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Understanding Adult Subpopulations Served by Workforce Investment Programs

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ABSTRACT

This study uses administrative data to describe the characteristics, services received, and short-term labor market outcomes of adult Hispanic, Asian, Pacific Islander, Indian and Native American, and migrant and seasonal farmworker customers leaving four workforce investment programs in 2011. Two programs—the Employment Service and the Workforce Investment Act's Adult Program—provide services to a general population, and two specialized programs—the Indian and Native American Program and the National Farmworker Jobs Program—provide services to more targeted populations. We show that the specialized programs play a distinctive role in the workforce investment system. They serve segments of the subpopulations with greater employment barriers and provide services that differ from those of more general programs. Differences in characteristics explain a large portion of the differences in services received. The subpopulations studied had lower post-participation employment and earnings, in general, than whites, with most of the differences explained by their characteristics but not by the services provided.

Key words: workforce investment, training, Workforce Investment Act (WIA), Adult Program, National Farmworker Jobs Program (NFJP), Employment Service, labor exchange, Indian and Native American Program (INAP)

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LIST OF ACRONYMS

ADRA	Administrative Data Research and Analysis
AJC	American Job Center (formerly known as One-Stop Career Center)
CAPACD	National Coalition for Asian Pacific American Community Development
CEW	Census of Employment and Wages
CRIS	Common Reporting Information System
CY	calendar year
DOL	U.S. Department of Labor
DVOP	Disabled Veteran Outreach Program
ES	Employment Service
ETA	Employment and Training Administration (in DOL)
GED	General Educational Development test
INA	Indian and Native Americans (or American Indians or Alaskan Natives)
INAP	Indian and Native American Program (which includes Native Hawaiians)
ITA	individual training account
LAUS	Local Area Unemployment Statistics
LERS	Labor Exchange Reporting System (for ES)
LVER	Local Veterans Employment Representatives
MCDC	Missouri Census Data Center
MIS	management information system
MSFW	migrant and seasonal farmworkers
NA	not available
n.a.	not applicable
n.d.	no date
NAWS	National Agricultural Worker Survey
NFJP	National Farmworker Jobs Program
PI	Hawaiians or Other Pacific Islanders
PY	program year
SAIPE	Small Area Income and Poverty Estimates
SPIR	Standardized Participant Information Record (for INAP)
SPR	Social Policy Research Associates
TANF	Temporary Assistance for Needy Families
UI	Unemployment Insurance
VETS	Veterans' Employment and Training Service
WIA	Workforce Investment Act of 1998
WIB	workforce investment board
WIASPR	Workforce Investment Act Standardized Participant Record (for NFJP)
WIASRD	Workforce Investment Act Standardized Record Data (for the Adult Program)

EXECUTIVE SUMMARY

The Workforce Investment Act of 1998 (WIA) and the Employment Service (ES) provide job seekers with a variety of services. Many of their programs serve groups that face well-documented employment barriers, including those considered in this study: Hispanics, Asians, Pacific Islanders (PI), Indian and Native Americans (INA), and migrant and seasonal farmworkers (MSFW). The U.S. Department of Labor (DOL) commissioned this study to better understand how four programs serve these groups. These four programs are the (1) ES, (2) WIA Adult Program, (3) Indian and Native American Program (INAP), and (4) National Farmworker Jobs Program (NFJP). The ES and WIA Adult Program both serve a general, broad population. The INAP (which serves INA and Native Hawaiians) and NFJP (which serves MSFW) are more specialized.

This study, sponsored by DOL's Chief Evaluation Office, uses administrative data that workforce programs collect for performance monitoring to describe how the workforce investment system serves each subpopulation. It answers the following research questions:

- How do the demographic and local area characteristics, services received, and post-participation outcomes of customers in the INAP and NFJP compare to those of INA and MSFW served in the ES and Adult Program?
- Within the ES and Adult Program, what are differences in the demographic and local area characteristics, services received, and program outcomes of Hispanic, Asian, Pacific Islander, INA, and MSFW customers?
- Within the ES and Adult Program, to what extent can differences in the services that subpopulations received be explained by differences in their demographic and local area characteristics? Similarly, to what extent can subpopulation differences in post-participation outcomes (employment, retention, and earnings) be explained by differences in subpopulation demographic and local area characteristics and program services received?

To answer these questions, we merged information from the programs' administrative databases[1] with geographic information from publicly available databases. Using data on people who left each program during 2011, we describe Hispanic, Asian, PI, INA, and MSFW customers' individual and local area characteristics, the program services they received, and their employment and earnings outcomes. We use multivariate analyses to examine the links between characteristics, services, and outcomes—to explore whether differences in characteristics and services explain differences in outcomes.

[1] Grantees must provide information quarterly to their state (for the ES and Adult Program) or DOL (for the INAP and NFJP). ES data are submitted through ETA form 9002 and stored in the Labor Exchange Reporting System (LERS). Adult Program data are submitted via ETA form 9090 and stored in the WIA Standardized Record Data (WIASRD). INAP data are tracked through the Standardized Participant Information Report (SPIR), although aggregated information provided by Common Reporting Information System (CRIS) is used for performance measurement. NFJP data are tracked through the WIA Standardized Participant Record (WIASPR). We draw information from program year 2012, quarter 3.

A. Overview of the study's findings

Two key findings emerged from the study. First, the INAP and NFJP play a unique role for the groups they serve. Second, service receipt and post-participation employment and earnings differ from those of subpopulations in the more general programs.

Next, we describe customers served in each program, then discuss each finding in turn.

1. Customers served in workforce programs

The study includes more than 15 million ES customers and slightly fewer than a half million Adult Program customers (Table 1). [2] Between 20 percent (ES) and 17 percent (Adult Program) of those served identified as a member of a subpopulation studied.[3] In 2011, Hispanics were about 16 percent of the customers leaving the ES and about 12 percent of those leaving the Adult Program. Other subpopulations were much smaller: Asians comprised 2 to 3 percent of those leaving each program, INA were about 1 percent,[4] and PI were less than 1 percent. MSFW were about 1 percent of customers leaving the ES (MSFW status was not collected in the Adult Program).

The two specialized programs are smaller. About 8,400 left the INAP in 2011, all of whom were INA or Native Hawaiians. About 7,200 left the NFJP, all of whom were MSFW and about 71 percent were Hispanic.

Table 1. Number of customers in each subpopulation leaving each program in 2011

	Total number customers served	Number served in each subpopulation studied								
		Hispanic	Asian	PI	INA	MSFW	Whites	Blacks	Multi-racial	Not Available
General programs										
ES	15,713,778	2,472,748	269,633	54,503	190,213	144,336	7,729,338	3,049,924	282,163	1,665,256
Adult Program	419,803	52,299	11,381	1,756	4,218	NA	243,676	82,377	8,499	15,597
Specialized programs										
NFJP	7,237	5,161	30	11	88	7,237	1,227	688	25	7
INAP	8,367	0	0	0	8,367	NA	0	0	0	0

Source: LERS for ES, WIASRD for Adult Program, WIASPR for NFJP, and SPIR for INAP.

Note: Numbers show how many customers received services and left the program during 2011. Customers receiving only core services were not included in the Adult Program. Race and ethnicity are not asked in the INAP. All are assumed to be INA.

ES = Employment Service; INA = Indian and Native Americans; MSFW = migrant and seasonal farmworkers; PI = Pacific Islanders.

[2] Our study includes those leaving the ES who received at least one service and those leaving the WIA Adult Program who received at least one intensive or training service.

[3] The subpopulations studied are defined using (1) mutually exclusive categories that capture both race (Asians, PI, INA, whites, blacks, and more than one of these races) and ethnicity (Hispanic); and (2) MSFW status, which spans race and ethnic categorizations.

[4] The use of INA to describe those served in the INAP differs from its definition in other programs because the INAP includes Native Hawaiians among those eligible to be served. In the ES, Adult Program, and NFJP, Native Hawaiians are coded as PI, not INA.

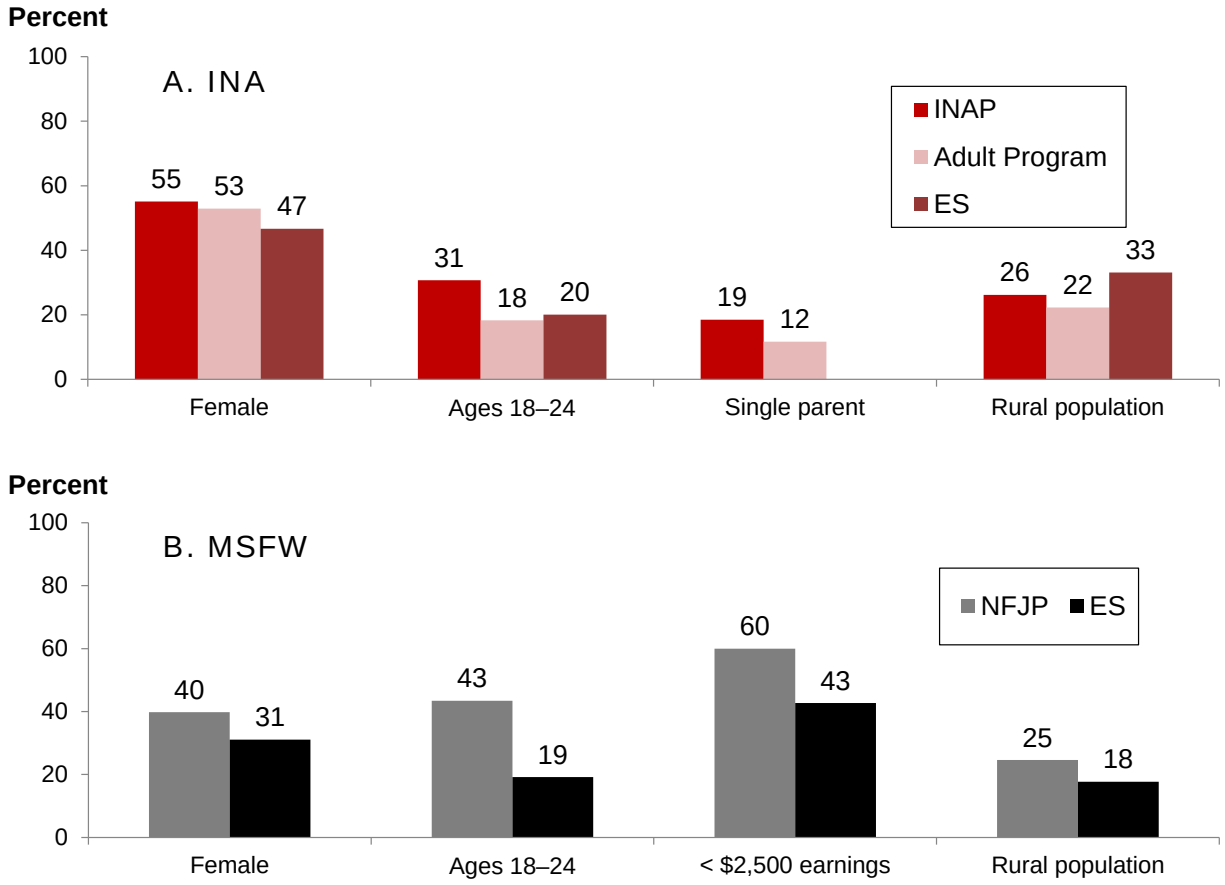
2. Customers served in specialized programs: INAP and NFJP

The specialized programs play a unique role in the workforce investment system in two ways. First, they serve customers who appear to have greater needs than INA and MSFW customers in the general programs. Second, customers who left these programs received different services than those who participated in the ES and Adult Program.

Compared to INA and MSFW served by the general programs, customers who left the specialized programs were more likely to have characteristics that suggest they face barriers to employment (Figure 1). For example:

- INAP customers were younger than INA leaving the Adult Program and more likely to be single parents.
- INAP customers were more likely than INA leaving the ES to be female and live in more rural areas.
- NFJP customers were more likely than MSFW leaving the ES to be female, young (ages 18 to 24), and have low pre-participation earnings (below $2,500). They also were more likely to live in areas with a more rural population and with higher unemployment rates.

Figure 1. Characteristics of INA and MSFW in general and specialized programs



Source: Appendix D, Table D.5.

Note: Customers receiving only core services were not included in the Adult Program analysis. Single parent status is not collected in the ES. < $2,500 is defined as having earnings below $2,500 in the second and third quarters before participating in the program.

ES = Employment Service; INA = Indian and Native American; INAP = Indian and Native American Program; NFJP = National Farmworker Jobs Program.

The three WIA programs studied (Adult Program, INAP, and NFJP) offer a similar range of services to jobseekers. However, INAP and NFJP customers received a different mix of services than customers of the Adult Program. These differences are consistent with the idea that specialized program customers face greater employment barriers. Examples include the following:

- INAP customers were more likely than INA leaving the Adult Program to receive training: 37 percent of INAP customers received training, versus 29 percent of INA customers of the Adult Program. Those who received training through the INAP focused on different areas than their Adult Program counterparts. For example, more INAP customers focused on building managerial, administrative, professional, and technical skills, and fewer focused on building mechanical and transportation skills.
- NFJP customers were more likely than the average customer leaving the Adult Program to receive training and supportive services.[5] More than 80 percent of customers leaving the NFJP received training, and about 65 percent received supportive services, versus 29 and 17 percent of customers in the Adult Program. NFJP customers who received training focused on building skills in different areas than Adult Program customers. For example, about half of customers leaving the NFJP focused on training for mechanical and transportation jobs, compared to about one-quarter of Adult Program customers.

3. Customers served in general programs: ES and the Adult Program

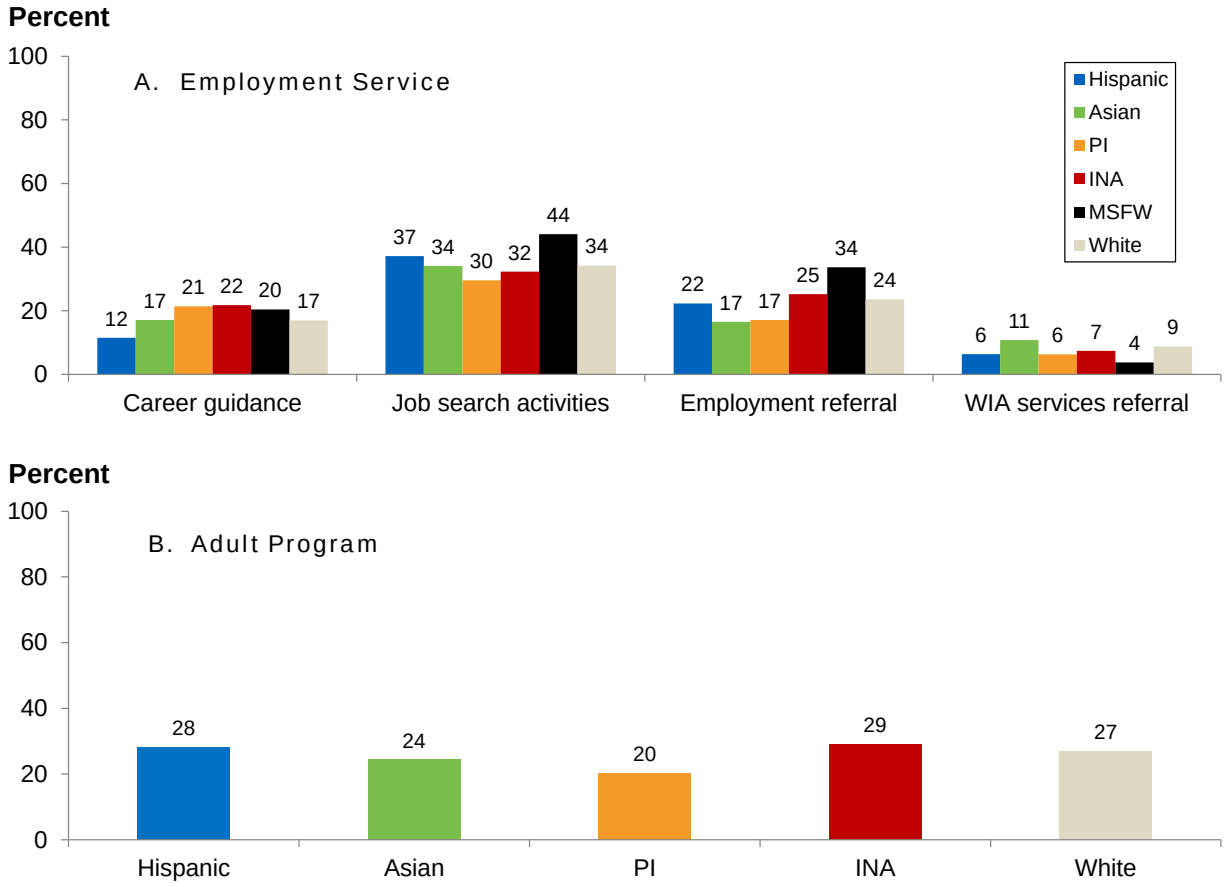
Within the ES and Adult Program, members of the subpopulations we studied had markers of greater employment barriers than the average customer leaving those programs. They were often younger, less educated, and likely to enter labor markets with different challenges than their counterparts. Subpopulations received different services in the ES and Adult Program (Figure 2). Examples of the differences include the following:

- **Career guidance.** Between 12 and 22 percent of ES subpopulations studied received career guidance.
- **Job search activities.** Between 30 and 44 percent of ES subpopulations studied received assistance with job search activities.
- **Employment referrals.** Between 17 and 34 percent of ES subpopulations studied were referred to employment.
- **WIA service referrals.** Between 4 and 11 percent of ES subpopulations studied were referred to WIA programs.
- **Training.** Between 20 and 29 percent of Adult Program subpopulations studied received occupational training.

Our multivariate analyses examine how each subpopulation compares to whites (or non-MSFW for MSFW) and suggests that customer and local area characteristics largely explain these differences in services received. Characteristics explained all but about 1 to 7 percentage points of the differences in services received among the groups.

[5] Comparisons between NFJP participants were made with the general population of Adult Program participants because MSFW status is not collected for the Adult Program.

Figure 2. Services received from the Employment Service and the Adult Program



Source: Appendix D, Tables D.7 to D.9.

Notes: MSFW status is not available in the Adult Program. Customers receiving only core services were not included in the Adult Program analysis. Figure only includes subpopulations studied and whites, the comparison group in multivariate analyses.

INA = Indian and Native Americans; MSFW = migrant and seasonal farmworkers; PI = Pacific Islander.

Because DOL established common employment and earnings measures to capture performance in the ES, Adult Program, NFJP, and INAP, researchers can compare post-participation outcomes across programs and between subpopulations in a program. These common measures track employment entered after program participation, employment retained for three quarters after program participation, and average earnings in the second and third quarters after leaving the program, if employed in each quarter.

The subpopulations studied had less favorable outcomes, in general, than other populations leaving the ES and Adult Program (Table 2). The notable exceptions were (1) a higher likelihood of gaining employment for Hispanics leaving either program and for MSFW leaving the ES, and (2) higher employment retention and average earnings for Asians.

Examples of the differences in employment among subpopulations include the following:

- About 53 percent of customers leaving the ES, but only 49 percent of Asians and 50 percent of INA, entered employment. About 81 percent of ES customers, but only 72 percent of MSFW and 74 percent of INA, retained employment.

- About 61 percent of customers leaving the Adult Program, but only 58 percent of Asians and PI and 56 percent of INA, entered employment. About 84 percent of Adult Program customers, but only 78 percent of INA, retained employment.

Examples of differences in earnings among subpopulations following participation include the following:

- Customers who left the ES and retained employment had average earnings of $14,288, with a range from $12,470 for MSFW to $18,464 for Asians.
- Customers who left the Adult Program and retained employment had average earnings of $14,010, with a range from $12,166 for INA to $16,843 for Asians.

Table 2. Employment and earnings after the Employment Service and the Adult Program

Program	Subpopulation	Entered employment	Retained employment	Average earnings
Employment Service	**Average**	**53**	**81**	**$14,288**
	Whites	54	82	$15,193
	Hispanics	55	81	$13,661
	Asians	49	84	$18,464
	Pacific Islanders	53	81	$13,616
	Indian and Native Americans	50	74	$12,752
	Migrant and seasonal farmworkers	64	72	$12,470
Adult Program	**Average**	**61**	**84**	**$14,010**
	Whites	61	85	$14,810
	Hispanics	63	83	$12,886
	Asians	58	87	$16,463
	Pacific Islanders	58	83	$12,478
	Indian and Native Americans	56	78	$12,166

Source: Appendix D, Tables D.7 to D.9.

Note: Black type indicates at or above average, red indicates below average, and **bold** indicates average.

The multivariate analyses compare outcomes between subpopulations and whites (or non-MSFW for MSFW) and suggest that, in general, customer and local area characteristics explain differences in post-participation employment and earnings. After we account for differences in characteristics:

- Between 1 and 15 percentage points difference remains between whites and subpopulations entering employment after leaving the ES, and a 1 to 4 percentage point difference remains for those leaving the Adult Program.
- Although no difference remains in retaining employment between PI and whites in either program, a differential of 5 percentage points remains for MSFW in the ES and for INA in the Adult Program.
- A difference in earnings in the second and third quarters after leaving ES remain, with earnings being $241 lower for MSFW, $372 lower for Hispanics, and $1,338 higher for Asians.

These differences usually remained unchanged, in general, when taking into account group-to-group differences in the services customers received in the program.

I. INTRODUCTION

This study, sponsored by the Department of Labor's (DOL) Chief Evaluation Office, uses administrative data that have never been collectively analyzed to describe how the workforce investment system serves Hispanics, Asians, Pacific Islanders (PI), Indian and Native Americans (INA), and migrant and seasonal farmworkers (MSFW). It helps fill a gap in knowledge: although differences in labor market activities among these groups are well documented, little systematic information is available that compares their characteristics, services received, and post-participation outcomes across workforce investment programs or among the subpopulations served.

The United States' workforce investment system was designed to enhance employment opportunities for job seekers, with DOL administering program implementation through a federal-state partnership. Four programs serve adults: (1) Employment Service (ES), (2) WIA Adult Program, (3) Indian and Native American Program (INAP), and (4) National Farmworker Jobs Program (NFJP). The ES and WIA Adult Program both serve a general, broad population. The INAP (which serves INA and Native Hawaiians) and NFJP (which serves MSFW) are more specialized. This study uses data that each program collects for performance monitoring to assess customers' characteristics, service receipt, and employment and earnings outcomes after leaving a program.

Research suggests that Hispanics, Asians, PI, INA, and MSFW have a particular need for services from these programs. As detailed below, each group faces challenges to employment or career advancement. For example:

- **Unemployment or underemployment.** Compared to the 8.9 percent national unemployment rate in 2011, Hispanics faced an unemployment rate of 11.5 percent, and PI and INA had unemployment close to 15 percent (Bureau of Labor Statistics 2012). Although official unemployment statistics are not available for MSFW, the National Agricultural Worker Survey (NAWS) suggests that MSFW also face employment challenges: only 25 percent said they worked year-round in 2009 (National Center for Farmworker Health 2012).
- **Education.** Less than 20 percent of INA, 14 percent of Hispanics, and 10 percent of PI between ages 25 and 29 held a bachelor's degree, compared to 39 percent of whites of the same age (National Center for Education Statistics 2013). Although more than 50 percent of all Asians have a bachelor's degree, some subgroups have lower-than-average rates of attainment. The NAWS data suggest that only 57 percent of MSFW of all age groups had completed grade 10, and only 9 percent had attained some form of higher education in 2009 (National Center for Farmworker Health 2012).
- **Geographic concentration.** As detailed below, Hispanics, poor Asians and INA are geographically concentrated (Josephy 1991; Motel and Patten 2012; National Coalition for Asian Pacific American Community Development 2013; U.S. Department of Labor 2013a).

Section A of this chapter provides background information on the subpopulations and programs studied in this research, Section B provides an overview of the research methods used in this study, and Section C provides a road map to the report.

A. Subpopulations and programs

Each subpopulation has different, and sometimes unique, needs in becoming fully active participants in the labor market. As context for understanding the research design and interpreting the results of the study, we provide a brief overview of employment barriers facing each of the five subpopulations studied and of the workforce investment programs in place to help them overcome these barriers.

1. Employment barriers among subpopulations

Each of the five subpopulations faces barriers to employment or career advancement. Some challenges are common across subpopulations, whereas others are unique to a particular subpopulation.

Hispanics.[6] Hispanics are a large and growing share of the U.S. labor force. Projections suggest the Hispanic workforce will grow from about 15 percent of the total U.S. labor force in 2000 to 19 percent in 2020 (Toossi 2012). The Hispanic population is diverse: about 65 percent of the 50.7 million Hispanics in the United States in 2010 self-identified as being of Mexican origin. Slightly more than 9 percent identified as Puerto Rican, and almost 4 percent (each) self-identified as being Cuban or Salvadoran (Motel and Patten 2012).

Despite this diversity, several group characteristics are noteworthy for our study, because they may influence labor market prospects. Consider that Hispanics are geographically concentrated—the 10 largest Hispanic groups (which also include Colombians, Dominicans, Ecuadorans, Guatemalans, Hondurans, and Peruvians) all had their largest populations in just three states: California, Florida, and New York. As a group, Hispanics are young: they have a median age of 27 years, compared to 37 years for the U.S. population as a whole (Motel and Patten 2012). Hispanics also are more likely than the overall population to be poor and to have lower median earnings than whites. In 2011, the median weekly wage for Hispanics stood at $549, or about 71 percent of that earned by whites (U.S. Department of Labor 2012). Typical explanations for Hispanics' low wages are (1) elatively high rates of limited English proficiency (McManus 1990; McManus et al. 1983; Mora and Davila 1998); and (2) low levels of education (Trejo 1997).

Asians and Pacific Islanders. The 19 million Asians and 1.4 million Pacific Islanders who lived in the United States in 2013 include those with a heritage in a broad set of countries in East Asia, South Asia, Southeast Asia, and the Pacific Islands. Statistics reported for Asians as a group often conceal their diversity. For example, 53 percent of Asians over age 25 have a bachelor's degree, but only 30 percent of Vietnamese and only 27 percent of PI do. Wide variation also exists in unemployment. The Japanese subpopulation averaged 3 percent unemployment in 2013, but Native Hawaiians and other Pacific Islanders averaged 10 percent unemployment.

[6] We use the term *Hispanic* because the program data available are reported for Hispanics and not for separate groups within the Hispanic population. When we report research from other studies, we adopt their nomenclature for describing the subpopulation.

Poor Asians tend to be geographically concentrated: nearly half live in high-concentration Asian neighborhoods in metropolitan areas, including Chicago, Los Angeles, New York, and San Francisco (National Coalition for Asian Pacific American Community Development 2013). In addition, about 65 percent of Asians are immigrants. Nearly one-third of Asians say they do not speak English very well or excellently (U.S. Department of Labor 2014). Limited English proficiency presents these members of the subpopulation with a barrier to finding sustainable employment (Ong and Hee 1993) and accessing services (Asian Americans Advancing Justice Los Angeles 2013).

Indians and Native Americans. INA are geographically concentrated and often culturally isolated from mainstream U.S. culture, which can lead to a misalignment of services with the needs of tribal communities in addressing these challenges (U.S. Department of Labor 2013a; Josephy 1991). In 2010, 44 percent lived in just six states: Arizona, California, New Mexico, New York, Oklahoma, and Texas, (Norris et al. 2012). In 2000, about one-third of the 3.3 million people who identified as single-race INA lived on American Indian reservations or in Alaska Native villages (Cornell and Kalt 2010; Ogunwole 2006), and more than half of the INA population either lived in communities near the reservations or routinely migrated back and forth between these communities and the reservations (Cornell and Kalt 2010).

Poverty among INA is the highest of any race or ethnic group. From 2007 to 2011, 27 percent of INA lived in poverty, compared to 14 percent of the U.S. population (Macartney et al. 2013). Poverty was highest among INA who lived on a reservation. In 2000, 39 percent of INA on reservations lived in poverty, compared with 27 percent of all INA.

Migrant and seasonal farmworkers. An MSFW can be a migrant farmworker, a seasonal farmworker, or a migrant food processing worker (U.S. Department of Labor 2013a).[7] An estimated 3 million MSFW worked in the United States in 2009 (National Center for Farmworker Health 2012). The NAWS data suggest that MSFW face considerable employment challenges. For example, in 2009, nearly three-quarters had total family income below U.S. poverty guidelines, even though they worked 42 hours per week, on average. About 72 percent were foreign-born, and about 35 percent said they could not speak English at all. Their mobile lifestyle, limited English proficiency, varying levels of citizenship status, and cultural barriers create employment barriers and make it difficult for service providers to address their challenges. Because workers often cross state lines for employment, it is frequently difficult for families to access services through state-based programs.

2. Workforce programs that serve subpopulations

DOL administers the WIA of 1998, which provides labor and employment services to meet the needs of job seekers, especially those facing employment challenges. Three Title I programs

[7] A seasonal farmworker is someone who worked at least 25 or more days or parts of days in which some work was performed in farm work, had at least half of earned income was from farm work, and was not employed in farm work year-round by the same employer during the preceding 12 months, A migrant farmworker is a seasonal farmworker whose work required travel such that the worker is unable to return to a permanent residence within the same day. A migrant food processing worker is someone who worked at least 25 or more days in the preceding 12 months in work performed in food processing, had at least half of earned income from processing work, and was not employed in food processing year-round by the same employer. The food processing work must require travel such that the worker was unable to return to a permanent residence in the same day.

target services to general adult subpopulations: the Adult Program targets low-income adults, the INAP serves INA, and the NFJP serves MSFW. The other programs (for example, Dislocated Worker and Youth) are more restrictive and targeted; therefore, they are not included in this study. WIA Title III developed a single service delivery system for WIA programs, the ES program (originally established under the Wagner-Peyser Act of 1933) and the VETS. Given the restricted and targeted nature of the VETS, we do not include it in this study.

The workforce development system organized under WIA has the following attributes (Bradley 2013; National Skills Coalition 2011):

- **Demand driven.** The system is structured to provide employment and training services that respond to the demands of local employers.
- **Local control.** Local workforce investment boards (WIBs) receive the majority of the state formula grant portion of WIA, which accounts for nearly 60 percent of Title I funding.
- **Universal access.** Core services (discussed later) are available to any individual, regardless of age or employment status.
- **Employment focus.** Employment is the first goal of services provided under Title I.
- **Consolidated service delivery system.** WIA established one-stop centers—now called American Job Centers (AJCs)—to provide job seekers and employers with a single location for accessing information about, and receiving services from, multiple federal employment and training programs. At the end of 2013, 1,707 comprehensive AJCs provided access to all WIA-mandated partner programs on-site. Another 827 affiliate centers offered some, but not all, services from WIA-mandated partner programs (CareerOneStop 2014). Mandated partners include WIA programs related to adult education and literacy, vocational rehabilitation programs, the INAP, the NFJP, the Job Corps program, the Senior Community Service Employment Program, postsecondary vocational education activities funded under the Carl D. Perkins Career and Technical Education Act, the Trade Adjustment Assistance program, and programs authorized by state unemployment compensation laws.
- **Consumer choice.** Both information and individual guidance provided in the one-stop delivery system and through individual training accounts (ITAs) (discussed later) offer consumers the ability to tailor services to their needs.
- **Performance accountability.** WIA requires states to track and report the performance of customer outcomes. In 2005, DOL implemented common outcome measures to capture performance across programs (Employment and Training Administration 2006). For programs that serve adults, these measures include whether customers who were not previously employed became employed after leaving the program (entered employment); whether the customers employed in the first quarter after leaving the program were also employed in the following two quarters (retained employment); and earnings in the second and third quarters for customers employed in the first, second, and third quarters after leaving the program (average earnings). State and local areas face sanctions if they fail to meet negotiated performance measures based on these outcomes, and performance is included as a criterion in grant competitions.

Although WIA brought ES and Title I programs together under one umbrella, the programs differ in size and populations served. The ES provides general services to all job seekers and is much larger than the other programs on which this study focuses. It served about 19 million people in 2012 (Table I.1). It is more than 2.5 times larger than the largest WIA program for adults, the Adult Program, which targets low-income adults and served about 7 million people in 2012. The more specialized WIA programs studied are much smaller than the Adult Program. The INAP served about 35,000 adults and the NFJP served slightly fewer than 22,000 participants in 2012.

Table I.1. Workforce investment programs (in this study) for adult job seekers

		WIA programs		
	ES	Adult Program	INAP	NFJP
Population served	All job seekers	Low-income adults (for noncore services)	Eligible Indian and Native Americans and Native Hawaiians	Eligible migrant and seasonal farmworkers
Number served (2012 calendar year)	19,081,905	7,012,100	35,362	21,736
Appropriations (in thousands)	$700,842	$770,811	$38,505	$78,105
Administrative database	LERS	WIASRD	SPIR	WIASPR

Source: U.S. Department of Labor 2013a.

Note: Appropriations include fiscal year 2013 and program year 2012. Number served for the ES includes unemployment insurance (UI) recipients who also received Wagner-Peyser-funded employment services. From the employment services alone, 9,932,112 consumers received services. ES does not include $165,000,000 appropriated (Collins et al. 2012) for services targeted toward eligible veterans (1,064,495 received services in the third and fourth quarters of 1999 and the first and second quarters of 2000 (Battelle Memorial Institute 2013).

Programs leverage their resources, eliminate duplication in service delivery, and meet the needs and expectations of program participants by coenrolling their customers in programs offered by partners in the AJC. For example, one role of the NFJP is to help coordinate other AJC services for MSFW (U.S. Department of Labor 2013a). Coenrollment in services necessitates a high level of communication between programs to avoid duplicating services. Of particular concern is the potential for WIA programs to duplicate core services offered through the ES for the same participant (Employment and Training Administration 2013).

Employment Service programs

The ES program provides labor exchange services to both job seekers and employers[8] on a self-service or staff-assisted basis. All people legally authorized to work in the United States may receive ES services, regardless of current employment status (Collins et al. 2012; Employment and Training Administration). Services provided include information on job postings, referral to job openings, job search workshops, assessment of skill levels or career guidance, and information on WIA services (Employment and Training Administration n.d.; National Skills Coalition 2012; U.S. General Services Administration n.d.).

[8] Services to employers include referrals of candidates to job offerings, assistance with special recruitment needs, and guidance on job restructuring.

Under the WIA, the ES delivers many of the initial or core services (discussed under WIA programs) in a sequential service strategy. ES staff members often are the first to helppeople seeking employment assistance services and refer them to other programs at the AJC. States provide these labor exchange services through three tiers of service delivery (U.S. Department of Labor 2011):

1. **Self-service.** Job seekers and employers can access these services (typically, electronic databases of job openings) without staff assistance. They are also available away from the physical AJC location and outside normal business hours.
2. **Facilitated self-help.** Resource room staff members help customers access resources such as computers, résumé-writing software, fax machines, photocopiers, and internet-based tools. The resources are typically available only in physical AJC offices.
3. **Staff-assisted services.** These services are provided in one-on-one and group settings and must be provided in at least one physical location in each workforce investment area. One-on-one services might include assessment, career counseling, development of an individual service plan, and intensive job search assistance. Group services might include orientation, job clubs, and workshops on résumé preparation, job search strategies, and interviewing.

WIA programs

Title I of WIA is designed to address labor market barriers and the education and training needs of targeted groups (including low-income adults, INA, and MSFW) and to help people gain lasting employment with earnings adequate for self-sufficiency. Each program has a separate funding stream. Three Title I programs (described next) are part of this study.

The **Adult Program** serves people who are at least 18 years old and are at risk of unemployment or need help to attain self-sufficiency. It offers supportive services such as transportation, child care, dependent care, housing, and, under certain circumstances, needs-related payments to enable customers to participate in the program. Employment and training services are provided to customers in three tiers that form a sequential service strategy. The initial vision was that most people would receive services at a lower tier before moving to a higher, more resource-intensive tier. In practice, participants often receive services from more than one tier at the same time. The three levels of service provision are:

1. **Core services** are frequently provided on a self-service basis and through the ES, as discussed earlier. Services can include job listings and labor market information; information on services the WIA and other programs provide; information on WIA service providers; internet access; computer software for assessments and résumé writing; and access to telephones, fax machines, and copiers. Some core services require limited staff assistance. Examples include workshops on résumé writing and interviewing; initial assessments of skills, aptitudes, and interests; determination of eligibility for programs; help in contacting an employer; and information on training services. Approximately 65 percent of customers in the Adult Program received only core services (U.S. Department of Labor 2013a). Because core services are often provided through the ES, we do not include them in analysis of the Adult Program in this study to avoid double counting service receipt.

2. **Intensive services.** Intensive services are available to some customers who cannot obtain or maintain employment—particularly employment that allows for self-sufficiency—with the help of core services alone. Those who qualify as having a low income (see Appendix B for definition) receive priority. Intensive services often require substantial staff time and involvement. They include comprehensive and specialized assessments, help in developing an individual employment plan, group and individual counseling, placement in work experience and internships, job development and placement, and short-term prevocational services, such as work skills development. Some services, such as workshops, can be considered either core or intensive, depending on their length.
3. **Training services.** Participants who cannot gain reasonable employment with the assistance of core and intensive services can be referred to training. Participants who need training may receive access to an ITA, a voucher they can use to attend a state-approved program of their choice (for example, a state-approved program in a high-demand field at a community college or for-profit trade school). ITAs usually are used to fund occupational skills training, skill upgrading, entrepreneurial training, and adult education and literacy activities (in conjunction with training). Employer-based training, such as on-the-job or customized training, as well as training designed for special populations facing multiple barriers to employment, can be funded directly rather than with an ITA.

How services are provided varies across states, across local workforce investment areas within states, and across AJCs within local workforce investment areas (D'Amico et al. 2004). These differences are consistent with WIA's emphasis on local control. One source of variation is different definitions of an intensive service. For example, one AJC might classify a résumé-writing workshop as a core service open to everyone, and another might classify it as an intensive service. Other sources of variation are how adults move through the tiered service levels, how priority among customers in target groups is established, and the relative emphasis placed on training (Dunham et al. 2005, 2006).

The **INAP** receives funding authorized under WIA Title I Section 166. It is provided through a biennial competitive grant process to Native American tribes and Native American nonprofit organizations. In 2013, there were 178 grantees (Bradley 2013). Grantees provide workforce investment services to American Indians, Alaskan Natives, and Native Hawaiians who reside on or off reservations (U.S. Department of Labor 2013a). For those living on reservations and in Alaskan Native villages, the program often provides the only employment and training services in the community. Such access is important because reservation and Native village residents often do not have the transportation or financial resources to travel to the nearest town or city to seek services. The program's goals differ from those of the more general ES and Adult Program. The INAP is designed to prepare INA for good jobs in the following ways (U.S. Department of Labor 2013a):

- Improve skills through effective training programs so customers can achieve their academic and occupational goals, enabling them to be prepared for the workforce
- Increase customers' literacy skills to prepare them for job training in growth occupations
- Promote economic and social development consistent with community goals and values

The **NFJP** is funded under WIA Title I Section 167. It is provided through a biennial competitive grant process to community-based organizations and public agencies. It aims to help MSFW and their families attain greater economic stability (U.S. Department of Labor 2013a). Participants must be authorized to work in the United States and have an income below the federal poverty level or 70 percent of the lower living standard income level. Services include case management, skills training, supportive services (including housing), and technical assistance to disadvantaged MSFW and their dependents.

In 2013, 52 grantees held NFJP training grants (Bradley 2013). Every state and Puerto Rico had at least one grantee, except for states with a small relative share of seasonal agricultural employment (U.S. Department of Labor 2013a). Alaska and Washington, DC do not have a grantee. Connecticut and Rhode Island are one combined state service area; Delaware and Maryland are another. Because of its large number of agricultural workers, California has five grantees. Because most annual migration patterns of MSFW are predictable and often cross state lines, grantees use specific outreach and service delivery methods to serve participants who would otherwise not be able to take advantage of services offered in AJCs.

The program provides MSFW with core, intensive, training, and supportive services (such as nutrition, transportation, and housing assistance) to increase skill levels and diminish the impact of employment barriers (U.S. Department of Labor 2013a). Grantees may choose which services to provide and whether to provide services in house or through formal or informal partnering agreements (Clary et al. 2013). Programs provide the following (U.S. Department of Labor 2013a):

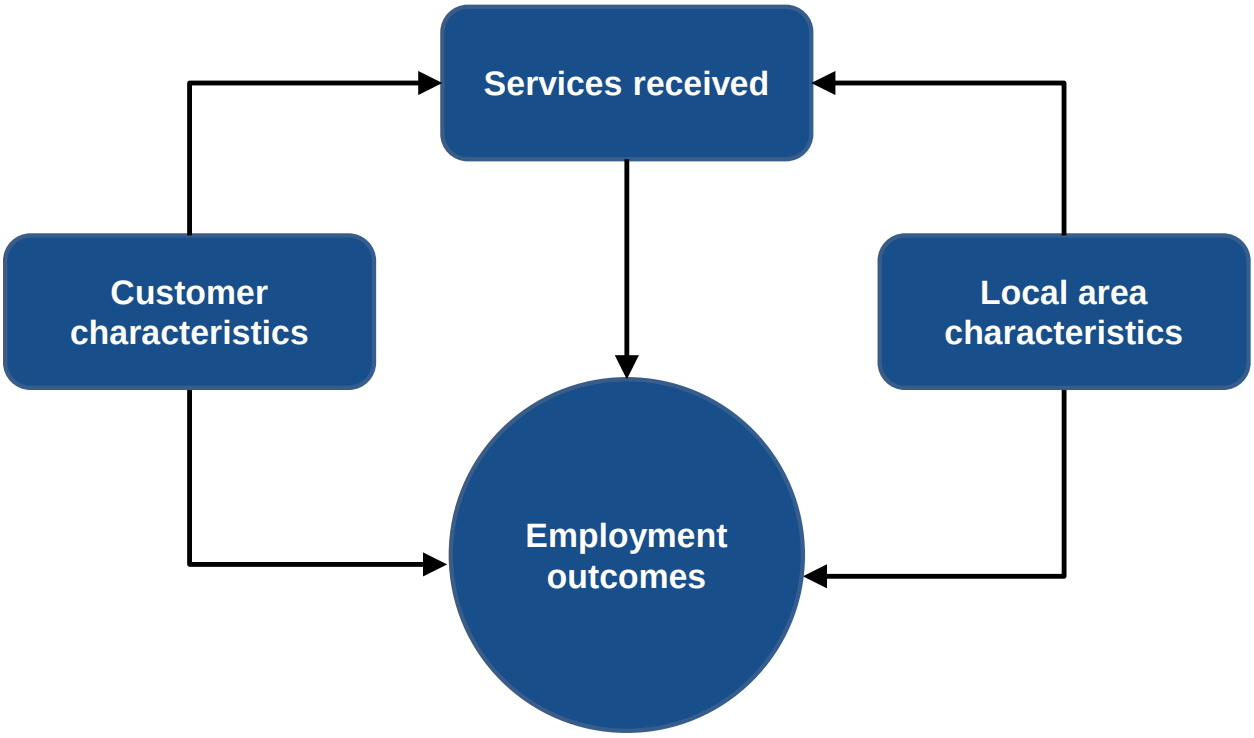
- An array of employment and training services tailored to the MSFW population
- Services to MSFW and their dependents that help them attain stable, good-paying, year-round jobs in and out of the agricultural industry
- Permanent and temporary housing assistance to enable participants to complete skills training, retain employment, and improve their economic outcomes

B. Study overview

Little is known about how programs in the workforce investment system serve the subpopulations of interest in this study. Analyses that are available rely on information from different years and use different metrics and definitions (U.S. Department of Labor 2013b; O'Leary and Eberts 2008; Social Policy Research Associates 2012; Clary et al. 2013), making it difficult to compare how a subpopulation fares in different workforce programs. Publicly available information on the services that different subpopulations receive in workforce programs and their outcomes after participating is even more limited, with the notable exception of information about the WIA Adult Program in the WIASRD Data Book (Social Policy Research Associates 2012). Therefore, DOL commissioned this study to better understand how workforce investment programs serve these five subpopulations: Hispanics, Asians, PI, INA, and MSFW. Its goal is to provide information on the customers DOL serves. By analyzing information using common metrics across subpopulations and each program, the study provides information on how subpopulations compare to one another and how each program serves them.

Figure I.1 provides a diagram of the conceptual framework for the associations of interest in the study. The diagram depicts a workforce system in which the customer's needs and the types of workers local employers need both influence the services a customer receives from a program. Indeed, qualitative evidence on the WIA programs suggest that the customer focus of AJCs means that their services are tailored to individual needs (D'Amico et al. 2004) and that customers with different needs receive different services. In addition, services differ across local areas, because they link to local job opportunities. In Figure I.1, the arrows from customer characteristics and local area characteristics to services received depict these relationships. Both customer and local area characteristics are also expected to influence employment. For example, the amount of education that a customer has and whether he or she is entering a labor market that is expanding or contracting will help determine the probability that the customer will find employment after participating in a workforce investment program. By enhancing a person's ability to link to the local labor market, whether through providing information or job search services or by building occupational skills, the services received in workforce investment programs should facilitate employment (Heinrich et al. 2008; Hollenbeck et al. 2005). The arrows to employment outcomes from services received depict these relationships.

Figure I.1. Relationships among factors influencing employment outcomes



Previous research has described some of the factors depicted in Figure 1 as affecting employment outcomes (see, for example, Social Policy Research Associates 2012). Typically, this research has focused on assessing the relationship depicted by one of the arrows using descriptive analysis. Sometimes, these relationships are described separately for different subpopulations. This study adds insights into how different workforce programs serve Hispanics, Asians, PI, INA, and MSFW by exploring how the factors depicted above relate to one another. It also analyzes those relationships for specific subpopulations, within and across programs. Such insights could identify unmet needs of customers within each subpopulation by highlighting how, for example, services and employment outcomes differ among groups after accounting for differences in the characteristics they bring to the program.

1. Research design

We use three research questions to structure our study:[9]

1. How do the demographic and local area characteristics, services received, and post-participation outcomes of customers in the INAP and NFJP compare to those of INA and MSFW in the ES and Adult Program?
2. Within the ES and Adult Program, what are differences in the demographic and local area characteristics, services received, and program outcomes of Hispanic, Asian, Pacific Islander, INA, and MSFW customers?
3. Within the ES and Adult Program, to what extent can differences in the services subpopulations received be explained by differences in their demographic and local area characteristics? Similarly, to what extent can subpopulation differences in post-participation outcomes (employment, retention, and earnings) be explained by differences in subpopulation demographic and local area characteristics and program services received?

We use the four administrative databases—one for each workforce program included in the study—to answer these questions. Each database is developed from DOL's Employment and Training Administration (ETA) program monitoring and contains information that grantees must provide quarterly to their state (for the ES and Adult Program) or DOL (for the INAP and NFJP). Each database contains information on customers' characteristics, service receipt, and post-participation outcomes. ES data are submitted through ETA 9002 form and stored in the Labor Exchange Reporting System (LERS). Adult Program data are submitted via ETA form 9090 and stored in the WIA Standardized Record Data (WIASRD). INAP data are tracked through the Standardized Participant Information Record (SPIR). Finally, NFJP data are tracked through the WIA Standardized Participant Record (WIASPR). ETA uses the LERS, WIASRD, and WIASPR for performance measurement. It uses aggregated information provided by Common Reporting Information System (CRIS) for INAP performance measurement. [10]

In each program, staff members collect information on people receiving services using a standardized set of data fields. Although the specifics of the fields vary somewhat across the programs, they usually include information on (1) demographic characteristics and pre-program earnings and employment, (2) services customers receive, and (3) post-participation employment and earnings outcomes over three quarters. We use data for program year 2012, quarter 3 for our analysis because they were the latest data available when the analysis began. These data provide information on customers who left the program in the 2011 calendar year. Appendix A provides

[9] These questions were simplified from those presented in the analysis plan for ease in exposition. During that process, we removed the subquestion on coenrollment: "To what extent do customers in the Adult Program coenroll in the NFJP, and what differences exist between those who do and do not coenroll? To what extent do customers in the NFJP coenroll with the ES and WIA Title IB programs, and what differences exist between those who do and do not coenroll?" After exploring the available data, we determined that it was not feasible to adequately address the question. We do, however, discuss the analysis that could be performed in a Chapter II footnote.

[10] The CRIS agreement between ETA and the Kansas Department of Commerce enables ETA to access wage records through the Wage Record Interchange System. It was not possible to obtain this individual-level data.

details on each database and how we developed it for use in our analysis. Here, we briefly highlight each database:

1. **LERS** provides information on participants using labor exchange services and covers the ES.[11] Because the publicly available LERS data used in this report were subject to data verification processes, numbers presented in our report could differ from those reported by DOL in its annual 9002 reporting.
2. **WIASRD** provides information on people who receive services under the Adult Program. The publicly available WIASRD data used in this report are also used for the DOL annual performance reporting.
3. **SPIR** is a nonpublic database that provides information on people who left the INAP. Information on employment and earnings in the SPIR is not the sole basis for performance measurement in official DOL reports. Instead, DOL combines information in the SPIR with that from UI wage records. This augmented information is contained in the CRIS database. We present these official performance measures in descriptive analyses for consistency with DOL performance reporting.
4. **WIASPR** is a nonpublic database that provides information on people who left the NFJP. These data are also used for the DOL annual performance reporting.

Not all databases contain information that allows us to study all subpopulations of interest (Table I.2). The WIASRD does not collect information on MSFW. The SPIR does not contain information on race and ethnicity, although the INAP only serves INA and Native Hawaiians.[12] Only Hispanics are available for analysis of the WIASPR because they were 71 percent of the customers who left the program in 2011.

Table I.2. Subpopulations identified in each data set

Data set	Program	Subpopulations that can be identified
General programs		
LERS	Employment Service	Hispanics, Asians, PI, INA, MSFW
WIASRD	Adult Program	Hispanics, Asians, PI, INA
Specialized programs		
SPIR	INAP	INA (includes Native Hawaiians)
WIASPR	NFJP	Hispanics

INA = Indian and Native Americans; LERS = Labor Exchange Reporting System; MSFW = migrant and seasonal farmworkers; PI = Pacific Islanders; SPIR = Standardized Participant Information Report; WIASPR = WIA Standardized Participant Record; WIASRD = Workforce Investment Act Standardized Record Data.

In 2011, more than 15 million customers left the ES after receiving at least one service, and slightly fewer than a half million left the Adult Program after receiving at least one intensive or training service (Table I.3). Between 20 percent (ES) and 17 percent (Adult Program) of

[11] The LERS also includes information on the Veterans' Employment and Training Service (VETS) programs.

[12] The use of INA to describe the population served in the INAP differs from its definition in other programs. The INAP includes Native Hawaiians among those eligible to be served, and the ES, Adult Program, and NFJP include Native Hawaiians as PI.

customers could be identified as a member of one of the subpopulations of interest. [13] Hispanics made up about 16 percent of the customers leaving the ES (2,472,748 customers) and about 12 percent of those leaving the Adult Program (52,299 customers). Other subpopulations were much smaller. Asians were about 2 percent of customers leaving the ES (269,633 customers) and about 3 percent of those leaving the Adult Program (11,381 customers). PI were less than 1 percent of customers leaving both programs (54,503 and 1,756 customers). INA were about 1 percent of customers leaving both the ES and Adult Program (190,213 and 4,218 customers), and MSFW were about 1 percent of customers leaving the ES (144.336 customers). (MSFW status was not collected in the Adult Program.) The more specialized programs are smaller. About 8,400 INA left the INAP and about 7,200 MSFW left the NFJP in 2011.

Table I.3. Number of customers in each subpopulation leaving each program in 2011

	Total number customers served	Number served in each subpopulation studied								
		Hispanic	Asian	PI	INA	MSFW	Whites	Blacks	Multiracial	Not Available
General programs										
ES	15,713,778	2,472,748	269,633	54,503	190,213	144.336	7,729,338	3,049,924	282,163	1,665,256
Adult Program	419,803	52,299	11,381	1,756	4,218	NA	243,676	82,377	8,499	15,597
Specialized programs										
NFJP	7,237	5,161	30	11	88	7,237	1,227	688	25	7
INAP	8,367	0	0	0	8,367	NA	0	0	0	0

Source: LERS for Employment Service, WIASRD for Adult Program, WIASPR for NFJP, and SPIR for INAP.

Note: Race and ethnicity are not asked in the INAP. All are assumed to be INA. Numbers show the number of customers who received services and left the program during 2011. Customers receiving only core services were not included in the Adult Program.

INA = Indian and Native Americans; MSFW = migrant and seasonal farmworkers; NA = not available; PI = Pacific Islanders.

2. Data constructs

We used the administrative databases to construct variables for three of the four factors identified in Figure I.1: customer characteristics, services received, and post-participation outcomes (Table I.4). We defined variables consistently across the databases, to the extent possible (see Appendix B). Customer characteristics include demographics, pre-program education, labor market experiences and earnings, and other characteristics. Service variables were constructed consistently across programs, but not all services are offered by each program. Services captured include staff-assisted services (in the ES); intensive or training activities; and, for those who received training, the focus of occupational training, as well as needs-based payments and supportive services. Program outcomes are ETA's common performance measures—entered employment, retained employment, and post-participation average earnings—and a measure of average earnings in the second and third quarters after program exit that includes those who are not employed as having zero earnings.

[13] Most customers leaving the ES (55 percent) and Adult Program (60 percent) were white, and about one-fifth leaving each program were black or African American. The subpopulations studied include those in mutually exclusive categories of race (Asians, PI, INA, whites, blacks, and more than one of these races) and ethnicity (Hispanic), as well as MSFW, which spans race and ethnic categorizations.

We merged these data with information from four publicly available, non-ETA databases that provide information from 2011 on the local areas where services were received. We use this information to characterize the areas in which customers were likely to seek employment. We drew information from: the Small Area Income and Poverty Estimates (SAIPE) for income and poverty statistics; Local Area Unemployment Statistics (LAUS) for the 2011 annual unemployment rate and labor force size; Census of Employment and Wages (CEW) for industrial employment; and Missouri Census Data Center (MCDC) for the percentage of the population in a county that lived in a rural area.

Table I.4. Data elements in each data set

	LERS	WIASRD	SPIR	WIASPR
Customer characteristics				
Demographics	• Gender • Age • Race/ethnicity • MSFW status • Education	• Gender • Age • Race/ethnicity • Education	• Gender • Age • Education	• Gender • Age • Race/ethnicity • Education
Pre-program employment and income	• Employment at participation • Pre-program earnings[a]	• Employment at participation • Pre-program earnings • Low-income status • TANF receipt • Other public assistance receipt	• Employment at participation • Public assistance receipt (other than TANF)	• Employment at participation • Pre-program earnings • TANF receipt • Other public assistance receipt
Other considerations	• Disability • Veteran	• Disability • Limited English proficiency • Offender • Single parent • Veteran	• Disability • Limited English proficiency • Offender • Single parent • Veteran	• Disability • Limited English proficiency • Offender • Single parent • Veteran
Services				
Services	• Workforce information • Staff-assisted services – Career guidance – Job search activities – Employment referral – WIA service referral	• Intensive and training services • Needs-related payments • Supportive services • Focus of occupational skills training	• Intensive and training services • Focus of occupational skills training	• Intensive and training services • Supportive services • Focus of occupational skills training
Outcomes				
Outcomes[b]	• Employment • Post-participation earnings	• Employment • Post-participation earnings		• Employment • Post-participation earnings

Note: Although race/ethnicity is not included in the SPIR, all INAP customers are INA. MSFW is not included in the WIASPR, but all customers are presumed MSFW or qualified family members.

[a] Pre-program earnings are calculated as the sum of earnings in the second and third quarters before program participation for the LERS and WIASRD, and the sum of earnings in the first and second quarters before program participation for the WIASPR.

[b] Because outcomes reported in the SPIR are not those used for performance measurement, we us data from the CRIS.

3. Analytic methods

We answer the first two research questions using simple descriptive analyses. We use percentage distributions to describe characteristics, services, and outcomes measured with categorical variables and means to describe these factors measured with continuous variables. We stratify analysis to compare factors for different programs and subpopulations, and we use a two-tailed *t*-test to determine the statistical significance ($p \leq 0.05$) for continuous measures and a chi-squared test to uncover statistically significant differences in distributions. When the chi-squared test reveals significant differences in distributions, we use a *t*-test to determine statistically significant differences between the programs or subpopulations in each category in the distribution. We focus discussion on differentials that (1) are statistically significant, (2) have a relatively large magnitude (at least a 5 percentage point difference between groups), and (3) apply to at least 5 percent of one subpopulation. Because our large sample sizes lead to statistical significance even for extremely small subgroup differences (the first criterion), the focus of discussion usually is based on the remaining criteria.

We address the third research question using regression analysis and the LERS and WIASRD data. Regression analysis allows us to determine how much of the difference in services received might be explained by the different characteristics of the subpopulations and how much of the difference in employment and earnings following participation might be explained by (1) different characteristics, or (2) different program services. Regression equations were estimated in two stages using probits when the dependent variable is binary and ordinary least squares when it was continuously measured. We captured the raw difference between subpopulations and whites in services received in a first-stage estimation that includes only indicators for being part of a subpopulation. In the second stage, we captured differences after controlling for characteristics (that is, using racial/ethnic variables and characteristics as independent variables). The difference in the coefficients (or marginal effects converted from estimated coefficients) on the racial/ethnic variables from the first and second stages captures the between-subpopulation differences in service receipt that are associated with differences in characteristics. We estimate the difference between each subpopulation and whites in outcomes after controlling for characteristics in the first stage and then estimate the difference after controlling for characteristics *and* program services received in the second stage. The difference in the coefficients or marginal effect between the first and second stages captures the between-subpopulation differences in post-employment outcomes that are associated with service receipt. Appendix C provides details.

4. Study limitations

Three caveats must be considered when interpreting results of this research. First, results cannot be used to draw causal conclusions. The data do not capture all factors that might underlie the relationships among customer characteristics, services, and outcomes. Using regression analysis enables us to adjust for the influence of some of the observable characteristics that vary with services and outcomes, but other important factors (for example, motivation) are not captured. Second, administrative databases do not contain sufficient detail to enable us to describe some of the differences that might exist in service provision. For example, not all databases contain information to measure intensity of the services received. Third, results might not be generalizable to economic conditions other than those in 2011.

C. Structure of the report

The next two chapters of the report use graphs to highlight key findings. Because chapters are written for an audience that has only a modest understanding of statistical methods, more technical material is provided in the appendices. Chapter II answers the first research question and describes the differences in characteristics, services, and outcomes between subpopulations served by the specialized programs and INA and MSFW in the general programs. Chapter III answers the second and third research questions and describes differences in characteristics, services, and outcomes for the subpopulations studied in the ES and the Adult Program. Four appendices and a reference list follow. Appendix A describes the construction of the four databases used in the analysis, and Appendix B provides the definitions of the variables used in the analysis. Appendix C describes the analytic methods, and Appendix D provides the main data tables that support discussion and figures in the text.

II. SPECIALIZED WORKFORCE PROGRAMS AND THE SUBPOPULATIONS THEY SERVE

INA and MSFW, two subpopulations of interest to DOL, are served through the general ES and WIA Adult Program but also have access to specialized programs to meet their unique needs. Previous research has explored how the INAP and NFJP programs serve job seekers. However, there has been no comprehensive analysis of whether the general and specialized programs reach different groups of INA and MSFW, whether variation exists in the types of services these populations receive through the two types of programs, and how their employment and earnings following participation may differ. To address this gap, this chapter answers the following research question:

> How do the demographic and local area characteristics, services received, and post-participation outcomes of customers in the INAP and NFJP compare to those of INA and MSFW in the ES and Adult Program?

Our analysis uses a two-step process in examining each factor. First, to provide a context for the analysis, we use descriptive analysis to explore individual and local area characteristics, services received, and post-participation outcomes for customers leaving the ES and Adult Program. We then compare these findings against those for customers leaving the specialized programs and for INA and MSFW in the general programs. Because MSFW status is not collected in the Adult Program, we compare findings for NFJP customers to those of the average customer in the Adult Program. Section A presents analysis of customer and local area characteristics, Section B services received, and Section C post-participation outcomes.

Key chapter findings

- Specialized programs—the INAP and the NFJP—play a unique role in the workforce investment system relative to general programs—the ES and the Adult Program.
- A higher percentage of customers served by specialized programs had characteristics suggesting employment barriers than did INA and MSFW served by the general programs.
- Customers leaving specialized programs were more likely to have received training than INA and MSFW leaving the general programs.
- Post-participation employment rates were generally similar or higher for customers leaving the specialized programs than for INA and MSFW leaving the general programs.
- Post-participation earnings were lower for customers leaving specialized programs than for INA and MSFW leaving the general programs.

A. Customer and local area characteristics

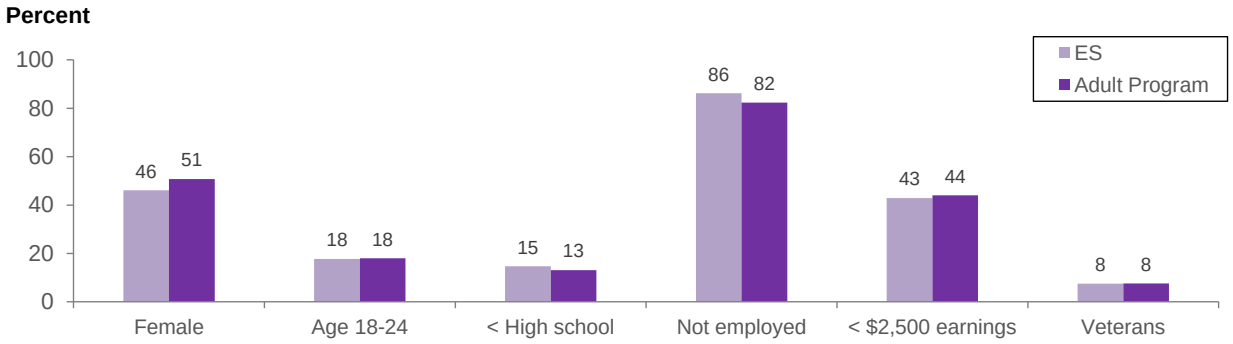
This section presents descriptive analysis that examines characteristics of customers in the two general programs. It then compares characteristics of subpopulations leaving the specialized programs with INA and MSFW customers leaving the ES and INA and the average customer leaving the Adult Program.

1. Customer and local area characteristics in general programs

Customers leaving the ES and Adult Program in 2011 had similar characteristics. In particular, a high percentage of customers in both programs had characteristics associated with employment barriers. Consider the following for customers leaving both programs (Figure II.1):

- About half were female.
- About 18 percent were ages 18 to 24.
- About 14 percent did not have a high school diploma or GED.
- More than 80 percent were not employed before starting the program.
- Less than half had earnings below $2,500 in the second and third quarters before program participation.
- About 8 percent were veterans.

Figure II.1. Characteristics of ES and Adult Program customers



Sources: LERS for ES; WIASRD for Adult Program; and Appendix D, Tables D.2 and D.4.

Note: < $2,500 is defined as having earnings below $2,500 in the second and third quarters before program participation.

Customers in both programs were likely to enter labor markets with the following characteristics (Appendix D, Tables D.2 and D.4):

- About one-fifth of the local area population was rural.
- Poverty rates hovered around 16 percent and unemployment rates around 9 percent.
- About 67 percent of employment was in service industries, with only 16 to 17 percent employment in each of goods-producing industries and government.

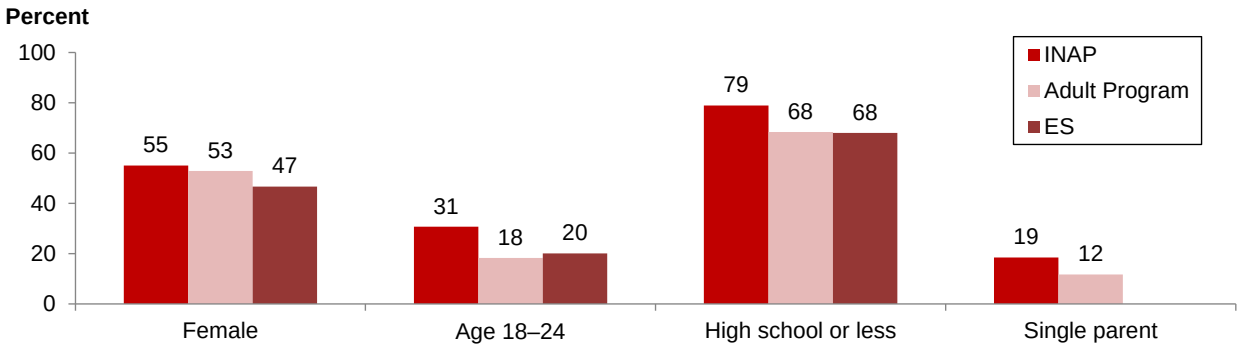
2. Customer and local area characteristics in specialized programs

The characteristics of customers leaving the INAP and NFJP suggest that they might face greater employment barriers than INA and MSFW leaving the general programs, perhaps because of different recruiting processes and eligibility criteria in the specialized programs. Compared to INA in the general programs, customers leaving the INAP were more likely to have the following characteristics (Figure II.2):

- **Female.** About 55 percent of customers leaving the INAP were female, compared to about 47 percent of INA customers leaving the ES.
- **Younger.** About 31 percent of the customers leaving the INAP were ages 18 to 24, compared with 18 to 20 percent of INA customers leaving the general programs.
- **Less educated.** Nearly 80 percent of customers leaving the INAP had a high school education or less, compared to about 68 percent of INA leaving the general program.
- **Single parents.** About 19 percent of customers leaving the INAP were single parents, compared to about 12 percent of INA leaving the Adult Program. (Single parent status is not recorded in the ES.)

Other characteristics of customers leaving the INAP were similar to those in the general programs (Appendix D, Table D.5).

Figure II.2. Characteristics of INA in workforce investment programs



Sources: LERS for the ES; WIASRD for the Adult Program; SPIR for the INAP; and Appendix D, Table D.5.
Note: Information on single parents is not available in the ES.

Compared to MSFW customers in the ES, customers leaving the NFJP were more likely to have the following characteristics (Figure II.3):[14]

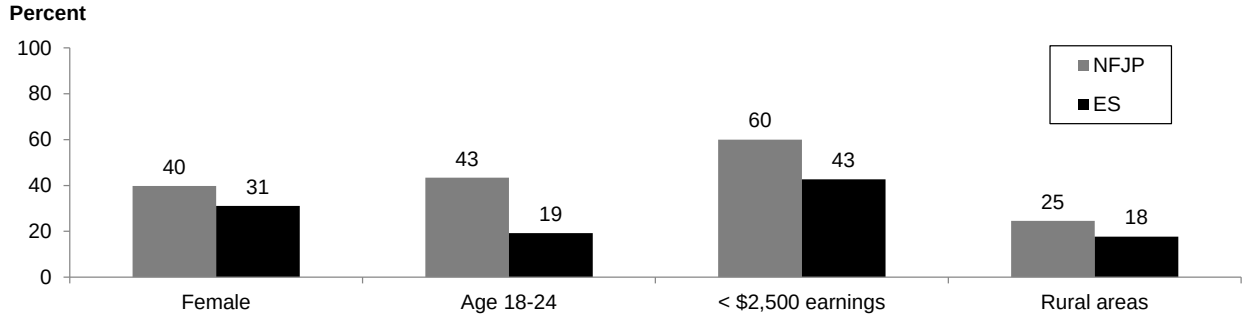
- **Female.** About 40 percent of customers leaving the NFJP were female, compared to about 31 percent of MSFW customers leaving the ES.
- **Younger.** About 43 percent of customers leaving the NFJP were ages 18 to 24, compared to about 19 percent of MSFW leaving the ES.
- **Earning less than $2,500 in the second and third quarters before program participation.** About 60 percent of customers leaving the NFJP had earnings of less than $2,500, compared to about 43 percent of MSFW leaving the ES.
- **Rurality (seeking employment in more rural areas).** Customers leaving the NFJP were likely to enter labor markets with about 25 percent rural population, whereas MSFW

[14] About 16 percent of customers who left the NFJP in 2011 were coenrolled in WIA Title IB programs or the ES. Although some differences existed between those who were and were not coenrolled, few discernible patterns emerged (Appendix D, Table D.6). We do not know the extent of Adult Program customers coenrolled in the NFJP because this information is not a required field and only 44 customers reported being coenrolled (0.01 percent).

customers leaving the ES were likely to enter labor markets with about 18 percent rural population.

Other characteristics of customers leaving the NFJP were similar to those in the general programs (Appendix D, Table D.5). Of note, more than 90 percent of customers leaving the NFJP and MSFW customers leaving the ES had no more than a high school education.

Figure II.3. Characteristics of MSFW in workforce investment programs



Sources: LERS for the ES; WIASRD for the Adult Program; WIASPR for the NFJP; and Appendix D, Table D.5.

Note: < $2,500 is defined as having earnings below $2,500 in the second and third quarters before starting the program.

B. Services received

This section presents the descriptive analysis that examines the services received for customers leaving the general programs. We describe, but do not compare, services between these programs because they are structured to provide different types and intensity of services. We then compare services received by those leaving the specialized programs with services received by INA and MSFW leaving the general programs. This comparison is especially noteworthy because the specialized programs served a higher percentage of customers with employment barriers. Therefore, we would expect them to provide different levels and types of services.

1. Services received in the general programs

The overall population of customers leaving the ES in 2011 received the following first-tier services in the workforce investment system (Appendix D, Table D.7):

- **Workforce information and staff-assisted services.** About 63 percent received workforce information through the ES, and about 70 percent received staff-assisted services.
- **Job search activities.** About 35 percent of customers engaged in job search activities though the ES.
- **Career guidance.** About 15 percent of customers received career guidance through the ES.
- **Referrals.** About one-quarter of customers received employment referral services, and 8 percent were referred to WIA services through the ES.

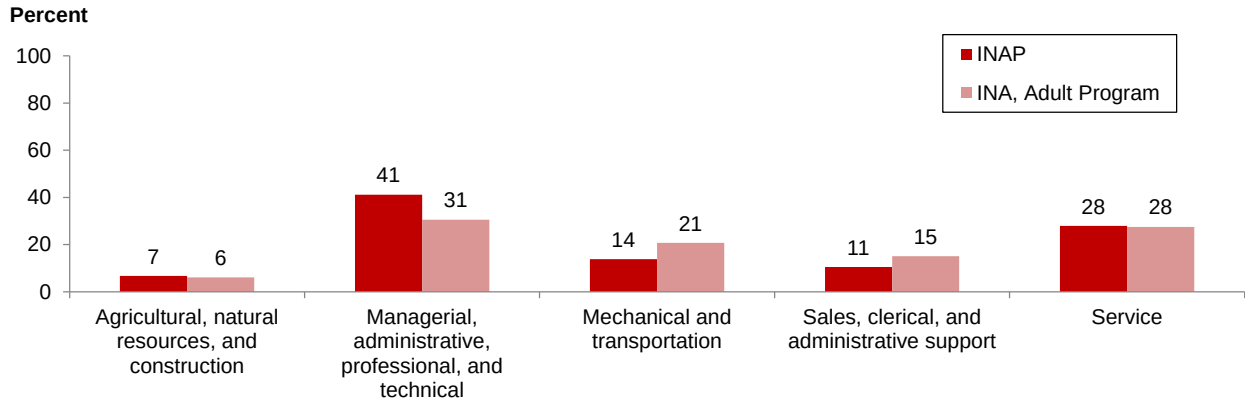
Our analytic restriction that customers leaving the Adult Program received at least one intensive or training service focuses the discussion of service receipt in this program of supportive services and training. For those who received training, we also analyzed the focus of occupational training (Appendix D, Table D.9). In the Adult Program, we see the following patterns across all customers:

- **Supportive services.** About 17 percent of customers received supportive services.
- **Training.** Slightly more than one-quarter of customers received training services.
- **Focus of occupational training.** When customers received training, the most common focus was for managerial, administrative, professional, and technical jobs (39 percent). About one-fifth trained for mechanical and transportation or service jobs; slightly more than 10 percent trained for sales, clerical, and administrative support jobs; and about one-quarter trained for service jobs.

2. Services received in the specialized programs

The services received by customers leaving the specialized programs differed from those received by INA and MSFW in the general programs, as would be expected given differences in characteristics. Comparison of services that customers received in the INAP to those INA received in the Adult Program suggests that a larger percentage of INAP customers received training, and for different occupations.[15] About 37 percent of customers leaving the INAP received training, compared to 29 percent of INA leaving the Adult Program (Appendix D, Table D.9). Customers who received training in the INAP were more likely than INA in the Adult Program to have trained for managerial, administrative, professional, and technical occupations (41 versus 31 percent) and less likely to receive training for mechanical and transportation occupations (14 versus 21 percent) (Figure II.4).[16]

Figure II.4. Focus of occupational training in INAP and by INA the Adult Program



Sources: WIASRD for the Adult Program; SPIR for the INAP; and Appendix D, Table D.10.

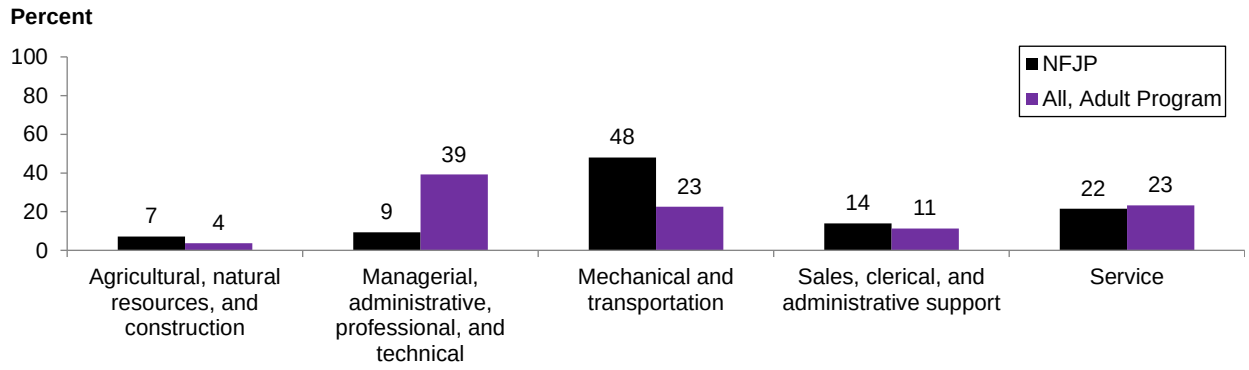
[15] Information on supportive services is not available in the INAP.

[16] The instructions for entering information on focus of occupational training are the same in the WIASRD, SPIR, and WIASPR: "Enter the 8 digit O*Net 4.0 (or later versions) code that best describes the training occupation for which the participant received training services. Enter the 8-digit O*Net 4.0 (or later versions) code that best describes the occupation." SPECIAL NOTE: If all 8-digits of the occupational skills code are not collected, record as many digits as are available and pad the rest of the field with "0s."

Comparison of services received by customers leaving the NFJP to those received by all customers leaving the Adult Program suggests that differences are large:

- **Supportive services.** About 68 percent of NFJP customers received supportive services, compared to 17 percent of Adult Program customers (Appendix D, Tables D.8 and D.9).
- **Training.** Approximately 81 percent of NFJP customers received training, compared to 29 percent of Adult Program customers (Appendix D, Tables D.8 and D.9).
- **Focus of training.** Almost half of NFJP customers trained for mechanical and transportation occupations, and about 9 percent trained for managerial, administrative, professional, and technical occupations (Figure II.5). This differs dramatically from the percentage of Adult Program customers who received similar services.

Figure II.5. Occupational training in the NFJP and the Adult Program



Sources: WIASRD for Adult Program; WIASPR for NFJP; and Appendix D, Table D.10.

Note: Because MSFW cannot be identified in the Adult Program, we use the average for all customers.

C. Post-participation outcomes

The differences in customer characteristics and services received between the general and specialized programs suggest that post-participation employment and earnings outcomes also differ. On the one hand, the higher percentage of specialized program customers who have characteristics that suggest they face employment barriers implies that specialized program customers might have lower levels of employment and earnings after they leave the program. On the other hand, the higher level of services specialized program customers receive and the differences in the focus of occupational training might decrease those differences in outcomes.

This section describes employment and earnings outcomes for customers leaving the general programs to provide a context, then compares outcomes between customers leaving the specialized programs to those of INA and MSFW in the general programs.

Performance measures for customers leaving the general programs indicate the following:

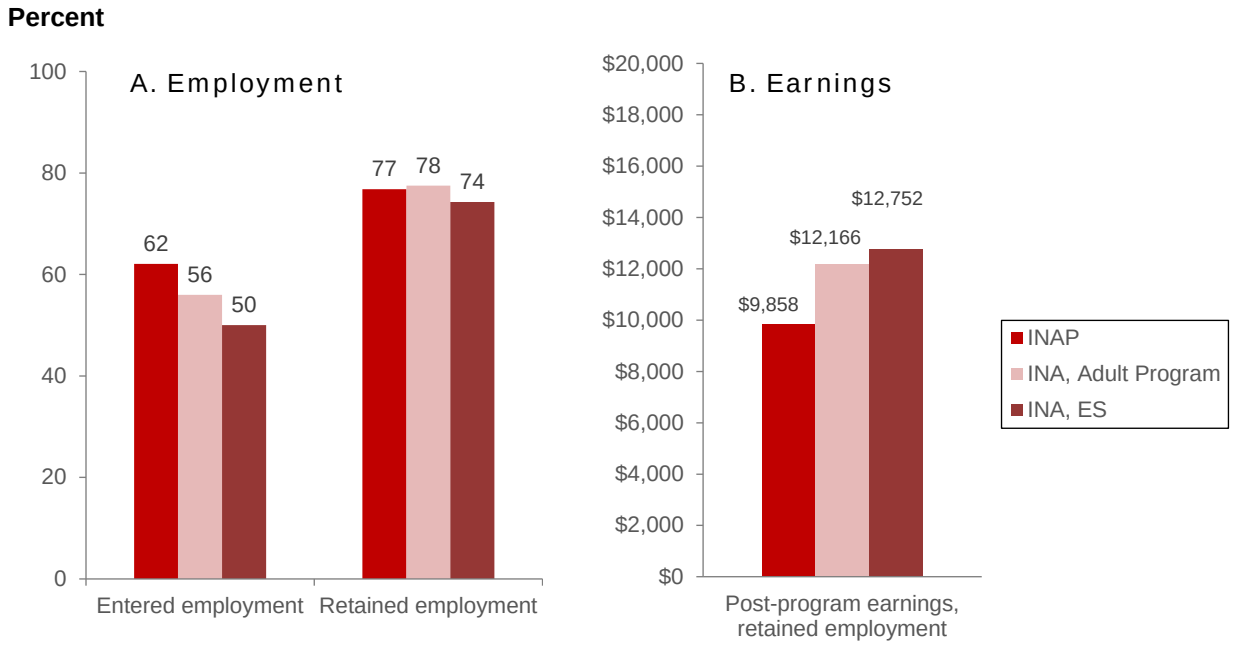
- **Entered employment.** Among those who were not employed at enrollment, 53 percent of ES customers and 61 percent of Adult Program customers entered employment after receiving services.

- **Retained employment.** Of those employed in the first quarter after leaving the program, 81 percent of ES customers and 84 percent of Adult Program customers retained employment.
- **Average earnings.** Customers employed in each of the first three quarters after leaving either the ES or Adult Program had earnings of about $14,000 in the second and third quarter.

When comparing post-participation outcomes for customers leaving the specialized programs to those of INA and MSFW customers leaving the general programs, employment outcomes were higher, in general, among specialized program customers, but earnings were lower. A comparison of customers leaving the INAP to INA leaving the general programs (Figure II.6) shows that:

- **Entered employment.** About 62 percent of customers leaving the INAP entered employment in the first quarter after leaving the program, compared with 50 to 56 percent of INA leaving the general programs.
- **Retained employment.** The percentage of customers who retained employment through the third quarter was similar among all programs, ranging from 74 to 78 percent.
- **Average earnings.** Earnings in the second and third quarters after leaving the INAP were $9,858, but they were more than $12,000 for INA leaving the general programs.

Figure II.6. Outcomes for INA following INAP, Adult Program, and ES participation

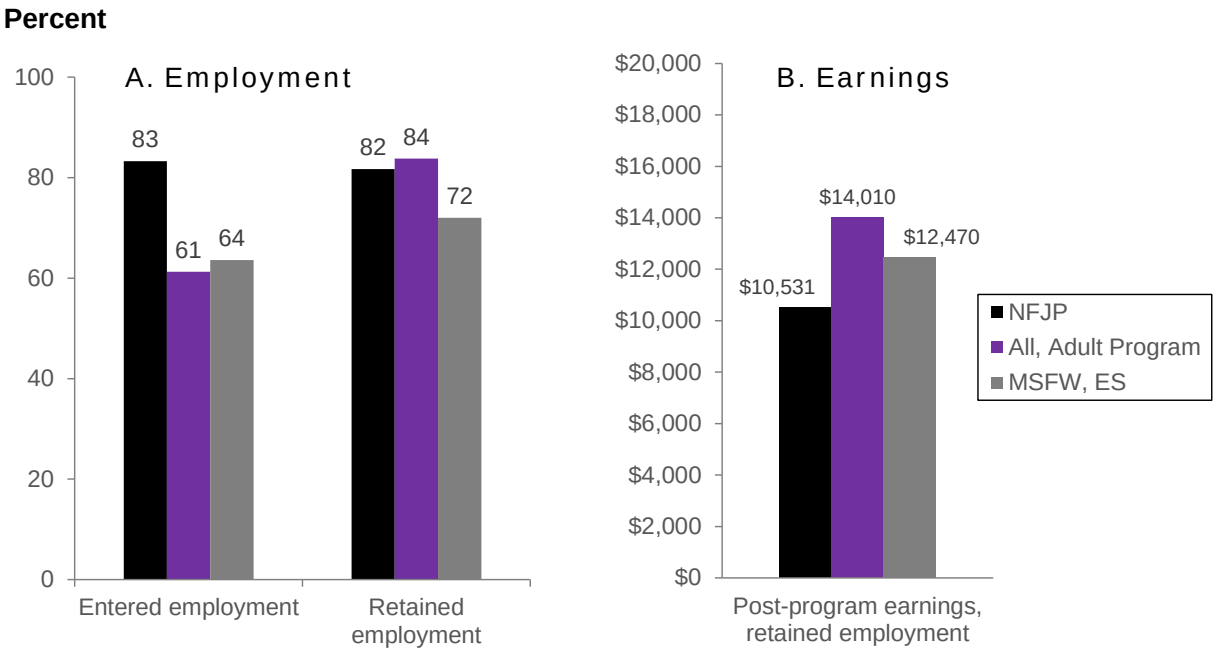


Sources: LERS for the ES; WIASRD for the Adult Program; CRIS for the INAP; and Appendix D, Table D.10.

A comparison of MSFW leaving the NFJP with MSFW leaving the ES and the average customer leaving the Adult Program shows that (Figure II.7):

- **Entered employment.** About 83 percent of customers leaving the NFJP entered employment in the first quarter after leaving the program, compared to 64 percent after leaving the ES. NFJP customers were about 22 percentage points more likely to enter employment than the general population of the Adult Program customers.
- **Retained employment.** About 82 percent of customers employed in the first quarter after leaving the NFJP retained it through the third quarter, compared to 72 percent leaving the ES and 84 percent of all customers leaving the Adult Program.
- **Average earnings.** Earnings in the second and third quarters after leaving the NFJP customers were $10,531, which is lower than the $12,470 average earnings of MSFW who left the ES and the $14,010 average earnings for customers leaving the Adult Program.

Figure II.7. Outcomes for MSFW following NFJP and ES participation



Sources: LERS for ES; WIASRD for Adult Program; WIASPR for NFJP; and Appendix D, Tables D.9 and D.10.

Note: Because MSFW cannot be identified in the Adult Program, we use the average for all customers.

III. SUBPOPULATIONS IN THE GENERAL WORKFORCE PROGRAMS

The ES and WIA Adult Program serve a wide range of job seekers, including the subpopulations studied. Little is known about how these general workforce programs serve the unique needs of these groups and how each subpopulation fares after receiving services. To help DOL better understand its customers, this chapter answers the following research questions:

- Within the ES and Adult Program, what are differences in the demographic and local area characteristics, services received, and program outcomes of Hispanic, Asian, Pacific Islander, INA, and MSFW customers?
- Within the ES and Adult Program, to what extent can differences in the services subpopulations received be explained by differences in their demographic and local area characteristics?
- To what extent can subpopulation differences in post-participation employment and earnings be explained by differences in subpopulation demographic and local area characteristics and program services received?

In this chapter, Section A presents descriptive statistics to assess similarities and differences in characteristics, Section B presents the information on program services received, and Section C presents information on post-participation outcomes across subpopulations within each program. The chapter also presents results of multivariate analysis to identify associations between (1) characteristics and program services received, to assess whether differences in the former can explain variation in the latter (Section B); and (2) characteristics, program services, and post-participation outcomes, to assess whether differences in services can explain differences in the subpopulations' post-participation outcomes (Section C). The final section of the chapter summarizes the study's research findings.

Key chapter findings

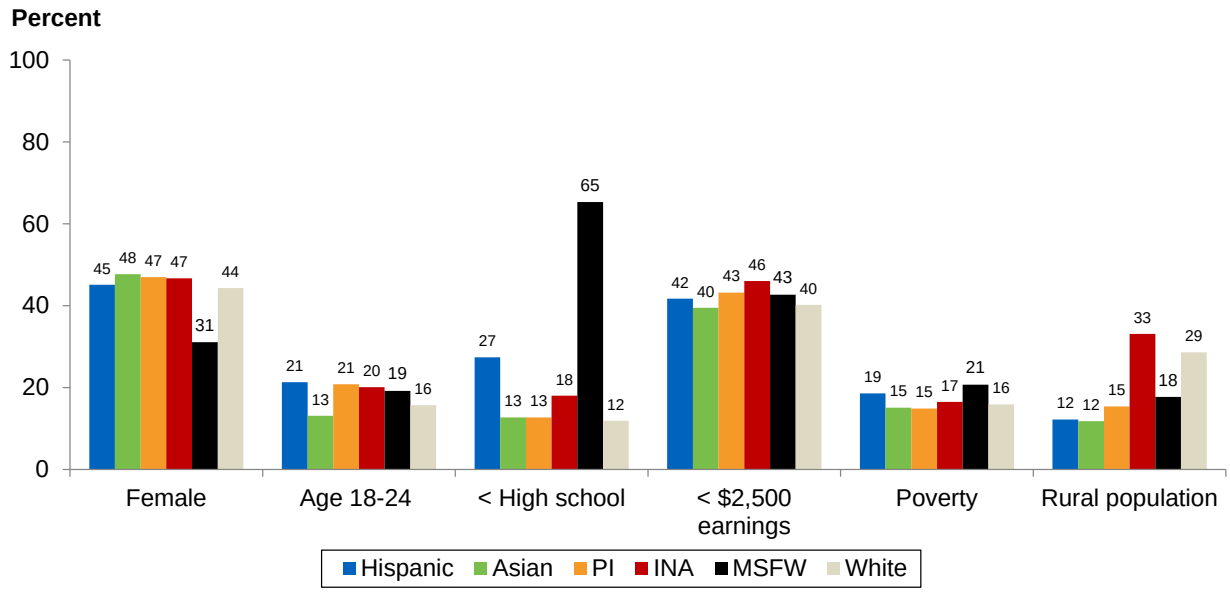
- Preexisting characteristics vary widely between subpopulations in ES and Adult Program customers.
- Although the services each subpopulation received from both programs differed, they do not follow a systematic pattern. Differences that do exist are generally explained by the characteristics that customers bring to the program.
- INA and MSFW had lower rates of employment and earnings than whites after they left the ES and Adult Program.
- Hispanics leaving the Adult Program and MSFW leaving the ES were more likely to enter employment than whites.
- Asians were more likely to retain employment and have higher earnings after leaving both programs than whites.
- Most differences in post participation employment and earnings were explained by characteristics customers brought to the program. Services received explained very little of the differences.

A. Customer and local area characteristics

The characteristics of ES customers, as described in Chapter II, were based on average characteristics of customers who left the program in 2011. Such averages mask the wide variation in characteristics among subpopulations served in the program. When we examine the characteristics often associated with barriers to employment among the subpopulations, we see notable differences (Figure III.1). Examples of the differences include:

- **Basic demographics.** The percentage of females ranged from 31 percent (MSFW) to 48 percent (Asians). The percentage of younger customers—those between ages 18 and 24—ranged from 13 percent (Asians) to 21 percent (Hispanics and PI).
- **Education and prior earnings.** The percentage of customers with less than a high school education before they started the ES ranged from 13 percent (Asians and PI) to 65 percent (MSFW). Subgroups were more similar in terms of pre-program earnings. The percentage with earnings below $2,500 in the second and third quarters before program participation ranged from 40 percent (Asians and whites) to 46 percent (INA).
- **Local poverty rate and rurality.** The percentage of the local area in poverty ranged from 15 percent (Asians and PI) to 21 percent (MSFW). Rurality varied even more. The percentage of the local area that is rural ranged from 12 percent (Asians and Hispanics) to 33 percent (INA).

Figure III.1. Characteristics of subpopulations leaving the ES



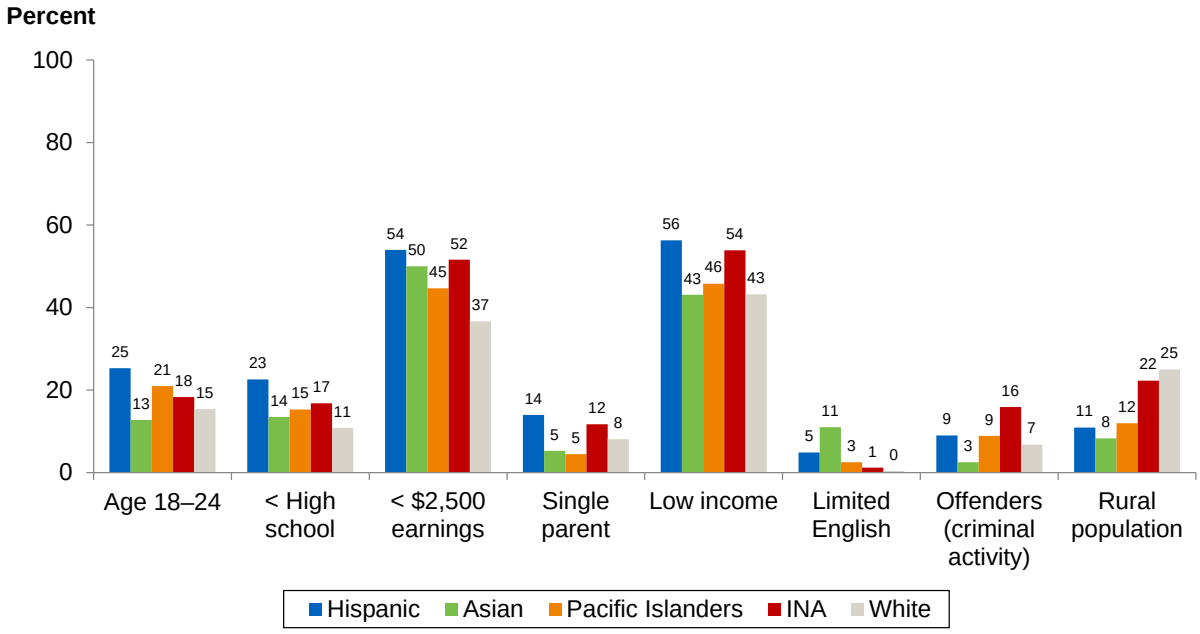
Sources: LERS and Appendix D, Tables D.2.

Note: Information on single parents and low income is not available for the ES. < $2,500 is defined as having earnings below $2,500 in the second and third quarters before program participation.

Similar variation exists in the characteristics of customers leaving the Adult Program (Figure III.2). Some of the notable differences in characteristics include:

- **Youth.** The percentage ages 18 to 24 ranged from 13 percent (Asians) to 25 percent (Hispanics).
- **Education and prior earnings.** The percentage of customers with less than a high school education ranged from 14 percent (Asians) to 23 percent (Hispanics), compared to 11 percent of whites. The percentage with pre-program earnings less than $2,500 in the second and third quarters before program participation ranged from 45percent (PI) to 54 percent (Hispanics), compared to only 37 percent of whites. Similarly, the percentage with low income ranged from 43 percent (Asians and whites) to 56 percent (Hispanics).
- **Other barriers.** The percentage of single parents ranged from 5 percent (Asians and PI) to 14 percent (Hispanics). The percentage who were offenders ranged from 3 percent (Asians) to 16 percent (INA).
- **Language ability.** The percentage with limited English ranged from 1 percent (INA, with whites less than 1 percent) to 11 percent (Asians).
- **Rurality.** The percentage likely to enter a labor market in a more rural area after program participation ranged from 8 percent (Asians) to 22 percent (INA).

Figure III.2. Characteristics of subpopulations leaving the Adult Program



Sources: WIASRD and Appendix D, Table D.4.

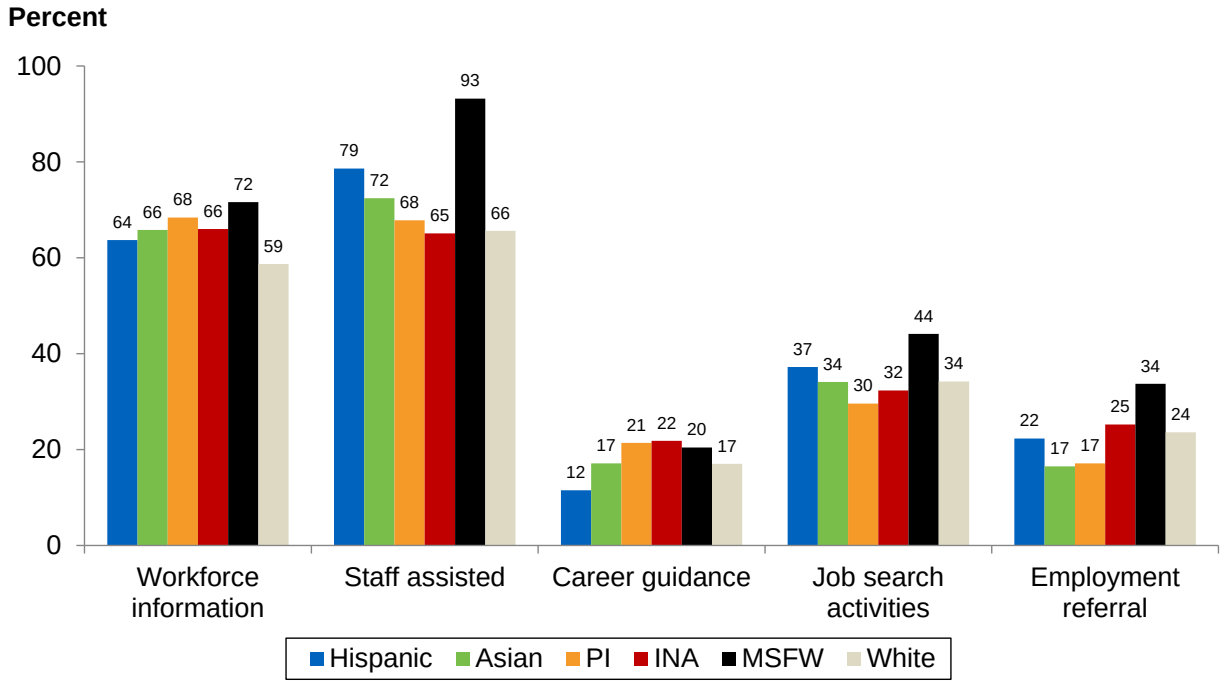
Note: Information on MSFW is not available for the Adult Program. < $2,500 is defined as having earnings below $2,500 in the second and third quarters before program participation.

B. Services received

The pattern of service receipt among the subpopulations differed significantly. Of note, a greater proportion of MSFW received each type of service than other subpopulations. Some of the notable differences among the subpopulations leaving the ES include the percentage who received (Figure III.3):

- **Workforce information services**, which ranged from 59 percent (whites) to 72 percent (MSFW).
- **Staff-assisted services**, which ranged from 66 percent (whites and INA) to 93 percent (MSFW).
- **Career guidance**, which ranged from 12 percent (Hispanics) to 22 percent (INA).
- **Job search activities**, which ranged from 30 percent (PI) to 44 percent (MSFW).
- **Employment referrals**, which ranged from 17 percent (Asians and PI) to 34 percent (MSFW).

Figure III.3. Services received by subpopulations leaving the ES



Sources: LERS and Appendix D, Tables D.7 and D.8.

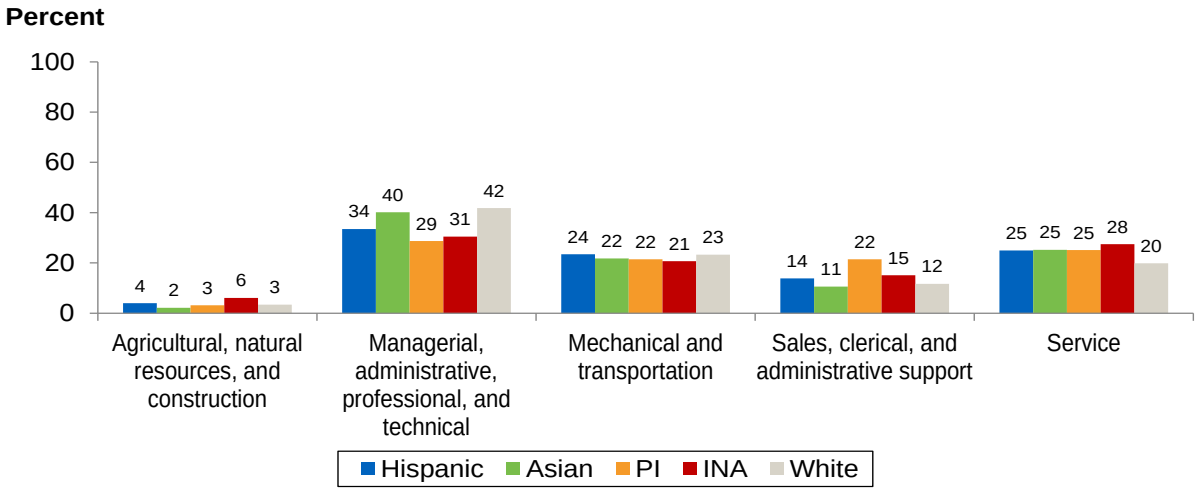
Fewer differences existed between the subpopulations leaving the Adult Program than in the ES. Some of the notable differences among the subpopulations leaving the Adult Program include the percentage that received (Appendix D, Table D.9):

- **Supportive services,** which ranged between 15 percent (Asians and whites) and 24 percent (INA).
- **Training,** which ranged between 20 percent (PI) and 29 percent (INA).

Some differences also existed in the focus of occupational training, for those who received training (Figure III.4). Specifically, for the subpopulations studied:

- **Focus of occupational training.** Between 29 percent (PI) and 40 percent (Asians) received managerial, administrative, professional, and technical training. All subpopulations had a lower percentage than whites training for jobs in this area. Between 11 percent (Asian) and 22 percent (PI) trained for sales, clerical, and administrative support jobs. All subpopulations had a greater percentage of customers train for service occupations than did whites.

Figure III.4. Occupational training for subpopulations leaving the Adult Program



Sources: WIASRD and Appendix D, Table D.9.

Because both the ES and the Adult Program customize their service delivery to individual needs, the differences in services received among subpopulations might be explained by differences in their characteristics. Our staged regression analysis examines how the differences in service receipt between whites and each racial/ethnic subpopulation (or between non-MSFW and MSFW) change when accounting for the differences in customer or local area characteristics (Appendix D, Table D.11). After controlling for characteristics, the only groups where there remains a greater than 5 percentage point differential in service receipt are:

- In the ES, MSFW have a 15 percentage point higher rate of referral to employment than non-MSFW.
- PI leaving the Adult Program have a 6 percentage point lower rate of receiving training than whites.

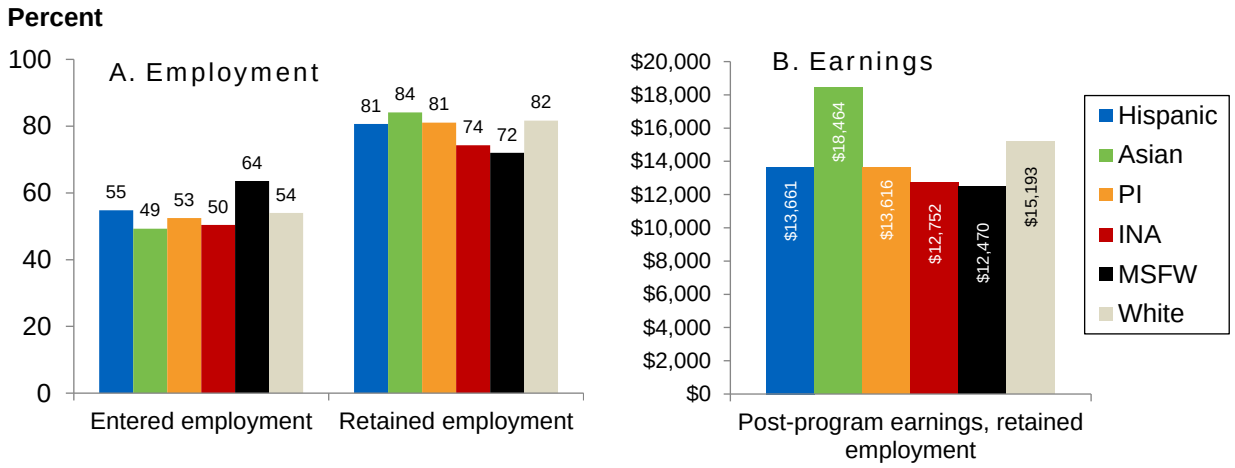
- Among those who received training in the Adult Program, three groups have a lower percentage of receiving training for managerial, administrative, professional, and technical training: Hispanics and INA (6 percentage points) and PI (10 percentage points).

C. Post-participation outcomes

The differences in characteristics that subpopulations brought to the general programs suggest that employment and earning differences will follow participation in them. Descriptive analyses show such differentials. For customers leaving the ES (Figure III.5):

- **Entered employment.** Between 49 percent (Asians and INA) and 64 percent (MSFW) of those not employed at program entrance entered employment in the first quarter.
- **Retained employment.** Between 72 percent (MSFW) and 84 percent (Asian) of those employed in the first quarter after leaving the ES retained employment into the third quarter.
- **Average earnings.** Earnings in the second and third quarters after participation (for those employed in each of the first three quarters) ranged from $12,470 (MSFW) to $18,464 (Asians). All subpopulations, except for Asians, had lower post-participation earnings than whites.

Figure III.5. Post-participation outcomes for subpopulations in the ES

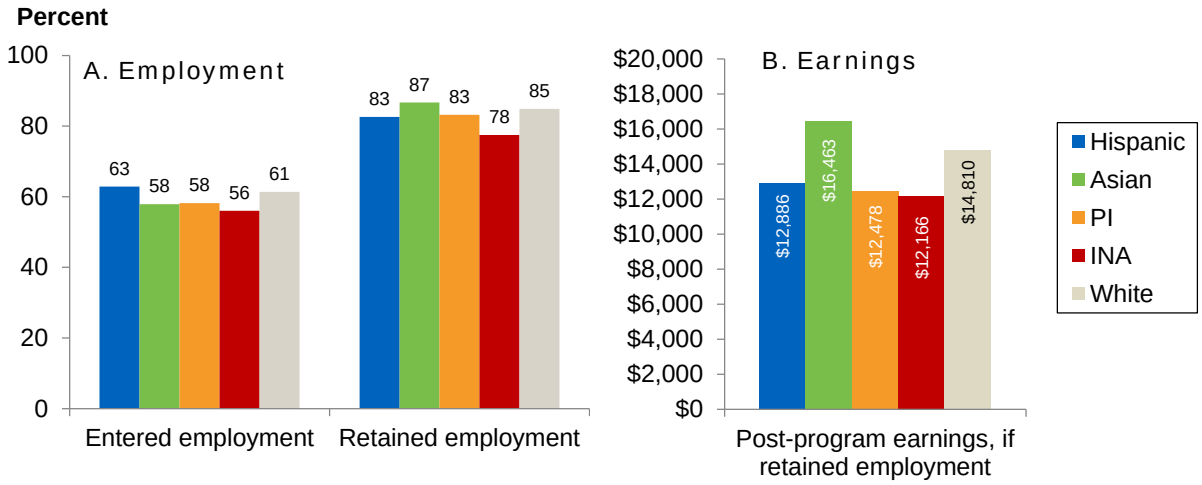


Sources: LERS and Appendix D, Tables D.7 and D.8.

Levels of employment and earnings were similar for those leaving the Adult Program. Specifically, for customers leaving the Adult Program (Figure III.6):

- **Entered employment.** Between 56 percent (INA) and 63 percent (Hispanics) who were not employed at program entrance entered employment in the first quarter after leaving the program.
- **Retained employment.** Between 78 percent (INA) and 87 percent (Asians) retained employment for the second and third quarters after program participation.
- **Average earnings.** Average earnings in the second and third quarters after participation ranged from $12,166 (INA) to $16,463 (Asians).

Figure III.6. Post-participation outcomes for subpopulations in the Adult Program



Sources: WIASRD and Appendix D, Table D.9.

Because subpopulations differ in characteristics and program services received, these factors might underlie the differences observed in post-participation employment and earnings. Table III.1 shows the difference between whites and each racial/ethnic subpopulation and between non-MSFW and MSFW in employment and earnings after using a regression framework to account for differences in characteristics. Differences in post-participation employment between each racial/ethnic subpopulation and whites are relatively small: less than 5 percentage points after accounting for characteristic differences. Differences in entered employment after leaving the ES are larger between MSFW and non-MSFW. These differences usually remained unchanged when taking into account group-to-group differences in the services customers received in the program (Appendix D, Table D.12).

Table III.1. Differences in post-participation outcomes net of characteristics

	Hispanics	Asians	PI	INA	MSFW
Employment Service					
Entered employment	+4.1*	-3.4*	-1.4*	-5.8*	+15.6*
Retention	+0.9	+1.5*	-0.2	-6.5*	-4.9*
Earnings	-$372*	+$1,338*	-$750*	-$554*	+$870*
Adult Program					
Entered employment	+4.2*	-2.4*	-1.1	-3.6*	NA
Retention	+0.4	+1.9*	-0.2	-4.8*	NA
Earnings	-$241	+$1,262	-$1,139*	-$704*	NA

Source: Appendix D, Table D.12.

Note: Numbers show the average marginal effect from a probit estimation of employment (that is, percentage point difference) or the coefficient from the ordinary least square estimation of earnings (that is, the dollar change). White was the omitted category in the estimations for racial/ethnic subpopulations, and MSFW was a binary variable in estimations for that subpopulation. An asterisk (*) indicates a significant difference ($p \leq 0.05$) from whites (racial/ethnic subpopulations) or non-MSFW (MSFW).

NA = not available.

D. Customers served: Implications of findings

This study helps fill a gap in knowledge about customers served in workforce programs by providing insights into characteristics, services received, and post-participation employment and earnings of adult Hispanics, Asians, Pacific Islanders, INA, and MSFW customers who participated in general and specialized workforce investment programs. By providing information on how these factors vary among subpopulations in each program and between the general and more specialized populations, the study helps build a better understanding of customers served in workforce investment programs. By building on such information, policymakers and program heads can better tailor resources to meet the needs of the diverse customers served in the workforce system.

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APPENDIX A

CONSTRUCTING DATA SETS

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This appendix describes the four databases used in this study. Each database was derived from individual-level administrative data for one of the programs examined in this study: the Employment Service (ES), and the WIA (Workforce Investment Act) Adult Program, Indian and Native American Program (INAP), and the National Farmworker Jobs Program (NFJP). Table A.1 summarizes the following:[1]

1. **LERS** (Labor Exchange Reporting System) contains information on customers using labor exchange services from the ES or the Veterans' Employment and Training Services (VETS) program. Social Policy Research Associates (SPR) provided Mathematica Policy Research with an extract from the program year (PY) 2012 quarter 3 public use data file on January 31, 2014. The file contained information for customers who left the program in calendar year 2011 and was subjected to the quality control checks listed in Section A.1.
2. **WIASRD** (Workforce Investment Act Standardized Record Data) contains information on customers receiving services from the Adult Program. The public-use file used in this report is drawn from PY 2012 quarter 3 WIA reporting.
3. **SPIR** (Standardized Program Information Record) contains information on customers who left the INAP after ending program participation. These nonpublic data were provided to Mathematica by the U.S. Department of Labor (DOL) on March 3, 2014. The file contained deidentified data from the SPIR administrative data systems.
4. **WIASPR** (Workforce Investment Act Standardized Participant Record) contains information on customers who left the NFJP after ending program participation. SPR provided these nonpublic data to Mathematica on December 12, 2013. The file contained deidentified data for participants who left the program in calendar year 2011.

Table A.1. Description of administrative data source files

Program	Data	Description	Source	Number of records in source file	Study sample
ES	LERS	Extract from public use file of people who left the program in 2011	SPR	16,160,000	15,713,778
Adult Program	WIASRD	PY 2012 quarter 3 public use data	http://www.doleta.gov/performance/results/#wiasrdQuarterly	5,141,304	419,803
INAP	SPIR	Private use file with information through March 3, 2014	SPR	388,509	8,367
NFJP	WIASPR	Extract from private use file of people who left the program in 2011	DOL	13,200	7,237

DOL = U.S. Department of Labor; ES = Employment Service; INAP = Indian and Native American Program; LERS = Labor Exchange Reporting System; NFJP = National Farmworkers Jobs Program; PY = program year; SPIR = Standardized Program Information Report; SPR = Social Policy Research Associates; WIASRD = Workforce Investment Act Standardized Record Data; WIASPR = Workforce Investment Act Standardized Participant Record.

[1] Two states, Pennsylvania (starting in August 2005) and Texas (starting in 2006), began piloting the Workforce Investment Streamlined Performance Reporting System, now called One-Stop Consolidated Customer Record. Because this system includes performance measurement data collected for the ES; VETS; Adult, Dislocated Workers, and Youth; Trade Adjustment Assistance; and National Emergency Grants, information for the LERS and WIASRD were built from these data for these two states.

We used these data to examine customers who left programs in 2011, because data for PY 2012 quarter 3 were the latest available for the ES and the Adult Program by the time analysis for this study began.[2] Using information on customers for a full year removes biases from seasonal labor market fluctuations from our analysis. We linked 2011 characteristics of the area from which customers received services to each of these files to capture geographic information about the labor market from which individuals were likely to enter. Information was drawn from four sources: Census of Employment and Wages (CEW), Local Area Unemployment Statistics (LAUS), Missouri Census Data Center (MCDC), and Small Area Income and Poverty Estimates (SAIPE). Table A.2 describes the information taken from each source.

Table A.2. Description of source files used for geographic descriptors

Data	Acronym	Information obtained	Source
Census of Employment and Wages	CEW	2011 average annual percentage of employees in 14 different industrial sectors	http://www.bls.gov/cew/
Local Area Unemployment Statistics	LAUS	2011 labor force size and annual unemployment rate	http://www.bls.gov/lau
Missouri Census Data Center	MCDC	Percentage of the population that lived in a rural area in 2010	http://mcdc.missouri.edu
Small Area Income and Poverty Estimates	SAIPE	Percentage of all people with income below the federal poverty level, 2011 annual average	http://www.census.gov/did/www/saipe/about/index.html

The four customer-level data files, as augmented with the geographic information, comprise the four data files used for analysis in this study. Section A of this appendix describes how we prepared each of the four customer-level databases and Section B describes how we linked geographic information to them.

A. Customer-level data

The four administrative data sets referred to earlier captured individual-level information about each program of interest. In each program, staff members collected data on people receiving services using a standardized set of data fields. Although the specifics of the fields varied somewhat across the programs, they generally included information on (1) demographic characteristics and pre-program earnings and employment, (2) program participation, and (3) at least two quarters of post-participation employment outcomes.

Our unit of analysis in each database is a participation spell, which the Training and Employment Guidance Letter 17-05 (Section 6B) defines as when the start date of the second participation is more than 90 days from the exit date of the prior participation. Because DOL defines participation as starting on the date a person first receives a service funded by the program and ending on the date of last service, a customer is defined as exiting the program when he or she does not receive any service funded by the program or a partner program for 90 consecutive calendar days, has no planned gap in service, and has no future services scheduled (ETA 2006). A customer can have more than one participation spell in at least two ways. A customer can (1) return for services more than 90 days after leaving a program (at either the

[2] Six quarters must elapse after a customer leaves the program for three quarters of wage records to be collected, given the two-quarter lag in data availability. Customers who left a program in calendar year 2011 quarter 4 are therefore the most recent group with complete outcome measures.

same American Job Center [AJC] or a different one) or (2) receive services from more than one grantee or AJC within 90 days of receiving services from another.

Although we use the term *customer* to describe our unit of analysis, the data actually describe a participation spell, leaving customers with multiple spells of participation (and multiple records) treated as independent observations. Using a participation spell as the unit of analysis was necessary because we could not distinguish records of the same individual with two different participation spells (repeat customers) from records of two different individuals each with one participation spell. Although records are required to contain a unique identification number that would enable us to identify repeat customers within a program, not all databases contain participant-specific identifiers.[3] Because we examined customers who left the program during one year, multiple records for the same customer exist only for those who left more than once within a four-quarter period.

For all programs, we restricted samples to adults (those at least 18 years old) who left the program in calendar year (CY) 2011 and received services in one of the 50 states or Washington, D.C. (geographic data are not available for U.S. territories). Each database had additional specific restrictions, as discussed below. Table A.1 reports the resulting sample sizes.

1. The Employment Service

The LERS administrative data provide information for customers using the labor exchange services and covers the ES and VETS programs. Databases containing participant-level records were started in PY 2012, with program participants defined as those who receive employment and/or workforce information services at an AJC. People enter the database when they start program participation and remain in it for eight quarters after they exit. Information on employment and earnings was drawn from unemployment insurance (UI) wage data records.

Because we subjected the public use file to data verification processes, numbers in our report could differ from those reported by DOL in its annual 9002 reporting. We summarize the changes to the variables used in this study to highlight areas of potential discrepancies between the two.[4] Our data verification procedures helped ensure data consistency with DOL data specifications, as defined in Training and Employment Guidance Letter 17-05 (ETA 2006) and the *ETA 9002 and VETS 200 Data Preparation Handbook* (ETA 2009); ensure consistency in data fields across states; and identify patterns in missing data. Many procedures are the same as or similar to those that SPR performed on the WIASRD data. Data checks focused on six key

[3] In the LERS and WIASRD, Michigan and Ohio had no instances of a duplicate ID, which reflects a repeat customer. In the LERS, other states had a 22 percent duplicate ID rate (total number of observations minus the number of observations with an ID that was never repeated divided by the total number of observations). The WIASRD had a 6 percent duplicate ID rate among states other than Michigan and Ohio. All states in the SPIR had duplicate IDs, with a duplicate ID rate of 99 percent, meaning that nearly all observations appeared in the data set more than once. The WIASPR had a duplicate rate of 3 percent among the states that contained duplicate records. Of note, 24 states (Arizona, Arkansas, Delaware, Hawaii, Illinois, Kansas, Maine, Maryland, Mississippi, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Vermont, Washington, and West Virginia) did not have repeat IDs.

[4] We identified several issues in the LERS fields related to veterans' status, but only reported changes in this appendix that affected variables used in this study.

areas: (1) missing data; (2) the consistency of the data with DOL's specifications; (3) the consistency of how fields were coded across states; (4) state-specific reporting issues (for example, instances in which a state reported no observations of a field coded as yes, but some observations coded as no); (5) invalid codes or entries; and (6) duplicate records. We discuss these topic areas in their order of prevalence.

a. Missing data

In addition to all data in North Carolina being missing (it was not uploaded in program year 2013 quarter 3), item-specific missing data (that is, reported blanks were inconsistent with the rules for a given field) were identified in 48 fields. For example, many observations across all states contained blank values in the five fields that record race, a noteworthy problem for this study. In most fields that contained missing data, only a subset of states—not all states—had blank values. For example, many observations in California, Illinois, Nevada, and Washington had blank values in the field identifying gender. In a few cases, we identified a way to backfill missing entries. For example, we recoded blank observations in Eligible Veteran Status (field 17) to 4-No when field 16 was not 1-Yes. Table A.3 shows the fields we used to construct analytical variables in which we identified missing data issues and describes how we addressed the issues.

Missing data also exist for 18 percent of customers in field 87, WIB (workforce investment boards) Name, which is how we linked geographic characteristics to a customer's record (see Section B). The following issues exist (Table A.4):

- Colorado, Georgia, Idaho, Massachusetts, Maine, Michigan, and Oregon did not provide a WIB name for any customer. We could not address this issue.
- Alaska and South Dakota did not provide a WIB name for any customers. Because these states have only one WIB, we coded all observations into the single WIB.
- California, Connecticut, Florida, Iowa, Louisiana, Maryland, Minnesota, Mississippi, Montana, Nebraska, New Mexico, New York, Ohio, Rhode Island, South Carolina, Virginia, Washington, Wisconsin, and West Virginia provided a WIB name for some but not all customers.

Table A.3. Missing data

Field	Issue and states affected	Action
04: Gender	Many blanks in California, Illinois, Nevada, and Washington.	Left as missing.
05: Date of Program Participation	51 records reported by Arizona had no date of program participation.	Deleted these records.
09-14: Race	Across states, race is not reported in many records.	Left as is.
17: Eligible Veteran Status (used to construct Veteran or Eligible Spouse)	Alabama, Arizona, Arkansas, Delaware, Georgia, Illinois, Indiana, Kansas, Oklahoma, and Vermont reported only codes 1,2,3-Yes and blanks and did not report any 4-No's.	Changed blank to 4-No when field 16 is 2-No.
17: Eligible Veteran Status (used to construct Veteran or Eligible Spouse)	Idaho, Massachusetts, Mississippi, Montana, Puerto Rico, and Washington reported many blank or 0 in addition to codes 1 through 4.	Changed blank or 0 to 4-No when field 16 is 2-No.
26: Employment Status at Participation	California, Indiana, and Washington reported many blanks. This field should not be blank.	Left as missing.
27: Highest Grade Completed (used to construct Education)	Alabama, Arizona, Arkansas, California, Florida, Massachusetts, Montana, New Jersey, New Mexico, Nevada, Tennessee, and Washington reported many blanks.	Left as missing.

Field	Issue and states affected	Action
34: Most Recent Date Received Staff-Assisted Services (used to construct Staff Assisted Services)	Connecticut and Minnesota (n = 64) reported blanks that can be filled with the most recent date received staff-assisted services for DVOP or LVER clients (field 35 or 36).	Changed blank to latest date in field 35 or 36.
35: Most Recent Date Received Staff-Assisted Services (DVOP) (used to construct LVER or DVOP)	Texas and Virgin Islands reported all blanks.	Left as missing.
36: Most Recent Date Received Staff-Assisted Services (LVER) (used to construct LVER or DVOP)	Texas and Utah reported all blanks.	Left as missing.
38: Most Recent Date Received Intensive Services (DVOP) (used to construct LVER or DVOP)	Virgin Islands reported all blanks.	Left as missing.
39: Most Recent Date Received Intensive Services (LVER) (used to construct LVER or DVOP)	Utah reported all blanks.	Left as missing.
40: Most Recent Date Received Career Guidance (used to construct Career Guidance)	Minnesota, Montana, Oregon, and Puerto Rico (n = 721) reported blanks that can be filled with the latest date the job seeker received career guidance services from DVOP or LVER staff (field 41 or 42).	Changed blank to latest date in field 41 or 42.
41: Most Recent Date Received Career Guidance (DVOP) (used to construct LVER or DVOP)	Virgin Islands reported all blanks.	Left as missing.
42: Most Recent Date Received Career Guidance (LVER) (used to construct LVER or DVOP)	Iowa and Utah reported all blanks.	Left as missing.
43: Most Recent Date Received Self-Service Workforce Information Services (used to construct Workforce Information Service)	California, Georgia, Idaho, Iowa, Mississippi, New York, Oregon, Texas, Washington, and West Virginia reported all or mostly blanks.	Left as missing.
44: Most Recent Date Received Staff-Assisted Workforce Information Services (used to construct Workforce Information Service)	Maine reported all blanks.	Left as missing.
45: Most Recent Date Attended TAP Employment Workshop (DVOP) (used to construct LVER or DVOP)	Across states, very few records have a date.	Left as missing.
46: Most Recent Date Attended TAP Employment Workshop (LVER) (used to construct LVER or DVOP)	Across states, very few records have a date.	Left as missing.
47: Most Recent Date Received Job Search Activities (used to construct Job Search Activities)	Minnesota, Montana, Pennsylvania, and Puerto Rico (n = 325) reported blanks that can be filled with dates of job search activities for DVOP or LVER clients (field 48 or 49).	Changed blank to latest date in field 48 or 49.
48: Most Recent Date of Job Search Activities (DVOP) (used to construct LVER or DVOP)	Virgin Islands reported all blanks.	Left as missing.
49: Most Recent Date of Job Search Activities (LVER) (used to construct LVER or DVOP)	Connecticut, Iowa, Minnesota, Nebraska, South Dakota, Utah, and Virgin Islands reported most or all blanks.	Left as missing.
50: Most Recent Date Referred to WIA Services (used to construct WIA Services Referral)	Louisiana and Texas reported all blanks.	Left as missing.
51: Most Recent Date Referred to Employment (used to construct Employment Referral)	Across states, blanks were reported that can be filled with dates of referral by DVOP or LVER staff (field 52 or 53).	Changed blank to latest date in field 52 or 53.
52: Most Recent Date Referred to Employment (DVOP) (used to construct LVER or DVOP)	Arizona and Virgin Islands reported all blanks.	Left as missing.
53: Most Recent Date Referred to Employment (LVER) (used to construct LVER or DVOP)	Arizona and Utah reported all blanks.	Left as missing.
55: Most Recent Date Referred to Federal Training (DVOP) (used to construct LVER or DVOP)	District of Columbia, Louisiana, Mississippi, Montana, and Virgin Islands reported all blanks.	Left as missing.
56: Most Recent Date Referred to Federal Training (LVER) (used to construct LVER or DVOP)	District of Columbia, Iowa, Kansas, Louisiana, Mississippi, Montana, Puerto Rico, and Utah reported all blanks.	Left as missing.
61: Most Recent Date Referred to Federal Job (DVOP) (used to construct LVER or DVOP)	Arizona, Connecticut, Delaware, Michigan, Montana, Virgin Islands, and Vermont reported all blanks.	Left as missing.
62: Most Recent Date Referred to Federal Job (LVER) (used to construct LVER or DVOP)	Arizona, Colorado, Connecticut, Iowa, Kansas, Michigan, Montana, and Utah reported all blanks.	Left as missing.
73: Other Reasons for Exit (used to verify legitimate skip conditions for outcome variables)	Many states reported blanks.	Changed blank to 0 for exiters.
82, 83, 84: Wages 1st, 2nd, 3rd Quarters After Exit Quarter (used to construct Post-participation Earnings, including those who did not retain employment)	Colorado, Maine, Mississippi, Missouri, Montana, Oregon, Puerto Rico, and Washington had some blank values. $999,999 is to be used for unavailable wages, so assume blank means 0.	Changed blank to 0 for exiters.

DVOP = Disabled Veterans Outreach Program; LVER = local veterans' employment representatives; n = number of customer records; TAP = Transition Assistance Program.

Table A.4. Missing WIB codes

State	Blank	Valid	Total	Percentage valid	Comments
Alaska	0	121,215	121,215	100.0	Only one WIB
Alabama	0	366,160	366,160	100.0	
Arkansas	0	243,692	243,692	100.0	
Arizona	0	174,770	174,770	100.0	
District of Columbia	0	38,146	38,146	100.0	Only one WIB
Delaware	0	60,605	60,605	100.0	Only one WIB
Hawaii	0	56,191	56,191	100.0	
Illinois	0	693,034	693,034	100.0	
Kansas	0	172,896	172,896	100.0	
Kentucky	0	233,857	233,857	100.0	
Missouri	0	384,509	384,509	100.0	
North Dakota	0	109,678	109,678	100.0	Only one WIB
New Hampshire	0	76,819	76,819	100.0	Only one WIB
New Jersey	0	234,982	234,982	100.0	
Nevada	0	113,472	113,472	100.0	
Oklahoma	0	139,511	139,511	100.0	
Pennsylvania	0	393,153	393,153	100.0	
South Dakota	0	78,933	78,933	100.0	Only one WIB
Tennessee	0	448,268	448,268	100.0	
Texas	0	1,661,446	1,661,446	100.0	
Utah	0	305,399	305,399	100.0	Only one WIB
Virginia	0	7,155	7,155	100.0	
Vermont	0	25,154	25,154	100.0	Only one WIB
Wyoming	0	74,363	74,363	100.0	Only one WIB
Indiana	12	364,512	364,524	100.0	
West Virginia	16	117,520	117,536	100.0	
New York	414	517,134	517,548	99.9	
California	4,919	1,914,610	1,919,529	99.7	
Ohio	1,370	434,408	435,778	99.7	
Montana	424	130,542	130,966	99.7	
South Carolina	3,024	382,411	385,435	99.2	
Wisconsin	1,760	106,842	108,602	98.4	
Florida	14,991	901,528	916,519	98.4	
Nebraska	1,903	105,990	107,893	98.2	
Connecticut	3,619	199,268	202,887	98.2	
New Mexico	3,368	113,843	117,211	97.1	
Minnesota	6,820	219,271	226,091	97.0	
Virginia	12,126	344,084	356,210	96.6	
Mississippi	13,485	205,350	218,835	93.8	
Louisiana	37,461	360,151	397,612	90.6	
Rhode Island	3,573	29,950	33,523	89.3	
Maryland	20,637	129,382	150,019	86.2	
Washington	133,557	322,502	456,059	70.7	
Iowa	83,759	135,903	219,662	61.9	
Colorado	397,372	0	397,372	0.0	
Georgia	563,444	0	563,444	0.0	
Idaho	307,554	0	307,554	0.0	
Massachusetts	196,732	0	196,732	0.0	
Maine	82,630	0	82,630	0.0	
Michigan	558,324	0	558,324	0.0	
Oregon	395,547	0	395,547	0.0	
Puerto Rico	61,279	0	61,279	0.0	
North Carolina					Data not available
Total	**2,910,120**	**13,248,609**	**16,158,729**	**81.9**	

b. Inconsistencies with the DOL specifications

We identified inconsistencies with DOL specifications in 42 data fields. For example, field 28, School Status at Participation, should be Attending Post High School rather than Attending High School if and only if the Highest Grade Completed field is a number greater than 12 (and is not coded 89, Attained Certificate of Attendance or Completion). Some observations, however, had inconsistent data between the School Status at Participation and Highest Grade Completed fields. We corrected data in the field to align with the specifications and information in the Highest Grade Completed field. Table A.5 provides a detailed account of the fields used to construct analytical variables used in this study in which we identified inconsistencies, and describes how we addressed those inconsistencies.

Table A.5. Inconsistency with DOL specifications

Field	Issue and states affected	Action taken
17: Eligible Veteran Status	In Connecticut, Idaho, Michigan, Minnesota, Mississippi, Montana, Puerto Rico, and Washington (n = 598,591), not all Veterans (field 16 = 1-Yes) are coded as 1-Yes, ≤ 180 days or 2-Yes, Eligible Veteran.	Left as is.
17: Eligible Veteran Status (used to construct Veteran or Eligible Spouse)	Campaign Veterans are deemed to be 2-Eligible Veterans regardless of days served. Entries from District of Columbia, Florida, Hawaii, Louisiana, Maryland, Minnesota, Missouri, Montana, Nebraska, New Jersey, New Hampshire, New York, Puerto Rico, Rhode Island, South Carolina, Tennessee, Virginia, and Wyoming (n = 1154) are inconsistent with this rule. Special Disabled Veterans are deemed to be 2-Eligible Veterans regardless of days served. Entries from District of Columbia, Florida, Georgia, Hawaii, Louisiana, Maryland, Massachusetts, Missouri, Montana, Nebraska, New Hampshire, New Mexico, North Dakota, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, Tennessee, Utah, and Virginia are inconsistent with this rule. Recently Separated Veterans are deemed to be 2-Eligible Veterans regardless of days served. Entries across many states (n = 2,729) are inconsistent with this rule.	Changed to 2-Yes if field 19 = 1-Yes. Changed to 2-Yes if field 20 = 2-Yes, special disabled. Changed to 2-Yes if field 22 = 1-Yes.
17: Eligible Veteran Status (used to construct Veteran or Eligible Spouse)	Veterans should be coded 1-Yes, <180 days or 2-Yes, Eligible Veteran but in many states some are coded 4-No	Changed 4-No to blank if field 16 = 1-Yes
26: Employment Status at Participation	Field should be coded 2 if the customer is a transitioning service member (field 24 = 1). Across most states (n = 29,483), some observations were coded as another value.	Changed to 2-Employed but received notice of termination if field 24 = 1-Yes.
67: Most Recent Date Referred to a Federal Contractor Job (DVOP) (used to construct LVER or DVOP)	Across many states (n = 6,212), data were reported for job seekers who are not special disabled, campaign, or recently separated veterans.	Left as is.
68: Most Recent Date Referred to a Federal Contractor Job (LVER) (used to construct LVER or DVOP)	Across many states (n = 5,267), data were reported for job seekers who are not special disabled, campaign, or recently separated veterans.	Left as is.
70: Most Recent Date Entered Into Federal Contractor Job (DVOP) (used to construct LVER or DVOP)	Georgia, Indiana, Iowa, Massachusetts, Minnesota, Missouri, Nevada, Pennsylvania, Puerto Rico, Rhode Island, Tennessee, and West Virginia (n = 110) reported data for job seekers who are not special disabled, campaign, or recently separated veterans.	Left as is.
71: Most Recent Date Entered Into Federal Contractor Job (LVER) (used to construct LVER or DVOP)	Georgia, Indiana, Kentucky, Massachusetts, Mississippi, Missouri, Nevada, Pennsylvania, Puerto Rico, Tennessee, and West Virginia (n = 121) reported data for job seekers who are not special disabled, campaign, or recently separated veterans.	Left as is.
80, 81: Wages 3rd and 2nd Quarters Prior to Participation Quarter (used to construct Pre-Program Earnings)	Colorado, Mississippi, Montana, Oregon, Puerto Rico, and Washington reported blanks. 999999.99 is to be used for blank data. We assume that blank means 0.	Changed blank values to 0.

DVOP = Disabled Veterans Outreach Program; LVER = Local Veterans' Employment Representatives.
n = number of customer records.

c. Field coding inconsistencies across states

We identified inconsistencies in how different states coded values in 23 fields. In nearly all cases, a subset of states coded values to 0 in a field in which other states coded the values as blank. For example, five states (Connecticut, Iowa, Mississippi, Tennessee, and West Virginia) and Puerto Rico coded zeros rather than blanks as negative responses for field 30, Migrant and Seasonal Farmworker (MSFW). However, in some fields, Texas coded entries that should have been blank as 9. We changed those zeros or nines to blanks. Table A.6 provides a detailed account of fields used to construct analytical variables in which we identified coding inconsistencies across states, and discusses how we addressed those inconsistencies.

Table A.6. Consistency across states

Field	Issue and states affected	Action taken
04: Gender	Invalid code 0 in Colorado, Connecticut, Iowa, Minnesota, Montana, New Jersey, New York, Ohio, Oregon, Puerto Rico, Washington, Wisconsin, and West Virginia and code 9 in Texas.	Changed 0 or 9 to blank.
08: Individual with a Disability	Invalid code 0 in Alaska, Colorado, Connecticut, Idaho, Iowa, Minnesota, Missouri, New Jersey, New York, Oregon, Pennsylvania, Puerto Rico, Tennessee, Texas, Washington, West Virginia, and Wisconsin and code 9 in Texas. Invalid code 0 in PA and TX but none with code 2	Changed 0 or 9 to blank. Changed 0 to 2.
09-14: Race	Invalid code 0 across all states and code 9 in Texas.	Changed 0 or 9 to blank.
15: Ethnicity	Invalid code 0 across all states and code 9 in Texas.	Changed 0 or 9 to blank.
26: Employment Status at Participation	Connecticut, Puerto Rico, and West Virginia have invalid code 0.	Changed 0 to blank.
29: UC Eligible Status (used to create Unemployment Compensation Status)	Iowa, Mississippi, Puerto Rico, and West Virginia have invalid code 0.	Changed 0 to blank.
30: MSFW	Connecticut, Iowa, Mississippi, Puerto Rico, Tennessee, and West Virginia have invalid code 0.	Changed 0 to blank.
31: Interstate	Alaska, Connecticut, Iowa, New Jersey, New York, Ohio, Oregon, Pennsylvania, Puerto Rico, and Wisconsin have invalid code 0.	Changed 0 to blank.

MSFW = migrant and seasonal farmworker.

d. State reporting issues

We defined state reporting issues as occurrences in which specific states (1) did not report a certain code (such as the code for no), even though they reported other codes; (2) reported values for more customers than expected; (3) reported a large number of a values we would expect to be relatively infrequent; or (4) reported extreme dates. We identified 23 fields with state reporting issues. Although the types of issues varied, some descriptive examples include:

- Mississippi, Missouri, Oregon, and Washington reported no or few values of zero for fields 80 and 81: Wages in the 3rd and 2nd Quarters Prior to Participation Quarter.
- California and Ohio reported a Most Recent Date Received Staff-Assisted Services (field 34) for most or all customers.

In many cases, we addressed these issues, which usually involved recoding values that did not make sense to blanks or recoding one field based on information in others. Table A.7

provides a detailed account of the fields used to construct analytical variables in which we identified state reporting issues, and discusses how we addressed those issues.

Table A.7. State reporting issues

Field	Issue and states affected	Action taken
05: Date of Program Participation	New Mexico and Texas (n = 5) reported some extreme dates of participation: some before 1990 and others after the exit date reported for the customer.	Deleted records with participation dates before January 1, 1990 or after the exit date.
07: Date of First Staff-Assisted Service	California, Georgia, Indiana, Ohio, and Wisconsin reported only 1 or none as blank.	Left as is.
08: Individual with a Disability	Georgia, Idaho, and Puerto Rico did not report any values of 2-No. It is possible that some blanks mean No. Alabama, Nevada, and Washington have a large amount of blanks. It is possible that some blanks mean No.	Left as is. Left as is.
15: Ethnicity	Mississippi did not report any values of 2-No, and Colorado reported very few values of 2-No. It is possible that blank entries mean no.	Left as is.
17: Eligible Veteran Status (used to construct Veteran or Eligible Spouse)	Alabama, Arizona, Arkansas, Delaware, Georgia, Illinois, Indiana, Kansas, Oklahoma, and Vermont reported only codes 1, 2, 3-Yes, and blank. Pennsylvania and Texas reported only 1, 2, 3-Yes and 0. None of these states reported any values of 4-No. It is likely that blank or 0 entries mean no. Idaho, Massachusetts, Mississippi, Montana, Puerto Rico, and Washington reported many blanks in addition to codes 1 through 4. Connecticut, Michigan, and Mississippi reported no values of 1-Yes, < 180 days. Puerto Rico reported a few 0.	Changed blank or 0 to 4-No when field 16 = 2-No. Left Connecticut, Michigan, and Mississippi as is. Changed 0 to blank for Puerto Rico.
26: Employment Status at Participation	Alaska, Colorado, Idaho, Maine, Missouri, Puerto Rico, and Utah reported very few 2-Received notice of termination.	Left as is.
27: Highest Grade Completed (used to construct Education)	California, Connecticut, Florida, Nebraska, Ohio, and Oregon reported a large number as 12-completed grade 12 but did not graduate. This field requires high school graduates to be reported as code 87 and code 12 for people who completed the 12th grade but did not graduate. Before program year 2005, code 12 was used for all people who completed the 12th grade, including those who graduated. It is likely that many of these 12's are really graduates. Alaska, Arizona, Colorado, Idaho, Minnesota, Montana, South Dakota, Tennessee, Virgin Islands, and Wisconsin reported no or very few 12-completed grade 12 but did not graduate. Colorado reported no values of codes 88 to 91. Iowa, Missouri, and Oregon reported a large number of observations as 0-No school grades completed. It is likely these should be blank.	Left as is.
29: UC-Eligible Status (used to construct Unemployment Compensation Status)	Connecticut and Montana reported only 1-Claimaint Referred by WPRS and blank or 0. Alabama, Arizona, Arkansas, Delaware, Illinois, Kansas, Montana, Oklahoma, Pennsylvania, Puerto Rico, Texas, and Vermont reported no values of 4-Neither. It is likely that 0 and blank should be coded as 4-Neither. California reported only 1-Claimant referred by WRPS and 4-Neither. California, Connecticut, Idaho, and Montana reported no 2-Claimant not referred by WPRS. California, Colorado, Connecticut, Iowa, Montana, Ohio, and Tennessee reported no values of 3-Exhaustee. Minnesota reported many observations coded as 3-Exhaustee, and very few coded as 4-Neither.	Changed 0 or blank to 4-Neither for first two groups of states. Left others as is.
30: MSFW	Alabama, Arizona, Arkansas, Colorado, Connecticut, Delaware, Georgia, Illinois, Indiana, Kansas, Kentucky, Massachusetts, Mississippi, Montana, Nevada, Oklahoma, Tennessee, Utah, and Vermont reported only values of 1-Yes and 0 or blank.	Left as is.
34: Most Recent Date Received Staff-Assisted Services (used to construct Received Staff Assisted Service)	California and Ohio reported a date for most or all customers.	Left as is.
80, 81: Wages 3rd and 2nd Quarters Prior to	Mississippi, Missouri, Oregon, and Washington reported none or few as 0.	Left as is.

Field	Issue and states affected	Action taken
Participation Quarter (used to construct Pre-Program Earnings)		

MSFW = migrant and seasonal farmworker; UC = unemployment compensation; WRPS = worker profiling and reemployment services.

e. Invalid codes or entries

We found that some or all states had reported observations with invalid codes or entries in six fields. For example, Pennsylvania and Texas reported codes 6, 9, and 97—which are invalid—for field 73, Other Reasons for Exit. We changed these codes to blank. Across all states, some observations with negative wages or quarterly wages greater than $999,999.99 are reported (fields 80–84). Although negative wages are clearly invalid, we also assumed that wages above $999,999 are invalid, and set these values to blank. Table A.8 provides a detailed account of the fields used to create variables used in this study in which we identified invalid codes or entries, and discusses how we addressed those issues.

Table A.8. Invalid codes and entries

Field	Issue and states affected	Action taken
73: Other Reasons for Exit (used to verify legitimate skip conditions for outcome variables)	Pennsylvania and Texas reported codes 6, 9, and 97. However, these codes are invalid.	Changed codes 6, 9, 97 to blank.
80, 81: Wages 3rd and 2nd Quarters Prior to Participation Quarter (used to construct Pre-Program Earnings)	Alaska, Missouri, and Ohio reported values of $999,999 and/or $999,999.99. These values signify that the state was unable to obtain the wage record information because the quarter was too far back in time to access easily.	Changed values of $999,999 or $999,999.99 to blank.
82, 83, 84: Wages 1st, 2nd, 3rd Quarters After Exit Quarter (used to construct Post-participation Earnings Including Those Who Did Not Retain Employment)	Across all states, some values over $999,999.99 are reported. We assume such values are invalid. Colorado, Maine, Mississippi, Missouri, Montana, Oregon, Puerto Rico, and Washington reported blanks. 999999.99 is to be used for blank data. We assume that blank means 0.	Changed values over $999,999.99 to blank. Change blank values to 0.

f. Duplicate records

We identified records for four customers that appeared to be double entries, because the identification number, state, and exit date were identical. We kept only one record for each customer. In addition, we identified 17 records that appear to be the same customer with dates of service (for each record) that are fewer than 90 days apart using codes for identification and state codes.[5] We consolidated these records to make a single participation spell and used the demographics from the earliest participation date (unless blank), coded services used on any record, and outcome fields from the record with the latest exit date.

2. The Adult Program

The WIASRD provides information for people who receive services under the Adult, Dislocated Worker, and Youth programs. Databases with individual records started in PY 2000, with data elements revised for PY 2005 to accommodate the common measures. People enter the database when they start program participation and remain in it for nine quarters after they exit. Information on employment and earnings is drawn from UI wage data records. We restricted the

[5] If a person receives services in two states, the spells were not considered overlapping.

WIASRD to customers enrolled in the Adult Program; not registered in the WIA Youth Program; did not receive services as part of a statewide program (defined as a WIB code of xx9xx or enrolled in a program using statewide funding); and received at least one intensive or training service. The restriction of receiving one intensive or training service creates a clearer distinction between the ES and the Adult Program (see Training and Employment Notice 13-13 [ETA 2013]) by removing customers who received only core services through WIA.

3. The Indian and Native American Program

The SPIR provides information for individuals who received services and left the INAP. Databases with individual records started in PY 2006. People are reported in the SPIR when they leave the program and remain in it in each subsequent report quarter. Grantees provide information on employment and earnings, with information mostly taken from supplemental sources. This information is not the sole basis for performance measures in official DOL reports. Instead, the DOL combines the supplemental information on employment and earnings in the SPIR with information from aggregate Common Reporting Information System (CRIS) data based on UI wage records. Although we unsuccessfully explored the possibility of obtaining individual-level CRIS data, SPR provided aggregate-level CRIS data for entered employment for those leaving the program from October 1, 2010 to September 30, 2011, which is one quarter preceding our exit cohort, and data for retention and earnings for those leaving the program from April 1, 2011, to March 31, 2012, which is one quarter later than our exit cohort.[6] We report information from the CRIS in descriptive analysis, but use information from the SPIR in multivariate analysis.

Because individuals remain in the SPIR indefinitely after they leave the program, we retained a single record for a customer and removed multiple records.[7] We defined unique records as those with different identification numbers, dates of birth, and dates of participation. We retained information only from the most recent submission quarter (typically the submission from quarter 2 in PY 2013, although prior submissions were used for grantees that failed to submit or who were defunded before that submission).

4. The National Farmworker Jobs Program

SPR provided Mathematica with data extracted from the WIASPR administrative data systems on March 3, 2014.[8] The WIASPR databases with individual records were started in PY

[6] In addition, the samples differ slightly because the SPIR analysis file for this study does not contain New Hampshire because all 21 observations from New Hampshire were dropped during the data cleaning process.

[7] We analyzed only the customer's last record in the SPIR. If a start or exit date for one visit to a grantee fell within 90 days after the end date of another visit to the same grantee, we combined information into one record for consistency with DOL's definition of a participation spell. Because we identified grantees by their grant ID number, we could not identify overlapping participations if the visits were to a grantee whose grantee number changed (with, say different grants).

[8] Not all states are represented in the WIASPR. Alaska and Washington, D.C., do not have an NFJP training grantee and therefore are absent from the WIASPR. Two pairs of states serve customers through combined service areas: Connecticut and Rhode Island and Maryland and Delaware. Data for those leaving the program are not available for Nebraska because in 2011, the Nebraska NFJP grantee changed, which means the previous grantee did not provide data and the new grantee had not operated its program for a long enough period to have anyone leave.

2001, with data elements revised in PY 2005 to accommodate the common measures. Grantees collect information when people start program participation, although people enter the WIASPR database only when they leave the program. Customers remain in the database for three quarters after they leave the program. Information on employment and earnings is primarily taken from supplemental sources, such as pay stubs or employers' reports, in part because employment might not be covered and reported through wage records. DOL uses these data, whether from UI records or supplemental sources, as the official outcomes in NFJP performance measurement. Grantees are not required to collect outcome data for people receiving related-assistance services only. For this study, we restricted the WIASPR so that customers must have received workforce investment services. This restriction excluded customers receiving only a related-assistance service and removed customers whose participation was not directly driven by workforce investment-related activities.

B. Geographic-level data

We captured the characteristics of the local labor market that the customer was likely to enter after leaving the program by linking county-level information to the four customer-level files using the WIB code.[9] We drew this geographic information from four sources: CEW (http://www.bls.gov/cew/); LAUS (http://www.bls.gov/lau/); MCDC (http://mcdc.missouri.edu/); and SAIPE (http://www.census.gov/did/www/saipe/about/index.html). Appendix B, Table B.2 identifies the variables taken from each source.

We used a five-step process that included tailoring geographic data from each source to equivalent boundaries across the four customer-level databases and linking it using the geographically consistent area.

1. **Created a county-level file from data extracted from geographic sources.** We imported variables from CEW, LAUS, MCDC, and SAIPE at the county level[10] into a SAS file and kept only geographic areas within the United States, including the District of Columbia. During this process, we transformed information into analytic variables (for example, created the proportion of employment in an industry). We merged the four data sets into a single county-level file using the county and state Federal Information Processing Standard (FIPS) as the merge key. In cases in which county names differed across data sets despite having the same FIPS, the SAIPE data set's naming convention was preferred. This process generated a county-level data set containing all geographic variables used in this study.

2. **Linked counties to WIB areas.** Because the WIASRD and LERS files contain WIB and not county identifiers, we imported a source cross-walk between county and a WIB that DOL provided (PY 2012 WIA Local Area Jurisdiction Detail.xlsx, personal correspondence, December 24, 2013). We tweaked the cross-walk to improve accuracy by:

[9] All WIASRD, SPIR, and WIASPR records contain geographic identifiers as do 82 percent of LERS source-file records. Records without a geographic identifier could not be matched to geographic information.

[10] The CEW file was reshaped from county-industry level (that is, a long panel) to the county level (that is a wide panel) format during this process. We use the term *county* to include both counties and county equivalents.

- Building and applying a city-town-to-county cross-walk[11] for Southern New England to convert those areas to counties
- Correcting spelling and attribution errors
- Correcting for changing U.S. Census geographic areas and WIB regions (geography_shifts.csv, www.census.gov/geo/reference/boundary-changes.html) (dol_additions.csv, personal correspondence, February 11, 2014)
- Dropping areas that do not exist or are not counties, such as the defunct Washabaugh County in South Dakota, or Upper Peninsula in Michigan
- Removing the territories outside the United States, but keeping the District of Columbia

3. **Created a common geographic unit that would span data files.** The WIASRD and LERS have the WIB as the lowest level of geography, whereas the SPIR and WIASPR have the county as the lowest level. To ensure comparability of geographic information across data sets, we created a geographic unit that could be applied across the data files. Because most WIB areas are larger than counties, a WIB generally represents the lowest level of geography that can be constructed across the four data sets and we matched WIB boundaries to county borders, which serve as the boundaries for the CEW, LAUS, MCDC, and SAIPE variables. Specifically, we defined:

   - the county as the geographic unit and used county-level data to describe the area when WIB and county borders corresponded.
   - the county as the geographic unit and used county-level data to describe the area when a WIB was smaller than a county (for example, the city of Oakland WIB serves the city of Oakland, with a separate WIB serving the rest of Alameda County, California). Likewise, if a WIB included *parts* of multiple counties, we used county-level data from all of those counties, combined as described previously.
   - all counties as the geographic unit and used a weighted average to describe the area when a WIB encompassed multiple counties (for example, the Northern Rural Training & Employment Consortium includes Butte, Del Norte, Lassen, Modoc, Plumas, Shasta, Siskiyou, Tehama, and Trinity counties in California). We based the weights for unemployment and industry shares on the number in the labor force, and the weights for rural rate, poverty rate, and household income on overall population.[12]
   - the state as the geographic unit when a WIB encompassed the entire state (see Table A.4 for a listing) and used state-level information to describe the area.

[11] We built the cross-walk using lists from each of the three states: http://www.dlt.ri.gov/lmi/maps/county.htm; http://www.ct.gov/ecd/cwp/view.asp?a=1106&q=250994; and http://www.sec.state.ma.us/cis/cisctlist/ctlistcoun.htm provide the information.

[12] For example, if the WIB served a two-county area and county A has an unemployment rate of 7.5 and a labor force of 100,000 and county B has an unemployment rate of 8.5 and a labor force of 50,000, the weighted unemployment rate would be 8.2 [(7.5*(100000/150000)) + (8.5*(50000/150000))].

These geographic areas were constructed by applying a new WIB name and number to areas with new geographic boundaries. For example, in the Oakland, California, example, we assigned a new WIB name of Alameda County so that the geographic unit became the county and not the subcounty area.

4. **Reconfigured the county geographic file to one based on new geographic units.** We added the WIB name and number to the county geographic file using the WIB-county cross-walk, removing the four counties (Nome Census Area, Alaska; Graham County, Arizona; Mohave County, Arizona; and Davis County, Utah) with no clearly defined WIB association. The result was 565 distinct geographic areas in the WIASRD, 457 in the LERS, 341 in the SPIR, and 173 in the WIASPR.

   We collapsed the county-level data set to the new geographic units and created variables at that level. We created the number of counties, population, and labor force in each area, for example, and applied the weighted average of county-level indicators for the new geographic units to areas that contained more than one county. We verified variables for the new geographic units using automated checks that required all percentage-based variables to be bounded by (0, 100) and each WIB's industry to share sum to 100 percent (or to less than 100 percent with data suppression for any industry when necessary to protect the identity of employers).

5. **Joined the geographic file to the four workforce data sets.** Because the LERS and WIASRD databases contain a WIB identifier, we joined them to the geographic file using the revised WIB identifier and the WIB-county cross-walk. We joined statewide WIB to the appropriate state-level geographic data.

   Because the SPIR and WIASPR databases contain county-level identifiers, we joined the geographic files to these databases using the WIB-county crosswalk described earlier. Specifically, we did the following:

   - We identified the counties with only one distinct (non-statewide) WIB and used the county code in SPIR/WIASPR to link to the appropriate WIB.
   - We identified geographic areas that were defined as states and used the state code in SPIR/WIASPR to link to the state-level WIB.
   - We joined county-level external data to the SPIR/WIASPR file if a SPIR/WIASPR county did not have WIB-level data available. We developed an indicator variable to show which files we joined or if no external data were available (this occurred for only two counties that had invalid FIPS values).

APPENDIX B

DEFINITION OF VARIABLES

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This appendix describes the variables, including the source variables, used in our analyses. In Section A, we describe the customer-level variables developed based on the four different individual-level databases: Labor Exchange Reporting System (LERS), Workforce Investment Act Standardized Records Data (WIASRD) system, Standardized Participant Information Record (SPIR), and Workforce Investment Act Standardized Participant Record (WIASPR). In Section B, we describe the geographic area variables that were created from four county-level databases. In Section C we discuss missing data in each of the data sets and variables. Appendix A provides background information about each of the data files used to create the variables.

A. Customer-level variables

We defined customer-level variables consistently across all four databases, to the extent possible. Definitions were based on the variable construction in the public use data files for the WIASRD developed by Social Policy Research Associates (SPR 2012). [13]

Consistency was greatly facilitated because the U.S. Department of Labor (DOL) standardized many of the data elements, definitions, and reporting codes across the programs and databases. When data fields were not standardized across programs, we developed standardized variables by making categories consistent (for example, collapsing categories when appropriate). When variables could not be standardized across the data bases, we made notations in Table B.1.

Table B.1 provides a listing of the variables, the database that contained information used to construct them, and their definitions. Programs with databases that did not contain information to construct a variable generally did not need that information for operations.

[13] Although we ensured consistency in variable structure across the data bases we did not cap outliers, which might be noteworthy in the LERS and WIASRD with values on age and earnings having distributions with a long tail at the upper end. Francis and Maxwell (2014) provides ranges for all variables used in the analysis.

Table B.1. Description of variables in the LERS, WIASRD, SPIR, and WIASPR

Variable	Availability	Definition
Characteristics		
Female	LERS, WIASRD, SPIR, WIASPR	A 0, 1 indicator variable with 1 indicating that a customer self-identified as being female and 0 if identified as being male.
Age	LERS, WIASRD, SPIR, WIASPR	Age is calculated based on the participant's birth date and participation date, and is rounded down to the nearest integer. In descriptive analyses the continuous variable is grouped into three categories: 18–24, 25–54, and 55+.
Race/ethnicity	LERS, WIASRD, SPIR, WIASPR	A series of 0, 1 indicator variables with 1 indicating that a customer self-identified as being in a particular category and 0 indicating that the customer did not identify as being in that category. Categories are Hispanic, Asian (not Hispanic), Pacific Islander (not Hispanic), Indian and Native American (not Hispanic), black (not Hispanic) and white (not Hispanic). The WIASRD and LERS coding instructions define separate fields for ethnicity (Hispanic or not Hispanic) and the race field allows for multiple mentions. In actuality, many states treat ethnicity as mutually exclusive with race, so if they indicate that someone is Hispanic, they tend to leave the race field blank. We therefore use the variable in the WIASRD and LERS that creates a single categorical variable for race/ethnicity. In creating that variable, Hispanic always takes precedence and multiple mentions of race become a multiple race category (for example, we would record the race/ethnicity of a customer who self-identifies as not Hispanic and black as black, a customer who self-identifies as Hispanic and black as Hispanic, and a customer who self-identifies as black and Asian as having more than one race). In the WIASPR, we create a race/ethnicity variable using the same decision rules. In the SPIR, we assume all customers are INAs because race and ethnicity variables are not available.
MSFW	LERS	A 0, 1 indicator variable with 1 indicating that a customer self-identified as being an MSFW and 0 if not.
Education	LERS, WIASRD, SPIR, WIASPR	A categorical variable that indicates the highest level of education completed by customer. Categories are less than high school, high school diploma or GED, some college, and bachelor's degree or beyond.
Employment status at participation	LERS, WIASRD, SPIR, WIASPR	A 1,2 indicator variable with 1 indicating that a customer identified as being employed at participation, and 2 if a customer was not employed or was employed but had received notice of termination.
Pre-program earnings (second and third quarters before participation)	LERS, WIASRD, WIASPR	A continuous variable that is the total sum of a customer's wages, in dollars, for the second and third quarters before program participation. In descriptive analyses the continuous variable is grouped into seven categories: 0, $1–$2,499, $2,500–$4,999, $5,000–$7,499, $7,500–$9,999, $10,000–$19,999, $20,000+. *In the WIASPR this variable uses earnings from the first and second quarters.*
Low income	WIASRD	A 0, 1 indicator variable with 1 indicating that the customer was classified as low income and 0 if not. Low income is defined as: an adult who (1) receives, or is a members of a family which receives, cash payments under a federal, state or local income-based public assistance program, or (2) received an income, or is a member of a family that received a total family income, for the six-month period prior to program participation (exclusive of unemployment compensation, child support payments, payments described in subparagraph A and old-age and survivors insurance benefits received under the Social Security Act) that, in relation to family size does not exceed the higher of (i) the poverty line, for an equivalent period, or (ii) 70 percent of the lower living standard income level, for an equivalent period; or (3) is a member of a household that receives (or has been determined within the 6-month period prior to program participation) Food Stamps under the Food Stamp Act of 1977; or (4) qualifies as a homeless individual; or (5) is a person with a disability whose own income meets the income criteria established in WIA section 101(25)(A) or (B), but is a member of a family whose income does not meet the established criteria.
TANF recipient	WIASRD, WIASPR	A 0, 1 indicator variable, with 1 indicating that the customer received TANF assistance and 0 if not.
Other public assistance	WIASRD, SPIR, WIASPR	A 0, 1 indicator variable, with 1 indicating that the customer received another form of public assistance and 0 if not.
Disability	LERS, WIASRD, SPIR, WIASPR	A 0, 1 indicator variable, with 1 indicating that the customer identified as having a disability and 0 if not.
Limited English proficiency	WIASRD, SPIR, WIASPR	A 0,1 indicator variable, with 1 indicating that the customer identified as being limited in English proficiency and 0 if not.
Offender	WIASRD, SPIR, WIASPR	A 0, 1 indicator variable, with 1 indicating that the customer identified as being an offender and 0 if not.
Single parent	WIASRD, SPIR, WIASPR	A 0, 1 indicator variable, with 1 indicating that the customer identified as being a single parent and 0 if not.
Veteran or eligible spouse	LERS, WIASRD, SPIR, WIASPR	A 0,1 indicator variable, with 1 indicating that the customer identified as being a veteran or having an eligible spouse and 0 if not.

Variable	Availability	Definition
Services		
Workforce information service	LERS	A 0, 1 indicator variable, with 1 indicating that the customer received workforce information services (either self- or staff-assisted) and 0 if not.
Staff-assisted service	LERS	A 0, 1 indicator variable with 1 indicating that the customer received any staff-assisted service and 0 if not.
Career guidance	LERS	A 0, 1 indicator variable, with 1 indicating that the customer received staff-assisted career guidance and 0 if not.
Job search activities	LERS	A 0, 1 indicator variable, with 1 indicating that the customer received staff-assisted job search activities and 0 if not.
Employment referral	LERS	A 0, 1 indicator variable, with 1 indicating that the customer was referred to employment and 0 if not.
WIA services referral	LERS	A 0, 1 indicator variable, with 1 indicating that the customer was referred to WIA services and 0 if not.
LVER or DVOP services	LERS	A 0, 1 indicator variable, with 1 indicating that the customer received any LVER or DVOP service and 0 if not LVERs provide employment services to veterans, conduct outreach to local employers to develop employment opportunities for veterans, and may provide referral to other entities in the support of veterans seeking employment. DVOPs provide a range of intensive services to veterans with service-connected disabilities or multiple employment barriers.
Intensive and training services	WIASRD, SPIR, WIASPR	A categorical variable indicating whether a customer received intensive services only, training only, neither, or both.
Received training	WIASRD	A 0, 1 indicator variable with 1 indicating that a customer received training (either alone or along with intensive services).
Needs-related payments	WIASRD	A 0, 1 indicator variable, with 1 indicating that the customer received any needs-related payments and 0 if not.
Supportive services	WIASRD, WIASRD	A 0, 1 indicator variable, with 1 indicating that the customer received any supportive services and 0 if not.
Needs-related payments or supportive services	WIASRD	A 0, 1 indicator variable, with 1 indicating that the customer received either needs-related payments or supportive services and 0 if not.
Focus of occupational training	WIASRD, SPIR, WIASPR	A series of 0, 1 indicator variables with 1 indicating that a customer who received training received it in a designated area and 0 if it was received in another area. Areas of focus include agriculture, natural resources, or construction occupations; managerial, administrative, professional, or technical occupations; sales, clerical, or administrative support occupations; and service occupations. Variables are legitimately missing if the customer did not receive any training.
Coenrolled: WIA and NFJP	WIASRD, WIASPR	A 1, 0 indicator variable with 1 indicating that the customer was coenrolled in the two programs and 0 if not.
Coenrolled: NFJP and ES	WIASPR	A 1, 0 indicator variable with 1 indicating that the customer was coenrolled in the two programs and 0 if not.
Outcomes		
Information on employment and earnings in the SPIR and WIASPR can be from either UI wage records or supplemental sources (for example pay stubs or individual interviews) and the source of information cannot be discerned. Although this information is used by DOL as the outcomes in NFJP performance measurement, the aggregate CRIS data are used for performance measurement in the INAP. We therefore substituted employment and data from aggregate-level CRIS reports in our database for entered employment (for those leaving from October 1, 2010, to September 30, 2011) and for retention and earnings (for those leaving from April 1, 2011, to March 31, 2012).		
Employment		
Entered employment (common measure)	LERS, WIASRD, CRIS, WIASPR	A 0, 1 indicator variable, with 1 indicating that the customer entered employment in the first quarter after exiting the program and 0 if not. This variable is legitimately missing if the customer was employed before entering the program or the customer exited the program for an unusual reason.
Retained employment (common measure)	LERS, WIASRD, CRIS, WIASPR	A 0, 1 indicator variable, with 1 indicating that the customer retained employment through the third quarter after exiting the program and 0 if not. This variable is legitimately missing if the customer did not enter employment in the first quarter after program exit or if the customer entered employment in the first quarter after program exit, but exited the program for an unusual reason.

Variable	Availability	Definition
Post-participation earnings, second and third quarters		
If retained employment (common measure)	LERS, WIASRD, CRIS, WIASPR	Total earnings in the second and third quarters after exiting the program. This variable is legitimately missing if the customer had no exit date recorded, was missing wages in at least one of the three quarters after program exit, or left the program for an unusual reason.
Including those not retained	LERS, WIASRD, CRIS, WIASPR	Total earnings in the second and third quarters after exiting the program, *including* those who were not employed in the first, second, and third quarters after exit. This variable is legitimately missing if the customer exited the program for an unusual reason. In the LERS, 32 percent of customers had wages in none of the three quarters, 11 percent had wages in one quarter, 13 percent had wages in two quarters, and 44 percent had wages in all three quarters. In the WIASRD, 26 percent had wages in none of the three quarters, 9 percent had wages in one of the quarters, 12 percent had wages in two of the quarters, and 53 percent had wages in all three quarters.

Notes: One source of error in capturing services in the LERS is that a state's management information system (MIS) may include more detailed or different service codes from the LERS fields. In such cases, the state must cross-walk its MIS codes with those used in the LERS to produce the LERS data file, which could introduce error and undermine accuracy and comparability of information across states. The Training and Employment Guidance Letter 17-05 (ETA 2006) defines the three common performance measures. Entered employment is captured for those who are not employed at the date of participation, retention is captured for those who are employed in the first quarter after the exit quarter, and earnings is captured for participants who are employed in the first, second, and third quarters after the exit quarter.

CRIS = Common Reporting Information System; DOL = U.S. Department of Labor; DVOP = Disabled Veteran Outreach Program; GED = general equivalency diploma; INA = Indian and Native Americans; LERS = Labor Exchange Reporting System; MSFW = migrant and seasonal farmworker; LVER = local veterans' employment representative; NFJP = National Farmworker Jobs Program; SPIR = Standardized Program Information Report; TANF = Temporary Assistance for Needy Families; UI = unemployment insurance; WIASPR = Workforce Investment Act Standardized Participant Record; WIASRD = Workforce Investment Act Standardized Record Data.

B. Local area characteristics

We developed a series of measures to describe the characteristics of the local labor market that a customer was likely to enter after leaving the program, defined as 2011 information about the local area in which the customer received services (see Appendix A). Information was obtained from 4 different sources: the Census of Employment and Wages (CEW); Local Area Unemployment Statistics (LAUS); Missouri Census Data Center (MCDC), and Small Area Income and Poverty Estimates (SAIPE). Because the lowest level of geography is the Workforce Investment Board (WIB) area in the LERS and WIASRD and the county is the lowest level in the SPIR and WIASPR, we developed geographic areas that could be applied consistently across all data bases and linked county-level from each of these sources to that area. Appendix A, section B provides details on how the geographic areas were constructed.

Table B.2 provides a listing of the variables, the databases that contained information used to construct them, their definitions, and the percentage of geographic areas in which information could not be obtained. We note that rates of missing data are high or that percentages do not always sum to 100 percent because data are suppressed when necessary to protect the identity of employers. In multivariate analyses, we include missing value variables to ensure all observations are included in the analysis, even in the presence of missing data.

Table B.2. Description of local area variables

Variable	Source	Definition	Percentage of areas with missing information			
			LERS	WIASRD	SPIR	WIASRD
Labor force	LAUS	2011 annual labor force size.	0.4	0.0	0.0	1.2
Unemployment rate	LAUS	2011 annual unemployment rate.	0.4	0.0	0.0	1.2
Rural	MCDC	Percentage of the population that lived in a rural area in 2010.	0.4	0.0	0.0	1.2
Poverty	SAIPE	Percentage of all people with income below the federal poverty level, 2011 annual average.	0.4	0.0	0.0	1.2
Industrial Shares of Employment		Data are redacted in some areas to maintain confidentiality.				
Government						
Federal government	CEW	Percentage of employees in the federal government in 2011 (averaged over four quarters).	0.4	0.0	0.0	1.2
State government	CEW	Percentage of employees in state government sector in 2011 (averaged over four quarters).	26.9	27.1	26.1	31.2
Local government	CEW	Percentage of employees in local government in 2011 (averaged over four quarters).	27.5	27.8	27.0	32.4
Goods producing						
Natural resources and mining	CEW	Percentage of employees in natural resources and mining in 2011 (averaged over four quarters).	23.1	22.5	22.6	27.8
Construction	CEW	Percentage of employees in construction in 2011 (averaged over four quarters).	22.7	22.7	22.3	28.3
Manufacturing	CEW	Percentage of employees in manufacturing sector in 2011 (averaged over four quarters).	20.1	20.4	20.8	30.1
Service providing						
Trade, transportation, and utilities	CEW	Percentage of employees in trade, transportation, and utilities in 2011 (averaged over four quarters).	1.8	1.1	0.9	2.9
Information	CEW	Percentage of employees in information sector in 2011 (averaged over four quarters).	35.8	34.7	33.7	43.4
Financial activities	CEW	Percentage of employees in financial activities sector in 2011 (averaged over four quarters).	14.6	14.9	13.8	18.5
Professional business	CEW	Percentage of employees in professional and business services in 2011 (averaged over four quarters).	15.1	14.9	13.8	23.7
Education and health	CEW	Percentage of employees in education and health services in 2011 (averaged over four quarters).	6.8	7.3	7.3	12.1
Leisure and hospitality	CEW	Percentage of employees in leisure and hospitality sector in 2011 (averaged over four quarters).	7.6	7.8	7.3	11.6
Other services	CEW	Percentage of employees in services not defined above in 2011 (averaged over four quarters).	21.4	20.7	19.1	30.1
Unclassified	CEW	Percentage of employees in industries that cannot be classified in 2011 (averaged over four quarters).	57.2	58.4	58.9	62.4

Note: The LERS has 457 areas used in our analysis, the WIASRD has 565, the SPIR has 341, and the WIASPR has 173.

CEW = Census of Employment and Wages; LAUS = Local Area Unemployment Statistics; LERS = Labor Exchange Reporting System; MCDC = Missouri Census Data Center; SAIPE = Small Area Income and Poverty Estimates; SPIR = Standardized Program Information Report; WIASPR = Workforce Investment Act Standardized Participant Record; WIASRD = Workforce Investment Act Standardized Record Data.

C. Missing data

Table B.3 provides the percentage of customers in our analyses in each data set with missing information on variables. The readers should note that several variables include legitimate skips—observations in which the variable has a missing value by design. These percentages are shown in Table B.3 in brackets; the reasons for these legitimate skips are discussed in Table B.1. The percentage of observations that are missing is calculated as [number of missing observations divided by (number of total values minus number of legitimate skips)].

Across all data sets, geographic variables, specifically those indicating employment share in various sectors, had the highest levels of missing data because the CEW suppresses information for areas in which firms could be identified (that is, in areas with few firms falling into that industrial classification). For example, if few firms in an area fall into the unclassified industry or the leisure and hospitality sector, they would have a missing value on those variables. We cannot assume that such cases represent small levels of industrial employment, however. In a relatively small local area, all industrial information might be suppressed or a firm that hires a large portion of the workforce might have information suppressed.

Services and outcomes had the lowest levels of missing information. Among services, only focus of occupational training had any missing values, and 20 to 33 percent of customers in the WIASRD, SPIR, and WIASPR who received training were missing values of this variable.[14] Migrant and seasonal farmworker (MSFW), which is available only in the LERS, was also missing for 32 percent of customers. Finally, post-participation earnings in the second and third quarters (including those who did not retain employment) were missing for 17 percent of customers in the WIASPR.

Of the four data sets, the LERS had the highest levels of missing data. In the LERS, 20 of 37 variables (slightly more than half) were missing for at least 10 percent of customers. About one-third of LERS variables (14) were missing for at least 20 percent of customers. However, all of these variables except MSFW were geographic variables, which were missing geographic codes as discussed in Appendix A. The WIASRD had lower levels of missing data, with only 10 variables, or approximately one-quarter, missing for at least 10 percent of customers, and only 5 variables missing for at least 20 percent of customers. Again, the geographic variables had the highest levels of missing values. Levels of missing data are extremely low in the SPIR and WIASPR, with only 3 variables in the SPIR and 5 in the WIASPR having any missing values.

[14] Focus of occupational training is not available in the LERS because the Employment Service does not offer occupational training.

Table B.3. Variables with missing values (percentages unless stated otherwise)

	LERS	WIASRD	SPIR	WIASPR
Number of customers	15,713,778	419,803	8,367	7,237
Customer characteristics				
Female	7.9	0.3	0.0	0.0
Age at participation	0.0	0.0	0.0	0.0
Race/ethnicity	10.6	3.7	NA	0.1
MSFW	32.2	NA	NA	NA
Education	2.3	0.2	0.0	0.0
Employment status at participation	0.7	0.0	0.0	0.0
Pre-program earnings	1.9	0.6	NA	0.0
Low income	NA	0.4	NA	NA
TANF recipient	NA	0.0	NA	0.0
Other public assistance	NA	0.0	0.0	0.0
Disability	10.0	2.3	0.0	0.0
Limited English proficiency	NA	0.1	0.0	0.0
Offender	NA	1.2	0.0	0.0
Single parent	NA	1.3	0.0	0.0
Veteran or eligible spouse	0.5	0.0	0.0	0.0
Local area characteristics				
Poverty rate	18.5	0.0	0.0	1.0
Rural area population	18.5	0.0	0.0	1.0
Unemployment rate	18.5	0.0	0.0	1.0
Employment share in:				
Government				
Federal government	18.5	0.0	0.0	1.0
State government	42.5	19.1	26.6	31.4
Local government	43.3	19.4	27.7	32.1
Goods producing				
Natural resources and mining	42.1	25.9	27.4	27.3
Construction	41.6	20.0	32.4	32.2
Manufacturing	40.2	25.7	33.9	29.3
Service providing				
Trade, transportation, and utilities	20.6	0.4	4.8	4.4
Information	52.1	28.9	38.8	44.6
Financial activities	33.1	16.1	16.7	24.1
Professional and business	34.9	14.2	19.0	24.9
Education and health	27.0	8.7	12.2	17.1
Leisure and hospitality	26.3	3.8	9.3	11.7
Other services	39.2	21.7	32.7	31.4
Unclassified	64.1	40.4	59.2	56.1
Services				
Received workforce information service	0.0	NA	NA	NA
Staff-assisted service	0.0	NA	NA	NA
Career guidance	0.0	NA	NA	NA
Job search activities	0.0	NA	NA	NA
Employment referral	0.0	NA	NA	NA
WIA services referral	0.0	n.a.	NA	NA
Intensive and training services	n.a.	0.0	0.0	0.0
Needs-related payments	n.a.	0.0	NA	NA
Supportive services	n.a.	0.0	NA	0.0
Focus of occupational training (if received training)	n.a.	20.8 [71.1]	32.9 [62.8]	26.6 [18.7]
LVER or DVOP services	0.0	n.a.	n.a.	n.a.
Coenrolled: WIA Title I programs and NFJP	n.a.	0.0[a]	n.a.	0.0[a]
Coenrolled: NFJP and ES	NA	n.a.	n.a.	0.0[a]

	LERS	WIASRD	SPIR	WIASPR
Outcomes				
Employment (common measures)				
Entered employment	0.0 [15.4]	0.0 [18.9]	0.0[b]	0.0 [7.5]
Retained employment	0.0 [44.5]	0.0 [35.6]	0.0[b]	0.0 [16.4]
Post-participation earnings, 2nd and 3rd quarters				
If retained employment (common measure)	0.0 [55.9]	0.0 [47.6]	0.0[b] [0.0]	0.0 [31.7]
Including those not retained	0.0 [1.4]	0.4 [1.4]	0.0 [3.6]	17.4 [0.0]

Note: Numbers in brackets ([]) are the percentage of legitimate skips. Numbers without brackets represent missing data.

[a] Variables are never missing by definition: Instructions require record 1 if the participant received services in both programs and 0 or blank if not or if the condition is unknown. Data checks require this variable to equal either 1 or 0 (SPR 2013, 2006). That said, reporting of most partner-funded services is optional in the WIASRD, suggesting that many of the blanks might reflect data that were not recorded.

[b] Because we pull outcomes data for the INAP from aggregate-level CRIS reports (see Appendix A for discussion), these variables are never missing in our SPIR file.

CRIS = Common Reporting Information System; DVOP = Disabled Veteran Outreach Program; ES = Employment Service; LERS = Labor Exchange Reporting System; LVER = local veterans employment representatives; MSFW = migrant and seasonal farmworker; NFJP = National Farmworkers Jobs Program; SPIR = Standardized Program Information Report; TANF = Temporary Assistance for Needy Families; WIA = Workforce Investment Act; and WIASPR = Workforce Investment Act Standardized Participant Record; WIASRD = Workforce Investment Act Standardized Record Data.

NA = not available.

n.a. = not applicable.

APPENDIX C

ANALYTIC METHODS

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In this appendix, we describe the analytic methods used to produce the results presented in this report and Appendix D tables. Section A describes how we use descriptive statistics to contextualize the study and answer the first two research questions. Section B describes how we use multivariate regression analyses to answer the third research question, and Section C describes the limitations of our analyses. Appendix B defines the variables used in all analyses.

Our analysis uses information from the four administrative databases describe in Appendix A. As described in that appendix, the databases developed for our analysis contain information on customers who left one of four programs in calendar year 2011: the Employment Services (ES), and the WIA (Workforce Investment Act) Adult Program, Indian and Native American Program (INAP), and National Farmworker Jobs Program (NFJP).

1. **LERS** (Labor Exchange Reporting System) provided information on characteristics, services, and outcomes for customers leaving the ES in 2011.
2. **WIASRD** (WIA Standardized Record Data) provided information on characteristics, services, and outcomes for customers leaving the Adult Program in 2011.
3. **WIASPR** (WIA Standardized Participant Record) provided information on characteristics, services, and outcomes for customers leaving the NFJP in 2011.
4. **SPIR** (Standardized Program Information Report) provided information on characteristics, services, and employment outcomes for customers leaving the INAP in 2011. We used the aggregate-level Common Reporting Information System (CRIS) data for earnings for the INAP for consistency with the U.S. Department of Labor (DOL) performance monitoring.

Geographic information that describes the local labor market in which the customer was likely to seek employment after leaving the program was merged to each of these databases.

We used these data to address questions on the characteristics, services received, and outcomes following program exit for five specific subpopulations in these programs:

1. Hispanics
2. Asian Americans
3. Hawaiian or Pacific Islanders (PI)
4. Indians and Native Americans (INA)
5. Migrant and seasonal farmworkers (MSFW)

A. Descriptive analysis

We use descriptive analyses of the data from each program to provide a context for the study and address the first two research questions:

- How do the demographic and local area characteristics, services received, and post-participation outcomes of customers in the INAP and NFJP compare to those of INA and MSFW in the ES and Adult programs?

- Within the ES and Adult programs, what are differences in the demographic and local area characteristics, services received, and program outcomes of Hispanic, Asian, Pacific Islander, INA, and MSFW customers?

Percentage distributions describe characteristics, services received, and outcomes measured with categorical variables, and means and standard deviations describe those measured with continuous variables. A *t*-test determines whether differences for continuous measures were statistically significant ($p \leq 0.05$) and a chi-squared test determines statistically significant differences in distributions for categorical measures. When the chi-squared test revealed significant differences in distributions, a *t*-test determines statistically significant differences between the subpopulations within or across programs in each category in the distribution.

B. Multivariate analysis

Our multivariate analyses used the LERS and WIASRD to provide a more in-depth understanding of the relationships between customer and local area characteristics and services received, and between characteristics and services and post-participation outcomes. Analyses was possible for each subpopulation in the ES (LERS) and Adult Program (WIASRD). Measures of service receipt included:

- Career guidance, job search activities, referred to employment, and referred to WIA services in the ES program. [15] These services are readily identifiable as staff-assisted and had at least 5 percent of customers using them.

- Whether training was received and focus of occupational training (for those who received training) in areas for which at least 5 percent of customers received training in the Adult Program.[16]

Post-participation outcomes for both the ES and Adult programs include the common measures (entered employment, retained employment and post-participation earnings for those who retained employment in the second and third quarters after leaving the program) and a fourth measure of earnings that includes those who were not employed.

In all estimations, we used an indicator variable to indicate values are missing (1 = missing for a given variable and 0 = not missing) and used the mean value of the variable for continuous measures and 0 for binary variables. We do not show missing variable indicators in the Appendix D tables or discuss them in the model specifications. We used a probit to estimate equations when the dependent variable is binary and calculated average marginal effects from the estimated coefficients and used ordinary least squares to estimate equations for the continuously measured earnings outcomes. Table C.1 provides a listing of variables used in the analyses and Appendix B tells how they were quantified.

[15] We only use these staff-assisted services because the definition of *staff-assisted* varies across WIBs. For example, staff providing help in the resource room might count as staff-assisted services in one area but not another. Our more narrowly measures, we presume, provides more consistent definitions across WIBs.

[16] Supported services are not used because the study focuses on workforce investments.

Table C.1. Description of variables used in multivariable analysis

Employment Services		Adult Program	
Dependent variables			
Services	**Post-participation outcomes**	**Services**	**Post-participation outcomes**
• Career guidance • Job search activities • Employment referral • WIA referral	• Entered employment • Retained employment • Post-participation earnings 2nd and 3rd quarters, if retained employment • Post-participation earnings 2nd and 3rd quarters (including those not retained)	• Received training • Occupational skills training focus: – Managerial and administrative – Professional and technical – Mechanical and transportation – Sales, clerical, and administrative support – Service	• Entered employment • Retained employment • Post-participation earnings 2nd and 3rd quarters, if retained employment • Post-participation earnings 2nd and 3rd quarters (including those not retained)
Race/ethnicity			
• Hispanic • Asian • Pacific Islander • INA • Black • More than one race • MSFW	• Hispanic • Asian • Pacific Islander • INA • Black • More than one race • MSFW	• Hispanic • Asian • Pacific Islander • INA • Black • More than one race	• Hispanic • Asian • Pacific Islander • INA • Black • More than one race
Characteristics			
Customer			
• Age • Female • Education • Not employed at participation • Pre-program earnings • Disability • Veteran or eligible spouse	• Age • Female • Education • Not employed at participation • Pre-program earnings • Disability • Veteran or eligible spouse	• Age • Female • Education • Not employed at participation • Pre-program earnings • Low income • Disability • Limited English proficiency • Offender • Single parent • Veteran or eligible spouse	• Age • Female • Education • Not employed at participation • Pre-program earnings • Low income • Disability • Limited English proficiency • Offender • Single parent • Veteran or eligible spouse
Local area			
• Labor force size • Poverty rate • Rural population share • Unemployment rate • Employment share in: – Federal government – State government – Local government – Natural resources/mining – Construction – Manufacturing	• Labor force size • Poverty rate • Rural population share • Unemployment rate • Employment share in: – Federal government – State government – Local government – Natural resources/mining – Construction – Manufacturing	• Labor force size • Poverty rate • Rural population share • Unemployment rate • Employment share in: – Federal government – State government – Local government – Natural resources/mining – Construction – Manufacturing	• Labor force size • Poverty rate • Rural population share • Unemployment rate • Employment share in: – Federal government – State government – Local government – Natural resources/mining – Construction – Manufacturing
Services			
	• Career guidance • Job search activities • Employment referral • WIA services referral • LVER or DVOP services		• Received training • Needs-related or supportive services

Note: Appendix B provides a description of variables. Post-employment outcomes estimations included pre-program earnings as independent variables only in estimations with earnings as the dependent variables and pre-program employment only in estimations with employment as the dependent variable. Because entered employment is captured only for customers not employed at program entry, employment status at participation is not included in this estimation.

DVOP = Disabled Veterans Outreach Program; INA = Indian and Native American; LVER = local veterans' employment representatives; MSFW = migrant and seasonal farmworker; WIA = Workforce Investment Act.

Regression equations were estimated in two stages. The first-stage estimation captured the raw differences in service receipt between the subpopulation and the comparison group. Two equations were estimated for the ES program: one for race-defined subgroups with whites as the comparison group (1a) and a second for MSFW with non-MSFW as the comparison group (1b). Because information on MSFW status is not available in the WIASRD, only Equation (1a) is estimated for that program

(1a) $S_i = \alpha_0 + \beta_1 Hispanic_i + \beta_2 Asian_i + \beta_3 PI_i + \beta_4 INA_i + \beta_5 Black_i + \beta_6 Multi_i + \varepsilon_{i,1}$

(1b) $S_i = \gamma_0 + \delta MSFW_i + \eta_{i,1}$

where S_i captures a service receipt for customer *i.* Binary variables in Equation (1a) indicate an Hispanic (*Hispanic*), Asian (*Asian*), PI (*PI*), INA (*INA*), or black (*Black*) customer, or a customer who indicated more than one race (*Multi)*. Racial/ethnic variables are mutually exclusive (that is, a person cannot be in more than one category) and whites are the omitted category to which all others are compared. Average marginal effects computed from the coefficients on the racial/ethnic variables *(β)* quantify the difference between a service or outcome between a particular subpopulation and whites.[17] We view the difference as the raw difference because it does not take into account differences in education, for example. The binary variable in Equation (1b), *MSFW*, indicates an MSFW customer and δ shows the raw difference in a service or outcome between MSFWs and non-MSFWs.

The second stage for service receipt and the first stage for post-participation outcomes add customer and local area characteristics to the estimation of Equation (1). We estimate a single equation because customer characteristics include race/ethnicity and MSFW status (Table C.1):

(2) $y_i = \alpha_0' + \beta_1' Hispanic_i + \beta_2' Asian_i + \beta_3' PI_i + \beta_4' INA_i + \beta_5' Black_i + \beta_6' Multi_i + \delta_i' MSFW_i + X_i\gamma + \varepsilon_{i,2}$,

where *y* captures service receipt or post-participation outcome and ***X*** is a vector of characteristics other than race/ethnicity that customer *i* brought to the program or of the local area the customer is likely to enter after leaving the program.

Coefficients[18] on the racial/ethnic variables *(β′)* show how a service or outcome differs between a particular subpopulation and whites who are not MSFW (in the ES estimation) or whites (in the Adult Program estimation), *controlling for any differences in characteristics* captured in **X**. For estimations of post-participation outcomes, the coefficients provide a baseline estimate of differences between subpopulations and the comparison group in employment or earnings controlling for differences in the characteristics. For service receipt estimations, the coefficients quantify the differences for subpopulations and the comparison group controlling for differences in characteristics. The percentage change between the coefficient estimated in Equations (2) and (1a), that is $[(\beta' - \beta)/\beta]$, quantifies the proportion of the difference in service receipt among a subpopulation that can be attributed to differences in characteristics. The coefficient on MSFW (δ') quantifies the difference between MSFW and those who are not MSFW and the percentage change between the coefficient estimated in Equations (2) and (1b) quantifies the proportion of the difference in service receipt between MSFW and those that are

[17] α and γ are intercept terms and ε and η are error terms.

[18] Henceforth, we use the word coefficient to mean coefficient or average marginal effect for ease in exposition.

not MSFW that can be attributed to characteristics. Because programs tailor services to customers' needs, we would expect characteristics to largely explain differences between the groups in service receipt.

In the second stage for post-participation outcomes estimations, we add services received into the estimation of outcomes (*o)*:

$$(3) \quad o_i = \alpha_0'' + \beta_1'' Hispanic_i + \beta_2'' Asian_i + \beta_3'' PI_i + \beta_4'' INA_i + \beta_5'' Black_i + \beta_6'' Multi_i + \delta_i'' MSFW_i + X_i\gamma + S_i\nu + \varepsilon_{i,3}.$$

Coefficients on the racial/ethnic variables *(β")* show how an outcome differs between a particular group and the comparison group, given any differences in the characteristics and program services received. The key insights from this analysis are drawn by comparing the coefficients on race/ethnicity and MSFW estimated from Equation (2) to those estimated from Equation (3) This comparison quantifies the percentage change in the difference in program outcomes between a subpopulation and whites, for example [(*β"- β')/β*], that might be attributed to service provision, given the differences in characteristics.

We used these multivariate analyses to address both parts of the third research question. We addressed the first part of the question, "*to what extent can differences in the services that subpopulations received be explained by differences in their demographic and local area characteristics?*", using estimates from Equations (1) and (2) for service receipt. Estimated coefficients were used in two ways. First, coefficients on the subpopulation variables from Equation (2) *(β')* showed how the probability of receiving services for each subpopulation compared with the comparison group, given customer and local area characteristics. Second, comparing the coefficients on the subpopulation indicator variables *(β)* estimated in the first stage (the raw difference) to those estimated in the second stage (Equation 2) is used to quantify how much of the difference in service receipt can be explained by customer and local area characteristics.

We addressed the section part of the question, "*to what extent can subpopulation differences in post-participation outcomes (employment, retention, and earnings) be explained by differences in subpopulation demographic and local area characteristics and program services received?*" using estimates from Equations (2) and Equation (3) with for post-participation outcomes as the dependent variable. Results were used in two ways. First, coefficients on the subpopulation indicator variables estimated in Equation (3) *(β")* showed how employment or earnings (dis)advantage of each subpopulation, compared with the comparison group, after controlling for the characteristics and services received. We compared the size of these coefficients to assess which subpopulations are more or less likely to have positive employment outcomes or earnings (dis)advantages. Second, we compared coefficients on the subpopulation indicator variables estimated in Equation (3) to those estimated in Equation (2) *(β')* to quantify the size of the difference in outcomes that can be explained by services received.

C. Study limitations

We provided the most thorough analysis possible to examine differences in subpopulations of adult job seekers in the public workforce system. Still, our findings must be interpreted in the context of the data and methods used. We identify three areas of caution when interpreting results.

1. **Description, not causation.** Because all analyses are descriptive, our results cannot be used to draw causal conclusions. We cannot say definitively, for example, that training causes post-participation earnings to be higher, because our research does not capture all factors that might underlie the relationship between training and earnings. Using regression analysis adjusts for the influence of some of the observable characteristics that vary with services and outcomes, but the available data do not include measures of other important factors (for example, motivation) that might be correlated with both service receipt and program outcomes.
2. **Imperfect measurement.** The variables used to capture characteristics, services, and outcomes might contain error, which decreases the statistical power of our analyses and makes it more difficult to detect relationships between factors of interest. We can identify two sources of potential error in this study:
    - **Limited detail on service receipt.** Although administrative databases contain an exhaustive listing of services received, they do not contain sufficient detail to enable us to describe many of the differences in service provision. For example, LERS, WIASRD, and SPIR databases only contain the date received a customer receives service it or a binary indicator that it was received. No information is collected about the actual hours spent in a service, as it is in the WIASPR. This lack of detail limits the capacity to form detailed measures of program intensity. Furthermore, high rates of missing data on focus of occupational training make it difficult to provide a complete analysis of service receipt in this area. Finally, the LERS, WIASRD, and SPIR databases provide limited details about services that customers receive outside of the American Job Center network—for example, from community organizations—which could confound the interpretation of statistical analyses of program services.
    - **Variations in practices and definitions.** Local policies and procedures vary across American Job Centers (AJC), which creates variations in practices, definitions of services, and service provision. For example, some AJC might enroll customers who access self-serve services in WIA, whereas others might enroll only customers who request intensive or training services in that program. Such variations could affect the customers' characteristics, the services they are observed to receive, and their outcomes.
3. **Limited generalizability.** Our data might not represent an exhaustive representation of program participation because they do not include information on all customers. [19] For example, customers receiving services in North Carolina are excluded from the LERS because that state did not upload information in program year 2013 quarter 3. Furthermore, we examined behaviors of customers leaving programs in 2011, a period in which the economy was emerging from the latest recession.

[19] Although data in geographic areas with fewer than 50 exiters were suppressed in the LERS and WIASRD, few customers had data suppressed. In the publicly available data used in this study, 3,226 of 38,803,668 total records (0.01 percent) were suppressed in the LERS and 946 of 5,142,250 records (0.02 percent) were suppressed in the WIASRD. Data were not suppressed in the nonpublic SPIR and WIASPR.

APPENDIX D

DATA TABLES

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This appendix contains the data tables that show the results of the study's main analyses and upon which the discussion in the body of the report is based. Appendix A describes the construction of the databases used in the analyses that produced the tables, and Appendix B provides a description of the variables presented in them. Appendix C provides details on the analytic methods used to produce the results. All tables use a customer's participation spell as the unit of analysis, even though we might refer to them as customers (Appendix A provides a discussion).

We applied the following rules to the descriptive tables in this appendix (D.2 to D.10):

- Item-specific nonresponse reduces the number of customers in some cells. Appendix Table B.3 shows variables affected by missing data.
- Numbers presented could differ slightly from those presented in other analysis using these same data sets (such as SPR 2012) because samples and variables used in this study are constructed for consistency across databases (see Appendix A).
- The number of customers in each subpopulation does not sum to the total because of missing data on race/ethnicity (Appendix Table B.3). Nearly 11 percent of customers in the Employment Service (ES), about 4 percent in the Adult Program and fewer than 1 percent In the National Farmworker Jobs Program (NFJP) were missing information on race/ethnicity.
- We present information for migrant and seasonal farmworkers (MSFW) in separate tables from the other subpopulations because nearly one-third are missing information on this variable.
- Table D.1 maps the tables, programs, and populations analyzed. It identifies the programs (second column) and populations (third column) in a table and the groups for which the analysis is structured (fourth column) and those to which the analysis group is compared (fifth column).

Table D.1. Subpopulation and comparison groups in each table

Tables	Program(s)	Population(s)	Analysis group(s)	Comparison group(s)
D.2, D.7	ES	All, racial/ethnic groups	Hispanic, Asian, PI, INA	White
D.3, D.8	ES	All, MSFW stratification[a]	MSFW	Not MSFW
	NFJP	Hispanic	Hispanic	Not Hispanic
D.4, D.9	Adult Program	All, racial/ethnic groups	Hispanic, Asian, PI, INA	White
D.5, D.10[b]	ES	Racial/ethnic groups, MSFW	INAP or NFJP or Adult Program	Adult Program or ES
	Adult Program	Racial/ethnic groups, MSFW	INAP or NFJP or Adult Program	Adult Program or ES
	INAP	INA	INAP	Adult Program or ES
	NFJP	Hispanics, MSFW	NFJP	Adult Program or ES
D.6	Adult Program	All, stratified by coenrollment	Coenrolled with NFJP	Not so coenrolled
	NFJP	All, stratified by coenrollment	Coenrolled with WIA Title IB, Coenrolled with ES	Not so coenrolled

Note: See page D.5 for definitions of acronyms.

[a] Statistics for customers who have a missing value for MSFW are included in a separate column, on which we do not conduct statistical tests.

[b] The Adult Program is the analysis group only for Asians and PI. The comparison group is both the Adult Program and ES when the INAP or NFJP is the analysis group and the ES when the Adult Program is the analysis group.

- We used the following statistical tests[20] to compare for differences between the analysis and comparison groups identified in Table D.1:
  - A two-tailed *t*-test for the difference in means of continuous variables (for example, unemployment rate) or for categories that are not part of a distribution (for example, female). We use an asterisk (*) to designate statistically significant ($p \leq 0.05$) comparisons.
  - A chi-square test for differences in distributions for categorical variables (for example, education). We use a dagger (†) to designate statistically significant comparisons using the chi-squared test. If the chi-squared test is significant, we use a two-tailed *t*-test to test for significant differences between each category in the distribution and use an asterisk (*) to designate statistically significant differences.

We applied the following rules to the multivariate tables in this appendix (D.11 and D.12):

- We used a probit to estimate equations with service receipt and employment outcomes as dependent variables and present average marginal effects in the tables. We used ordinary least squares to estimate equations with earnings as the dependent variable and present coefficients in the tables.
- We used an asterisk (*) to designate a coefficient whose difference from zero is statistically significant.
- The *Raw Difference* column in Table D.11 shows the average marginal effect of being a member of a subpopulation of interest on the receipt of a service from a regression in which only the racial/ethnic variables (and an MSFW dummy variable, in the ES regressions) are included as independent variables. Numbers in the racial or ethnic group column header show the average difference between the subpopulation and whites. Numbers in the MSFW column header show the average difference between MSFWs and non-MSFWs. Numbers convey the same information as in descriptive analyses.
- The *Controlling for Characteristics* column in Tables D.11 shows the average marginal effect of being a member of a subpopulation on the receipt of a service from a regression in which the customer and local area characteristics are the independent variables in addition to the racial/ethnic variables (and an MSFW dummy variable, in the ES regressions). It shows the proportion of service receipt that cannot be explained by characteristics that are available in the databases. The bottom number, in italics, shows the percentage change in the marginal effect that results from adjusting for customer and local area characteristics, calculated using this formula: [*(controlling for characteristics − raw difference)/raw difference*]. Marginal effects computed from coefficients that are not statistically different from 0 are treated as 0 in these calculations.
- The *Controlling for Characteristics* column in Tables D.12 shows the average marginal effect of being a member of a subpopulation on employment outcomes and earnings from a

[20] Tests were conducted using the assumption of equal variances.

regression in which racial/ethnic variables (and an MSFW dummy variable, in the ES regressions) and the customer and local area characteristics are the independent variables.

- The *Controlling for Characteristics and Services* column in Table D.12 shows the average marginal effect of being a member of a subpopulation on employment outcomes and earnings from a regression in which customer and local area characteristics, and services received are the independent variables in addition to the racial/ethnic variables (and an MSFW dummy variable, in the ES regressions). It shows the proportion of the outcomes that cannot be explained by characteristics or services measures available in the databases. The bottom number, in italics, shows the percentage change in the marginal effects that results from adjusting for services, calculated using this formula: [*(controlling for services – controlling for characteristics)/controlling for characteristics*]. Marginal effects computed from coefficients that are not statistically different from 0 are treated as 0 in these calculations.
- Variables with missing values take the value of the mean of the variable. Indicator variables (1 = missing for a given variable and 0 = not missing value) are constructed for variables that contained missing data and included in the analysis, although the coefficients are not shown in tables. Appendix Table B.3 shows variables affected by missing data.
- The abbreviations and symbol used in the tables can be found on in the List of Acronyms at the beginning of the report.

Table D.2. Characteristics of the ES customers (percentages unless stated otherwise)

	All	Race/ethnicity				
		Hispanic	Asian	PI	INA	White
Customer characteristics						
Number of customers	15,713,778	2,472,748	269,633	54,503	190,213	7,729,338
Female	46.1	45.1*	47.7*	47.0*	46.7*	44.3
Age (at participation)		†	†	†	†	
18–24	17.7	21.3*	13.1*	20.8*	20.1*	15.7
25–54	68.5	69.2*	69.9*	69.9*	70.5*	67.5
55 or older	13.8	9.5*	17.0*	9.3*	9.4*	16.8
MSFW	1.4	5.5*	0.6*	0.7*	0.6*	0.3
Education		†	†	†	†	
Less than high school	14.7	27.4*	12.7*	12.7*	18.0*	11.9
High school diploma or GED	44.9	40.6*	28.4*	50.1*	50.0*	45.4
Some college	23.5	19.9*	19.7*	21.3*	23.0*	24.4
Bachelor's degree or beyond	16.9	12.1*	39.1*	15.9*	8.9*	18.4
Not employed at participation (or received notice)	86.2	86.1*	87.0*	88.2*	87.6*	84.6
Pre-program earnings (2nd and 3rd quarters before participation)		†	†	†	†	
None	32.6	30.8*	32.8*	33.9*	32.9*	31.0
$1–$2,499	10.3	10.9*	6.7*	9.3	13.1*	9.2
$2,500–$4,999	8.6	9.5*	6.6*	8.1	9.1*	8.0
$5,000–$7,499	8.4	9.3*	6.8*	7.9	8.2*	8.0
$7,500–$9,999	7.6	8.8*	6.9*	7.6	7.2*	7.5
$10,000–$19,999	18.9	20.5*	19.7*	19.2*	15.4*	20.1
$20,000 or more	13.6	10.1*	20.5*	14.0*	14.0*	16.2
Disability	3.1	2.2*	1.9*	2.9*	3.6*	3.5
Veteran or eligible spouse	7.5	4.4*	2.8*	6.1*	6.6*	8.8
Local area characteristics						
Number of areas	457	457	456	453	457	457
Poverty rate	16.7	18.6*	15.1*	14.9*	16.5*	15.9
Rural areas	21.8	12.2*	11.8*	15.4*	33.1*	28.6
Unemployment rate	9.1	10.4*	9.0*	8.7*	7.8*	8.4
Employment in:						
Federal government	2.2	2.2*	2.4*	3.0*	3.1*	2.1
State government	3.4	2.8*	3.6	6.0*	4.4*	3.7
Local government	11.8	12.6*	9.9*	8.7*	14.0*	12.0
Goods producing						
Natural resources and mining	2.1	3.6*	1.6*	1.9*	2.6*	1.8
Construction	4.4	4.2*	4.3*	4.4*	4.3*	4.5
Manufacturing	9.8	8.0*	8.8*	6.6*	9.2*	10.9
Service providing						
Trade, transportation, and utilities	19.5	19.5*	19.0*	19.3*	19.0*	19.6
Information	2.1	2.3*	2.6*	2.0*	1.9*	1.8
Financial activities	5.2	5.2*	5.6*	5.0*	4.4*	5.0
Professional business	11.8	11.9*	13.7*	12.4*	9.6*	10.9
Education and health	14.4	14.4*	14.4*	13.5*	14.0*	14.4
Leisure and hospitality	10.4	10.3*	10.5*	12.8*	11.0*	10.4
Other services	3.5	3.8*	4.0*	3.9*	3.1*	3.3
Unclassified	0.2	0.3*	0.3*	0.2*	0.1*	0.1

Sources: LERS for customer characteristics; CEW, LAUS, MCDC, and SAIPE for local area characteristics.

Table D.3. Characteristics of MSFW in the ES and Hispanics in the NFJP (percentages unless stated otherwise)

	ES				NFJP		
	All	MSFW	Not MSFW	Missing MSFW	All	Hispanic	Not Hispanic
Customer Characteristics							
Number of customers	15,713,778	144,336	10,513,150	5,056,292	7,237	5,161	2,069
Female	46.1	31.1*	46.9	44.9*	39.8	41.1*	36.5
Age (at participation)		†		†			
18–24	17.7	19.2*	17.8	17.6*	43.4	43.2	44.0
25–54	68.5	66.2*	68.4	68.9*	52.7	52.7	52.6
55 or older	13.8	14.6*	13.9	13.6*	3.9	4.1	3.4
Education		†		†		†	
Less than high school	14.7	65.3*	14.2	14.4*	66.2	73.7*	47.7
High school diploma or GED	44.9	25.1*	41.9	51.9*	26.2	22.0*	36.7
Some college	23.5	5.8*	24.9	20.9*	5.7	3.5*	10.9
Bachelor's degree or beyond	16.9	3.7*	19.0	12.8*	1.9	0.8*	4.6
Not employed at participation (or received notice)	86.2	88.4*	85.1	88.3*	92.5	94.5*	87.7
Pre-program earnings[a]		†				†	
None	32.6	26.3*	31.4	35.4*	30.4	31.5*	27.7
$1–$2,499	10.3	16.4*	9.9	11.1*	29.6	27.2*	35.6
$2,500–$4,999	8.6	15.5*	8.4	9.0*	20.0	20.0	20.1
$5,000–$7,499	8.4	13.3*	8.2	8.6*	11.5	11.9	10.7
$7,500–$9,999	7.6	10.5*	7.6	7.6*	5.0	5.6*	3.6
$10,000–$19,999	18.9	14.1*	19.4	17.9*	3.4	3.9*	2.2
$20,000 or more	13.6	3.8*	15.3	10.3*	0.1	0.0	0.1
TANF recipient	NA	NA	NA	NA	2.2	2.4*	1.6
Other public assistance	NA	NA	NA	NA	1.8	0.9*	3.9
Disability	3.1	1.4*	3.2	3.0*	2.2	1.3*	4.3
Limited English proficiency	NA	NA	NA	NA	28.1	36.5*	7.4
Offender	NA	NA	NA	NA	5.2	2.9*	10.5
Single parent	NA	NA	NA	NA	17.5	19.0*	13.8
Veteran or eligible spouse	7.5	1.4*	7.7	7.3*	1.9	1.5*	2.7
Local area characteristics							
Number of areas	457	375	348	159	173	147	136
Poverty rate	16.7	20.7*	16.6	16.8*	19.7	20.2*	18.5
Rural areas	21.8	17.7*	18.8	28.8*	24.6	17.9*	41.3
Unemployment rate	9.1	12.9*	9.2	8.9*	11.4	12.4*	8.7
Employment in:							
Federal government	2.2	2.4*	2.3	2.0*	2.5	2.6*	2.1
State government	3.4	3.1*	3.3	4.0*	3.2	3.1*	3.7
Local government	11.8	14.6*	11.8	11.3*	14.6	14.8*	13.6
Goods producing							
Natural resources and mining	2.1	11.4*	2.3	1.2*	8.4	9.7*	3.3
Construction	4.4	3.8*	4.5	4.1*	3.9	3.8*	4.3
Manufacturing	9.8	6.8*	8.8	12.8*	8.4	7.2*	12.5
Service providing							
Trade, transportation, and utilities	19.5	18.0*	19.3	19.8*	18.9	18.6*	19.7
Information	2.1	1.3*	2.2	1.7*	1.4	1.4*	1.6
Financial activities	5.2	4.0*	5.2	5.1*	4.0	3.9*	4.3
Professional business	11.8	9.1*	11.9	11.3*	9.3	9.3	9.2
Education and health	14.4	12.6*	14.5	14.2*	13.5	13.3*	14.0
Leisure and hospitality	10.4	9.4*	10.4	10.2*	9.8	9.6*	10.3
Other services	3.5	3.7	3.7	3.0*	3.4	3.5*	3.0
Unclassified	0.2	0.2*	0.2	0.0*	0.2	0.2*	0.1

Sources: LERS for ES, and WIASPR for NFJP for customer characteristics; CEW, LAUS, MCDC, and SAIPE for local area characteristics.

[a] The variable pre-program earnings is based on earnings in the 2nd and 3rd quarters before program participation for ES customers, and on earnings in the 1st and 2nd quarters before program participation for NFJP customers.

Table D.4. Characteristics of the Adult Program customers (percentages unless stated otherwise)

	All	Race/ethnicity				
		Hispanic	Asian	PI	INA	White
Customer characteristics						
Number of customers	419,803	52,299	11,381	1,756	4,218	243,676
Female	50.7	52.0*	52.0*	52.4*	52.9*	48.9
Age (at date of participation)		†	†	†	†	
18–24	18.0	25.3*	12.8*	21.0*	18.3*	15.4
25–54	69.7	67.4*	72.1*	71.1	73.4*	69.5
55 or older	12.3	7.3*	15.0	7.9*	8.3*	15.1
Education		†	†	†	†	
Less than high school	13.1	22.6*	13.5*	15.3*	16.8*	10.8
High school diploma or GED	45.4	45.9	31.4*	53.8*	51.6*	45.8
Some college	25.9	22.0*	21.3*	19.9*	22.6*	26.1
Bachelor's degree or beyond	15.6	9.5*	33.8*	11.0*	9.0*	17.3
Not employed at participation (or received notice)	82.3	83.4*	84.0*	85.0*	85.6*	82.0
Pre-program earnings (2nd and 3rd quarters before participation)		†	†	†	†	
None	31.8	41.3*	41.8*	33.8*	37.0*	26.5
$1–$2,499	11.7	12.7*	8.2*	10.9	14.6*	10.2
$2,500–$4,999	9.1	8.7	6.2*	8.4	9.7	8.9
$5,000–$7,499	8.6	7.9*	6.7*	8.7	8.1	8.7
$7,500–$9,999	7.8	7.2*	6.2*	8.4	7.2*	8.3
$10,000–$19,999	19.6	15.7*	18.6*	20.4*	16.5*	22.7
$20,000 or more	11.5	6.5*	12.2*	9.4*	6.9*	14.7
Low income	48.8	56.3*	43.1	45.8*	53.9*	43.2
TANF recipient	3.2	5.1*	2.6*	4.2*	4.3*	2.2
Other public assistance	26.6	30.6*	16.9*	24.2	32.5*	22.7
Disability	4.9	3.8*	2.8*	4.1*	6.1	5.3
Limited English proficiency	1.5	4.9*	10.6*	2.5*	1.2*	0.4
Offender	7.8	9.0*	2.5*	8.9*	15.9*	6.8
Single parent	11.0	14.0*	5.3*	4.5*	11.7*	8.1
Veteran or eligible spouse	7.6	4.3*	2.3*	4.8*	7.3*	9.0
Local area characteristics						
Number of areas	565	515	376	169	336	564
Poverty rate	16.3	17.3*	15.6*	15.6*	16.2*	15.8
Rural areas	20.2	10.9*	8.3*	12.0*	22.3*	25.0
Unemployment rate	9.1	10.0*	9.3*	8.8*	8.7*	8.9
Employment in:						
Federal government	1.8	1.8*	1.7*	1.9*	2.1*	1.6
State government	3.1	2.7*	2.7*	3.9*	3.8*	3.3
Local government	11.3	11.3*	9.8*	9.9*	11.9	11.8
Goods producing						
Natural resources and mining	1.8	3.5*	1.6*	1.7	2.5*	1.8
Construction	4.3	4.2*	4.2	4.4*	4.2	4.2
Manufacturing	11.3	9.7*	11.0*	10.4*	11.4*	12.1
Service providing						
Trade, transportation, and utilities	19.3	19.2*	18.8*	19.4	19.1*	19.4
Information	2.0	2.3*	2.7*	2.3*	1.9*	1.8
Financial activities	5.0	5.2*	5.6*	5.3*	4.8*	4.7
Professional business	11.2	11.7*	13.4*	12.7*	11.0*	10.5
Education and health	15.7	16.4*	16.2*	14.7*	14.5*	15.0
Leisure and hospitality	10.0	9.6*	9.6*	10.1	10.1	10.1
Other services	3.6	3.9*	4.0*	3.9*	3.6*	3.5
Unclassified	0.2	0.3*	0.3*	0.1*	0.1	0.1

Sources: WIASRD for customer characteristics and CEW, LAUS, MCDC, and SAIPE for local area characteristics.

Table D.5. Characteristics of subpopulations across programs (percentages unless stated otherwise)

	Hispanic			Asian		PI			INA		MSFW	
	NFJP	Adult Program	ES	Adult Program	ES	Adult Program	ES	INAP	Adult Program	ES	NFJP (all)	ES
Number of customers	5,161	52,299	2,472,748	11,381	269,633	1,756	54,503	8,367	4,218	190,213	7,237	144,336
Female	41.1	52.0*	45.1*	52.0	47.7*	52.4	47.0*	55.1	52.9*	46.7*	39.8	31.1*
Age (at participation)		†	†		†				†	†		†
18–24	43.2	25.3*	21.3*	12.8	13.1	21.0	20.8	30.7	18.3*	20.1*	43.4	19.2*
25–54	52.7	67.4*	69.2*	72.1	69.9*	71.1	69.9	64.6	73.4*	70.5*	52.7	66.2*
55 or older	4.1	7.3*	9.5*	15.0	17.0*	7.9	9.3	4.6	8.3*	9.4*	3.9	14.6*
Education		†	†		†		†		†	†		†
Less than high school	73.7	22.6*	27.4*	13.5	12.7*	15.3	12.7*	18.6	16.8*	18.0	66.2	65.3
High school diploma or GED	22.0	45.9*	40.6*	31.4	28.4*	53.8	50.1*	60.3	51.6*	50.0*	26.2	25.1*
Some college	3.5	22.0*	19.9*	21.3	19.7*	19.9	21.3	14.7	22.6*	23.0*	5.7	5.8
Bachelor's degree or beyond	0.8	9.5*	12.1*	33.8	39.1*	11.0	15.9*	6.4	9.0*	8.9*	1.9	3.7*
Not employed at participation (or received notice)	94.5	83.4*	86.1*	84.0	87.0*	85.0	88.2*	87.2	85.6*	87.6	92.5	88.4*
Pre-program earnings (2nd and 3rd quarters before participation)		†	†		†		†					†
None	31.5	41.3*	30.8	41.8	32.8*	33.8	33.9	NA	37.0	32.9	30.4	26.3*
$1–$2,499	27.2	12.7*	10.9*	8.2	6.7*	10.9	9.3*	NA	14.6	13.1	29.6	16.4*
$2,500–$4,999	20.0	8.7*	9.5*	6.2	6.6	8.4	8.1	NA	9.7	9.1	20.0	15.5*
$5,000–$7,499	11.9	7.9*	9.3*	6.7	6.8	8.7	7.9	NA	8.1	8.2	11.5	13.3*
$7,500–$9,999	5.6	7.2*	8.8*	6.2	6.9*	8.4	7.6	NA	7.2	7.2	5.0	10.5*
$10,000–$19,999	3.9	15.7*	20.5*	18.6	19.7*	20.4	19.2	NA	16.5	15.4	3.4	14.1*
$20,000 or more	0.0	6.5*	10.1*	12.2	20.5*	9.4	14.0*	NA	6.9	14.0	0.1	3.8*
Disability	1.3	3.8*	2.2*	2.8	1.9*	4.1	2.9*	3.3	6.1*	3.6	2.2	1.4*
Limited English proficiency	36.5	4.9*	NA	10.6	NA	2.5	NA	2.2	1.2*	NA	28.1	NA
Offender	2.9	9.0*	NA	2.5	NA	8.9	NA	15.7	15.9	NA	5.2	NA
Single parent	19.0	14.0*	NA	5.3	NA	4.5	NA	18.5	11.7*	NA	17.5	NA
Veteran or eligible spouse	1.5	4.3*	4.4*	2.3	2.8*	4.8	6.1*	2.8	7.3*	6.6*	1.9	1.4*

	Hispanic			Asian		PI			INA		MSFW	
	NFJP	Adult Program	ES	Adult Program	ES	Adult Program	ES	INAP	Adult Program	ES	NFJP (all)	ES
Local area characteristics												
Number of areas	147	348	457	376	456	169	453	341	336	457	173	375
Poverty rate	20.2	17.3*	18.6*	15.6	15.1*	15.6	14.9*	18.0	16.2*	16.5*	19.7	20.7*
Rural areas	17.9	10.9*	12.2*	8.3	11.8*	12.0	15.4*	26.2	22.3*	33.1*	24.6	17.7*
Unemployment rate	12.4	10.0*	10.4*	9.3	9.0*	8.8	8.7	9.2	8.7*	7.8*	11.4	12.9*
Employment in:												
Federal government	2.6	1.8*	2.2*	1.7	2.4*	1.9	3.0*	3.2	2.1*	3.1*	2.5	2.4*
State government	3.1	2.7*	2.8*	2.7	3.6*	3.9	6.0*	4.4	3.8*	4.4	3.2	3.1*
Local government	14.8	11.3*	12.6*	9.8	9.9	9.9	8.7*	13.6	11.9*	14.0*	14.6	14.6
Goods producing												
Natural resources and mining	9.7	3.5*	3.6*	1.6	1.6	1.7	1.9*	2.6	2.5	2.6	8.4	11.4*
Construction	3.8	4.2*	4.2*	4.2	4.3*	4.4	4.4	4.1	4.2*	4.3*	3.9	3.8*
Manufacturing	7.2	9.7*	8.0*	11.0	8.8*	10.4	6.6*	7.7	11.4*	9.2*	8.4	6.8*
Service providing												
Trade, transportation, and utilities	18.6	19.2*	19.5*	18.8	19.0*	19.4	19.3	18.2	19.1*	19.0*	18.9	18.0*
Information	1.4	2.3*	2.3*	2.7	2.6*	2.3	2.0*	1.9	1.9	1.9	1.4	1.3*
Financial activities	3.9	5.2*	5.2*	5.6	5.6	5.3	5.0*	4.7	4.8	4.4*	4.0	4.0
Professional business	9.3	11.7*	11.9*	13.4	13.7*	12.7	12.4*	10.8	11.0*	9.6*	9.3	9.1*
Education and health	13.3	16.4*	14.4*	16.2	14.4*	14.7	13.5*	14.1	14.5*	14.0	13.5	12.6*
Leisure and hospitality	9.6	9.6	10.3*	9.6	10.5*	10.1	12.8*	11.0	10.1*	11.0	9.8	9.4*
Other services	3.5	3.9*	3.8*	4.0	4.0*	3.9	3.9	3.5	3.6*	3.1*	3.4	3.7*
Unclassified	0.2	0.3*	0.3*	0.3	0.3*	0.1	0.2*	0.2	0.1*	0.1*	0.2	0.2*

Sources: LERS for ES, WIASRD for Adult Program, SPIR for INAP, and WIASPR for NFJP for customer characteristics; CEW, LAUS, MCDC, and SAIPE for local area characteristics.

Table D.6. Characteristics of those coenrolled with the NFJP (percentages unless stated otherwise)

	Adult Program			NFJP			
	All	Coenrolled NFJP	Not coenrolled	All	Coenrolled WIA Title IB	Coenrolled ES	Not coenrolled in WIA Title IB or ES
Number of customers	419,803	44	419,759	7,237	781	497	6,065
Customer characteristics							
Female	50.7	36.4	50.7	39.8	33.8*	71.6*	38.5
Age (at participation)					†		
18–24	18.0	15.9	18.0	43.4	38.3*	45.7	44.0
25–54	69.7	79.5	69.7	52.7	58.6*	50.3	52.1
55 or older	12.3	4.5	12.3	3.9	3.1	4.0	4.0
Race/ethnicity							
Hispanic	12.9	72.7*	12.9	71.4	73.9*	81.9*	70.4
Education		†			†	†	
Less than high school	13.1	38.6*	13.1	66.2	61.2*	92.0*	65.2
High school diploma or GED	45.4	47.7	45.4	26.2	32.1*	5.6*	26.8
Some college	25.9	6.8*	25.9	5.7	4.7	2.0*	6.0
Bachelor's degree or beyond	15.6	6.8*	15.6	1.9	1.9	0.4*	2.0
Not employed at participation (or received notice)	82.3	90.9*	82.3	92.5	96.3*	92.2	92.1
Pre-program earnings (2nd and 3rd quarter before participation)		†			†		
None	31.8	63.6*	31.8	30.4	28.7	37.0	30.3
$1–$2,499	11.7	4.5*	11.7	29.6	27.5	28.6	30.1
$2,500–$4,999	9.1	6.8	9.1	20.0	17.9	16.7	20.5
$5,000–$7,499	8.6	9.1	8.6	11.5	11.9	9.9	11.5
$7,500–$9,999	7.8	4.5	7.8	5.0	6.9*	4.8	4.7
$10,000–$19,999	19.6	11.4	19.6	3.4	7.0*	3.0	2.9
$20,000 or more	11.5	0.0*	11.5	0.1	0.0*	0.0	0.1
Low income	48.8	95.5*	48.8	NA	NA	NA	NA
TANF recipient	3.2	6.8	3.2	2.2	4.4*	1.2	2.0
Other public assistance	26.6	29.5	26.6	1.8	3.2*	2.4	1.5
Disability	4.9	2.3	4.9	2.2	0.6*	1.6	2.4
Limited English proficiency	1.5	27.3*	1.5	28.1	21.6*	30.0	28.8
Offender	7.8	6.8	7.8	5.2	6.3	3.6	5.1
Single parent	11.0	11.6	11.0	17.5	24.6*	29.4*	15.8
Veteran or eligible spouse	7.6	4.5	7.6	1.9	0.8*	0.4*	2.1
Local area characteristics							
Number of areas	565	21	565	173	61	39	170
Poverty rate	16.3	17.9*	16.3	19.7	21.4*	18.3*	19.6
Rural areas	20.2	14.2*	20.2	24.6	22.0*	11.9*	25.8
Unemployment rate	9.1	12.5*	9.1	11.4	12.1*	12.7*	11.1
Employment in:							
Federal government	1.8	2.0	1.8	2.5	1.9*	2.0*	2.6
State government	3.1	7.7*	3.1	3.2	2.9*	2.1*	3.3
Local government	11.3	12.9*	11.3	14.6	14.5*	11.8*	14.9
Goods producing							
Natural resources and mining	1.8	6.3*	1.8	8.4	9.4*	5.1*	8.4
Construction	4.3	4.0	4.3	3.9	4.2*	4.7*	3.8
Manufacturing	11.3	7.0*	11.3	8.4	8.1*	4.8*	8.8
Service providing							
Trade, transportation, and utilities	19.3	17.2*	19.3	18.9	18.8	20.1*	18.8
Information	2.0	1.8	2.0	1.4	1.1*	1.6*	1.5
Financial activities	5.0	4.3*	5.0	4.0	4.1*	5.4*	3.9
Professional business	11.2	11.5	11.2	9.3	8.4*	12.2*	9.1
Education and health	15.7	12.0*	15.7	13.5	13.6	15.0*	13.4
Leisure and hospitality	10.0	9.3*	10.0	9.8	9.5	12.4*	9.7
Other services	3.6	4.4*	3.6	3.4	3.5	3.0*	3.5
Unclassified	0.2	0.3*	0.2	0.2	0.2	0.0*	0.2

Sources: WIASRD for Adult Program and WIASPR for NFJP for customer characteristics; CEW, LAUS, MCDC, and SAIPE for local area characteristics.

Table D.7. Services received from and outcomes following participation in ES (percentages unless stated otherwise)

		Race/ethnicity				
	All	Hispanic	Asian	PI	INA	White
Number of customers	15,713,778	2,472,748	269,633	54,503	190,213	7,729,338
Services						
Workforce information	62.9	63.7*	65.8*	68.4*	66.0*	58.7
Staff-assisted	69.9	78.6*	72.4*	67.8*	65.1*	65.6
Career guidance	14.7	11.5*	17.1	21.4*	21.8*	17.0
Job search activities	34.6	37.2*	34.1	29.6*	32.3*	34.2
Employment referral	23.2	22.3*	16.5*	17.1*	25.2*	23.6
WIA services referral	8.3	6.4*	10.8*	6.3*	7.4*	8.8
LVER or DVOP	2.7	1.6*	1.1*	2.2*	2.1*	3.1
Outcomes						
Employment (common measures)						
Entered employment	52.8	54.8*	49.3*	52.5*	50.4*	54.0
Retained employment	80.6	80.7*	84.1*	81.1*	74.3*	81.7
Post-participation earnings, 2nd and 3rd quarters after participation, in dollars						
If retained employment (common measure)	14,288	13,661*	18,464*	13,616*	12,752*	15,193
Including those not retained	7,453	7,391*	9,592*	6,993*	6,009*	8,188

Source: LERS.

Table D.8. Services received from and outcomes following MSFW participation in ES and Hispanic participation in the NFJP (percentages unless stated otherwise)

	ES				NFJP		
	All	MSFW	Not MSFW	Missing on MSFW	All	Hispanic	Not Hispanic
Number of customers	15,713,778	144,336	10,513,150	5,056,292	7,237	5,161	2,069
Services							
Workforce information	62.9	71.6*	63.2	61.9*	NA	NA	NA
Staff-assisted	69.9	93.2*	73.1	62.5*	NA	NA	NA
Career guidance	14.7	20.4*	14.7	14.6*	NA	NA	NA
Job search activities	34.6	44.1*	38.7	25.9*	NA	NA	NA
Employment referral	23.2	33.7*	22.5	24.2*	NA	NA	NA
WIA services referral	8.3	3.8*	9.4	6.0*	NA	NA	NA
LVER or DVOP	2.7	0.4*	2.7	2.9*	NA	NA	NA
Intensive and training						†	
Neither	NA	NA	NA	NA	0.8	0.5*	1.6
Intensive services only	NA	NA	NA	NA	17.8	19.4*	13.9
Training only	NA	NA	NA	NA	0.1	0.1	0.0
Both	NA	NA	NA	NA	81.3	80.0*	84.4
Supportive services	NA	NA	NA	NA	68.1	64.5*	77.1
Focus of occupational skills training, if received training	NA	NA	NA	NA		†	
Agricultural, natural resources, and construction	NA	NA	NA	NA	7.2	6.8	8.2
Managerial, administrative, professional, and technical	NA	NA	NA	NA	9.3	7.2*	14.4
Mechanical and transportation	NA	NA	NA	NA	48.0	46.6*	51.2
Sales, clerical, and administrative support	NA	NA	NA	NA	14.0	18.1*	4.0
Service	NA	NA	NA	NA	21.5	21.3	22.1
Outcomes							
Employment (common measures)							
Entered employment	52.8	63.6*	52.6	52.8*	83.3	83.0	84.1
Retained employment	80.6	72.0*	81.2	79.6*	81.7	79.7*	86.5
Post-participation earnings, 2nd and 3rd quarters after participation, in dollars							
If retained employment (common measure)	14,288	12,470*	14,636	13,609*	10,531	10,122*	11,437
Including those not retained	7,453	7,295*	7,637	7,077*	9,037	8,598*	10,070

Sources: LERS for ES; WIASPR for NFJP.

Note: The All column for ES includes only customers with a non-missing value for MSFW. Needs-related payments are not part of the ES and NFJP services.

Table D.9. Services and outcomes following participation in the Adult Program (percentages unless stated otherwise)

		Race/ethnicity				
	All	Hispanic	Asian	PI	INA	White
Number of customers	419,803	52,299	11,381	1,756	4,218	243,676
Services						
Intensive and training		†	†	†	†	
Neither	0.0	0.0	0.0	0.0	0.0	0.0
Intensive services only	71.1	71.9*	75.6*	79.8*	70.8*	72.9
Training only	1.6	1.3	1.4	1.1	0.9*	1.3
Both	27.3	26.8*	23.0*	19.1*	28.3*	25.8
Needs-related payments	0.4	0.4	0.2*	0.0*	0.3	0.3
Supportive services	16.7	22.4*	14.5	18.5*	24.4*	14.9
Focus of occupational skills training, if received training		†	†	†	†	
Agricultural, natural resources, and construction	3.7	4.0*	2.2*	3.2	6.1*	3.4
Managerial, administrative, professional, and technical	39.2	33.5*	40.2	28.7*	30.5*	41.8
Mechanical and transportation	22.6	23.5	21.8	21.5	20.7*	23.3
Sales, clerical, and administrative support	11.3	13.9*	10.6	21.5*	15.1*	11.7
Service	23.3	25.0*	25.2*	25.1*	27.5*	19.9
Outcomes						
Employment (common measures)						
Entered employment	61.3	62.9*	57.9*	58.2*	56.0*	61.4
Retained employment	83.8	82.6*	86.7*	83.2	77.5*	84.9
Post-participation earnings, 2nd and 3rd quarters after participation, in dollars						
If retained employment (common measure)	14,010	12,886*	16,463*	12,478*	12,166*	14,810
Including those not retained	8,249	7,643*	9,626*	7,129*	6,164*	8,864

Sources: WIASRD, for Adult Program; WIASPR for NFJP.

Table D.10. Services and outcomes of subpopulations across programs (percentages unless stated otherwise)

	Hispanic			Asian		PI			INA		MSFW	
	NFJP	Adult Program	ES	Adult Program	ES	Adult Program	ES	INAP	Adult Program	ES	NFJP	ES
Number of customers	5,161	52,299	2,472,748	11,381	269,633	1,756	54,503	8,367	4,218	190,213	7,237	144,336
Services												
Core services	NA	67.6	100.0	72.6	100.0*	82.5	100.0*	64.1	71.3*	100.0*	NA	100.0
Intensive and training services												
Neither	0.5	0.0*	n.a	0.0	n.a.	0.0	n.a.	17.1	0.0*	n.a.	0.8	n.a
Intensive services only	19.4	71.9*	n.a	75.6	n.a	79.8	n.a	45.7	70.8*	n.a	17.8	n.a
Training only	0.1	1.3*	n.a	1.4	n.a	1.1	n.a	14.4	0.9*	n.a	0.1	n.a
Both	80.0	26.8*	n.a	23.0	n.a	19.1	n.a	22.8	28.3*	n.a	81.3	n.a
Supportive services	64.5	22.4*	n.a.	14.5	n.a	18.5	n.a	NA	24.4	n.a	68.1	n.a
Focus of occupational skills training, if received training		†							†			
Agricultural, natural resources, and construction	6.8	4.0*	n.a	2.2	n.a	3.2	n.a	6.7	6.1	n.a	7.2	n.a
Managerial, administrative, professional, and technical	7.2	33.5*	n.a	40.2	n.a	28.7	n.a	41.1	30.5*	n.a	9.3	n.a
Mechanical and transportation	46.6	23.5*	n.a	21.8	n.a	21.5	n.a	13.8	20.7*	n.a	48.0	n.a
Sales, clerical, and administrative support	18.1	13.9*	n.a	10.6	n.a	21.5	n.a	10.5	15.1*	n.a	14.0	n.a
Service	21.3	25.0*	n.a	25.2	n.a	25.1	n.a	27.9	27.5	n.a	21.5	n.a
Outcomes												
Employment (common measures)												
Entered employment	83.0	62.9*	54.8*	57.9	49.3*	58.2	52.5*	62.1	56.0*	50.4*	83.3	63.6*
Retained employment	79.7	82.6*	80.7	86.7	84.1*	83.2	81.1	76.8	77.5	74.3*	81.7	72.0*
Post-participation earnings, 2nd and 3rd quarters after participation, In dollars												
If retained employment (common measure)	10,122	12,886*	13,661*	16,463	18,464*	12,478	13,616*	9,858	12,166*	12,752*	10,531	12,470*
Including those not retained	8,598	7,643*	7,391*	9,626	9,592	7,129	6,993	NA	6,164*	6,009*	9,037	7,295*

Sources: LERS for ES; WIASRD for Adult Program; SPIR (services) and CRIS (outcomes) for INAP; WIASPR for NFJP.

Note: Needs-related payments are available only in the WIASRD, which precludes cross-program comparisons.

Table D.11. Associations between customer and local area characteristics and services received (average marginal effects unless stated otherwise)

	Hispanic		Asian		PI		INA		MSFW	
	Raw difference	Controlling for characteristics	Raw difference	Controlling for characteristics	Raw difference	Controlling for characteristics	Raw difference	Controlling for characteristics	Raw difference	Controlling for characteristics
Employment Service										
Number of customers	15,713,778	15,713,778	15,713,778	15,713,778	15,713,778	15,713,778	15,713,778	15,713,778	15,713,778	15,713,778
Career guidance	-0.051*	-0.025* *-51.0%*	0.001	0.012* *A*	0.040*	0.024* *-40.0%*	0.043*	0.043* *0.0%*	0.057*	0.036* *-36.8%*
Job search activities	0.025*	0.037* *23.3%*	-0.001	0.028* *A*	-0.046*	-0.016* *-65.2%*	-0.019*	0.005* *-126.3%*	0.052*	0.034* *-34.6%*
Referred to employment	-0.013*	0.028* *-315.4%*	-0.069*	-0.020* *-71.0%*	-0.064*	-0.021* *-67.2%*	0.016*	0.000 *B*	0.113*	0.158* *39.8%*
Referred to WIA services	-0.024*	-0.017* *-29.2%*	0.019*	0.000 *B*	-0.023*	-0.019* *-17.4%*	-0.013*	-0.002* *-84.6%*	-0.050*	-0.014* *-72.0%*
Adult Program										
Number of customers	419,803	419,803	419,803	419,803	419,803	419,803	419,803	419,803	NA	
Received training	0.010*	0.032* *220.0%*	-0.028*	0.022* *-178.6%*	-0.072*	-0.058* *-19.4%*	0.021*	0.015* *-28.6%*	NA	
Focus of occupational skills training, if received training										
Managerial, administrative, professional, and technical	-0.081*	-0.061* *-24.7%*	-0.016	-0.012 *C*	-0.128*	-0.102* *-20.3%*	-0.110*	-0.057* *-48.2%*	NA	
Mechanical and transportation	0.003	0.010* *A*	-0.014	0.009 *C*	-0.017	0.036 *C*	-0.025*	-0.025* *0.0%*	NA	
Sales, clerical, and administrative support	0.021*	0.015* *-28.6%*	-0.010	-0.024* *A*	0.096*	0.040* *-58.3%*	0.033*	0.011 *B*	NA	
Service	0.055*	0.026* *-52.7%*	0.057*	0.051* *-10.5%*	0.056*	0.009 *A*	0.082*	0.039* *-52.4%6*	NA	

Sources: LERS for ES; WIASRD for Adult Program.

Note: *A* indicates a coefficient went from insignificant to significant with inclusion of characteristics into the estimation, *B* indicates that it went from significant to insignificant and C indicates it stayed insignificant..

Table D.12. Associations between services received and post-participation employment and earnings (average marginal effects unless stated otherwise)

	Hispanic		Asian		PI		INA		MSFW		
	Controlling for characteristics	Controlling for services	Controlling for characteristics	Controlling for services	Controlling for characteristics	Controlling for services	Controlling for characteristics	Controlling for services	Controlling for characteristics	Controlling for services	Number of customers
Employment Service											
Employment (common measures)											
Entered employment	0.041*	0.038* *-7.3%*	-0.034*	-0.033* *-2.9%*	-0.014*	-0.013* *-7.1%*	-0.058*	-0.058* *0.0%*	0.156*	0.146* *-6.4%*	13,288,289
Retained employment	0.009*	0.009* *0.0%*	0.015*	0.015* *0.0%*	-0.002	-0.002 *0.0%*	-0.065*	-0.065* *0.0%*	-0.049*	-0.047* *-4.1%*	8,719,656
Post-participation earnings, 2nd and 3rd quarters											
If retained employment (common measure)	-372*	-369* *-0.8%*	1,338*	1,341* *0.2%*	-750*	-753* *0.4%*	-544*	-545* *0.2%*	870*	1,019* *17.1%*	6,932,997
Including those not retained	205*	185* *-9.8%*	390*	415* *6.4%*	-556*	-547* *-1.6%*	-795*	-775* *-2.5%*	1,704*	1,679* *-1.5%*	15,487,205
Adult Program											
Employment (common measures)											
Entered employment	0.042*	0.037* *-11.9%*	-0.024*	-0.028* *16.7%*	-0.011	-0.004 *0.0%*	-0.036*	-0.039* *8.3%*	NA		340,399
Retained employment	0.004	0.003 *0.0%*	0.019*	0.019* *0.0%*	-0.002	0.001 *0.0%*	-0.048*	-0.050* *4.2%*	NA		270,359
Post-participation earnings, 2nd and 3rd quarters after participation, in dollars											
If retained employment (common measure)	-241*	-316* *31.1%*	1,262*	1,202* *-4.8%*	-1,139*	-934* *-18.0%*	-704*	-734* *4.3%*	NA		220,168
Including those not retained	304*	201* *-33.9%*	828*	762* *-8.0%*	-599*	-436* *-27.2%*	-890*	-933* *4.8%*	NA		412,364

Sources: LERS for ES; WIASRD for Adult Program.

Note: The sample size differs for each outcome because each outcome captures information for a different sample. See Appendix B for definitions.

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