
California Labor Market Assessment

*Analysis prepared by McKinsey & Company
and commissioned by College Futures Foundation*

OCTOBER 2019

Executive summary

- **In 2030, California is projected to face a labor market gap of nearly 1.8 million jobs.** Over 50% of this gap will be concentrated in high-skill jobs in computer and math and health care.
 - **Business and financial and engineering jobs** are additional occupation clusters with large projected labor gaps, low automation potential, and high wages in California. These occupations are expected to represent 18% of the state's gap.
 - **59% of the projected unfilled occupations will require a bachelor's degree**, an additional 9% will require a graduate degree, and the remainder will need an associate or some college education.
- **Over 1/3 of the 2030 labor market gap is expected to be in three regions**, Los Angeles (425k gap), Inland Empire (141k gap) and Central Valley (74k gap).
 - Across regions, the gap will be concentrated in high-skill jobs in **four occupation clusters: health care, computer and mathematical, engineering, and business and financial occupations.**
 - **In Los Angeles, 61% of the projected unfilled jobs will require a bachelor's degree**, in the Central Valley, 45%, and the Inland Empire 43%.

Methodology for this labor market assessment

State gap analysis

- Labor market gap calculated as the **difference between projected job postings in 2030 and projected graduates in 2030**
- Estimates of job postings and graduates were estimated using a **10-year employment compounded annual growth rate (CAGR)**
- Job estimates include only **occupations requiring higher education** (incl. postsecondary nondegree award, some college-no degree, associate's, bachelor's, master's and doctorate). Occupation-level education requirements are defined by the US Bureau of Labor Statistics' Employment Projections program based on the typical entry-level education requirement for the respective occupation
- Gap estimate includes only **occupational clusters with overall undersupply**
 - The gap presented excludes nine occupational clusters that are projected to have an aggregate labor oversupply of 247,000 workers. Oversupply clusters include: legal, production, food preparation, protective service, arts, design, entertainment, community and social service, management and life, physical and social science
 - Although the clusters included present an overall undersupply of graduates, there could be specific occupations within each cluster where there is oversupply (e.g. education sector presents an overall undersupply although there is an oversupply for Preschool and Kindergarten teachers)

Regional gap analysis

- The regional gap analysis was **replicated following the methodology implemented at the state level**
- Regional gap estimates include only **occupational clusters with overall regional undersupply**. Sectors with oversupply at the regional level but with undersupply at the state level were excluded in the regional gap. For example:
 - Health care support: statewide undersupply but oversupply in Central Valley and L.A. Healthcare support is different from health care practitioners and includes occupations such as: nursing assistants, dental assistants, pharmacy aides
 - Agriculture : statewide undersupply but oversupply in Inland Empire
 - Production: statewide oversupply but undersupply in Central Valley and L.A
 - Community and Social Service: statewide oversupply but undersupply for Inland Empire
 - Legal: statewide oversupply but undersupply for Inland Empire and Central Valley
- Due to supply differences across regions, and assuming no inter-regional migration, summing up the regional gaps does not perfectly add to the overall labor gap at the state level

Occupational groups used for this labor market assessment are based on BLS occupational classification

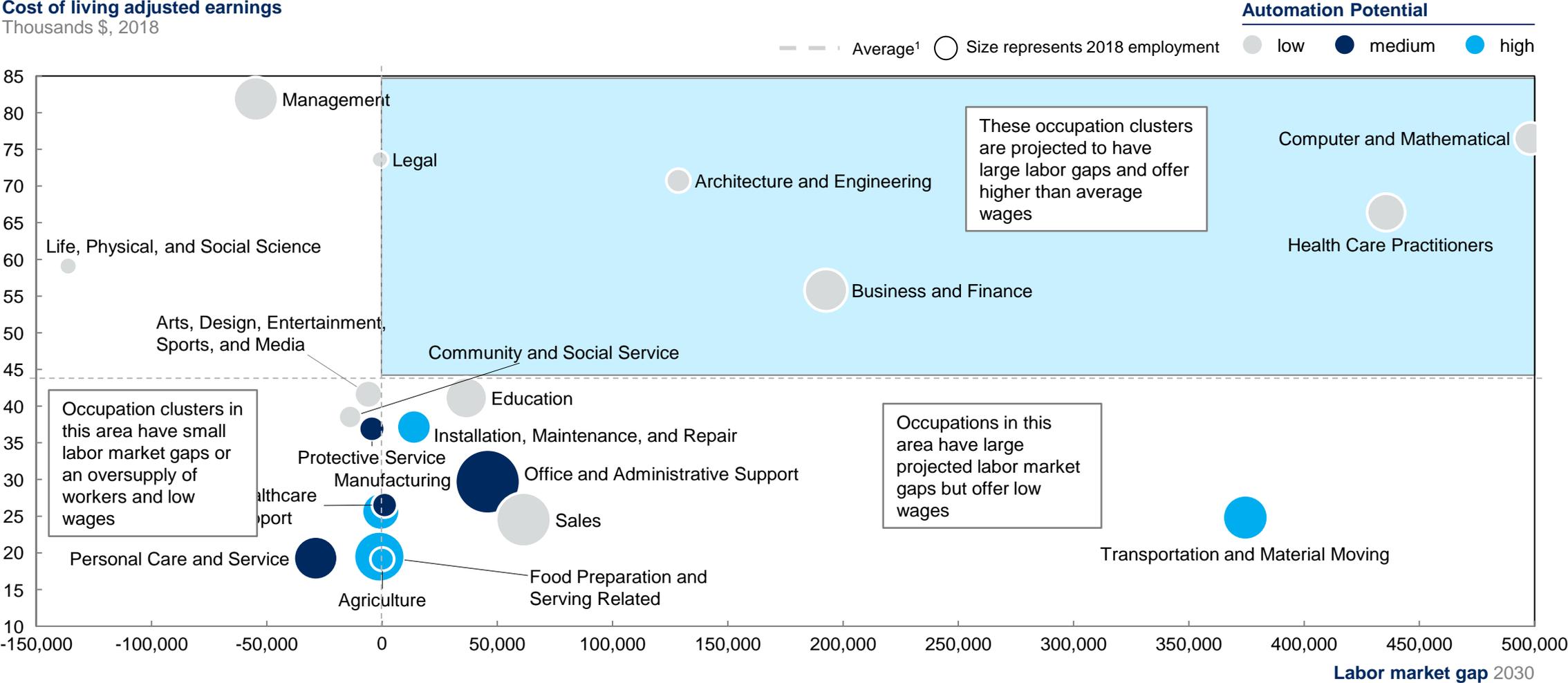
Occupation code	Occupation cluster	Sample occupations
11-0000	Management Occupations	Top executives, managers
13-0000	Business and Financial Operations Occupations	HR specialists, mgt. analysts, accountants
15-0000	Computer and Mathematical Occupations	Software developers, database administrators, actuaries
17-0000	Architecture and Engineering Occupations	Architects, engineers, drafters, engineering technicians
19-0000	Life, Physical, and Social Science Occupations	Conservation scientists, food scientists, chemists
21-0000	Community and Social Service Occupations	Counselors, mental health workers, social workers
23-0000	Legal Occupations	Attorneys, legal support, magistrates, judges
25-0000	Education, Training, and Library Occupations	Teachers, librarians, curators, archivists
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	Art directors, singers, designers, actors, athletes
29-0000	Healthcare Practitioners and Technical Occupations	Dentists, physicians, therapists, pharmacists, nurses
31-0000	Healthcare Support Occupations	Nurse assistant, medical assistant, pharmacy aide
33-0000	Protective Service Occupations	Firefighter, law enforcement, police officers, security
35-0000	Food Preparation and Serving Related Occupations	Chefs, fast food workers, hosts, waiters, dishwashers
37-0000	Building and Grounds Cleaning and Maintenance Occupations	Tree trimmers, janitors, pest control workers
39-0000	Personal Care and Service Occupations	Funeral service workers, embalmers, projectionists
41-0000	Sales and Related Occupations	Cashiers, travel agents, retail salespersons
43-0000	Office and Administrative Support Occupations	Customer service representatives, clerks, messengers
45-0000	Farming, Fishing, and Forestry Occupations	Logging workers, agricultural workers,
47-0000	Construction and Extraction Occupations	Electrician, carpenter, extraction workers
49-0000	Installation, Maintenance, and Repair Occupations	Automotive technician, repairers, HVAC technician
51-0000	Production Occupations	Assemblers, fabricators, bakers, machinists
53-0000	Transportation and Material Moving Occupations	Truck drivers, material movers, forklift operators

Top 10 industries in California by projected employment, 2018-2030

Industry ³	2030 total employees Thousands	% of 2018 total employment ¹	% of 2030 total employment ²	2018-2030 % Change in Employment
Health care	3,277	12.6%	14.9%	31.4%
Accommodation and Food Service	1,988	8.6%	9.1%	15.8%
Retail Trade	1,841	9.1%	8.4%	-3.0%
Professional Services	1,776	7.7%	8.1%	14.6%
Admin and Support	1,434	6.5%	6.5%	11.3%
Construction	1,294	6.9%	5.9%	15.6%
Manufacturing	1,257	5.6%	5.7%	-7.6%
Other Services ²	1,002	4.8%	4.6%	7.0%
Transportation and Warehousing	823	3.4%	3.8%	21.2%
Wholesale Trade	707	3.7%	3.2%	-2.2%

¹ Excluding government and unclassified ² Other Services: NAICS code 81, encompasses sub-industries like automotive repair, equipment repair, personal care services, drycleaning, and death care services ³ Industries are 2-digit NAICS super sectors

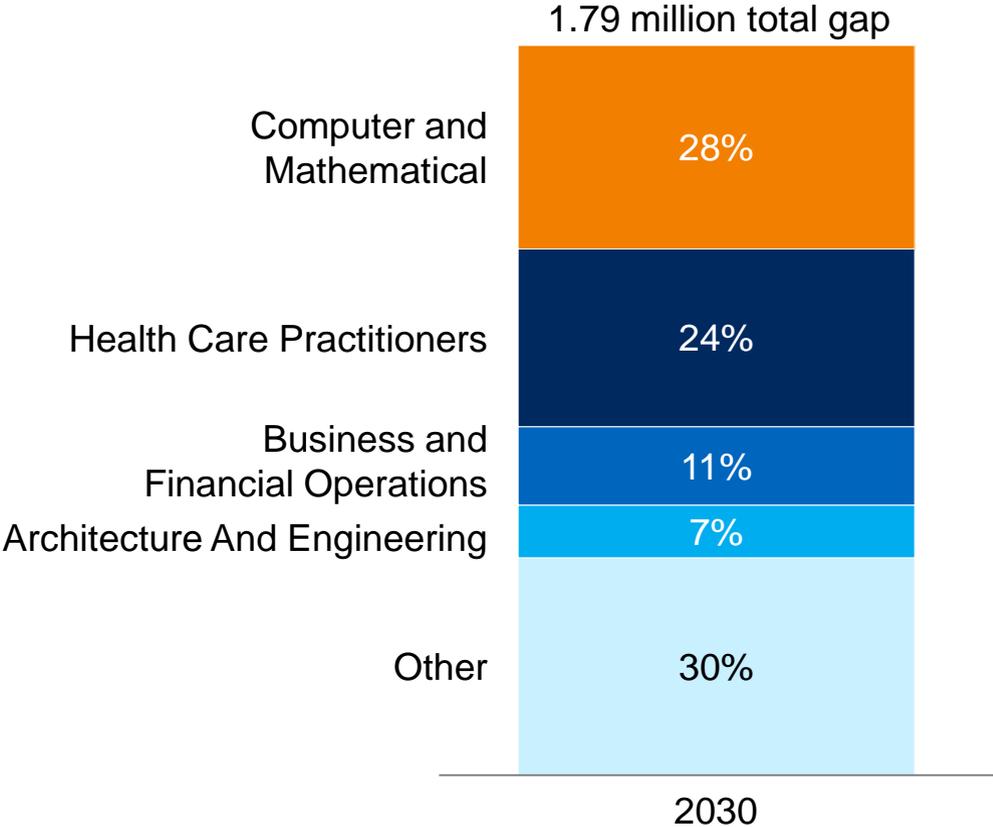
Health care, computer and math, engineering, and business occupations have large projected labor gaps, low automation potential, and high wages.



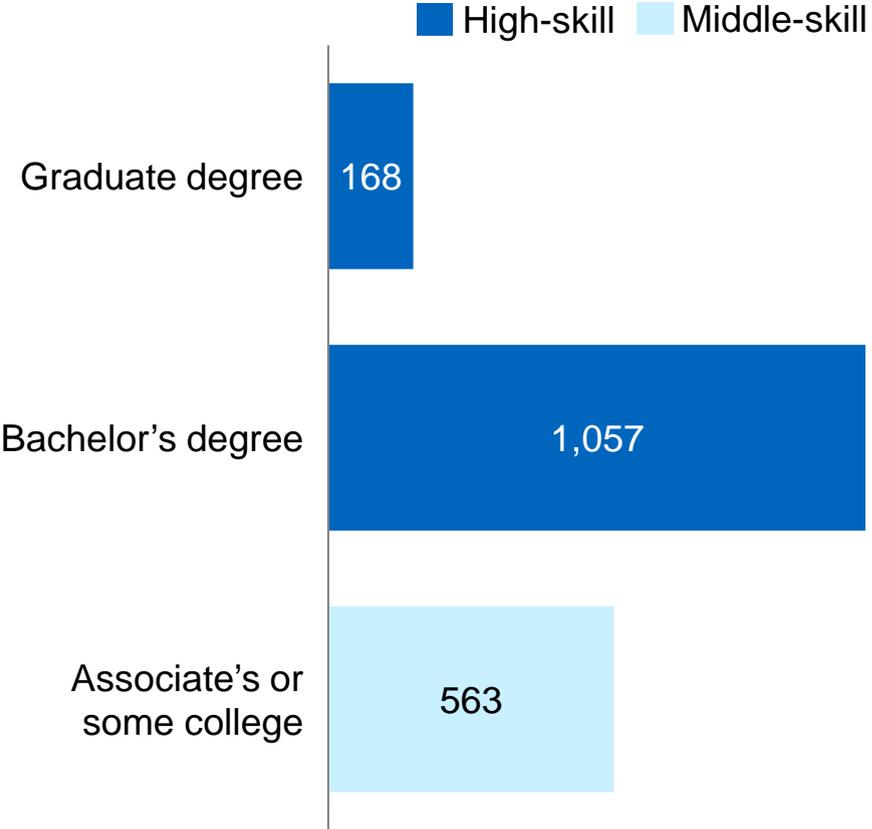
¹ Average for employment change is the average change in employment observed across all industries; average for cost of living earnings is the average earnings adjusted for COL

The majority of California’s 2030 labor market gap is going to be in high-skill jobs, especially in computer and math and health care occupations.

Labor market gap¹ in California for occupation clusters² with undersupply³, % of total gap, 2030



Labor market gap in California by degree type needed², Thousands, 2030

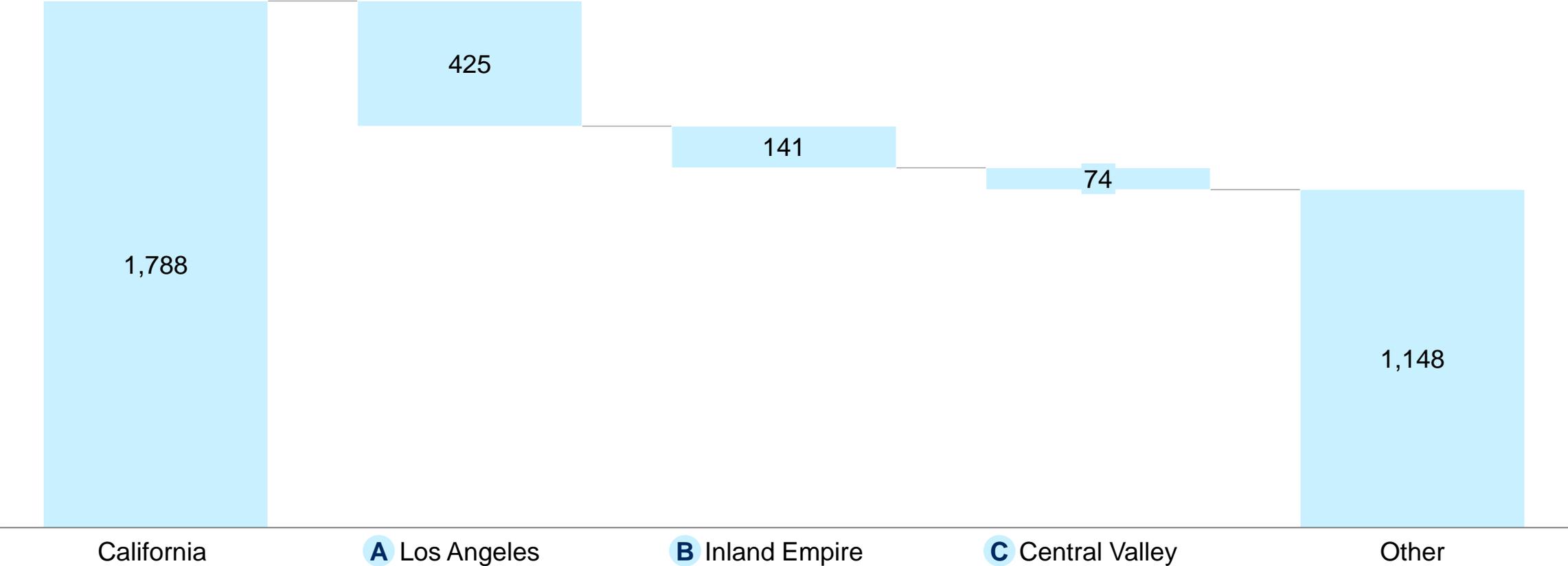


¹ Labor market gap calculated as the difference between projected job postings in 2030 and projected graduates in 2030. Both job postings and graduates were estimated using a 10-year employment CAGR (2018-28)
² Includes occupations requiring the following levels of education: postsecondary nondegree award, some college-no degree, associate's, bachelor's, master's and doctorate
³ For the analysis were excluded nine occupational clusters that are projected to have an aggregate labor oversupply of 247 thousand workers. Oversupply clusters include: legal, production, food preparation, protective service, arts, design, entertainment, community and social service, management and life, physical and social science

35% of California's total labor market gap in 2030 is expected to be in Los Angeles, the Central Valley, and the Inland Empire.

Labor market gap^{1,2} in California for occupational clusters with undersupply³ by region

Thousands, 2030



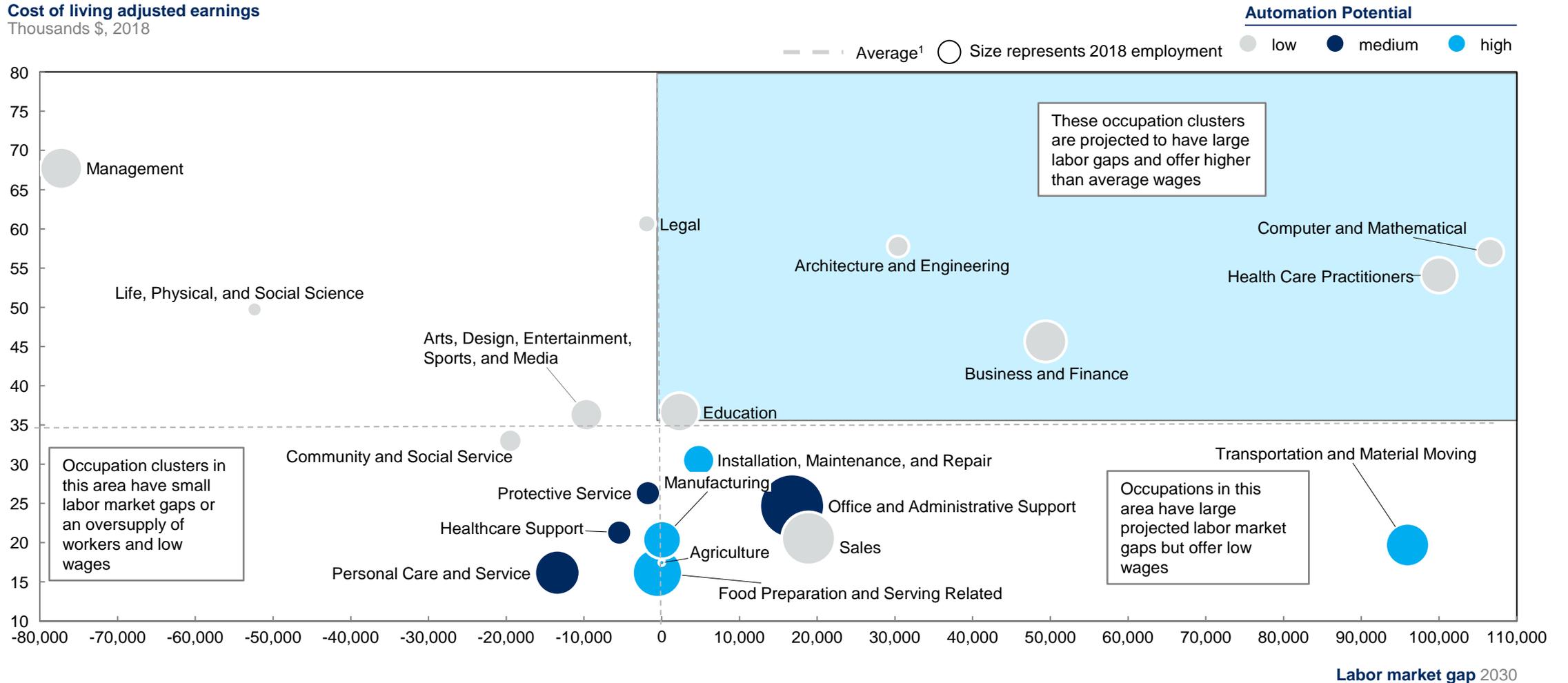
1 Labor market gap calculated as the difference between projected job postings in 2030 and projected graduates in 2030. Both job postings and graduates were estimated using a 10-year employment CAGR (2018-28)

2 Includes occupations requiring the following levels of education: postsecondary nondegree award, some college-no degree, associate's, bachelor's, master's and doctorate

3 Occupational clusters with oversupply were excluded for both the statewide estimate as well as the regional gaps. Sectors excluded at state level don't necessarily match excluded sectors at regional analyses. Check methodology for regional gap analyses for more details

A In 2030, engineering, computer, business, and health care occupation clusters in Los Angeles are projected to have large labor market gaps as well as low automation potential and higher than average wages.

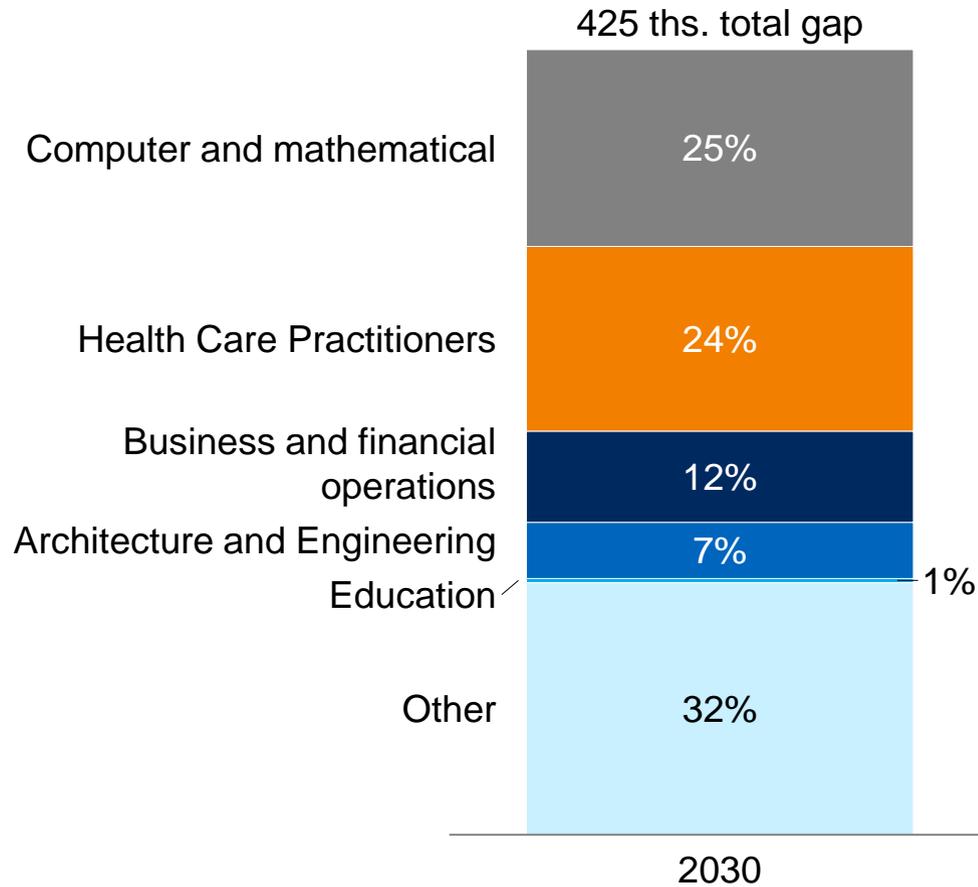
Cost of living adjusted earnings
Thousands \$, 2018



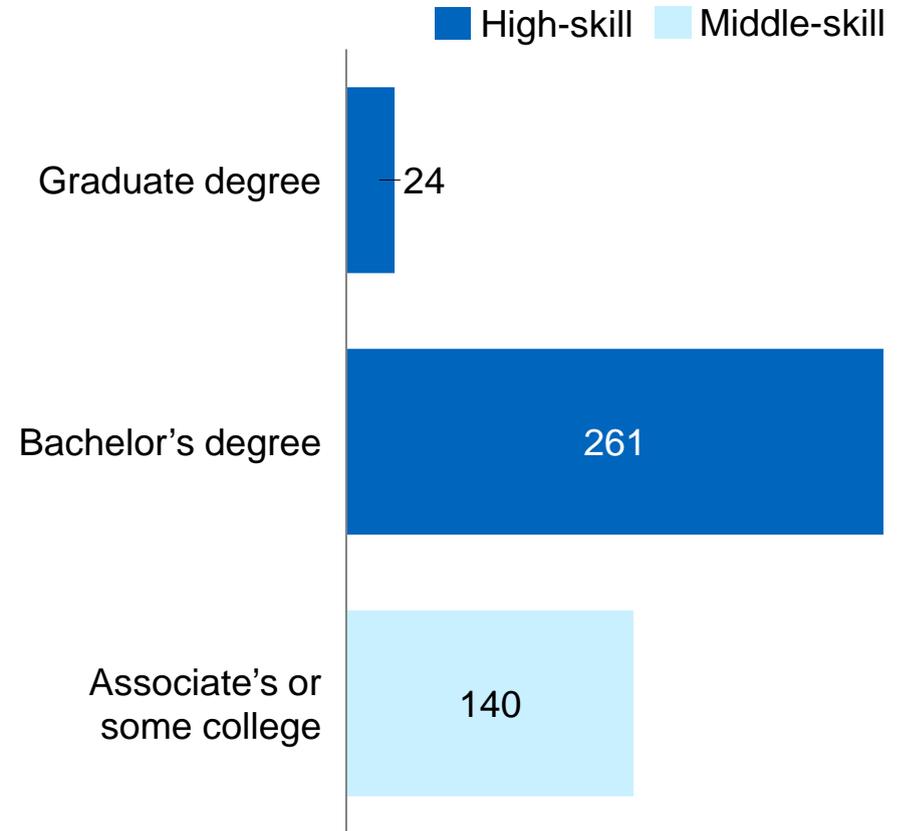
¹ Average for employment change is the average change in employment observed across all industries; average for cost of living adjusted earnings is of COL-adjusted median annual earnings
Note: Los Angeles defined as Los Angeles and Orange counties

A The majority of the 2030 labor market gap in Los Angeles will be in high-skill jobs, especially in computer and math and health care occupations.

Labor market gap¹ in Los Angeles for occupation clusters² with undersupply³, % of total gap, 2030



Labor market gap¹ in Los Angeles by degree type needed², Thousands, 2030



¹ Labor market gap calculated as the difference between projected job postings in 2030 and projected graduates in 2030. Both job postings and graduates were estimated using a 10-year employment CAGR (2018-28)

² Includes occupations requiring the following levels of education: postsecondary nondegree award, some college-no degree, associate's, bachelor's, master's and doctorate

³ For the analysis were excluded ten occupational clusters that are projected to have an aggregate labor oversupply of 182 thousand workers. Oversupply clusters include: farming, fishing and forestry, food preparation, protective service, legal, healthcare support, arts, design, entertainment, community and social service, personal care management and life, physical and social science

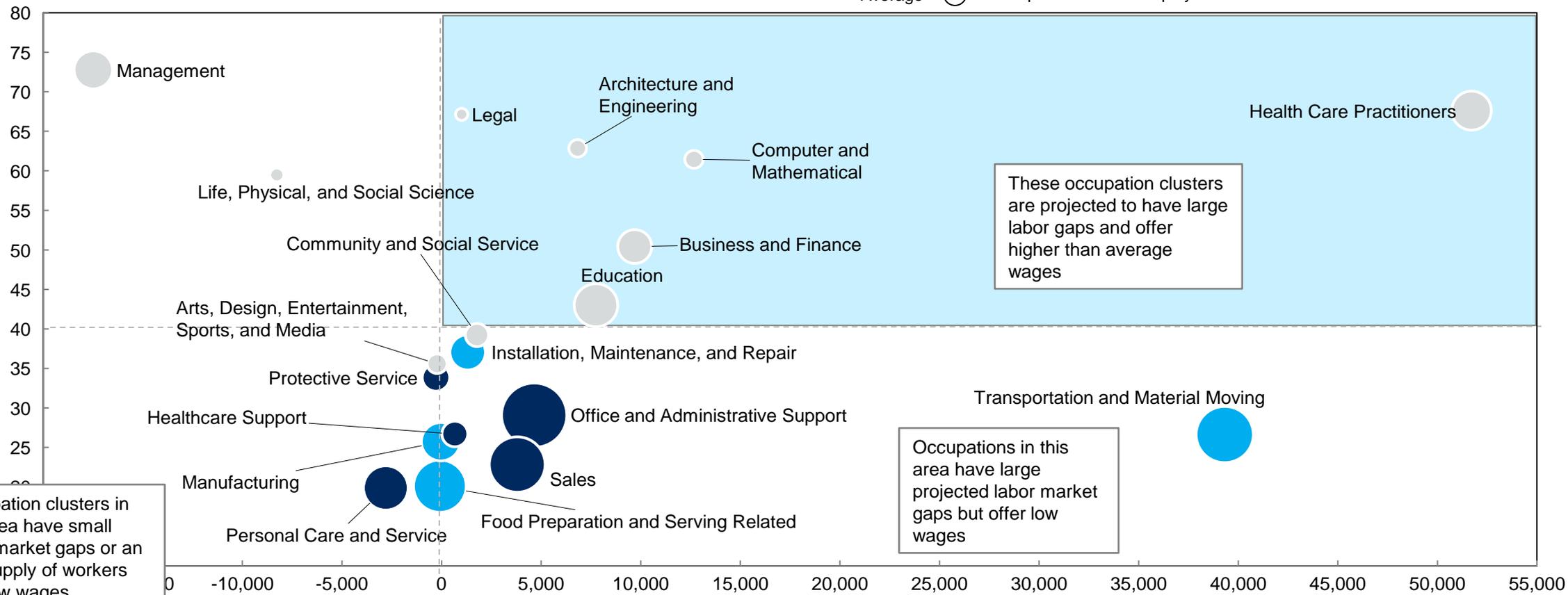
B In the Inland Empire, engineering, computer, business, and health care occupations offer excellent future job prospects – with high projected labor gaps, low automation potential, and higher than average wages.

Cost of living adjusted earnings

Thousands \$, 2018

Automation Potential

--- Average¹ ○ Size represents 2018 employment ● low ● medium ● high



Occupation clusters in this area have small labor market gaps or an oversupply of workers and low wages

These occupation clusters are projected to have large labor gaps and offer higher than average wages

Occupations in this area have large projected labor market gaps but offer low wages

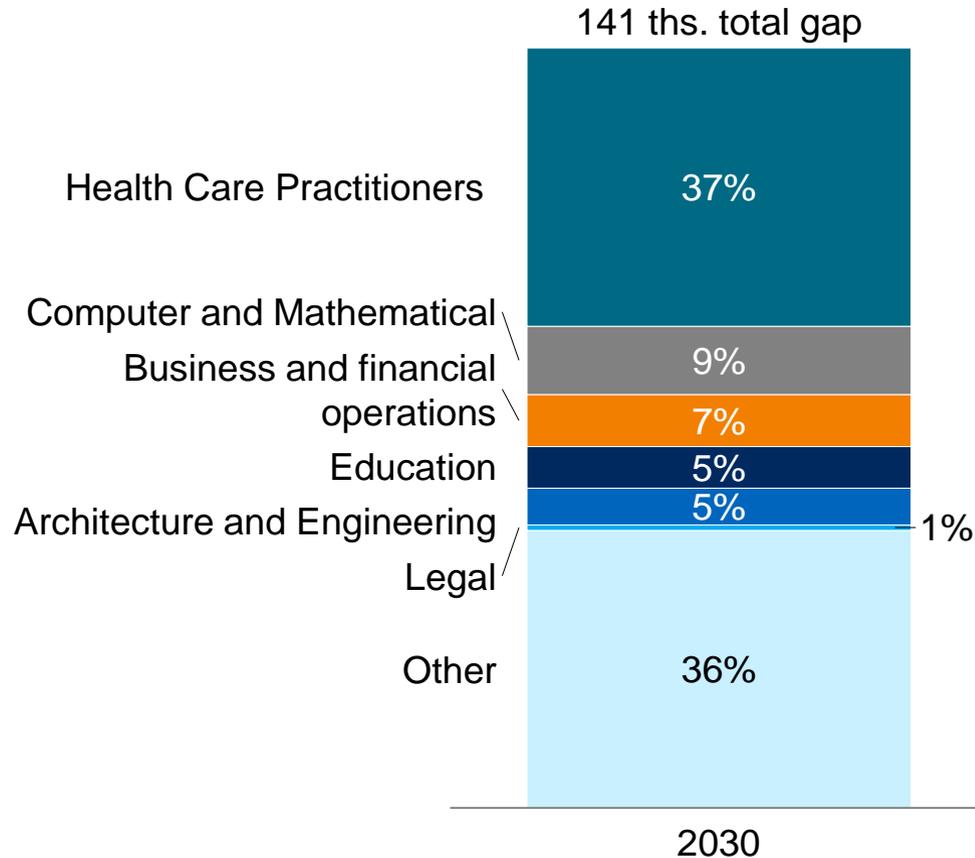
Labor market gap 2030

¹ Average for employment change is the average change in employment observed across all industries; average for cost of living adjusted earnings is of COL-adjusted median annual earnings
 Note: Inland Empire defined as San Bernardino and Riverside counties

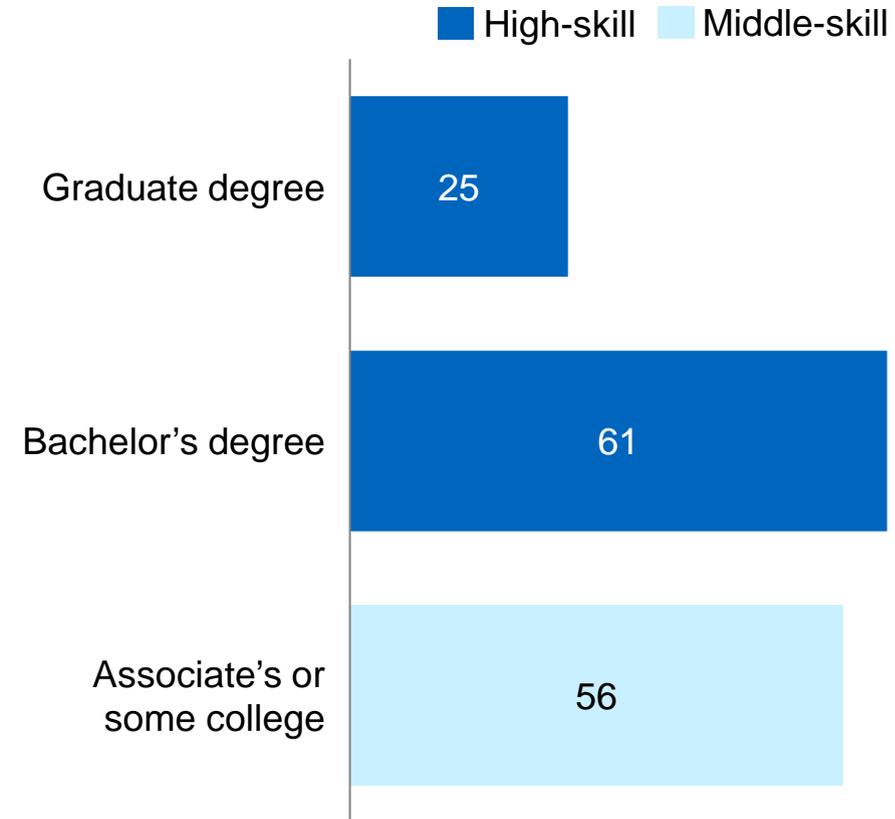
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B The majority of the 2030 labor market gap in the Inland Empire is going to be in health care occupations.

Labor market gap¹ in Inland Empire for occupation clusters² with undersupply³, % of total gap, 2030



Labor market gap¹ in Inland Empire by degree type needed², Thousands, 2030



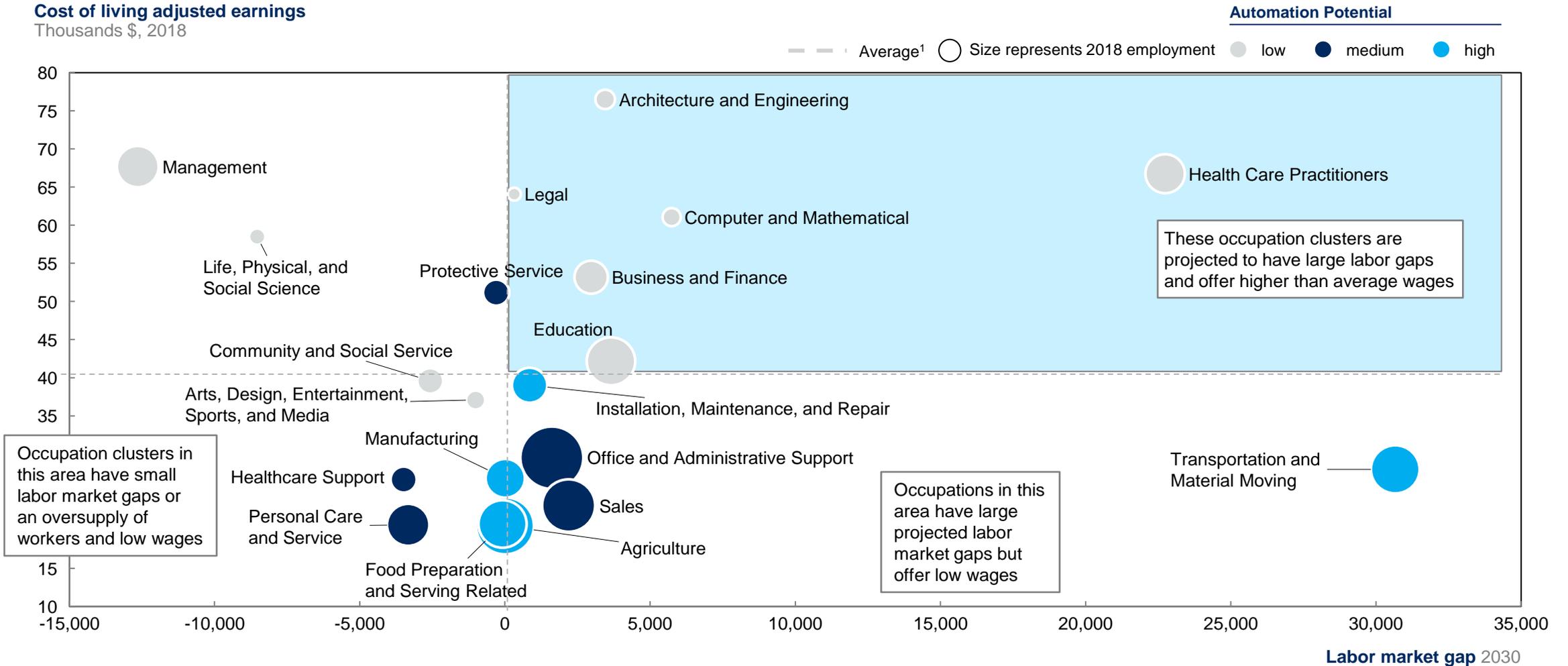
¹ Labor market gap calculated as the difference between projected job postings in 2030 and projected graduates in 2030. Both job postings and graduates were estimated using a 10-year employment CAGR (2018-28)

² Includes occupations requiring the following levels of education: postsecondary nondegree award, some college-no degree, associate's, bachelor's, master's and doctorate

³ For the analysis were excluded eight occupational clusters that are projected to have an aggregate labor oversupply of 29 thousand workers. Oversupply clusters include: farming, production, food preparation, protective service, arts, design, entertainment, personal care, management and life, physical and social science

C In the Central Valley, health care, engineering, computer, and business occupations have large projected labor market gaps, low automation potential, and offer higher than average wages.

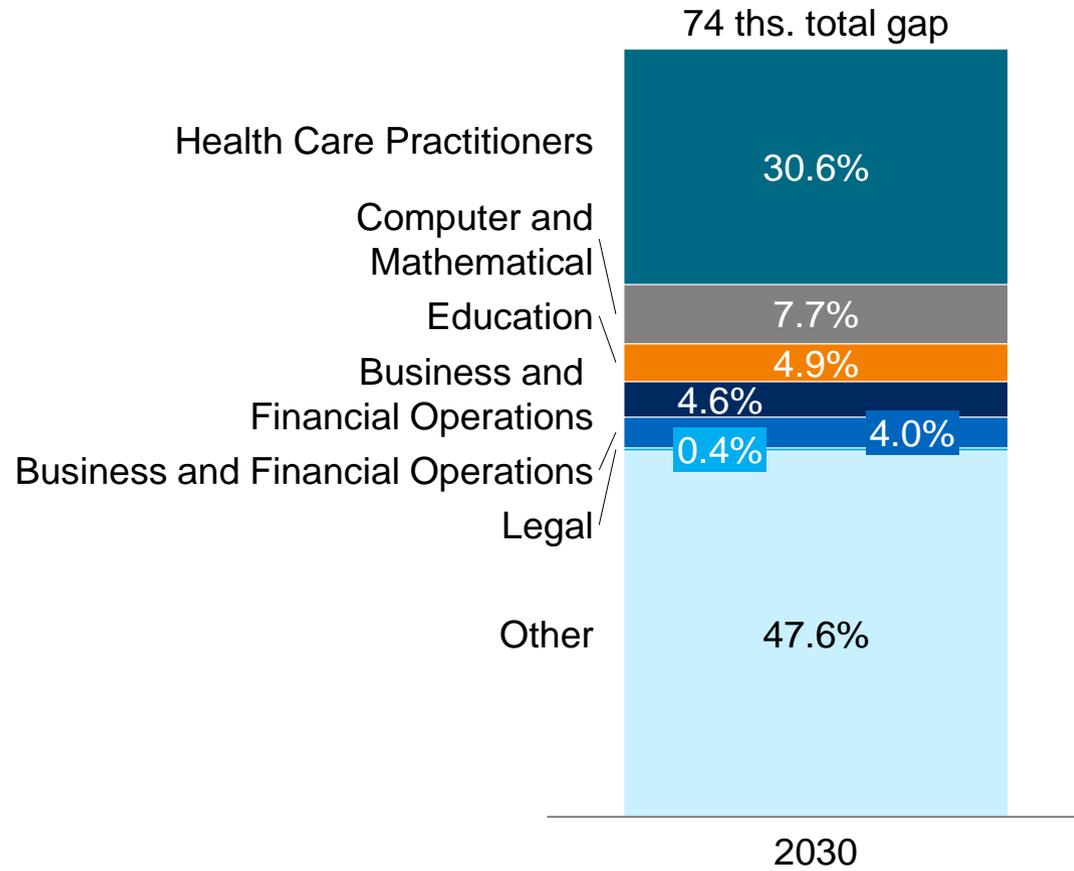
Cost of living adjusted earnings
Thousands \$, 2018



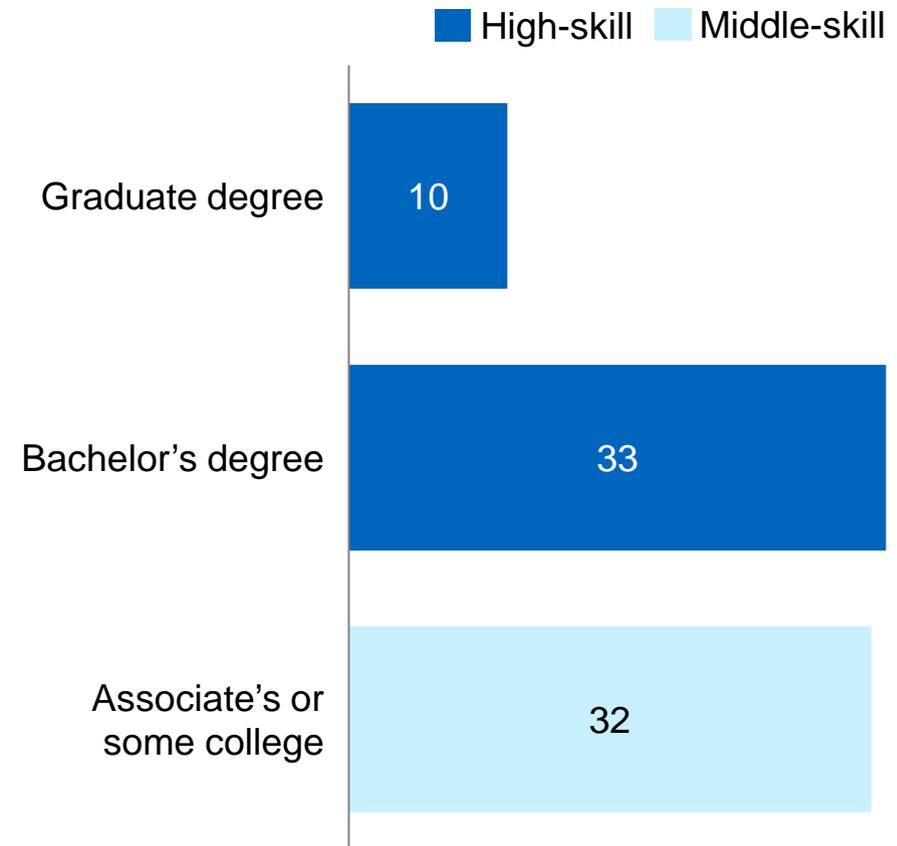
¹ Average for employment change is the average change in employment observed across all industries; average for cost of living adjusted earnings is of COL-adjusted median annual earnings
Note: Central Valley defined as Fresno, Kern, Merced, and Stanislaus counties

C More than 30% of the projected 2030 labor market gap in the Central Valley will be in health care occupations.

Labor market gap¹ in Central Valley for occupation cluster² with undersupply³, % of total gap, 2030



Labor market gap in Central Valley by degree type needed², Thousands, 2030



¹ Labor market gap calculated as the difference between projected job postings in 2030 and projected graduates in 2030. Both job postings and graduates were estimated using a 10-year employment CAGR (2018-28)

² Includes occupations requiring the following levels of education: postsecondary nondegree award, some college-no degree, associate's, bachelor's, master's and doctorate

³ For the analysis were excluded eight occupational clusters that are projected to have an aggregate labor oversupply of 32 thousand workers. Oversupply clusters include: food preparation, protective service, arts, design, entertainment, community and social service, management, healthcare support, personal care and life, physical and social science