Analysis of Workforce Innovation and Opportunity Act

Program Claimant Demographic Data

State Fiscal Years 2015-16

November 2017

Study conducted by

Survey and Applied Research Section
Audit & Evaluation Division
Policy, Accountability and Compliance Branch
Danell Brewster, MPPA
Michael Wright, MA

For

Equal Employment Opportunity Office
Employment Development Department

WORKFORCE INNOVATION AND OPPORTUNITY ACT ADVERSE IMPACT ANALYSES
Survey and Applied Research (SAR) Section
Employment Development Department

EXECUTIVE SUMMARY

To address potential discrimination against clients in California's Workforce Innovation and Opportunity Act (WIOA) programs, we examined outcome data for clients enrolled statewide in our system from July 1, 2015 through June 30, 2016 (FY2015-16). If there was systemic discrimination in our WIOA programs against people in protected groups such as race/ethnicity, gender, disability, or age, we would expect them to have fewer positive outcomes than other groups, or an adverse impact. For the purpose of this analysis, we considered the following positive outcomes: exit codes such as attending school, attending high school, completed high school, attending college, attained GED or equivalency diploma, attained secondary school (high school) diploma, entered employment, called back/remained with layoff employer, date of employment. All other exit codes such as did not enter employment, did not attain diploma, and drop out were considered "other outcomes."

In addition to the exit code data described above for our enrolled clients in the year of interest, we used the following demographic data for our analyses: race/ethnicity, gender, disability status, and age. Below are the WIOA data analysis results by research question.

Research questions:

1. **Is there a significant difference in positive outcomes for members of different racial or ethnic groups? If so, which ones and how do they differ?** We found no significant difference between racial/ethnic groups on positive outcomes for training/education or employment.
2. **Is there a significant difference in positive outcomes for different genders? If so, how do they differ?** We found no significant difference between genders on positive outcomes for training/education or employment.
3. **Is there a significant difference in positive outcomes for clients with a disability and those without a disability? If so, how do they differ?** We found no significant difference between these groups on positive outcomes for training/education or employment.
4. **Is there a significant difference in positive outcomes by age? If so, which ones and how do they differ?** We found small practical significant differences in positive training/education and employment outcomes by age. The youngest age group had fewer positive training/education outcomes than expected and fewer positive employment outcomes than expected.

Conclusion

These analyses suggest that there was no systemic discrimination or adverse impact on California's enrolled WIOA program clients during Fiscal Year 2015-16 based on race/ethnicity, gender, or disability. The small significant difference found in the results by age suggests a small impact to employment outcomes for the youngest group (not a protected class under the Age Discrimination in Employment Act). The Department will continue to conduct this examination annually to monitor for differences in the outcomes of these groups and take any needed action.

WORKFORCE INNOVATION AND OPPORTUNITY ACT ADVERSE IMPACT ANALYSES
Survey and Applied Research (SAR) Section
Employment Development Department

METHODOLOGY

The Workforce Services Branch (WSB) and its vendor, GSI, provided CalJOBS^{SM} data files for all enrolled WIOA participants from July 1, 2015 to June 30, 2016 (FY 2015-16).

Survey and Applied Research Section researchers performed analyses on the cases with outcome and demographic data. The file contained 93,833 records, of which 59,350 contained exit codes and demographic variables (age, gender, race/ethnicity, disability status).

SAR Section researchers measured the strength of association between the outcomes (training/education and employment) and demographic characteristics to evaluate differences of practical significance. We considered the following positive training/education outcomes: exit codes such as attending school, attending high school, completed high school, attending college, attained GED or equivalency diploma, and attained secondary school (high school) diploma. We considered the following positive employment outcomes: entered employment, called back/remained with layoff employer, date of employment. All other exit codes were considered "other outcomes" such as did not enter employment, did not attain diploma, and drop out. For the purposes of the outcomes analyses, "positive outcomes" means having one or more positive outcomes and "other outcomes" means having no positive outcomes and having one or more other outcomes.

Researchers used the Chi-Square Test of Independence and Cramer's V or Phi coefficient to measure the strength of association and determine the practical significant differences between groups on outcome indicators. We used the Mann-Whitney U test on age instead of a *t*-test, due to the non-normal distribution of the data. Researchers performed additional tests when practical significant differences appeared between groups as shown by the Chi-square Tests of Independence and minimum effect size results (Cramer's V[1] or Phi > .10). Where the minimum effect size value exceeded .10, indicating a practical significant difference, we used the adjusted residual (a type of standard deviation) to evaluate differences between specific groups within the analysis.

[1] According to AcaStat's Applied Statistics Desktop Reference, Cramer's V is useful for comparing multiple Chi-Square test statistics and is generalizable across contingency tables of varying sizes. It is interpreted as a measure of the relative strength of an association between two variables. The coefficient ranges from 0 to 1 (perfect association). In practice, a Cramer's V of .10 provides a good minimum threshold for suggesting there is a substantive relationship between two variables. Interpretation of larger values: .10-.29 (small association); .30-.49 (moderate association); .50+ (large association). http://www.acastat.com/statbook/statbook.html.

RESULTS

Is there a significant difference in positive outcomes for members of different racial or ethnic groups? If so, which ones and how do they differ?

To optimize the analysis, researchers combined several of the less frequently occurring races/ethnicities. We also coded those who indicated "Yes" for Hispanic (a separate question) to Hispanic (any race). Measures of association between the outcomes (training/education and employment) and racial/ethnic groups found no practical significant differences between these groups, indicating no systemic discrimination against particular racial/ethnic groups.

Table 1

FY2015-16 Training/Education Outcome Results by Combined Races/Ethnicities

Combined Races/Ethnicities	Other Outcomes	Positive Outcomes	Total cases
African American/Black	882	3375	4257
	24.4%	17.6%	18.7%
American Indian/Alaskan Native	62	275	337
	1.7%	1.4%	1.5%
Asian	161	986	1147
	4.5%	5.1%	5.0%
Hawaiian/Other Pacific Islander	31	158	189
	0.9%	0.8%	0.8%
White	506	3359	3865
	14.0%	17.5%	17.0%
Hispanic (any race)	1969	11027	12996
	54.5%	57.5%	57.0%
Total	3611	19180	22791

Note: A Cramer's V value of .069 on the Chi-square Test of Independence indicated no practical significant difference between groups on overall outcome. (Where value < .1, no or negligible association.)

Table 2

FY2015-16 Employment Outcome Results by Combined Races/Ethnicities

Combined Races/Ethnicities	Other Outcomes	Positive Outcomes	Total Cases
African American/Black (not Hispanic)	6215	5983	12198
	26.5%	19.8%	22.7%
American Indian/Alaskan Native	344	465	809
	1.5%	1.5%	1.5%
Asian	1089	1546	2635
	4.6%	5.1%	4.9%
Hawaiian/Other Pacific Islander	185	262	447
	0.8%	0.9%	0.8%
White (not Hispanic)	3672	6240	9912
	15.7%	20.6%	18.5%
Hispanic (any race)	11920	15733	27653
	50.9%	52.0%	51.5%
Total	23425	30229	53654

Note: A Cramer's V value of .092 on the Chi-square Test of Independence indicated no practical significant difference between groups on overall outcome. (Where value < .1, no or negligible association.)

Is there a significant difference in positive outcomes for different genders? If so, how do they differ?

Measures of association between the outcomes (training/education and employment) and gender found no practical significant difference between males and females, indicating no systemic discrimination towards a particular gender.

Table 3

FY2015-16 Training/Education Outcome Results by Gender

Gender	Other Outcomes	Positive Outcomes	Total Cases
Female	1976	10289	12265
	51.6%	50.0%	50.2%
Male	1854	10294	12148
	48.4%	50.0%	49.8%
Total	3830	20583	24413

Note: A Phi value of .012 on the Chi-square Test of Independence indicated no practical significant difference between groups on overall outcome. (Where value < .1, no or negligible association.)

Table 4

FY2015-16 Employment Outcome Results by Gender

Gender	Other Outcomes	Positive Outcomes	Total Cases
Female	13819	16234	30053
	53.5%	49.6%	51.3%
Male	11998	16514	28512
	46.5%	50.4%	48.7%
Total	25817	32748	58565

Note: A Phi value of .039 on the Chi-square Test of Independence indicated no practical significant difference between groups on overall outcome. (Where value < .1, no or negligible association.)

Is there a significant difference in positive outcomes for clients with a disability and those without a disability? If so, how do they differ?

Measures of association between the outcomes (training/education and employment) and people with or without disabilities found no practical significant difference between these groups. This indicates no systemic discrimination affecting clients with disabilities.

Table 5

FY2015-16 Training/Education Outcome Results by Disability

Disability	Other Outcomes	Positive Outcomes	Total Cases
No disability indicated	3456	19121	22577
	90.7%	93.3%	92.9%
Disability indicated	356	1366	1722
	9.3%	6.7%	7.1%
Total	3812	20487	24299

Note: A Phi value of -.038 on the Chi-square Test of Independence indicated no practical significant difference between groups on overall outcome. (Where value > -.1, no or negligible association.)

Table 6

FY2015-16 Employment Outcome Results by Disability

Disability	Other Outcomes	Positive Outcomes	Total Cases
No disability indicated	23360	30813	54173
	91.3%	94.8%	93.2%
Disability indicated	2230	1698	3928
	8.7%	5.2%	6.8%
Total	25590	32511	58101

Note: A Phi value of -.069 on the Chi-square Test of Independence indicated no practical significant difference between groups on overall outcome. (Where value > -.1, no or negligible association.)

Is there a significant difference in positive outcomes by age? If so, which ones and how do they differ?

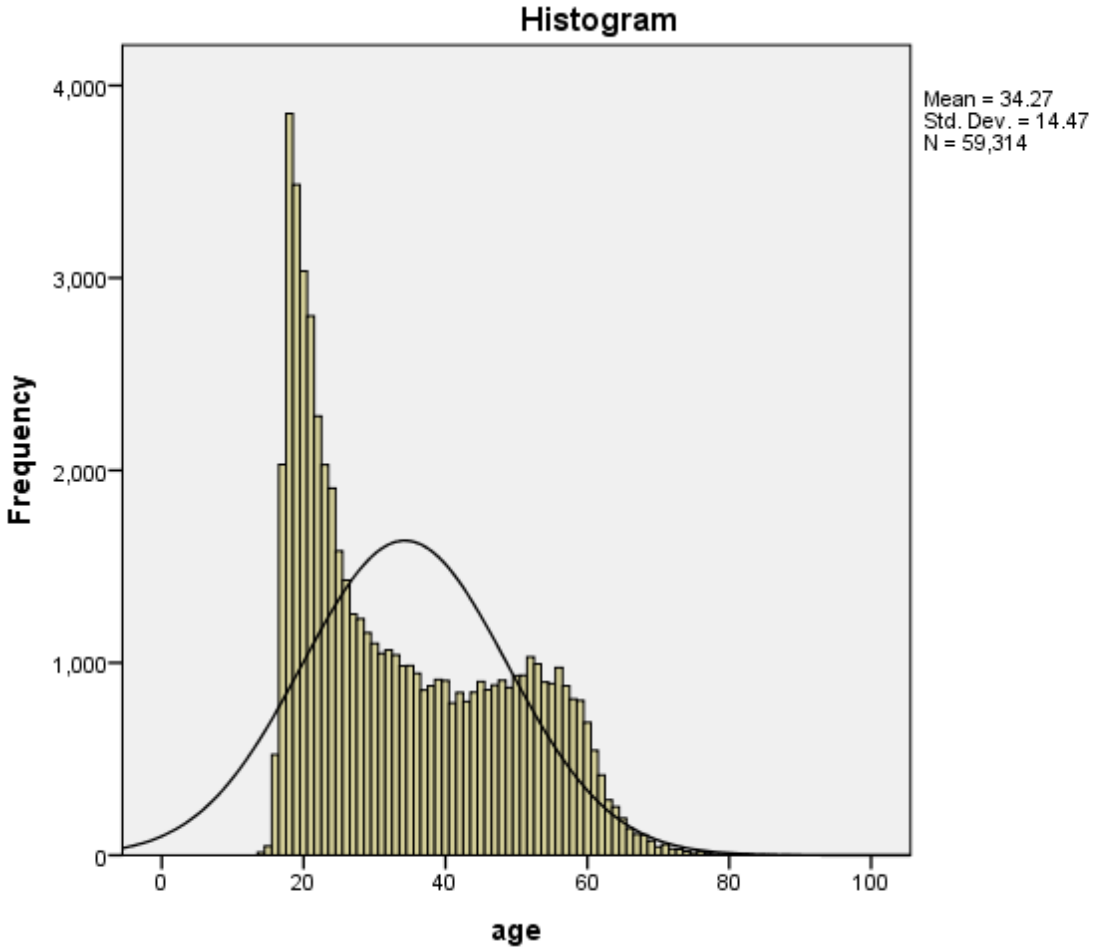
As shown in Figure 1 (p. 7), the FY2015-16 cases were predominately young people. Since the ages were not normally distributed, we initially used a test more suitable to non-normal data of this type to observe the relationship between age and outcomes. The Mann-Whitney U tests for both types of outcomes (training/education and employment) showed the mean rank of the cases with positive outcomes to be higher, meaning the ages in cases with positive outcomes were, on average, older than in cases with other outcomes.

To better observe the strength of the relationship and more specifically account for differences with additional tests, we grouped the cases into four equal age quartiles (shown in Table 7, p.8).

Measures of association showed a weak relationship between the four age groups and both types of outcomes (training/education and employment). Ranging between .165 and .284, the Cramer's V values suggest small practical significant differences by age quartile. The youngest group (up to 21) had fewer positive training/education outcomes than expected (see Table 10, p. 9), largely accounting for the small practical difference in training/education outcomes. When we examined employment outcomes, we also found a weak association with other employment outcomes for this same group; they had fewer positive employment outcomes than expected (see Table 13, p. 10).

Figure 1

Age Distribution With Normal Curve for FY2015-16



Note: If this data were normally distributed, the age frequencies would fall roughly under the normal (bell-shaped) curve on this graph. Due to the non-normal nature of this data, non-parametric statistical tests were used in the analyses.

Table 7

FY2015-16 Age Statistics

Age Statistics	Total Cases
Number of cases	59314
Mean age	34.27
Median age	30.00
Std. deviation around the mean age	14.470
Minimum age	14
Maximum age	88
Quartiles for age	
25% of cases	**21**
50% of cases	**30**
75% of cases	**47**

Note: Researchers used the age quartiles bolded and shaded above to analyze the strength of the relationship (practical significance of the differences).

Table 8

FY2015-16 Training/Education Outcome Results for Age

Mann-Whitney U Age Ranks (N=24399)	Other Outcomes	Positive Outcomes
Number of cases	3830	20569
Mean Rank	8113.09	**12960.99**
Sum of Ranks	31073130.50	266594669.50

Note: Mann-Whitney U tests rank each value across the dataset from lowest to highest and sums these ranks for each group. It then compares the mean ranks for each group to determine a significant difference between them. The positive outcome group had the highest mean rank on age (bolded and shaded) indicating that those with positive outcomes were, on average, older than those with other outcomes.

Table 9

FY2015-16 Age Statistics by Training/Education Outcome

Age Statistics	Other Outcomes	Positive Outcomes	Total Cases
Number of cases	3830	20569	24399
Mean age	20.1	29.1	27.7
Median age	19	23	22
Std. deviation around the mean age	3.879	13.100	12.557

Table 10

FY2015-16 Age Group by Training/Education Outcomes

Age Groups	Other Outcome	Training/Education Outcome	Total Cases
Up to 21 -*	2989	8967	11956
	78.0%	43.6%	49.0%
Adjusted residual	39.2	**-39.2** (less than expected)	
22 to 30	778	4576	5354
	20.3%	22.2%	21.9%
Adjusted residual	-2.7	2.7 (more than expected)	
31 to 47	46	4133	4179
	1.2%	20.1%	17.1%
Adjusted residual	-28.5	28.5 (more than expected)	
Over 47	17	2893	2910
	0.4%	14.1%	11.9%
Adjusted residual	-23.9	23.9 (more than expected)	
Total	3830	20569	24399

Notes: Adjusted residuals above ±2.0 are considered more or less than expected.
A Cramer's V value of .284 on the Chi-square Test of Independence indicated a small practical significant difference on training/education outcomes.
-*= had significantly fewer cases with positive training/education outcomes than expected.

Table 11

FY2015-16 Employment Outcome Results for Age

Mann-Whitney U Age Ranks (N=58529)	**Other Outcomes**	**Positive Outcomes**
Number of cases	25805	32724
Mean Rank	27426.11	**30715.09**
Sum of Ranks	707730706.50	1005120478.50

Note: Mann-Whitney U tests rank each value across the dataset from lowest to highest and sums these ranks for each group. It then compares the mean ranks for each group to determine a significant difference between them. The positive outcome group had the highest mean rank on age (bolded and shaded) indicating that those with positive outcomes were, on average, older than those with other outcomes.

Table 12

FY2015-16 Age Statistics by Employment Outcome

Age Statistics	Other Outcomes	Positive Outcomes	Total Cases
Number of cases	25805	32724	58529
Mean age	33.5	35.1	34.4
Median age	28	32	31
Std. deviation around the mean age	15.336	13.672	14.452

Table 13

FY2015-16 Age Group by Employment Outcomes

Age Quartile	Other Outcome	Entered Employment	Total Cases
Up to 21 -*	8640	6537	15177
	33.5%	20.0%	25.9%
Adjusted residual	37.0	**-37.0** (less than expected)	
22 to 30	5341	8563	13904
	20.7%	26.2%	23.8%
Adjusted residual	-15.4	15.4 (more than expected)	
31 to 47	5619	9882	15501
	21.8%	30.2%	26.5%
Adjusted residual	-22.9	22.9 (more than expected)	
Over 47	6205	7742	13947
	24.0%	23.7%	23.8%
Adjusted residual	1.1	-1.1 (as expected)	
Total	25805	32724	58529

Notes: Adjusted residuals above ±2.0 are considered more or less than expected. A Cramer's V value of .165 on the Chi-square Test of Independence indicated a small practical significant difference on employment outcomes.
-*= had significantly fewer clients who entered employment than expected.