EQUITY ASSESSMENT
GOOD JOBS AND VOCATIONAL PROGRAMS
INLAND EMPIRE/DESERT REGIONS

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COE FOR LABOR MARKET RESEARCH
INLAND EMPIRE/DESERT

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California Community Colleges

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EXECUTIVE SUMMARY

Community colleges play a pivotal role in preparing the workforce for high-quality, middle-skill jobs, thanks to their accessibility, affordability, and strong partnerships with regional employers. This study highlights the opportunities for these institutions to bridge equity gaps in the Inland Empire/Desert region's workforce by aligning educational pathways with labor market needs. Specifically, this research examines the demographic disparities among workers in well-paying, middle-skill jobs, referred to as "good jobs," and students enrolled in vocational programs designed to prepare them for these roles. The goal is to illuminate existing inequities in representation within both the workforce and educational pipeline, providing a foundation for targeted interventions.

The study was guided by three main objectives:

- Identify good-paying, middle-skill jobs, hereafter referred to as "good jobs", that offer economic opportunity and career growth for Inland Empire/Desert region residents,
- Understand the current demographics (e.g., age, gender, and race/ethnicity) of workers in these "good jobs" compared to the workforce overall, and
- Examine the demographic (e.g., age, gender, and race/ethnicity) composition of community college students in relation to workers in these jobs, hereafter referred to as "good job vocational programs".

Section 1: Good Jobs Analysis

- For the purposes of this section, equitable representation is defined as the demographic distribution of workers in good jobs closely reflects the demographics of individuals in the IE/D labor force.
- In the Inland Empire, 47 "good jobs" were identified based on criteria including middle-skill occupations, a minimum of 50 annual job openings, positive job growth projected through 2027, and wages exceeding $25.74 an hour. These positions accounted for nearly 200,000 jobs in 2022 and are expected to offer approximately 24,000 annual openings through 2027.
- The majority of workers in good jobs were Hispanic or Latino workers (48.4%) and White workers (35.8%) and percentage of Black or African American (6.8%) and Asian (8.3%) were slightly less than IE/D labor force overall.
- Women accounted for only 2.2% to 4.6% in construction-related occupations, with even lower representation among Black and Asian women. Additionally, women are less likely to participate in vocational training and Registered Apprenticeship programs, underscoring the need to expand access to these opportunities.
- In Healthcare Support Occupations, men of color have a slightly higher representation compared to Healthcare Practitioners and Technical Occupations, though these roles tend to offer lower entry-level wages. Research underscores the significance of gender and cultural competence in healthcare, especially given the underrepresentation of men of color.
- Although the diversity of the U.S. population has increased, the demographic shifts in protective services have lagged.[13] These occupations remain male-dominated, and women—particularly women of color—face persistent barriers to entry, including bias, discrimination, and a lack of mentorship.

Section 2: Good Job Vocational Programs Analysis

- For the purposes of this section, equitable representation is defined as the demographics of students enrolled in G.J. Vocational Programs closely reflect the demographics of the labor force in IED.
- 52 vocational programs offered by Riverside and San Bernardino County community colleges that had student enrollment in 2021-22 that prepare students for the good jobs identified in this study.

- Inland Empire community college programs are enrolling a significantly higher share of Hispanic or Latino students in priority programs (63.6%) compared to the share of Hispanic or Latinos in the both the IE/D labor force (47.5%) and Good Jobs workforce (48.4%).
- Black or African American students (6.7%) made up a slightly less of a share of enrollments in GJ vocational programs as compared to both Black or African American individuals in the IE/D labor force (7.1%) and Good Jobs workforce (6.8%). A significantly smaller share of Asian (3.7%) and White (25.7%) students were enrolled in community college GJ vocational programs as compared to Asian (10.5%) and White (34.1%) individuals in the IE/D labor force.
- Hispanic/Latino male students represent a significantly higher share in Advanced Manufacturing programs, constituting 60.0% of students, while white male students make up 28.9% of these programs. This trend aligns with broader patterns of occupational segregation in technical and high-paying fields, where men, particularly white and Hispanic/Latino men, dominate, leaving women and minority men underrepresented.[18]
- Health programs show a substantially higher share of Hispanic/Latina women (46.1%) and women overall, which reflects traditional gender norms and career preferences that guide more women into caregiving roles. However, Hispanic/Latino males remain underrepresented in health-related programs (14.6%).
- White and Hispanic/Latino males represent the majority of students (35.1% and 20.6%, respectively), while females, particularly Black and Asian women, are significantly underrepresented. This mirrors the findings in the Bureau of Labor Statistics (BLS) report on protective services, where gender and racial barriers limit women's participation, especially in leadership roles.[22]

Section 3: Key Findings

- Equity gaps were identified in the education and employment pipeline specifically covering women, particularly women of color in traditionally male-dominated occupations such as protective services, construction and other traditional apprenticable trades.
- Men of color are better represented in Healthcare Support Occupations than in Healthcare Practitioners and Technical Occupations, although the former typically offers lower entry-level wages. This situation underscores the need for gender and cultural competence in healthcare settings to build trust, enhance communication, and improve outcomes.
- The Inland Empire/Desert COE presents this report to guide collaborative efforts in addressing the equity gaps identified within. It serves as a resource for community colleges to potentially refine curricula in alignment with industry needs, ensuring training includes vital technological skills and accommodates diverse learning needs. This strategic alignment with employers should seek to enhance student employability and ensure equitable workforce participation by addressing the barriers that disproportionately affect underrepresented groups.

INTRODUCTION

Through a comparison of student demographics with workforce demographic data, this research has uncovered significant under- and over- representation of students from specific demographic groups enrolling in vocational programs that train workers for the good jobs identified in this study. This analysis provides valuable insights for developing strategies to ensure that all students have equitable access to career pathways leading to economic mobility. By identifying statistical under- and over-representation of both students in these programs and workers in good jobs, community colleges can target their recruitment and retention efforts to address the identified demographic gaps, potentially leading to more equitable representation in good jobs within the region.

First, in *Section 1 Good Jobs Analysis*, this report uses labor market data on job growth, education requirements, and wages to identify 47 occupations in the Inland Empire/Desert Region (IE/D) that provide economic opportunity for under resourced workers and families. The report walks through the demographics of workers in these good jobs, and how they compare to the labor force overall in the IE/D region. **Section 2 Good Job Vocational Programs Analysis** identifies the community college programs that prepare students for the identified good jobs and explores the demographics of students enrolled in these programs. **Section 3 Key Findings** highlights the equity gaps in the education and employment pipeline for the 47 good jobs identified in this report and offers considerations for both employers and community college leaders, faculty, staff, and partners in their efforts to build a more diverse and inclusive talent pipeline into these good jobs. This section concludes with specific opportunities to use this data to inform and support the Inland Empire/Desert Regional Consortium Strategic Plan 2023 – 2025 Diversity, Equity, and Inclusion (DEI) goals.

The data sources used in this study include data from Lightcast, a labor market analytics firm that specializes in providing insights for workforce development, economic planning, and education. Lightcast compiles its regional and occupational datasets from a variety of federal and state sources. Among these are the Quarterly Census of Employment and Wages (QCEW), which offers detailed industry employment and wage data, and other critical sources such as the U.S. Census Bureau's American Community Survey (ACS) and Quarterly Workforce Indicators, the Bureau of Labor Statistics' Occupational Employment and Wage Statistics and Current Population Survey, and data from the Bureau of Economic Analysis.[1] These combined resources provide comprehensive insights into employment trends, wage patterns, and industry-specific workforce characteristics across the Inland Empire/Desert regions.

Additionally, this report utilizes data from IPUMS USA, which preserves and harmonizes U.S. Census microdata, specifically using 2022 ACS data. This dataset provides granular, disaggregated information, which is crucial for producing detailed reports on workforce demographics. It allows for the breakdown of occupational workforce characteristics by race, gender, age, and education level, enabling deeper analysis of equity gaps and workforce diversity.[2] Together, these complementary data sources provide both broad and detailed insights for this report.

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[1] Lightcast (2022). Version 2024.2. Retrieved from https://lightcast.io/ in August 2024.
[2] IPUMS USA (ACS), University of Minnesota. (n.d.). IPUMS USA dataset. live.usa.datadownload.ipums.org/web/extracts/usa/2347594/usa_00014.xml

To analyze the demographic distribution of these groups, two types of statistical analyses were used: the Proportionality Index and Proportion Gap.[3] These methods allowed us to compare the representation of different demographic groups within each population. The analysis was conducted with a 95% confidence level, which means there is high confidence that the results reflect actual trends rather than random chance, and that there was enough data to support our conclusions.

In this analysis, the percentages of gender, age, and race/ethnicity in the labor force within the Inland Empire/Desert (IE/D) region served as a baseline to assess equity gaps of worker demographics in good jobs. Similarly, the demographic percentages for the labor force within the Inland Empire/Desert served as a baseline when assessing equity gaps among students enrolled in vocational programs that prepare workers for good jobs. Throughout the report, the terms 'overrepresentation' and 'underrepresentation' are referencing the results of these statistical methods to quantify how significantly a demographic group's percentage in a particular group, like the workers in good jobs or students in community college programs, deviates from that group's percentage in a broader baseline, such as the regional labor force. As an example, understanding these terms helps us recognize that overrepresentation, such as more Hispanics or Males in specific educational programs, is not inherently negative but reflects the program's alignment with labor force and demographic trends.

Definitions for the purpose of this study:

- "Equitable representation in good jobs" means that the demographics of workers in good jobs in the Inland Empire/Desert is comparable to those of the labor force in IE/D regions.
- "Equitable representation of students" means that the demographics of students enrolled in programs that train for one or more of the 47 good jobs used in this study reflects the demographics of the labor force in IE/D regions.

Fundamentally, this report lays out to what extent specific groups of students and workers – by age, race/ethnicity, and gender – are under or overrepresented at different points along the community college pathway to "good jobs" in the Inland Empire.

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[3] California Community Colleges Chancellor's Office. (2017). *Disproportionate impact, equity, and placement.* https://www.ccccо.edu/-/media/CCCCO-Website/About-Us/Divisions/Digital-Innovation-and-Infrastructure/Network-Operations/Accountability/Files/Disproportionate_Impact_Equity_and_Placement-201701051.pdf
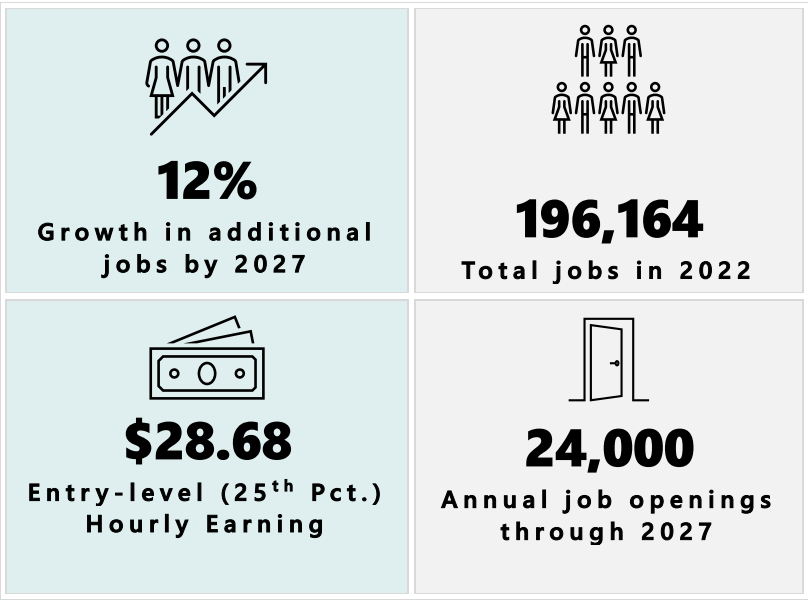
SECTION 1: GOOD JOBS ANALYSIS

Middle-skill occupations that require more than a high school diploma but less than four-year degrees often represent opportunities for economic mobility for a broad range of students and residents. Many of these occupations, often found in industries like construction, healthcare, manufacturing, and information technology, are in high demand and typically offer competitive wages, job stability, and opportunities for career advancement.

For the purposes of this report, good jobs in the IE/D region were identified based on the following criteria:

- **Middle skill**: Requires at least a high school diploma or equivalent, less than a bachelor's degree, and less than 5 years' work experience.

- **Job Availability**: Have at least 50 annual job openings in both Riverside and San Bernardino counties combined.

- **Growing**: Job growth projection for 2022-27 is greater than 50 jobs per year.

- **Provides a living wage**: Pays entry level wages (25th percentile) at or above the living wage of $25.74 per hour for a single adult.[4]

Based on the above criteria, 47 of the 798 occupations in the Standard Occupational Classification (SOC)[5] system met these criteria in the Inland Empire/Desert regions.

Collectively, these 47 good jobs were projected to grow 12% and offer more than 24,000 annual job openings per year between 2022 and 2027.

12% Growth in additional jobs by 2027	**196,164** Total jobs in 2022
$28.68 Entry-level (25th Pct.) Hourly Earning	**24,000** Annual job openings through 2027

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[4] While the UW self-sufficiency standard is currently used by the CO and other COEs, the self-sufficiency standard was not updated at the time of the research for this report. The UW version at the time of this report was from 2021, and did not account for significant increases in the cost of living in the Inland Empire the last three years and is below the State of California minimum wage of $16.00. For these reasons, the COE used an alternative living wage calculation from MIT in the analysis. MIT estimates, the living wage for an adult with no kids living in 2024 is $26.30 in Riverside County and $25.17 in San Bernadino County.

[5] "Standard Occupational Classification," Bureau of Labor Statistics, bls.gov/soc/

The following Exhibit 1.1 lists the 47 occupations that met the good jobs definition for this study.

Exhibit 1.1: Good Jobs in IE/D Regions

	2022 Jobs	Job Growth – 2027	Annual Job Openings	Entry-level wage
Installation, Maintenance, and Repair Occupations				
Aircraft Mechanics and Service Technicians (49-3011)	2,443	10%	241	$30.34
Automotive Glass Installers and Repairers (49-3022)	605	26%	86	$27.45
Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)	4,916	23%	689	$32.62
Electrical and Electronics Repairers, Commercial and Industrial Equipment (49-2094)	1,135	10%	122	$29.76
Electrical Power-Line Installers and Repairers (49-9051)	1,576	6%	144	$38.02
First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)	6,080	13%	692	$29.88
Heating, Air Conditioning, and Refrigeration Mechanics and Installers (49-9021)	6,342	13%	727	$31.38
Industrial Machinery Mechanics (49-9041)	3,383	14%	373	$29.91
Medical Equipment Repairers (49-9062)	444	13%	54	$33.89
Mobile Heavy Equipment Mechanics, Except Engines (49-3042)	2,302	19%	298	$28.64
Security and Fire Alarm Systems Installers (49-2098)	944	13%	128	$29.97
Healthcare Practitioners and Technical Occupations				
Dental Hygienists (29-1292)	1,788	21%	205	$49.78
Diagnostic Medical Sonographers (29-2032)	766	17%	68	$40.41
Licensed Practical and Licensed Vocational Nurses (29-2061)	8,565	9%	841	$30.35
Radiologic Technologists and Technicians (29-2034)	1,842	15%	158	$38.53
Respiratory Therapists (29-1126)	1,792	12%	139	$37.29
Surgical Technologists (29-2055)	1,091	15%	101	$30.87
Healthcare Support Occupations				
Healthcare Support Workers, All Other (31-9099)	2,071	1%	299	$37.05
Medical Equipment Preparers (31-9093)	735	11%	118	$27.64
Occupational Therapy Assistants (31-2011)	277	46%	72	$30.57
Physical Therapist Assistants (31-2021)	830	27%	169	$31.35
Construction and Extraction Occupations				
Electricians (47-2111)	9,329	14%	1,117	$34.09
Glaziers (47-2121)	921	7%	104	$27.21
Operating Engineers and Other Construction Equipment Operators (47-2073)	4,475	14%	527	$28.87
Plumbers, Pipefitters, and Steamfitters (47-2152)	5,075	5%	519	$27.10
Office and Administrative Support Occupations				
Eligibility Interviewers, Government Programs (43-4061)	3,426	3%	336	$26.09
First-Line Supervisors of Office and Administrative Support Workers (43-1011)	15,537	2%	1,626	$26.07

|				
Postal Service Mail Carriers (43-5052)	3,240	2%	265	$27.18
Public Safety Telecommunicators (43-5031)	949	19%	137	$29.15
Protective Service Occupations				
Detectives and Criminal Investigators (33-3021)	1,336	6%	121	$51.08
Firefighters (33-2011)	3,250	3%	320	$28.81
First-Line Supervisors of Police and Detectives (33-1012)	696	37%	105	$64.47
Police and Sheriff's Patrol Officers (33-3051)	7,108	10%	731	$42.80
Production Occupations				
First-Line Supervisors of Production and Operating Workers (51-1011)	5,145	5%	541	$31.69
Stationary Engineers and Boiler Operators (51-8021)	671	22%	110	$25.80
Water and Wastewater Treatment Plant and System Operators (51-8031)	1,456	7%	160	$29.94
Transportation and Material Moving Occupations				
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors (53-1047)	9,168	15%	1,230	$31.07
Heavy and Tractor-Trailer Truck Drivers (53-3032)	47,258	17%	6,917	$27.38
Railroad Conductors and Yardmasters (53-4031)	812	13%	92	$45.37
Legal Occupations				
Paralegals and Legal Assistants (23-2011)	1,740	22%	277	$27.45
Life, Physical, and Social Science Occupations				
Occupational Health and Safety Technicians (19-5012)	623	74%	189	$30.87
Sales and Related Occupations				
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	14,365	6%	1,510	$29.72
Architecture and Engineering Occupations				
Architectural and Civil Drafters (17-3011)	813	9%	92	$35.08
Arts, Design, Entertainment, Sports, and Media Occupations				
Audio and Video Technicians (27-4011)	537	26%	85	$25.97
Building and Grounds Cleaning and Maintenance Occupations				
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers (37-1012)	2,928	5%	341	$26.34
Business and Financial Operations Occupations				
Claims Adjusters, Examiners, and Investigators (13-1031)	1,670	12%	166	$28.42
Computer and Mathematical Occupations				
Computer User Support Specialists (15-1232)	3,670	8%	315	$26.28

We will compare the race/ethnicity, gender, and age of workers in these good jobs to the IE/D labor force overall. We will also examine the demographics of students enrolled in community college programs that can lead to employment in these jobs.

1.1: EQUITY ANALYSIS OVERVIEW

For the purposes of this section, equitable representation is defined as the demographic distribution of workers in good jobs closely reflects the demographics of individuals in the IE/D labor force. Exhibit 1.2 presents the race and ethnicity distribution for both IE/D labor force as well as the workers in good jobs as described in the previous section.[6]

The shares of Hispanic or Latino workers (48.4%) and White workers (35.8%) in good jobs were slightly greater as compared to IE/D labor force. The percentage of Black or African American (6.8%) and Asian (8.3%) were slightly less than IE/D labor force overall.

Exhibit 1.2: IE/D Labor Force and Good Job Workforce Race & Ethnicity Distribution
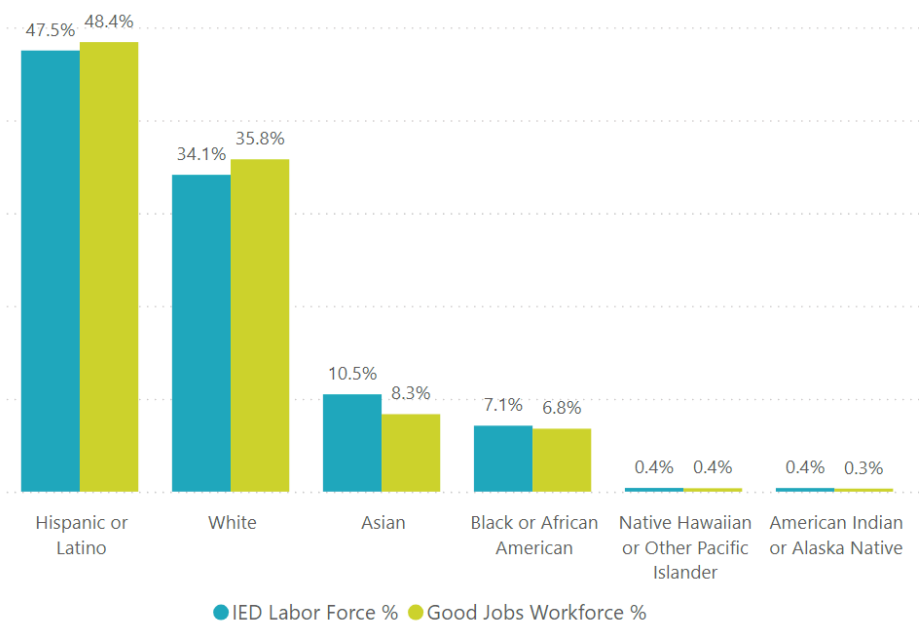
Source: Lightcast (2022). Version 2024.2. Retrieved from https://lightcast.io/ in August 2024.

Exhibit 1.3 presents the distribution of age for both IE/D labor force participants as well as the workers in good jobs. This report used groupings based on typical stages of progression through education, career and retirement. The share of mid-career workers (ages of 35 – 54) in good jobs (48.2%) was 6.8% greater than IE/D labor force participants in this same age category (41.4%). The share of workers in good jobs that are of pre-career/college age (24<) were 7.3% less than IE/D labor force participants (13%) in this same age category.

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[6] Labor force is defined as individuals 16 years and older regardless of employment status.

Exhibit 1.3: IE/D Labor Force and Good Job Workforce Age Category Distribution
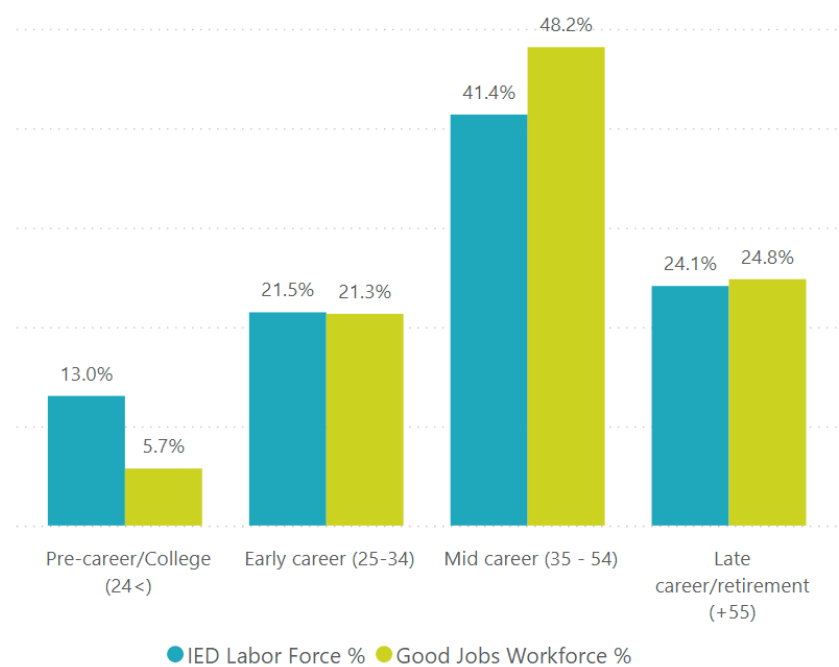
Source: Lightcast (2022). Version 2024.2. Retrieved from https://lightcast.io/ in August 2024.

Exhibit 1.4 presents gender distribution for both IE/D labor force participants as well as the workers in good jobs. The share of females in good jobs (25.9%) was significantly less than IE/D labor force females (48%). The share of male workers in good jobs (74.1%) was 22.1% greater than males in the IE/D labor force (52%).

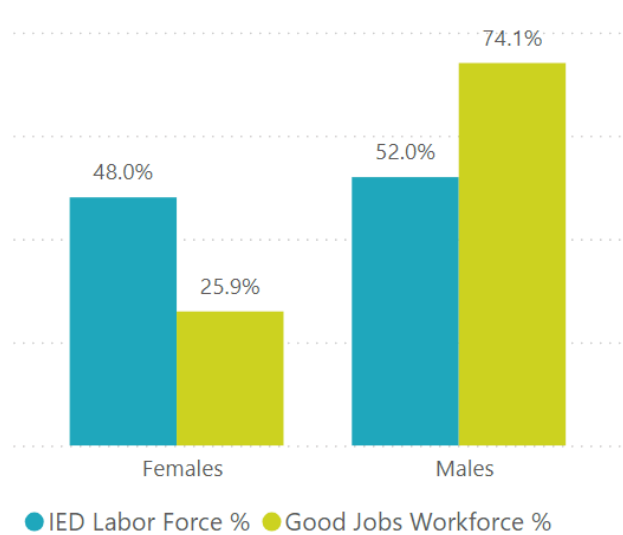## Exhibit 1.4: IE/D Labor Force and Good Job Workforce Gender Distribution

Source: Lightcast (2022). Version 2024.2. Retrieved from https://lightcast.io/ in August 2024.

Exhibit 1.5 provides the number of the 47 good jobs with highly under or highly over representation in each of the demographic categories between both good job workers and IE/D labor force participants.

Exhibit 1.5: Good Jobs with Significant Under/Over-Representation

Demographic Category	Good jobs with Underrepresentation	Good jobs with Overrepresentation
Hispanic or Latino	21	3
Black or African American	24	16
White	5	24
Asian	25	16
American Indian or Alaska Native	21	20
Native Hawaiian or Other Pacific Islander	16	19
Females	31	15
Males	15	31
Early career (25-34)	8	21
Pre-career/College (24<)	40	3
Mid-career (35 - 54)	2	24
Late career/retirement (+55)	21	10

Source: COE Analysis of Lightcast (2022). Version 2024.2.

Based on the results shown in Exhibit 1.5, the following sections will analyze the highest under and highest over representation in the following demographic categories:

- Females are highly underrepresented in 31 of the 47 good jobs.
- Black or African Americans are highly underrepresented in 24 of the 47 good jobs.
- Hispanics or Latinos are highly underrepresented in 21 of the 47 good jobs.
- Workers of Late career/retirement (+55) age are highly underrepresented in 21 of the 47 good jobs.
- Males are highly represented in 31 of the 47 good jobs.

1.2: FEMALES ARE UNDERREPRESENTED IN GOOD JOBS

In the Inland Empire/Desert (IE/D) regions, women constitute 48% of the labor force, with projections indicating an increase of 1% by 2028. This trend contrasts sharply with the projected 3% decline in female workforce participation across the state of California during the same period.[7]

Despite making up nearly half of the overall labor force in the IE/D area, women are significantly underrepresented in 31 of the 47 'good jobs,' comprising only 26% of the workforce in the 31 high-quality jobs. These jobs span 11 of the 16 major occupational sectors as classified by the Standard Occupational Classification system. Exhibit 1.6 outlines this disparity, grouping the underrepresentation by occupational sector and specific jobs where women are particularly underrepresented.

The majority of these 31 jobs are concentrated in three main sectors: Installation, Maintenance, and Repair Occupations (11 jobs); Construction and Extraction Occupations (4 jobs); and Protective Service Occupations (4 jobs). These sectors represent critical areas where efforts to boost female participation could make a significant impact in the number of women employed in good jobs overall.

Exhibit 1.6: Good Jobs with Significant Underrepresentation of Females

Occupation	% of Female
Inland Empire / Desert Region Female Labor Force	48%
Female workers employed in the 47 "Good Jobs"	26%
Installation, Maintenance, and Repair Occupations	
Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)	1.8%
Mobile Heavy Equipment Mechanics, Except Engines (49-3042)	1.8%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers (49-9021)	2.1%
Electrical Power-Line Installers and Repairers (49-9051)	3.0%
Security and Fire Alarm Systems Installers (49-2098)	3.5%
Industrial Machinery Mechanics (49-9041)	3.6%
Aircraft Mechanics and Service Technicians (49-3011)	6.8%
Automotive Glass Installers and Repairers (49-3022)	6.9%
First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)	7.6%
Medical Equipment Repairers (49-9062)	9.5%
Electrical and Electronics Repairers, Commercial and Industrial Equipment (49-2094)	18.8%
Construction and Extraction Occupations	

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[7] Lightcast (2022). Version 2024.2. Retrieved from https://lightcast.io/ in September 2024.

Plumbers, Pipefitters, and Steamfitters (47-2152)	2.2%
Electricians (47-2111)	3.4%
Operating Engineers and Other Construction Equipment Operators (47-2073)	3.6%
Glaziers (47-2121)	4.6%
Protective Service Occupations	
Firefighters (33-2011)	5.4%
Police and Sheriff's Patrol Officers (33-3051)	17.5%
First-Line Supervisors of Police and Detectives (33-1012)	18.6%
Detectives and Criminal Investigators (33-3021)	27.1%
Production Occupations	
Stationary Engineers and Boiler Operators (51-8021)	3.8%
Water and Wastewater Treatment Plant and System Operators (51-8031)	6.5%
First-Line Supervisors of Production and Operating Workers (51-1011)	23.0%
Transportation and Material Moving Occupations	
Heavy and Tractor-Trailer Truck Drivers (53-3032)	8.0%
Railroad Conductors and Yardmasters (53-4031)	13.5%
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors (53-1047)	29.2%
Sales and Related Occupations	
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	30.7%
Office and Administrative Support Occupations	
Postal Service Mail Carriers (43-5052)	35.3%
Architecture and Engineering Occupations	
Architectural and Civil Drafters (17-3011)	24.0%
Arts, Design, Entertainment, Sports, and Media Occupations	
Audio and Video Technicians (27-4011)	11.0%
Building and Grounds Cleaning and Maintenance Occupations	
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers (37-1012)	12.9%
Computer and Mathematical Occupations	
Computer User Support Specialists (15-1232)	28.6%

1.3: BLACK OR AFRICAN AMERICANS ARE UNDERREPRESENTED IN GOOD JOBS

In the Inland Empire/Desert (IE/D) regions, Black or African American workers constitute 7.1% of the labor force, with projections indicating a decline of 0.1% by 2028. This trend contrasts sharply with the projected -4% decline in Black or African American workforce participation across the state of California during the same period.

Black or African Americans workers are significantly underrepresented in 24 of the 47 good jobs, comprising only 6.8% of the workforce in the 24 high-quality jobs. These jobs span 11 of the 16 major occupational sectors as classified by the Standard Occupational Classification system. Exhibit 1.7 outlines this disparity, grouping the underrepresentation by occupational sector and specific jobs where Black or African Americans are particularly underrepresented.

The majority of these 24 jobs are concentrated in three main sectors: Installation, Maintenance, and Repair Occupations (9 jobs); Construction and Extraction Occupations (4 jobs); and Healthcare Practitioners and Technical Occupations (3 jobs). These sectors represent critical areas where efforts to boost Black or African American participation could be highly effective.

Exhibit 1.7: Good Jobs with Significant Underrepresentation of Black or African Americans

Occupation	% of Black or African Americans
Inland Empire / Desert Region Black or African American Labor Force	7.1%
Black or African American workers employed in the 47 "Good Jobs"	6.8%
Installation, Maintenance, and Repair Occupations	
Mobile Heavy Equipment Mechanics, Except Engines (49-3042)	2.7%
Automotive Glass Installers and Repairers (49-3022)	2.7%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers (49-9021)	3.5%
Industrial Machinery Mechanics (49-9041)	3.6%
Medical Equipment Repairers (49-9062)	4.4%
First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)	4.5%
Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)	4.5%
Electrical Power-Line Installers and Repairers (49-9051)	4.6%
Electrical and Electronics Repairers, Commercial and Industrial Equipment (49-2094)	5.5%
Construction and Extraction Occupations	
Glaziers (47-2121)	2.3%
Plumbers, Pipefitters, and Steamfitters (47-2152)	3.1%
Operating Engineers and Other Construction Equipment Operators (47-2073)	3.4%

Electricians (47-2111)	3.5%
Healthcare Practitioners and Technical Occupations	
Dental Hygienists (29-1292)	2.4%
Diagnostic Medical Sonographers (29-2032)	4.0%
Radiologic Technologists and Technicians (29-2034)	4.9%
Architecture and Engineering Occupations	
Architectural and Civil Drafters (17-3011)	2.7%
Arts, Design, Entertainment, Sports, and Media Occupations	
Audio and Video Technicians (27-4011)	6.0%
Building and Grounds Cleaning and Maintenance Occupations	
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers (37-1012)	3.0%
Legal Occupations	
Paralegals and Legal Assistants (23-2011)	5.1%
Life, Physical, and Social Science Occupations	
Occupational Health and Safety Technicians (19-5012)	5.0%
Production Occupations	
First-Line Supervisors of Production and Operating Workers (51-1011)	4.5%
Sales and Related Occupations	
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	2.7%
Healthcare Support Occupations	
Physical Therapist Assistants (31-2021)	6.0%

1.4: HISPANICS OR LATINOS ARE UNDERREPRESENTED IN GOOD JOBS

In the Inland Empire/Desert (IE/D) regions, Hispanics or Latinos constitute 47.5% of the labor force, with projections indicating an increase of 9.1% by 2028. This trend contrasts with the projected 3% increase in Hispanics or Latinos workforce participation across the state of California during the same period.

Despite making up 47.5% of the overall labor force in the IE/D area, Hispanics or Latinos are significantly underrepresented in 21 of the 47 'good jobs,' comprising 48.4% of the workforce in the 21 high-quality jobs. These jobs span 11 of the 16 major occupational sectors as classified by the Standard Occupational Classification system. Exhibit 1.8 outlines this disparity, grouping the underrepresentation by occupational sector and specific jobs where Hispanics or Latinos are particularly underrepresented.

The majority of these 21 jobs are concentrated in three main sectors: Healthcare Practitioners and Technical Occupations (5 jobs); Protective Service Occupations (4 jobs); and Healthcare Support Occupations (2 jobs).

These sectors represent critical areas where efforts to boost Hispanics or Latino participation could be highly effective.

Exhibit 1.8: Good Jobs with Significant Underrepresentation of Hispanics or Latinos

Occupation	% of Hispanic or Latinos
Inland Empire / Desert Region Hispanics or Latinos Labor Force	47.5%
Hispanics or Latino workers employed in the 47 "Good Jobs"	48.4%
Healthcare Practitioners and Technical Occupations	
Respiratory Therapists (29-1126)	34.0%
Dental Hygienists (29-1292)	36.3%
Diagnostic Medical Sonographers (29-2032)	37.2%
Licensed Practical and Licensed Vocational Nurses (29-2061)	38.5%
Radiologic Technologists and Technicians (29-2034)	38.9%
Protective Service Occupations	
First-Line Supervisors of Police and Detectives (33-1012)	28.8%
Firefighters (33-2011)	31.9%
Detectives and Criminal Investigators (33-3021)	37.9%
Police and Sheriff's Patrol Officers (33-3051)	39.0%
Healthcare Support Occupations	
Occupational Therapy Assistants (31-2011)	34.2%
Physical Therapist Assistants (31-2021)	38.4%
Office and Administrative Support Occupations	
Postal Service Mail Carriers (43-5052)	36.2%
Public Safety Telecommunicators (43-5031)	38.4%
Production Occupations	
Water and Wastewater Treatment Plant and System Operators (51-8031)	33.5%
Stationary Engineers and Boiler Operators (51-8021)	39.0%
Architecture and Engineering Occupations	
Architectural and Civil Drafters (17-3011)	39.8%
Arts, Design, Entertainment, Sports, and Media Occupations	
Audio and Video Technicians (27-4011)	35.4%
Business and Financial Operations Occupations	
Claims Adjusters, Examiners, and Investigators (13-1031)	35.5%
Computer and Mathematical Occupations	

Computer User Support Specialists (15-1232)	32.2%
Installation, Maintenance, and Repair Occupations	
Aircraft Mechanics and Service Technicians (49-3011)	40.0%
Sales and Related Occupations	
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	39.8%

1.5: LATE CAREER/RETIREMENT (+55) WORKERS ARE UNDERREPRESENTED IN GOOD JOBS

In the Inland Empire/Desert (IE/D) regions, workers of late career/retirement (+55) age constitute 24.1% of the labor force, with projections indicating an increase of 5% by 2028. This trend is greater than the projected 3.7% increase in workforce participation for individuals of late career/retirement (+55) age across the state of California during the same period.

Despite making up 24.1% of the overall labor force in the IE/D area, workers of late career/retirement (+55) age are significantly underrepresented in 21 of the 47 'good jobs,' comprising 24.8% of the workforce in the 21 high-quality jobs. These jobs span 11 of the 16 major occupational sectors as classified by the Standard Occupational Classification system. Exhibit 1.9 outlines this disparity, grouping the underrepresentation by occupational sector and specific jobs where workers of late career/retirement (+55) age are particularly underrepresented.

The majority of these 21 jobs are concentrated in three main sectors: Installation, Maintenance, and Repair Occupations (6 jobs); Protective Service Occupations (4 jobs); and Healthcare Practitioners and Technical (4 jobs). These sectors represent critical areas where efforts to boost participation of workers of late career/retirement (+55) age could be highly effective.

Exhibit 1.9: Good Jobs with Significant Underrepresentation of Late Career/Retirement (+55) Workers

Occupation	% of workers +55 years old
Inland Empire / Desert Region Labor Force of late career/retirement (+55) age	24.1%
Late career/retirement (+55) age workers employed in the 47 "Good Jobs"	24.8%
Installation, Maintenance, and Repair Occupations	
Electrical Power-Line Installers and Repairers (49-9051)	13.0%
Automotive Glass Installers and Repairers (49-3022)	13.8%
Electrical and Electronics Repairers, Commercial and Industrial Equipment (49-2094)	15.0%
Security and Fire Alarm Systems Installers (49-2098)	15.7%
Aircraft Mechanics and Service Technicians (49-3011)	17.9%

Heating, Air Conditioning, and Refrigeration Mechanics and Installers (49-9021)	18.7%
Protective Service Occupations	
Firefighters (33-2011)	6.6%
Police and Sheriff's Patrol Officers (33-3051)	8.8%
Detectives and Criminal Investigators (33-3021)	13.5%
First-Line Supervisors of Police and Detectives (33-1012)	14.0%
Healthcare Practitioners and Technical Occupations	
Surgical Technologists (29-2055)	13.8%
Dental Hygienists (29-1292)	18.7%
Radiologic Technologists and Technicians (29-2034)	19.0%
Diagnostic Medical Sonographers (29-2032)	19.2%
Healthcare Support Occupations	
Physical Therapist Assistants (31-2021)	11.8%
Occupational Therapy Assistants (31-2011)	14.9%
Arts, Design, Entertainment, Sports, and Media Occupations	
Audio and Video Technicians (27-4011)	17.5%
Computer and Mathematical Occupations	
Computer User Support Specialists (15-1232)	18.0%
Construction and Extraction Occupations	
Electricians (47-2111)	20.2%
Office and Administrative Support Occupations	
Public Safety Telecommunicators (43-5031)	15.5%
Transportation and Material Moving Occupations	
Railroad Conductors and Yardmasters (53-4031)	17.9%

1.6: MALE WORKERS ARE HIGHLY REPRESENTED IN GOOD JOBS

In the Inland Empire/Desert (IE/D) regions, Males constitute 52% of the labor force, with projections indicating an increase of 3% percent by 2028. This trend contrasts with the projected -1% decline in the Male workforce participation across the state of California during the same period.

Male workers are significantly overrepresented in 31 of the 47 good jobs, comprising 74.1% of the workforce in the 31 high-quality jobs. These jobs span 11 of the 16 major occupational sectors as classified by the Standard Occupational Classification system. Exhibit 1.10 outlines this disparity, grouping by occupational sector and specific jobs where Male workers are particularly overrepresentation.

The majority of these 31 jobs are concentrated in three main sectors: Installation, Maintenance, and Repair Occupations (11 jobs); Construction and Extraction Occupations (4 jobs); and Protective Services Occupations (4 jobs). Increasing the participation of females in these traditionally male-dominated fields could help address the gender wage gap, offer women access to higher-paying, stable jobs, and contribute to a more inclusive workforce. Targeted recruitment, specialized training programs, and supportive policies within community college programs can be instrumental in preparing women for these roles. This could involve offering career exploration opportunities, mentorship programs, and hands-on training designed to increase female participation in these sectors. By addressing the underrepresentation of women, especially in high-demand and skilled trades, community colleges can play a pivotal role in advancing gender equity in the workforce.

Exhibit 1.10: Good Jobs with Significant Overrepresentation of Males

Occupation	% of Male workers
Inland Empire / Desert Region Males Labor Force	52.0%
Male workers employed in the 47 "Good Jobs"	74.1%
Installation, Maintenance, and Repair Occupations	
Electrical and Electronics Repairers, Commercial and Industrial Equipment (49-2094)	81.2%
Medical Equipment Repairers (49-9062)	90.5%
First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)	92.4%
Automotive Glass Installers and Repairers (49-3022)	93.1%
Aircraft Mechanics and Service Technicians (49-3011)	93.2%
Industrial Machinery Mechanics (49-9041)	96.4%
Security and Fire Alarm Systems Installers (49-2098)	96.5%
Electrical Power-Line Installers and Repairers (49-9051)	97.0%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers (49-9021)	97.9%
Mobile Heavy Equipment Mechanics, Except Engines (49-3042)	98.2%
Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)	98.2%
Protective Service Occupations	
Detectives and Criminal Investigators (33-3021)	72.9%
First-Line Supervisors of Police and Detectives (33-1012)	81.4%
Police and Sheriff's Patrol Officers (33-3051)	82.5%
Firefighters (33-2011)	94.6%
Construction and Extraction Occupations	
Glaziers (47-2121)	95.4%
Operating Engineers and Other Construction Equipment Operators (47-2073)	96.4%
Electricians (47-2111)	96.6%

Plumbers, Pipefitters, and Steamfitters (47-2152)	97.8%
Production Occupations	
First-Line Supervisors of Production and Operating Workers (51-1011)	77.0%
Water and Wastewater Treatment Plant and System Operators (51-8031)	93.5%
Stationary Engineers and Boiler Operators (51-8021)	96.2%
Transportation and Material Moving Occupations	
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors (53-1047)	70.8%
Railroad Conductors and Yardmasters (53-4031)	86.5%
Heavy and Tractor-Trailer Truck Drivers (53-3032)	92.0%
Architecture and Engineering Occupations	
Architectural and Civil Drafters (17-3011)	76.0%
Arts, Design, Entertainment, Sports, and Media Occupations	
Audio and Video Technicians (27-4011)	89.0%
Building and Grounds Cleaning and Maintenance Occupations	
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers (37-1012)	87.1%
Computer and Mathematical Occupations	
Computer User Support Specialists (15-1232)	71.4%
Office and Administrative Support Occupations	
Postal Service Mail Carriers (43-5052)	64.7%
Sales and Related Occupations	
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (41-4012)	69.3%

1.7: INTERSECTIONALITY OF RACE AND GENDER IN GOOD JOBS

While looking at race, ethnicity, and gender age categories on their own can be a helpful starting point, labor market disparities, advantages, and disadvantages are often a result of interconnected identities and social categorizations. A report from the US Department of Labor report estimates that in 2019 alone, segregation by industry and occupation cost Black women an estimated $39.3 billion, and Hispanic women an estimated $46.7 billion, in lower wages compared to white men[8]. A Black man's experiences and outcomes in the Inland Empire job market differ in important ways from a Black woman's experience, which differs from a White woman's experience, and so on. While deeper investigation into this complicated topic is warranted, this section explores employment trends in the good jobs identified in this report for the four largest race and ethnicities in the Inland Empire labor force by gender.

Exhibit 1.11 presents the distribution of race and ethnicity, disaggregated by gender, across all cohorts used in this study, utilizing data sourced from the American Community Survey (ACS) via IPUMS[9] and cross referencing the good jobs identified in this study. The ACS is an ongoing national survey conducted by the U.S. Census Bureau that collects detailed demographic, social, economic, and housing information. Unlike a full census, the ACS relies on a representative sample of households, which is then extrapolated to estimate characteristics of the entire population. Since the ACS uses a sample, its estimates are subject to sampling variability. This means that the characteristics of the sample may not perfectly reflect the characteristics of the entire population.[10]

Exhibit 1.11: Race & Ethnicity and Gender Distribution

	Good Jobs #	Hispanic or Latinos		White		Black or African American		Asian	
		M	F	M	F	M	F	M	F
IE/D Population		22.7%	25.1%	17.4%	16.9%	3.6%	3.6%	5.1%	5.5%
IE/D Labor Force		22.9%	25.0%	17.3%	17.1%	3.6%	3.6%	5.0%	5.6%
Good Jobs Workforce		27.8%	20.1%	22.7%	11.7%	4.5%	2.6%	6.0%	4.6%
Occupational Sectors of Good Jobs (46)									
Architecture and Engineering Occupations	1			100.0%					
Arts, Design, Entertainment, Sports, and Media Occupations	1			76.8%			3.4%	19.7%	
Building and Grounds Cleaning and Maintenance Occupations	1	36.1%		41.4%	2.5%			20.0%	
Business and Financial Operations Occupations	1	25.8%	19.6%	4.0%	25.7%	1.0%	5.3%	2.5%	16.2%
Computer and Mathematical Occupations	1	42.0%	10.0%	20.6%	6.0%	8.0%	0.7%	10.3%	2.3%
Construction and Extraction Occupations	4	43.5%	3.0%	45.0%	0.2%	5.4%		2.9%	
Healthcare Practitioners and Technical Occupations	6	2.8%	29.3%	3.3%	28.0%	1.1%	8.6%	9.7%	17.2%

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[8] Bearing the Cost: How Overrepresentation in Undervalued Jobs Disadvantaged Women During the Pandemic. US Department of Labor. March 15, 2022. www.dol.gov/sites/dolgov/files/WB/media/BearingTheCostReport.pdf

[9] Steven Ruggles, Sarah Flood, Matthew Sobek, Daniel Backman, Annie Chen, Grace Cooper, Stephanie Richards, Renae Rodgers, and Megan Schouweiler. IPUMS USA: Version 15.0 [dataset]. Minneapolis, MN: IPUMS, 2024.
https://doi.org/10.18128/D010.V15.0

[10] Code Lists, Definitions, and Accuracy. July 30, 2024. https://www.census.gov/programs-surveys/acs/technical-documentation/code-lists.html

Occupation									
Healthcare Support Occupations	3		43.2%	11.7%	22.3%	5.7%	2.5%	9.2%	5.5%
Installation, Maintenance, and Repair Occupations	11	40.0%	2.8%	41.8%	0.4%	6.3%		8.7%	
Legal Occupations	1		46.1%	2.0%	30.4%	9.3%		2.5%	9.8%
Life, Physical, and Social Science Occupations	1	46.1%	11.0%	39.4%				2.5%	1.1%
Office and Administrative Support Occupations	4	8.0%	36.6%	10.4%	26.6%	3.0%	2.2%	5.6%	7.5%
Production Occupations	3	48.0%	20.2%	16.5%	1.7%	2.1%	1.9%	8.7%	1.0%
Protective Service Occupations	4	37.3%	13.8%	44.3%	1.5%	2.7%	0.4%		
Sales and Related Occupations	1	13.2%	25.0%	30.9%	12.1%	1.4%	0.3%	12.3%	4.9%
Transportation and Material Moving Occupations	3	50.4%	2.7%	24.5%	4.0%	10.0%	0.8%	7.6%	0.1%

As illustrated in Exhibit 1.11, women of color, particularly Black and Hispanic women hold a significantly lower share of the good jobs as compared to male workers. Additionally, women are also underrepresented in good jobs that are traditionally male dominated such as protective services and Contraction and Extraction occupations.

In construction-related occupations, as shown in Exhibit 1.11 (Section 1.2), women accounted for only 2.2% to 4.6% of the workforce, with even lower representation among Black and Asian women. Additionally, women are less likely to participate in vocational training and Registered Apprenticeship programs, underscoring the need to expand access to these opportunities. Providing better pathways for women to "earn while they learn" could help them develop the skills needed for higher-paying jobs in the trades, as well as in non-traditional industries like advanced manufacturing and information technology, which typically offer higher wages.[11]

In Healthcare Support Occupations, men of color have a slightly higher representation compared to Healthcare Practitioners and Technical Occupations, though these roles tend to offer lower entry-level wages. Despite this, their presence in more advanced healthcare roles remains limited. Research underscores the significance of gender and cultural competence in healthcare, especially given the underrepresentation of men of color. Culturally competent care enables providers to understand and respect the cultural backgrounds of their patients, which is crucial for fostering trust, effective communication, and improved patient outcomes.[12]

Although the diversity of the U.S. population has increased, the demographic shifts in protective services have lagged.[13] These occupations remain male-dominated, and women—particularly women of color—face persistent barriers to entry, including bias, discrimination, and a lack of mentorship. These challenges hinder women's ability to access stable, higher-wage careers commonly found in protective services. Hispanic women have a relatively higher representation (13.8%) in these fields compared to Black and Asian women, who are significantly underrepresented. As highlighted in Exhibit 1.6 (Section 1.2), while women have higher representation in supervisory roles, as well as detective and investigator occupations, their numbers remain far below that of their male counterparts.

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[11] "Discover Apprenticeship: Women in Apprenticeship." U.S. Department of Labor, apprenticeship.gov, February 2021. Accessed February 2022. https://www.apprenticeship.gov/sites/default/files/women-in-apprenticeship-fact-sheet_0.pdf.
[12] Salsberg E, Richwine C, Westergaard S, et al. Estimation and Comparison of Current and Future Racial/Ethnic Representation in the US Health Care Workforce. JAMA Netw Open. 2021;4(3):e213789. doi:10.1001/jamanetworkopen.2021.3789
[13] U.S. Bureau of Labor Statistics. (2022). Examining employment and diversity in the protective service occupations. Monthly Labor Review. https://www.bls.gov/opub/mlr/2022/article/examining-employment-and-diversity-in-the-protective-service-occupations.htm

By recognizing these gaps, community college faculty can design targeted programs that provide inclusive training and access to support systems, ensuring that underrepresented groups, particularly women and men of color, are better prepared for high-demand, higher-wage occupations.

SECTION 2: GOOD JOB VOCATIONAL PROGRAMS ANALYSIS

This study identified 52 vocational programs offered by Riverside and San Bernardino County community colleges that had student enrollment in 2021-22 that prepare students for the good jobs (GJ) identified in this study. As a result of a joint effort between Employment Development Department (EDD) and California Community Colleges Chancellor's Office (CCCCO), a crosswalk was produced that aligns programs using Taxonomy of Programs (TOP) to Standard Occupation Code (SOC).[14] This resulting crosswalk was used to identify the vocational programs that train students for the identified good jobs. Exhibit 2.1 displays the 52 priority programs grouped by the industry sectors established by the California Community College Chancellor's Office. [15]

Exhibit 2.1: Good Job Vocational Programs in Inland Empire/Desert Region

Good Job Vocational Programs	
Advanced Manufacturing	**Health**
Aeronautical and Aviation Technology (0950.00)	Administrative Medical Assisting (1208.20)
Computer Electronics (0934.10)	Dental Hygienist (1240.20)
Industrial Systems Technology and Maintenance (0945.00)	Diagnostic Medical Sonography (1227.00)
Manufacturing and Industrial Technology (0956.00)	Health Information Coding (1223.10)
Advanced Transportation and Logistics	Licensed Vocational Nursing (1230.20)
Automotive Collision Repair (0949.00)	Medical Assisting (1208.00)
Automotive Technology (0948.00)	Medical Office Technology (0514.20)
Aviation Airframe Mechanics (0950.10)	Radiologic Technology (1225.00)
Aviation Powerplant Mechanics (0950.20)	Respiratory Care/Therapy (1210.00)
Diesel Technology (0947.00)	**Information and Communication Technologies - Digital Media**
Agriculture, Water, and Environmental Technologies	Applied Photography (1012.00)
Agriculture Business, Sales and Service (0112.00)	Commercial Music (1005.00)
Horticulture (0109.00)	Computer Infrastructure and Support (0708.00)
Nursery Technology (0109.30)	Computer Support (0708.20)
Turfgrass Technology (0109.40)	E-Commerce (Technology emphasis) (0709.10)
Business and Entrepreneurship	Geographic Information Systems (2206.10)
E-Commerce (Business emphasis) (0509.70)	Office Technology/Office Computer Applications (0514.00)
Law, General (1401.00)	**Public Safety**

Management Development and Supervision (0506.30)	Administration of Justice (2105.00)
Paralegal (1402.00)	Corrections (2105.10)
Energy, Construction, and Utilities	Fire Academy (2133.50)
Water and Wastewater Technology (0958.00)	Fire Technology (2133.00)
Architectural Drafting (0953.10)	Forensics, Evidence, and Investigation (2105.40)
Architecture and Architectural Technology (0201.00)	Industrial and Transportation Security (2105.30)
Drafting Technology (0953.00)	Police Academy (2105.50)
Electrical (0952.20)	**Retail, Hospitality, and Tourism**
Electrical Systems and Power Transmission (0934.40)	Fashion Merchandising (1303.20)
Electro-Mechanical Technology (0935.00)	Office Management (0514.40)
Energy Systems Technology (0946.10)	
Environmental Control Technology (0946.00)	

2.1 EQUITY ANALYSIS OVERVIEW

Referencing the identified GJ vocational programs, the following section provides a detailed examination of the representation of students by key demographic categories, including race/ethnicity, gender, and age as compared to the IED labor force. The charts and narrative highlight significant over- and under-representation within these categories across the identified programs. These insights are crucial for understanding how different student populations are participating in vocational programs, providing a basis for targeted interventions aimed at addressing equity gaps and ensuring all students have access to programs leading to good jobs.

In 2022, the population of individuals between the ages of 15 and 64 in Riverside and San Bernardino counties was 3.1 million, which represented 66.4% of the Inland Empire/Desert's total population. During the academic year 2022, the community colleges in the Inland Empire/Desert region enrolled 143,824 students into community college programs. Due to the release timing of program and student data, this study was confined to the 2022 academic year. To ensure consistency and comparability with various labor market data sources, all data utilized in this study was from 2022.

For the purposes of this section, equitable representation is defined as the demographics of students enrolled in G.J. Vocational Programs closely reflect the demographics of the labor force in IED. To assess equitable representation, it's essential to examine how closely student demographics in G.J. Vocational Programs align with those of the IE/D labor force.

Exhibit 2.2, shows college programs are enrolling a significantly higher share of Hispanic or Latino students in priority programs (63.6%) compared to the share of Hispanic or Latinos in the both the IE/D labor force (47.5%) and Good Jobs workforce (48.4%).

Black or African American students (6.7%) made up a slightly less of a share of enrollments in GJ vocational programs as compared to both Black or African American individuals in the IE/D labor force (7.1%) and Good Jobs workforce (6.8%). A significantly smaller share of Asian (3.7%) and White (25.7%) students were enrolled in community college GJ vocational programs as compared to Asian (10.5%) and White (34.1%) individuals in the IE/D labor force.
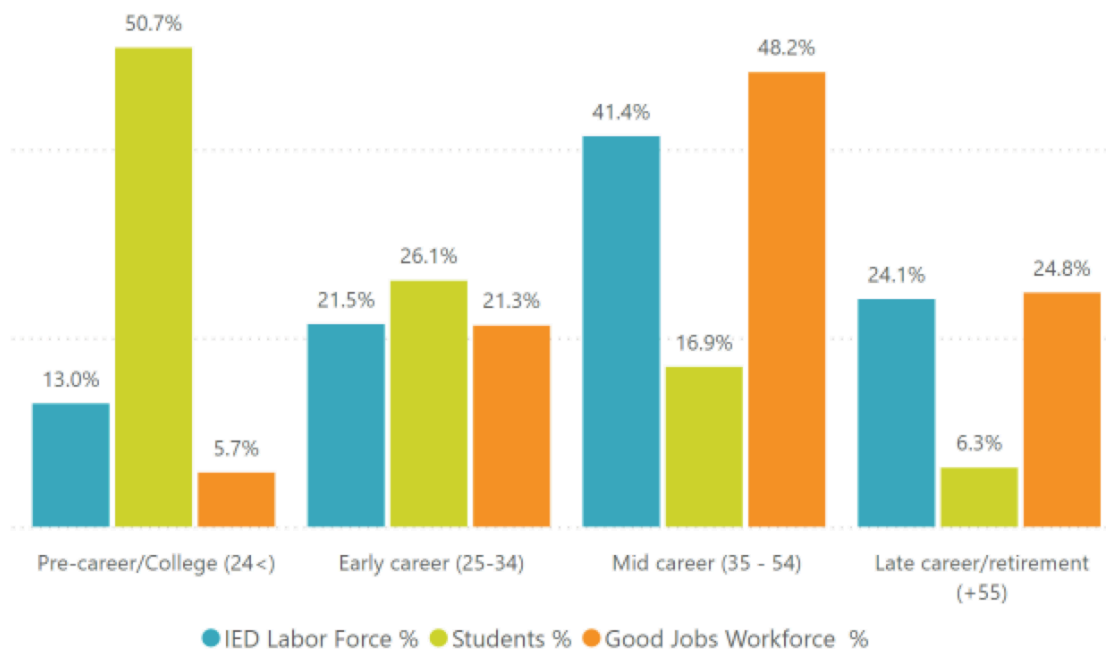
Exhibit 2.2: Race/Ethnicity of Students Enrolled in GJ Vocational Programs
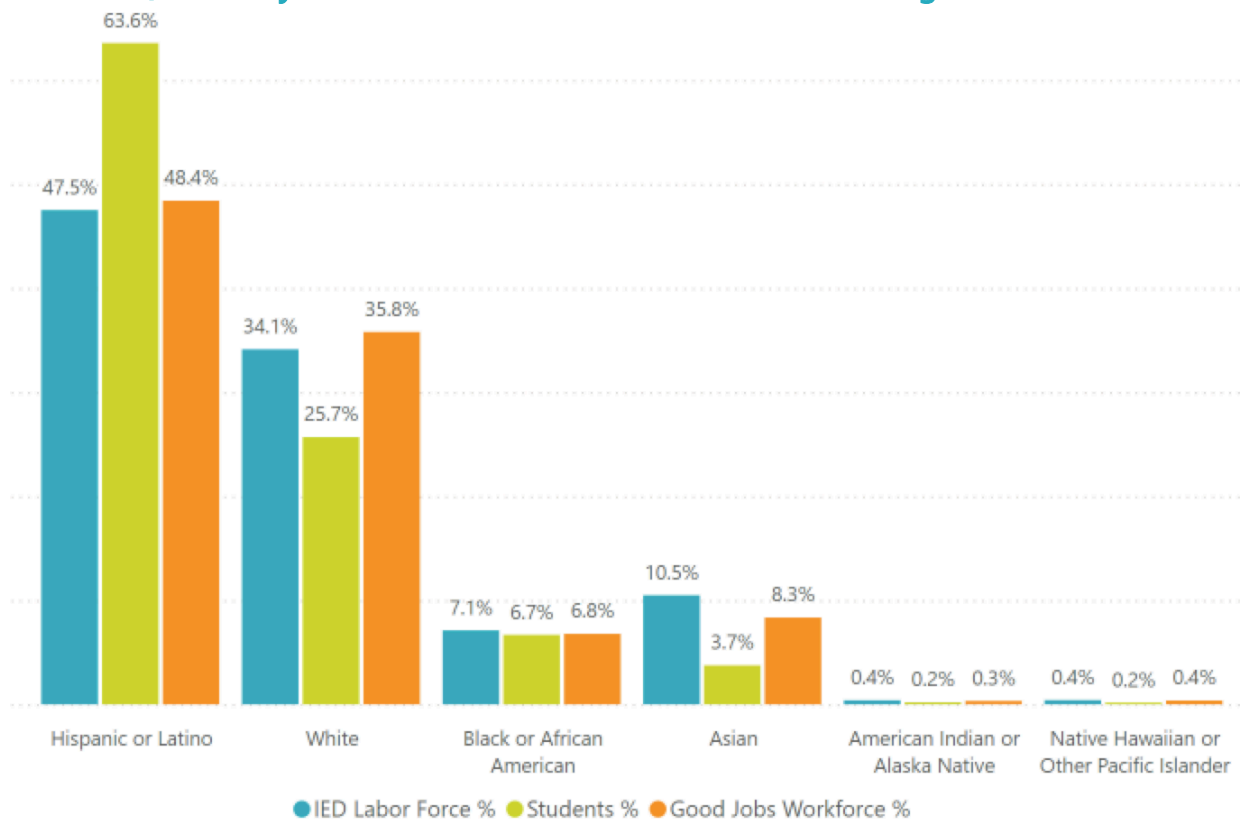
Sources: COE Analysis of Lightcast (2022). Version 2024.2. & California Community Colleges Chancellor's Office. (n.d.). Outcomes: Course retention and success rates. Data Mart. Retrieved September 2024

Exhibit 2.3 presents the age distribution for both students enrolled in GJ Vocational Programs, individuals in the IED labor force and workers in Good Jobs. For the ease of analyzing and comparing the age of each population data is grouped based on typical stages of progression through education and career. The share of mid-career (35 – 54) individuals in the IED labor force (41.4%) and workers in Good Jobs (48.2%) is significantly greater than mid-career (35 – 54) students enrolled in priority programs (16.9%). The Pre-career/College (24<) students enrolled in GJ Vocational Programs (50.7%) is significantly greater than the share of Pre-career/College (24<) individuals in the IED labor force (13.0%) and workers in Good Jobs (5.7%).
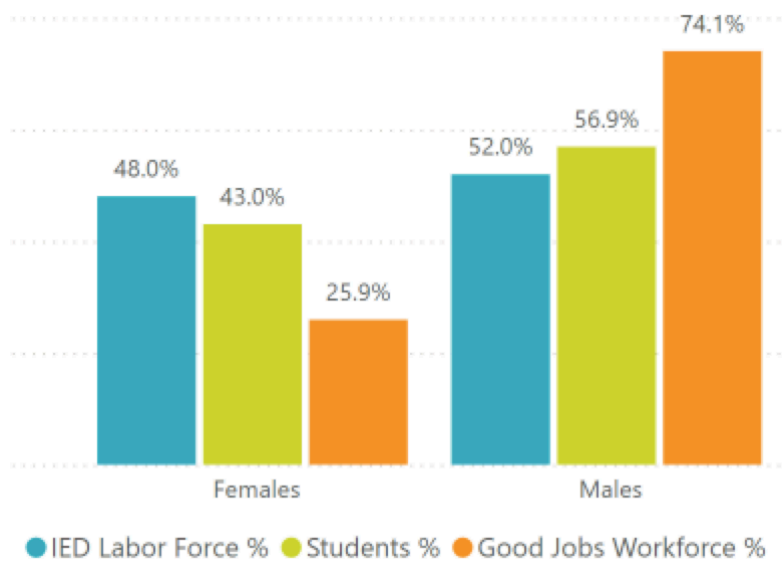
Exhibit 2.3: Age Category of Students Enrolled in GJ Vocational Programs

Sources: COE Analysis of Lightcast (2022). Version 2024.2. & California Community Colleges Chancellor's Office. (n.d.). Outcomes: Course retention and success rates. Data Mart. Retrieved September 2024

Exhibit 2.4 presents gender distribution for students enrolled in GJ Vocational Programs, individuals in the IED labor force and workers in Good Jobs. The share of female students enrolled in GJ Vocational Programs (43.0%) is greater than the share of female workers in good jobs (25.9%) suggesting that community colleges play an important role in ensuring equitable access to education for these students on a path to middle-skill, high-wage, growing jobs in the region.

Exhibit 2.4: Gender of Students Enrolled in GJ Vocational Programs

Sources: COE Analysis of Lightcast (2022). Version 2024.2. & California Community Colleges Chancellor's Office. (n.d.). Outcomes: Course retention and success rates. Data Mart. Retrieved September 2024

Exhibit 2.5 provides the number of the 52 priority programs with highly under or highly over representation in each of the demographic categories as compared to workers in good jobs.

Exhibit 2.5: GJ Vocational Programs with Significant Under/Over-Representation

Demographic Category	GJ Vocational Programs with Underrepresentation	GJ Vocational Programs with High Representation
Hispanic or Latino	1	42
Black or African American	8	12
White	30	5
Asian	12	
American Indian or Alaska Native	1	2
Native Hawaiian or Other Pacific Islander		
Females	20	13
Males	12	23
Early career (25-34)	3	31
Pre-career/College (24<)		43
Mid-career (35 - 54)	28	
Late career/retirement (+55)	23	

Based on the results shown in Exhibit 2.5, the following sections will analyze the highest under and highest over representation in the following demographic categories:

- Female students are highly underrepresented in 20 GJ vocational programs that support good jobs.
- Asian students are highly underrepresented in 12 GJ vocational programs that support good jobs.
- Black or African American students are highly underrepresented in 8 GJ vocational programs that support good jobs.
- Hispanic students are highly overrepresented in 42 GJ vocational programs that support good jobs.
- Male students are highly overrepresented in 23 GJ vocational programs that support good jobs.
- White students are highly underrepresented in 30 GJ vocational programs that support good jobs.

2.2 FEMALE STUDENTS HIGHLY UNDERREPRESENTED IN GJ VOCATIONAL PROGRAMS

In the Inland Empire/Desert (IE/D) regions, Female individuals constituted 48.0% of the labor force and account for only 26% of workers in good jobs, yet they represent 43.1% of the students enrolled in community college programs during the academic year 2021-2022 and are significantly underrepresented in 20 of the 52 Good Jobs Vocational Programs.

Exhibit 2.6 outlines the 20 programs, which span 6 of the 11 CCCCCO Priority Sectors[20] with most of the programs concentrated in the Energy, Constructions, and Utilities sector (7 programs). This sector represents a critical area where efforts to boost female participation could be highly effective.

Exhibit 2.6: GJ Vocational Programs with Significant Underrepresentation of Female Students

GJ Vocational Programs	% of Female Students
Inland Empire / Desert Region Female Labor Force	48.0%
Female workers employed in the 47 "Good Jobs"	26.0%
Energy, Construction, and Utilities	
0946.00 - Environmental Control Technology	3.6%
0952.20 - Electrical	4.4%
0934.40 - Electrical Systems and Power Transmission	6.4%
0958.00 - Water and Wastewater Technology	17.9%
0953.00 - Drafting Technology	23.3%
0953.10 - Architectural Drafting	30.5%
0201.00 - Architecture and Architectural Technology	38.1%
Information and Communication Technologies - Digital Media	
0708.20 - Computer Support	22.7%
0708.00 - Computer Infrastructure and Support	23.1%
1005.00 - Commercial Music	24.6%
Public Safety	
2133.50 - Fire Academy	6.5%
2133.00 - Fire Technology	9.3%
2105.50 - Police Academy	19.5%
Advanced Transportation and Logistics	
0949.00 - Automotive Collision Repair	8.9%
0950.10 - Aviation Airframe Mechanics	9.1%
0948.00 - Automotive Technology	11.6%
Agriculture, Water, and Environmental Technologies	
0112.00 - Agriculture Business, Sales and Service	26.9%
0109.00 - Horticulture	30.3%
Advanced Manufacturing	
0950.00 - Aeronautical and Aviation Technology	8.6%
0934.10 - Computer Electronics	15.4%

2.3 ASIAN STUDENTS HIGHLY UNDERREPRESENTED IN GJ VOCATIONAL PROGRAMS

In the Inland Empire/Desert (IE/D) regions, while Asian individuals constituted 10.5% of the labor force and account for 8.3% of workers in good jobs, they represent only 3.7% of the students enrolled in community college programs during the academic year 2021-2022 and are significantly underrepresented in 12 of the 52 Good Jobs Vocational Programs.

Exhibit 2.7 outlines the 12 programs, which span 6 of the 11 CCCCCO Priority Sectors[16] with most of the programs concentrated in two sectors: Information and Communication Technologies – Digital Media (4 programs) and Public Safety (4 programs). These sectors represent critical areas where efforts to boost Asian participation could be highly effective.

Exhibit 2.7: GJ Vocational Programs with Significant Underrepresentation of White Students

GJ Vocational Programs	% of Asian Students
Inland Empire / Desert Region Asian Labor Force	10.5%
Asian workers employed in the 47 "Good Jobs"	8.3%
Information and Communication Technologies - Digital Media	
1005.00 - Commercial Music	4.1%
0514.00 - Office Technology/Office Computer Applications	4.8%
1012.00 - Applied Photography	7.0%
0708.00 - Computer Infrastructure and Support	8.0%
Public Safety	
1402.00 - Paralegal	2.3%
2105.00 - Administration of Justice	2.6%
2133.00 - Fire Technology	2.9%
2105.50 - Police Academy	4.3%
Advanced Manufacturing	
0950.00 - Aeronautical and Aviation Technology	5.1%
Advanced Transportation and Logistics	
0948.00 - Automotive Technology	3.3%
Business and Entrepreneurship	
0506.30 - Management Development and Supervision	7.3%
Energy, Construction, and Utilities	
0952.20 - Electrical	2.7%

2.4 BLACK OR AFRICAN AMERICAN STUDENTS HIGHLY UNDERREPRESENTED IN GJ VOCATIONAL PROGRAMS

In the Inland Empire/Desert (IE/D) regions, while Black or African American individuals constituted 7.1% of the labor force and account for 6.8% of workers in good jobs, they represent only 6.7% of the students enrolled in community college programs during the academic year 2021-2022 and are significantly underrepresented in 8 of the 52 Good Jobs Vocational Programs.

Exhibit 2.8 outlines the 8 programs, which span 3 of the 11 CCCCCO Priority Sectors with most of the programs concentrated in two sectors: Energy, Construction, and Utilities (4 programs) and Public Safety (3 programs).

These sectors represent critical areas where efforts to boost Black or African American participation could be highly effective.

Exhibit 2.8: GJ Vocational Programs with Significant Underrepresentation of Black Students

GJ Vocational Programs	% of Black Students
Inland Empire / Desert Region Black Labor Force	7.1%
Black workers employed in the 47 "Good Jobs"	6.8%
Energy, Construction, and Utilities	
0946.00 - Environmental Control Technology	4.1%
0201.00 - Architecture and Architectural Technology	4.9%
0952.20 - Electrical	5.2%
0953.00 - Drafting Technology	5.7%
Public Safety	
2133.50 - Fire Academy	2.8%
2133.00 - Fire Technology	3.2%
2105.50 - Police Academy	4.7%
Advanced Transportation and Logistics	
0948.00 - Automotive Technology	4.0%

2.5 HISPANIC OR LATINO STUDENTS HIGHLY REPRESENTED IN GJ VOCATIONAL PROGRAMS

In the Inland Empire/Desert (IE/D) regions, while Hispanic or Latino individuals constituted 47.5% of the labor force and account for 48.4% of workers in good jobs, they represent 65.1% of the students enrolled in community college programs during the academic year 2021-2022 and are significantly represented in 42 of the 52 Good Jobs Vocational Programs as compared to IE/D labor force.

Exhibit 2.9 outlines the 42 programs, which span 9 of the 11 CCCCCO Priority Sectors with most of the programs concentrated in three sectors: Energy, Construction, and Utilities (9 programs), Health (8 programs) and Public Safety (6 programs). Recognizing this overrepresentation is vital because it highlights both opportunities and challenges. While these sectors provide access to stable, well-paying jobs, occupational segregation can limit advancement and reinforce wage disparities. Addressing these issues ensures that Hispanic students not only enter these fields but also have the support and pathways to progress into higher-skilled, higher-paying roles, enhancing economic mobility and workforce diversity as well as emphasizes the importance of designing inclusive programs that foster success and career advancement for Hispanic and Latino students in these key industries.

Exhibit 2.9: GJ Vocational Programs with Significant Underrepresentation of Hispanic or Latino Students

GJ Vocational Programs	% of Hispanic or Latino Students

Inland Empire / Desert Region Hispanic or Latino Labor Force	47.5%
Hispanic or Latino workers employed in the 47 "Good Jobs"	48.4%
Energy, Construction, and Utilities	
0935.00 - Electro-Mechanical Technology	84.0%
0946.00 - Environmental Control Technology	82.6%
0934.40 - Electrical Systems and Power Transmission	82.2%
0953.10 - Architectural Drafting	74.6%
0201.00 - Architecture and Architectural Technology	74.3%
0946.10 - Energy Systems Technology	73.7%
0952.20 - Electrical	70.3%
0953.00 - Drafting Technology	63.0%
0958.00 - Water and Wastewater Technology	59.2%
Health	
1208.00 - Medical Assisting	100.0%
1223.10 - Health Information Coding	73.7%
1210.00 - Respiratory Care/Therapy	71.2%
1240.20 - Dental Hygienist	68.8%
0514.20 - Medical Office Technology	68.5%
1230.20 - Licensed Vocational Nursing	68.4%
1208.20 - Administrative Medical Assisting	64.9%
1225.00 - Radiologic Technology	63.3%
Public Safety	
2105.50 - Police Academy	73.1%
2105.00 - Administration of Justice	69.6%
2105.40 - Forensics, Evidence, and Investigation	68.5%
2105.10 - Corrections	67.6%
2105.30 - Industrial and Transportation Security	58.0%
1402.00 - Paralegal	56.9%
Advanced Transportation and Logistics	
0949.00 - Automotive Collision Repair	89.7%
0947.00 - Diesel Technology	79.0%
0948.00 - Automotive Technology	76.5%
0950.10 - Aviation Airframe Mechanics	63.0%
0950.20 - Aviation Powerplant Mechanics	61.7%
Information and Communication Technologies - Digital Media	
1012.00 - Applied Photography	63.8%
0514.00 - Office Technology/Office Computer Applications	62.4%
1005.00 - Commercial Music	56.7%
0708.00 - Computer Infrastructure and Support	56.2%
0708.20 - Computer Support	55.1%
Advanced Manufacturing	
0945.00 - Industrial Systems Technology and Maintenance	100.0%
0950.00 - Aeronautical and Aviation Technology	72.1%
0956.00 - Manufacturing and Industrial Technology	70.2%
0934.10 - Computer Electronics	56.5%
Agriculture, Water, and Environmental Technologies	

0112.00 - Agriculture Business, Sales and Service	77.1%
0109.00 - Horticulture	76.7%
Business and Entrepreneurship	
0506.30 - Management Development and Supervision	65.1%
Retail, Hospitality, and Tourism	
1303.20 - Fashion Merchandising	84.6%
0514.40 - Office Management	69.6%

2.6 MALE STUDENTS HIGHLY OVERREPRESENTED IN GJ VOCATIONAL PROGRAMS

In the Inland Empire/Desert (IE/D) regions, males made up 52.0% of the labor force but account for 74.1% of workers in good jobs. Despite this, they represent 57.1% of the community college enrollment during the academic year 2021-2022 and were significantly overrepresented in 23 of the 52 Good Jobs Vocational Programs.

Exhibit 2.10 outlines the 23 programs, which span 6 of the 11 CCCCCO Priority Sectors with most of the programs concentrated in the Energy, Construction, and Utilities sector (9 programs) followed by the Advanced Transportation and Logistics sector (4 programs).

Exhibit 2.10: GJ Vocational Programs with Significant Underrepresentation of Male Students

GJ Vocational Programs	% of Male Students
Inland Empire / Desert Region Male Labor Force	52.0%
Male workers employed in the 47 "Good Jobs"	74.1%
Energy, Construction, and Utilities	
0946.10 - Energy Systems Technology	100.0%
0946.00 - Environmental Control Technology	96.4%
0952.20 - Electrical	95.6%
0934.40 - Electrical Systems and Power Transmission	93.6%
0958.00 - Water and Wastewater Technology	82.1%
0953.00 - Drafting Technology	76.7%
0953.10 - Architectural Drafting	69.5%
0201.00 - Architecture and Architectural Technology	61.9%
Advanced Transportation and Logistics	
0947.00 - Diesel Technology	100.0%
0949.00 - Automotive Collision Repair	91.1%
0950.10 - Aviation Airframe Mechanics	90.9%
0948.00 - Automotive Technology	88.4%
Information and Communication Technologies - Digital Media	
0708.20 - Computer Support	77.3%
0708.00 - Computer Infrastructure and Support	76.9%
1005.00 - Commercial Music	75.4%
Advanced Manufacturing	
0945.00 - Industrial Systems Technology and Maintenance	100.0%
0950.00 - Aeronautical and Aviation Technology	91.4%

0934.10 - Computer Electronics	84.6%
Agriculture, Water, and Environmental Technologies	
0112.00 - Agriculture Business, Sales and Service	73.1%
0109.00 - Horticulture	69.7%
Public Safety	
2133.50 - Fire Academy	93.5%
2133.00 - Fire Technology	90.7%

2.7: WHITE STUDENTS HIGHLY UNDERREPRESENTED IN GJ VOCATIONAL PROGRAMS

In the Inland Empire/Desert (IE/D) regions, while white individuals constituted 34.1% of the labor force and account for 35.8% of workers in good jobs, they represent only 22.5% of the students enrolled in community college programs during the academic year 2021-2022 and are significantly underrepresented in 30 of the 52 Good Jobs Vocational Programs.

Exhibit 2.11 outlines the 30 programs, which span 9 of the 11 CCCCCO Priority Sectors[17] with most of the programs concentrated in three sectors: Energy, Constructions, and Utilities (8 programs); Health (6 programs); and Advanced Transportation and Logistics (5 programs). These sectors represent critical areas where efforts to boost white participation could be highly effective.

Exhibit 2.11: GJ Vocational Programs with Significant Underrepresentation of White Students

GJ Vocational Programs	% of White Students
Inland Empire / Desert Region White Labor Force	34.1%
White workers employed in the 47 "Good Jobs"	35.8%
Energy, Construction, and Utilities	
0946.00 - Environmental Control Technology	13.4%
0935.00 - Electro-Mechanical Technology	16.0%
0934.40 - Electrical Systems and Power Transmission	17.8%
0201.00 - Architecture and Architectural Technology	20.9%
0952.20 - Electrical	21.7%
0953.00 - Drafting Technology	22.0%
0953.10 - Architectural Drafting	25.4%
0946.10 - Energy Systems Technology	26.3%
Health	
0514.20 - Medical Office Technology	10.0%
1230.20 - Licensed Vocational Nursing	11.0%
1208.20 - Administrative Medical Assisting	13.4%
1223.10 - Health Information Coding	26.3%

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[17] California Community Colleges Chancellor's Office. (n.d.). *K12 SWP industry sector crosswalk*. Strong Workforce Program Archive. https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Workforce-and-Economic-Development/Strong-Workforce-Program/SWP-Archive/Events/K12-SWP-Industry-Sector-Crosswalk

1225.00 - Radiologic Technology	27.7%
1210.00 - Respiratory Care/Therapy	28.8%
Advanced Transportation and Logistics	
0949.00 - Automotive Collision Repair	10.3%
0948.00 - Automotive Technology	15.4%
0947.00 - Diesel Technology	21.0%
0950.20 - Aviation Powerplant Mechanics	26.6%
0950.10 - Aviation Airframe Mechanics	26.8%
Information and Communication Technologies - Digital Media	
1012.00 - Applied Photography	21.3%
0514.00 - Office Technology/Office Computer Applications	21.6%
Public Safety	
2105.50 - Police Academy	17.9%
2105.00 - Administration of Justice	19.2%
2105.40 - Forensics, Evidence, and Investigation	21.0%
2105.10 - Corrections	24.2%
Retail, Hospitality, and Tourism	
0514.40 - Office Management	16.5%
Advanced Manufacturing	
0950.00 - Aeronautical and Aviation Technology	22.8%
Agriculture, Water, and Environmental Technologies	
0112.00 - Agriculture Business, Sales and Service	22.9%
0109.00 - Horticulture	23.3%
Business and Entrepreneurship	
0506.30 - Management Development and Supervision	16.7%

2.8: INTERSECTIONALITY OF RACE AND GENDER IN VOCATION PROGRAMS THAT SUPPORT GOOD JOBS

This section explores this intersectionality of race and gender in the programs that train students for good jobs identified in this report. Incorporating gender and race when discussing community college programs is essential for promoting equity and inclusion. Community colleges serve as key access points to education and career advancement for diverse populations, and examining enrollment data through the lens of race and gender reveals critical patterns. For example, if certain groups, such as women or racial minorities, are underrepresented in high-demand, high-wage fields like STEM, construction, or healthcare, it highlights barriers that need to be addressed to ensure all students have equal access to these opportunities. Understanding these disparities allows colleges to design targeted interventions, such as recruitment strategies, mentorship programs, or financial aid packages, that can help bridge gaps and create pathways for all students to succeed.

Furthermore, analyzing the intersection of gender and race helps challenge occupational stereotypes and promote workforce diversity. Traditional perceptions of who belongs in certain fields can limit students' aspirations and opportunities. By making data-driven decisions based on who is enrolling in which programs, community colleges can proactively promote inclusive learning environments. This not only enhances students' educational experiences but also ensures that a broader, more diverse set of workers is prepared to enter

industries in need of skilled labor. Ultimately, addressing these issues at the program level helps maximize students' potential, equips them with the tools to succeed, and strengthens the overall workforce.

Exhibit 2.12 presents the distribution of Race and Ethnicity, disaggregated by gender, across all cohorts used in this study, utilizing data from

Exhibit 2.12: Student Race & Ethnicity and Gender Distribution

	Hispanic or Latinos		White		Black or African American		Asian	
	M	F	M	F	M	F	M	F
IE/D Population	22.7%	25.1%	17.4%	16.9%	3.6%	3.6%	5.1%	5.5%
IE/D Labor Force	22.9%	25.0%	17.3%	17.1%	3.6%	3.6%	5.0%	5.6%
Good Jobs Workforce	27.8%	20.1%	22.7%	11.7%	4.5%	2.6%	6.0%	4.6%
Priority Sectors								
Advanced Manufacturing	60.0%	11.1%	28.9%					
Advanced Transportation and Logistics	73.0%	5.6%	16.2%	2.3%	2.2%		0.8%	
Business and Entrepreneurship	18.5%	50.7%	4.5%	17.0%	1.6%	6.2%	1.5%	
Energy, Construction, and Utilities	86.5%	0.2%	11.4%				1.9%	
Health	14.6%	46.1%	9.3%	20.3%		1.9%	3.8%	4.1%
Information and Communication Technologies - Digital Media	16.3%	54.0%	3.8%	15.0%	0.7%	6.2%	2.3%	1.8%
Public Safety	35.1%	31.2%	20.6%	7.4%	2.5%	2.4%	0.2%	0.6%

Source: California Community Colleges Chancellor's Office. (n.d.). Outcomes: Course retention and success rates. Data Mart. Retrieved September 2024

Exhibit 2.12 reveals important insights about gender and race/ethnicity representation in community college programs, specifically in key sectors like Advanced Manufacturing, Health, Business and Entrepreneurship, and Public Safety. Hispanic/Latino male students represent a significantly higher share in Advanced Manufacturing programs, constituting 60.0% of students, while white male students make up 28.9% of these programs. This trend aligns with broader patterns of occupational segregation in technical and high-paying fields, where men, particularly white and Hispanic/Latino men, dominate, leaving women and minority men underrepresented.[18]

In contrast, Health programs show a substantially higher share of Hispanic/Latina women (46.1%) and women overall, which reflects traditional gender norms and career preferences that guide more women into caregiving roles. However, Hispanic/Latino males remain underrepresented in health-related programs (14.6%), indicating an opportunity for community colleges to target outreach and recruitment efforts to diversify these programs further. Research underscores the significance of gender and cultural competence in healthcare, especially given the underrepresentation of men of color. Culturally competent care enables providers to understand and respect the cultural backgrounds of their patients, which is crucial for fostering trust, effective communication, and improved patient outcomes.[19]

Similarly, Public Safety programs reflects clear gender and racial disparities. White and Hispanic/Latino males represent the majority of students (35.1% and 20.6%, respectively), while females, particularly Black and Asian

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[18] Bearing the Cost: How Overrepresentation in Undervalued Jobs Disadvantaged Women During the Pandemic. US Department of Labor." March 15, 2022. www.dol.gov/sites/dolgov/files/WB/media/BearingTheCostReport.pdf
[19] Salsberg E, Richwine C, Westergaard S, et al. Estimation and Comparison of Current and Future Racial/Ethnic Representation in the US Health Care Workforce. JAMA Netw Open. 2021;4(3):e213789. doi:10.1001/jamanetworkopen.2021.3789

women, are significantly underrepresented. This mirrors the findings in the Bureau of Labor Statistics (BLS) report on protective services, where gender and racial barriers limit women's participation, especially in leadership roles.[22] These imbalances highlight the need for programmatic changes and support mechanisms to increase diversity in male-dominated fields such as Advanced Manufacturing and Public Safety, while also encouraging broader representation of men in Health sectors.

Community colleges play a vital role in addressing these disparities by developing inclusive programs that support underrepresented groups and ensure equitable access to career paths with stable, higher wages. Targeted recruitment, mentorship, and "earn-while-you-learn" models can help bridge these gaps and diversify the workforce in sectors critical to regional economic growth.

SECTION 3: KEY FINDINGS

The following section highlights key findings from the analysis contained in this report. By aligning programs with the needs of middle-skill occupations, community colleges provide students with the skills and qualifications necessary to enter the workforce quickly and pursue economic mobility. This approach not only benefits students by opening pathways to well-paying jobs, but also strengthens the local economy by addressing labor shortages and supporting industries that rely on a skilled workforce. The success of students in these programs contributes to regional economic growth, making community colleges a vital link between education and the workforce.

DISPARITIES IN THE DEMOGRAPHICS OF WORKFORCE IN GOOD JOBS

The comparison of workforce demographics in the identified good jobs against the broader regional labor force revealed significant disparities:

- Females are highly underrepresented in 31 of the 47 good jobs.
- Black or African Americans are highly underrepresented in 24 of the 47 good jobs.
- Hispanics or Latinos are highly underrepresented in 21 of the 47 good jobs.
- Workers of late career/retirement (+55) age are highly underrepresented in 21 of the 47 good jobs.

DISPARITIES IN THE DEMOGRAPHICS OF STUDENTS ENROLLED IN VOCATIONAL PROGRAMS

The comparison of community college student demographics in vocational programs with workforce demographics in good jobs also uncovered significant disparities:

- Female students are highly underrepresented in 20 good job vocational programs that support good jobs.
- Asian students are highly underrepresented in 12 good job vocational programs that support good jobs.
- Black or African American students are highly underrepresented in 8 good job vocational programs that support good jobs.
- Hispanic students are highly overrepresented in 42 good job vocational programs that support good jobs.
- Male students are highly overrepresented in 23 good job vocational programs that support good jobs.
- White students are highly underrepresented in 30 good job vocational programs that support good jobs.

EQUITY GAPS IN THE EDUCATION AND EMPLOYMENT PIPELINE

The disparities observed in both workforce demographics and student enrollments in vocational programs clearly delineate the persistent equity gaps in the education-to-employment pipeline, as detailed in the subsequent sections. These gaps are demonstrated by differences in participation rates among the various demographic groups when compared to their proportions in the wider labor market. By identifying where certain groups are underrepresented or overrepresented, the analysis helps to highlight structural issues and areas where targeted interventions are needed to ensure equitable access to education and employment opportunities in the following areas:

1. **Women in Traditionally Male-Dominated Occupations**: Women are consistently underrepresented in apprenticeships in construction occupations as well as other traditional apprenticable trades.[20] These sectors are predominantly occupied by male workers, especially White and Hispanic males, which is evident in high-wage occupations like Installation, Maintenance, and Repair, as well as Construction and Extraction occupations.[21] This imbalance underscores ongoing occupational segregation, where men hold a larger share of high-wage roles in these sectors. [22]
2. **Representation in Protective Services**: Male workers, particularly White and Hispanic males, heavily dominate high-quality jobs in protective services, with women of color representing less than 13% of these roles. The Bureau of Labor Statistics reports that White workers comprise nearly 90% of first-line supervisors in police and detective work, and over 80% in other high-paying protective service roles.[23] These trends further the divide between economic success and more equitable success and representation of women and other minority male populations within these occupations.
3. **Representation of Minority Women:** Although women make up nearly half of the labor force in the IE/D area, they occupy only 26% of the positions in 31 out of 47 identified good jobs. Hispanic women and other women of color are particularly underrepresented in community college programs that prepare students for careers in traditionally male-dominated fields like protective services and technical maintenance roles which furthers the divide of their equitable representation.
4. **Men of color representation in Healthcare:** Men of color are somewhat better represented in Healthcare Support Occupations than in Healthcare Practitioners and Technical Occupations, though the former typically offers lower entry-level wages. This representation highlights a critical need for gender and cultural competence in healthcare settings, which is essential for building trust, enhancing communication, and improving patient outcomes.[24] Community colleges play a crucial role in bridging this gap by developing programs that attract men of color into healthcare careers and equip them with the cultural competence necessary to excel.

Addressing these disparities by improving the education-to-employment pipeline and enhancing support services is crucial for increasing enrollment and completion rates among both women and men of color in community college programs geared towards middle-skill occupations. Implementing such measures can help correct gender and racial imbalances and open pathways to economic advancement for these underrepresented groups in the IE/D area. By fostering a more inclusive and culturally competent workforce, particularly in high-demand sectors like healthcare and protective services, community colleges can play a pivotal role in meeting the diverse needs of their communities and enhancing overall patient and public outcomes.

[20] Bearing the Cost: How Overrepresentation in Undervalued Jobs Disadvantaged Women During the Pandemic. US Department of Labor." March 15, 2022. www.dol.gov/sites/dolgov/files/WB/media/BearingTheCostReport.pdf

[21] "Discover Apprenticeship: Women in Apprenticeship." U.S. Department of Labor, apprenticeship.gov, February 2021. Accessed February 2022. https://www.apprenticeship.gov/sites/default/files/women-in-apprenticeship-fact-sheet_0.pdf.

[22] "Occupational Segregation of Black Women Workers in the U.S. National Employment Law Project. April 9, 2024. https://www.nelp.org/insights-research/occupational-segregation-of-black-women-workers-in-the-u-s/

[23] Examining employment and diversity in the protective service occupations. January 2022. . https://www.bls.gov/opub/mlr/2022/article/examining-employment-and-diversity-in-the-protective-service-occupations.htm

[24] Salsberg E, Richwine C, Westergaard S, et al. Estimation and Comparison of Current and Future Racial/Ethnic Representation in the US Health Care Workforce. JAMA Netw Open. 2021;4(3):e213789. doi:10.1001/jamanetworkopen.2021.3789

APPENDIX A: METHODOLOGY

DEFINITIONS

SOC code: The Standard Occupational Classification system is a federally defined system used to classify workers into occupational categories that are grouped together according to job duties.[25]

TOP code: The Taxonomy of Programs is a system of codes used by the State of California to compare differently named academic programs with similar outcomes across community colleges.[26] Each course offered by California Community Colleges is assigned to a TOP code.

Living wage: The living wage for this study is based on the Living Wage Calculator by MIT, which measures the floor income necessary for an individual (under age 65 and without disability) or family to afford basic expenses in California.[27] The $25.74 living wage for this report was based on the average of $26.30 in Riverside County and $25.17 in San Bernardino County.

Good job: A middle-skill job that requires at least a high school diploma, but less than a bachelor's degree, requires fewer than five years of work experience at entry; entry-level earnings are above the living wage for a single adult in the Inland Empire/Desert regions; positive projected growth of new jobs annually; and has at least 50 projected annual job openings in Inland Empire/Desert between 2022 and 2027.

Good job vocational program: A community college program that trains for a good job identified in this report.

Labor force participation: People who are 16 years of age and older, who are either employed or unemployed and seeking work are considered labor force participants.[28]

Underrepresentation: Using the Proportionality Index, underrepresentation occurs when a subgroup constitutes a smaller percentage within the specific population than in the broader population or workforce. For instance, if African American students make up 10% of a college's student body but represent 20% of the local population, the Proportionality Index would signal underrepresentation.[29]

Overrepresentation: Using the Proportionality Index method, overrepresentation occurs when a subgroup (such as an ethnic or gender group) makes up a larger percentage of a specific population (like students or faculty) than it does in the general population or workforce. For example, if Hispanic students comprise 50% of a college's student body but only 30% of the regional population, the Proportionality Index would indicate they are overrepresented.[29]

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[25] "Standard Occupational Classification," Bureau of Labor Statistics, bls.gov/soc/

[26] "Taxonomy of Programs," California Community Colleges, https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Educational-Services-and-Support/Academic-Affairs/What-we-do/Curriculum-and-Instruction-Unit/Files/TOPmanual6200909corrected12513pdf.ashx

[27] *Amy K. Glasmeier, "Living Wage Calculator," Massachusetts Institute of Technology, 2024. Accessed on [Insert Date Accessed], https://livingwage.mit.edu/.*

[28] U.S. Bureau of Labor Statistics. (n.d.). Labor force concepts. Retrieved from https://www.bls.gov/cps/definitions.htm#lfconcepts

[29] California Community Colleges Chancellor's Office. (2017). *Understanding disproportionate impact and equity in California community colleges*. Sacramento, CA: California Community Colleges Chancellor's Office. Retrieved from https://www.cccco.edu/

DATA

We used several data sources for this project, which are described below, including any applicable treatment used on the data.

Labor market information was pulled from Lightcast, a labor market analytics firm that specializes in providing insights for workforce development, economic planning, and education. Lightcast compiles its regional and occupational datasets from a variety of federal and state sources. Among these are the Quarterly Census of Employment and Wages (QCEW), which offers detailed industry employment and wage data, and other critical sources such as the U.S. Census Bureau's American Community Survey (ACS) and Quarterly Workforce Indicators, the Bureau of Labor Statistics' Occupational Employment and Wage Statistics and Current Population Survey, and data from the Bureau of Economic Analysis.[30] These combined resources provide comprehensive insights into employment trends, wage patterns, and good job workforce demographic characteristics. This data was used to provide baseline demographic descriptive analysis for the labor force and good jobs workforce for this report. The baseline year of 2022 was used to offer the maximum comparability with the student data available and projected data was through 2027.

Good jobs workforce demographics data was pulled from IPUMS USA, which preserves and harmonizes U.S. Census microdata, specifically using 2022 ACS data. These data included occupational data to be used to report disaggregated demographics for both Race & Ethnicity and Gender. Due to the inclusion of partially masked SOC codes, we created a crosswalk between the good job SOC codes and the appropriate masked SOC codes from this data. We were able to match 46 of the 47 good jobs to produce enough data for us to report on.

Good job vocational program student demographics data was pulled from the California Community Colleges Chancellor's Office Data Mart system, specifically using the Outcomes > Retention/Success Rate data set.[31] The data included a regular-admit students that were enrolled in 2022 calendar year in any of the identified good job vocational programs. In the California Community Colleges system, a "regular-admit student" generally refers to a student who meets the standard admissions requirements and is eligible for enrollment based on typical criteria, like being over 18 years old or possessing a high school diploma or equivalent. This term distinguishes such students from special categories like "dual-enrolled" high school students, who take college courses part-time, or other non-traditional admits (such as minors or individuals in special programs) who might have specific enrollment restrictions or require additional approvals.[32]

The programs identified in this report were found by referencing the CIP-SOC crosswalk, a joint initiative by the Bureau of Labor Statistics and National Center for Education Statistics,[33] connects educational programs with corresponding occupations. Leveraging this crosswalk, we analyzed the 407 active programs to identify those associated to the SOC codes of the good jobs identified.

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[30] Lightcast (2022). Version 2024.2. Retrieved from https://lightcast.io/ in August 2024.

[31] California Community Colleges Chancellor's Office. (n.d.). *Outcomes: Course retention and success rates*. Data Mart. Retrieved September 2024 from https://datamart.cccco.edu/Outcomes/Course_Ret_Success.aspx

[32] California Community Colleges Chancellor's Office. (n.d.). *Student FAQ*. Retrieved 10/31/2024 from https://www.cccco.edu/Students/student-faq

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STATISTICAL ANALYSIS

We applied multiple statistical methods, including the proportionality index, z-score, and p-value, to accurately assess demographic representation within the cohorts and to quantify the strength and significance of observed differences. These methods enhance confidence in the data by allowing precise comparisons of demographic percentages and determining the statistical relevance of any disparities.

Z-Score: A z-score measures how many standard deviations a data point is from the mean (average) of a dataset. It is calculated by subtracting the mean from the value and dividing by the standard deviation. A positive z-score indicates a value above the mean, while a negative z-score indicates a value below the mean. Z-scores are commonly used to understand the position of a data point within a normal distribution and to compare values across different datasets. As an example, a z-score of 1.5 means the value is 1.5 standard deviations above the mean, suggesting it's moderately above average compared to the rest of the data.

P-Value: The p-value represents the probability of observing a result as extreme as, or more extreme than, the actual observed results, assuming the null hypothesis is true. In hypothesis testing, it helps determine the statistical significance of the results. A small p-value (e.g., < 0.05) indicates strong evidence against the null hypothesis, suggesting that the observed results are unlikely to have occurred by random chance. Conversely, a large p-value implies the results could be due to random variation. As an example, a test with a p-value of 0.03, there is a 3% chance that the observed results are due to random chance if the null hypothesis is true, often suggesting statistical significance at the 5% level ($p < 0.05$) resulting in a 95% confidence level.

Proportionality Index is a statistical method used to evaluate the representation of a specific subgroup within a population relative to its representation in a reference group, such as a regional workforce or general population. It is calculated by dividing the proportion of the subgroup in the target population (e.g., students or workers in good jobs) by the proportion of the subgroup in the reference population or the labor force in IE/D regions for this report.

To interpret the data, a Proportionality Index of 1 indicates perfect proportionality, meaning the subgroup is equally represented in both groups. An index greater than 1 suggests overrepresentation, while an index less than 1 suggests underrepresentation. To further study the magnitude of the representation, we defined "highly" over or under representation where there was positive or negative 0.15 difference from 1.

Proportion Gap is a statistical method that we used to provide a second method comparison to the proportionality index. The proportion gap is calculated by subtracting the proportion of a specific subgroup from the proportion of a reference group. For example, if there were 70% of Hispanics or Latinos in the reference group (IE/D Labor force as an example) but there were only 50% Hispanics or Latinos in GJ Vocational programs, the proportion gap is 20 percentage points (70% - 50%). A positive gap (when the reference group's percentage is higher than the subgroup's percentage) indicates an equity gap or underrepresentation. It suggests that the subgroup is represented at a lower percentage than the reference group. A negative gap (if the subgroup's percentage is higher than the reference group's percentage) indicates overrepresentation.