

Labor Market Analysis for Program Recommendation:
 1303.20/Fashion Merchandising
 (Fashion Styling and Visual Display Certificate of Achievement
 and Associate Degree)
 (Fashion Media, Events & Promotions Certificate of Achievement)
 Orange County Center of Excellence, December 2023



Summary

Program LMI Endorsement	Endorsed: All LMI Criteria Met <input type="checkbox"/>	Endorsed: Some LMI Criteria Met <input checked="" type="checkbox"/>	Not LMI Endorsed <input type="checkbox"/>
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Program LMI Endorsement Criteria

	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Supply Gap:	<i>Comments:</i> There is projected to be 959 annual job openings throughout Los Angeles and Orange counties for the middle-skill occupation <i>merchandise displayers and window trimmers</i> . Over the past three years, only one college offered a program related to this occupation. However, the three-year annual average of awards is zero . Therefore, no awards for this occupation were conferred and supply is equal to zero .	
Living Wage: (Entry-Level, 25 th)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	<i>Comments:</i> The entry-level wage for merchandise displayers and window trimmers is \$17.89, which is below the OC living wage of \$20.63.	
Education:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	<i>Comments:</i> The typical entry-level education for <i>merchandise displayers and window trimmers</i> is a high school diploma or equivalent. However, more than one-third of workers (34%) in the field have completed some college or an associate degree as their highest level of education.	
Emerging Occupation(s)		
	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<i>Comments:</i> N/A		

The Orange County Center of Excellence for Labor Market Research (OC COE) prepared this report to determine whether there is a supply gap in the Los Angeles/Orange County regional labor market related to two fashion-related occupations:

- Middle-Skill
 - Merchandise Displayers and Window Trimmers (27-1026)
- Above Middle-Skill – denoted with an asterisk (*) throughout this report.
 - Market Research Analysts and Marketing Specialists (13-1161)*

Middle-skill occupations typically require a community college education while above middle-skill occupations typically require at least a bachelor's degree.

Based on the available data, there appears to be a supply gap for this middle-skill occupation in the region and more than one-third of workers (34%) in the field have completed some college or an

associate degree as their highest level of education. However, the entry-level hourly wage for *merchandise displayers and window trimmers* is considerably below the living wage. **Therefore, due to some of the regional labor market criteria being met, the COE endorses this proposed program.**

Exhibit 1 lists the occupational demand, supply, typical entry-level education, and educational attainment for the two occupations included in this report.

Exhibit 1: Labor Market Endorsement Summary

Occupation (SOC)	Demand (Annual Openings)	Supply (CC and Non-CC)	Entry-Level Hourly Earnings (25 th Percentile)	Typical Entry-Level Education	Community College Educational Attainment
Merchandise Displayers and Window Trimmers (27-1026)	LA: 731	<i>Accounted for Below</i>	OC: \$17.89	High school diploma or equivalent	34%
	OC: 228				
	TTL: 959				
Middle-Skill Total	959	Accounted for Below	N/A	N/A	N/A
Market Research Analysts and Marketing Specialists (13-1161)*	LA: 3,851	LA: 1,214	OC: \$26.39	Bachelor's degree	15%
	OC: 1,476	OC: 164			
	TTL: 5,327	TTL: 1,378			
Above Middle-Skill Total	5,327	1,378	N/A	N/A	N/A
Total	6,286	1,378	N/A	N/A	N/A

*Denotes an above middle-skill occupation

Demand:

- The number of jobs for *merchandise displayers and window trimmers* is projected to increase 4% through 2027. There is projected to be 959 annual job openings.
- The entry-level hourly wage for *merchandise displayers and window trimmers* is \$17.89 in Orange County, which is below the living wage of \$20.63.
- There were 6,111 online job postings related to *merchandise displayers and window trimmers* over the past 12 months. The highest number of postings were for retail merchandisers, store merchandisers, visual merchandisers, and operations associates.
- The typical entry-level education for *merchandise displayers and window trimmers* is a high school diploma or equivalent.
- More than one-third of *merchandise displayers and window trimmers* (34%) have completed some college or an associate degree as their highest level of educational attainment.

Supply:

- There was an average of 416 awards conferred by 23 community colleges in Los Angeles and Orange Counties from 2019 to 2022. Of those, none were for the middle-skill occupation.
- Non-community college institutions conferred an average of 962 awards from 2019 to 2021. Of those, none were for the middle-skill occupation.

- Orange County community college students that exited fashion merchandising programs in the 2020-21 academic year had a median annual wage of \$31,888 after exiting the program and 36% attained the regional living wage.
- There was insufficient data to determine the percentage of Orange County fashion merchandising students that exited their program and reported that they are working in a job closely related to their field of study.

Demand

Occupational Projections:

Exhibit 2 shows the annual percent change in jobs for the two fashion-related occupations researched in this report from 2017 through 2027. Employment in these fashion-related occupations declined 3% from 2019 to 2020 in Orange County, which is less than the 7% decline across all occupations due to the COVID-19 pandemic. Employment in these fashion-related occupations is projected to grow at a similar rate when compared to all occupations through 2027.

Exhibit 2: Annual Percent Change in Jobs for Fashion-Related Occupations, 2017-2027

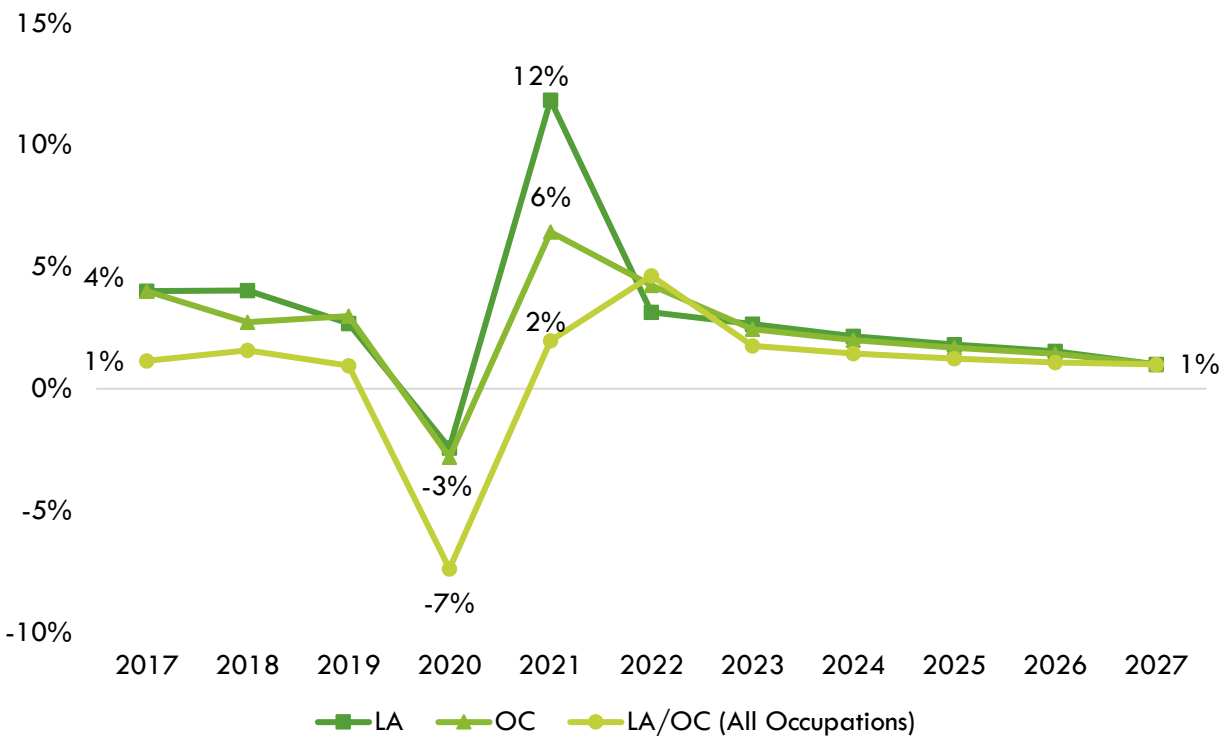


Exhibit 3 shows the five-year occupational demand projections for *merchandise displayers and window trimmers*. In Los Angeles/Orange County, the number of jobs related to this middle-skill occupation is projected to increase by 4% through 2027. There is projected to be 959 jobs available annually. Of those, 76% (731) are projected to be in Los Angeles County.

Exhibit 3: Middle-Skill Occupational Demand in Los Angeles and Orange Counties¹

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	5,684	5,932	249	4%	731
Orange	1,778	1,852	74	4%	228
Total	7,462	7,784	323	4%	959

Exhibit 4 shows the five-year occupational demand projections for *market research analysts and marketing specialists*. In Los Angeles/Orange County, the number of jobs related to this above middle-skill occupation is projected to increase by 10% through 2027. There is projected to be 5,327 jobs available annually. Of those, 72% (3,851) are projected to be in Los Angeles County.

Exhibit 4: Above Middle-Skill Occupational Demand in Los Angeles and Orange Counties

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	31,059	34,344	3,285	11%	3,851
Orange	12,149	13,313	1,164	10%	1,476
Total	43,208	47,657	4,450	10%	5,327

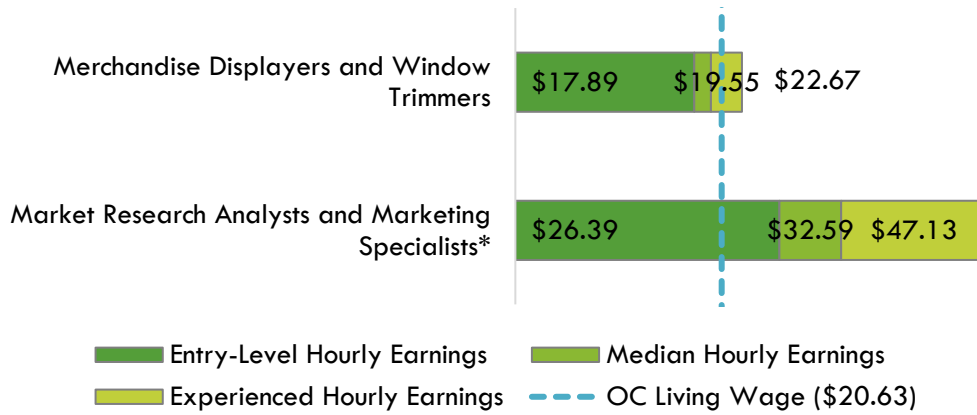
Wages:

The labor market endorsement in this report considers the entry-level hourly wage for the middle-skill occupation, *merchandise displayers and window trimmers*, in Orange County as it relates to the county's living wage. Los Angeles County wages are included below in order to provide a complete analysis of the LA/OC region.

The typical entry-level hourly wage for *merchandise displayers and window trimmers* is \$17.89, which is considerably below the living wage for one adult (\$20.63 in Orange County). The experienced hourly wage is \$22.67, which is above the living wage. Orange County's average wage (\$21.01) is above the average statewide wage of \$20.39 for this occupation. Exhibit 5 shows the wage range for each of these fashion-related occupations in Orange County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

¹ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

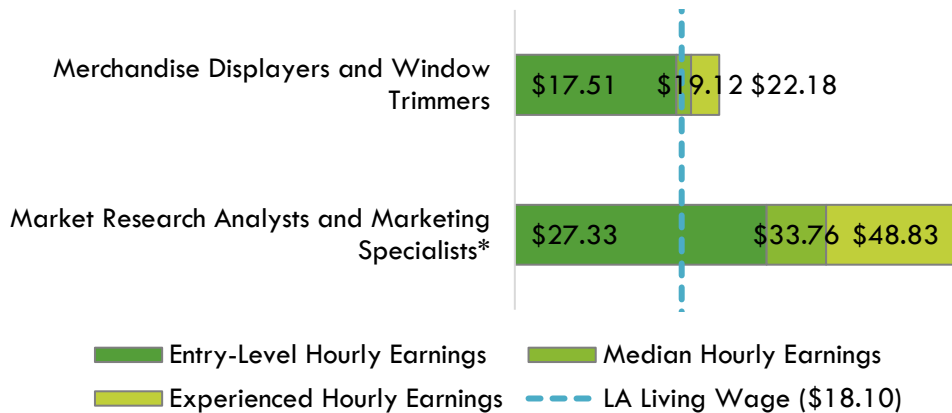
Exhibit 5: Wages by Occupation in Orange County



*Denotes an above middle-skill occupation

The typical entry-level hourly wage for *merchandise displayers and window trimmers* is \$17.51, which is below the living wage for one adult (\$18.10 in Los Angeles County). The experienced hourly wage is \$22.18, which is above the living wage. Los Angeles County's average wage (\$20.56) is slightly above the average statewide wage of \$20.39 for this occupation. Exhibit 6 shows the wage range for each of these fashion-related occupations in Los Angeles County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

Exhibit 6: Wages by Occupation in Los Angeles County



*Denotes an above middle-skill occupation

Job Postings:

Important Online Job Postings Data Note: Online job postings data is sourced from Lightcast, a labor market analytics firm that scrapes, collects, and organizes data from online job boards such as LinkedIn, Indeed, Glassdoor, Monster, GovernmentJobs.com, and thousands more. Lightcast uses natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. However, NLP has limitations that include understanding contextual words or phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.² For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast's database.

² K. R. Chowdhary, *Fundamentals of Artificial Intelligence* (Basingstoke: Springer Nature, 2020), <https://link.springer.com/book/10.1007/978-81-322-3972-7>.

Additionally, there are several limitations when analyzing job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online, and jobs may be filled through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

There were 16,804 online job postings related to these fashion-related occupations listed in the past 12 months. Of those, only 36% (6,111) were for the middle-skill occupation, *merchandise displayers and window trimmers*. Exhibit 7 shows the number of job postings by occupation.

Exhibit 7: Number of Job Postings by Occupation (n=16,804)

Occupation	Job Postings	Percentage of Job Postings
Market Research Analysts and Marketing Specialists*	10,693	64%
Merchandise Displayers and Window Trimmers	6,111	36%
Total	16,804	100%

*Denotes an above middle-skill occupation

The top employers for *merchandise displayers and window trimmers* in the region, by number of job postings, are shown in Exhibit 8.

Exhibit 8: Top Middle-Skill Employers by Number of Job Postings (n=6,111)

Employer	Job Postings	Percentage of Job Postings
SAS Retail Services	285	5%
Crossmark	207	3%
Acosta	118	2%
Sam's Club	116	2%
Walmart	114	2%
The Coca-Cola Company	113	2%
Retail Odyssey	113	2%
Advantage Solutions	107	2%
PepsiCo	104	2%
Macy's	102	2%

The top employers for *market research analysts and marketing specialists* in the region, by number of job postings, are shown in Exhibit 9.

**Exhibit 9: Top Above Middle-Skill Employers by Number of Job Postings
(n=10,693)**

Employer	Job Postings	Percentage of Job Postings
Amazon	104	1.0%
Next Level Recruiting	55	0.5%
KPI Group	43	0.4%
Coalition Technologies	39	0.4%
Robert Half	39	0.4%
24 Seven	38	0.4%
Halo Marketing Consultants	38	0.4%
Aquent	34	0.3%
Hospice Alliance Network	32	0.3%
Aston Carter	31	0.3%
Live Nation	31	0.3%
Eclipse California	30	0.3%
NBC	26	0.2%

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for *merchandise displayers and window trimmers* in Exhibit 10.

**Exhibit 10: Top Skills for Middle-Skill Occupation by Number of Job Postings
(n=6,111)**

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Merchandising (4,389)	Sales (2,598)	Microsoft Excel (514)
Visual Merchandising (666)	Communications (2,187)	Microsoft Outlook (279)
Planogram (651)	Management (1,959)	Microsoft PowerPoint (262)
Marketing (584)	Customer Service (1,678)	Microsoft Office (241)
Selling Techniques (560)	Lifting Ability (1,389)	Apple IOS (130)
Warehousing (459)	Detail Oriented (1,099)	SAS (Software) (112)
Inventory Management (449)	Good Driving Record (719)	Adobe Photoshop (99)
New Product Development (421)	Self-Motivation (698)	Adobe Illustrator (95)
Stocking Merchandise (419)	Operations (677)	Microsoft Word (89)
Auditing (392)	Leadership (571)	Markdown (66)

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for *market research analysts and marketing specialists* in Exhibit 11.

Exhibit 11: Top Skills for Above Middle-Skill Occupation by Number of Job Postings (n=10,693)

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Marketing (7,875)	Communications (5,542)	Instagram (1,978)
Social Media (3,944)	Sales (3,878)	Microsoft Excel (1,715)
Instagram (1,978)	Detail Oriented (3,156)	Microsoft Office (1,526)
Digital Marketing (1,929)	Management (2,794)	TikTok (1,482)
Project Management (1,882)	Writing (2,235)	Microsoft PowerPoint (1,480)
Content Creation (1,586)	Research (2,101)	Adobe Photoshop (1,068)
TikTok (1,482)	Customer Service (2,083)	Google Analytics (1,030)
Analytics (1,348)	Planning (1,934)	Microsoft Outlook (688)
Search Engine Optimization (1,317)	Self-Motivation (1,809)	Adobe Creative Suite (637)
Marketing Strategies (1,309)	Presentations (1,798)	Pinterest (572)

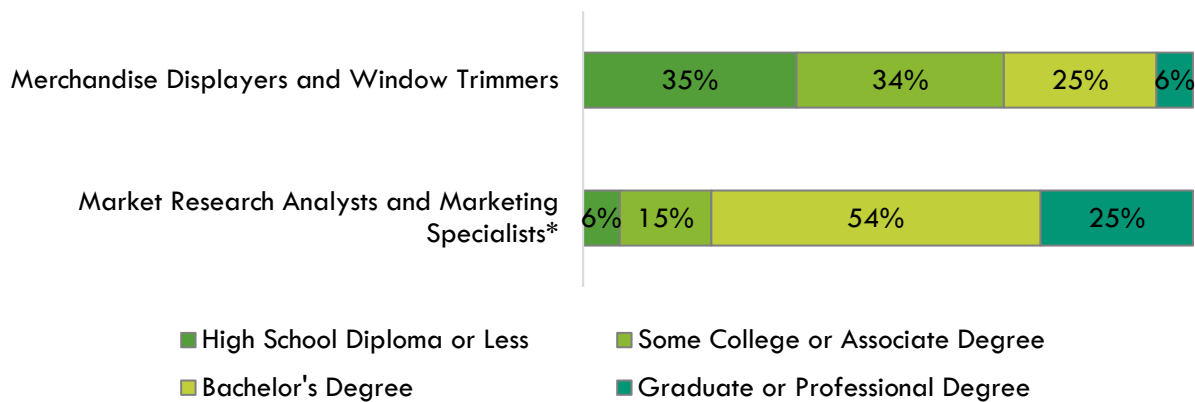
Educational Attainment:

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for *merchandise displayers and window trimmers*, and a bachelor's degree for *market research analysts and marketing specialists*. The national-level educational attainment data indicates that 34% of workers in the middle-skill occupation, *merchandise displayers and window trimmers*, have completed some college or an associate degree as their highest level of education. Conversely, only 15% of workers in the above middle-skill occupation, *market research analysts and marketing specialists*, have completed some college or an associate degree. Exhibit 12 shows the educational attainment for each occupation, sorted by highest community college educational attainment to lowest.

Of the 32% of the cumulative job postings for this middle-skill occupation that listed a minimum education requirement in Los Angeles/Orange County, 70% (1,379) requested a high school diploma or an associate degree and 30% (594) requested a bachelor's degree.

Conversely, of the 53% of the postings for this above middle-skill occupation that listed a minimum education requirement, 80% (4,556) requested a bachelor's degree and 18% (997) requested a high school diploma or an associate degree.

Exhibit 12: National-level Educational Attainment for Occupations



*Denotes an above middle-skill occupation

Educational Supply

Community College Supply:

Exhibit 13 shows the three-year average number of awards conferred by community colleges in the related TOP codes:

- Marketing and Distribution (0509.00)
- Display (0509.60)
- E-Commerce (business emphasis) (0509.70)
- Fashion Merchandising (1303.20)

The colleges with the most completions in the region are Santa Monica, Orange Coast, Mt. San Antonio, and Saddleback.

Notably, only one college – Orange Coast – currently offers a Display program. However, only one award was conferred in 2020-21 for this program. Therefore, the three-year average of awards is zero. Over the past 12 months, there were no other related program recommendation requests from regional community colleges.

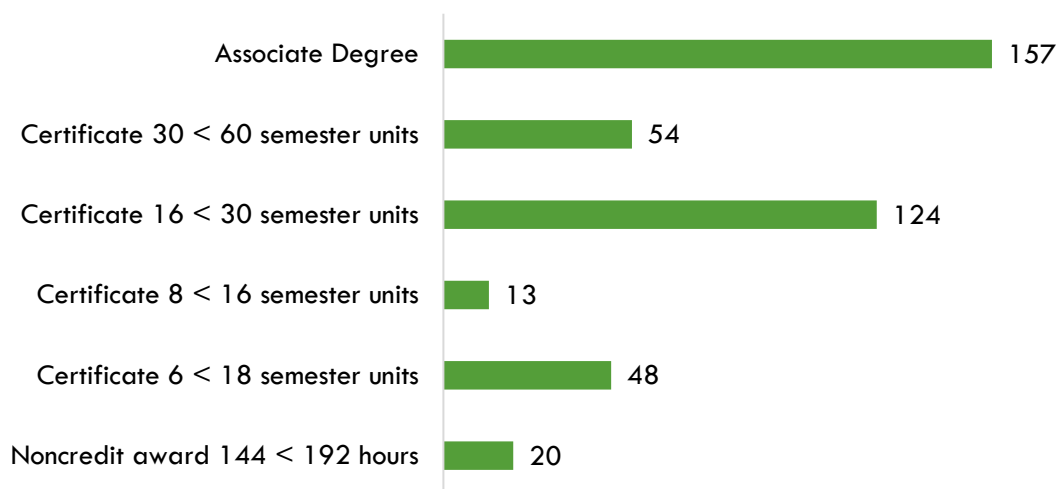
Exhibit 13: Regional Community College Awards (Certificates and Degrees), 2019-2022

TOP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
0509.00	Marketing and Distribution	Cerritos	18	14	26	19
		Compton	-	-	1	0
		East LA	5	8	6	6
		El Camino	6	9	6	7
		Glendale	1	3	4	3
		LA City	15	15	13	14
		LA Harbor	-	-	1	0
		LA Pierce	8	8	10	9
		LA Trade-Tech	3	7	4	5
		LA Valley	19	24	27	23
		Long Beach	5	15	18	13
		Mt San Antonio	5	12	9	9
		Pasadena	6	3	17	9
		Rio Hondo	9	11	7	9
		Santa Monica	28	54	61	48
		West LA	1	1	4	2
		LA Subtotal	129	184	214	176
		Cypress	5	4	-	3
		Fullerton	4	8	4	5
		Golden West	6	4	6	5
Orange Coast	69	48	20	46		
Saddleback	27	15	19	20		
Santa Ana	-	2	1	1		

TOP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
		Santiago Canyon	18	57	17	31
		OC Subtotal	129	138	67	111
		Supply Subtotal/Average	258	322	281	287
0509.60	Display	Orange Coast	-	1	-	0
		OC Subtotal	-	1	-	0
		Supply Subtotal/Average	-	1	-	0
0509.70	E-Commerce (business emphasis)	Long Beach	4	7	5	5
		LA Subtotal	4	7	5	5
		Supply Subtotal/Average	4	7	5	5
1303.20	Fashion Merchandising	El Camino	4	5	-	3
		LA Trade-Tech	9	21	11	14
		Long Beach	10	15	4	10
		Mt San Antonio	28	19	26	24
		Santa Monica	40	27	24	30
		LA Subtotal	91	87	65	81
		Fullerton	8	12	7	9
		Orange Coast	19	13	16	16
		Saddleback	2	17	19	13
		Santa Ana	4	4	7	5
		OC Subtotal	33	46	49	43
		Supply Subtotal/Average	124	133	114	124
		Supply Total/Average	386	463	400	416

Exhibit 14 shows the annual average community college awards by type from 2019-20 through 2021-22. The plurality of the awards are associate degrees (157), followed by certificates of 16 to less than 30 semester units (124).

Exhibit 14: Annual Average Community College Awards by Type, 2019-2022



Community College Student Outcomes:

Exhibit 15 shows the Strong Workforce Program (SWP) metrics for fashion merchandising programs in Coast Community College District (CCCD), the Orange County Region, and California. Of the 360 fashion merchandising students in Orange County, 35% (126) attended a CCCD college.

Orange County students that exited fashion merchandising programs in the 2020-21 academic year had a 154% median change in earnings, which is significantly higher than students throughout California (65%). However, both of these percentages are below the median change in earnings of CCCD students (205%). Median annual earnings for CCCD students (\$40,600) that exited fashion merchandising programs were higher than Orange County Region (\$31,888) and statewide (\$28,412). There was insufficient data to determine the percentage of CCCD or Orange County students that are employed in their field of study. A higher percentage of CCCD students attained the living wage (44%) when compared to Orange County (36%) and statewide (35%).

Exhibit 15: Fashion Merchandising (1303.20) Strong Workforce Program Metrics, 2020-21³

SWP Metric	CCCD	OC Region	California
SWP Students	126	360	1,556
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	61%	48%	40%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	Insufficient Data	Insufficient Data	68%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	10	33	153
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)	Insufficient Data	20	60
SWP Students with a Job Closely Related to Their Field of Study (2019-20)	Insufficient Data	Insufficient Data	55%
Median Annual Earnings for SWP Exiting Students	\$40,600 (\$19.52)	\$31,888 (\$15.33)	\$28,412 (\$13.66)
Median Change in Earnings for SWP Exiting Students	205%	154%	65%
SWP Exiting Students Who Attained the Living Wage	44%	36%	35%

³ All SWP metrics are for 2020-21 unless otherwise noted.

Non-Community College Supply:

For a comprehensive regional supply analysis, it is also important to consider the supply from other institutions in the region that provide training programs for these fashion-related occupations. Exhibit 16 shows the annual and two-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Codes:

- Apparel and Textile Marketing Management (19.0905)
- E-Commerce/Electronic Commerce (52.0208)
- Marketing/Marketing Management, General (52.1401)
- Fashion Merchandising (52.1902)
- Apparel and Accessories Marketing Operations (52.1904)

Due to different data collection periods, the most recent two-year period of available data is from 2019 to 2021. Between 2019 and 2021, non-community colleges in the region conferred an average of 962 awards annually in related training programs. All of these awards are related to the above middle-skill occupation, *market research analysts and marketing specialists*.

Exhibit 16: Regional Non-Community College Awards, 2019-2021

CIP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2-Year Award Average
19.0905	Apparel and Textile Marketing Management	FIDM-Fashion Institute of Design & Merchandising-Los Angeles	66	43	55
Supply Subtotal/Average			66	43	55
52.0208	E-Commerce/Electronic Commerce	University of La Verne	4	1	3
Supply Subtotal/Average			4	1	3
52.1401	Marketing/Marketing Management, General	California State University-Northridge	384	406	395
		FIDM-Fashion Institute of Design & Merchandising-Los Angeles	27	28	28
		Fremont College	4	1	3
		Loyola Marymount University	154	149	152
		Mount Saint Mary's University	9	3	6
		Vanguard University of Southern California	8	12	10
		Woodbury University	19	9	14
Supply Subtotal/Average			605	608	607
52.1902	Fashion Merchandising	FIDM-Fashion Institute of Design & Merchandising-Los Angeles	314	262	288
Supply Subtotal/Average			314	262	288
52.1904	Apparel and Accessories Marketing Operations	Woodbury University	10	10	10
Supply Subtotal/Average			10	10	10
Supply Total/Average			999	924	962

Regional Demographics

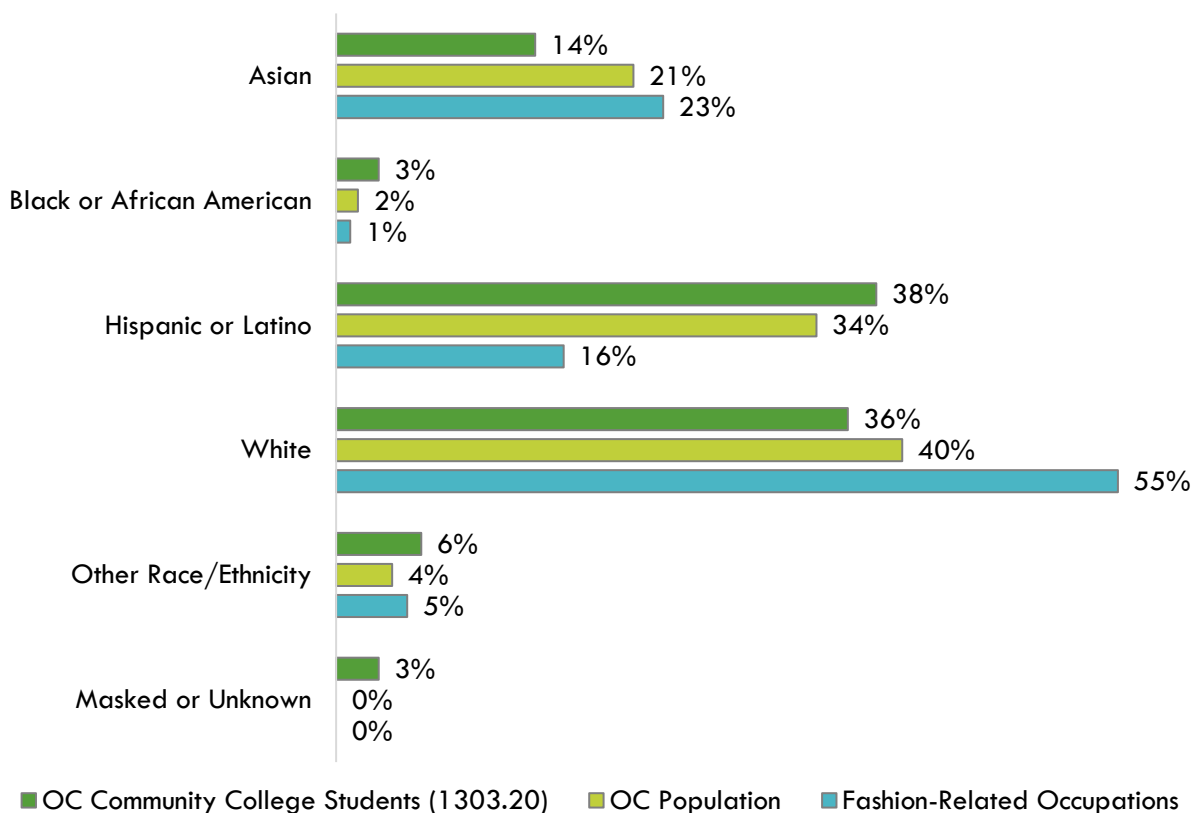
This section analyzes demographic data for Orange County community college students enrolled in fashion merchandising programs compared to the OC population, as well occupational data, for the purpose of identifying potential diversity and equity issues that can be addressed by community college programs.

Ethnicity:

Exhibit 17 shows the ethnicity of Orange County community college students enrolled in fashion merchandising programs compared to the overall Orange County population, as well as the two fashion-related occupations included in this report. Notably, 55% of workers employed in these fashion-related occupations are white, which is higher than the population (40%) and community college fashion merchandising students (36%). Conversely, 38% of community college fashion merchandising students are Hispanic or Latino, which is higher than the Orange County population (34%) and workers in these fashion-related occupations (16%).

Examining disaggregated data for each occupation (not shown), the plurality (55%) of *market research analysts and marketing specialists* are white, while half (50%) of *merchandise displayers and window trimmers* workers are Hispanic or Latino. Notably, *market research analysts and marketing specialists* is an above middle-skill occupation and workers in Orange County earn nearly \$10 more per hour than workers in the middle-skill occupation, *merchandise displayers and window trimmers*.

Exhibit 17: Program and County Demographics by Ethnicity

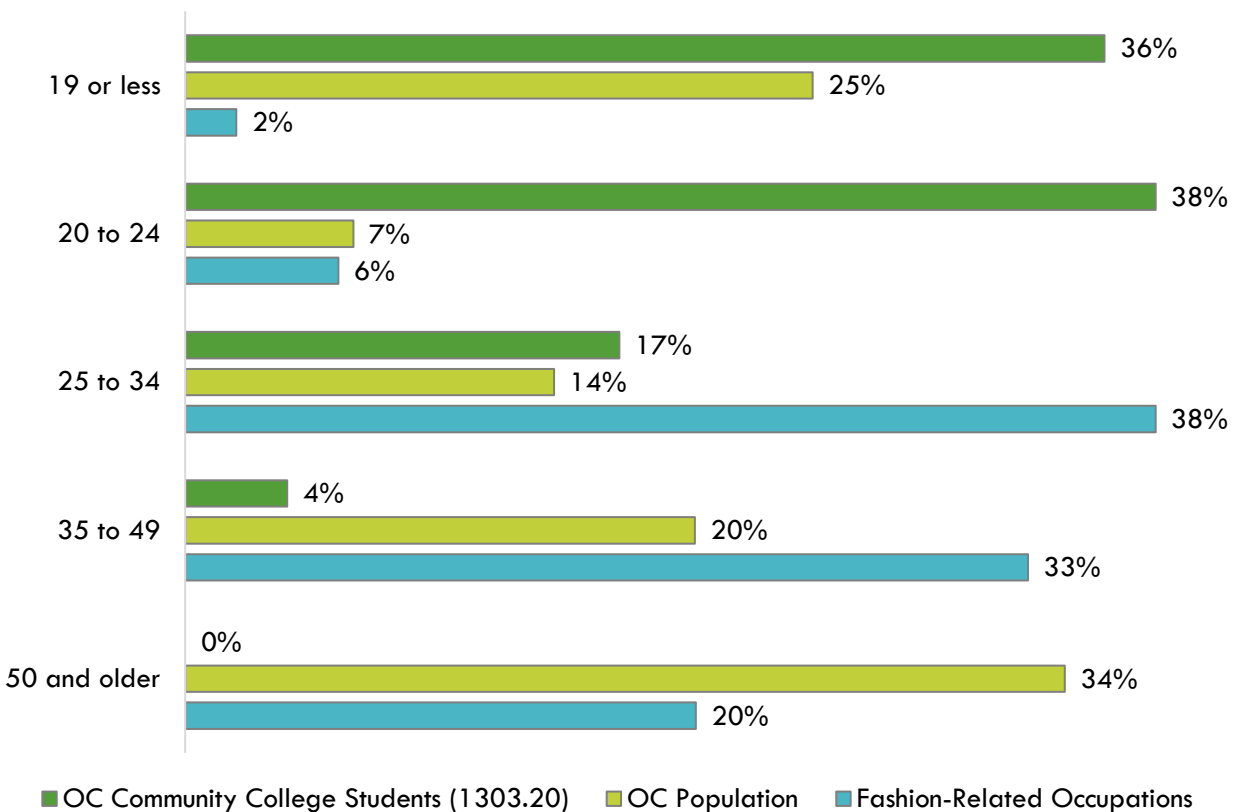


Age:

Exhibit 18 shows the age of Orange County community college students enrolled in fashion merchandising programs compared to the overall Orange County population, as well as the two fashion-related occupations included in this report. The plurality of workers in these occupations are age 25 to 34 (38%) which is higher than community college fashion merchandising students (17%) and the population (14%). Only 8% of workers in these occupations are 24 or less, which is significantly lower than the population (32%) and community college fashion merchandising students (74%).

Examining disaggregated data for each occupation (not shown), 25 to 34 is the largest age group (39%) for *market research analysts and marketing specialists*, while 35 to 49 is the largest age group (37%) for *merchandise displayers and window trimmers*.

Exhibit 18: Program and County Demographics by Age



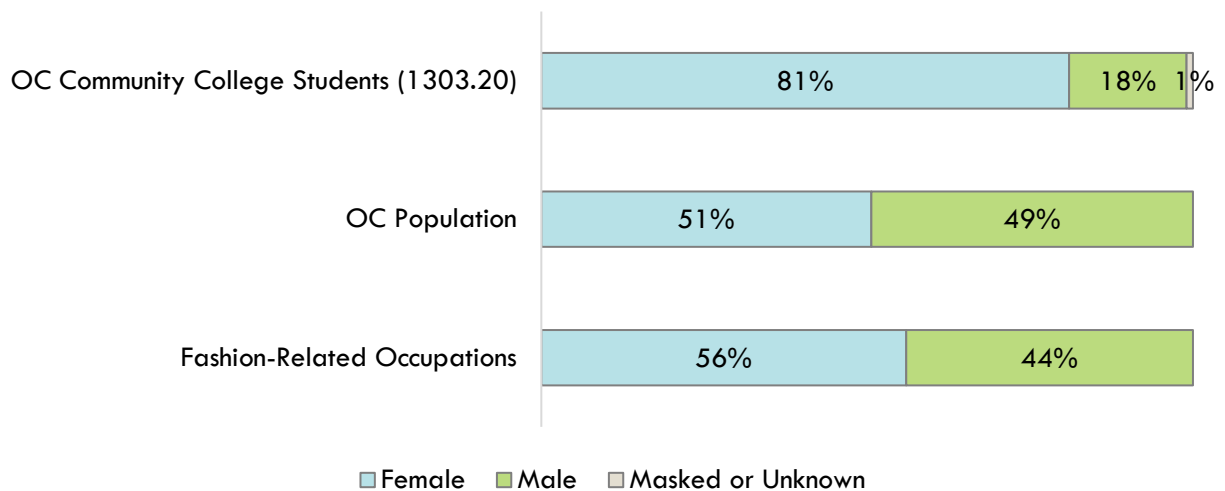
Sex:

Exhibit 19 shows the sex of Orange County community college students enrolled in fashion merchandising programs compared to the overall Orange County population as well as the two fashion-related occupations included in this report.

Though the Orange County population is split nearly evenly between men and women, 56% of workers in these occupations are women. Additionally, 81% of community college fashion merchandising students are women.

Examining disaggregated data for each occupation (not shown), female workers are the majority in both occupations: *market research analysts and marketing specialists* (56%) and *merchandise displayers and window trimmers* (55%).

Exhibit 19: Program and County Demographics by Sex



Appendix A: Methodology

The OC COE prepared this report by analyzing data from occupations and education programs. Occupational data is derived from Lightcast, a labor market analytics firm that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS) and other government agencies. Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Using a TOP-SOC crosswalk, the OC COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

The OC COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a "supply table" with this information, which is the source of the program supply data for this report. TOP code data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP code data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data), also known as IPEDS. TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California Community College system do not use TOP codes in their reporting systems.

Data included in this analysis represent the labor market demand for relevant positions most closely related to the proposed program as expressed by the requesting college in consultation with the OC COE. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study which can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions.

All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

Appendix B: Data Sources

Data Type	Source
Occupational Projections, Wages, and Job Postings	<p>Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics and the American Community Survey. For more information, see https://lightcast.io/</p>
Living Wage	<p>The living wage is derived from the Insight Center’s California Family Needs Calculator, which measures the income necessary for an individual of family to afford basic expenses. The data assesses the cost of housing, food, child care, health care, transportation, and taxes. For more information, see: https://insightccd.org/family-needs-calculator/</p> <p>The living wage for one adult in Orange County is \$20.63 per hour (\$42,910.40 annually). This figure is used by the CCCCCO to calculate the percentage of students that attained the regional living wage.</p>
Typical Education and Training Requirements, and Educational Attainment	<p>The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, see https://www.bls.gov/emp/documentation/education/tech.htm</p>
Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences	<p>The O*NET database includes information on skills, abilities, knowledge, work activities, and interests associated with occupations. For more information, see https://www.onetonline.org/help/online/</p>
Educational Supply	<p>The CCCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: https://datamart.cccco.edu</p> <p>The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). For more information, see https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions</p>
Student Metrics and Demographics	<p>LaunchBoard, a statewide data system supported by the California Community Colleges Chancellor's Office and hosted by Cal-PASS Plus, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, see: https://www.calpassplus.org/LaunchBoard/Home.aspx</p>

Data Type	Source
Population and Occupation Demographics	<p>The Census Bureau's American Community Survey (ACS) is the premier source for detailed population and housing information. For more information, see: https://www.census.gov/programs-surveys/acs</p> <p>Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. For more information, see: https://usa.ipums.org/usa/about.shtml</p>

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