It should be noted that not all industry groups in the Creative Sector portfolio are the subject of active assistance by the state or local economic development organizations. Development interests include film/TV, music, cultural activities, performing arts, and computer services related to digital media.<sup>7</sup>

Other groups like Business Consulting, Publishing and Information, Broadcasting, and Architecture have not yet been the focus of development efforts. This is mainly because they were added to the portfolio through the adoption of the broad definition of the Creative Sector.

<sup>7</sup> Film Hawai'i. State of Hawaii. Hawaii Film Office. <https://filmoffice.hawaii.gov/incentives-tax-credits/>.

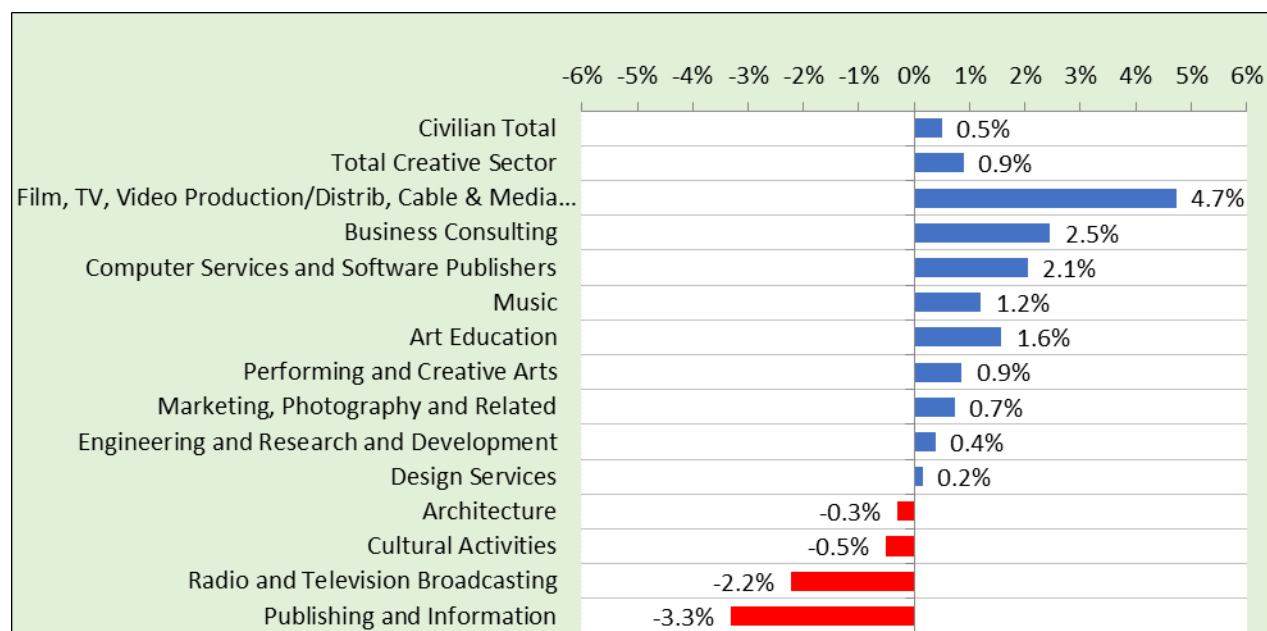


Brands Salvage Public and Jana Lam, Fellows in the inaugural Creative Lab Hawaii Fashion Immersive, showcase their products at their respective shops in Hawaii and in boutiques throughout the world. Photo Credit: Photo credit Nella Media Group

## Creative Sector Job Growth

In terms of job growth, the Creative Sector portfolio mostly performed above the average over the 2012 to 2022 period (Figure 1). Nine of the thirteen industry groups showed a positive average annual growth rate over the period. Eight groups outperformed the state's civilian jobs' average annual growth rate of 0.5%. Film, TV, Video Production/Distribution, Cable & Media Streaming topped the list with a 4.7% average annual growth rate. This was followed by business consulting. Average annual growth rates in this report were calculated using the compound annual growth rate formula.

The four industry groups that lost jobs over the same period were Architecture, Cultural Activities, Radio and TV Broadcasting, and Publishing and Information.

**Figure 1. Average Annual Growth in the Creative Sector, 2012-2022**

Source: Lightcast™ and DBEDT calculation.

## National Competitiveness of the Creative Sector

Job growth helps show the Creative Sector's competitiveness within Hawai'i's civilian economy. Note that "civilian economy" is defined as all industries in the economy minus federal military industries listed under NAICS 9012. Using the civilian economy makes our measurements and comparisons more concise.

Another measure is their performance compared to the nation's comparable sector. If Hawai'i's Creative Sector job growth rate is higher than the nation's comparable sector, Hawai'i's Creative Sector is effectively increasing its national competitive share. If the sector is increasing job growth more slowly in Hawai'i than its national share, then it is *decreasing* its competitive share.<sup>8</sup> This methodology applies to industry groups and industries.

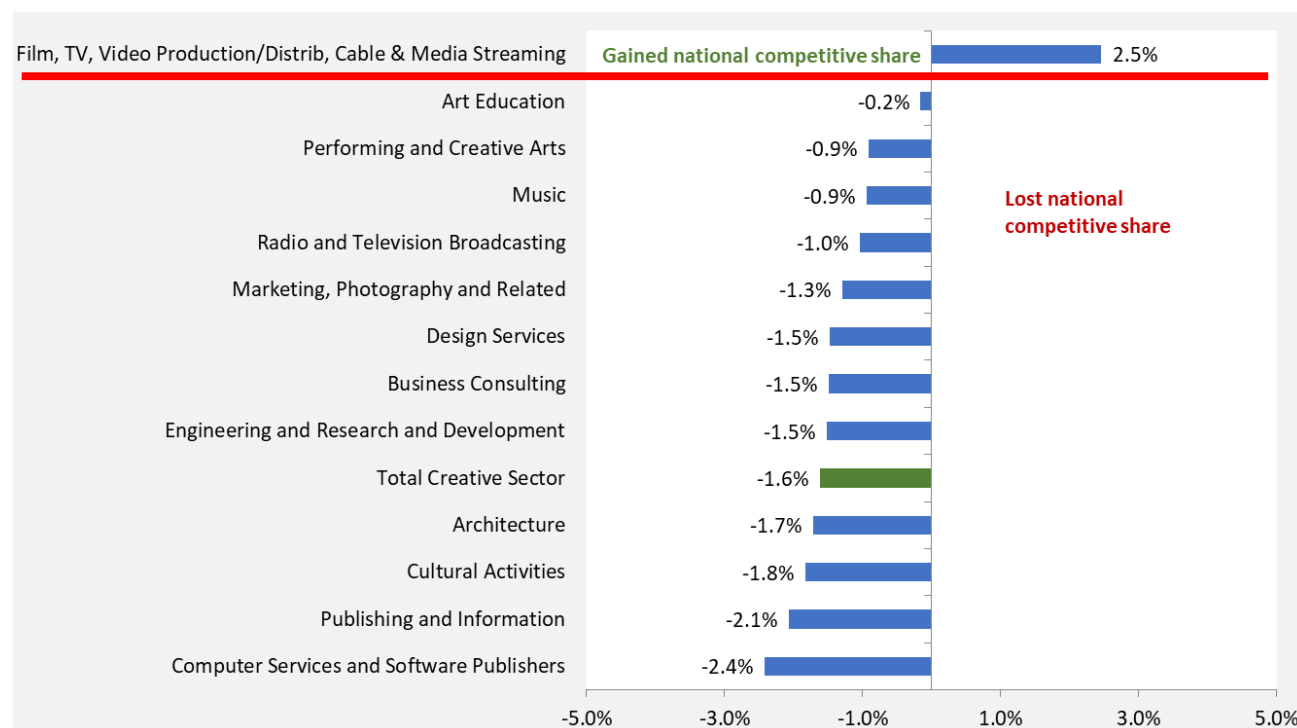
Figure 2 shows how much more or less Hawai'i's Creative Sector and industry groups increased per year on average than the nation's comparable sector and groups. For instance, over the 2012 to 2022 period, jobs in the Film, TV, Video Production/Distribution, Cable & Media Streaming industry group had an average annual growth rate of 2.5 percentage points more in Hawai'i than the nation's comparable group. Thus, this industry group gained a competitive national share. On the other hand, even though the Computer Services and Software Publishers industry group's jobs increased over this period, it lost competitive national share due to an average annual growth rate that was 2.4 percentage points below the nation's comparable group rate.

The industry groups of Art Education, Music, Performing and Creative Arts, Business Consulting, Computer Services and Software Publishers, Design Services, Engineering and Research and Development, and Marketing, Photography and Related lost competitive national share even though they

<sup>8</sup> A more complete discussion of the performance metrics and framework for analysis is contained in the DBEDT report Benchmarking Hawai'i's Emerging Industries, available for download at [http://hawaii.gov/dbedt/info/economic/data\\_reports/emerging-industries/](http://hawaii.gov/dbedt/info/economic/data_reports/emerging-industries/).

increased their statewide job counts. Industry groups that have both positive job growth and an increase in competitive national industry share represent the high-performing groups over a given period. Industry groups with a higher competitive share metric have a higher comparative advantage compared to the national industry groups over a given period.

**Figure 2. Gain or Loss of National Competitive Industry Share, 2012-2022**



Source: Lightcast™ and DBEDT calculation.

## Industry Concentration – Hawai‘i’s Creative Specialties

A third performance metric that helps in the evaluation of the Creative Sector is job concentration (Figure 3). This is a measure of how much Hawai‘i specializes and helps shed light on the export orientation.

Export activity brings new money into the state and is a basis for long-term industry growth. Unfortunately, estimates of industry exports are not part of standard industry data programs. Thus, it is not clear how much output in each industry is exported.

However, it is possible to identify *likely* export industries by measuring the concentration of their employment in the state’s civilian economy. An industry that employs a significantly higher proportion of jobs in Hawai‘i than does the same industry nationally is relatively more concentrated and is likely to be exporting at least some of its output.

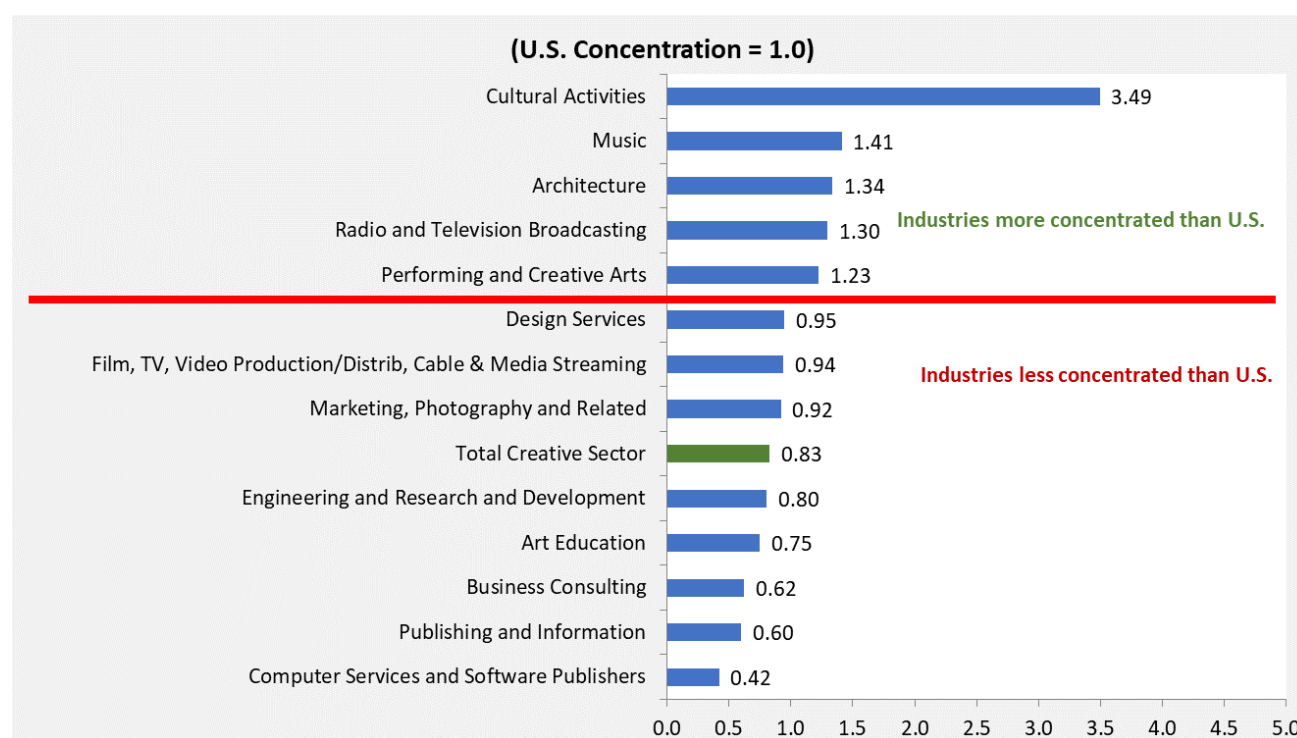
Industry concentration is measured by a metric called the Location Quotient, or LQ for short. The LQ for an industry at the U.S. level is fixed at 1.0. Hawai‘i industries with an LQ measure of more than 1.0 are more concentrated in the economy than the same industry for the U.S. as a whole. Those below 1.0 are less concentrated. This method works for industries, industry groups, and sectors.

For instance, the measure for Cultural Activities in Figure 3 means that employment in Hawai‘i’s cultural industry group is 3.5 times more concentrated than the nation’s comparable group. This

suggests that cultural activities are relatively more important to Hawai'i and may be exporting a significant amount of the industry's output. On the other hand, Computer Services and Software Publishers in Hawai'i with, an LQ of just 0.4, have a little less than half the employment concentration of the nation's comparable group. While it is possible that business consulting may be exporting some of its output, it has a long way to go to demonstrate the strong comparative advantage shown by the more concentrated industries above the 1.0 level.

In addition to Cultural Activities, Music, Architecture, Radio and Television Broadcasting, and Performing and Creative Arts had concentrations in Hawai'i's civilian economy that were higher than the nation's comparable groups. These more concentrated industry groups are likely helping to drive Hawai'i's economy. Industry groups that are not as concentrated in Hawai'i as they are nationally likely serve mainly local demand but may also export some of their output.

**Figure 3. Concentration of Industry Group Employment Compared to U.S., 2022**



Source: Lightcast™ and DBEDT calculation.



*Creative Lab Hawai'i, founded in 2012 by the Hawai'i State Department of Business, Economic Development, and Tourism's Creative Industries Division (CID), is a key facet of DBEDT's HI Growth Initiative. Creative Lab fosters talent development in Hawai'i's innovation ecosystem to increase exports, attract investment, and build the state's creative entrepreneurial capacity.*

## Performance Map Framework: Measuring Creative Industries

A framework to better understand the overall implications of these key performance measures would be very helpful, especially one that can clarify the notion of emerging industries and how they can be measured. A closely related framework in the economic development research tool box is the industry life cycle model. This model breaks industries in an economy into four generalized stages of life, starting with an *Emerging* phase, moving to a *Base-Growth* industry phase, followed by a mature or *Transitioning* phase, and finally a *Declining* phase. Of course, not all industries fit nicely into this notion, especially over short periods. However, with some qualifications, this notion of development stages can help us evaluate the status of the Creative Sector portfolio.

Using the performance metrics from Figures 1, 2, and 3, the Creative Sector, industry groups, and industries can be placed into one of four life-cycle quadrants according to the criteria shown in Table 2.

**Table 2. 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)

**Emerging Quadrant:** These are industries that are potentially in the early, take-off stage. They have been performing well by showing both job growth and an increase in their competitive share of the national industry. However, these industries have yet to achieve a concentration in the state's economy

equal to the same industry in the U.S. as a whole. An *Emerging* creative industry is one that has found a competitive niche in the economy and is gaining in competitive national industry share. At some point, if the process continues, the industry's concentration will exceed the national level and the Emerging industry will graduate to a Base-Growth industry in the state's economy.

**Base-Growth Quadrant:** These are industries that have become potential economic drivers. They are growing their job counts and are increasing their competitive national industry share. Moreover, they have exceeded the national level of industry concentration in the economy and are likely exporting at least a proportion of their output.

**Transitioning Quadrant:** Transitioning creative industries are still maintaining or growing their workforce, however, they are losing competitive national industry share (growing more slowly than the same industry nationally). This is typical of mature industries that are still important to the economy but are having difficulty maintaining national market share. They are considered transitioning because they could either continue to lose industry share and eventually fall into decline or reinvigorate themselves and begin to regain industry share and continue growing. Also, in this quadrant may be former Emerging industries that never reached Base-Growth status before losing competitive national industry share and some previously Declining industries that are fighting back into competitiveness.

**Declining Quadrant:** The Declining quadrant contains industry groups showing job losses over the period. All these Creative industry groups have lost jobs to some extent between 2012 and 2022. Most industries that are losing jobs are also losing competitive national industry share. However, while those are declining in jobs over the period, these industries are not necessarily dying industries. A number of temporary circumstances may have put some of Hawai'i's creative industries into the Declining quadrant over the period studied. Their appearance in the Declining quadrant is a red flag that warrants more careful analysis to understand the problem.

It must be emphasized that the performance map framework is more of a guide to understanding an industry's situation rather than a conclusion about the value of the industry to the state. It provides a starting point for assessing the strengths and weaknesses of the industries in the portfolio. Also, within industries that are experiencing mixed or poor performance, there may be pockets of very successful firms.

### III. CREATIVE SECTOR PORTFOLIO PERFORMANCE

Table 3 shows how the individual Creative Sector industry groups fell on the performance map based on the 2012 to 2022 period performance measures. Overall, the Creative Sector had 52,301 jobs in 2022.

**Table 3: Creative Sector Industry Groups in Hawai'i Mapped by Performance, 2012-2022**

Total Creative Sector Jobs, 2022: 52,301					
Average Annual Earnings, 2022: \$67,847					
Job Growth Rate, 2012-2022: 9.3%					
<b>Emerging Group: 5.0% of Sector Jobs</b>			<b>Base-Growth Group: 0% of Sector Jobs</b>		
Industry Group	Job Growth Rate	Average Annual Earnings, 2022	Industry Group	Job Growth Rate	Average Annual Earnings, 2022
Film, TV, Video Production/ Distribution, Cable & Media Streaming	58.9%	\$100,740			
<b>Declining Group: 13.5% of Sector Jobs</b>			<b>Transitioning Group: 81.5% of Sector Jobs</b>		
Industry Group	Job Growth Rate	Average Annual Earnings, 2022	Industry Group	Job Growth Rate	Average Annual Earnings, 2022
Architecture	-2.9%	\$99,385	Business Consulting	27.5%	\$75,655
Cultural Activities	-5.1%	\$64,572	Computer Services and Software Publishers	22.5%	\$126,084
Radio and Television Broadcasting	-20.2%	\$78,074	Art Education	16.9%	\$22,907
Publishing and Information	-28.7%	\$77,904	Music	12.7%	\$42,836
			Performing and Creative Arts	8.9%	\$27,356
			Marketing, Photography and Related	7.6%	\$37,081
			Engineering and Research and Development	3.9%	\$119,574
			Design Services	1.6%	\$40,349

Source: Lightcast™ and DBEDT calculation.

The Creative Sector added 4,443 jobs to the state's civilian economy between 2012 and 2022. This amounted to a 9.3% Job Growth Rate, higher than the 5.1% increase in Hawai'i's civilian economy as a whole over the period. The 2022 average annual earnings of the Creative Sector, at \$67,847, was slightly higher than the state's civilian economy average, at \$66,971.

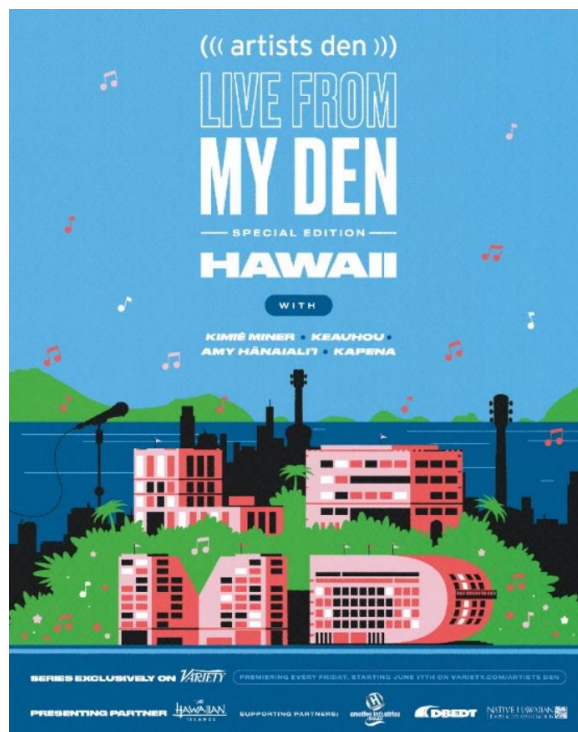
#### High-Performing Creative Sector Industry Groups

Only one Creative Sector industry group, Film, TV, Video Production/Distribution, Cable & Media Streaming, registered as high-performing industries for the 2012 to 2022 period. The group had a 58.9% Job Growth Rate, from 1,653 jobs in 2012 to 2,626 jobs in 2022, and had average annual earnings of \$100,740 in 2022.

#### Other Creative Sector Industry Groups Performance

Eight of the Creative Sector industry groups were in the Transitioning quadrant for the 2012 to 2022 period. These ranged from Design Services, which increased only 1.6% in jobs, to Business Consulting, which grew jobs by 27.5%. However, while these industry groups grew, their growth rates were below the nation's comparable group rates. As a result, they lost some ground to the nation in terms of competitive industry share.

The four Creative Sector industry groups that lost jobs during the 2012 to 2022 period fell into the Declining quadrant of the performance maps; these were Architecture, Cultural Activities, Radio and Television Broadcasting, and Publishing and Information. It is important to note that the independence of these groups is not yet clear. The performance of some groups may reflect strong or weak markets driving other industries for which the target is simply a supplier. For instance, the high performance of cultural activities in the performance map could reflect the strong tourism demand over the period, rather than a specific local or export market for cultural products. Likewise, some targets may perform poorly because they are tied to another industry that has experienced difficulties.



*In coordination with Hawaii Tourism Authority (HTA), Native Hawaiian Hospitality Association (NaHHA), the Creative Industries Division worked during 2021 with the acclaimed Artists Den to produce the 4-part digital Live From My Den (LFMD) Special Edition Hawaii series, featuring Kimié Miner, Kapena, Amy Hānaiali'i, and Keauhou. Image Credit: Artists Den*

## IV. CREATIVE SECTOR PERFORMANCE BY COUNTY

The following tables summarize county performance for Creative Sector industry groups, measured by paid employment and self-employed/sole proprietors, during the 2012 to 2022 period.

### Honolulu County

Honolulu County accounted for 37,768 of the state's Creative Sector jobs in 2022, a 0.9% average annual increase from 2012. As shown in Table 4, two Creative Sector industry groups were high-performing in Honolulu County in the 2012 to 2022 period. These high-performing groups not only grew jobs during the period but also increased their competitive share of the activity by exceeding the national growth rate for the industry. These included: Film, TV, Video Production/ Distribution, Cable & Media Streaming, and Music. Four groups lost jobs in Honolulu County over the 2012 to 2022 period: Architecture, Cultural Activities, Publishing and Information, and Radio and Television Broadcasting.

**Table 4. Creative Sector and Industry Group Jobs, Honolulu County, 2012-2022**

Sector / Industry Group	Quadrant	Jobs			Average Annual Job Growth Rate		
		2012	2020	2022	2012-2020	2020-2022	2012-2022
Total Creative Sector	Transitioning	34,670	34,826	37,768	0.1%	4.1%	0.9%
Film, TV, Video Production/ Distribution, Cable & Media Streaming	Base-Growth	1,379	1,625	2,325	2.1%	19.6%	5.4%
Music	Base-Growth	587	614	857	0.6%	18.1%	3.9%
Art Education	Transitioning	500	518	553	0.5%	3.3%	1.0%
Business Consulting	Transitioning	3,816	4,577	4,861	2.3%	3.1%	2.5%
Computer Services and Software Publishers	Transitioning	3,957	3,944	4,495	0.0%	6.8%	1.3%
Design Services	Transitioning	1,239	1,261	1,296	0.2%	1.4%	0.5%
Engineering and Research and Development	Transitioning	4,690	4,718	4,978	0.1%	2.7%	0.6%
Marketing, Photography and Related	Transitioning	7,237	7,607	7,764	0.6%	1.0%	0.7%
Performing and Creative Arts	Transitioning	4,614	4,535	4,836	-0.2%	3.3%	0.5%
Architecture	Declining	1,552	1,444	1,428	-0.9%	-0.6%	-0.8%
Cultural Activities	Declining	2,848	2,220	2,668	-3.1%	9.6%	-0.7%
Publishing and Information	Declining	1,409	1,125	1,060	-2.8%	-3.0%	-2.8%
Radio and Television Broadcasting	Declining	842	637	647	-3.4%	0.8%	-2.6%

Source: Lightcast™ and DBEDT calculation.

The comparisons of the Honolulu County Creative Sector's job growth and earnings with the comparable state sector and comparable national sector are listed in Table 5. For Creative Sector job growth, Honolulu County's 0.9% average annual growth rate was the same as the state's 0.9% rate, but lower than the nation's 2.5% rate. For average annual earnings in 2022 for the Creative Sector, Honolulu County was higher than the state's comparable sector, but much lower than the nation's comparable sector.

**Table 5. Performance of Honolulu County Creative Sector and Industry Groups Compared with State and Nation, 2012-2022**

Sector / Industry Group	Quadrant	Job Change 2012-2022	Average Annual Job Growth Rate			Average Annual Earnings, 2022		
			County	State	U.S.	County	State	U.S.
Total Creative Sector	Transitioning	3,097	0.9%	0.9%	2.5%	\$74,475	\$67,847	\$102,717
Film, TV, Video Production/Distribution, Cable & Media Streaming	Base-Growth	946	5.4%	4.7%	2.3%	\$100,661	\$100,740	\$152,917
Music	Base-Growth	270	3.9%	1.2%	2.1%	\$50,469	\$42,836	\$48,113
Art Education	Transitioning	53	1.0%	1.6%	1.7%	\$22,286	\$22,907	\$19,712
Business Consulting	Transitioning	1,045	2.5%	2.5%	4.0%	\$82,418	\$75,655	\$102,713
Computer Services and Software Publishers	Transitioning	538	1.3%	2.1%	4.5%	\$127,322	\$126,084	\$158,327
Design Services	Transitioning	57	0.5%	0.2%	1.6%	\$40,544	\$40,349	\$53,919
Engineering and Research and Development	Transitioning	287	0.6%	0.4%	1.9%	\$120,894	\$119,574	\$133,311
Marketing, Photography and Related	Transitioning	527	0.7%	0.7%	2.0%	\$38,034	\$37,081	\$68,302
Performing and Creative Arts	Transitioning	222	0.5%	0.9%	1.8%	\$29,856	\$27,356	\$32,738
Architecture	Declining	-125	-0.8%	-0.3%	1.4%	\$106,569	\$99,385	\$92,867
Cultural Activities	Declining	-180	-0.7%	-0.5%	1.3%	\$65,002	\$64,572	\$71,616
Publishing and Information	Declining	-349	-2.8%	-3.3%	-1.3%	\$72,928	\$77,904	\$151,199
Radio and Television Broadcasting	Declining	-194	-2.6%	-2.2%	-1.2%	\$82,340	\$78,074	\$96,107

Source: Lightcast™ and DBEDT calculation.

## Hawai'i County

Hawai'i County accounted for 5,597 of the state's Creative Sector jobs in 2022, a 1.2% average annual growth rate from 2012. As shown in Table 6, seven Creative Sector industry groups were high-performing in Hawai'i County during the 2012 to 2022 period. These high-performing groups not only grew jobs during the period but also increased their competitive share of the activity by exceeding the national job growth rate for the comparable group. Base-Growth industries included: Architecture, Cultural Activities, and Music. Emerging industries included: Art Education, Computer Services and Software Publishers, Film, TV, Video Production/ Distribution, Cable & Media Streaming, and Radio and Television Broadcasting. Two Creative Sector industry groups lost jobs in Hawai'i County over the 2012 to 2022 period.

**Table 6. Creative Sector and Industry Group Jobs, Hawai'i County, 2012-2022**

Sector / Industry Group	Quadrant	Jobs			Average Annual Job Growth Rate		
		2012	2020	2022	2012-2020	2020-2022	2012-2022
Total Creative Sector	Transitioning	4,990	5,250	5,597	0.6%	3.3%	1.2%
Architecture	Base-Growth	145	159	178	1.1%	5.8%	2.1%
Cultural Activities	Base-Growth	85	122	133	4.6%	4.7%	4.6%
Music	Base-Growth	170	155	237	-1.2%	23.7%	3.4%
Art Education	Emerging	53	58	66	1.1%	7.2%	2.3%
Computer Services and Software Publishers	Emerging	246	380	442	5.6%	7.9%	6.0%
Film, TV, Video Production/ Distribution, Cable & Media Streaming	Emerging	72	95	97	3.6%	1.1%	3.1%
Radio and Television Broadcasting	Emerging	50	69	65	4.0%	-2.7%	2.6%
Business Consulting	Transitioning	501	576	597	1.7%	1.8%	1.8%
Design Services	Transitioning	283	303	316	0.8%	2.2%	1.1%
Marketing, Photography and Related	Transitioning	1,236	1,238	1,245	0.0%	0.3%	0.1%
Performing and Creative Arts	Transitioning	1,332	1,412	1,538	0.7%	4.4%	1.4%
Engineering and Research and Development	Declining	573	551	561	-0.5%	0.9%	-0.2%
Publishing and Information	Declining	243	135	123	-7.1%	-4.7%	-6.6%

Source: Lightcast™ and DBEDT calculation.

The comparisons of Hawai'i County Creative Sector's job growth and earnings with the comparable state sector and comparable national sector are listed in Table 7. For Creative Sector job growth, Hawai'i County's 1.2% average annual growth rate was higher than the state's 0.9% rate but lower than the nation's 2.5% rate. For average annual earnings in 2022 for the Creative Sector, Hawai'i County was lower than the state's comparable sector, and much lower than the nation's comparable sector.

**Table 7. Performance of Hawai'i County Creative Sector and Industry Groups Compared with State and Nation, 2012-2022**

Sector / Industry Group	Quadrant	Job Change 2012-2022	Average Annual Job Growth Rate			Average Annual Earnings, 2022		
			County	State	U.S.	County	State	U.S.
Total Creative Sector	Transitioning	607	1.2%	0.9%	2.5%	\$47,190	\$67,847	\$102,717
Architecture	Base-Growth	33	2.1%	-0.3%	1.4%	\$72,898	\$99,385	\$92,867
Cultural Activities	Base-Growth	48	4.6%	-0.5%	1.3%	\$68,677	\$64,572	\$71,616
Music	Base-Growth	67	3.4%	1.2%	2.1%	\$26,243	\$42,836	\$48,113
Art Education	Emerging	13	2.3%	1.6%	1.7%	\$25,173	\$22,907	\$19,712
Computer Services and Software Publishers	Emerging	195	6.0%	2.1%	4.5%	\$95,188	\$126,084	\$158,327
Film, TV, Video Production/ Distribution, Cable & Media Streaming	Emerging	25	3.1%	4.7%	2.3%	\$73,578	\$100,740	\$152,917
Radio and Television Broadcasting	Emerging	15	2.6%	-2.2%	-1.2%	\$51,901	\$78,074	\$96,107
Business Consulting	Transitioning	95	1.8%	2.5%	4.0%	\$47,833	\$75,655	\$102,713
Design Services	Transitioning	33	1.1%	0.2%	1.6%	\$38,611	\$40,349	\$53,919
Marketing, Photography and Related	Transitioning	8	0.1%	0.7%	2.0%	\$29,631	\$37,081	\$68,302
Performing and Creative Arts	Transitioning	206	1.4%	0.9%	1.8%	\$23,598	\$27,356	\$32,738
Engineering and Research and Development	Declining	-12	-0.2%	0.4%	1.9%	\$110,104	\$119,574	\$133,311
Publishing and Information	Declining	-120	-6.6%	-3.3%	-1.3%	\$47,920	\$77,904	\$151,199

Source: Lightcast™ and DBEDT calculation.

## Maui County

Maui County accounted for 6,452 of the state's Creative Sector jobs in 2022, a 0.8% average annual growth rate increase from 2012. As shown in Table 8, four Creative Sector industry groups were high-performing in Maui County in the 2012 to 2022 period. These high-performing groups not only grew jobs during the period but also increased their competitive share of the activity by exceeding the national job growth rate for the comparable group. Emerging industries included: Art Education, Computer Services and Software Publishers, Cultural Activities, and Film, TV, Video Production/Distribution, Cable & Media Streaming. Five industry groups lost jobs in Maui County over the 2012 to 2022 period.

**Table 8. Creative Sector and Industry Group Jobs, Maui County, 2012-2022**

Sector / Industry Group	Quadrant	Jobs			Average Annual Job Growth Rate		
		2012	2020	2022	2012-2020	2020-2022	2012-2022
Total Creative Sector	Transitioning	5,967	5,773	6,452	-0.40%	5.7%	0.8%
Art Education	Emerging	76	83	95	1.10%	7.4%	2.3%
Computer Services and Software Publishers	Emerging	343	449	562	3.40%	11.9%	5.1%
Cultural Activities	Emerging	50	57	59	1.60%	1.3%	1.5%
Film, TV, Video Production/ Distribution, Cable & Media Streaming	Emerging	98	101	143	0.40%	18.9%	3.9%
Architecture	Transitioning	157	162	173	0.30%	3.3%	0.9%
Business Consulting	Transitioning	385	454	475	2.10%	2.3%	2.1%
Marketing, Photography and Related	Transitioning	1,354	1,451	1,588	0.90%	4.6%	1.6%
Performing and Creative Arts	Transitioning	2,147	2,067	2,345	-0.50%	6.5%	0.9%
Design Services	Declining	305	268	275	-1.60%	1.3%	-1.0%
Engineering and Research and Development	Declining	335	330	312	-0.20%	-2.8%	-0.7%
Music	Declining	358	133	151	-11.70%	6.6%	-8.3%
Publishing and Information	Declining	279	171	211	-5.90%	11.0%	-2.8%
Radio and Television Broadcasting	Declining	79	47	63	-6.20%	15.7%	-2.2%

Source: Lightcast™ and DBEDT calculation.

The comparisons of Maui County Creative Sector's job growth and earnings with the comparable state sector and comparable national sector are listed in Table 9. For Creative Sector job growth, Maui County's 0.8% average annual growth rate was lower than the state's 0.9% rate and the nation's 2.5% rate. For average annual earnings in 2022 for the Creative Sector, Maui County was lower than the state's comparable sector, and much lower than the nation's comparable sector.

**Table 9. Performance of Maui County Creative Sector and Industry Groups Compared with State and Nation, 2012-2022**

Sector / Industry Group	Quadrant	Job Change 2012-2022	Average Annual Job Growth Rate			Average Annual Earnings, 2022		
			County	State	U.S.	County	State	U.S.
Total Creative Sector	Transitioning	486	0.8%	0.9%	2.5%	\$51,733	\$67,847	\$102,717
Art Education	Emerging	19	2.3%	1.6%	1.7%	\$26,214	\$22,907	\$19,712
Computer Services and Software Publishers	Emerging	219	5.1%	2.1%	4.5%	\$133,897	\$126,084	\$158,327
Cultural Activities	Emerging	8	1.5%	-0.5%	1.3%	\$52,448	\$64,572	\$71,616
Film, TV, Video Production/ Distribution, Cable & Media Streaming	Emerging	45	3.9%	4.7%	2.3%	\$132,465	\$100,740	\$152,917
Architecture	Transitioning	15	0.9%	-0.3%	1.4%	\$66,405	\$99,385	\$92,867
Business Consulting	Transitioning	90	2.1%	2.5%	4.0%	\$41,269	\$75,655	\$102,713
Marketing, Photography and Related	Transitioning	234	1.6%	0.7%	2.0%	\$38,080	\$37,081	\$68,302
Performing and Creative Arts	Transitioning	198	0.9%	0.9%	1.8%	\$25,396	\$27,356	\$32,738
Design Services	Declining	-30	-1.0%	0.2%	1.6%	\$43,882	\$40,349	\$53,919
Engineering and Research and Development	Declining	-23	-0.7%	0.4%	1.9%	\$112,917	\$119,574	\$133,311
Music	Declining	-208	-8.3%	1.2%	2.1%	\$33,848	\$42,836	\$48,113
Publishing and Information	Declining	-68	-2.8%	-3.3%	-1.3%	\$124,130	\$77,904	\$151,199
Radio and Television Broadcasting	Declining	-16	-2.2%	-2.2%	-1.2%	\$67,855	\$78,074	\$96,107

Source: Lightcast™ and DBEDT calculation.



*The Maui Film Festival's Celestial Cinema showcases the work of Hollywood and Hawai'i Filmmakers and attracts hundreds of celebrities, filmmakers, global media, and visitors on the green in Wailea.*



*In 2021/22, in partnership with the Hawaii Academy of Recording Arts (HARA), and the High Technology Development Corporation (HTDC), the Creative Industries Division kicked off Hoku Nights, a new 1-Hour Monthly Series of concept films at the Entrepreneur's Sandbox featuring performances by Hawaii's music legends and emerging recording artists.*

## Kaua'i County

Kaua'i County accounted for 2,302 of the state's Creative Sector jobs in 2022, a 0.6% average annual growth rate from 2012. As shown in Table 10, four Creative Sector industry groups were high-performing in Kaua'i County during the 2012 to 2022 period. These high-performing groups not only grew jobs during the period but also increased their competitive share of the activity by exceeding the national job growth rate for the comparable group. Base-Growth industries included: Architecture, Music, and Performing and Creative Arts. Emerging industries included Art Education. Six industry groups lost jobs in Kaua'i County over the 2012 to 2022 period.

**Table 10. Creative Sector and Industry Group Jobs, Kaua'i County, 2012-2022**

Sector / Industry Group	Quadrant	Jobs			Average Annual Job Growth Rate		
		2012	2020	2022	2012-2020	2020-2022	2012-2022
Total Creative Sector	Transitioning	2,169	2,165	2,302	0.0%	3.1%	0.6%
Architecture	Base-Growth	56	76	76	4.0%	0.0%	3.2%
Music	Base-Growth	41	57	60	4.1%	2.9%	3.8%
Performing and Creative Arts	Base-Growth	580	607	731	0.6%	9.7%	2.3%
Art Education	Emerging	25	36	50	4.3%	18.3%	7.0%
Business Consulting	Transitioning	152	207	220	3.9%	3.2%	3.8%
Computer Services and Software Publishers	Transitioning	102	136	155	3.6%	6.8%	4.2%
Marketing, Photography and Related	Transitioning	618	637	621	0.4%	-1.2%	0.1%
Cultural Activities	Declining	85	37	51	-9.7%	16.2%	-5.0%
Design Services	Declining	117	86	86	-3.8%	0.1%	-3.0%
Engineering and Research and Development	Declining	160	142	123	-1.5%	-7.1%	-2.6%
Film, TV, Video Production/ Distribution, Cable & Media Streaming	Declining	99	45	55	-9.2%	9.8%	-5.7%
Publishing and Information	Declining	101	60	48	-6.4%	-10.4%	-7.2%
Radio and Television Broadcasting	Declining	33	38	26	1.9%	-17.8%	-2.4%

Source: Lightcast™ and DBEDT calculation.

The comparisons of Kaua'i County Creative Sector's job growth and earnings with the comparable state sector and comparable national sector are listed in Table 11. For Creative Sector job growth, Kaua'i County's 0.6% average annual growth rate was lower than the state's 0.9% rate and lower than the nation's 2.5% rate. For average annual earnings in 2022 for the Creative Sector, Kaua'i County was lower than the state's comparable sector, and much lower than the nation's comparable sector.

**Table 11. Performance of Kaua'i County Creative Sector and Industry Groups Compared with State and Nation, 2012-2022**

Sector / Industry Group	Quadrant	Job Change 2012-2022	Average Annual Job Growth Rate			Average Annual Earnings, 2022		
			County	State	U.S.	County	State	U.S.
Total Creative Sector	Transitioning	133	0.6%	0.9%	2.5%	\$44,558	\$67,847	\$102,717
Architecture	Base-Growth	21	3.2%	-0.3%	1.4%	\$101,013	\$99,385	\$92,867
Music	Base-Growth	19	3.8%	1.2%	2.1%	\$21,939	\$42,836	\$48,113
Performing and Creative Arts	Base-Growth	151	2.3%	0.9%	1.8%	\$25,010	\$27,356	\$32,738
Art Education	Emerging	25	7.0%	1.6%	1.7%	\$20,475	\$22,907	\$19,712
Business Consulting	Transitioning	69	3.8%	2.5%	4.0%	\$46,576	\$75,655	\$102,713
Computer Services and Software Publishers	Transitioning	53	4.2%	2.1%	4.5%	\$117,236	\$126,084	\$158,327
Marketing, Photography and Related	Transitioning	3	0.1%	0.7%	2.0%	\$32,294	\$37,081	\$68,302
Cultural Activities	Declining	-34	-5.0%	-0.5%	1.3%	\$42,533	\$64,572	\$71,616
Design Services	Declining	-31	-3.0%	0.2%	1.6%	\$32,504	\$40,349	\$53,919
Engineering and Research and Development	Declining	-37	-2.6%	0.4%	1.9%	\$113,907	\$119,574	\$133,311
Film, TV, Video Production/ Distribution, Cable & Media Streaming	Declining	-44	-5.7%	4.7%	2.3%	\$57,155	\$100,740	\$152,917
Publishing and Information	Declining	-53	-7.2%	-3.3%	-1.3%	\$43,157	\$77,904	\$151,199
Radio and Television Broadcasting	Declining	-7	-2.4%	-2.2%	-1.2%	\$61,984	\$78,074	\$96,107

Source: Lightcast™ and DBEDT calculation.

## V. CREATIVE SECTOR PERFORMANCE BY INDUSTRY GROUPS

This section takes a closer look at the performance of the Creative Sector industry groups. Detailed data are shown for selected groups in this section. However, complete data for all groups are in the Appendix.

States have increasingly come to realize that solely promoting technology does not necessarily generate creative innovation upon which technology depends. It is the creative input that helps focus the commercial development and application technology, as well as providing content, such as in digital entertainment. Beyond technology, creative activity generates major export products and services and is essential to differentiating Hawai'i's visitor products from other sun and surf destinations.

The diversity of creative activity has made the sector a difficult one to define for measurement purposes. As discussed earlier, to establish an improved definition, the DBEDT Research Division worked with the Creative Industries Division to better measure the sector considering similar efforts in other states. Based on this collaboration, an updated measurement for the sector was developed using the definition established in Massachusetts as a model. Table 12 shows the Creative Sector industry groups and their primary performance metrics.

**Table 12. Job Growth in Hawai'i's Creative Sector and Industry Groups, 2012-2022**

Sector / Industry Group	Hawai'i Jobs		Average Annual Job Growth Rate, 2012-2022		Average Annual Earnings, 2022		Performance Metrics		
	2012	2022	Hawai'i	U.S.	Hawai'i	U.S.	Competitive Share 2012-2022	Location Quotient (LQ), 2022	Change in LQ, 2012-2022
Total Creative Sector	47,857	52,301	0.9%	2.5%	\$67,847	\$102,717	-1.6%	0.83	-0.05
Marketing, Photography and Related	10,454	11,249	0.7%	2.0%	\$37,081	\$68,302	-1.3%	0.92	-0.02
Performing and Creative Arts	8,674	9,450	0.9%	1.8%	\$27,356	\$32,738	-0.9%	1.23	0.01
Business Consulting	4,854	6,188	2.5%	4.0%	\$75,655	\$102,713	-1.5%	0.62	-0.03
Engineering and Research and Development	5,763	5,988	0.4%	1.9%	\$119,574	\$133,311	-1.5%	0.80	-0.04
Computer Services and Software Publishers	4,678	5,730	2.1%	4.5%	\$126,084	\$158,327	-2.4%	0.42	-0.06
Cultural Activities	3,069	2,912	-0.5%	1.3%	\$64,572	\$71,616	-1.8%	3.49	-0.29
Film, TV, Video Production/ Distribution, Cable & Media Streaming	1,653	2,626	4.7%	2.3%	\$100,740	\$152,917	2.5%	0.94	0.27
Design Services	1,944	1,974	0.2%	1.6%	\$40,349	\$53,919	-1.5%	0.95	-0.04
Architecture	1,910	1,855	-0.3%	1.4%	\$99,385	\$92,867	-1.7%	1.34	-0.10
Publishing and Information	2,044	1,458	-3.3%	-1.3%	\$77,904	\$151,199	-2.1%	0.60	-0.07
Music	1,157	1,305	1.2%	2.1%	\$42,836	\$48,113	-0.9%	1.41	0.01
Radio and Television Broadcasting	1,003	801	-2.2%	-1.2%	\$78,074	\$96,107	-1.0%	1.30	-0.01
Art Education	654	764	1.6%	1.7%	\$22,907	\$19,712	-0.2%	0.75	0.06

Source: Lightcast™ and DBEDT calculation.

## Performing and Creative Arts

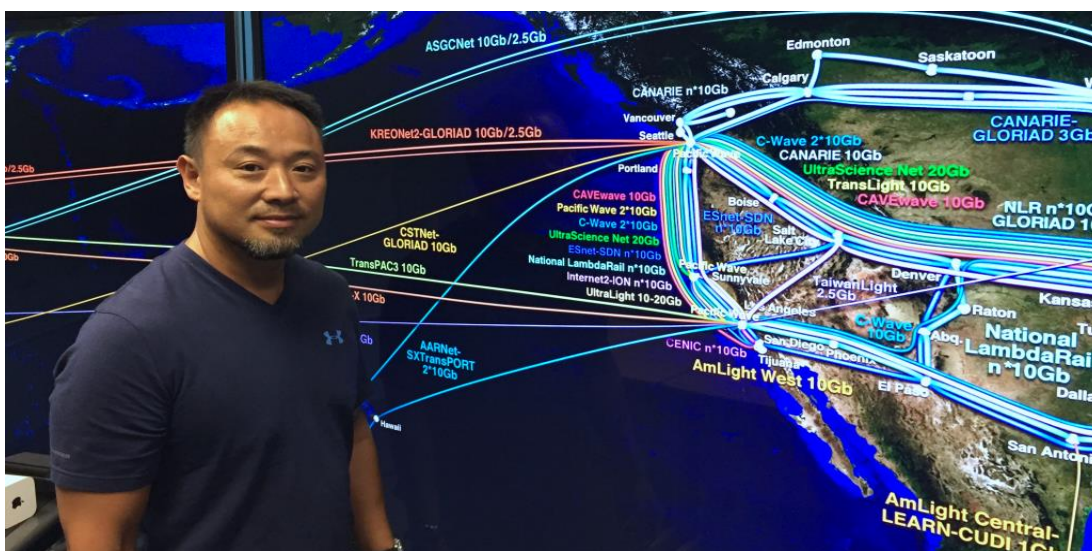
This industry group is composed of several areas of the arts including selected performing arts, creative arts (visual and literary), and supporting industries such as promoters, agents, managers, and art dealers. The group does not include musicians, who are included in the Music industry group, and museums, which are included in the Cultural Activities group. Both groups are discussed later.

Performing and Creative Arts is the second largest single industry group in the Creative Sector with 9,450 jobs in 2022, including self-employed workers. From 2012 to 2022, this group added 776 jobs. Jobs increased the most for Independent Artists, Writers, and Performers, gaining 630 jobs; followed by Dance Companies which gained 227 jobs. Jobs decreased the most for Other Performing Art Companies, losing 86 jobs. The earnings average for workers in the Performing and Creative Arts group was only \$27,356 in 2022. Since many of the jobs in this group are part-time, the average annual earnings do not represent a full-time labor force.

The Performing and Creative Arts group is very concentrated in Hawai'i, with 23% more jobs proportionately than for the group nationally. This reflects the interdependence between Hawai'i's rich artistic and cultural resources and the tourism sector. That interdependence also explains part of the under-performance of the industry group in the last several years, during which the tourism cycle peaked and began to decline. Beyond tourism, this sector also provides a channel for the input of artistic creativity to a range of other innovative activities, including film, various forms of digital media, architecture, and applied design.

## Engineering and Research and Development

One of the leading groups of Hawai'i's Creative Sector is Engineering and Research and Development, with 5,988 jobs in 2022. It is included in the Creative Sector because innovation and creativity are major drivers in the application of engineering and in transforming emerging technologies into commercial products and services.



*Co-Principal Investigator Jason Leigh, director of the University of Hawai'i at Mānoa's Laboratory for Advanced Visualization and Applications (LAVA). Photo credit LAVA, UH Mānoa.*

Jobs in the Engineering and Research and Development group increased by 0.4% annually from 2012 to 2022. The average annual earnings of this group were \$119,574 in 2022, the second highest among the whole Creative Sector. Detailed data can be found in the Appendix.

## Computer Services and Software Publishers

The Creative Sector places heavy emphasis on the marriage of new digital technology with traditional entertainment, cultural, and artistic content and is variously referred to as *digital media*, *creative media*, and sometimes *new media*. Evolving digital technology not only revolutionizes the delivery of traditional content such as music and movies, but it also pushes the bounds of possible content well beyond those traditional formats into animation, games, and a myriad of internet-based services. This in turn creates new commercial opportunities for programmers, artists, designers, musicians, and authors.

As Table 13 shows, the Computer Services and Software Publishers industry group includes both programming and software activities and support activities such as systems design and computer facilities.

**Table 13. Computer Services and Software Publishers Industry Group, 2012-2022**

Industry Group / Industry	Hawai'i Jobs		Average Annual Job Growth Rate, 2012-2022		Average Annual Earnings, 2022		Performance Metrics		
	2012	2022	Hawai'i	U.S.	Hawai'i	U.S.	Competitive Share 2012-2022	Location Quotient (LQ), 2022	Change in LQ, 2012-2022
Computer Services and Software Publishers	4,678	5,730	2.1%	4.5%	\$126,084	\$158,327	-2.4%	0.42	-0.06
Software Publishers	171	568	12.8%	7.8%	\$163,194	\$204,922	5.0%	0.20	0.09
Custom Computer Programming Services	1,761	1,673	-0.5%	3.8%	\$145,963	\$153,677	-4.3%	0.31	-0.12
Computer Systems Design Services	2,746	3,489	2.4%	3.8%	\$110,513	\$138,725	-1.3%	0.65	-0.02

Source: Lightcast™ and DBEDT calculation.

Jobs in this industry group grew at an average annual growth rate of 2.1% over the 2012 to 2022 period. Overall, the group declined in terms of competitive national share; two of the three industries in the group declined in terms of competitive national share.

The average annual earnings in the industry group were relatively high, at \$126,084 in 2022. The highest-paying industry in the group, Software Publishers, averaged \$163,194, while the lowest-paying industry in the group, Computer Systems Design Services, averaged \$110,513.

## Marketing, Photography and Related

The Marketing, Photography and Related industry group in Hawai'i play an important role in bringing Hawai'i's goods and services to the attention of national and international markets. Photography studios, portrait, marketing, advertising, public relations, media specialists, and other professional, scientific, and technical services account for most of this sector's workforce of 11,249 in 2022. As the largest sector in Hawai'i's Creative Sector, this group's job growth rate increased by 0.7% annually from 2012 to 2022, lower than the 2.0% rate in the nation for this group. From 2012 to 2022, this industry group added 795 jobs; the Marketing Consulting Services industry had the largest job gain in this industry group, at 734 jobs.

The average annual earnings for the Marketing, Photography and Related industry group were \$37,081 in 2022, almost half the average for the Creative Sector. Average annual earnings ranged from \$87,473 in Media Buying Agencies to \$28,400 in Other Services Related to Advertising.

The Marketing, Photography and Related industry group is a very competitive business from both a creative and business development perspective. Since geography is less of an advantage in these activities, Hawai'i companies in the industry group must prove that their creativity and knowledge of Hawai'i's products outweigh the greater reach and possible economies held by nationwide advertising and related firms.

## **Business Consulting**

The Business Consulting industry group was a thriving industry group over the 2012 to 2022 period with 6,095 jobs in 2022 and an average annual jobs growth rate of 2.5% over the period.

Administrative Management and General Management Consulting Services, Environmental Consulting Services, and Other Scientific and Technical Consulting Services are the three largest components of the Business Consulting industry group, accounting for 85% of the group's jobs in 2022.

The average annual earnings for Business Consulting were \$75,655. This ranged from \$110,495 for Other Management Consulting Services to \$59,824 for Process, Physical Distribution, and Logistics Consulting Services.

## **Publishing and Information**

The Publishing and Information industry group showed a 3.3% average annual decline in jobs from 2012 to 2022, which was worse than the national level. This industry group is dominated by Newspaper Publishing, which accounted for 36.9% of the industry group's jobs in 2022. Newspaper Publishing showed a 5.5% average annual decline in jobs over the period, which was better than the 6.1% average annual decline nationally. The rise of the internet as a source of information is certainly a major factor in the decline of traditional publishing. In Hawai'i, internet publishing and broadcasting (NAICS 519290, Web Search Portals and All Other Information Services) increased jobs by 3.1% annually from 2012 to 2022, with 256 jobs in 2022.

The annual earnings average for the Publishing and Information industry group in Hawai'i was \$77,904 in 2022. This ranged from \$139,411 for Directory and Mailing List Publishers to \$42,158 for Periodical Publishers. The Newspaper Publishing average was \$75,702 in 2022.

## **Cultural Activities**

The Cultural Activities industry group had 2,912 jobs in 2022 and included museums, historical sites, nature parks and other similar institutions, and grantmaking foundations. Cultural Activities registered a 0.5% average annual decrease in jobs over the 2012 to 2022 period, a figure lower than the nation's comparable activities. As a result, the Cultural Activities industry group lost competitive national industry share.

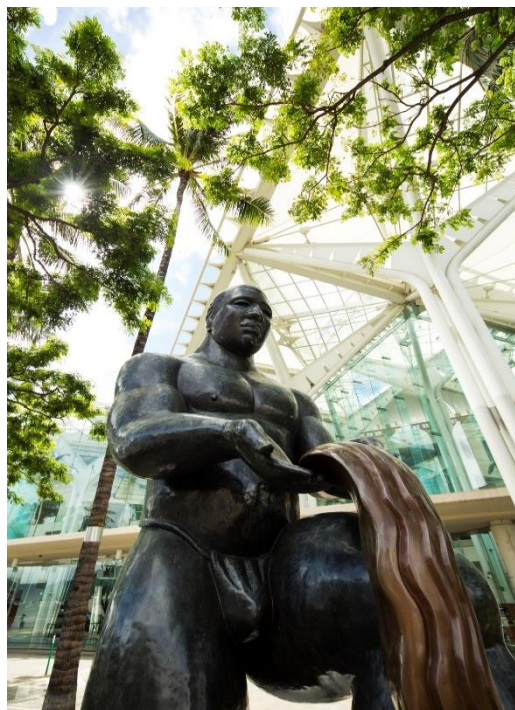
The average annual earnings for Cultural Activities were \$64,572 in 2022. This ranged from \$114,408 for Grantmaking Foundations to \$37,770 for Museums.

## Architecture

Architecture is one of the more visible industry groups in the Creative Sector. A unique style of Hawaiian architecture has developed over the last several decades, weaving themes from old and new Hawai'i into designs suited to the state's climate and lifestyle. More recently, architecture has become a leading source of creativity in addressing the need to conserve energy and provide alternative energy sources in Hawai'i's residential and commercial structures.

Architecture employed 1,855 people in 2022. Since 2012 it had a negative 0.3% average annual growth. This was below the average growth for the state's civilian economy and below the 1.4% average growth for the nation's comparable industry group. Most of the industry group's jobs were in Architectural Services, while the remainder of the jobs were in Landscape Architectural Services. Both industries registered a negative job growth from 2012 to 2022.

The average annual earnings in architecture were \$99,385 in 2022, with Architectural Services at \$103,846 and Landscape Architectural Services at \$80,191.



*"The Water Giver" by Maui artist Shige Yamada at Hawai'i Convention Center.  
Photo credit HVCB*

## Design Services

Design services had 1,974 jobs in 2022. 48% of these jobs were in Graphic Design Services, while another 33% were in Interior Design Services. Since 2012, the average annual job growth in this industry group was 0.2%. Graphic Design Services jobs *declined* 0.8% annually and Interior Design Services jobs grew 2.2% on average annually.

The average annual earnings for the industry group were \$40,349 in 2022. Industrial Design Services had the highest average annual earnings at \$93,486 while Other Specialized Design Services had the lowest at \$23,559.

## Radio and Television Broadcasting

Like publishing, broadcasting has been impacted by the rise of the internet as an information and entertainment alternative. Radio and TV Broadcasting jobs declined by 2.2% on average annually over the 2012 to 2022 period to 801 jobs in 2022; nationally, the decline was 1.2%.

Television Broadcasting Stations lost 2.1% of its workforce on average annually over the 2012 to 2022 period to 415 jobs in 2022. It had an average annual earnings of \$95,071 in 2022.

Radio Broadcasting Stations lost 2.3% of its workforce on average annually over the 2012 to 2022 period to 386 jobs in 2022. It had an average annual earnings of \$54,970 in 2022.

## Film, TV, Video Production/Distribution, Cable & Media Streaming

Filmmakers from Hollywood and around the world are using Hawai'i as a location for film, television, commercial, and digital media production. For decades, Hawai'i's natural beauty has been the backdrop for popular films such as "From Here to Eternity," "South Pacific" and "Jurassic Park."

The state has established tax incentives to attract productions to Hawai'i. Since 2007, Act 88/89 incentives have continued to lure a wave of major feature films to the state. These include Disney's "Pirates of the Caribbean: At World's End," Lionsgate's "The Hunger Games: Catching Fire", Paramount's "Indiana Jones and the Kingdom of the Crystal Skull", Warner Bros. Pictures' "Godzilla", and the fourth installment of the successful franchise, "Jurassic World." Hawai'i ranks among the top ten film destinations in the United States.

Film and television production in Hawai'i has been an important contributor to both jobs and income in the state, as well as to the visitor industry through the global exposure these productions have enjoyed.

The NAICS industries for film and TV production do not include creative and business services beyond direct production jobs and certain production support services. As a result, the employment data represent only the core jobs in film/TV and video activity. Other industry jobs such as actors, musicians, writers, food service, and other specialties are compiled in statistics for other NAICS industries. However, the data does not differentiate film/TV project jobs from other activities. Many jobs are only for the short duration of the production.

The 2022 NAICS update now defines Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers in the industry group. Jobs recorded for the industry group in the statistics are shown in Table 14.

The overall industry group Film, TV, Video Production/Distribution, Cable & Media Streaming involved 2,626 jobs in 2022, an annual average increase of 4.7% from 2012.

Jobs in the industry group grew faster in Hawai'i than the nation over the 2012 to 2022 period; however, average annual earnings were below the nation's comparable group in 2022.

**Table 14. Film, TV, Video Production/Distribution, Cable & Media Streaming Industry Group, 2012-2022**

Industry Group / Industry	Hawai'i Jobs		Average Annual Job Growth Rate, 2012-2022		Average Annual Earnings, 2022		Performance Metrics		
	2012	2022	Hawai'i	U.S.	Hawai'i	U.S.	Competitive Share 2012-2022	Location Quotient (LQ), 2022	Change in LQ, 2012-2022
Film, TV, Video Production/Distribution, Cable & Media Streaming	1,653	2,626	4.7%	2.3%	\$100,740	\$152,917	2.5%	0.94	0.27
Manufacturing and Reproducing Magnetic and Optical Media	13	27	8.0%	-4.8%	\$58,247	\$157,372	12.8%	0.50	0.38
Motion Picture and Video Production	1,276	2,212	5.7%	3.3%	\$81,742	\$108,091	2.4%	1.50	0.42
Motion Picture and Video Distribution	12	8	-3.5%	3.7%	\$126,798	\$161,869	-7.2%	0.19	-0.16
Teleproduction and Other Postproduction Services	65	64	-0.1%	3.3%	\$74,595	\$90,919	-3.4%	0.48	-0.12
Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers	287	313	0.9%	1.4%	\$243,253	\$220,862	-0.5%	0.29	0.01

Source: Lightcast™ and DBEDT calculation.

Volatility in the year-to-year film production employment is a major factor. The combination of limited data and extreme volatility from year to year make this a very difficult industry to assess over a short period.



*NCIS: Hawai'i, is the fourth installment of the NCIS franchise and continues to film in the Hawaiian Islands. Photo courtesy of CBS ©2024 CBS Broadcasting, Inc. All Rights Reserved.*

## Music

Hawai'i has always had a unique music arts culture based on Hawaiian heritage but has expanded to embrace trends in music worldwide. The range of talented musicians in Hawai'i has been an important attraction for visitors as well as a staple of the island's culture. Until the digital age, the problem of taking Hawai'i's unique music to the world at large had been the difficulties of breaking into a national recording industry that was mainstream-oriented and the high investment cost of producing and distributing recorded music without the backing of major music labels.



*Hawai'i Songwriting Festival attracts artists, musicians, songwriters, and music supervisors from around the world to Hawai'i Island and hosted the first Creative Lab Music Immersive, June 2017*



*Creative Lab Music Immersive Fellow Aolani Yukie Silva and Mentor/Professional Producer Bobby Campbell record an original song that will be pitched for sync licensing for film, television and advertising at the 2023 Creative Lab Hawaii Music Immersive (CLMI). Photo Credit: Sarah Anderson*

The dynamics changed with the digital age, which has made the production of high-quality recordings affordable to individual artists and new distribution systems that allow artists to promote and sell their music through the internet and music downloading services.

There were 1,305 employed and self-employed workers in Hawai'i's Music industry group in 2022, most of them performers. As Table 15 shows, employment in Hawai'i's Music industry group increased by 1.2% per year on average over the 2012 to 2022 period. By contrast, jobs in this industry group nationally grew annually by 2.1% over the same period.

**Table 15. Music Industry Group, 2012-2022**

Industry Group / Industry	Hawai'i Jobs		Average Annual Job Growth Rate, 2012-2022		Average Annual Earnings, 2022		Performance Metrics		
	2012	2022	Hawai'i	U.S.	Hawai'i	U.S.	Competitive Share 2012-2022	Location Quotient (LQ), 2022	Change in LQ, 2012-2022
Music	1,157	1,305	1.2%	2.1%	\$42,836	\$48,113	-0.9%	1.41	0.01
Musical Instrument and Supplies Retailers	193	285	3.9%	1.5%	\$32,712	\$32,888	2.4%	1.12	0.32
Music Publishers	16	38	9.1%	3.7%	\$29,343	\$88,357	5.4%	0.80	0.37
Sound Recording Studios	34	50	3.8%	3.5%	\$30,282	\$37,507	0.3%	0.52	0.06
Record Production and Distribution	27	52	6.7%	3.9%	\$32,231	\$115,253	2.8%	0.93	0.29
Other Sound Recording Industries	31	11	-9.6%	2.8%	\$29,517	\$55,881	-12.4%	0.40	-0.92
Musical Groups and Artists	855	869	0.2%	1.8%	\$48,272	\$45,839	-1.7%	1.96	-0.13

Source: Lightcast™ and DBEDT calculation.

The centerpiece of this industry group — Musical Groups and Artists — showed an average job growth rate of 0.2% over the 2012 to 2022 period. Among the industries, only Other Sound Recording Industries showed a decline in jobs.

Earnings in the Music industry group generally reflect part-time professions. The average annual earnings for the industry group were \$42,836 in 2022, below the state's overall Creative Sector and the state's civilian economy.



*Opening day at the 2023 Creative Lab Music Immersive. This five-day intensive program, which takes place on the Big Island of Hawaii provides participants with the opportunity to co-write and produce music for specific film or TV projects with a team of professional mentors.*

*Phot credit: Sarah Anderson*

## Arts Education

The Arts Education industry group comprised of music, theater, dance, visual and literary art is pervasive in public and private elementary and secondary schools, and in institutions of higher education. Within the public sector, the size and trends in arts are difficult to discern due to a lack of information. However, in the private sector, there are 77 small establishments and numerous self-employed educators in the state specializing in various forms of arts education. The total number of jobs in this small industry was 764 in 2022, up from 654 in 2012, equivalent to a 1.6% average annual growth rate over the 2012 to 2022 period. Nationally, the comparable group showed a 1.7% average annual growth rate in jobs over the period. Average annual earnings amounted to only \$22,907 for Hawai'i in 2022 and \$19,712 nationally. This suggests that part-time work is the norm in the industry. Until more can be learned about the extent and trends in education serving the arts and other creative disciplines, this small industry group may serve as a barometer for interest in education supporting the Creative Sector.



*SFCA Hawaii is one of the state organizations providing arts education through a collaboration with Department of Education, the Hawaii Arts Alliance and University of Hawaii as part of the ARTS First Program.*



*At Creative Lab Hawaii, creative entrepreneurs are coached by professional mentors in the business aspects of the creative industries and learn how to accelerate new business and monetization opportunities. Photo Credit: Sarah Anderson*



## VI. CONCLUSIONS AND NEXT STEPS

Developing Hawai'i's key creative activities is a valuable economic development strategy. Hawai'i's cultural diversity and its Hawaiian host culture are major attractions for millions of visitors and their spending. The uniqueness of Hawai'i's creative, artistic, and cultural content helps Hawai'i's creative products compete in worldwide markets. Additionally, the creative industries and their workforce are key sources of ideas, content, and talent for Hawai'i's other industries.

The four-quadrant performance map has helped to organize the industry groups of the updated Creative Sector by their growth, competitiveness, and concentration in the state's economy over the 2012 to 2022 period.

One Creative Sector industry group, Film, TV, Video Production/Distribution, Cable & Media Streaming, registered as Emerging (high-performing).

Eight of the Creative Sector industry groups were in the Transitioning quadrant. These ranged from Design Services with a 0.2% average annual job growth rate to Business Consulting with a 2.5% average annual job growth rate. However, while these industry groups grew, their growth rates were below the nation's comparable industry groups. As a result, they lost some ground to the nation in terms of competitive industry share.

Four Creative Sector industry groups that lost jobs fell into the Declining quadrant of the performance map; these were Publishing and Information, Radio and Television Broadcasting, Architecture, and Cultural Activities. Productivity may be playing a role in reducing the need for labor to deliver the same level of service as in years past.

Future research should examine the dimensions and opportunities of the commercial markets served by the Creative Sector industry groups. This includes digital media and the broader film industry, which are only partially captured in the NAICS-defined film production industry. Also needing closer study is the link between specific creative activities and emerging technologies in information, communications, entertainment, and the broad range of commercial applications that are being driven by innovation. Learning how creative activity utilizes and supports emerging technology can serve to clarify the skill sets and educational elements that will help make Hawai'i a leader in innovation.



*Creative Industries, Hawai'i Film Office, and Creative Lab Hawai'i are key facets of the State's Creative and Innovation Industry Development, building a continuum of talent, infrastructure, and investment to transform Hawai'i's economy into one based on innovation and creative economy.*

## APPENDIX

**Table A1. Conversion of 2017 NAICS to 2022 NAICS**

2017 NAICS	Changed to ->	2022 NAICS	2022 Industry Description
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. Industry Group Description Changes**

2022 Industry Group Description	2023 Industry Group Description
Computer and Digital Media	Computer Services and Software Publishers
Film, TV, and Video Production/Distribution	Film, TV, Video Production/Distribution, Cable & Media Streaming

Table A3. Detailed Industry Data, 2012-2022

NAICS Code	Sector / Industry Group / Industry	Hawai'i Jobs and Earnings				Performance Metrics			U.S. Comparable	
		Jobs 2012	Jobs 2022	Avg. Ann. Job Growth Rate, 2012-2022	Ave. Ann. Earnings, 2022	Competitive Share 2012-2022	Location Quotient (LQ), 2022	Change in LQ, 2012-2022	Ave. Ann. Job Growth Rate, 2012-2022	Ave. Ann. Earnings, 2022
	<b>Hawai'i Creative Sector</b>	<b>47,857</b>	<b>52,301</b>	<b>0.9%</b>	<b>\$67,847</b>	<b>-1.6%</b>	<b>0.83</b>	<b>-0.05</b>	<b>2.5%</b>	<b>\$102,717</b>
	<b>Architectural</b>	1,910	1,855	-0.3%	\$99,385	-1.7%	1.34	-0.10	1.4%	\$92,867
541310	Architectural Services	1,541	1,505	-0.2%	\$103,846	-1.9%	1.43	-0.13	1.7%	\$104,057
541320	Landscape Architectural Services	369	350	-0.5%	\$80,191	-1.2%	1.03	-0.02	0.7%	\$58,203
	<b>Art Education</b>	654	764	1.6%	\$22,907	-0.2%	0.75	0.06	1.7%	\$19,712
611610	Fine Arts Schools	654	764	1.6%	\$22,907	-0.2%	0.75	0.06	1.7%	\$19,712
	<b>Business Consulting</b>	4,854	6,188	2.5%	\$75,655	-1.5%	0.62	-0.03	4.0%	\$102,713
541611	Administrative Management and General Management Consulting Services	2,390	3,159	2.8%	\$82,663	-2.3%	0.57	-0.07	5.1%	\$112,675
541612	Human Resources Consulting Services	473	315	-4.0%	\$61,284	-5.9%	0.53	-0.33	1.9%	\$99,496
541614	Process, Physical Distribution, and Logistics Consulting Services	246	461	6.5%	\$59,824	2.4%	0.53	0.15	4.1%	\$84,548
541618	Other Management Consulting Services	173	150	-1.5%	\$110,495	-5.6%	0.19	-0.11	4.1%	\$95,532
541620	Environmental Consulting Services	766	1,043	3.1%	\$67,858	1.5%	1.63	0.35	1.7%	\$77,715
541690	Other Scientific and Technical Consulting Services	806	1,061	2.8%	\$68,675	0.8%	0.68	0.11	2.0%	\$92,633
	<b>Computer Services and Software Publishers</b>	4,678	5,730	2.1%	\$126,084	-2.4%	0.42	-0.06	4.5%	\$158,327
513210	Software Publishers	171	568	12.8%	\$163,194	5.0%	0.20	0.09	7.8%	\$204,922
541511	Custom Computer Programming Services	1,761	1,673	-0.5%	\$145,963	-4.3%	0.31	-0.12	3.8%	\$153,677
541512	Computer Systems Design Services	2,746	3,489	2.4%	\$110,513	-1.3%	0.65	-0.02	3.8%	\$138,725
	<b>Cultural Activities</b>	3,069	2,912	-0.5%	\$64,572	-1.8%	3.49	-0.29	1.3%	\$71,616
712110	Museums	1,962	1,652	-1.7%	\$37,770	-2.7%	4.37	-0.78	0.9%	\$55,090
712120	Historical Sites	279	197	-3.4%	\$49,489	-2.1%	3.39	-0.39	-1.4%	\$45,270
712190	Nature Parks and Other Similar Institutions	20	84	15.4%	\$45,302	12.0%	1.59	1.11	3.5%	\$45,578
813211	Grantmaking Foundations	808	980	1.9%	\$114,408	0.0%	2.84	0.27	2.0%	\$98,167
	<b>Design Services</b>	1,944	1,974	0.2%	\$40,349	-1.5%	0.95	-0.04	1.6%	\$53,919
541340	Drafting Services	318	275	-1.4%	\$52,870	-0.8%	2.03	0.04	-0.6%	\$44,519
541410	Interior Design Services	516	643	2.2%	\$44,690	-0.8%	0.85	0.02	3.0%	\$49,110
541420	Industrial Design Services	32	9	-12.0%	\$93,486	-14.3%	0.07	-0.21	2.3%	\$88,280
541430	Graphic Design Services	1,024	943	-0.8%	\$35,068	-1.4%	1.06	-0.05	0.6%	\$51,200
541490	Other Specialized Design Services	54	103	6.8%	\$23,559	3.5%	0.60	0.21	3.3%	\$70,161
	<b>Engineering and Research and Development</b>	5,763	5,988	0.4%	\$119,574	-1.5%	0.80	-0.04	1.9%	\$133,311
541330	Engineering Services	3,942	4,753	1.9%	\$123,721	0.1%	0.98	0.11	1.7%	\$122,004
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	1,476	1,063	-3.2%	\$111,004	-5.6%	0.47	-0.27	2.3%	\$162,874
541720	Research and Development in the Social Sciences and Humanities	344	172	-6.7%	\$57,871	-8.0%	0.57	-0.61	1.3%	\$92,193
	<b>Film, TV, Video Production/Distribution, Cable &amp; Media Streaming</b>	1,653	2,626	4.7%	\$100,740	2.5%	0.94	0.27	2.3%	\$152,917
334610	Manufacturing and Reproducing Magnetic and Optical Media	13	27	8.0%	\$58,247	12.8%	0.50	0.38	-4.8%	\$157,372
512110	Motion Picture and Video Production	1,276	2,212	5.7%	\$81,742	2.4%	1.50	0.42	3.3%	\$108,091
512120	Motion Picture and Video Distribution	12	8	-3.5%	\$126,798	-7.2%	0.19	-0.16	3.7%	\$161,869
512191	Teleproduction and Other Postproduction Services	65	64	-0.1%	\$74,595	-3.4%	0.48	-0.12	3.3%	\$90,919
516210	Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers	287	313	0.9%	\$243,253	-0.5%	0.29	0.01	1.4%	\$220,862
	<b>Marketing, Photography and Related</b>	10,454	11,249	0.7%	\$37,081	-1.3%	0.92	-0.02	2.0%	\$68,302
541613	Marketing Consulting Services	834	1,568	6.5%	\$43,736	1.3%	0.66	0.13	5.2%	\$81,569
541810	Advertising Agencies	550	421	-2.6%	\$61,047	-4.7%	0.34	-0.15	2.1%	\$119,501
541820	Public Relations Agencies	428	295	-3.6%	\$69,110	-6.1%	0.60	-0.40	2.4%	\$113,455
541830	Media Buying Agencies	6	20	13.9%	\$87,473	11.2%	0.22	0.15	2.7%	\$127,913
541840	Media Representatives	106	106	0.0%	\$45,996	1.7%	0.89	0.22	-1.7%	\$113,930
541850	Outdoor Advertising	111	230	7.5%	\$56,912	7.7%	1.22	0.70	-0.2%	\$81,046
541860	Direct Mail Advertising	62	35	-5.6%	\$39,346	-3.3%	0.17	-0.05	-2.3%	\$76,276
541870	Advertising Material Distribution Services	27	8	-11.7%	\$34,975	-14.5%	0.09	-0.27	2.8%	\$78,800
541890	Other Services Related to Advertising	548	518	-0.6%	\$28,400	-2.2%	1.00	-0.12	1.6%	\$54,109
541910	Marketing Research and Public Opinion Polling	367	316	-1.5%	\$48,016	0.2%	0.62	0.07	-1.7%	\$91,626
541921	Photography Studios, Portrait	1,691	2,023	1.8%	\$30,221	0.3%	2.13	0.26	1.5%	\$22,933
541922	Commercial Photography	378	530	3.4%	\$31,021	-1.8%	1.49	-0.11	5.2%	\$41,855
541990	All Other Professional, Scientific, and Technical Services	5,346	5,178	-0.3%	\$33,520	-1.8%	1.02	-0.09	1.5%	\$51,558
	<b>Music</b>	1,157	1,305	1.2%	\$42,836	-0.9%	1.41	0.01	2.1%	\$48,113
459140	Musical Instrument and Supplies Retailers	193	285	3.9%	\$32,712	2.4%	1.12	0.32	1.5%	\$32,888
512230	Music Publishers	16	38	9.1%	\$29,343	5.4%	0.80	0.37	3.7%	\$88,357
512240	Sound Recording Studios	34	50	3.8%	\$30,282	0.3%	0.52	0.06	3.5%	\$37,507
512250	Record Production and Distribution	27	52	6.7%	\$32,231	2.8%	0.93	0.29	3.9%	\$115,253
512290	Other Sound Recording Industries	31	11	-9.6%	\$29,517	-12.4%	0.40	-0.92	2.8%	\$55,881
711130	Musical Groups and Artists	855	869	0.2%	\$48,272	-1.7%	1.96	-0.13	1.8%	\$45,839
	<b>Performing and Creative Arts</b>	8,674	9,450	0.9%	\$27,356	-0.9%	1.23	0.01	1.8%	\$32,738
459920	Art Dealers	818	839	0.3%	\$37,126	-0.3%	2.94	0.20	0.6%	\$43,324
711110	Theater Companies and Dinner Theaters	413	414	0.0%	\$43,816	-1.2%	0.97	-0.01	1.2%	\$37,338
711120	Dance Companies	117	344	11.4%	\$22,164	7.6%	3.69	2.05	3.7%	\$33,142
711190	Other Performing Arts Companies	90	4	-27.5%	\$12,105	-28.6%	0.07	-1.60	1.2%	\$44,392
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities	273	301	1.0%	\$35,253	-2.7%	0.52	-0.09	3.7%	\$48,190
711320	Promoters of Performing Arts, Sports, and Similar Events without Facilities	494	522	0.5%	\$30,705	-2.3%	1.24	-0.16	2.8%	\$53,445
711410	Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures	333	261	-2.4%	\$16,425	-2.6%	0.81	-0.15	0.2%	\$84,099
711510	Independent Artists, Writers, and Performers	6,135	6,765	1.0%	\$25,221	-0.7%	1.22	0.04	1.7%	\$25,555

Table A3. Detailed Industry Data, 2012-2022 (cont'd)

NAICS Code	Industry Groups and Industries	Hawai'i Jobs and Earnings				Performance Metrics			U.S. Comparable	
		Jobs 2012	Jobs 2022	Ave. Ann. Job Growth Rate, 2012-2022	Ave. Ann. Earnings, 2022	Competitive Share 2012-2022	Location Quotient (LQ), 2022	Change in LQ, 2012-2022	Ave. Ann. Job Growth Rate, 2012-2022	Ave. Ann. Earnings, 2022
	<b>Publishing and Information</b>	2,044	1,458	-3.3%	\$77,904	-2.1%	0.60	-0.07	-1.3%	\$151,199
513110	Newspaper Publishers	950	538	-5.5%	\$75,702	0.6%	0.94	0.14	-6.1%	\$69,696
513120	Periodical Publishers	647	410	-4.5%	\$42,158	-1.0%	0.91	0.00	-3.5%	\$94,383
513130	Book Publishers	97	98	0.1%	\$43,417	1.8%	0.32	0.08	-1.7%	\$98,627
513140	Directory and Mailing List Publishers	119	83	-3.6%	\$139,411	1.1%	0.84	0.16	-4.6%	\$114,188
513191	Greeting Card Publishers	5	11	8.1%	\$61,403	14.5%	0.73	0.58	-6.4%	\$68,539
513199	All Other Publishers	37	63	5.5%	\$75,501	0.4%	0.25	0.03	5.0%	\$148,462
519290	Web Search Portals and All Other Information Services	188	256	3.1%	\$134,356	-4.9%	0.34	-0.15	8.0%	\$277,423
	<b>Radio and Television Broadcasting</b>	1,003	801	-2.2%	\$78,074	-1.0%	1.30	-0.01	-1.2%	\$96,107
516110	Radio Broadcasting Stations	489	386	-2.3%	\$54,970	0.1%	1.22	0.13	-2.4%	\$70,733
516120	Television Broadcasting Stations	514	415	-2.1%	\$99,582	-2.4%	1.38	-0.21	0.3%	\$122,727