

Workforce Innovation and Opportunity Act

An Analysis of Adult Training Programs

CONDUCTED BY THE INDIANA BUSINESS RESEARCH CENTER AT
INDIANA UNIVERSITY'S KELLEY SCHOOL OF BUSINESS
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INTRODUCTION

The Indiana Business Research Center (IBRC) in collaboration with the Indiana Department of Workforce Development (DWD), conducted in-depth analysis for the Workforce Innovation and Opportunity Act (WIOA) Adult Programs. In this report, we present our findings on the WIOA Adult Program participants from 2012 to 2017 where we uncover who had benefited the most from the program.

The major evaluation questions included the following:

- What were the characteristics of WIOA Adult Program participants and how did they change overtime?
- How did the usage of program services change over time?
- Did participating in the Adult Program boost a participant's wages after the training?
- Was there an association between the post-training wages and the amount of training received by participants?

This report includes a summary of the key findings, followed by three sections: the cohort descriptive analysis, program service descriptive analysis, and longitudinal linear regression analysis. We begin with a summary of the key findings:

KEY FINDINGS

COHORT DESCRIPTIVE ANALYSIS

in this analysis, we analyzed the retention rate of the WIOA Adult Program participants and the change of their socio-demographic characteristics from 2012 to 2017.

- Retention rates decreased significantly one year after joining the program. The retention rate after two consecutive years in the program was about 20%, after three consecutive years showed less than 5%, and was even lower in four or more years. In total, 14% of participants skipped a year or more before returning to the program.
- Participants of age 25-34 had the highest participation rate, followed by age groups 35-54, under 25, and 55 years and older. Cohort 2015 experienced some interesting characteristics, such as having a smaller proportion of participants who were single parent and/or identified as low-income.

PROGRAM SERVICE DESCRIPTIVE ANALYSIS

In this analysis, we analyzed the characteristics of WIOA Adult Program participants based on the type of program service they engaged in.

- Job Ready services (including both short term and long term) were the most popular among cohorts, followed by Occupation Skills and Work Based services.
- Self-Directed service had the shortest attendance (on average 1 day), while Work Based service had the longest attendance (on average 65 days).
- Work Based service was more popular among younger cohorts (under age 35), while Self-Directed service was more popular among older cohorts (age 45 and above).

LONGITUDINAL ANALYSIS

For this set of analyses, (1) we utilized fixed effects linear models to examine the causal relationship between individual's program participation and their wage growth, and (2) we performed a multiple linear regression (MLR) to delineate the association between the amount of training and participants' post-training wages.

- On average, program participation improved participants' average annual wages by 10%. Non-White, Hispanic, low-income participants, and/or participants who had not received post-secondary education experienced higher wage growth than their counterparts. However, participants with basic literacy skills had lower wage gains compared to those who were illiterate.
- The amount of training (in days) received by participants did not show any significant association with their post-training wages. Other characteristics, such as, pre-training wages, being male and/or enrolled in college, were positively associated with their post-training wages, whereas being low-income and/or having not received higher education were negatively associated with their post-training wages.
- From our findings, the Adult Program showed positive results and served best for disadvantaged groups, and best kept as short-term/on-demand type of training sessions. However, the program services are only recommended for a short-term motivator and cannot be taken as an alternative to formal education.

I. WIOA ADULT PROGRAM PARTICIPANT CHARACTERISTICS

COHORT DESCRIPTIVE ANALYSIS

EVALUATION QUESTION 1: What were the characteristics of WIOA Adult Program participants and how did they change overtime?

In all the WIOA Adult Program cohorts between 2012 and 2017, most participants stayed in the program for only one year ([Table 1](#)). About 20% of participants stayed for two consecutive years, less than 5% stayed for three years, and even fewer for four years or more.

The demographics across cohorts are mostly consistent with some exceptions.

- Age: Age was categorized into 5 age groups: under age 25, age 25-34, 35-44, 45-54 and 55 years and older. The age composition across cohorts was stable: 25% for age 25-34, 20% for age 35-44 and 45-54 respectively, and 16% for both the youngest and the oldest age group. (Figure 1)
- Gender: In all cohorts, the share of female and male participants is about 50/50. (Figure 2)
- Race/ethnicity: The majority of participants were White Americans, ranging from 69%, in Cohort 2015, to 79%, in Cohort 2012. The second largest racial group is African American, who made up, on average, 20% of cohort participants. (Figure 3)
- Disability: On average, 10% of participants in each cohort had disabilities. (Figure 4)
- Homelessness: About 4% of participants in each cohort were homeless except for Cohort 2012, in which the proportion was down to 2.1%. (Figure 5)
- Single parents: Single parents made up one third of participants in Cohorts 2012 through 2014. The share dropped to 25% in Cohort 2015 and continuously went down for later cohorts. (Figure 6)
- Education: In each cohort, about half of the participants had a high school diploma or equivalent, followed by participants with some college, vocational, or technical training (24%). About 12% of participants completed an associate degree, 8% had a bachelor or above degree, and 8% had no formal education at all. (Figure 7)
- Basic Skills (literacy): The proportion of participants equipped with basic skills (i.e., literacy rate) varied widely across cohorts. While Cohort 2012-2014 had on average 92% of literacy rate, Cohort 2015 had the lowest, 47%. The literacy rate in Cohort 2016 and 2017 was 62% and 84% respectively.¹ (Figure 8)
- Income: Vast majority of participants, on average 80% across cohorts, were identified as low-income. Cohort 2015 and 2016 had slightly better economic standing, with the low-income proportion down at low 70%. (Figure 9)
- Economic Growth Region (EGR): Pulling from all cohorts, 23% of participants came from Region 4 (Benton, Carroll, Cass, Clinton, Fountain, Howard, Miami, Montgomery, Tippecanoe, Tipton, Warren, and White counties), followed by Region 12 (Marion County) that alone accounted for 12%. (Figure 10 & Figure 11)
- Veterans: The veteran participation rate was 9-12% across cohorts, and did not vary much overtime. (Figure 12)
- Offenders: The percentage of offender or ex-offender participants was on the rise, starting at 6% in Cohort 2012 and rising to 20% in Cohort 2017. (Figure 13)

II. SERVICE DESCRIPTIVE ANALYSIS

EVALUATION QUESTION 2: How did the usage of program services change over time?

The WIOA Adult Program participants attended over 40 services offered between 2012 and 2017. Based on the content of services and the length and distribution of services, we categorized trainings into 5 ‘broader categories: Job Ready Short Term, Job Ready Long Term², Occupation Skills, Self-Directed, and Work Based.

- Yearly participation rate: Work Based and Occupation Skills trainings were taken up consistently by cohorts, with on average 17% participation rate. Self-Directed services were generally less popular, except for Cohort 2015, in which nearly 70% of participants used this type of service. The use of Job Ready Short-Term trainings was declining overtime, while the usage of Job Ready Long Term—yet with limited data—reached 83% in Cohort 2017. (Figure 14)
- Attendance: Program attendance was the shortest for Self-Directed services, on average 1 day, followed by Job Ready Short Term (2 days), Job Ready Long Term (25 days), Occupation Skills (61 days) and Work Based, the longest (68 days). (Table 2)

- Wages: The highest wage earners were Job Ready Long-Term participants. However, interpret with caution for these values, since the sample size is rather small (n=215) compared to other groups. The second highest wage group were participants in Self-Directed services, although this is largely driven by the earning spike from Cohort 2015. (Figure 15)
- Age: Overall, 26% of participants were in age 25-34, followed by 20% in age 35-44 and 45-54 respectively, 19% in age under 25 and 13% in 55 years and older. Work Based and Occupation Skills trainings were especially popular among younger age groups (under age 35), whereas Self-Directed training services were favored by older cohorts (age 45 and above). (Figure 16)
- Gender: Male and female participants were evenly distributed (50/50) across all training services, except for Work Based trainings, where male participants slightly dominated (66%). (Figure 17)
- Race/ethnicity: White Americans dominated all training services, taking a large proportion of 77% on average. They were in favor of Work Based and Self-Directed services. African Americans came the second, averaging 20%. They were in favor of Occupation Skills and Job Ready Long-Term programs. (Figure 18)
- Basic skills (literacy): Basic literacy skills were the highest among Job Ready Long Term and Self-Directed participants, whose shares were 68% and 57% respectively. Next came Occupation Skills and Job ready Short-Term participants, both at 20%. Work Based participants were the least skillful, with only 10% literacy rate. (Figure 19)
- Low-income: Low-income participants dominated all training services. These made up over 80% of participants in Work Based, Occupation Skills and Job Ready trainings. The low-income proportion in Job Ready Long Term Self- Directed services also reached above 60% respectively. (Figure 20)

III. LONGITUDINAL ANALYSIS

EVALUATION QUESTION 3: Did participating in the WIOA Adult Program boost a participant’s wages after the training?

THE SAMPLE

Due to large variation in program retention, for this analysis, we only focused on participants who had completed the program for one year in any given year between 2012 and 2017. Since they made up 78% (n=74,756) of all participants (n=96,133), the sample is considered large enough to produce robust results. (Table 3)

METHODS

To examine the effects of program participation on wage growth over time, we used longitudinal fixed effects models. Fixed effects models are commonly used in mitigating time-invariant unobserved/hard-to-measure confounders (e.g., personality) to infer causal relationships. For this purpose, individual fixed effects were used in our models to subdue any between-person variation so to focus solely on the impact of program participation on participants’ wage growth. We compared participants’ average wages in years before entering the program to their average wages in years after the training, the difference of which was used as the outcome variable.

In Model 1, we added individual fixed effects to control for time-invariant characteristics (such as, race, gender, personality, etc.). We also controlled for the program year3 fixed effect that captures any systematic influence of economic condition that may be different each year but common to all participants. We specifically included a variable for college enrollment, since not being able to work full-time would sufficiently lower one’s wages. In

addition to the concurrent training variable, lagged training variables were included to capture any lagged training effect on participants' wage growth.

From Model 2 to Model 15 fixed effects models, we added interactions between training participation in a year and demographic variables (race, gender, low-income, basic skills, limited English literacy 4, education level, veteran, Hispanic, offender, homeless, single parent, long-term unemployed⁵, eligible immigrant, and farmworker), respectively, to examine how participants from various socio-demographic groups had benefited from the training programs. Detailed results are provided in the Appendix 2.

RESULTS

MODEL 1 FINDINGS

During the program year, average wages of all participants declined by 11%. Being enrolled in college significantly lowered wages by 13% in the training program year. The numbers indicated that while an individual is either enrolled in higher education or participating in a program in a given year, wages can decrease temporarily due to reduced working hours in the year.

One year after the training, there is not a significant wage increase for participants. However, after two years, participants are seen with an increase of annual wages by 10%, compared to their wages before the training.

One caveat is that the program year that trainings follow is different from the calendar year by which annual wages are typically calculated. This could explain the lagged two-year effect of the program.

MODEL 2 TO MODEL 15 FINDINGS

- Non-White participants had 6% more wage gains than Whites one year after training and gained 3% more than Whites two years after the training.
- Hispanic participants had 4% more wage increase compared to non-Hispanics one year after the training.
- The wage growth of low-income participants was prominent. Overall, their wages grew 18% more than their counterpart one year after the training and 5% more two years after the training.
- Participants with basic literacy skills did not benefit more than those illiterate from the training. In fact, their wage growth was 9% smaller compared to their counterpart, one year after the training, and 3% smaller two years after the training.
- Participants who had post-secondary education did not benefit from training more than those who had not attended collage either. For example, one year after the training, the wage growth of participants who had some form of college training (technical/vocational/ associate degrees) was 3% smaller, and of those who had college or above degrees was 11% smaller, than that of non-college participants.
- For other demographic characteristics, such as gender, long-term unemployed, limited English skills, homeless, offender, veteran, single parents, immigrants and farmworkers, there was no significant difference on wages as a direct result of training.

EVALUATION QUESTION 4: Was there an association between the post-training wages and the amount of training received by participants?

SAMPLE

For this line of investigation, it is important to compare participants with their peers from the same cohort in the same service area. We focused on Cohort 2012 who participated in the Job-Ready Short-Term service. The reasons are the following. First, among all five service areas, the Job-Ready Short-Term service was the most widely used by participants (93% participation rate). Second, given the large number of controlling variables in this study, a larger sample size would make results more robust. Third, in order to attribute the training effect to the Job-Ready Short-Term service, we removed participants who also attended other services simultaneously. For each participant, we used the average wages between 2010 and 2012 as the pre-training wages and that between 2013 and 2015 as the post-training wages.

METHODS

In Models 16 and 17, we performed multiple linear regression (MLR) analysis to examine how the total number of days/times in Job-Ready Short-Term service was associated with the post-training wages, while holding the pre-training wages and other demographics (e.g., age, gender, race, education level, low-income status) constant. To further detect the relation of the amount of service usage with the post-training wages, in Model 18 and 19, we categorized the days/times attended in the Job-Ready Short-Term training into four categories⁶.

RESULTS

- The amount of program (Job-Ready Short-Term) usage, using either the level or categorized measure, did not show a significant linear association with participants' post-training wages.
 - A participant's pre-training wages is the most significant determinant for his/her post-training wages.
 - The average post-training wages of female participants were 17% lower than that of male participants.
 - The post-training wages of older cohorts (age 45 and above) were 8-19% lower than that of younger cohorts (under age 45). There was not significant wage difference among age groups (below age 25, 25-34 and 35-44) in younger cohorts.
 - Participants who had some college training or had associate degrees on average earned 10% more and those who had college or above degrees earned 23% more in post-training years, compared to participants who did not go to college (at most high school diploma or equivalent).
 - The average post-training wages of low-income participants were 7% lower than that of their counterpart.
 - The average post-training wages of participants enrolled in higher education in 2012 were 15% higher than that of those who did not attend college that year.
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ENDNOTES

1. A participant (A) who is a youth, that the individual has English reading, writing, or computing skills at or below the 8th grade level on a generally accepted standardized test; or (B) who is a youth or adult, that the individual is unable to compute or solve problems, or read, write, or speak English, at a level necessary to function on the job, in the individual's family, or in society.
2. We divided the "job-ready service" category into job-ready short-term and job-ready long-term for statistical analysis purposes, because these two types had very large variation in the average days of service participation, standard deviation, and the distribution.

3. Program year refers to the term starting in July and ending in the following June. For example, program year 2012 = July 2012-June 2013.
4. Limited English, reading or speaking skills.
5. participant who has been unemployed for 27 or more consecutive weeks.
6. Four categories are: one day=1, two days=2, three days=3, four days and more=4

TABLES AND FIGURES

TABLE 1. COHORT RETENTION AND PARTICIPATION

		Year						Others	
		2012	2013	2014	2015	2016	2017		
Cohort	2012	Participation year	<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>	<u>4th year</u>	<u>5th year</u>	<u>6th year</u>	<u>Skipped 1+ year</u>
		# Participants	28,023	5,926	879	238	44	11	1706
		Retention rate		21%	3%	1%	0%	0%	6%
	2013	Participation year		<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>	<u>4th year</u>	<u>5th year</u>	<u>Skipped 1+ year</u>
		# Participants		17,186	3,692	606	98	21	883
		Retention rate			21%	4%	1%	0%	5%
	2014	Participation year			<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>	<u>4th year</u>	<u>Skipped 1+ year</u>
		# Participants			17,842	4,243	498	98	384
		Retention rate				24%	3%	1%	2%
	2015	Participation year				<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>	<u>Skipped 1+ year</u>
		# Participants				15,728	2,812	312	206
		Retention rate					18%	2%	1%
	2016	Participation year					<u>1st year</u>	<u>2nd year</u>	<u>Skipped 1+ year</u>
		# Participants					7,785	1,525	0
		Retention rate						20%	0%
	2017	Participation year						<u>1st year</u>	<u>Skipped 1+ year</u>
		# Participants						8,096	0
		Retention rate							0%

TABLE 2: SERVICE ATTENDANCE BY DAYS

Broad Category	Measurement	Year						Total
		2012	2013	2014	2015	2016	2017	
Job Ready	Mean Days	2	2	2	2	2	3	2
	Standard Deviation	6	8	5	4	4	12	7
	Frequency	14,204	9,294	8,478	9,412	4,988	6,405	52,781
Job Ready Long Term	Mean Days	26	.	.	1	26	47	43
	Standard Deviation	43	.	.	0	30	56	53
	Frequency	3	0	0	1	33	178	215
Occupation Skills	Mean Days	73	69	57	55	55	57	61
	Standard Deviation	74	66	54	54	56	53	60
	Frequency	827	1,028	1,112	910	638	1,122	5,637
Self-Directed	Mean Days	1	1	1	1	1	1	1
	Standard Deviation	0	0	0	1	1	0	1
	Frequency	332	447	205	4,301	932	22	6,239
Work Based	Mean Days	63	48	62	98	58	81	65
	Standard Deviation	46	42	48	60	62	49	54
	Frequency	71	165	148	82	152	111	729
Total	Mean Days	6	9	9	6	8	13	8
	Standard Deviation	25	30	27	21	26	33	26
	Frequency	15,437	10,934	9,943	14,706	6,743	7,838	65,601

TABLE 3: TRAINING PARTICIPATION DURATION (IN YEARS)

Years of Participation	Frequency	Percentage
1	74,756	77.8
2	18,233	19.0
3	2,587	2.7
4	480	0.5
5	66	0.1
6	11	0.0
Total	96,133	100

FIGURE 1: COHORT PARTICIPATION: AGE

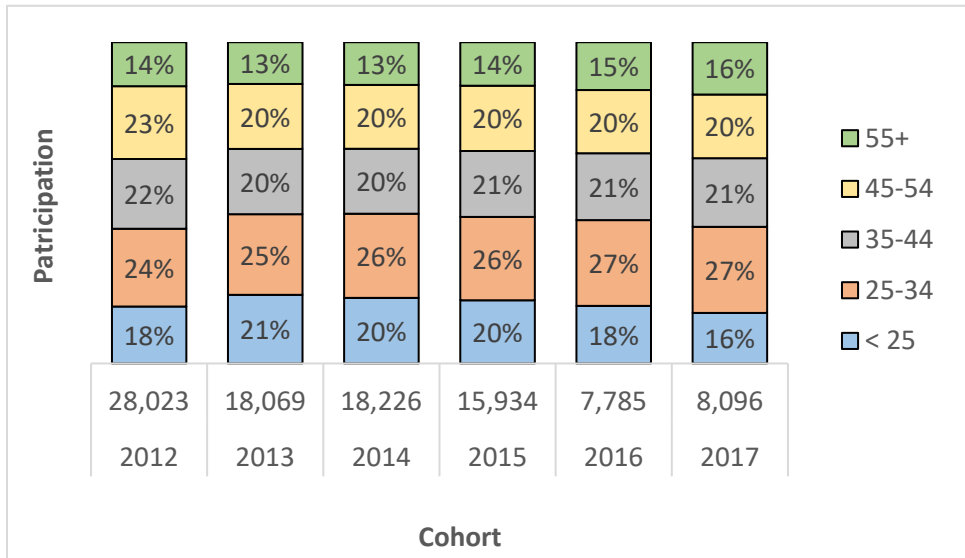


FIGURE 2: COHORT PARTICIPATION: SEX

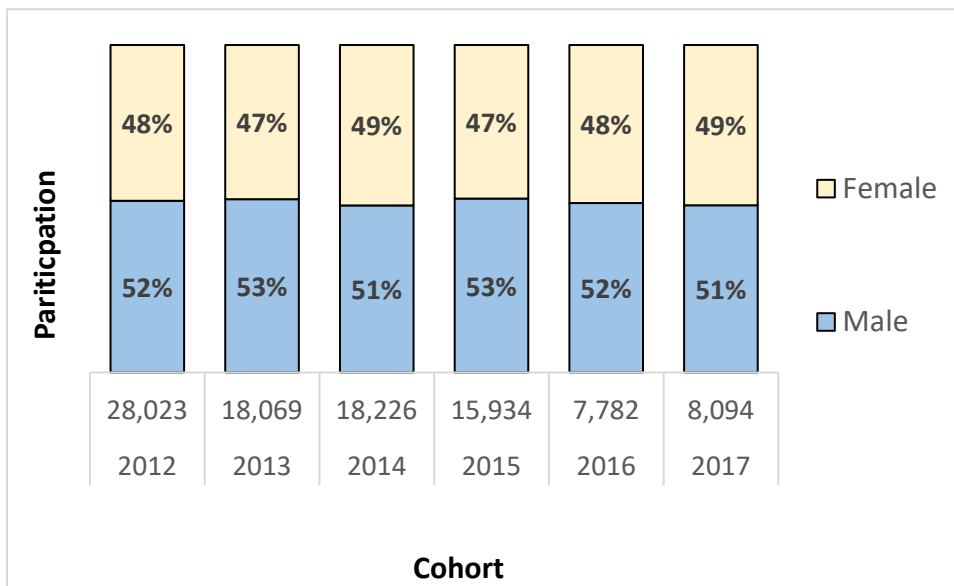


FIGURE 3: COHORT PARTICIPATION: RACE

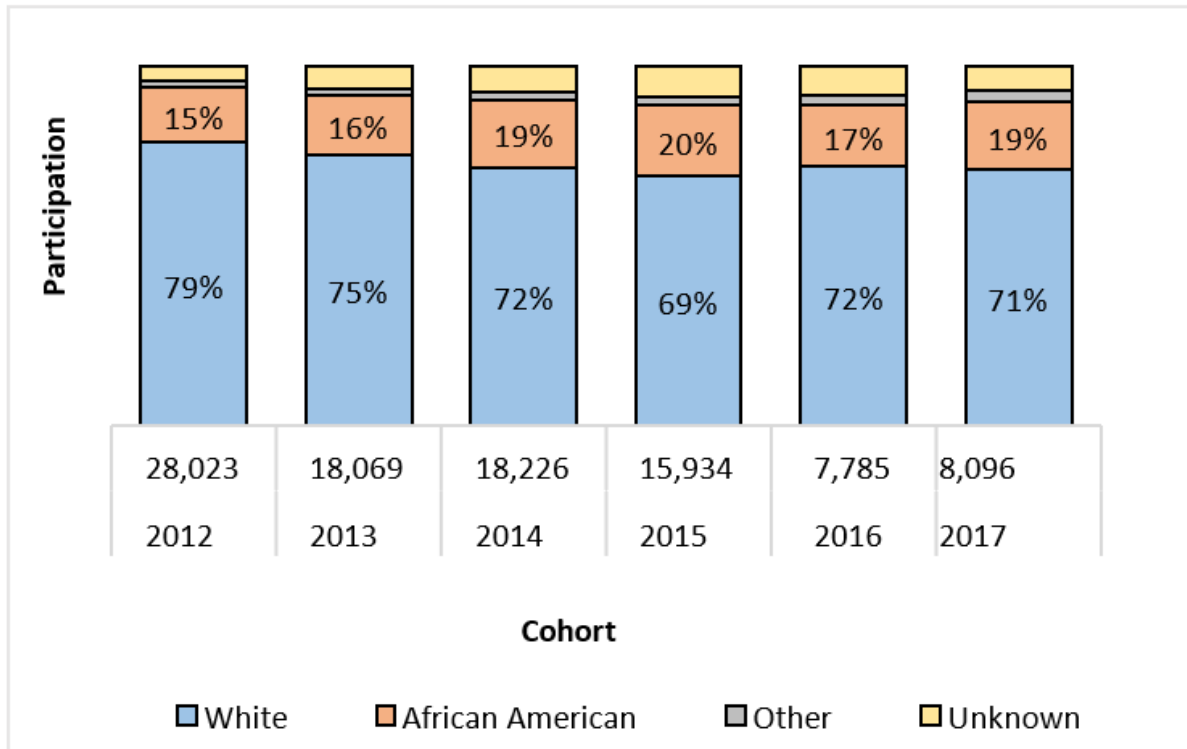


FIGURE 4: COHORT PARTICIPATION: DISABILITY

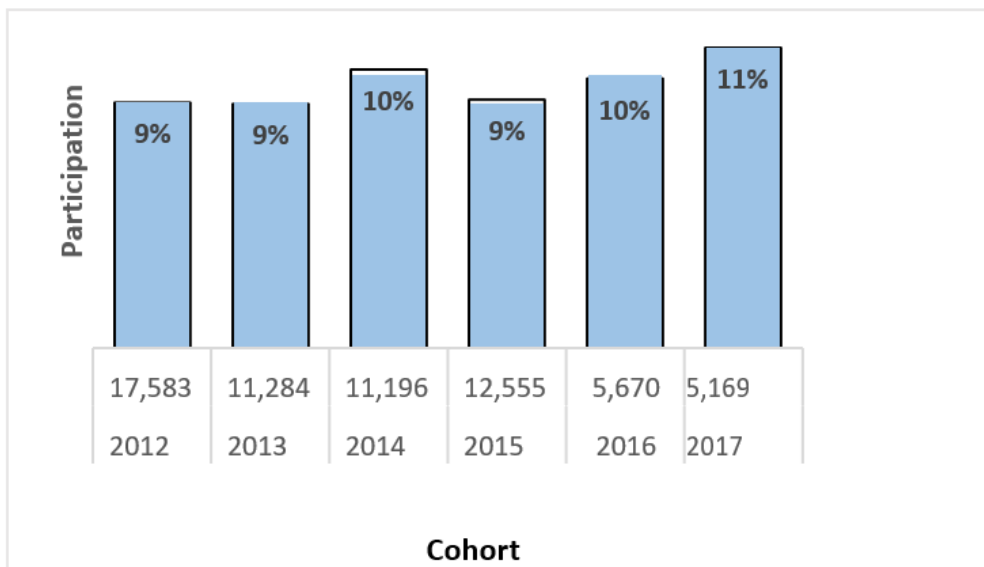


FIGURE 5: COHORT PARTICIPATION: EXPERIENCING HOMELESSNESS

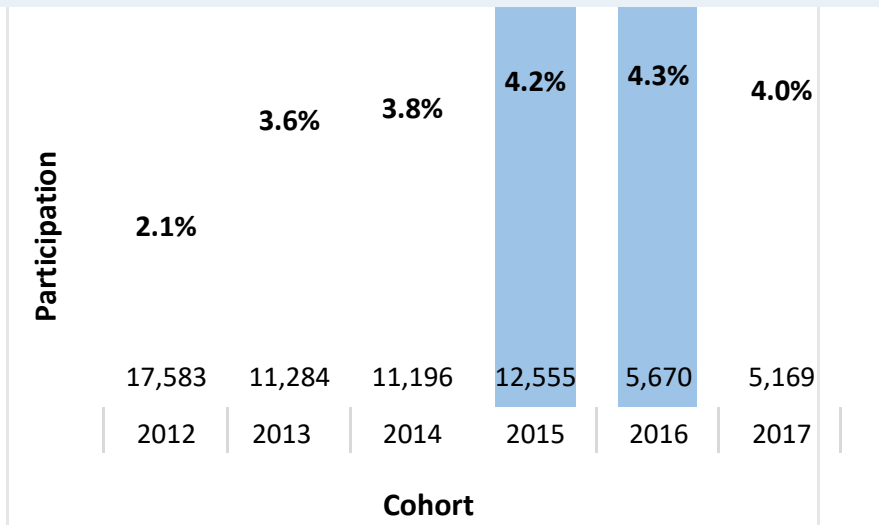


FIGURE 6: COHORT PARTICIPATION - SINGLE PARENT

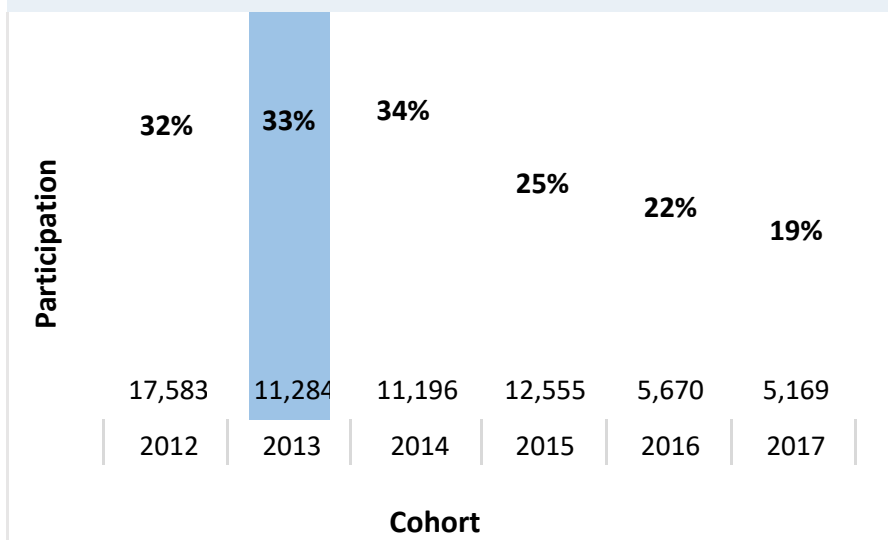


FIGURE 7: COHORT PARTICIPATION: EDUCATION

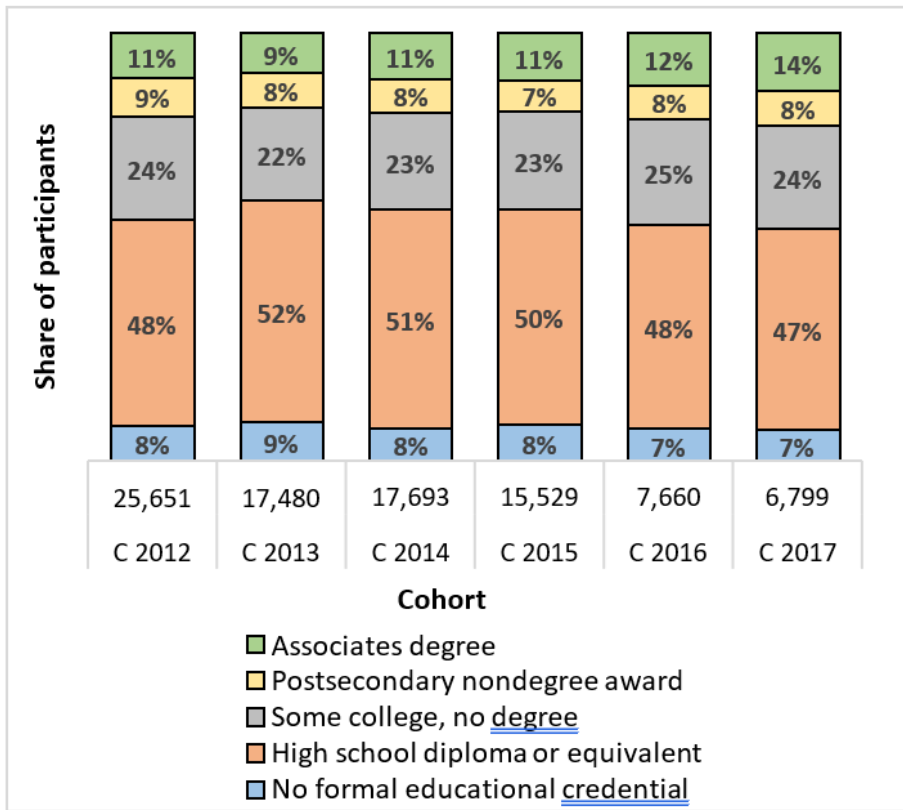


FIGURE 8: COHORT PARTICIPATION: BASIC SKILLS

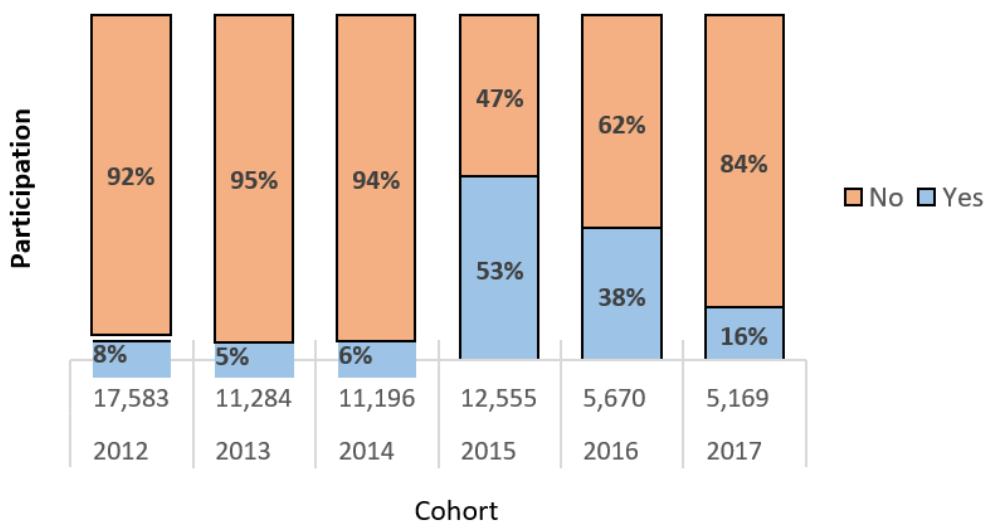


FIGURE 9: COHORT PARTICIPATION: LOW INCOME

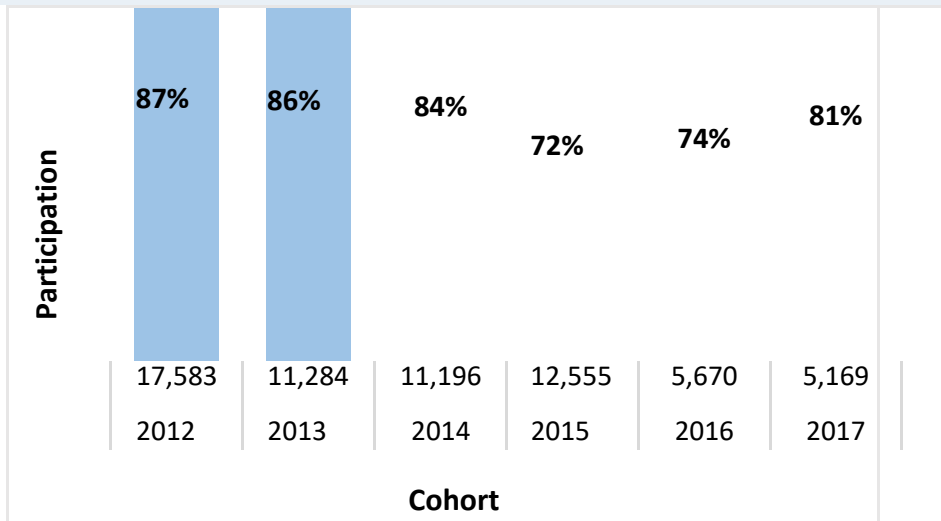


FIGURE 10: COHORT PARTICIPATION RATE BY ECONOMIC GROWTH REGION FOR ALL COHORTS

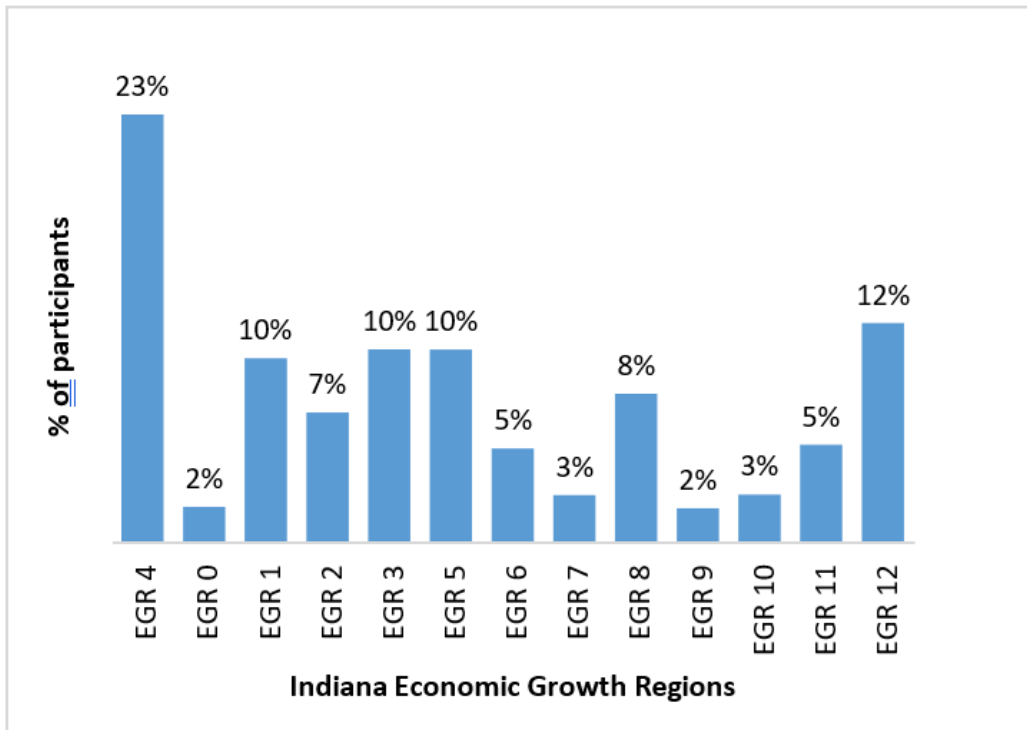


FIGURE 11: COHORT PARTICIPATION BY ECONOMIC GROWTH REGION

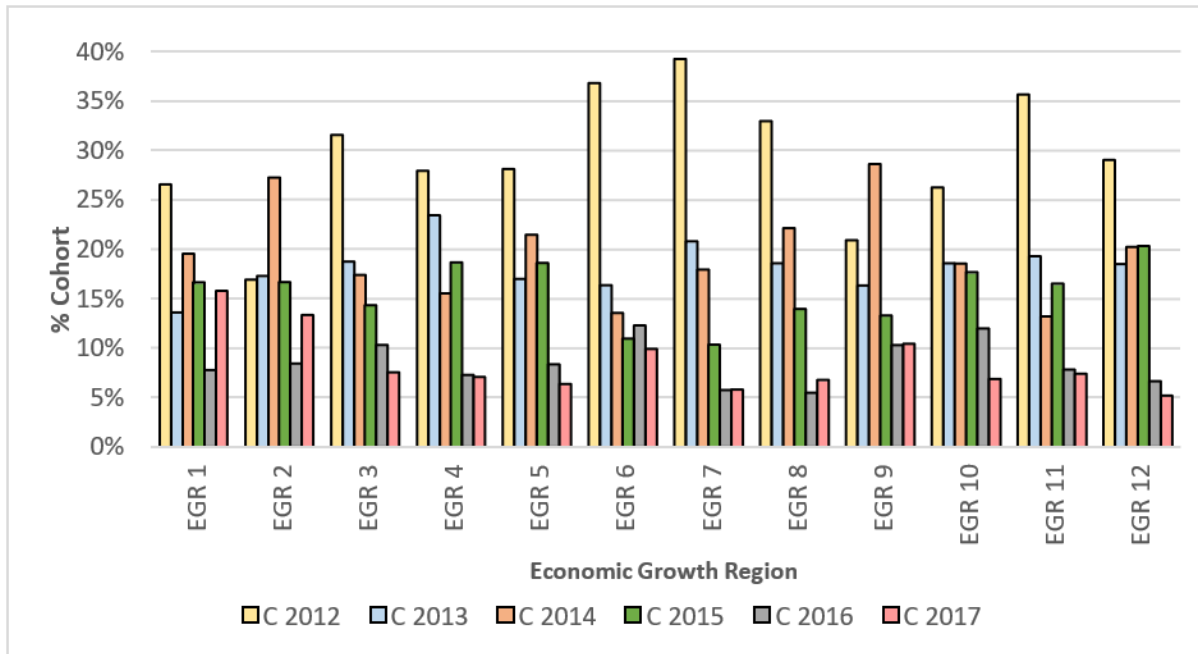


FIGURE 12: COHORT PARTICIPATION: VETERANS

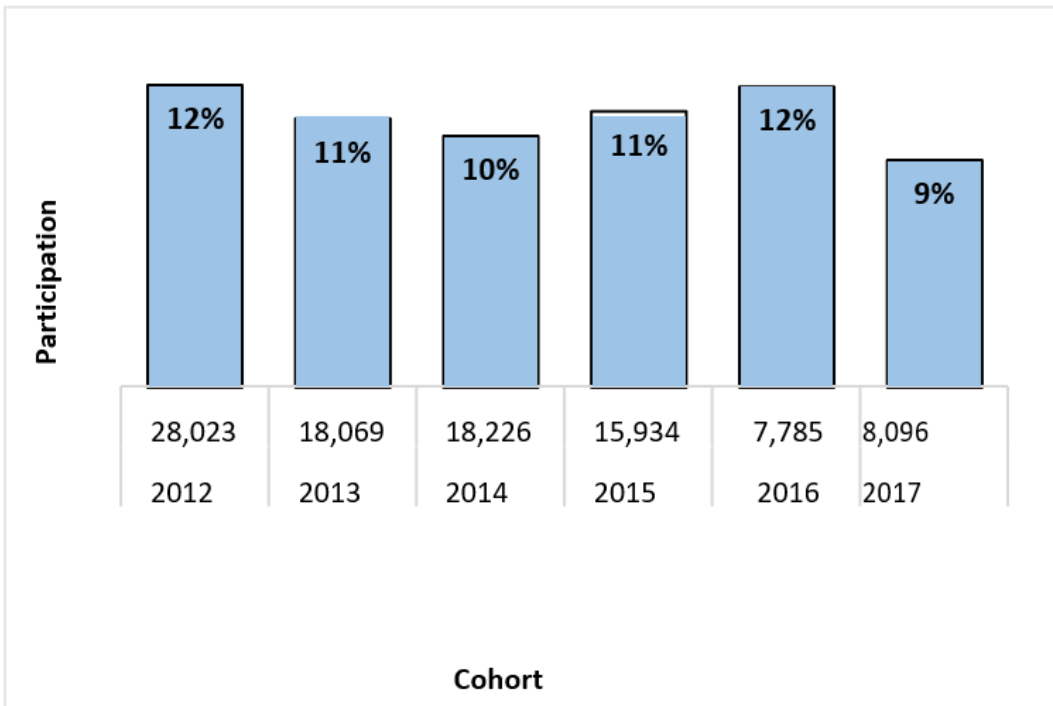


FIGURE 13: COHORT PARTICIPATION: OFFENDERS

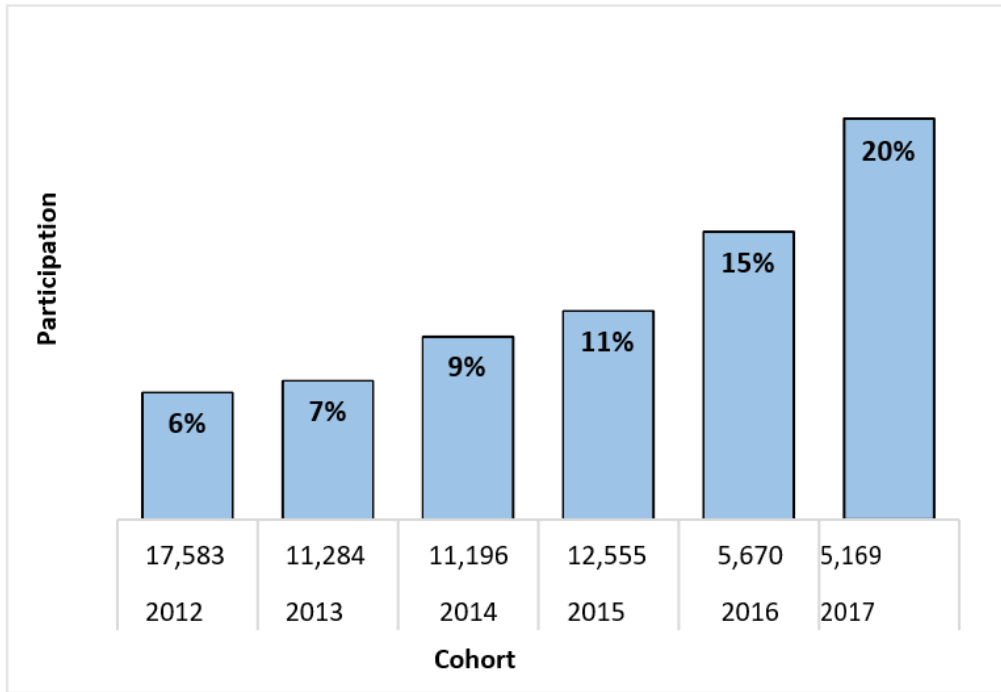


FIGURE 14: BROAD CATEGORIES: PARTICIPANT RATES

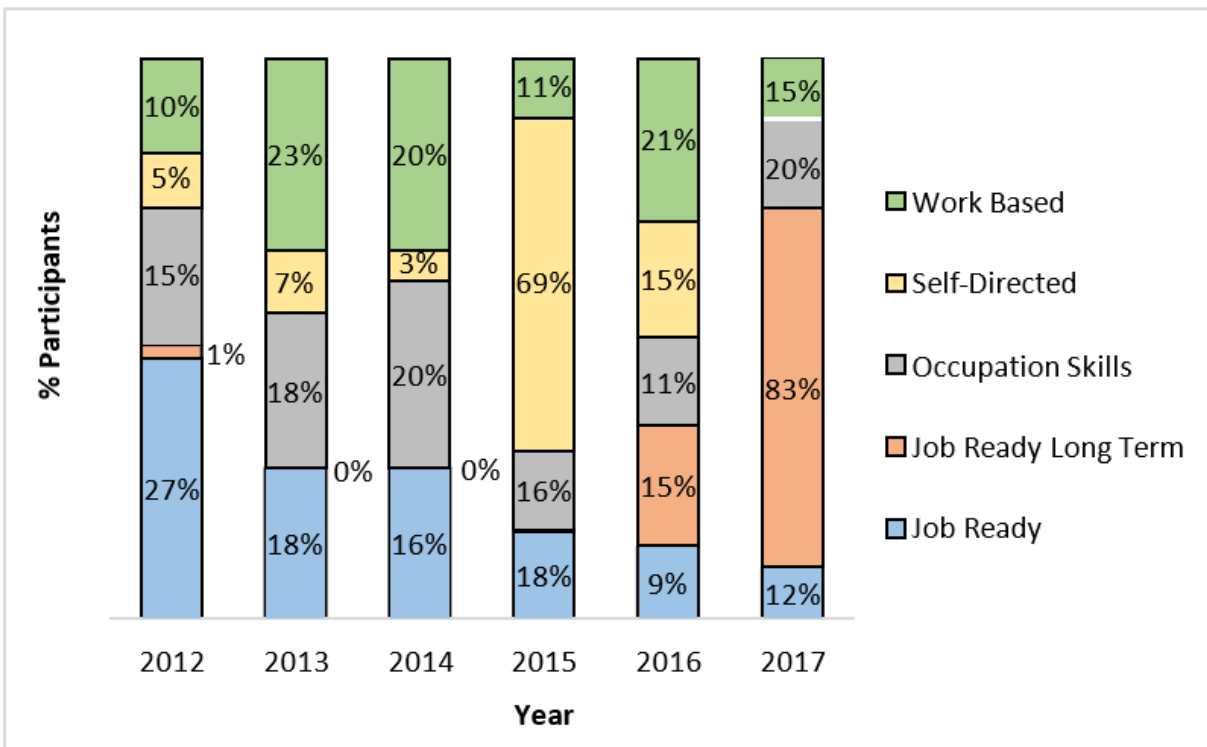


FIGURE 15: BROAD CATEGORIES: AVERAGE ANNUAL SALARIES

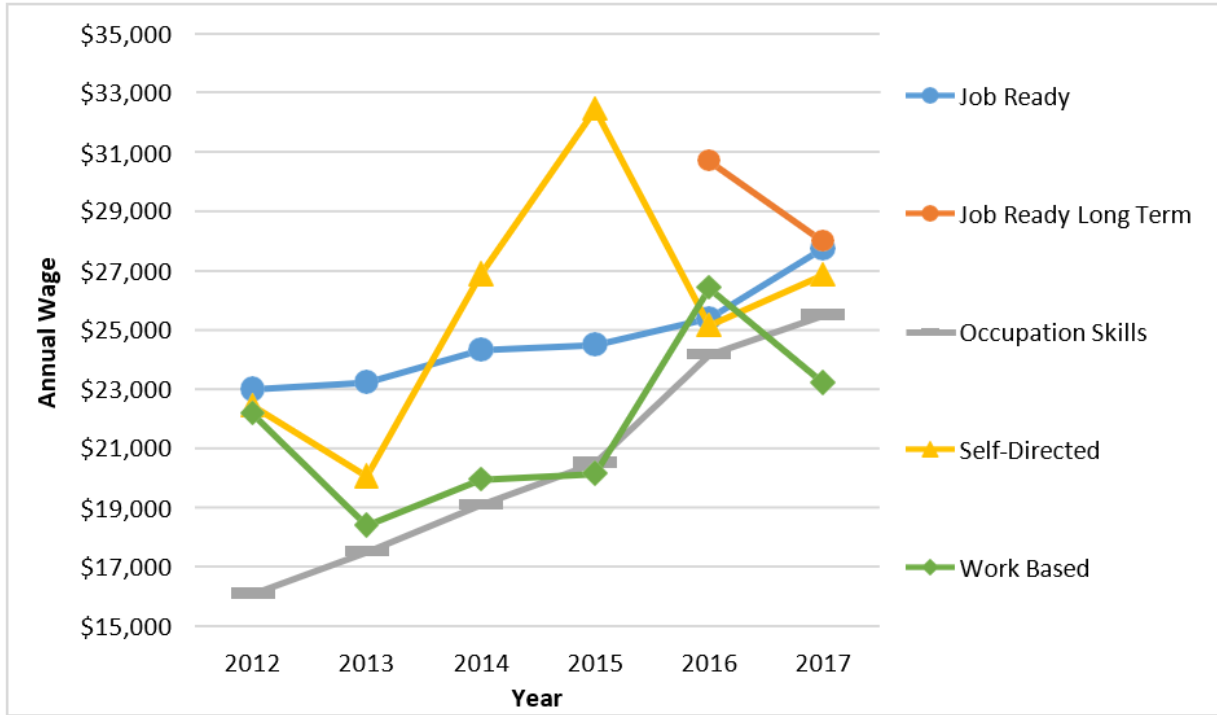


FIGURE 16: ADULT PROGRAM PARTICIPATION BY AGE

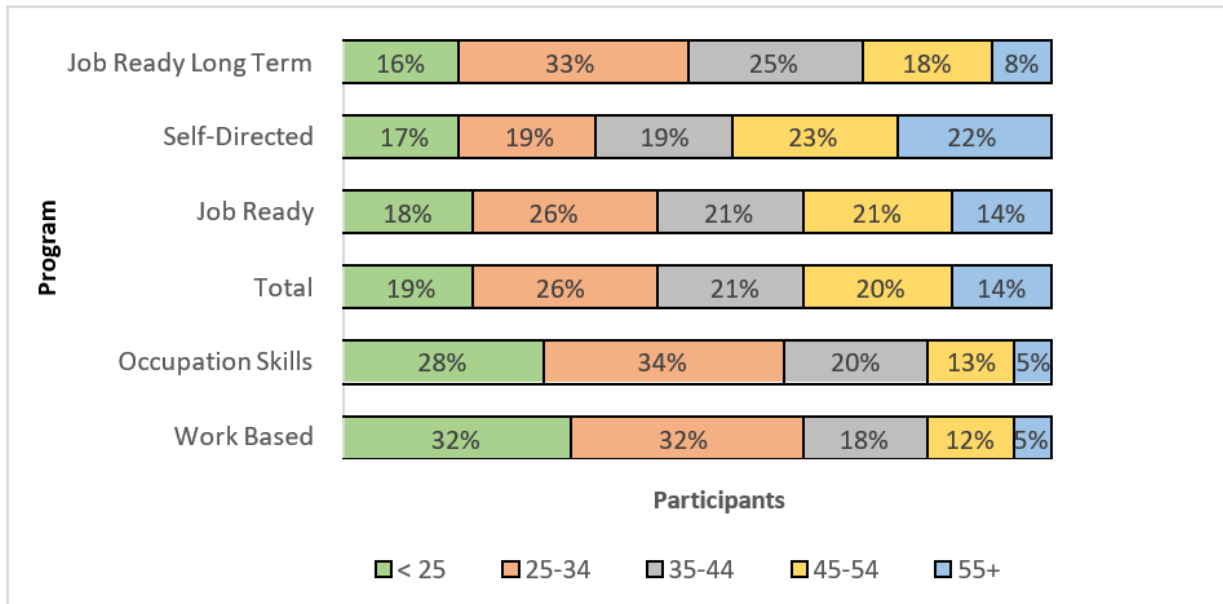


FIGURE 17: BROAD CATEGORIES BY SEX

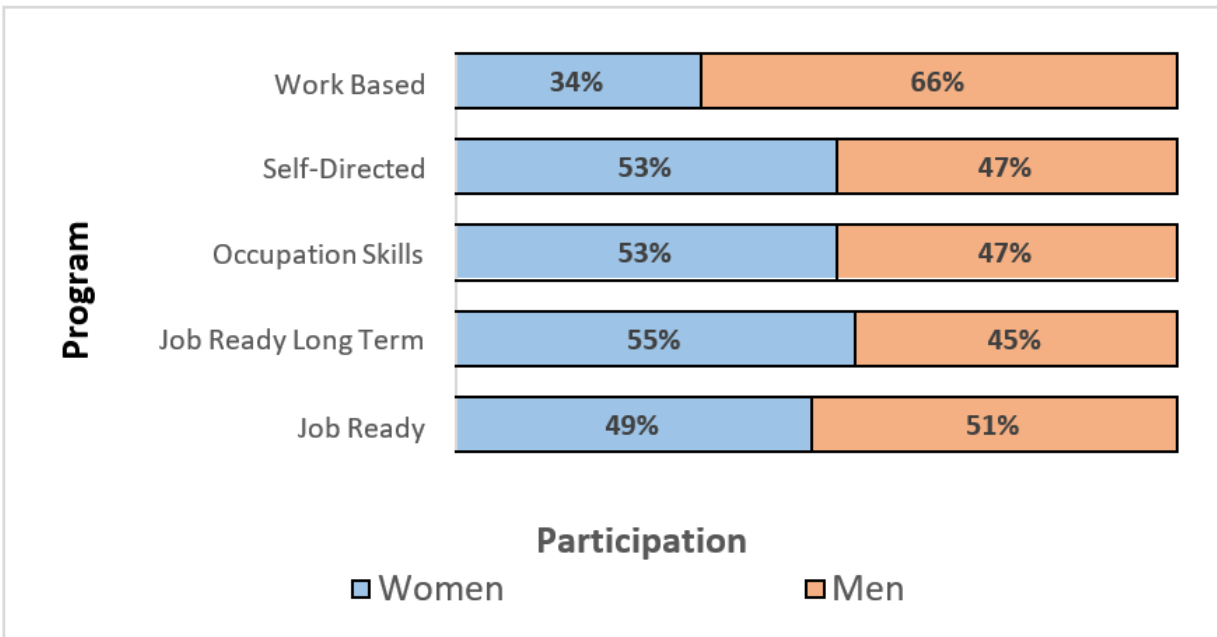


FIGURE 18: PROGRAM PARTICIPATION BY RACE

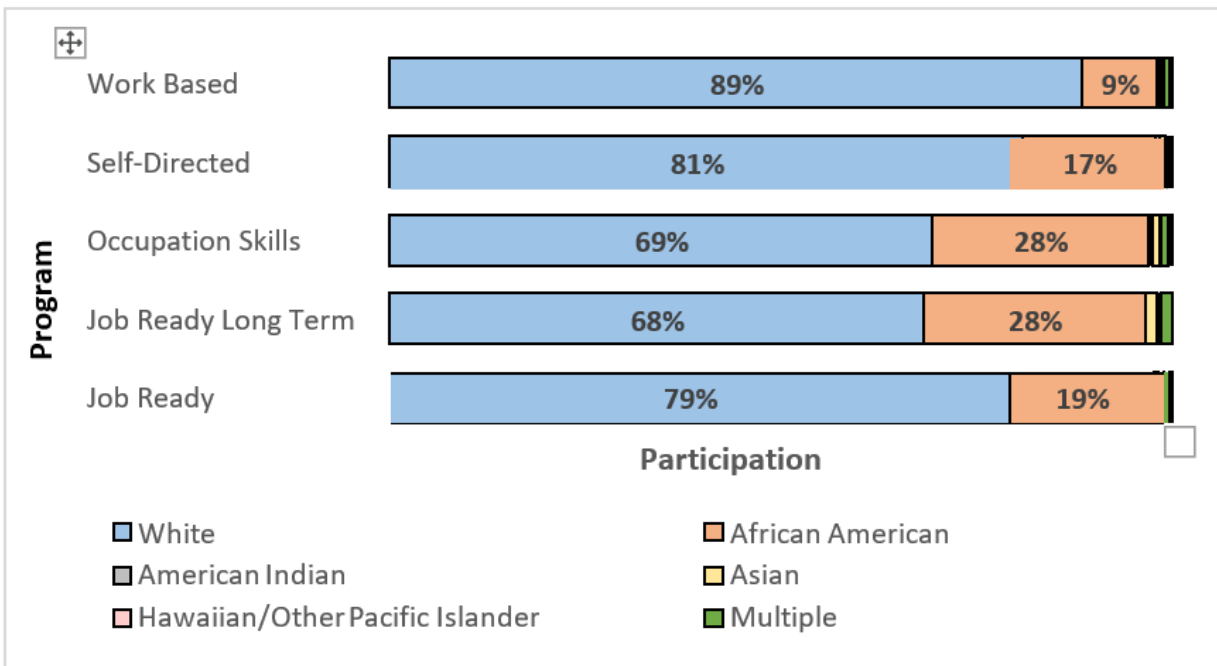


FIGURE 19: BROAD CATEGORIES: BASIC SKILLS

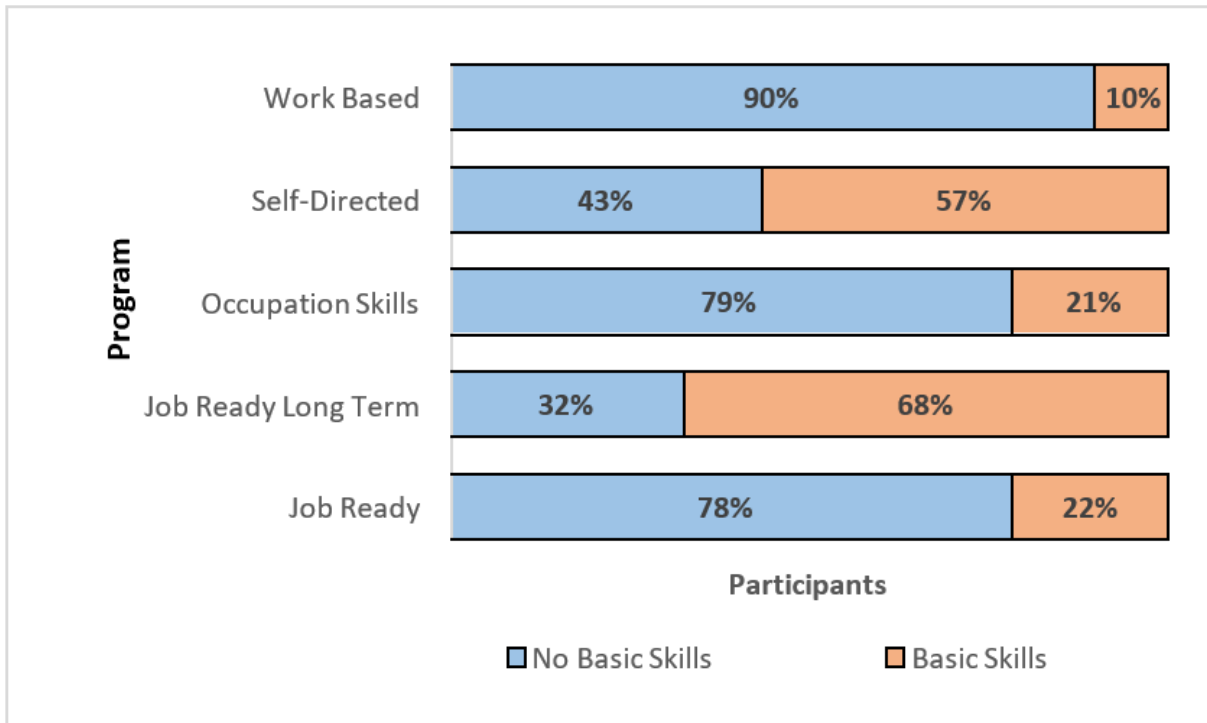


FIGURE 20: BROAD CATEGORIES: LOW INCOME

