



The mission of the California Labor Lab is to extend the pursuit of health and safety for workers in traditional employment to those in a wide range of alternative arrangements in partnership with affected communities.

Data Brief #8

Education Mismatch in the California Workforce

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In the California Work and Health Survey (CWHs), respondents report on the characteristics of main and secondary jobs held in the month prior to interview. For each job, they indicate the occupation in a natural language description. The descriptions are then translated into Standard Occupational Classification (SOC) six-digit codes. The section of the CWHs on job characteristics includes a question asked separately for both main and secondary jobs about the level of education respondents would say is required to do their jobs reasonably well. The response categories are “high school”, “associate degree or vocational school”, “bachelor’s degree”, or “graduate degree or some training beyond a bachelor’s.” Later, in the demographics section of the CWHs, the respondents report on their own level of education. We compare their responses about the educational requirements for their jobs with the level of their own education. From their responses to these two questions, we have created three variables: those for whom their level of education is the same as their assessment of the requirements for the job (hereafter “same level”), those for whom the job requires more education than they have (“undereducated”), and those for whom the job requires less education (“overeducated”).

In the Department of Labor’s occupational classification system, O-Net, occupations are classified into five “job zones” which are based on the Department’s research on the requirements of jobs along three dimensions, the amount of education, experience, and training needed to do a job (1). We merged information on the job zone for each six-digit SOC code from O-Net to that same code in the CWHs.

In this report, we use both the subjective measure from the CWHs and the objective measures from O-Net’s job zones to characterize the extent of education mismatch and to show how mismatch differs by characteristics of individuals and their jobs.

Overall Measures of Educational Mismatch

Most of California’s workers are in jobs requiring the same amount of education as they have, but more of the remainder say that they are over-educated for their jobs than under-educated. Using the O-Net job zones, all but a handful of California’s workers are in jobs requiring at least some training and large numbers are in jobs requiring a lot of education, training, and experience.

About two-thirds of California’s workers report that they have the same level of education as their jobs require.

Relatively few California workers, 7%, say that they are under-educated for the demands of their jobs, while a much greater percentage, 26%, said that they are over-educated.

- 12% and 10% of those with a high school education or less and some college without a degree report less education than their job demands, respectively, while only 1% and 0% of those with a BA or graduate training, respectively, do.
- 43%, 24%, and 39% of those with some college, a BA, or some graduate training, respectively, report more education than their jobs demand.

Using the O-Net job zone system, all but 3% of California's workers are in jobs requiring some level of experience or training (zone 1).

Almost forty percent of California's workers are in job zones 4 or 5, requiring considerable or extensive preparation, education, training, and education experience. A similar proportion are in job zone 2. Job zones do not match up perfectly with levels of education, but the largest percentage of those in zone 1 (68%) do have a high school education or less while the largest percentage in zone 5 (56%) have at least some graduate training.

- Overall, the correlation between job zone and level of education is relatively high, .47 ($p < .0001$), suggesting that the workers' reports of how much education is needed to do their jobs is similar to the objective assessments from O-Net's job zone system.

Characteristics of Workers Experiencing Educational Mismatch

Race/ethnicity and gender were not associated with the percentage reporting the same amount, less than, or more than the level of education required by their jobs.

There was a strong relationship between age and the percentage reporting a level of education that was the same as, less than, or more than required by their jobs.

- Younger workers, those 18-34, were much less likely than older workers to report having the same amount of education for their jobs; they were less likely to report being undereducated and more likely to report being overeducated for their jobs.

Persons with activity limitations, the measure of disability used in the CWHS, were more likely to report being undereducated for their jobs and there was a trend for them to be more likely to report being overeducated for them. Overall, they were less likely to report the same level of education as their jobs required.

Being an independent contractor or in such other forms of alternative employment as on-call work, working at a temp agency, or being a subcontracted worker was not associated with reporting having the same, less than, or more than the level of education required for jobs.

Contingent workers, those in jobs not expected to last beyond the current year, were much more likely to be in jobs requiring less education than they had.

Workers securing employment through apps were less likely to say that they had the same level of education as their jobs required; they were much more likely to report having more education than needed to do their jobs.

Occupations and Industries with Large Numbers of Overeducated Workers

- Occupations with large numbers of workers with more education than their jobs require include sales and related occupations (456,000), administrative support (385,000), management (303,000), health care support (267,000), business and financial services (252,000), food preparation and serving (224,000), and transportation and material moving occupations (210,000).
- Industries with large numbers of workers with more education than their jobs require include retail (495,000), health care/social assistance (470,000), accommodation/food services (262,000), professional-scientific-technical services (243,000), public administration (241,000), and transportation and warehouse industries (219,000).

Relationship Between Educational Mismatch and Financial Status and Working Conditions

- Workers who reported higher levels of education than required for their jobs were significantly more likely to have low earnings and low household income (both at or below \$40,000) in the prior year and, although it didn't meet criteria for statistical significance, there was a trend for such individuals to have household incomes at or below 125% of the Federal Poverty Level.
- Workers with the same, less than, or more than the education levels required for their jobs were not more likely to experience financial strain as measured by having any difficulty living on one's household income, ability to sustain a \$400 emergency expense, or expecting actual hardships in food, housing, or medical care in the next two months.
- Having the same, less than, or more than the education level required for jobs was not associated with wage theft on the job, but having less than or more than the education required significantly increased the probability of reporting high levels of job stress (greater than the 90th percentile of this measure); there was a trend that did not reach statistical significance for those with less than or more than the education level required to report the combination of high demands and low job decision latitude that has been shown to predict the onset of cardiovascular disease and a range of musculoskeletal conditions.

Summary

Two-thirds of California's workers have the same level of education as they perceive necessary to do their jobs. However, among the remainder, far more (26%) report having more education than required for their jobs than less (7%), verifying the observation that, although there is a premium associated with education in labor market outcomes, many are still left overeducated for their work.

Occupations with large numbers of workers who are overeducated for their jobs are diverse, ranging from those in sales, administrative support, healthcare support, and food services, but also encompassing at least 250,000 apiece in management positions and business and financial services occupations. Industries with at least 250,000 such workers are also diverse, including retail, health care/social assistance, and accommodation and food services.

There is a strong correlation between the subjective measure of educational requirements for jobs based on a comparison of responses about the level of education needed to do a job and the level the individual actually has and the O-Net job zone data on objective job requirements. This suggests that it is not merely a perception of mismatch between education level and demands of the job.

Race/ethnicity and gender were not associated with educational mismatch. However, several groups reported a higher level of education than required by their jobs, including workers between 18 and 34, those in contingent jobs, and those who secure work through an app. Workers with more education than required for their jobs were more likely to have low earnings and low household income. Those with either more or less education than required were more likely to report high levels of stress on the job.

Educational mismatch is more than a burden on the individual worker when it segues into inadequate earnings since the latter often leads to higher levels of public benefit reciprocity (2, 3). It also indicates that there may be an inadequate return on the public's investment in education (4). It is surely not the intent of society to have such large number of individuals, approximately a quarter of all workers, in jobs that don't take advantage of their educational attainment.

References

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2. Somers MA, Cabus SJ, Groot W, van den Brink HM. Horizontal mismatch between employment and field of education: Evidence from a systematic literature review. *Journal of Economic Surveys*. 2019;33(2):567-603.
3. Shahidan A, Ismail R. A critical review of the literature on the concept of job mismatch and overeducation. *Journal of Economics and Sustainability*. 2021;3(1):9-.
4. McGuinness S, Pouliakas K, Redmond P. Skills mismatch: Concepts, measurement and policy approaches. *Journal of Economic Surveys*. 2018;32(4):985-1015.

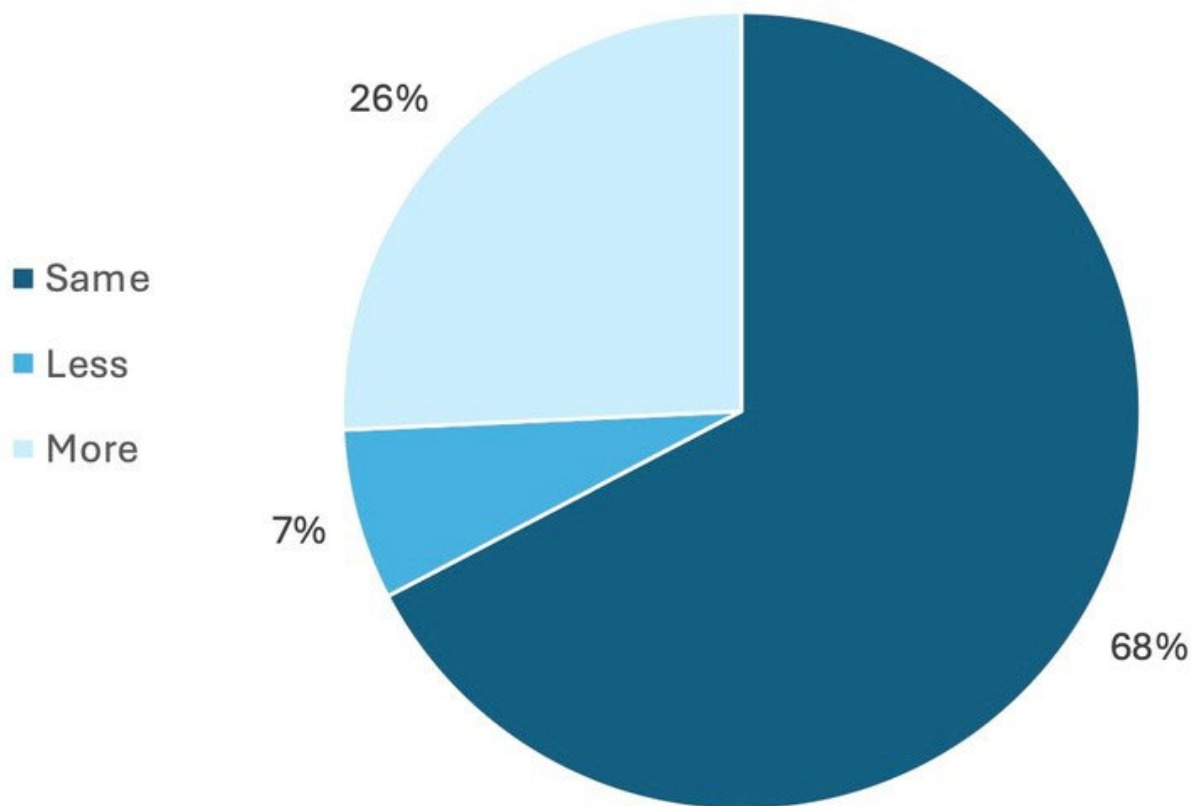
About the Survey

The California Work and Health Survey (CWHS) used a random sample of cell phones to develop its study cohort of 4,014 working age Californians. The CWHS was administered between November 2022 and May 2023 by telephone interviewers or completed on-line at the respondents' choice. Both the telephone-administered and on-line surveys could be completed in English or Spanish. The survey covered current employment status, working conditions among the employed, health status, and economic well-being. The results were weighted to reflect known characteristics of the working age population of California.

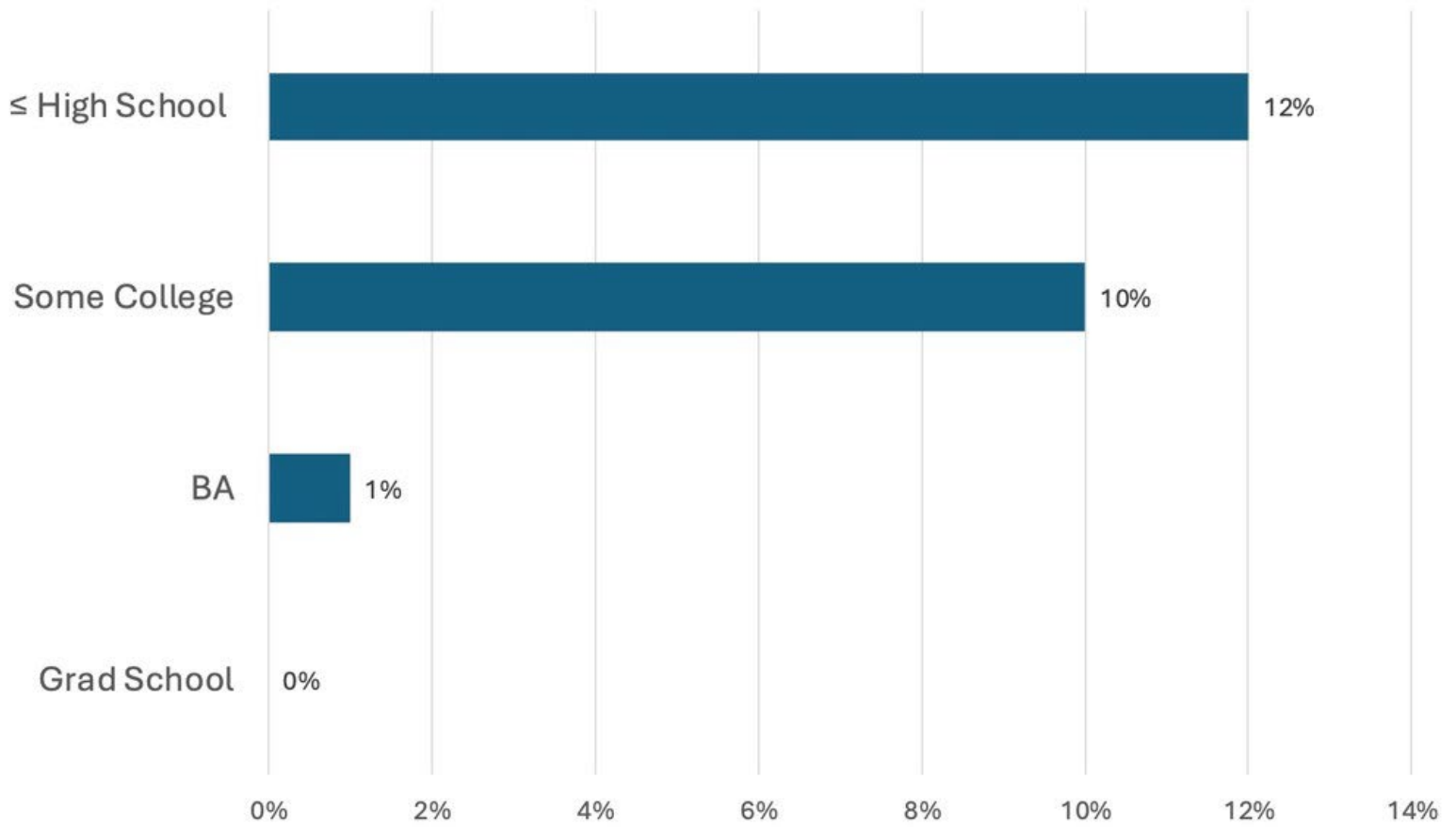
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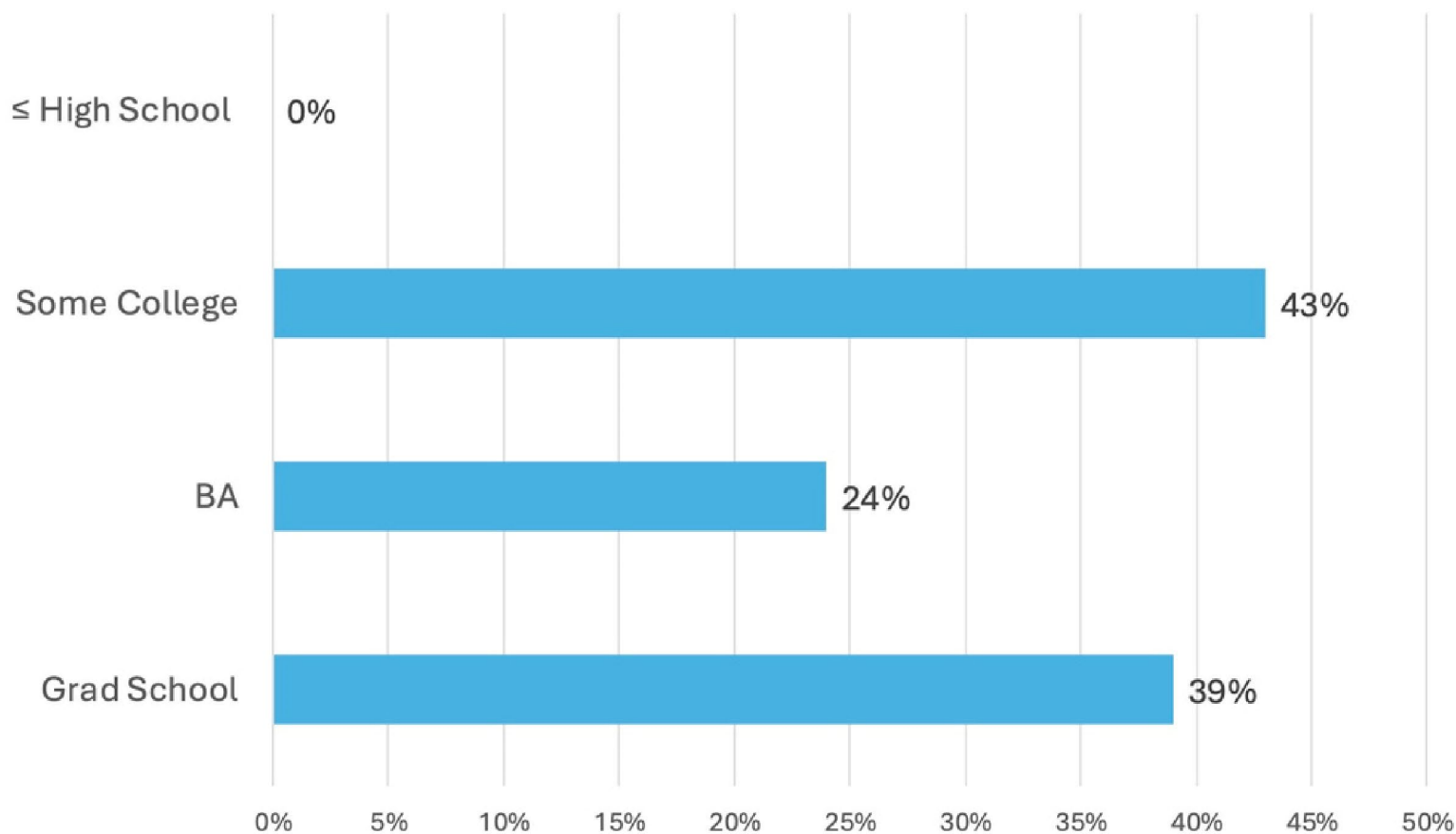
Percentage of California's Workers with the Same, Less, or More Education than Required for their Jobs



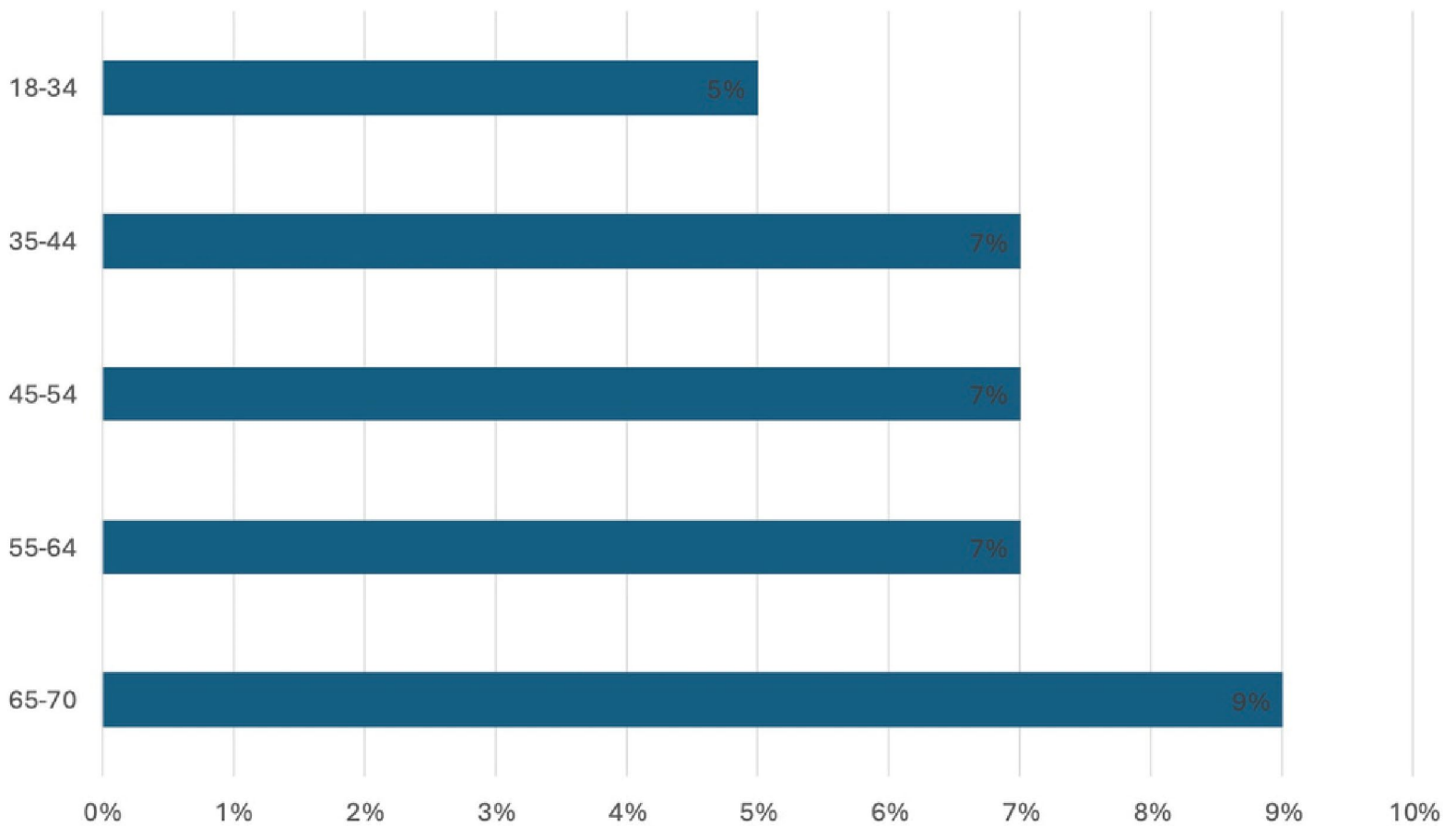
Percentage of California's Workers with Less Education than Required for their Jobs, by Education Level



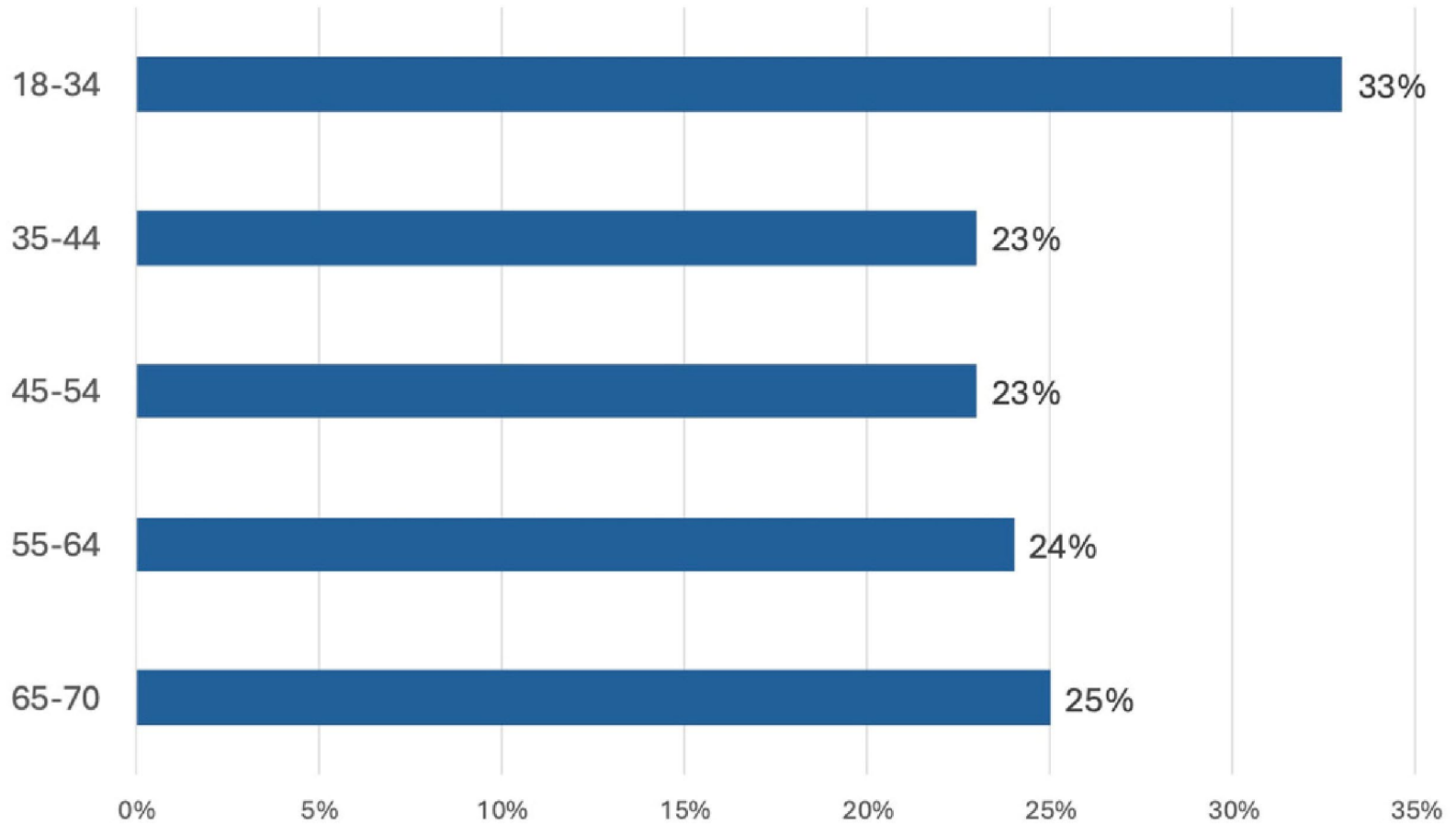
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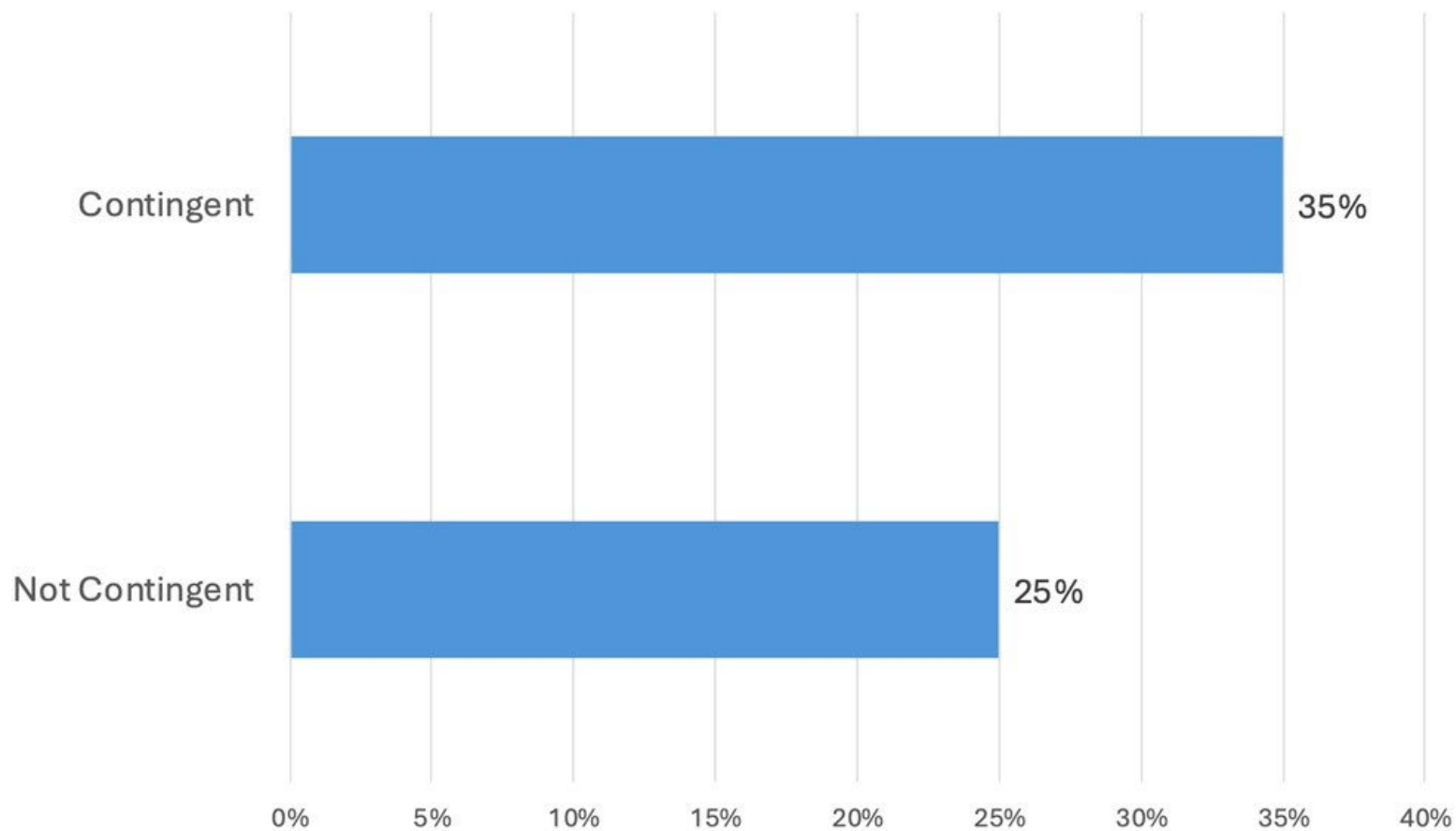
Percentage of California's Workers with Less Education than Required for their Jobs, by Age Group



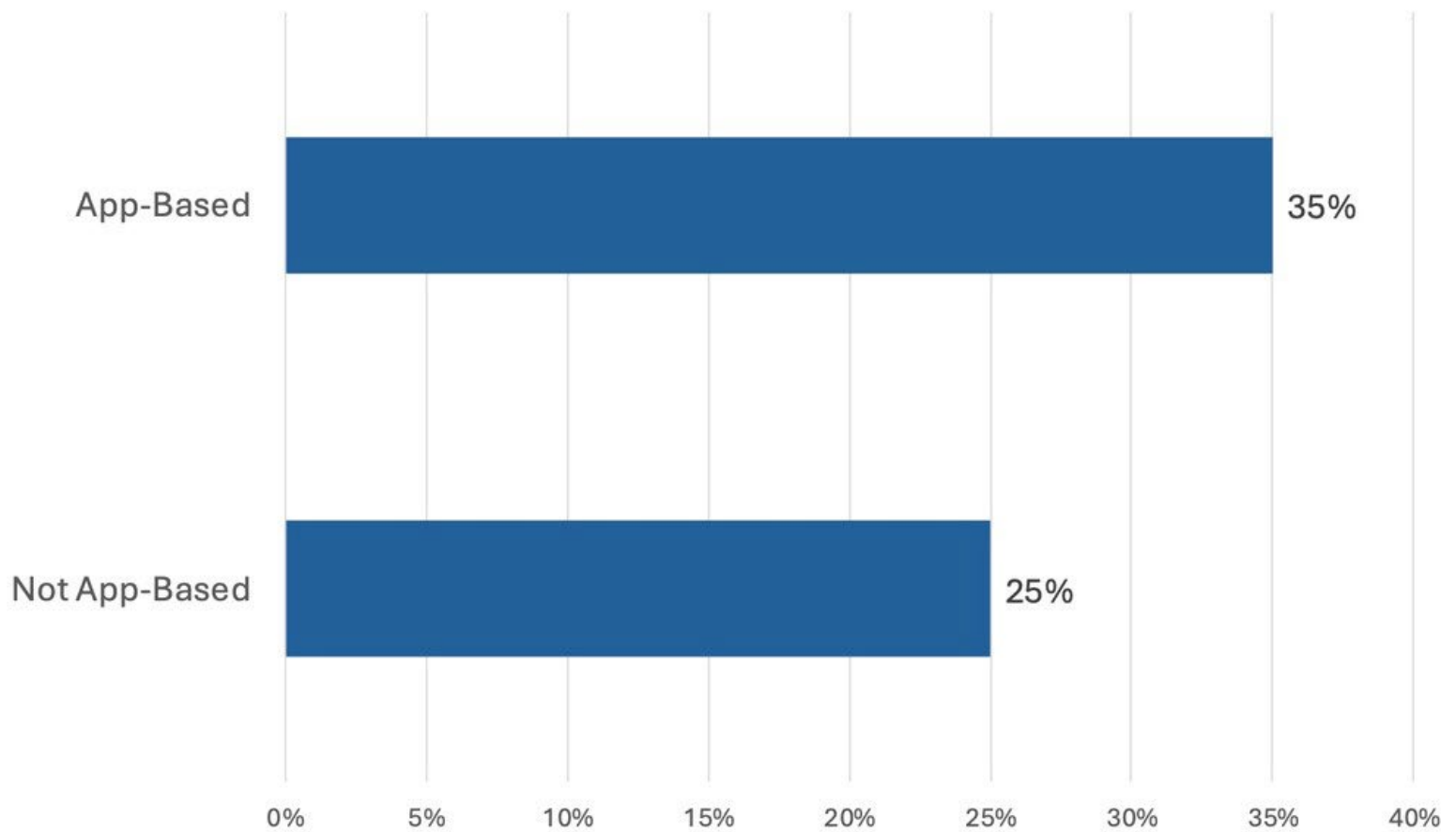
Percentage of California's Workers with More Education than Required for their Jobs, by Age Group



Percentage of California's Workers with More Education than Required for their Jobs, by Contingent Employment Status



Percentage of California's Workers with More Education than Required for their Jobs, by Whether Work Secured through an App



Percentage of California's Workers with More Education than
Required for their Job, by Perceived Stress Levels at or Greater
than 90th Percentile

