# Labor Market Analysis for Program Recommendation: 0506.00/Business Management (Human Resources Management) (Human Resources Management Certificate) Orange County Center of Excellence, September 2024 (data valid thru November 2024)



### Summary

Program LMI	Endorsed: All	Endorsed: Some	☐ Not LMI	
Endorsement	LMI Criteria Met	LMI Criteria Met	Endorsed	Ш
	Program LMI End	orsement Criteria		
	Yes <b>☑</b>		No □	
Supply Gap:	Comments: There is project Angeles and Orange cour occupations, which is more institutions.	ties for these two middle-s	skill human resources	
	Yes <b>☑</b>		No □	
Living Wage: (Entry-Level, 25 <sup>th</sup> )	Comments: The majority (human resources occupa wage of \$20.63.			
	V 🗖		No 🗆	
	Yes <b>☑</b>		140 🗀	
Education:	Comments: The typical ent is a high school diploma o entry-level education for timekeeping. However, maccompleted some college education.	r equivalent, while an asso numan resources assistants, are than one-third of work	roll and timekeeping clociate degree is the typexcept payroll and ters in the field have	oical
Education:	Comments: The typical ent is a high school diploma o entry-level education for timekeeping. However, macompleted some college education.	r equivalent, while an asso numan resources assistants, are than one-third of work	roll and timekeeping clociate degree is the typexcept payroll and ters in the field have	oical
Education: Ye	Comments: The typical ent is a high school diploma o entry-level education for timekeeping. However, macompleted some college education.  Emerging C	r equivalent, while an assonuman resources assistants, are than one-third of work or an associate degree as	roll and timekeeping clociate degree is the typexcept payroll and ters in the field have	oical

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 the following four human resources occupations:

- Middle-Skill
  - Payroll and Timekeeping Clerks (43-3051)
  - Human Resources Assistants, Except Payroll and Timekeeping (43-4161)
- Above Middle-Skill denoted with an asterisk (\*) throughout this report.
  - O Human Resources Managers (11-3121)\*
  - O Human Resources Specialists (13-1071)\*

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 these middle-skill human resources occupations, the majority of annual job openings (64%) have entry-level wages above the living wage, and more than one-third of workers in the field have completed some college or an associate degree as their highest level of education. Therefore, due to all 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 four human resources 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 (25th Percentile)	Typical Entry- Level Education	Community College Educational Attainment
Payroll and	LA: 774			High school	
Timekeeping	OC: 298	Accounted for Below	OC: \$21.54	diploma or	48%
Clerks (43-3051)	TTL: 1,072	TOI DETOW		equivalent	
Human Resources	LA: 431				
Assistants, Except Payroll and	OC: 169	Accounted	OC: \$19.21	Associate degree	40%
Timekeeping (43-4161)	TTL: 600	for Below			
Middle-Skill Total	1,672	Accounted for Below	N/A	N/A	N/A
Human Resources	LA: 602	LA: 144			
Managers	LA: 602 OC: 240	LA: 144 OC: 187	OC: \$49.21	Bachelor's degree	24%
			OC: \$49.21	Bachelor's degree	24%
Managers	OC: 240	OC: 187	OC: \$49.21	Bachelor's degree	24%
Managers (11-3121)*  Human Resources Specialists	OC: 240 TTL: 842	OC: 187 TTL: 331	OC: \$49.21 OC: \$27.00	Bachelor's degree  Bachelor's degree	24%
Managers (11-3121)* Human Resources	OC: 240 TTL: 842 LA: 2,643	OC: 187 TTL: 331 LA: 741	· 		
Managers (11-3121)*  Human Resources Specialists	OC: 240 TTL: 842 LA: 2,643 OC: 1,077	OC: 187 TTL: 331 LA: 741 OC: 310	· 		

<sup>\*</sup>Denotes an above middle-skill occupation

#### Demand:

- The number of jobs related to these middle-skill human resources occupations is projected to decrease by 3% through 2027. There is projected to be 1,672 annual job openings.
- Hourly entry-level wages for these two middle-skill human resources occupations range from \$19.21 to \$21.54 in Orange County; 64% of annual job openings have entry-level wages above the living wage.
- There were 5,009 online job postings for these middle-skill occupations over the past 12 months. The highest number of postings were for payroll specialists, human resources assistants, and payroll clerks.
- The typical entry-level education for these middle-skill human resources occupations ranges from a high school diploma or equivalent to an associate degree.
- Between 40% and 48% of workers in these middle-skill occupations have completed some college or an associate degree as their highest level of educational attainment.

#### Supply:

- There was an average of 1,382 awards conferred by 25 community colleges in Los Angeles and Orange Counties from 2019 to 2022.
- Non-community college institutions did not confer any awards from 2019 to 2021.
- Orange County community college students that exited business management programs in the 2020-21 academic year had a median annual wage of \$39,264 after exiting the program and 44% attained the regional living wage.
  - Additionally, RSCCD community college community college students that exited business management programs in the 2020-21 academic year had a median annual wage of \$50,290 after exiting the program and 56% attained the regional living wage.
- Throughout Orange County, 67% of business management students that exited their program in 2019-20 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 these human resources occupations from 2017 through 2027. Employment in these human resources occupations declined 1% from 2019 to 2020 in Orange County which is less than the 7% decline across all occupations due to the COVID-19 pandemic. In fact, there was a notable 10% increase in employment for these human resources occupations in Orange County between 2020 and 2021. Employment in these occupations is projected to grow at a similar rate when compared to all occupations through 2027.

Human Resources Occupations, 2017-2027 15% 10% 10% 5% <sub>4% 4</sub> 0% -1% -5% -7% -10% 2020 2021 2023 2018 2019 2022 2024 2025 2026 2027 →OC →LA/OC (All Occupations)

Exhibit 2: Annual Percent Change in Jobs for

Exhibit 3 shows the five-year occupational demand projections for these middle-skill human resources occupations. In Los Angeles/Orange County, the number of jobs related to these middle-skill occupations is projected to decrease by 3% through 2027. There is projected to be 1,672 jobs available annually. Of those, 72% (1,205) are projected to be in Los Angeles County.

Exhibit 3: Middle-Skill Occupational Demand in Los Angeles and Orange Counties<sup>1</sup>

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022- 2027 % Change	Annual Openings
Los Angeles	10,842	10,566	(276)	(3%)	1,205
Orange	4,200	4,084	(116)	(3%)	467
Total	15,042	14,650	(392)	(3%)	1,672

Exhibit 4 shows the five-year occupational demand projections for these above middle-skill human resources occupations. In Los Angeles/Orange County, the number of jobs related to these above middle-skill occupations is projected to increase by 6% through 2027. There is projected to be 4,562 jobs available annually. Of those, 71% (3,245) 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	29,984	32,009	2,025	7%	3,245
Orange	12,420	13,140	720	6%	1,317
Total	42,404	45,149	2,745	6%	4,562

<sup>&</sup>lt;sup>1</sup> Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

# Wages:

The labor market endorsement in this report considers the entry-level hourly wages for these middle-skill human resources occupations in Orange County as they relate 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.

Approximately 64% of annual openings for these middle-skill human resources occupations have entry-level wages above the living wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages for these middle-skill TV occupations range from \$19.21 to \$21.54. When analyzing the middle-skill occupations, Orange County's average wages (\$25.84) are lower than the average statewide wage of \$27.12. Exhibit 5 shows the wage range for each of these human resources occupations in Orange County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

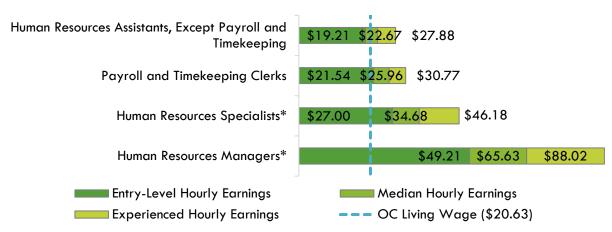


Exhibit 5: Wages by Occupation in Orange County

All annual openings for these middle-skill human resources occupations have entry-level wages above the living wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages for these middle-skill occupations are in a range from \$19.82 to \$22.08. When analyzing the middle-skill occupations, Los Angeles County's average wages (\$26.57) are lower than the average statewide wage of \$27.12. Exhibit 6 shows the wage range for each of these human resources 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

<sup>\*</sup>Denotes an above middle-skill occupation

<sup>\*</sup>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 of phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.<sup>2</sup> For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast's database.

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 23,263 online job postings related to these human resources occupations listed in the past 12 months. Of those, 22% (5,009) were for middle-skill human resources occupations. Nearly 60% of job postings were for human resources specialists (an above middle-skill occupation). Exhibit 7 shows the number of job postings by occupation.

Exhibit 7: Number of Job Postings by Occupation (n=23,263)

Occupation	Job Postings	Percentage of Job Postings
Human Resources Specialists*	13,521	58.1%
Human Resources Managers*	4,733	20.4%
Payroll and Timekeeping Clerks	3,077	13.2%
Human Resources Assistants, Except Payroll and Timekeeping	1,932	8.3%
Total	23,263	100%

<sup>&</sup>lt;sup>2</sup> K. R. Chowdhary, Fundamentals of Artificial Intelligence (Basingstoke: Springer Nature, 2020), <a href="https://link.springer.com/book/10.1007/978-81-322-3972-7">https://link.springer.com/book/10.1007/978-81-322-3972-7</a>.

The top employers for the two middle-skill human resources occupations 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=5,009)

Employer	Job Postings	Percentage of Job Postings
Robert Half	336	7%
Aston Carter	165	3%
Randstad	155	3%
AppleOne	85	2%
Citrus Valley Health Partners	84	2%
Rice Gorton Pictures	56	1%
Vaco	48	1%
California State University	44	1%
University of California	42	1%
Adecco	38	1%

The top employers for the two above middle-skill human resources occupations 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=18,254)

Employer	Job Postings	Percentage of Job Postings
Robert Half	361	2%
University of California	234	1%
Citrus Valley Health Partners	1 <i>87</i>	1%
Aston Carter	164	1%
Randstad	115	1%
California State University	103	1%
AppleOne	97	1%
Providence	80	0.4%
Deloitte	68	0.4%
Marriott International	62	0.3%

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for these two middle-skill occupations in Exhibit 10.

Exhibit 10: Top Skills for Middle-Skill Occupations by Number of Job Postings (n=5,009)

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Payroll Processing (1,649)	Communications (1,928)	Microsoft Excel (1,423)
Auditing (1,452)	Detail Oriented (1,547)	Payroll Systems (1,002)
Accounting (1,285)	Management (1,177)	Microsoft Outlook (700)
Payroll Systems (1,002)	Customer Service (1,108)	Human Resources Information System (HRIS) (652)
Data Entry (944)	Writing (861)	Microsoft PowerPoint (467)
Finance (577)	Organizational Skills (853)	Spreadsheets (419)
Payroll Reporting (571)	Operations (846)	Microsoft Word (411)
Administrative Support (520)	Filing (833)	ADP Workforce Now (358)
Payroll Tax (404)	Clerical Works (791)	Kronos (Timekeeping Software) (213)
Multi-State Payroll (358)	Multitasking (715)	Workday (Software) (139)

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for these two above middle-skill occupations in Exhibit 11.

Exhibit 11: Top Skills for Above Middle-Skill Occupations by Number of Job Postings (n=18,254)

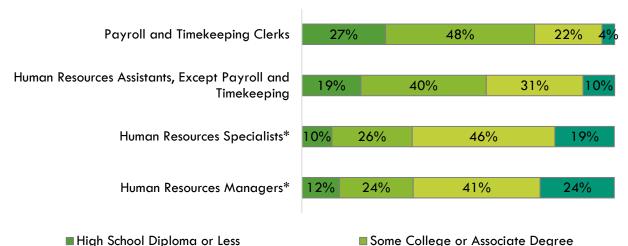
Top Specialized Skills	Top Soft Skills	Top Computer Skills
Employee Relations (3,982)	Communications (8,607)	Microsoft Office (3,744)
Performance Management (2,468)	Management (6,825)	Microsoft Excel (3,622)
Labor Law (2,148)	Leadership (4,711)	Human Resources Information System (HRIS) (3,429)
Auditing (2,115)	Detail Oriented (4,367)	Microsoft PowerPoint (2,424)
Human Resource Management (1,932)	Customer Service (4,159)	Microsoft Outlook (2,044)
Talent Management (1,850)	Writing (3,826)	Applicant Tracking Systems (1,817)
Applicant Tracking Systems (1,817)	Operations (3,646)	Microsoft Word (1,104)
Project Management (1,762)	Problem Solving (3,498)	Workday (Software) (663)
Employee Onboarding (1,440)	Organizational Skills (2,821)	Spreadsheets (584)
Talent Acquisition (1,386)	Interpersonal Communications (2,729)	Payroll Systems (374)

#### **Educational Attainment:**

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for payroll and timekeeping clerks; an associate degree for human resources assistants, except payroll and timekeeping; and a bachelor's degree for human resources specialists and human resources managers. The national-level educational attainment data indicates between 40% and 48% of workers in the middle-skill occupations have completed some college or an associate degree as their highest level of education. Between 24% and 26% of workers in the above middle-skill occupations 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 54% of the cumulative job postings for these middle-skill human resources occupations that listed a minimum education requirement in Los Angeles/Orange County, 66% (1,793) requested a high school diploma or an associate degree and 33% (901) requested a bachelor's degree.

Conversely, of the 68% of the postings for these above middle-skill human resources occupations that listed a minimum education requirement, 72% (8,858) requested a bachelor's degree and 26% (3,242) requested a high school diploma or an associate degree.



■ Graduate or Professional Degree

Exhibit 12: National-level Educational Attainment for Occupations

Bachelor's Degree

<sup>\*</sup>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: Business Management (0506.00), Management Development and Supervision (0506.30), and Labor and Industrial Relations (0516.00). The colleges with the most completions in the region are Cerritos, Coastline, and Mt. San Antonio. Over the past 12 months, there was one other related program recommendation requests from regional community colleges.

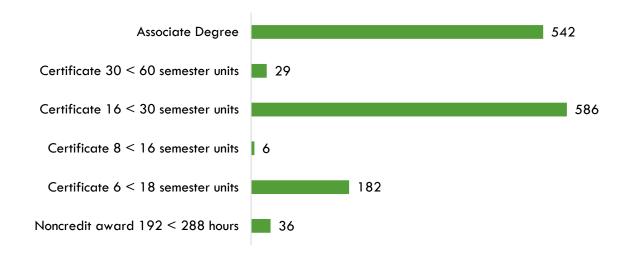
Exhibit 13: Regional Community College Awards (Certificates and Degrees), 2019-2022

TOP			2019-	2020-	2021-	3-Year
Code	Program	College	2020	2021	2022	Award
Couc			Awards	Awards	Awards	Average
		Cerritos	516	387	276	393
		East LA	18	17	18	18
		El Camino	33	49	22	35
		Glendale	13	15	28	19
		LA City	39	18	16	24
		LA Mission	1	4	6	4
		LA Pierce	2	7	14	8
		LA Valley	36	30	39	35
		Long Beach	29	44	28	34
		Mt San Antonio	145	150	188	161
	Business	LA Subtotal	832	<b>72</b> 1	635	729
0506.00	Management	Coastline	72	307	33	137
		Cypress	3	7	1	4
		Fullerton	12	11	19	14
		Golden West	8	11	13	11
		Irvine Valley	14	5	23	14
		North Orange Adult	36	19	32	29
		Orange Coast	16	19	16	17
		Santa Ana	<i>7</i> 1	40	39	50
		Santiago Canyon	24	55	25	35
		OC Subtotal	256	474	201	310
	Supply	Subtotal/Average	1,088	1,195	836	1,040
		Cerritos	32	50	59	47
		LA Pierce	4	5	11	7
		LA Southwest	9	15	21	15
	Management	LA Trade-Tech	4	8	12	8
0506.30	Development and	LA Valley	20	18	17	18
	Supervision	Pasadena	3	10	6	6
		Rio Hondo	25	18	16	20
		Santa Monica	19	19	30	23
		LA Subtotal	116	143	172	144

TOP Code	Program	College	2019- 2020 Awards	2020- 2021 Awards	2021- 2022 Awards	3-Year Award Average
		Coastline	247	7	142	132
		Cypress	-	1	11	4
		Irvine Valley	-	3	-	1
		Saddleback	27	53	38	39
		Santa Ana	11	9	9	10
		Santiago Canyon	2	1	1	1
		OC Subtotal	287	74	201	187
	Supply	Subtotal/Average	403	217	373	331
0514.00	Labor and	LA Trade-Tech	9	12	11	11
0516.00	Industrial Relations	LA Subtotal	9	12	11	11
	Supply	Subtotal/Average	9	12	11	11
	Supp	oly Total/Average	1,500	1,424	1,220	1,382

Exhibit 14 shows the annual average community college awards by type from 2019-20 through 2021-22. The majority of the awards (586) are for certificates of 16 to less than 30 semester units, followed by associate degrees (542).

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



### **Community College Student Outcomes:**

Exhibit 12 shows the Strong Workforce Program (SWP) metrics for business management programs in Rancho Santiago Community College District (RSCCD), the Orange County Region, and California. Of the 5,591 business management students in Orange County, 13% (726) attended a RSCCD college.

RSCCD students who exited business management programs in the 2020-21 academic year had substantially higher median annual earnings (\$50,290) compared to all business management students in Orange County (\$39,264). A higher percentage of RSCCD business management students attained the living wage (56%) when compared to all business management students in Orange County (44%). However, both figures are lower than the percentage of business management students who attained the living wage statewide (60%).

Exhibit 12: Business Management (0506.00) Strong Workforce Program Metrics, 2020-21<sup>3</sup>

SWP Metric	RSCCD	OC Region	California
SWP Students	726	5,591	39,942
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	39%	32%	37%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	92%	88%	88%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	31	282	1,967
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)	47	585	3,569
SWP Students with a Job Closely Related to Their Field of Study (2019-20)	64%	67%	75%
Median Annual Earnings for SWP Exiting Students	\$50,290 (\$24.17)	\$39,264 (\$18.88)	\$42,944 (\$20.65)
Median Change in Earnings for SWP Exiting Students	12%	27%	22%
SWP Exiting Students Who Attained the Living Wage	56%	44%	60%

# 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 human resources occupations. Between 2019 and 2021, no related awards were conferred by non-community college institutions.

 $<sup>^3</sup>$  All SWP metrics are for 2020-21 unless otherwise noted.

# **Regional Demographics**

This section analyzes demographic data for Orange County community college students enrolled in business management 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 16 shows the ethnicity of Orange County community college students enrolled in business management programs compared to the overall Orange County population, as well as the four human resources occupations included in this report. Notably, 43% of workers employed in these occupations are white, which is slightly higher than the population (40%) and significantly higher than the number of community college business management students (20%). Conversely, 28% of workers employed in these occupations are Hispanic or Latino, which is lower than the population (34%) and community college business management students (46%).

Examining disaggregated data for each occupation (not shown), white workers also comprise the largest group of workers in three of the four human resources occupations included in this report, representing 56% of human resources assistants, except payroll and timekeeping, 45% of human resources managers, and 43% of human resources specialists. The plurality of payroll and timekeeping clerks (41%) are Hispanic or Latino.

Asian 4% Black or African American 3% 46% 34% Hispanic or Latino 28% 20% White 40% 43% 6% 4% Other Race/Ethnicity 4% 3% Masked or Unknown 0%

Exhibit 16: Program and County Demographics by Ethnicity

■OC Community College Students (0506.00) ■OC Population ■Human Resources Occupations

#### Age:

Exhibit 17 shows the age of Orange County community college students enrolled in business management programs compared to the overall Orange County population, as well as the four human resources occupations included in this report. The plurality (37%) of workers in these occupations are age 35 to 49 years, followed by 30% of workers aged 50 and older. This is higher than the population, with those 35 years or older comprising 54% of the Orange County population. Community college business management students are largely younger, with nearly 86% of students aged 34 years or younger. Notably, the plurality (35%) of community college business management students are aged 20 to 24 years, which is significantly higher than the percentage of workers in these occupations (25%) and Orange County population (14%) – a deviation of 25%.

Examining disaggregated data for each occupation (not shown), 35 to 49 years is the largest age group for three of the four occupations: payroll and timekeeping clerks (44%), human resources assistants, except payroll and timekeeping (43%), and human resources specialists (35%). Conversely, 44% of human resources managers are 50 and older.

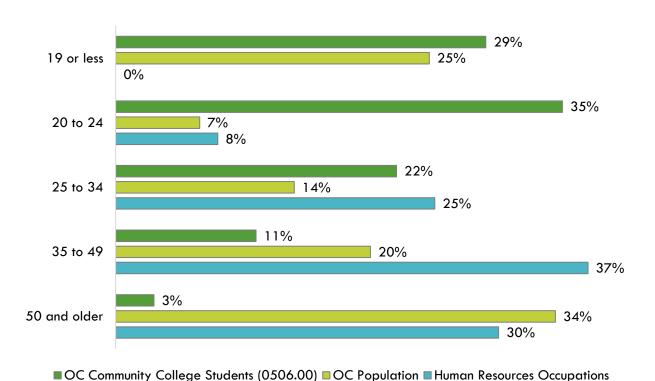


Exhibit 17: Program and County Demographics by Age

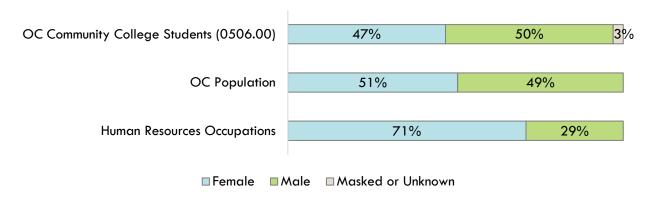
#### Sex:

Exhibit 18 shows the sex of Orange County community college students enrolled in business management programs compared to the overall Orange County population, as well as the four human resources occupations included in this report.

While men and women are almost evenly represented among the population and business management students, more women (71%) than men (29%) are employed in these human resources occupations.

Examining disaggregated data for each occupation (not shown), female workers are the majority in all four occupations: payroll and timekeeping clerks (89%), human resources assistants, except payroll and timekeeping (74%), human resources specialists (72%), and human resources managers (55%).

Exhibit 18: 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	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 <a href="https://lightcast.io/">https://lightcast.io/</a>
Living Wage	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: <a href="https://insightcced.org/family-needs-calculator/">https://insightcced.org/family-needs-calculator/</a> The living wage for one adult in Orange County is \$20.63 per hour (\$42,910.40 annually). This figure is used by the CCCCO to calculate the percentage of students that attained the regional living wage.
Typical Education and Training Requirements, and Educational Attainment	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 <a href="https://www.bls.gov/emp/documentation/education/tech.htm">https://www.bls.gov/emp/documentation/education/tech.htm</a>
Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences	The O*NET database includes information on skills, abilities, knowledges, work activities, and interests associated with occupations. For more information, see <a href="https://www.onetonline.org/help/online/">https://www.onetonline.org/help/online/</a>
Educational Supply	The CCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: <a href="https://datamart.cccco.edu">https://datamart.cccco.edu</a>
	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 <a href="https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions">https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions</a>
Student Metrics and Demographics	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

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

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