**How Are Women Served by the WIA Adult and Dislocated Worker Programs? Findings from Administrative Data**

Final Report

December 21, 2012

Nan Maxwell
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Policy Research

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ACKNOWLEDGMENTS

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ABSTRACT

We describe the characteristics, service receipt, and short-term labor market outcomes of female customers leaving the Workforce Investment Act (WIA) Adult and Dislocated Worker programs in 2009. We also assess gender differences in each of these domains and how service receipt and outcomes varied with local area characteristics. We found that females were more likely than males to face employment barriers before enrolling in WIA programs. These differences, along with geographic factors, mostly explained the more extensive receipt of training and supportive services among females. However, measures of customer and local area characteristics available for our analysis could not explain large gender disparities in the focus of occupational skills training and in post-program earnings. We recommend conducting a process study to better understand gender differences in occupational skills training, and we suggest changes to existing data systems that would facilitate stronger quantitative analyses of the experiences and outcomes of WIA customers.

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EXECUTIVE SUMMARY

The Workforce Investment Act of 1998 (WIA) programs, administered by the U.S. Department of Labor (DOL), were designed to address the challenges that workers face in obtaining and maintaining adequate jobs. The WIA Adult and Dislocated Worker programs provide employment and training services to eligible customers through a network of almost 3,000 American Job Centers (formerly known as One-Stop Career Centers). Staff at American Job Centers use a customized approach to service delivery for adults and dislocated workers, providing more training and supportive services to customers whose needs are not met by the core service offerings.[1]

Female customers of the workforce system might face greater challenges than men in achieving satisfactory employment. Previous research indicates that women receive lower earnings than men (DOL, Bureau of Labor Statistics [BLS] 2012a) and are more likely to hold jobs paying hourly rates at or below the minimum wage (BLS 2012b). Part of these gender gaps in earnings might be related to the differences in the types of occupations in which women and men are employed; women are less likely to hold jobs as managers or skilled workers (Equal Employment Opportunity Commission 2011).

Although there are no special WIA programs for them, these patterns suggest that women could have a particularly strong need for WIA services targeted toward reducing their employment barriers. Aggregate program data indicate that females were one-half more likely than males to receive WIA-funded training through the Adult and Dislocated Worker programs. However, after exiting from the WIA system, women earned, on average, about three-quarters the amount that men earned (Social Policy Research Associates 2011a). No previous study has focused on the extent to which these gender differences are associated with other factors that differ between men and women, such as their characteristics, the types of WIA services they receive, or the labor market opportunities they face.

The purpose of this study, conducted for the Women's Bureau at DOL and sponsored by DOL's Chief Evaluation Office, is to gain more insight into how the WIA Adult and Dislocated Worker programs address the needs of its adult female customers. The core of our analysis focuses on the following research questions:

1. What are the demographic and pre-program characteristics of female customers in the Adult and Dislocated Worker programs? What proportion of women have characteristics that are associated with barriers to employment? Do the differences between females and males suggest that women are more likely to face employment barriers?[2]

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[1] Supportive services (including needs-related payments) provide customers with assistance in meeting their related needs for child care, transportation, and other work supports.

[2] Although the administrative data used for this study do not allow employment barriers to be directly observed, we identified several characteristics that are often associated with such barriers: having a low income, less than a high school education, a disability, and/or limited English proficiency as well as being a single parent. Hence, we describe the prevalence of each of these characteristics to learn about the extent to which females and males might face barriers to employment.

2. What services do female customers receive? How do gender differences in service receipt change when taking into account differences between women and men in their characteristics?

3. What are the labor market outcomes of female customers? How do gender gaps in outcomes change when accounting for gender differences in characteristics and service receipt?

In answering these research questions, we also assess whether the patterns we find vary across local workforce investment areas (LWIAs). This information can be used to identify areas for further research, to identify opportunities for strengthening certain types of services, or to better target services to specific groups of female customers. Our analysis of gender differences also suggests areas for additional research on improving service provision and, ultimately, the labor market outcomes for females after they leave the WIA programs.

The first section of this executive summary gives an overview of the data and methods we used in this study and the second section highlights the major findings of the study. The final three sections include a discussion of the study's limitations, recommendations for future research and data collection strategies, and our concluding remarks.

A.   Data and Methods

We used two publicly available data sources in our analysis. First, we examined individual-level information from the Workforce Investment Act Standardized Records Data (WIASRD) system to describe the characteristics of WIA customers who left the Adult and Dislocated Worker programs, the types of services they received before leaving, and which of these factors were associated with improved post-program employment and earnings outcomes. Second, we linked in area-level information from the American Community Survey data to the WIASRD to examine whether service receipt and outcomes varied systematically with socioeconomic characteristics of the local areas in which customers were served by the WIA programs.

We used several descriptive statistical techniques in our analysis. First, we developed a series of simple descriptive statistics, such as means, percentages, and correlations. Analyzing these summary measures allowed us to characterize the barriers faced by groups of female WIA customers, the characteristics of the local areas where they participated in the program, the WIA services they received, and how they fared in the job market. We also used the simple descriptive statistics to summarize differences between female and male customers in service receipt and post-program outcomes. Second, to better isolate the potential sources of gender disparities in service receipt, earnings, and employment we used a linear regression analysis to account for other measured factors that might differ between genders.

B.   Overview of the Study's Findings

The subsections below summarize the results of our study for the three research questions, which concern (1) barriers and other customer characteristics, (2) receipt of services through the WIA programs, and (3) post-program labor market outcomes. We weave our analysis of local area characteristics throughout this discussion.

The findings below are based on women and men who left the Adult and Dislocated Worker programs in 2009. Because that year included the trough of the recent recession and represented a

fairly unique period for the economy as a whole, we also undertook a sensitivity analysis that focused on customers who exited in 2007, a year that included the peak of the business cycle. We found differences over time in the overall population of female customers served, the services they received, and their post-program earnings. However, we observed similar shifts in the population of male customers between years. As a result, *gender differences*—a major focus of this study—were generally similar in the two time periods.

1.   Barriers and Other Customer Characteristics

A majority of female customers entering the Adult program faced employment barriers. Almost half of these women had low incomes, which was by far the most common barrier we examined. Further, 20 percent were single parents, and 13 percent had not finished high school. A relatively small fraction of females had a disability (5 percent) or limited English proficiency (2 percent). Approximately 25 percent of all women who left the Adult program faced two or more of the barriers we analyzed. Customers in the Dislocated Worker program appear to have been less disadvantaged. Although no information about family income is collected for this program, the prevalence of each of the non-income barriers we examined was lower among customers in the Dislocated Worker than the Adult program. In both programs, barriers were generally more common among younger women, minorities, and women who were not employed when they began participating in their WIA program.

Women were more likely than men to face employment barriers. As shown for the Adult program in Figure 1, approximately 59 percent of women and 50 percent of men had at least one of the characteristics associated with employment barriers that we examined. Most of this gender difference was driven by a larger fraction of women having low incomes and being single parents. The higher prevalence of employment barriers among female customers, relative to males, might reflect the socioeconomic characteristics of the local areas in which they received WIA services. For example, females were more likely than males to be served in areas with high rates of poverty and single parenthood (although they were less likely to come from high unemployment areas). Gender differences in the prevalence of specific employment barriers in the Dislocated Worker program were smaller than in the Adult program but followed a similar pattern. In both programs, gender differences in other characteristics such as age and race/ethnicity were less pronounced than the gender differences in employment barriers. This analysis suggests that, as a group, women might have a greater need for some WIA services than men have.

Figure 1. Comparison of Employment Barriers in the WIA Adult Program, by Gender
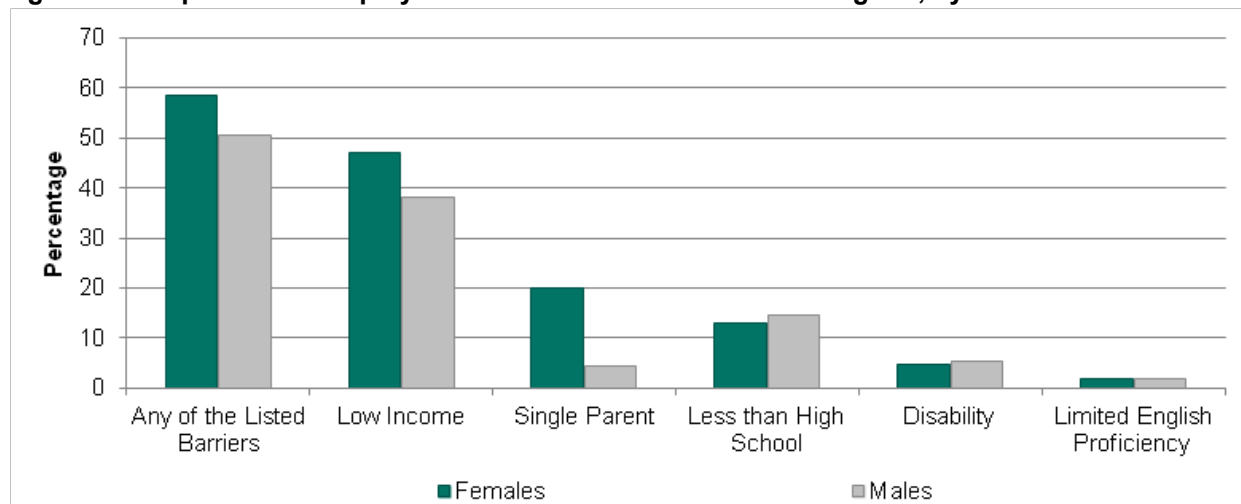
Source: Appendix F, Table F.2.

2.   Receipt of WIA Services

Women were more likely than men to receive training and supportive services. Females in the Adult program were over a third more likely than males to receive any kind of training, as shown in Figure 2. Similarly, females were one-half more likely than males to receive supportive services. In the Dislocated Worker program, gender differentials in the receipt of training and supportive services also favored females but were relatively small.

Figure 2. Extent of Services Received, by WIA Program and Gender
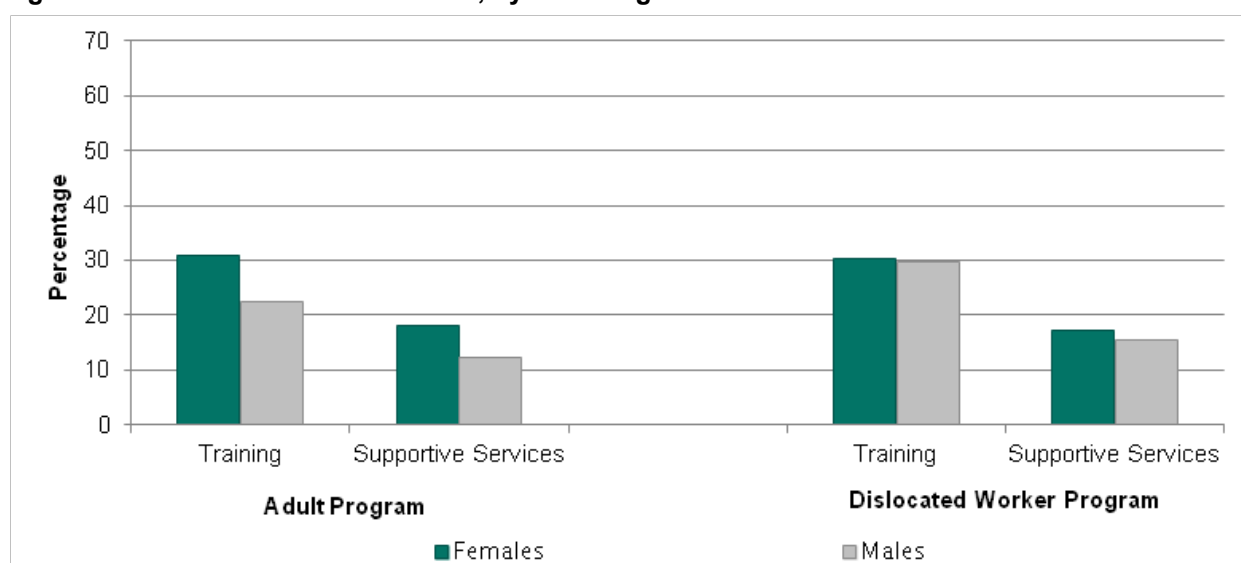
Source: Appendix F, Table F.11.

Women facing pre-program employment barriers received more extensive WIA services. Our analysis suggests that staff at American Job Centers target training and supportive services in a manner consistent with the goals of the WIA programs. For example, about 36 percent of the low-income women in the Adult program received training, compared to 27 percent of other women. Further, single parents in the Adult Program were almost two-thirds more likely than other women

to receive training and almost twice as likely to receive supportive services. Our geographic analysis also suggests that training and supportive services were more likely to be received in areas with high rates of employment in low-skilled, blue-collar jobs, compared with areas where employment was concentrated in high-skilled, white-collar jobs.

Most of the gender differentials in the extent of services received can be explained by customer and local area characteristics. We used a regression analysis to examine how the estimated female advantage in service receipt changed when accounting for customer and local area characteristics. The results of this analysis can be seen in Figure 3 by comparing the red bars (observed, unadjusted differences between women and men) and the light blue bars (estimated, adjusted difference when accounting for customer and local area characteristics). In the Adult program, the adjusted gender difference in the training rate is about one-tenth as large as the unadjusted gender difference. Similarly, when accounting for both customer- and area-level characteristics, the adjusted female advantage in supportive service receipt is three-tenths as large as the unadjusted difference. Few gender differences in the receipt of training or supportive services existed in the Dislocated Worker program both before and after accounting for customer and local area characteristics.

Figure 3. Gender Differences in the Extent of Services Received, by WIA Program
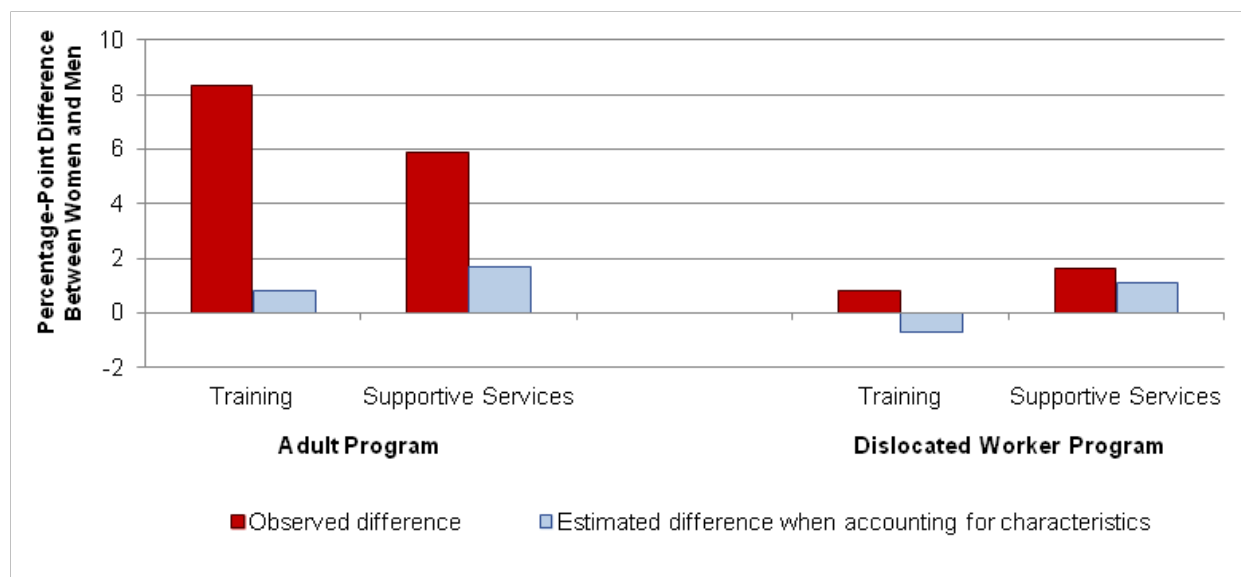
Source: Appendix F, Table F.47.

Note: The red bars represent observed differences between females and males in the percentage receiving services. The light blue bars represent estimates of the gender differences that have been adjusted using regression methods to account for (1) barriers, demographics, and other pre-program characteristics of customers and (2) area-level factors that might affect service receipt.

There were large gender differences in the focus of occupational skills training. Figure 4 shows the distribution of occupational skills training for females and males in the Adult program. Although approximately one in 10 males received training focused on agricultural, natural resources, or construction occupations, virtually no females did so. Further, although over half of the males received training focused on mechanical and transportation-related occupations, only about one in 15 females received training for those occupations. By contrast, the occupational skills training of females tended to be disproportionately concentrated in managerial, administrative, professional, or technical jobs; in sales, clerical, and administrative support jobs; and in service jobs. Our calculations indicate that gender balance would be achieved only if over 54 percent of the trainees who exited

from the Adult program had received skills training for a different occupation. Gender differentials in the distribution of occupational skills training were similar in the Dislocated Worker program.

Figure 4. Focus of Occupational Skills Training in the WIA Adult Program, by Gender
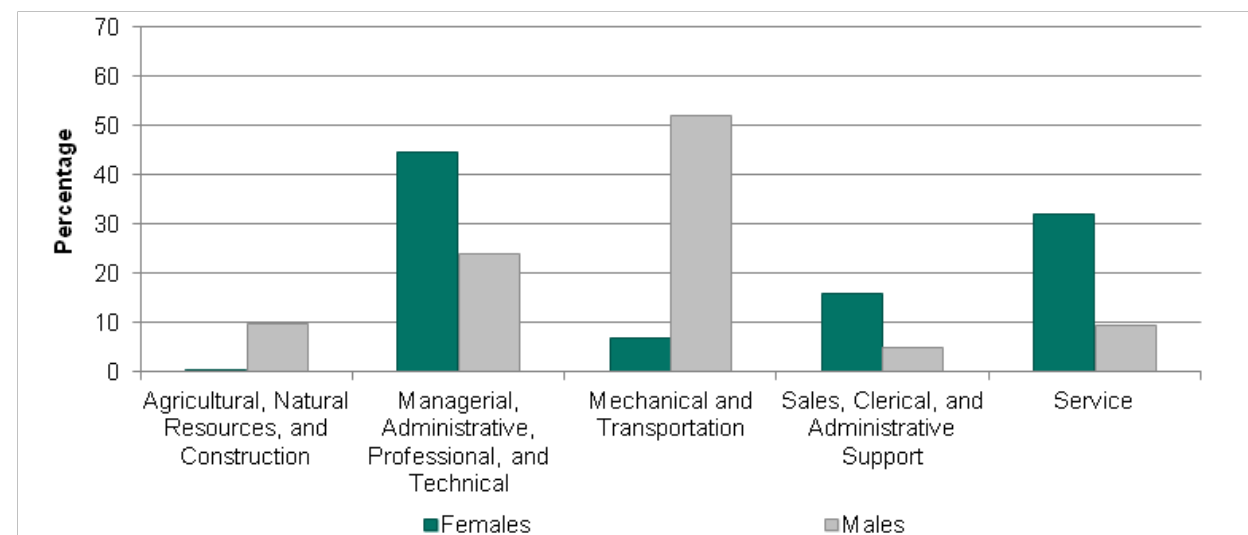
Note: Percentages are reported for customers who received training and for whom the field of training was reported.

Neither customer nor local area characteristics explain the large gender disparity in occupational skills training. Although the extent of gender dissimilarity varied noticeably with employment barriers and other characteristics, our regression analysis could account for very little of this difference. Our results indicates that, taken together, barriers, demographics, pre-program experiences in the labor market, and local area characteristics explained no more than one-seventh of the differential tendency of females and males to receive training for a given group of occupations.

3.   Post-Program Outcomes

Most females and males became employed during the year after leaving the WIA programs. Nearly three-quarters of female customers (74 percent in the Adult program and 72 percent in the Dislocated Worker program) who left a WIA program in 2009 became employed within 12 months of exiting. Rates of employment were slightly lower among males who left the Adult program (by 1 percentage point) and slightly higher among males leaving the Dislocated Worker program (by 2 percentage points). Because these gender differences were so small, our analysis of post-program earnings concentrated primarily on earnings.

Gender gaps in earnings during the first post-program year were substantial. Females earned approximately 14 percent less than males, on average, during the year after leaving the Adult program: $13,421 versus $15,539, for a difference of $2,118.[3] Among exiters from the Dislocated Worker program, the average earnings of females was approximately 21 percent lower than the average earnings of males during the first year after leaving the program: $15,196 versus $19,340, a difference of $4,144. Figure 5 illustrates these differences graphically.[4]

Figure 5. Earnings During the First Year After Leaving Each WIA Program, by Gender

Source: Appendix F, Table F.22.

Women with pre-program barriers tended to have lower post-program earnings. Women who were in low-income families before entering the Adult program had lower earnings than did other women during the year after exiting the program. Compared with other groups of females leaving the Adult or Dislocated Worker programs, earnings were lower among single parents, women with less education, and those who were not employed when they started receiving WIA services. This suggests a continued role of pre-program factors in explaining participants' earnings after leaving the WIA programs.

Post-program earnings varied substantially with the extent of services received and the focus of occupational skills training. Females who received training through the Adult program earned almost 80 percent more during the year after leaving the program than those who did not. In the Dislocated Worker program, there was a 37 percent earnings increase associated with the receipt of training. Of the women who received occupational skills training in either program, those whose

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[3] These earnings averages are based on the full population of WIA exiters, including both those who did and did not find a job during the first post-program year. This approach is intended to avoid confounding comparisons of earnings with unmeasured factors that might be associated with differences in the likelihood of becoming employed.

[4] We focus our discussion on the level of post-program earnings, rather than on pre- to post-program changes in earnings. Such changes are problematic to interpret because of the potential for gender differences in the extent to which pre-program losses in earnings spur workers to seek WIA services.

training concentrated on managerial, administrative, professional, or technical jobs tended to have the highest post-program earnings. In contrast, women who received training for sales, clerical, and administrative support jobs or for service jobs had relatively low average earnings after exiting.

Local area characteristics were related to geographic variability in the earnings of females who participated in the Dislocated Worker program. Earnings of females during the year after leaving the Dislocated Worker program tended to be lower in relatively disadvantaged areas and in areas with relatively little employment in high-skilled, white-collar industries and occupations. However, none of the area-level socioeconomic indicators we examined in this study substantially correlated with the post-program earnings of females who had participated in the Adult program.

Large unexplained gender gaps in post-program earnings remain after accounting for factors that vary by gender. This finding is based on a regression analysis in which we assessed how the female disadvantage in earnings changed when accounting for customer characteristics, service receipt, and local area characteristics. Figure 6 displays the results of our analysis graphically; the red bars represent the observed, unadjusted gender differences between the post-program earnings of women and men, and the light blue bars represent the estimated, adjusted gaps that account for characteristics and service receipt. In both programs the adjusted gaps are about 40 percent smaller than the unadjusted gaps. The remaining differences suggest that the customer characteristics, measures of service receipt, and local area characteristics assessed in this study explain only part of the gender gaps in post-program earnings. After accounting for those factors, the (unexplained) female disadvantage in earnings during the year after leaving the Adult and Dislocated Worker programs was $1,290 and $2,479, respectively.

Figure 6. Gender Differences in Earnings During the Year After Leaving Each WIA Program
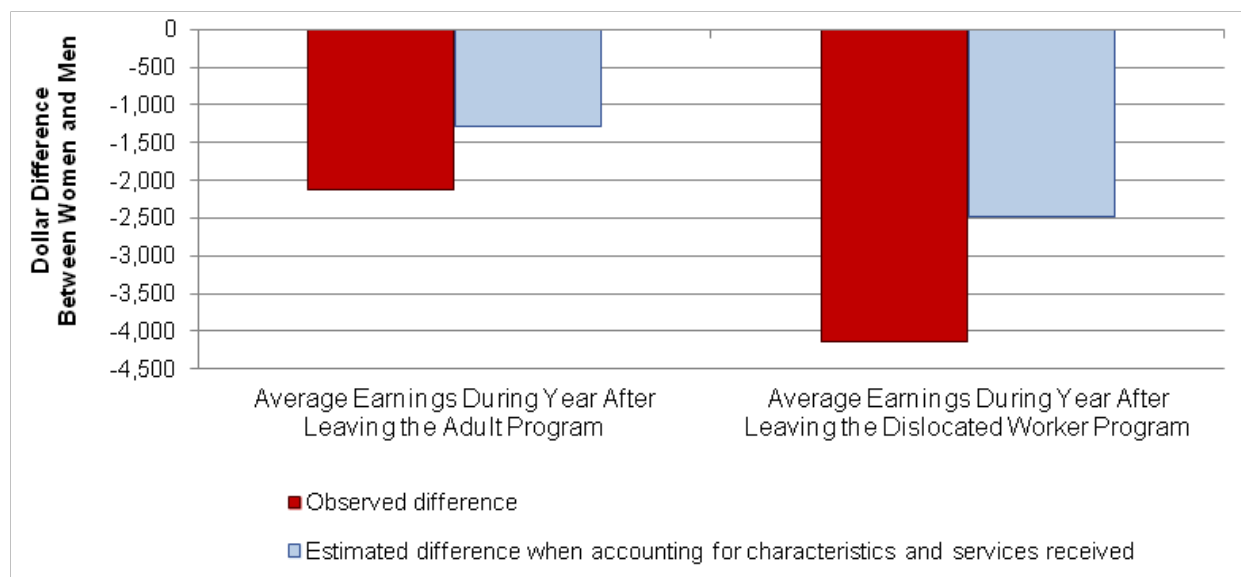
Source: Appendix F, Tables F.52 and F.53.

Note: The red bars represent observed differences between females and males in average earnings during the first post-program year. The light blue bars represent estimates of the gender differences that have been adjusted using a linear regression to account for (1) barriers, demographics, and other pre-program characteristics of customers; (2) the services that customers received; and (3) area-level factors that might affect service receipt and earnings.

C. Limitations

Our findings must be interpreted in the context of the data and methods used in our study. All of our analyses are descriptive; therefore, the results cannot be used to draw causal conclusions. We cannot say definitively, for example, that receiving a specific type of occupational skills training caused post-program earnings to be higher or lower because there are factors not captured in our research design that might underlie the relationship between training and outcomes. Using regression analysis allows us to adjust for the influence of some of the observable characteristics that vary significantly with training, employment, and earnings. However, the available data are limited and do not include measures of other important factors that might be correlated with both receipt of services and subsequent outcomes. Of particular concern for examining gender disparities is the relatively limited information that the WIASRD contains on pre-program characteristics such as the prior occupation of employment.

Our findings must also be considered within the time frame in which the data analyzed were collected. We examined the experiences of customers leaving the WIA programs in 2009, a year that coincided with the trough of one of the deepest recessions in recent memory. Our sensitivity analysis based on customers who exited in 2007 revealed a broadly similar pattern of gender differentials over time. Still, the three-year period we examined is relatively short, and different conclusions might have been drawn had we examined WIA in a different era—or even today.

D. Recommendations

We recommend that a process study be undertaken to help to gain insights into the large gender differences in occupational skills training and post-program earnings that could not be explained by the available administrative data. Such a study could shed light on how WIA program operations might influence women in their choice of services and in their employment aspirations, particularly relative to those of men. Examples of questions that might be addressed in such a study include:

- Does occupational skills training alleviate or exacerbate the gender segregation across occupations that exists before program entry? Are American Job Center counselors proactively suggesting or referring women and men to traditional occupations for training? Or are customers inclined to pursue traditional training despite counselors' efforts to encourage them to consider training in nontraditional fields?

- Do counselors' recommendations appropriately reflect varying conditions in the local labor market, and do some approaches to service provision lead to better employment earnings and outcomes than others?

- Are services structured to provide information and support that accommodate fully informed choices in occupational training? For example, are customers made aware of the earnings potential and employment opportunities associated with each type of occupational training?

- How is the choice of occupational skills training related to customers' career goals? To what extent do customers seek to use it to move ahead in their existing career path versus retooling their skill set for a new career trajectory?

We also recommend four steps that the Employment and Training Administration (ETA) might take to improve DOL's capacity to use the WIASRD to monitor women's progress in the Adult and

Dislocated Worker programs and to conduct other research about WIA customers. Specifically, we suggest the ETA request that states and American Job Centers:

- **Reduce the consequences of missing data through improved state reporting.** Especially important for monitoring women's experiences in the program is reducing missing data on occupational skills training.

- **Ensure the use of consistent customer identification numbers**. This would allow for a more comprehensive customer-level understanding of the services received and post-participation outcomes.

- **Request additional data items to facilitate longitudinal analyses.** Increased pre-program information (for example, about the prior occupation and industry of employment) could be particularly valuable for understanding the patterns of WIA service receipt and post-program outcomes. Additional information about customers' participation histories at American Job Centers and other organizations would allow DOL to refine its knowledge of the WIA system and of whether it is providing a "one-stop" system to meet all the service needs of its customers.

- **Encourage consistency in how service receipt is recorded.** There appears to be substantial variation across states, local areas, and American Job Center counselors in (1) the extent to which potential customers are recorded in the WIA system, (2) which tiers of services (core, intensive, and/or training) are recorded, and (3) the way particular services are classified across the tiers. A more standardized approach to recording service receipt would allow DOL to gain a better understanding of WIA service utilization in general. It would also allow for stronger future analyses of gender differences in service receipt and program outcomes.

E. Conclusion

This report provides three key insights about the experiences of women who participated in the WIA programs:

1. Women in the Adult program were about one-fourth more likely than men to receive occupational training and one-half more likely to receive supportive services. These differences can largely be explained by the customer and local area characteristics available for this study.

2. There were substantial dissimilarities between women and men in the types of occupational skills training they received through both the Adult and Dislocated Worker programs. At most, one-seventh of these disparities can be explained by the customer and local area characteristics examined in this study.

3. Women earned 14 percent less than men after leaving the Adult program and 21 percent less than men after leaving the Dislocated Worker program. Approximately three-fifths of this gender gap cannot be explained by this study's measures of customer and local area characteristics and receipt of WIA services.

Future research aimed at understanding the unexplained gender differentials we found could potentially allow the WIA programs to be structured to achieve more consistent excellence.

I. INTRODUCTION

The Workforce Investment Act of 1998 (WIA) programs are administered by the U.S. Department of Labor (DOL) and constitute the largest source of federally funded employment services and training in the United States. In fiscal year 2011, WIA employment and training programs served more than 8 million customers, with a budget of more than $2.9 billion (DOL 2012). DOL provides funding to states and local areas to serve a wide population and to empower customers with the ability to choose among various services through a network of almost 3,000 American Job Centers (formerly known as One-Stop Career Centers). Staff at American Job Centers are encouraged to adopt a customized approach to service delivery for adults and dislocated workers, providing more intensive services and training to customers whose needs are not met by the core service offerings. These higher levels of service are generally intended for customers who would otherwise be unable to obtain or maintain employment, particularly in jobs that allow for self-sufficiency (Public Law 105-220, Section 134).

WIA does not provide special programs for women, even though, as a group, they do not have parity with men in their earnings and occupations.[1] Among full-time workers in 2011, women tended to earn about 18 percent less than men (DOL, Bureau of Labor Statistics [BLS] 2012a). Also in 2011, women held about 62 percent of the jobs paying hourly rates at or below the minimum wage (BLS 2011b), even though they represented only 47 percent of the workforce (BLS 2012c). Gender gaps in earnings might be related to differences between women and men in the occupations in which they are employed or trained. For example, women are substantially less likely than men to be employed as managers or skilled workers (Equal Employment Opportunity Commission 2011). The patterns suggest that women might face greater employment barriers than men do, particularly with respect to high-earnings occupations.

The priorities of the WIA programs suggest that higher levels of service or other additional assistance might be concentrated on women, especially low-income women, facing challenges in achieving adequate employment and earnings. Yet aggregate program data on the performance of the American Job Centers suggest that, although women receive more WIA-funded services than men receive, they have less favorable outcomes (Social Policy Research Associates 2011a). No previous study has focused on the extent to which these gender differences are associated with other factors that differ between men and women, such as their characteristics, the types of services they receive, or the labor market opportunities they face.

This study, sponsored by the DOL's Chief Evaluation Office and conducted for DOL's Women's Bureau, provides a detailed analysis of customers in the WIA Adult and Dislocated Worker programs to shed light on the general research question: *how are adult women served by the WIA programs?* Our analysis had two main components:

1. We examined individual-level information from the Workforce Investment Act Standardized Records Data (WIASRD) to describe the characteristics of female WIA customers who exited from these programs in 2009, the types of services they received

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[1] WIA does provide special programs for other groups that often face multiple barriers to employment, including veterans, Native Americans, and migrant and seasonal farm workers.

before exiting, and which services were associated with improved post-program earnings and employment outcomes.

2. We linked area-level information from the American Community Survey (ACS) data to the WIASRD to examine whether female characteristics, service receipt, and outcomes vary systematically with socioeconomic characteristics of the local areas.

Throughout the study, we draw comparisons between females and males to gain insight about the potential sources of gender differences in service receipt and outcomes.

In the remainder of this chapter, we provide additional context about the WIA programs, summarize the patterns of gender differences in WIA customers found by previous research, discuss the broader gender differences in educational and labor market outcomes in the United States, and describe the structure of the overall report.

A. The WIA Programs

WIA is designed to address labor market barriers and the education and training needs of low-income and displaced workers. It requires states to provide local employment and training services—through the network of American Job Centers—to help individuals gain lasting employment with earnings adequate to allow for self-sufficiency. Its focus is on serving those who are in low-paying jobs or are unemployed because of permanent economic changes. Customers can qualify for WIA services in up to three programs:

- The **Adult** program serves individuals who are at least 18 years of age.

- The **Dislocated Worker** program serves individuals who, typically, have been terminated or laid off from employment without cause, are working at a business in which the employer has announced a facility closure within 180 days, were previously self-employed but are currently unemployed, or are a displaced homemaker no longer supported by the income of a family member.

- The **Youth** program serves individuals ages 14 to 21 who have low family income and face at least one specific employment barrier, such as being a high school dropout, having a disability or basic skills deficiency, or being homeless.

Each program has a separate funding stream. Some customers over the age of 18 may enroll in both the Adult and Dislocated Worker programs. Customers ages 18 to 21 could receive services from all three programs.

One of the goals of WIA is to allow customers "one-stop" access to a menu of workforce system services at American Job Centers. The act sought to bring together the training and re-employment services that had previously been provided under the Job Training Partnership Act of 1982 and the Comprehensive Employment and Training Act of 1973; the Employment Service (ES) program, administered by DOL's Employment and Training Administration and established under the Wagner-Peyser Act of 1933; and the Veterans' Employment and Training Services (VETS) program, administered by DOL's Office of the Assistant Secretary for Veterans' Employment and Training.[6] The ES program often serves as a referral point to the WIA programs because it provides a variety of employment-related labor exchange services to both job seekers and employers. For example, job seekers may receive assistance searching for a job, referrals, and placement assistance, and potential employers may receive assistance in developing job order requirements, recruiting, and job restructuring. The VETS program provides similar job-seeking services as the ES program but aims to meet the distinct needs of veterans.

As noted earlier, WIA organizes services into three tiers:

1. **Core services.** The core services are mostly self-service and are often provided as part of the ES. Self-service offerings include job listings and labor market information; information on services provided via WIA and other programs; information on WIA providers; Internet access; computer software for assessments and resume writing; and access to telephones, fax machines, and copiers. Some core services require limited staff assistance. Examples of staff-assisted core services include workshops on resume writing and interviewing; initial assessments of skills, aptitudes, and interests; determination of eligibility for programs; help in contacting an employer; and information about training services.

2. **Intensive services.** These services are available to customers who cannot obtain or maintain employment, particularly employment that allows for self-sufficiency, with the help of core services alone. Often requiring substantial staff time and involvement, intensive services 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 pre-vocational services, such as work skills development. Some services, such as workshops, may be considered either core or intensive, depending on their length.

3. **Training services.** WIA customers who cannot gain reasonable employment with the assistance of core and intensive services can be referred to training. Customers who need training may receive access to an Individual Training Account (ITA), which is essentially a type of voucher they may use to attend a program of their choice on a state-approved list (for example, a state-approved program in a high-demand field at a community college or for-profit trade school). ITAs are generally used to fund occupational skills training, skills upgrading, entrepreneurial training, and adult education and literacy

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[6] Other partners in the American Job Center system include WIA programs related to adult education and literacy and vocational rehabilitation, 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, among others. Customers can be co-enrolled in WIA and one or more of these other programs.

activities (in concert with training). Employer-based training, such as on-the-job or customized training, and training designed for special populations facing multiple barriers to employment, can be funded directly rather than with an ITA.

The initial vision was that most individuals offered services in the Adult and Dislocated Worker programs would receive services at a lower tier before moving to a higher, more resource-intensive tier. In practice, that has not been the case. Customers often receive services from multiple tiers simultaneously or partake of services from one tier only for a brief time before moving to the next one. Although any individual is eligible to receive core services, priority for intensive and training services is given to participants in the Adult program who receive public assistance or otherwise qualify as having a low income.

Because state and local agencies are responsible for overseeing WIA program implementation, available services vary across local workforce investment areas (LWIAs) and American Job Centers (D'Amico et al. 2004). One source of variation arises with differing definitions of an intensive service. For example, a resume-writing workshop might be classified as a core service and open to everyone in one American Job Center, but classified as an intensive service and restricted to WIA customers in need of more intensive services in another. Other sources of variation arise in how adults and dislocated workers move through the tiered service levels, how priority for target groups is established, and the relative emphasis placed on training (Dunham et al. 2005, 2006).

B. Gender Differences Between WIA Participants

Published data on the WIA Adult and Dislocated Worker programs regarding individuals who had not received any services for 90 days ("exiters") show that the use, type of services, and outcomes of females differ from those of males (Social Policy Research Associates 2011a). Specifically, among exiters from April 2010 to March 2011:

- **WIA served fewer women than men.** A total of 766,795 women and 894,558 men exited from the Adult and Dislocated Worker programs.[7]

- **Women exiting the Adult program were more likely than men to receive intensive and training services.** Approximately 42 percent of women in the Adult program received any noncore service as compared to 37 percent of males, and a greater percentage received training (15 percent versus 10 percent). Among exiters from the Dislocated Worker program, gender differences in the tiers of services received were negligible.

- **Females and males received different types of occupational skills training.** For example, 44 to 45 percent of females in the two programs received training for managerial, professional, and technical jobs compared with about 27 percent of males in the Adult program and 34 percent of males in the Dislocated Worker program. In contrast, about 5 to 6 percent of females received training for installation, repair, production, transportation, and material-moving jobs as compared to 49 percent of males from each program.

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[7] These numbers exclude customers who exited from the Youth program; in addition, all of the numbers reported in this section exclude customers whose gender was not recorded in the WIASRD system.

- **Men earned substantially more than women after leaving WIA programs, even though employment rates were similar.** Slightly more than half of women and men were employed in the first quarter after leaving the Adult or Dislocated Worker program, and about 80 percent of them remained employed during the following two quarters. Women, however, earned about $4,000 less than men in those two quarters—$11,671 versus $15,597 for those leaving the Adult program and $15,054 versus $19,338 for those leaving the Dislocated Worker program.

C. Potential Barriers to Female-Male Parity in the Labor Market

Gender gaps in earnings have historically been closely associated with differences in the types of occupations in which females and males are employed (Blau and Kahn 2000). In 2010, about 41 percent of women and 48 percent of men working full time were in an occupation where at least 75 percent of other workers were of their gender (Hegewisch and Liepmann 2012). And, although almost half the national workforce was female, women represented only about 8 percent of skilled craft workers, 25 percent of semi-skilled machine operatives, 38 percent of lower- to mid-level managers, and 28 percent of executive or senior-level officials and managers (Equal Employment Opportunity Commission 2011).

These differences in occupations might reflect segregation in the education and training system (Berik and Bilginsoy 2006; Joy 2000). Table I.1 illustrates gender segregation in enrollment across fields of study at the associate's degree level, a type of training often funded by WIA. It shows the fields in which women received the highest and lowest percentages of degrees and the percentage of all associate's degrees awarded in these fields. About 36 percent of women and 9 percent of men were awarded degrees in the five fields with the highest percentage of women, whereas about 3 percent of women and 26 percent of men were awarded degrees in the five fields with the lowest percentage of women.

Table I.1. Percentage of Associate's Degrees Awarded to Women in Different Fields of Study, 2009–2010

	Percentage of Degrees Awarded to Women	Percentage of Degrees Awarded
Percentage of degrees to females	--	62.0
Fields with the Highest Percentage of Associate's Degrees Awarded to Women		
Family and consumer sciences/human sciences	94.8	1.1
Legal professions and studies	88.0	1.2
Education	86.2	2.0
Health professions and related programs	85.4	20.9
Public administration and social service professions	85.4	0.5
Fields with the Lowest Percentage of Associate's Degrees Awarded to Women		
Precision production	6.4	0.3
Engineering and engineering technologies	10.3	6.5
Computer and information sciences and support services	24.0	3.8
Agriculture and natural resources	35.8	0.7
Physical science and science technologies	38.4	0.5

Source: Data were compiled from the National Center for Education Statistics, Integrated Postsecondary Education Data System. Available at http://nces.ed.gov/ipeds/ (accessed July 21, 2012).

Two sets of explanations for why education, training, and employment are segregated center on a potentially greater need for workforce flexibility among women than among men (Goldin and Katz 2011). The first set of explanations focuses on different choices made by each gender. For example, it is often assumed that women face greater family obligations than men do and, as a result, choose to pursue less specialized education and training to facilitate flexibility in employment. This flexibility, however, is associated with lower wages and with lateral, rather than upward, career trajectories (Mincer and Ofek 1982; Mincer and Polachek 1974; Widner 2009). The second set of explanations focuses on the restrictions placed on women's choices. Gender bias in career and training counseling might cause women to restrict their decisions at the start of their careers (Negrey et al. 2001), and labor market institutions and gender norms might subsequently restrict their job assignments and upward mobility (Ransom and Oaxaca 2005; Cotter et al. 2011). These two vantage points are somewhat intertwined in a "chicken versus egg" discussion: employers make gender-based decisions because of women's greater family obligations, and women ascribe greater weight to family obligations than to labor market investments than men do because of restrictions on their career opportunities (Gronau 1988). Both sets of explanations suggest that women face greater difficulty than men do in maintaining suitable employment that allows them to balance career and family.

Further, regardless of the underlying motivations, the family and economic circumstances of women can pose barriers to their success in the labor market. Most women have at least one child by their late 20s (U.S. Department of Commerce, Census Bureau 2010), and women re-entering the labor force after childbearing often have deteriorated job skills and a need for even greater flexibility in employment (Gangl and Ziefle 2009). In addition, nearly one-third (32 percent) of female householders with no husband present were in poverty in 2010, compared to about 12 percent of all families (DeNavas-Walt et al. 2011). Both lower wages and higher poverty rates leave women with more barriers to finding and retaining employment (Zedlewski 2003). A substantial majority of women in poverty face multiple barriers to work, such as self-reported physical and mental health problems, experiences of domestic violence, lack of transportation, and lack of understanding of work norms (Danziger et al. 2000). Women in low-wage jobs are also likely to have nontraditional and irregular work schedules and to work in an environment with inflexible work policies, both of which complicate options for child care (Chaudry et al. 2012). Finally, women who have been out of the labor force are left with limited networks for gaining access to stable jobs (Chapple 2002).

Taken together, this discussion suggests that women have different job-search needs and face different, and possibly more complex, labor market barriers than men do. The WIA programs could help reduce the barriers that customers face by connecting them to appropriate services. However, this might not be evident when examining simple gender differences in post-program employment and earnings because females and males might differ markedly in their characteristics upon entry into the program. Our study we considers the extent to which adjusting for pre-program characteristics and for the characteristics of local labor markets reduces the apparent gender gaps in post-program employment and earnings.

D. Structure of the Report

The next chapter provides an overview of this study's design. Chapter III presents results from our analyses of the disparities between females and males in terms of the characteristics of customers, services received, and outcomes. Chapter IV includes results from our analyses of how these disparities vary with the characteristics of local areas. Finally, Chapter V summarizes our findings and discusses their implications for policy and future research.

The report also includes seven detailed appendices. The first three provide more detailed information about the design of the study. Appendix A defines the variables used in the analysis, Appendix B provides details about the data files used, and Appendix C includes details about our analytic methods. The next two appendices provide in-depth discussions about potential ways to improve the administrative data used in the study. Appendix D focuses on the challenges of using the WIASRD for research and includes recommendations for how to improve the value of the data so that policymakers can learn how to more effectively administer the programs and improve customers' outcomes. In Appendix E, we discuss similar issues for ES and VETS data, which we ultimately did not use in this study. The final two appendices present the detailed results of our analyses. Appendix F provides the main data tables upon which figures in the text are based, and Appendix G lists a full set of results from the statistical models we estimated using all the explanatory factors examined in this study.

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II. OVERVIEW OF THE STUDY DESIGN

The purpose of this study is to explore potential sources of aggregate gender differences between customers of the WIA Adult and Dislocated Worker programs. To do this, we developed descriptive profiles of female and male customers to better understand the barriers (or advantages) that they might face, their receipt of services, and their earnings and employment outcomes. In this chapter, we describe the research design we used to conduct our descriptive analyses. We first present our conceptual framework for understanding the interrelationships among characteristics, service receipt, and outcomes; this discussion includes a list of specific research questions we sought to answer in this study. We then describe, sequentially, the data and analysis methods used to answer our research questions and the potential limitations to interpreting the study's results.

A. Conceptual Framework and Research Questions

Women might have less-than-desirable outcomes in the labor market after receiving WIA services—especially when compared to men—for at least three reasons. First, they might enter the program with *characteristics* that make them harder to serve unless processes are tailored to their specific needs. A greater proportion, for example, could face employment barriers stemming from poverty or family responsibilities.

Second, women might receive different *services* than males while enrolled in WIA, which might lead to different outcomes. Using WIA customer data, Hegewisch and Luyri (2010) found that although women were more likely to receive training than men, occupational skills training was highly segregated by gender. Women were more than three times as likely as men to receive training for traditionally female occupations such as services, sales, or clerical work, and men were more than seven times more likely to receive training in traditionally male occupations such as transportation or production and repair. Occupational segregation in the labor market has generally been associated with lower earnings among women compared with men (Blau and Kahn 2000).

Third, women might be more likely than men to receive WIA services in a *local area* with high levels of economic or social distress. Under such circumstances, the services females receive might be less effective in improving outcomes simply because the demand for labor is lower in the area in which they are seeking employment.

Figure II.1 depicts our conceptual framework for understanding the role of customer characteristics, service receipt, and local area characteristics in affecting employment and earnings outcomes. As shown in the figure, (1) customer characteristics and characteristics of the local area in which services are received could affect service receipt and (2) all three of these factors might influence employment and earnings outcomes. Previous research (Social Policy Research Associates 2011a; Hegewisch and Luyri 2010; Heinrich et al. 2008) has described the relationship between each of the contributing factors and outcomes, sometimes separately for women and men, but these descriptions typically focus on one factor at a time. In this study, we seek to develop a more cohesive understanding of the factors that might affect labor market outcomes in order to better understand the differences between female and male customers and, potentially, the unmet needs of female customers.

Figure II.1. Relationships Between Factors Influencing Employment and Earnings Outcomes
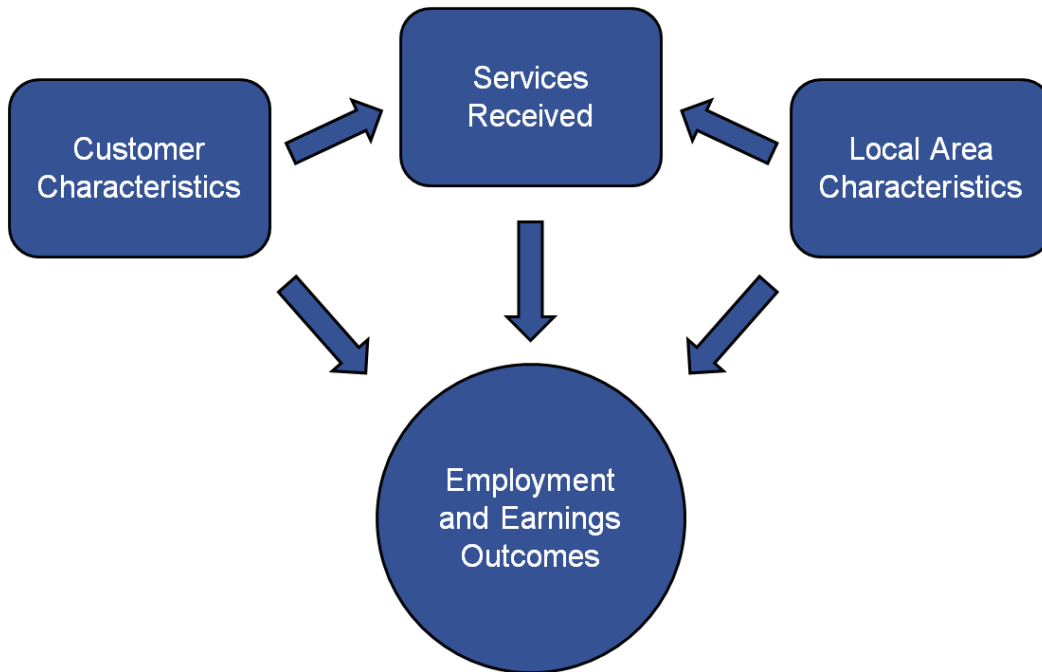
We first focus on the role of customer characteristics by answering the following research questions (Chapter III):

- What are the demographic and pre-program characteristics of female customers in WIA's Adult and Dislocated Worker programs? What proportion of women have characteristics that are associated with barriers to employment? Do the differences between females and males suggest that women are more likely to face employment barriers?[8]

- What services do female customers receive? How do gender differences in service receipt change when taking into account differences between women and men in their characteristics?

- What are the labor market outcomes of female customers? How do gender gaps in outcomes change when accounting for gender differences in characteristics and service receipt?

In answering these research questions, we seek to gain insight about the varied needs of females using WIA services by describing different subpopulations of females and the services they received. This information can be used to identify areas for further research to identify opportunities for

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[8] Although the administrative data used for this study do not allow employment barriers to be directly observed, we identified several characteristics that are often associated with such barriers: having a low income, less than a high school education, a disability, and/or limited English proficiency as well as being a single parent. Hence, we describe the prevalence of each of these characteristics to learn about the extent to which females and males might face barriers to employment.

strengthening certain types of services or better targeting them to specific groups of female customers. Our analysis of gender differences could also suggest areas for additional research on improving service provision and, ultimately, the outcomes for females after they leave the WIA Adult and Dislocated Worker programs.

Our second set of analyses, presented in Chapter IV, brings in information about labor market conditions, socioeconomic structure, WIA program measures, and other characteristics of the local areas in which customers received services. These analyses are intended to answer the following research questions:

- How are female WIA customers distributed across local workforce investment areas (LWIAs)? [9] Are females distributed differently across LWIAs than men?

- Do services provided to female and male WIA customers vary systematically with characteristics of the LWIA? How much of the gender differences in service receipt change can be explained by unique features of each local area?

- Do the labor market outcomes of female and male customers exiting the WIA programs vary systematically with LWIA characteristics? How do gender gaps in outcomes change when accounting for local area characteristics?

Our answers to these questions provide information about the potential role that local employment barriers (and opportunities), as well as the variability of WIA program implementation across areas, play in shaping service receipt and post-program outcomes. Our findings could be used to direct future research to improve the allocation of program resources to meet the unique needs of each local area. In addition, if the geographic distribution of females and males differs systematically, accounting for LWIA-level factors could be important for understanding the extent to which geographic targeting strategies could reduce gender disparities in outcomes.

B. Data

We used data from two sources for our analysis. The first source is a set of public-use files from the WIASRD system, which serves as the foundation for quarterly and annual reporting to DOL of financial, participant, and performance information from states and from workforce investment boards. These files contain information on the demographic and pre-program characteristics of WIA customers, the services customers received, and their post-program outcomes. In addition to measuring customer-level characteristics, we used these data to create area-level measures of WIA program offerings. The second source is the U.S. Census Bureau's ACS, which provides information on the characteristics of the geographic areas in which WIA services were received. We provide brief overviews of the data in this section. Appendix A has more information about the definitions of our analysis measures, and Appendix B includes a technical description of how we constructed and linked the data files from each source.

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[9] LWIAs are the primary service areas for which program performance is measured, and the only substate geographic areas identifiable in the WIASRD. Any geographic differences we uncovered cannot necessarily be interpreted as variability across American Job Centers per se because an LWIA can contain more than one job center.

1. Workforce Investment Act Standardized Records Data

WIA requires that states collect individual-level data on customers for both accountability and performance measurement. The data are intended to document the services that customers receive under the WIA Adult, Dislocated Worker, and Youth programs, as well as the National Emergency Grants programs.[10] The WIASRD system also includes individual-level data to measure customers' employment and earnings outcomes after exiting the WIA programs. Accordingly, staff members at American Job Centers collect data on individuals receiving WIA services using a standardized set of data fields. These fields include (1) demographic characteristics and pre-program earnings and employment data, (2) program participation information, and (3) quarterly post-program outcomes for the first year after customers exit the program. Each state submits these data to the federal government on a quarterly basis for all individuals recorded as having received WIA services within a specified time period.[11] The data, which do not contain personally identifiable information, are compiled by the Employment and Training Administration at DOL into the WIASRD system. Table II.1 lists the full set of WIASRD-based variables used in our study, and Appendix A describes how they are defined.

We used the WIASRD to analyze the characteristics, services, and outcomes of customers meeting the following conditions:

- They registered for the Adult or Dislocated Worker program and were not in the Youth program.[12] We performed analysis separately for customers in each program because they largely serve different populations. The relatively small fraction of customers co-enrolled in both programs (see below) were included in the analysis for each program.

- They left the Adult or Dislocated Worker program during calendar year 2009. The restriction on exit years was necessary because states can take up to six months to report a post-program outcome in the WIASRD. By restricting analysis to customers who left the program during 2009, we can observe outcomes for four quarters after program exit using the most recently available data at the time this study was conducted.

- They received at least one intensive or training service from an American Job Center located in the 50 states or the District of Columbia. We did not include customers who used only core services because (1) some American Job Centers provide core services primarily as part of the Wagner-Peyser program, with limited support from WIA, and

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[10] National Emergency Grants (NEG) are intended to expand state and local capacity to serve dislocated workers by providing additional funding in response to large, unexpected economic events which cause significant job losses. In this study, we exclude from our analyses individuals served only by the NEG program because it is so highly specialized. In addition, we exclude customers served only by specialized statewide programs (such as the rapid-response and statewide incumbent worker programs) because information about them is not generally recorded in the WIASRD.

[11] The time periods covered in the WIASRD differ depending on the field. See, for example, Attachment G of ETA's Training and Employment Guidance Letter 17-09, which is available online at http://wdr.doleta.gov/directives/attach/TEGL/TEGL17-09a7.pdf (accessed October 10, 2012). We selected an analytic sample of customers selected for this study, as described below, for which all of the desired information about characteristics, service receipt, and outcomes was available in the WIASRD.

[12] The Youth program's goals differ from those of the programs for adults (see Chapter I).

(2) the WIASRD does not contain data on customers who received only self-serve core services and are, therefore, excluded from the WIA performance measures.

Based on these conditions, our initial set of cases included 433,528 adults, 49 percent of whom were female, and 226,912 dislocated workers, approximately 46 percent of whom were female (Appendix F, Table F.1).[13] We further limited our sample to customers with complete information on most of the measures listed in Table II.1.[14] This resulted in an analysis data set with a virtually identical gender balance consisting of 405,748 customers existing from the Adult program and 213,722 customers exiting from the Dislocated Worker program. Approximately 15 percent of the customers in the analysis data set were co-enrolled in the two programs.

Table II.1. Customer Characteristics, Services, and Outcomes Examined in the Study

Characteristics	Services	Outcomes
Demographic Attributes • Age • Gender • Race/ethnicity **Pre-Program Attributes** *Education and Labor Market* • Education • Employment status • Average quarterly earnings *Family* • Single parent • Displaced homemaker[a] *Income*[a] • Low income • Received TANF in last six months • Received other (non-TANF) public assistance in last six months *Other Barriers* • Disability • Limited English proficiency • Eligible veteran status	**Extent of Service Receipt (all customers)** • Tiers of service received (intensive, training, both) • Received needs-related payments or supportive services **Focus of Occupational Skills Training (customers who received any training)** • Agricultural, natural resources, and construction • Managerial, administrative, professional, and technical • Mechanical and transportation • Sales, clerical, and administrative support • Service	**Earnings** • Average post-program quarterly earnings • Pre- to post-program change in quarterly earnings **Employment** • Employed at any point during year after leaving program • Employed in first post-program quarter • Employed in all four quarters of first post-program year

Note: Appendix A includes detailed definitions for the measures in the table.

TANF = Temporary Assistance for Needy Families program.

[a] Displaced homemaker status is a required reporting element only for customers in the Dislocated Worker program. Low-income status and receipt of TANF or other public assistance in the last six months are required elements only for customers in the Adult program. Other public assistance includes general assistance (state or local government), refugee cash assistance, assistance through the Food sStamp and Supplemental Nutrition Assistance programs, and Supplemental Security Income.

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[13] Tables referenced in the main text with a letter before the decimal are located in the corresponding appendix to this report. We have included hyperlinks for such tables that point to their locations in the appendices.

[14] Appendix F provides additional information about how we cleaned the WIASRD data and handled observations with missing or inconsistent information.

Based on the customers in our analysis data set, we used the WIASRD to calculate LWIA-level program measures. Specifically, we calculated the share of customers receiving training and the share of those receiving supportive services, which might be interpreted as measures of the extent to which customers in the area need or have access to these targeted services. We also calculated the number of customers in each LWIA, which could be positively associated with a wider array of local program offerings. For example, LWIAs with more customers might be better able to support specialized training programs.

We conducted a sensitivity check using similar data from 2007. The goal of this check was to assess whether our findings might be unduly influenced by our use of data from 2009, a year that included the trough of the recent recession and represented a fairly unique period for the economy as a whole. Replicating our main analyses using data on customers who exited the program in 2007—a year that included the business cycle peak—yielded a very similar pattern of results to what we found using customers that left the program in 2009. Because the findings were so similar between periods, our text focuses on the more recent results from 2009; we use footnotes to highlight any notable differences found in comparison to 2007.

2. American Community Survey Data

We used data from the ACS to measure selected characteristics of the LWIA in which services were received. The ACS is designed to provide relatively current information on the characteristics and housing of the U.S. population by annually collecting detailed socioeconomic data from a sample of households. Data are collected on a rolling basis and reported as cumulative frequencies over a specified period. The area-level variables we constructed for this study using the ACS were based on five-year averages within geographic areas from 2006 to 2010.[15] Table II.2 provides a list of the ACS variables used in the study, and Appendix A contains detailed definitions of these variables.

We developed two types of area-level measures for our analyses. First, we calculated indicators of whether each LWIA was above or below the national average for each local labor market and socioeconomic characteristic. This measure allowed us to assess whether females and males differed in their exposure to these characteristics. Second, we developed continuous measures of these characteristics to assess the extent to which they are more or less common in areas with greater service receipt and better post-program outcomes.

The geographic areas included in our analysis were often individual LWIAs; however, in cases where boundaries changed during the study period, we grouped multiple LWIAs together to achieve geographic consistency over time (see Appendix B). Using these consistent-boundary service areas in our analysis allowed us to link the same ACS characteristics to individuals entering WIA programs

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[15] Five-year estimates are based on larger samples than are one-year and three-year estimates; they are the most reliable estimates available and the only ones released for areas with populations less than 20,000. They cover the entire United States (starting in 2010), whereas one- and three-year estimates are available only for larger, census-defined areas. The five-year estimates may be less precise when economic or other conditions change rapidly. Because the unemployment rates increased over the period of our study, our five-year estimates likely reflect unemployment rates higher than those in 2007 but lower than those in 2009, for example. The ACS does not include information about urbanicity; therefore, we supplemented these data with information from the 2000 census on the shares of local populations living in rural areas.

in the same area but in different years. Because most consistent-boundary service areas correspond to individual LWIAs, we refer to them all as simply "LWIAs" in the remainder of this report.

Table II.2. Local Area Characteristics Examined in the Study

Program Measures	Economic Activity and Social Barriers
- Share of customers receiving training - Share of customers receiving supportive services - Number of customers	- Unemployment rate - Female labor-force participation rate - Poverty rate - Share of children younger than 18 who are in a single-parent or nonfamily household - Share of population with limited English proficiency - Share of housing units that are vacant

Structure of the Labor Market	Geography
Industrial Share of Employment in: - Agriculture, forestry, fishing and hunting, and mining - Arts, entertainment, recreation, and accommodation and food service - Construction - Educational services - Finance, insurance, and real estate - Health care and social assistance - Information - Manufacturing - Professional and related services - Retail trade - Transportation and warehousing and utilities - Wholesale trade - Other services (except public administration) - Public administration **Occupational Share of Employment in:** - Agricultural and construction - Maintenance, production, and transportation - Management, business, science, and arts - Sales and office - Service	**Region** - Region 1 (Northeast) - Region 2 (Mid-Atlantic) - Region 3 (Southeast) - Region 4 (Mountain) - Region 5 (Midwest) - Region 6 (West) **Share of Population Living in Rural Areas**

Note: Program measures were constructed using our analytic samples from the public-use WIA Standardized Records data. The rural share of the local population was based on the 2000 census. All other LWIA-level characteristics were based on the American Community Survey five-year summary file for 2006–2010. Appendix A provides additional information about how these variables were defined.

C. Analytic Methods

We used several descriptive methods in our analysis of characteristics, service receipt, and outcomes. We developed a series of simple descriptive statistics that we use to provide an understanding of the characteristics of female WIA customers, the local areas where they participated in the program, the WIA services they received, and how they fared in the job market. We also used these statistics to summarize differences between groups of women and between female and male customers. To better isolate gender disparities in service receipt, earnings, and employment, we used regression analysis to account for other measured factors that might differ

between genders. We provide an overview of our simple descriptive statistics and regression methods in two subsections; Appendix C provides a more technical discussion.

1.   Analysis of Simple Descriptive Statistics

Many of our research questions could be answered by using **percentages and averages** to describe the distribution of characteristics, services received, and post-program outcomes. These descriptive statistics allowed us to draw comparisons between groups of female customers defined based on their demographic and pre-program characteristics.[16] In this subgroup analysis, we used low-income status (defined in Appendix A) as the only poverty-related measures (other than earnings) by which to stratify the analysis of customers in the Adult program.[17] We did not examine subgroups of female customers who were displaced homemakers, had limited English proficiency, or were veterans, because fewer than 10 percent of the females registered in the Adult and Dislocated Worker programs fell into these categories. This restriction on our analysis helped us avoid analyzing small samples of customers, which could lead to unreliable results, and allows for clearer exposition of our findings in the text.

To summarize gender differences in the overall prevalence of a given characteristic, service, or outcomes, we used **female-to-male ratios** of percentages. These ratios provide an intuitive understanding of the relative proportion of female and male customers in each category. A female-to-male ratio of 1.25 means that the share of females who fall into a given category is one-quarter higher than the share of males falling into that category. Similarly, a ratio of 0.75 means there is a one-quarter lower likelihood of females falling into a category, relative to males. We follow a similar approach when describing differences in the distribution of earnings, taking the female-to-male ratio of averages. In our discussion of results, we highlight only those gender differences that are at one-tenth or larger.

We used the **Duncan index of dissimilarity** (Duncan and Duncan 1955) to summarize the extent of gender differences in occupational skills training.[18] This index allows us to describe differences in the distribution of women and men across multiple groups of occupations simultaneously, and can be interpreted as percentage of women (or men) that would have to change the focus of their occupational skills training in order to eliminate gender differences. The index ranges from 0 (complete similarity in the distribution) to 100 (total segregation across occupations) and is implicitly weighted so that changes in occupations with more trainees affect the index more than changes in occupations with fewer trainees.

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[16] Focusing on percentages and averages enables relatively clean comparisons of characteristics, service receipt, and outcomes between subgroups of differing sizes because these summary measures, unlike counts and totals, are normalized by the number of individuals in each group.

[17] Direct measures of poverty are only collected for customers in the Adult program and are not available for customers who participated only in the Dislocated Worker program.

[18] James and Taeuber (1985) describe four statistics commonly used to measure differences in the distribution of social groups (such as males and females) and units of social organization (such as occupations). We selected the Duncan index in our analysis for two reasons: (1) it has a more intuitive interpretation, as described in the text, than the other three measures discussed by James and Taeuber and (2) it is the most commonly used measure in the occupational segregation literature.

In our geographic analysis, we used **Pearson correlation coefficients** to quantify the strength of the association between area-level measures of the local labor market or socioeconomic structure and measures of service receipt and customer outcomes in the same LWIA. Correlations range between −1 and +1, with both the sign and size of the coefficient being of interest. A negative coefficient indicates a tendency for one factor to increase while the other decreases, and a positive coefficient indicates that both factors tend to move in the same direction. The closer the coefficient is to 0, the weaker the strength of the relationship. We calculated correlations separately for female and male customers, comparing them to assess whether they differ by gender. In our discussion, we highlight area-level correlations with an absolute value of at least 0.224 between two factors. At this threshold value, each factor could explain up to 5 percent of the variability in the other factor.[19]

2. Regression Analysis

We used regression analysis to calculate the gender gap in services received and in labor market outcomes when accounting for other factors that might differ between females and males. We estimated gender gap in a series of stages to quantify the proportion that might be attributable to differences in customer characteristics, WIA services received (when considering post-program outcomes), and local area characteristics.

When focusing on gender differentials in services received, we estimated the observed ("unadjusted") gender gap in the first stage and the "adjusted" gap we would expect given customer characteristics in the second stage; in the third stage we also accounted for the differences across customers in the characteristics of the LWIA in which services were received.[20] Similarly, when examining outcomes, we estimated the unadjusted gender gap in the first stage and the adjusted gender gap given customer characteristics in the second stage. In the third and fourth stages, we further adjusted the gap by adding measures of services receipt and indicators for the local area in which the services were received, respectively.

Our ordering of the stages reflects the flow of customers through the WIA programs. Customers bring demographic and pre-program characteristics to the American Job Centers, and these characteristics underlie both services received and program outcomes. Customers then receive program services and training. Finally, local area characteristics might influence both the services received while in the program and customers' outcomes after exiting. By comparing estimates of the gender gap at each stage, we quantify the proportion that might be explainable by gender differences in each successive set of factors.

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[19] The amount that is *uniquely* explained by each factor might actually be smaller when controlling for additional influences. However, below the threshold correlation value of 0.224, there would be no way for either factor to explain even 5 percent of the variability in the other.

[20] In the regression analysis, *all* area-level differences in characteristics are captured by including a separate intercept for each LWIA. It was not computationally possible to estimate nonlinear probability models of binary outcomes, such as service receipt and employment, when including area-level intercepts. Therefore, we used a linear probability regression model in all stages of the analysis. This consistent approach to estimating gender gaps allows us to attribute the differences between different modeling stages to the additional covariates rather than to differences in the models used at each stage.

D. Limitations

Even though we provide the most thorough analysis to date of female customers and how their receipt of WIA services and post-program outcomes differ from men, all of our results are descriptive. The findings of this study cannot be interpreted causally. For example, we cannot say definitively that gender differences in occupational skills training causes higher or lower gender disparities in post-program earnings because there are factors not captured in our research design that might underlie the relationship between training and outcomes. Using regression analysis allows us to adjust for the influence of some of the observable characteristics that vary significantly with employment and earnings. However, the available data are limited and do not include measures of other important factors that might be correlated with both receipt of services and subsequent outcomes. Of particular concern for examining gender disparities is the relatively limited information that the WIASRD contains on pre-program characteristics. For example, there is no information about customers' prior occupation and industry of employment, which could have a considerable influence on the occupational skills training received while in the WIA programs.

The structure of the WIASRD also might limit the reliability or representativeness of our estimates of service receipt and post-program outcomes. For example, Dunham et al. (2005, 2006) found noticeable differences across LWIAs and American Job Centers in how certain types of services are recorded, as well as differences in the extent to which customers are included in the WIA reporting system. (Appendix D provides a more detailed discussion of these issues.) Perhaps more important for our study is the nearly 30 percent rate of missing data on occupational skills training, which means that analyses might be based on a nonrepresentative sample of WIA customers. The employment and earnings measures we examined in this study could also be biased, although the direction of the bias is unclear. On the one hand, our estimates of employment and earnings after exit might be understated because (1) most analyses capture outcomes in 2010, which is shortly after the trough of the latest recession and represents a period of relatively high unemployment and low earnings, and (2) outcomes are measured in the short term (first year) after WIA participation and might not be indicative of future earnings potential. On the other hand, our estimates of post-program outcomes might be overstated because the WIA performance standards might encourage local staff to terminate customers only after they find employment (D'Amico et al. 2004).

III. DISPARITIES IN CHARACTERISTICS, SERVICES, AND OUTCOMES

Earnings and employment outcomes after leaving the WIA programs are likely to be affected by both the WIA services customers receive and the employment barriers and characteristics they bring with them to the program. Because staff at American Job Centers typically develop a package of service offerings tailored to meet the needs of the customer, service receipt might vary based on customers' characteristics and barriers. For example, for younger and less-educated women, American Job Centers might focus on building knowledge, skills, and abilities that will be of use over the course of a lifetime. WIA customers who are of prime working age and who have higher levels of education might be better served through supports to help them balance work and family. Although the goal of WIA services is to improve customers' labor market outcomes, ongoing barriers faced by customers could also have lingering effects. For example, single parents who benefited from child care assistance while in the program could still require more scheduling flexibility after exiting the program.

This chapter draws on the logic model outlined in Chapter II to describe the characteristics, services received, and outcomes of customers who exited from the Adult and Dislocated Worker programs in 2009.[21] Its three subsections address the following sets of research questions, in turn:

- What are the demographic and pre-program characteristics of female customers in WIA's Adult and Dislocated Worker programs? What proportion of women have characteristics that are associated with barriers to employment? Do the differences between females and males suggest that women are more likely to face employment barriers?

- What services do female customers receive? How do gender differences in service receipt change when taking into account differences between women and men in their characteristics?

- What are the labor market outcomes of female customers? How do gender gaps in outcomes change when accounting for gender differences in characteristics and service receipt?

The final section of the chapter presents a summary of results from our analyses of customer-level records that we use to answer these research questions.

In this chapter and the next, we use figures and text boxes to highlight important findings from the analysis. Readers can find more detailed results from analyses described here in Appendix F, Tables F.1 through F.39.

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[21] Most of the results in this chapter are based on 2009 program exiters for whom the WIA Standardized Records Data contain complete information about the characteristics and outcome measures used in the analysis (see Chapter II). To examine whether there was change over time related to the recession, we also present selected findings based on a similarly defined group of 2007 program exiters.

A. Customer Characteristics and Employment Barriers

Our analysis of customer characteristics has four components. First, we examine the attributes of females leaving the Adult and Dislocated Worker programs in 2009 after receiving intensive or training services. Second, we compare subgroups of women to shed light on potential variability in the needs of female WIA customers. Third, we draw comparisons between female and male exiters in 2009 to learn about possible gender differences in characteristics. Fourth, we conduct a sensitivity analysis to assess the extent to which our results might be affected by our use of data from 2009, a year that represents a fairly unique period for the economy as a whole.

In presenting the results of our analysis in the subsections below, we focus on demographic characteristics, educational attainment, and (especially) the following pre-program characteristics that might be associated with less-favorable labor-market outcomes:

- Having a low income

- Being a single parent

- Having less than a high school education

- Having a disability

- Having limited English proficiency

We refer to these factors as "barriers to employment," although we recognize that they do not necessarily constitute barriers per se. Many women and men with these characteristics can and do achieve success in the labor market. Nonetheless, the characteristics are, on average, associated with a lower degree of labor market success and therefore suggest that individuals who have them are more likely to face barriers to employment.[22] Because low-income status is only available for customers in the Adult program, our discussion of barriers focuses largely on that program, with the text indicating differences, if any, for females in the Dislocated Worker program.

> *The majority of customers in the Adult program faced at least one employment barrier. Customers in the Dislocated Worker program appear to have been less disadvantaged, but information about their family income is not collected for the WIA program. Females were substantially more likely than males to face an employment barrier, especially low-income status and single parenthood. Although the composition of WIA customers changed over time, gender differences in customer characteristics remained similar.*

1. Characteristics of Female WIA Exiters and Prevalence of Employment Barriers

Of the 199,785 female customers exiting from the Adult program and the 205,953 female customers existing from the Dislocated Worker program in 2009, over 70 percent were of prime working age (25 to 54), and the majority were non-Hispanic whites. Approximately 41 percent of

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[22] We also discuss pre-program employment status but do not use this measure as an indicator of employment barriers because the data used for this study do not allow us to distinguish unemployed customers from those who were out of the labor force. For example, reduced employment could be associated with greater participation in other education and training programs before entering the WIA program. We do not, however, discuss differences based on pre-program earnings in the text because, as mentioned in Chapter III.C, such comparisons are likely to be skewed by potential differences across groups in the extent to which earnings losses spur workers to seek WIA services.

females in the Adult program and 45 percent of women in the Displaced Worker program had attended or completed college. Additional information about pre-program characteristics is included in Table F.2.

Approximately three of out five women in the Adult program (59 percent) faced at least one of the barriers to employment considered in this study, as seen in Figure III.1. Almost half had low incomes, which was by far the most common barrier we examined. In addition, 20 percent of the females in the Adult program were single parents and 13 percent had not finished high school. A relatively small fraction of female exiters had a disability (5 percent) or limited English proficiency (2 percent). The percentages for each individual barrier add up to more than 59 percent because a substantial fraction of women—approximately 25 percent of all exiters—faced two or more of the barriers we analyzed in this study.

Figure III.1. Employment Barriers Among Females in the WIA Adult Program
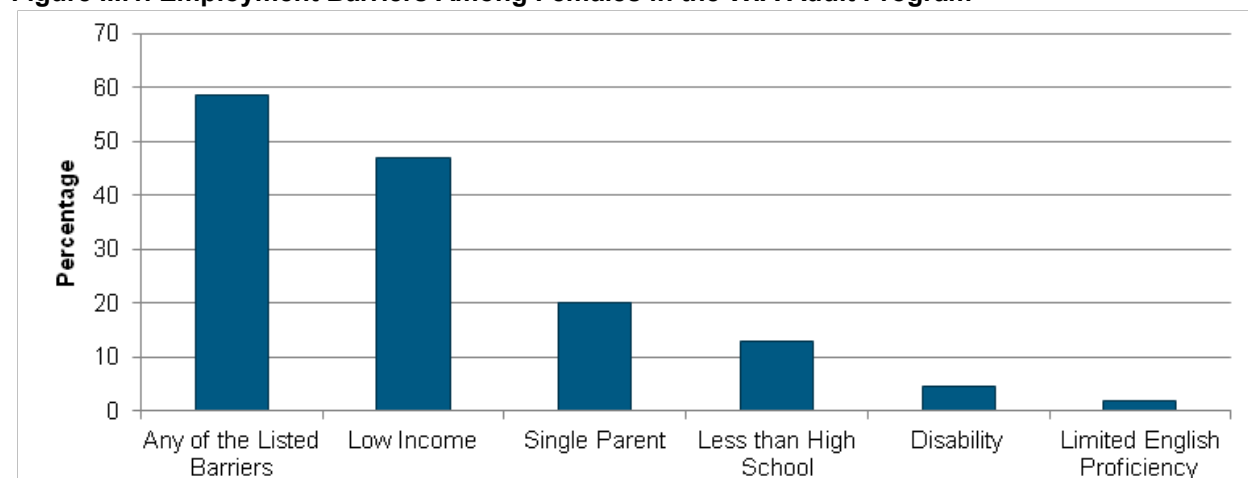
Source: Appendix F, Table F.2.

Our analysis of the Dislocated Worker program, as depicted in Figure III.2, indicates that approximately 25 percent of women faced one of the non-income barriers to employment we examined. This figure excludes low-income status, a data item that is only required to be collected for WIA participants enrolled in the Adult program. The prevalence of each of the individual non-income barriers suggests that the Dislocated Worker program served a less disadvantaged population than did the Adult program, in which the prevalence of non-income barriers was almost 35 percent. Approximately 13 percent of customers in the Dislocated Worker program were single parents, 10 percent had not completed high school, and smaller fractions had a disability (3 percent) or limited English proficiency (3 percent).

In the remainder of this report, we analyze the Adult and Dislocated Worker programs separately and do not make comparisons between them because of these differences in the extent of barriers faced by their customers, which potentially follow from the differences in target populations they serve (see Chapter I).

Figure III.2. Employment Barriers Among Females in the WIA Dislocated Worker Program
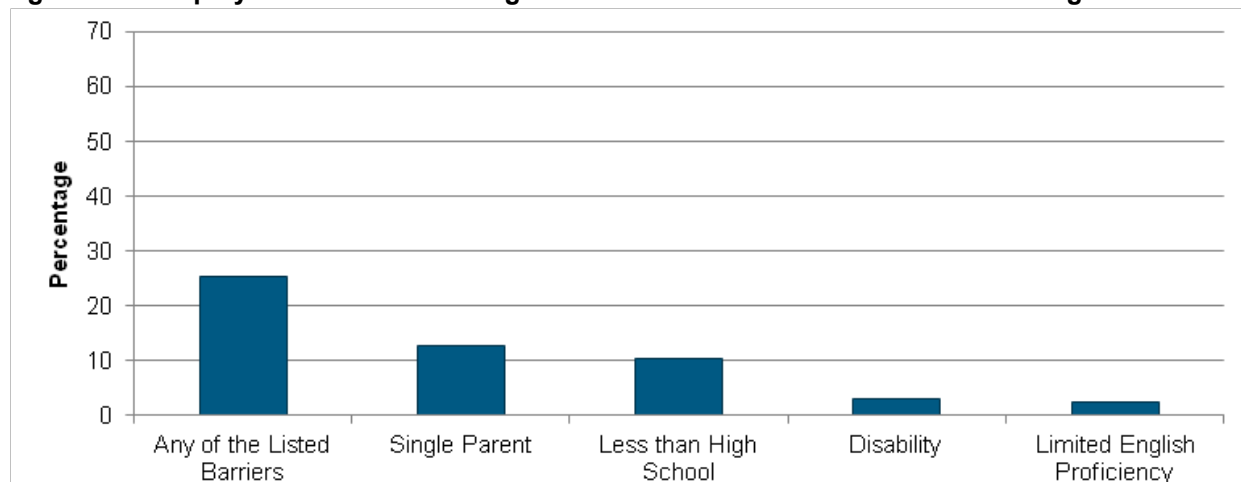
Source: Appendix F, Table F.2.

2.   Comparisons of Employment Barriers Among Subgroups of Females

The prevalence of specific employment barriers might differ among groups of women in the Adult program with differing characteristics. Understanding these differences could shed light on how needs vary across female WIA customers. Our discussion here focuses on differences by age, race/ethnicity, educational attainment, and employment status at entry into WIA. Tables F.3 through F.10 present a broader set of comparisons that might be of interest to the reader.

One way in which barriers might differ is by age, as Figure III.3 shows for the Adult program. Younger female customers (ages 18 to 24) were more likely than prime-age (ages 25 to 54) or older (ages 55 and above) customers to have low incomes, which could be a factor of experience. The rate of single

Barriers were more common among younger and minority women and less common among those with higher educational attainment.

parenthood was much lower among older women, although this could be because fewer such workers had children still living at home. Younger women were also less likely to have completed high school, which could be a factor of time—these women may eventually obtain a high school equivalency degree through the General Educational Development (GED) program. Disabilities appeared to be more common among women in the older age groups, which could suggest greater constraints on the types of employment they could pursue. This broad pattern of differences by age group was also seen in the Dislocated Worker program (Table F.3).

Figure III.3. Employment Barriers Among Females in the WIA Adult Program, by Age Group
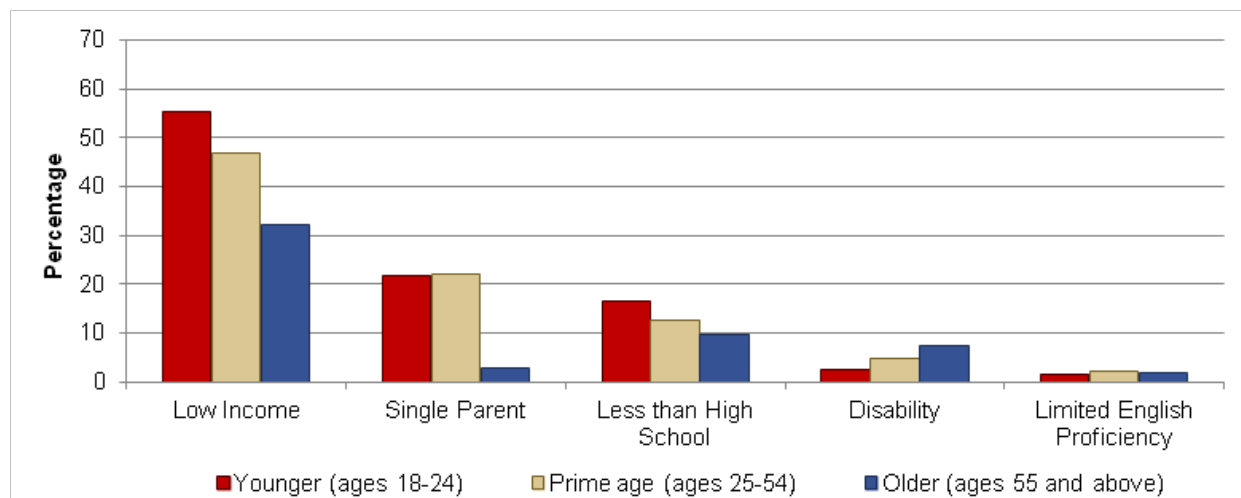
Source: Appendix F, Table F.3.

Racial and ethnic differences among female customers suggest that employment barriers—and potentially differing reasons for program participation—vary along these lines. Black and Hispanic female customers were more likely to face barriers than white female customers were, as Figure III.4 shows for the Adult program. Both groups were more likely to be low income and single parents, and they were less likely to have completed high school. These differences might, in part, have been present because these women also tended to be younger than white customers (see Table F.4). Hispanics were also the most likely to have limited English proficiency, which could be related to lower levels of educational attainment. A similar pattern of racial and ethnic differences in the prevalence of each non-income employment barrier was seen in the Dislocated Worker program (Table F.4).

Figure III.4. Employment Barriers Among Females in the WIA Adult Program, by Race/Ethnicity
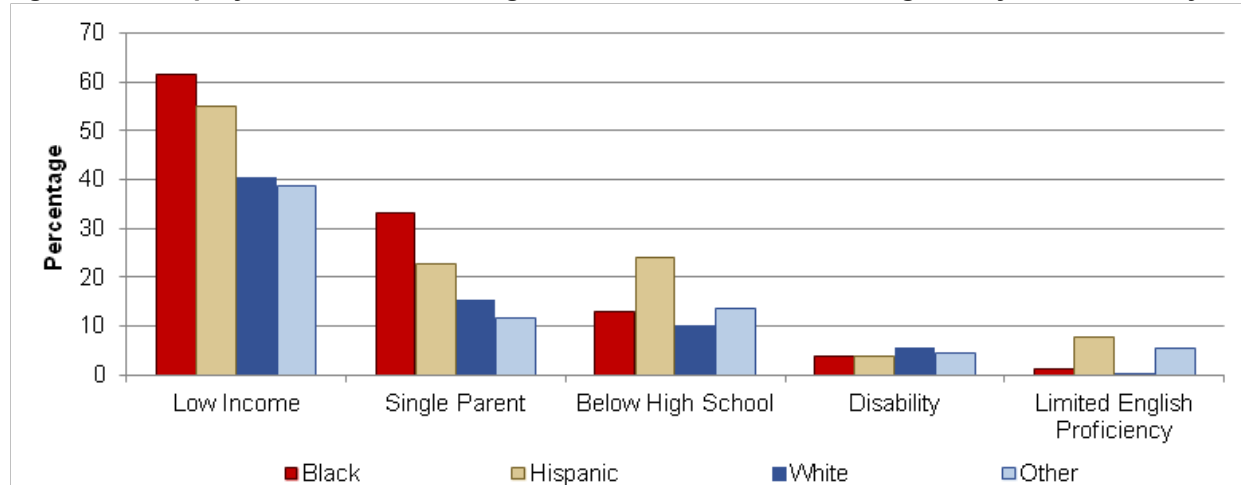
Source: Appendix F, Table F.4.

Lower levels of education are often associated with other employment challenges. As Figure III.5 shows for the Adult program, women with less education, particularly those without a college degree, were more likely to be in a low-income family. Twenty-seven percent of females with a bachelor's degree lived in a low-income family compared to about half of those without the

degree. Although fewer than one in 14 females with a bachelor's degree was a single parent, over one in five without the degree faced this challenge. Females with less than a high school education were more likely to have limited English proficiency than others. Some of this is a factor of age because younger female customers tended to have the lowest level of education (as discussed above) but could still invest in education later in life. Educational differences in specific non-income employment barriers were generally similar in the Dislocated Worker program, although less pronounced for single parenthood and more pronounced for limited English proficiency (Table F.5).

Figure III.5. Employment Barriers Among Females in the WIA Adult Program, by Level of Educational Attainment
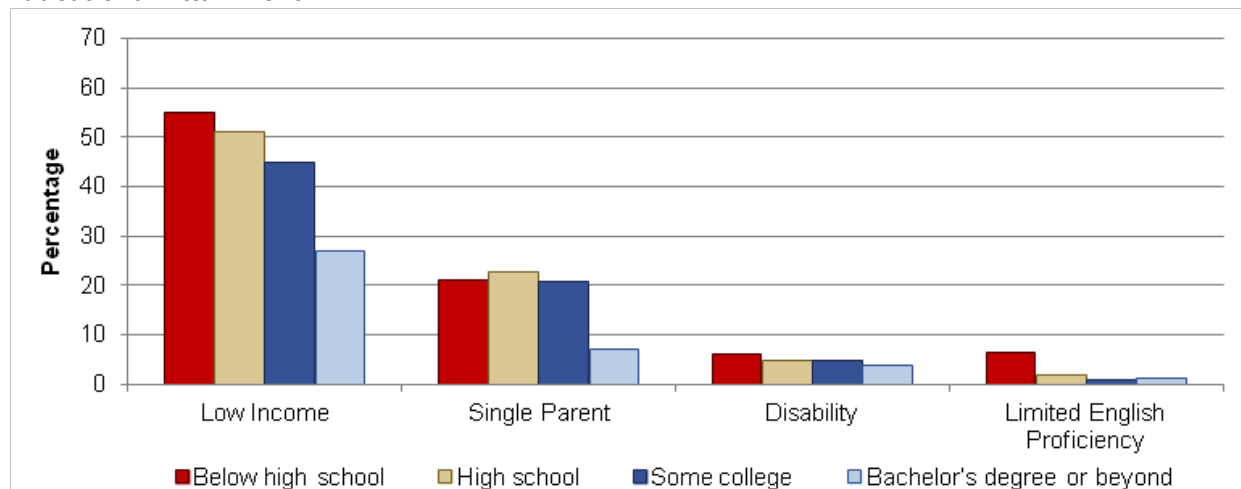
Source: Appendix F, Table F.5.

Women who were not employed when entering the program had noticeably lower levels of education relative to women who were employed, but were less likely to be single parents (Table F.6). Nearly 15 percent of customers who left the Adult program and were not employed when they entered the program lacked a high school diploma, as compared to about 8 percent of women who were employed at entry. Relative to those who were employed when entering into the Adult program, a greater percentage of those not employed were in low-income families (48 percent versus 46 percent), received TANF (6 percent versus 2 percent), and received public assistance other than TANF (26 versus 19 percent). A lower proportion of women who were not employed before participation were single parents; however, this may be because they were older.

3.   Gender Differences in Employment Barriers and Other Characteristics

Our analysis suggests that women might have a greater need for some WIA services than men because they are more likely to face employment barriers. As shown for the Adult program in Figure III.6, approximately 59 percent of women had at least one of the characteristics associated with employment barriers that we examined in this study, compared to approximately 50 percent of men. The percentage ratio was 1.16, indicating that the prevalence of barriers was about one-sixth greater among women. As seen in Figure III.6, most of this gender difference was driven by a larger fraction of women having low incomes and being single parents. Differences in the prevalence of specific employment barriers in the Dislocated Worker program were less pronounced but followed a similar pattern (Table F.2).

Figure III.6. Comparison of Employment Barriers in the WIA Adult Program, by Gender
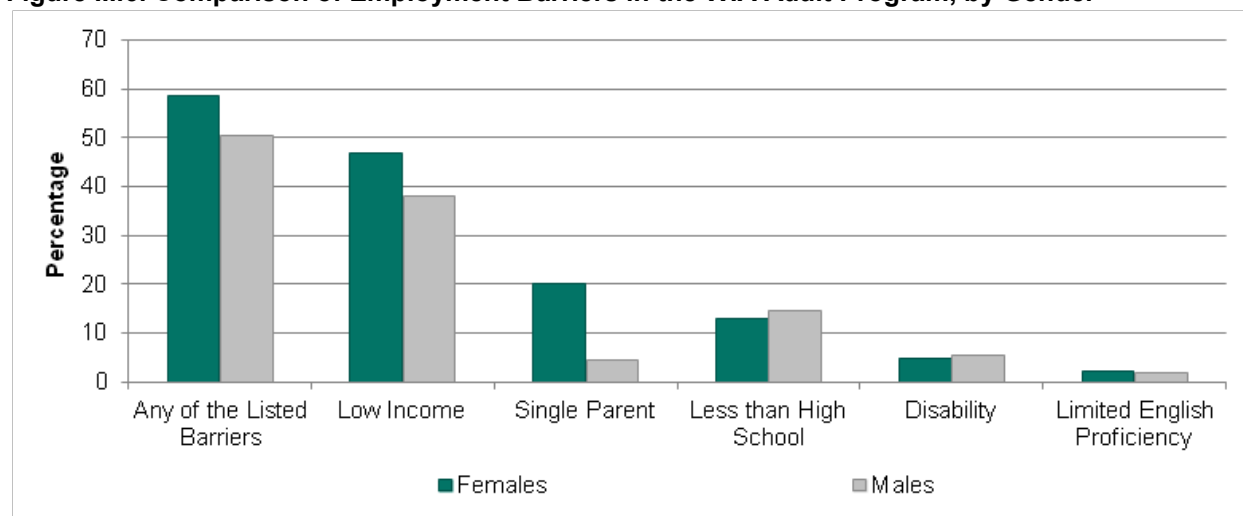
Source: Appendix F, Table F.2.

Female customers leaving the Adult program tended to be younger than males, were more likely to be a racial or ethnic minority, and were more likely to have attended or completed college. Women in the Adult program also had a greater probability of employment at program entry relative to men. However, gender differences in demographics, educational attainment, and pre-program employment were fairly small in comparison with the differences in the prevalence of low incomes and single parenthood. For example, approximately four percent more women than men in the Adult program were non-Hispanic blacks (23 percent versus 19 percent), and about five percent more woman were employed when entering the program (23 percent versus 18 percent). In contrast, roughly seven percent more women than men in the Adult program had low incomes (47 percent versus 38 percent), and almost 16 percent more women were single parents (20 percent versus four percent). These patterns were generally the same in the Dislocated Worker program, though the differences were not as great (and males were younger than females).

4.   Sensitivity Analysis of Change in Characteristics Over Time

The characteristics of the overall population exiting from WIA changed between 2007 and 2009, but gender differences were similar in the two years. When comparing only females over time, we found that a higher percentage of females who exited both the Adult and Dislocated Worker programs in 2007 were in the youngest age group or were a member of a racial or ethnic minority. In addition, the prevalence of barriers such as low incomes and single parenthood was noticeably greater in 2007 for both programs, which suggests that WIA services had been more closely focused on high-needs individuals before the recession hit. However, we observed similar shifts in the male population of exiters between years. As a result, *gender differences* in demographics and the prevalence of barriers were generally steady over time, which can be seen by comparing the female-to-male ratios from 2009 (Table F.2) to those from 2007 (Table F.36).

Our sensitivity analysis of customers' characteristics suggests that the gender disparities observed for service receipt or post-program outcomes might also change relatively little over time. In fact, this is borne out in our subsequent results. Because our study is focused primarily on gender differences, the remaining discussion of our sensitivity analysis is included as a series of footnotes describing any notable differences in our results for 2007 exiters relative to our main findings for 2009 exiters.

B. WIA Services Received

Among the women we studied who left either the Adult or Dislocated Worker programs in 2009 after receiving noncore WIA services, virtually all (over 97 percent) received intensive services, either in isolation or in combination with training (Table F.11). Slightly fewer than 70 percent received intensive services only, about 3 percent received training only, and over one-quarter received both intensive and training services. This pattern accords with the tiered structure of WIA described in Chapter I, whereby training is reserved for customers for whom intensive services are not sufficient to help them secure gainful employment. In the Adult program, about 18 percent of females received supportive services such as assistance with child care, transportation, or other needs-related payments to help enable their participation in other approved WIA training or services. A similar share of women (17 percent) in the Dislocated Worker program received supportive services.[23]

In the remainder of this section, we use the receipt of training and supportive services as our two main measures of the extent of services received. We also examine the distribution of the occupations on which skills training was focused (among those receiving training), given the potential for gender differences in occupational skills training described in Chapter II. In the first subsection, we describe how service receipt among female customers differed in relation to employment barriers and other customer characteristics. In the second subsection, we examine differences in the extent of services received by females and males and consider what portion of the gender differences can be explained by customers' characteristics upon entering the WIA system. The third subsection contains a similar analysis for occupational skills training.

> *Customers facing employment barriers when entering the WIA program, particularly women, were more likely to receive training and supportive services. However, pre-program barriers were also associated with greater gender differences in occupational skills training. A substantial portion of the gender differences in the extent of service receipt, but not in the focus of occupational skills training, could be explained by customer characteristics*

1. Employment Barriers, Other Customer Characteristics, and Female Service Receipt

Our analysis suggests that staff at American Job Centers target training and supportive services in a manner consistent with the goals of WIA outlined in Chapter I. Such services are more likely to be received by female customers facing greater barriers to employment or with other characteristics associated with greater needs. For example, as seen in Figure III.7, low-income women and single parents in the Adult program were more likely than other groups of women to receive training and supportive services. About 36 percent of low-income women received training, while around 27 percent of non-low-income women did so. Supportive services were received by nearly 22 percent of low-income women, but only 15 percent of non-low-income women. Further, single

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[23] For ease of exposition, we use "supportive services" to refer to both WIA-defined supportive services and needs-related payments. Our sensitivity analysis shows that the distribution of services received for female customers changed from a slight majority receiving training in 2007 (Table F.37) to a large majority receiving only intensive services in 2009 (Table F.11). The share of females receiving supportive services in 2009 was approximately three-fifths the size of the share that did so in 2007.

parents were almost two-thirds again more likely than other women to receive training (45 percent versus 27 percent) and almost twice as likely to receive supportive services (29 percent versus 16 percent). The rates of training and supportive services, as well as differences between single parents and other women, were similar in the Dislocated Worker program.

Figure III.7. Extent of Services Received Among Females in the WIA Adult Program, by Presence of Selected Barriers
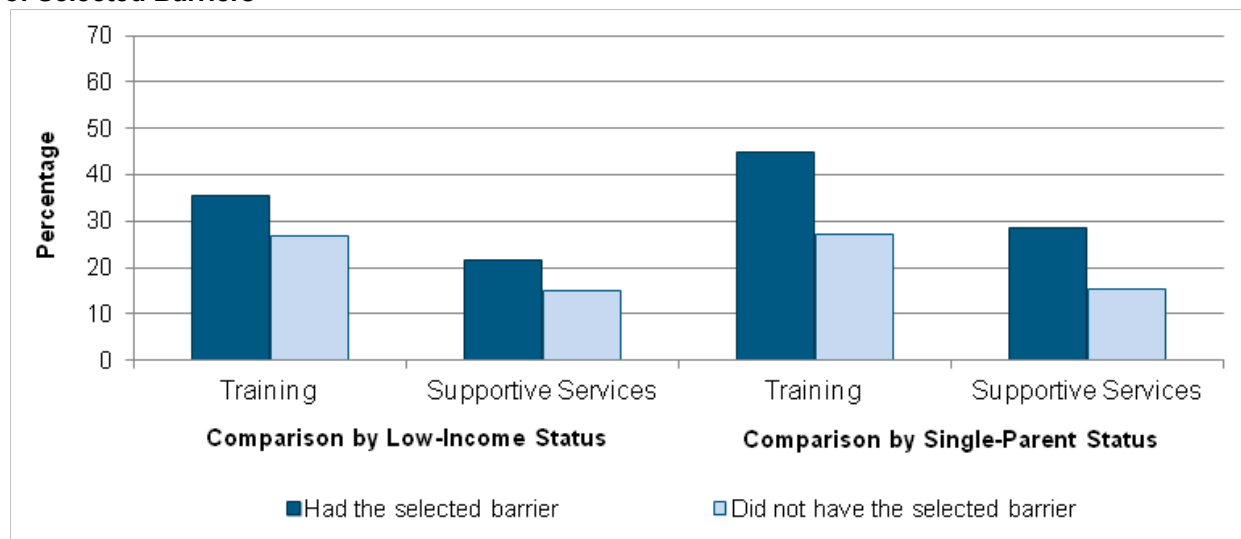
Source: Appendix F, Tables F.18 and F.19.

When examining educational differences in the receipt of training and supportive services, our analysis suggested a more complicated pattern (Table F.14). For example, a *lower* percentage of female customers with less than a high school education received training in both programs, relative to females with other levels of education. Only about one-fifth of females without a high school degree received training in either program, as compared to roughly one-third of the females with a high school degree. Supportive services appeared to be provided at similar rates to females without a bachelor's degree (18 to 19 percent), but at lower rates to those who had completed college (8 percent in the Adult program and 10 percent in the Dislocated Worker program).

Additional details about differences in receipt of training and supportive services across subgroups of females can be seen in Tables F.12 to F.17. We highlight some of the largest (and statistically significant) differences here:

- Younger females (aged 18 to 24) were more likely than women in other age groups to receive training in the Adult program. Over 40 percent received training, compared with 31 percent of prime-age females (aged 25 to 54) and 16 percent of older females (at least 55 years old). In the Dislocated Worker program, prime-age females were the most likely to receive training—about 33 percent versus 29 percent of younger females and 22 percent of older females.

- In both programs, black, non-Hispanic females were more likely to receive training than females of other races/ethnicities. About 37 percent in the Adult program and 35 percent in the Dislocated Worker program received training, compared with about 30 to 31 percent of white females. In addition, Hispanic females were more likely than other females to receive supportive services.

- The services that females received varied with pre-enrollment employment status. Females who were employed at entry into the Adult program were about twice as likely to receive training as other females. Females in the Dislocated Worker program who were employed at entry but who had received a separation notice were more likely than the other groups to receive training.

Information on occupational skills training was missing for nearly 30 percent of female customers, which makes it difficult to assess with certainty the distribution of the focus of training. From the data available, it appears that the plurality of women who received training in 2009 focused on managerial, administrative, professional, or technical occupations (Table F.11). In both the Adult and Dislocated Worker programs, almost one in three women received training for jobs in these fields. The next most frequent type of occupation skills training was for service jobs, which were the focus for almost one in four women in the Adult program and one in five women in the Dislocated Worker program. Few women who received training—less than one in 20—were trained in preparation for jobs in mechanical or transportation-related occupations.[24]

The types of occupational training on which females focused differed slightly across subpopulations, as defined by employment barriers, age, race/ethnicity, educational attainment, and employment status at entry into WIA. In particular:

- Low-income women in the Adult program were almost twice as likely to be trained for service occupations than other women. Similarly, single parents were half again more likely in both programs to be trained for service occupations.

- Prime-age females (aged 25 to 54) were most likely to receive training for managerial, administrative, professional, or technical jobs, whereas younger workers were most likely to be trained for service jobs—potentially in line with age-related differences in education and experience. Older workers (at least 55 years old) were the most likely to be trained for sales, clerical, and administrative support jobs in both programs.

- Black and Hispanic females were less likely than white, non-Hispanic females to receive training for managerial, administrative, professional, or technical jobs, and black, non-Hispanic females were more likely than either Hispanic or white, non-Hispanic females to receive training for service jobs.

- The likelihood of receiving training for managerial and professional jobs was higher among women with higher levels of education, whereas the likelihood of training for mechanics, sales, and service jobs was lower in that group.

- Females who received training through either program and were employed at entry were more likely than non-employed females to receive training for managerial and professional jobs and less likely to receive training in sales or service jobs.

Tables F.12 through F.19 provide additional details about how the distribution of occupational skills differed across groups of women. As discussed in greater detail in the next subsection, however, it is important to be cautious in interpreting the results of these comparisons because there were also

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[24] The distribution of occupational skills training for females exiting in 2007 (Table F.37) was similar, although this information was missing for a larger fraction of customers in that year.

differences across subgroups in the percentage of female customers whose focus of occupational skills was not reported.

2.   Gender Differences in the Extent of Service Receipt

Females in the Adult program were more likely to receive training and supportive services than males were, although the majority of both genders received neither. As seen in Figure III.8, females were over one-third more likely than males to receive any kind of training (31 percent versus 23 percent). Similarly, females were half again more likely than males to receive supportive services (18 percent versus 12 percent). In the Dislocated Worker program, gender differentials in the receipt of training and supportive services also favored females but were relatively small ([Table F.11](#)).[25]

Figure III.8. Extent of Services Received, by WIA Program and Gender
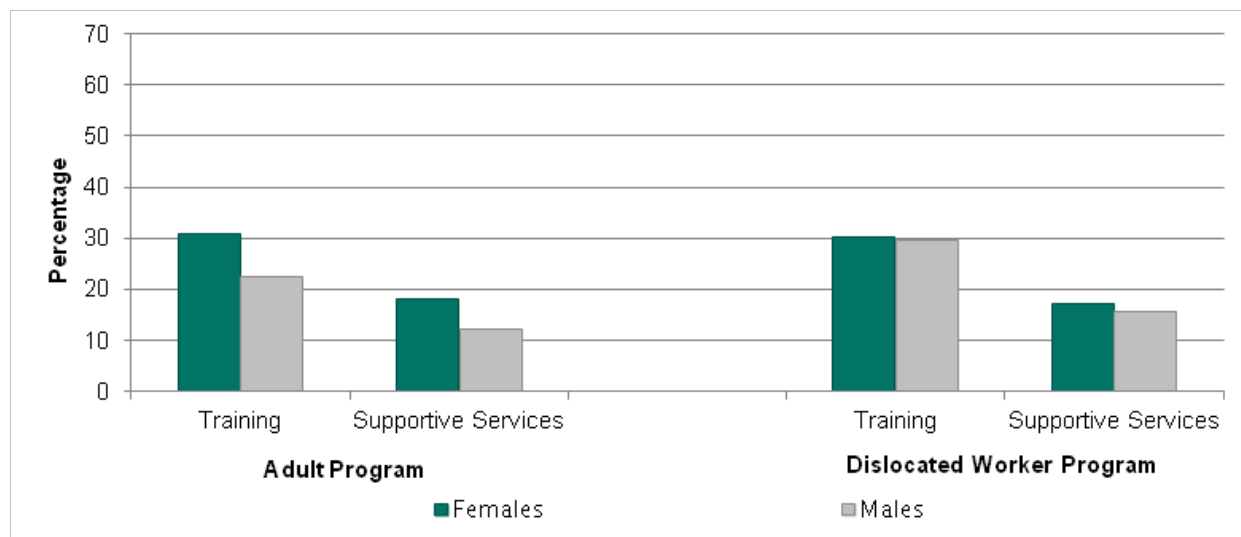
Source: Appendix F, [Table F.11](#).

These gender differences in the Adult program lend support to the idea that training and supportive services are targeted toward customers with greater barriers, given that females tended to have more barriers than did males. The pattern could, however, also reflect other differences in the choices made by customers and American Job Center staff that are related to gender differences in customers' pre-WIA characteristics and experiences. As a result, we used regression analysis to assess what portion of the gender difference in the extent of services received might be explained by the demographic and pre-program characteristics available in the WIASRD system, as listed in Chapter II, [Table II.1](#).

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[25] Although a larger share of customers in both programs received training and supportive services in 2007, the gender differential was mostly similar to 2009 in relative terms. That is, the ratio of the percentage of females receiving services to the percentage of males receiving services was roughly constant over time (see [Table F. 37](#) for 2007 and [F.11](#) for 2009). The one exception was that the relative differential in receipt of supportive services in the Adult program was smaller in 2007, although females were still a third more likely than males to receive supportive services in that year.

The results of our regression analysis for 2009 exiters are shown in Table F.21. They indicate that:

- Customer characteristics help explain gender differences in the extent of services received, but the unexplained differences still favor females.

- Accounting for the characteristics of customers in the Adult program explained half of the female advantage in training receipt and 41 percent of the gender differential in receipt of supportive services.

- Customer characteristics explained almost all of the female training advantage in the Dislocated Worker program, which was negligible to begin with, and approximately 23 percent of the small female-male difference in supportive services.

> *A substantial portion of gender differences in the receipt of training and supportive services could be explained by baseline differences in barriers, demographics, and other characteristics of customers when entering the WIA programs.*

These results suggest that part of the overall tendency for females to receive more training and supportive services than males do might actually have been attributable to gender differences in other factors that already exist when they enter the WIA system (including labor market barriers). In interpreting these findings, it is important to recall that we are only able to control for the customer-level measures available in the WIASRD. The presence of unexplained gender differentials in our analysis does not necessarily imply that females and males with identical characteristics are targeted differently for services; there could be other unmeasured economic characteristics or barriers that differ by gender.

3. Gender Differences in Occupational Skills Training

Among customers who received training, there were large differences in the occupations in which females and males tended to focus their training. Figure III.9 shows gender differences in the distribution of occupational skills training for customers in the Adult program. Although approximately 10 percent of males received training focused on agricultural, natural resources, or construction jobs, virtually no females did so. Further, although over half of males received training focused on mechanical and transportation-related job, only approximately one in 15 females received training geared toward those occupations. As previously noted, the training of females was disproportionately concentrated in managerial, administrative, professional, and technical jobs; sales, clerical, and administrative support jobs; and service jobs. Gender differentials in the distribution of occupational skills training were similar in the Dislocated Worker program in 2009.[26]

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[26] The relative prevalence of each type of occupational skills training differed slightly for both males and females in 2007 (Table F.37) as compared to 2009 (Table F.11), but gender differentials in the concentration of occupational skills training was similar in both years.

Figure III.9. Focus of Occupational Skills Training in the WIA Adult Program, by Gender
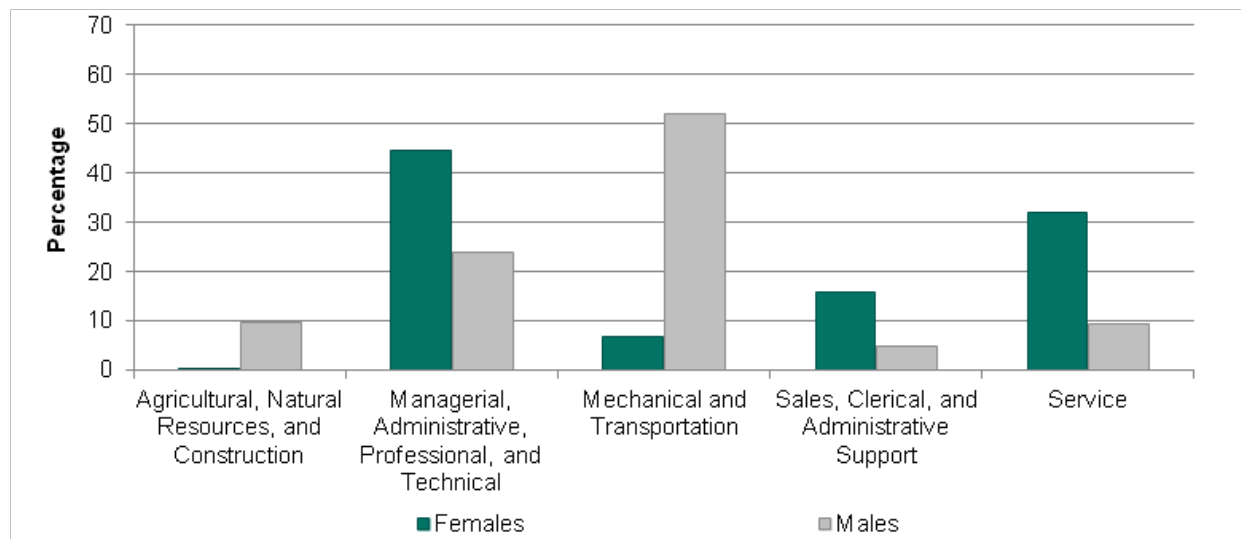
Source: Appendix F, Table F.11.

Note: Percentages are reported for customers who received training and for whom the field of training was reported.

Based on the Duncan index, which provides a concise summary measure of gender differences in the distribution across categories, our analysis suggests that gender balance would be achieved if over 54 percent of the trainees who exited from the Adult program in 2009 had received skills training for a different occupation (Table F.20). Similarly, 58 percent of trainees exiting from the Dislocated Worker program would need to have changed their focus to equalize the distribution of occupational skills training.

Our calculations also indicate that there were generally more gender differences in the focus of occupational skills training among some subgroups of customers who faced employment barriers. Specifically:

- Gender segregation by occupation was greater among low-income workers in the Adult program compared to those who were not in a low-income family.

- In both the Adult and Dislocated Worker programs, gender differences in the distribution of occupational skills training were higher among single parents and those who had not completed high school before receiving services, relative to other categories of workers.

> *There was generally greater gender segregation in occupational skills training among disadvantaged workers than among other workers.*

- Compared to other groups of workers, gender differences were higher among younger workers, blacks, and Hispanics, as well as among those who were not employed at the time they started receiving WIA services.

Even so, gender differences in occupational skills training were smaller among exiters with disabilities or limited English proficiency, relative to those without disabilities or who were proficient in English, which could suggest a more limited set of career options (Table F.20).

Although the degree of gender dissimilarities in occupation skills training varied noticeably with employment barriers and other characteristics, very little of the differences could be actually be accounted for by customer characteristics. Our regression analysis indicates that barriers, demographics, and other pre-program characteristics explained between approximately 1 and 17 percent of the differential tendency of females and males to receive training in a given group of occupations (see Appendix F, Table F.21). Hence, large gender dissimilarities in the focus of training remain when controlling for the customer-level characteristics available in the WIASRD. As discussed previously, however, such unexplained differences in occupation skills training should be interpreted cautiously because no information is available about customers'

> *… but female-male differences in occupational selection were largely unexplained by barriers or other customer characteristics recorded in the WIASRD system.*

pre-program occupation or about other potentially important pre-existing factors that could vary by gender.

C. Labor Market Outcomes

Although service receipt provides a proximal measure of the experiences of customers while they are WIA participants, the performance of the Adult and Dislocated Worker programs is ultimately judged according to customers' post-program employment and earnings. The detailed examination of those outcomes we present here is, therefore, intended to shed additional light on how customers might be served by the programs.

> *Females earned 14 percent less than males after leaving the Adult program and 21 percent less than males after leaving the Dislocated Worker program. Pre-program characteristics and service receipt were both significantly related to earnings but together explained only two-fifths of the female disadvantage.*

In the first subsection below, we present our analysis of employment and earnings among female exiters from the WIA Adult and Dislocated Worker programs in 2009.[27] In the second subsection, we compare the labor market outcomes of females and males. To learn more about the substantial gender disparities noted in Chapter I, we include a statistical analysis that quantifies the extent to which gender gaps are explained, sequentially, by differences between females and males in their characteristics (including barriers) and by the services they received.

An important caveat to all of our findings is that they can support only a descriptive interpretation. As discussed in Chapter II, differences in earnings or employment between groups of individuals cannot be definitively attributed to differences in pre-program factors or service receipt because labor market outcomes could be affected by factors not accounted for in our study design. Comparing post-program outcomes to

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[27] Post-program employment rates and average earnings were higher among females who exited in 2007 (Table F.39), compared to those who exited in 2009 (Table F.22). These differences are consistent with the worsening of the economy between 2007, which included the peak of the business cycle, and 2009, which included the business cycle trough. Our analysis indicated virtually no change over time in gender disparities, as measured by the female-to-male ratios of employment rates and average earnings of exiters. Consequently, the discussion and analysis in this section focus on our results for customers who exited from WIA in 2009.

pre-program employment and earnings may be especially problematic because customers may tend to seek out training and job search assistance only after experiencing a sharp decline in their labor market prospects, such as a job loss (Ashenfelter 1978; Heckman et al. 1999). We are unable to observe what their outcomes would have been without access to WIA services and, therefore, cannot causally attribute changes in earnings to participation in the program.

1. Post-Program Female Employment and Earnings

Nearly three-quarters of female customers (74 percent in the Adult program and 72 percent in the Dislocated Worker program) who left a WIA program in 2009 became employed within 12 months of exiting (Table F.22). Of those who became employed after leaving either program, about 80 percent in each program obtained their job in the first quarter after exiting the program. Over three-quarters of female customers who gained employment in the first quarter were employed in all four quarters during their first year following program exit. Average total earnings during the first post-program year among women exiting the WIA Adult and Dislocated Worker programs were $13,420 and $15,196, respectively.[28]

Comparing subgroups of females reveals a complicated relationship between pre-program characteristics and post-program employment and earnings (Table F.23 through F.30). Relative to other groups of women exiting from the Adult or Dislocated Worker programs:

- Single parents had higher employment rates but slightly lower earnings after exit.

- Both post-program employment rates and earnings were lower among women with lower levels of education, especially those without a high school degree.

- Employment rates tended to be higher among younger women (ages 18–24) and lower among older women (age 55 and older). However, earnings were substantially higher among prime-age workers (ages 25–54).

- Differences between black, Hispanic, and white females in post-program employment were, for the most part, fairly small. The main difference by race/ethnicity was that white women were more likely to be employed in all four quarters than were females in the other groups, a difference that was more pronounced in the Dislocated Worker program than in the Adult program.

Along with other traditionally disadvantaged groups, women with pre-program barriers tended to have lower earnings than did other women in the year after leaving the WIA programs. But there was no consistent relationship between pre-program measures of disadvantage and post-program employment rates.

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[28] These earnings averages are based on the full population of WIA exiters, including both those who did and did not find a job during the first post-program year. Excluding women who did not find jobs after exiting indicates a higher rate of earnings among the employed: $20,535 during the first post-program year among exiters from the Adult program and $21,046 among exiters from the Dislocated Worker program. Because exiters who found jobs are unlikely to be representative of exiters who did not find jobs, however, the remainder of our analysis includes all WIA exiters. This approach seeks to avoid confounding comparisons of earnings across groups with unmeasured factors that might be associated with differences in the types of jobs each group was offered or accepted.

- Women who were not employed when they started receiving WIA services were less likely to be employed and had lower earnings after exiting.

Women who were in low-income families before entering the Adult program had similar employment rates but lower post-program earnings compared with other females exiting the program.

Receipt of training and, to a lesser extent, supportive services was associated with higher rates of employment and greater earnings in the year following exit from both programs (Tables F.31 and F.32). For example, women who received training were about one-fifth more likely than women who did not receive training to have worked at any point during the post-program year—84 percent versus 70 percent in the Adult program and 82 percent versus 68 percent in the Dislocated Worker program. Similarly, females who received training through the Adult program earned almost 80 percent more during the year after leaving the program than those who did not. In the Dislocated Worker program, there was 37 percent earnings differential associated with the receipt of training. This is consistent with the idea that more extensive WIA services could boost participants' employment prospects—but this relationship could also be the result of more motivated customers seeking out training and supportive services.

Of the women who received occupational skills training, those whose training concentrated on managerial, administrative, professional, or technical jobs tended to have the highest post-program earnings (Table F.33). Women who received training for such jobs in the Adult program also tended to have the highest rates of employment, compared with those whose occupational skills training focused on other fields. In both programs, women who received occupations skills training for sales, clerical, and administrative support jobs or for service jobs had relatively low employment rates and average earnings after exiting.

2. Gender Differences in Post-Program Outcomes

Employment rates during the year after leaving WIA programs differed little by gender. As shown in Figure III.10, employment rates were slightly higher among female exiters from the Adult program in 2009, as compared to males. The largest difference was in the likelihood of holding a job in all four quarters, but even this employment outcome was only about one-eighth more likely to be achieved among females relative to males. Differences in employment rates among exiters from the Dislocated Worker program were even smaller and did not consistently favor either gender.

Figure III.10. Post-Program Employment Rates, by WIA Program and Gender
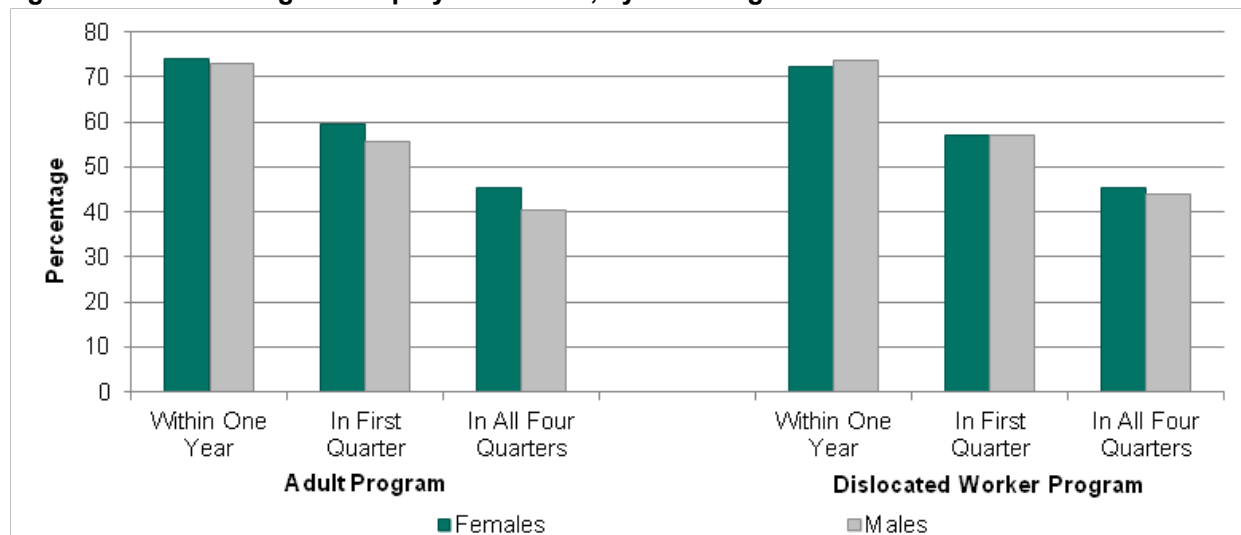
Source: Appendix F, Table F.22.

In contrast to the relatively small gender differences in post-program employment rates, gender differences in post-program earnings were substantial. Females earned approximately 14 percent less than males, on average, during the year after leaving the Adult program: $13,421 versus $15,539, for a difference of $2,118. Among exiters from the Dislocated Worker program, the average earnings of females was approximately 21 percent lower than the average earnings of males during the first post-program year: $15,196 versus $19,340, a difference of $4,144. Figure III.11 illustrates these differences graphically. Relative to their quarterly pre-program average rate of earnings, earnings losses were lower among females who participated in both the Adult and Dislocated Worker programs, compared with males (Table F.22). However, as previously discussed, interpreting such changes is problematic because of potential gender differences in the extent to which earnings losses spur workers to seek WIA services. As a result, in the remainder of our discussion of results in the main text, we focus on post-program earnings; the appendix tables include additional information about pre- to post-program earnings changes.

Figure III.11. Earnings During the First Year After Leaving Each WIA Program, by Gender
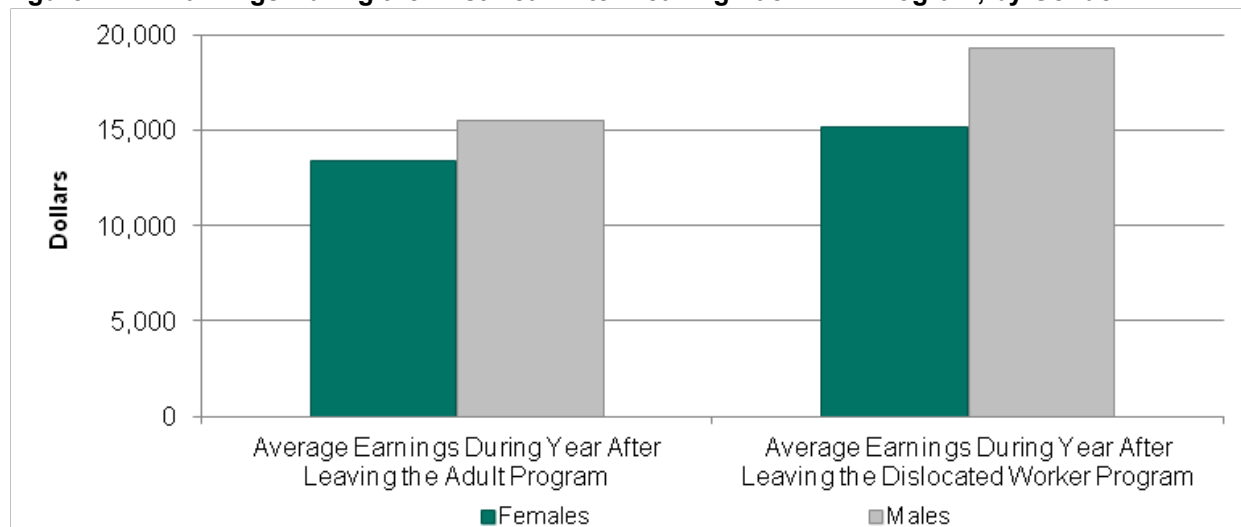
Source: Appendix F, Table F.22.

The stark gender disparities in the earnings of WIA exiters could be related to differences between females and males in pre-program barriers and other characteristics, and in their experiences while participating in WIA programs. For example, females were more likely than males to be single parents and less likely to have completed high school (Section III.A), and based on the results of the previous subsection, a greater prevalence of such pre-program employment barriers tended to translate into lower post-program earnings. In addition, although females were more likely than males to receive training and supportive services, their occupational skills training tended to be in very different fields (Section III.B).

To assess the extent to which customer characteristics and services received might explain gender differences in outcomes, we applied the staged regression analysis method described in Chapter II. In the first stage, we established the baseline gender gap by calculating the unadjusted differential between females or males. In the second stage, we estimated an adjusted gender gap using a regression technique to account for customer characteristics. In the third stage, we additionally accounted for receipt of training and supportive services and, if applicable, the focus of occupational skills training. We use changes in the gender gaps between stages to quantify the explanatory power of gender differences in customer characteristics and service receipt.

In presenting the results of this analysis, we focus on earnings, rather than employment outcomes, for two reasons. First, as shown previously, there were relatively small unadjusted differences in employment rates between females and males, whereas gender gaps in earnings were substantial. Second, differences in employment are implicitly taken into account in our measures of earnings because the analysis includes exiters who had no post-program earnings. Results for employment outcomes are presented in Table F.35 in Appendix F.

Figure III.12 displays the unadjusted and adjusted gender differences in earnings during the first year after participating in the WIA programs. The unadjusted estimates (depicted in red) from the first stage of our analysis confirm the findings described previously. Females earned $2,118 less than males during the first year after exiting from the Adult program and $4,144 less than males after exiting from the Dislocated Worker program.

Figure III.12. Gender Differences in Earnings During the Year After Leaving Each WIA Program
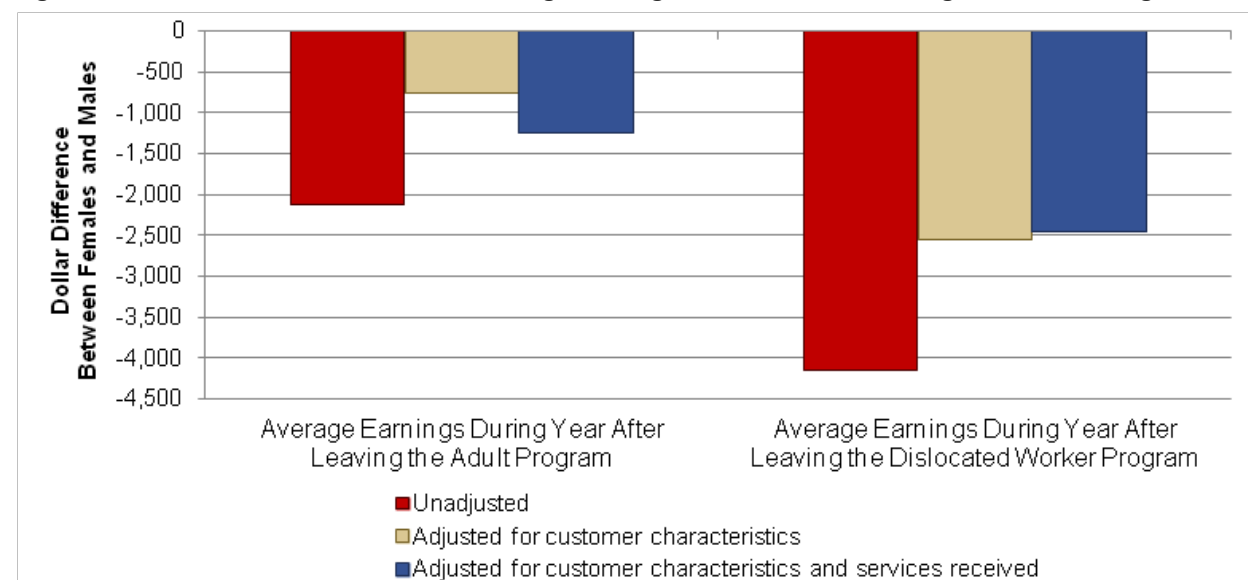
The adjusted estimates of the gender gap from the second stage (depicted by the tan bars in Figure III.12) suggest that barriers, demographics, and other pre-program factors explain a sizable proportion of the female disadvantage in post-program earnings. Among customers who left the Adult program, the adjusted gender gap falls by 64 percent (to $758 per year); among those who left the Dislocated Workers program, it falls by 38 percent (to $2,559 per year) when accounting for customer characteristics.

Adjusting the gender gap further to account for service receipt (as depicted by the blue bars in Figure III.12) produces smaller changes in the estimated gender gap; however, the direction of the change differs between the Adult and Dislocated Worker programs. In particular:

- Our estimate of the female disadvantage in earnings after leaving the Adult program rises from $758 to $1,242 per year (in absolute value) when accounting for service receipt in addition to customer characteristics. This change represents approximately 23 percent of the baseline, unadjusted earnings gap.

- Compared to the second-stage gender gap in earnings in the Dislocated Worker program ($2,559 per year), which only accounted for customer characteristics, additionally adjusting for service receipt yields a gender gap of $2,451. This decline represents less than 3 percent of the baseline gap in earnings.

These findings suggest that differences between females and males in the package of services they received (including both the extent of service receipt and, if applicable, the focus of occupational skills training) might explain a substantial part of the gender gaps in earnings among customers leaving the Adult program.

However, based on our previous results, accounting for receipt of training and supportive services only might be expected to result in a *larger* adjusted gender gap. Given that more extensive service receipt was associated with greater earnings, higher rates of training and supportive service receipt among females are likely to be associated with less of an earnings disadvantage among women. Therefore, when adjusting for differences in the extent of service receipt we would expect the regression analysis to reveal a larger underlying female disadvantage in earnings. This is consistent with our findings for the Adult program.

Because gender gaps in the Dislocated Worker program are not, in fact, larger when accounting for all service-receipt measures, our findings suggest that gender differences in the focus of occupational skills training could play a role in contributing to the female disadvantage in earnings. But, although these results are suggestive, causal conclusions cannot be drawn from this analysis. As previously noted, the available data do not allow us to control for important customer characteristics (such as pre-program occupation and industry, as well as other unmeasurable factors) that might affect both services received and outcomes.

Taken as a whole, our analysis suggests that gender differences in customer characteristics and service receipt could explain approximately 40 percent of the unadjusted gender gap in earnings in both programs. However, although the adjusted gaps are smaller than the unadjusted gaps, they still indicate a large unexplained female disadvantage in earnings.

D. Summary

Our analysis of female customers who left the WIA Adult and Dislocated Worker programs in 2009 suggests that the majority of women had at least one characteristic commonly associated with employment barriers. Females with lower levels of education, younger women, and women who were not employed at the time of entry into either program were especially likely to face other challenges to employment, which suggests they might need a more exhaustive set of services than others. The differences in characteristics between women and men also suggest that, as a group, females are more likely than males to face employment barriers, which could indicate a gender difference in what customers need from the WIA programs.

Patterns of service receipt suggest that WIA training and supportive services tended to be targeted toward customers facing greater barriers, particularly women. However, the training received by females and males tended to focus on building skills for very different sets of occupations. Our analysis indicates that baseline differences in barriers, demographics, and other characteristics at entry into WIA could explain a substantial portion of gender differences in training and supportive services. But, although gender dissimilarities in WIA occupational skills training were generally greater among individuals facing greater pre-existing barriers, the customer characteristics measured in the WIASRD could explain few of the gender differences in the focus of occupational skills training.

After leaving a WIA program, females had substantially lower earnings than males, although gender differences in employment rates were relatively small. Females earned 14 percent less than males after exiting from the Adult program; the gender earnings gap was 21 percent during the first year after exit from the Dislocated Worker program. These earnings gaps appear to be associated with a greater prevalence of pre-program barriers among women. Our analysis suggests that accounting for customer characteristics could explain almost two-thirds of the female disadvantage in earnings among exiters from the Adult program and two-fifths of the disadvantage in earnings among exiters from the Dislocated Worker program.

The relationship between service receipt and gender differentials in post-program earnings is less clear. Post-program earnings were generally higher among those who received training and supportive services, and women generally received more training and services than did men. However, there was marked variation in earnings associated with differences in the focus of occupational skills training, which differed substantially by gender. Our staged regression analysis indicates that accounting for the potential influences of service receipt and occupational skills training (after adjusting for customer characteristics) reveals larger underlying post-program gaps in earnings between female and male exiters from the Adult program and smaller underlying gaps among those exiting the Dislocated Worker program. This pattern suggests that gender differences in occupational skills trainings could contribute to the observed post-program gender gaps in earnings. These findings must be interpreted cautiously, however, because they are based on a descriptive study design, which cannot fully account for important pre-program characteristics and labor market experiences that might affect both WIA service receipt and post-program outcomes.

IV. VARIATION ACROSS LOCAL AREAS

Both the nature of WIA services that customers receive and customers' labor market outcomes after leaving the Adult and Dislocated Worker programs are likely to be influenced by the unique features of the areas in which services are received. For example, local labor market conditions and the socioeconomic structure could influence the set of job opportunities available to customers and affect the recommendations made by American Job Center staff about whether to pursue occupational skills training and, if so, how to focus it. In addition, the decentralized nature of WIA administration makes it likely that service strategies differ across local areas; this could, in turn, lead to geographic variability in post-program outcomes.

These local area characteristics could contribute to gender disparities in services or outcomes if females and males tend to receive WIA services in geographic areas with different service-provision strategies or labor market conditions. Such place-based variation in disparities might have been amplified by the recent recession, which had differential impacts by industry and gender. For example, males are disproportionately employed in manufacturing and construction industries, which were the hardest hit, whereas females are disproportionately employed in education and health services, which added jobs over the period, albeit at a slower rate of growth than in the past (Goodman and Mance 2011; DOL 2011). These macro-level changes may have played out differently across regions and metropolitan areas, contributing to differences between local areas in labor market conditions faced by women and men.

This chapter presents the results of our analyses of the relationships between characteristics of local areas in which customers participated in the WIA programs, the services they received, and their post-program outcomes. Its three sections focus on the following sets of research questions:

- How are female WIA customers distributed across local workforce investment areas (LWIAs)? Are females distributed differently across LWIAs than men?

- Do services provided to female and male WIA customers vary systematically with characteristics of the LWIA? How much of the gender differences in service receipt can be explained by unique features of each local area?

- Do the labor market outcomes of female and male customers exiting the WIA programs vary systematically with LWIA characteristics? How do gender gaps in outcomes change when accounting for local area characteristics?

A final section summarizes our findings from the analyses of linked customer-level records and area-level data that we use to answer these research questions. Throughout the chapter, we focus on customers exiting the Adult and Dislocated Worker programs in 2009.

A. The Distribution of Customers Across Local Areas

Our analysis of a series of area-level measures of economic and social activity suggests the following:

1. Both female and male WIA customers received services in areas with relatively high levels of unemployment and female labor-force participation but relatively low prevalence of economic hardship. For example, about 2 out of 3 customers leaving the Adult program received services in areas with unemployment rates that were higher than the national average. Close to 6 out of 10 customers received services in areas with above-average rates of female labor-force participation; about 4 out of 10 were served in areas with an above-average prevalence of single-parent households; and about 3 out of 10 received services in areas with above-average rates of poverty, limited English proficiency, or housing vacancies.

2. Women were less likely than men to receive services in high-unemployment areas but were more likely to receive services in areas that might otherwise be characterized as disadvantaged. For example, women who participated in the Adult program were more likely than men to receive services in areas with above-average rates of poverty, single-parent households, limited English proficiency, and vacant housing, but they were less

> *Female customers of the Adult and Dislocated Worker programs were less likely than male customers to receive services in high-unemployment areas but were more likely to receive services in areas with high rates of poverty and single parenthood.*

likely to receive services in areas with above-average unemployment and female labor-force participation rates.

These trends can be seen graphically in Figure IV.1 for customers who participated in the Adult program.

Figure IV.1. Percentage of Customers in the WIA Adult Program Receiving Services in Areas with an Above-Average Prevalence of Selected Socioeconomic Markers
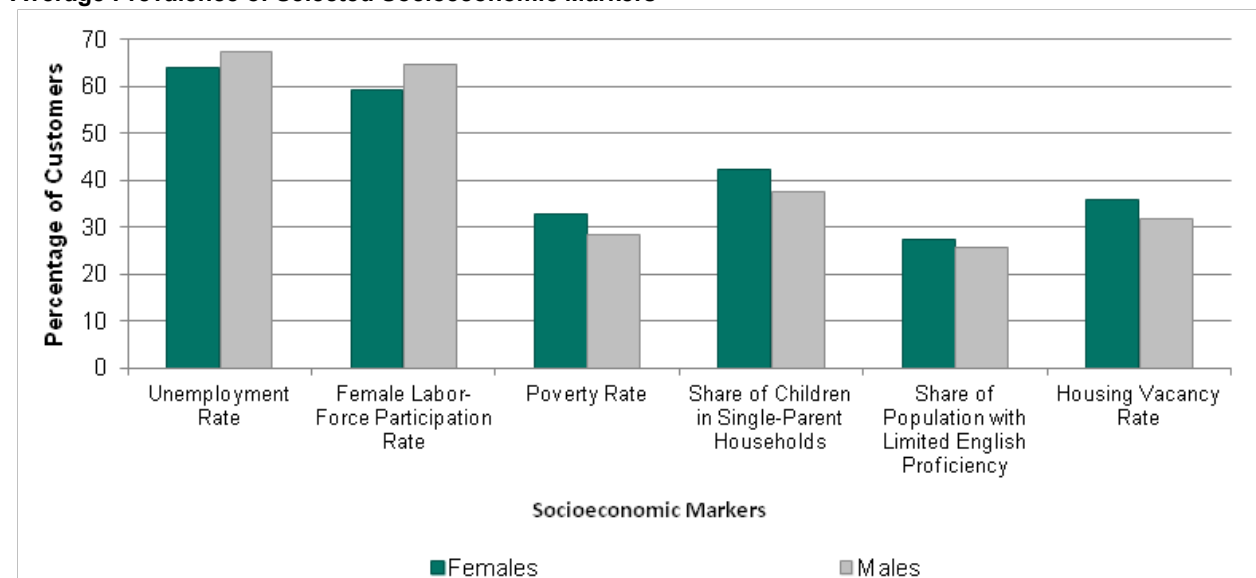
Gender differences also existed in the structure of the local labor markets in which WIA customers received services and in the regions of the country in which they were located (Table F.40). For example, women leaving the Adult program were about one-fifth more likely than men to be served in areas with above-average employment in the construction sector and one-tenth less likely to be served in areas with above-average employment in manufacturing. Women leaving the Dislocated Worker program were about one-fifth more likely than men to be in served in areas with above-average employment in the information sector. In both programs, women were about one-tenth more likely to receive services in areas with above-average employment in sales and office occupations. Female customers were more likely than male customers to receive services in the Mid-Atlantic (both programs), Southeast and Mountain states (Adult program only), and Northeast states (Dislocated Worker program only), and less likely to receive services in Midwest (both programs) and Western (Adult program only) states.

Perhaps because of these differences, as well as other factors, women in the Adult program were over two-fifths more likely than men to be served in LWIAs with above-average rates of training and supportive services. Relatively few gender differences existed in program services in the Dislocated Worker program.

B. Local Variation in Services Received

We used two sets of analyses to assess whether differences in LWIA characteristics might contribute to geographic differences in WIA services received. First, we examined a series of correlations between local area characteristics and LWIA-level measures of service receipt. In interpreting our findings, we focused only on "substantial" correlations, which we define as large enough to potentially explain 5 percent or more of the relationship between two factors.[29] The results of this analysis might help identify characteristics of LWIAs that are associated with differential patterns of services receipt in the Adult and Dislocated Worker programs. Second, we used a regression analysis to assess the extent to which gender differences in services received might be explained by the unique features of the LWIAs. Results of each analysis are presented in the following subsections.

1. Correlations Between Local Area Characteristics and Service Receipt

The correlations show that a relatively small number of local area characteristics are significantly related to the likelihood that customers received training and supportive services. Focusing on substantial correlations for female WIA participants, we found that:

- Areas that offered more training tended to also offer more supportive services. For example, females in the Dislocated Worker program were more likely to receive supportive services in areas with high rates of training.

- Training rates in both programs were lower in LWIAs that served a greater number of customers on an annual basis, which could suggest a relative scarcity of resources or a crowding-out dynamic in services areas with more customers.

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[29] Specifically, we use "substantial" to refer to correlations between two factors that are greater than or equal to 0.224 in absolute value, as described in Chapter II.

- Supportive services were less commonly received through the Adult program in areas with higher shares of employment in professional industries and management occupations and in areas with lower shares of employment in mechanical occupations. We saw similar, although less substantial, relationships when considering supportive services received through the Dislocated Worker program and training received through either program. These findings, along with the more general pattern of the industry/occupation correlations, appear to show greater receipt of work assistance and job training in areas where more women were employed in low-skilled, blue-collar jobs and fewer women were employed in high-skilled, white-collar jobs.

- The proportions of females who received training and supportive services in both programs varied markedly across regions of the country where WIA services were received.

Tables F.41 and F.42 in Appendix F provide the full results of this geographic analysis of the extent of service receipt for the Adult and Dislocated Worker programs, respectively.

We also found that some local area characteristics were significantly and substantially associated with the type of occupational skills training customers received. For example, females were less likely to be trained for managerial, administrative, professional, and technical jobs in LWIAs in which there was more employment in professional industries and in management, business, science, and arts occupations—both of which could suggest a lower need for WIA-funded occupational skills training for similar jobs. In addition, substantial variation also existed across regions of the country in training for managerial, administrative, professional, and technical jobs; sales, clerical, and administrative support jobs; and service jobs. No other clear patterns emerged from this geographic analysis of occupational skills training (see Appendix F, Tables F.43 through F.46).

2.   Local Area Characteristics and Gender Differences in Service Receipt

Geographic variation in socioeconomic characteristics and program operations could potentially explain part of the gender differences in WIA services received described in Chapter III. For example, the higher rate of training among women, relative to men, could partially stem from a greater share of women receiving services in areas in which American Job Center staff recommend training to all customers. We assessed this possibility by building on the regression analysis presented in Chapter III. The analysis presented in that chapter adjusted the gender differential in services for customer characteristics only; in this chapter, we also adjust for local area characteristics.[30]

Our findings suggest that local area characteristics explain much of the gender differences in training and supportive services received through the Adult program that were not explained by customers' characteristics. As discussed in Chapter III, customer characteristics explained about half of the female advantage in training and two-fifths of their advantage in supportive services. The regression analysis that also includes local area characteristics indicates that, taken together,

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[30] As noted in Chapter II, we account for *all* unique characteristics of local areas that might influence service receipt and outcomes by including a separate intercept for each LWIA in the regression analysis. Appendix C provides additional details about this method.

customer and local area characteristics explain most of the gender differences in the receipt of training and supportive services in the Adult program. This can be seen by comparing the difference between the size of the light blue bars in Figure IV.2, which represent adjusted gender differences, to the red bars in the figure, which represent unadjusted gender differences. In particular:

- The adjusted gender difference in the training rate, which accounts for both customer- and area-level characteristics, is just under 1 percentage point, whereas the unadjusted difference was 8 percentage points. The change in the estimated gap from accounting for both sets of factors is over 7 percentage points, or about nine-tenths of the unadjusted difference.

- The adjusted gender difference in the propensity to receive supportive services is slightly less than 2 percentage points, whereas the unadjusted difference was approximately 6 percentage points. Hence, when accounting for both customer- and area-level characteristics, the female advantage in receiving supportive service falls by about 4 percentage points, or approximately two-thirds of the unadjusted difference.

> *Accounting for both customer and local area characteristics helps explain the observed tendency of females to receive more training and supportive services than males in the Adult program. Relatively small differences remained unexplained after adjusting for these factors.*

Customer and local area characteristics do not appear to be clearly associated with gender differences in the Dislocated Worker program. This lack of association could be an artifact of the small observed differences between females and males in the Dislocated Worker program in the propensity to receive training or supportive services.

Figure IV.2. Gender Differences in the Extent of Services Received, by WIA Program
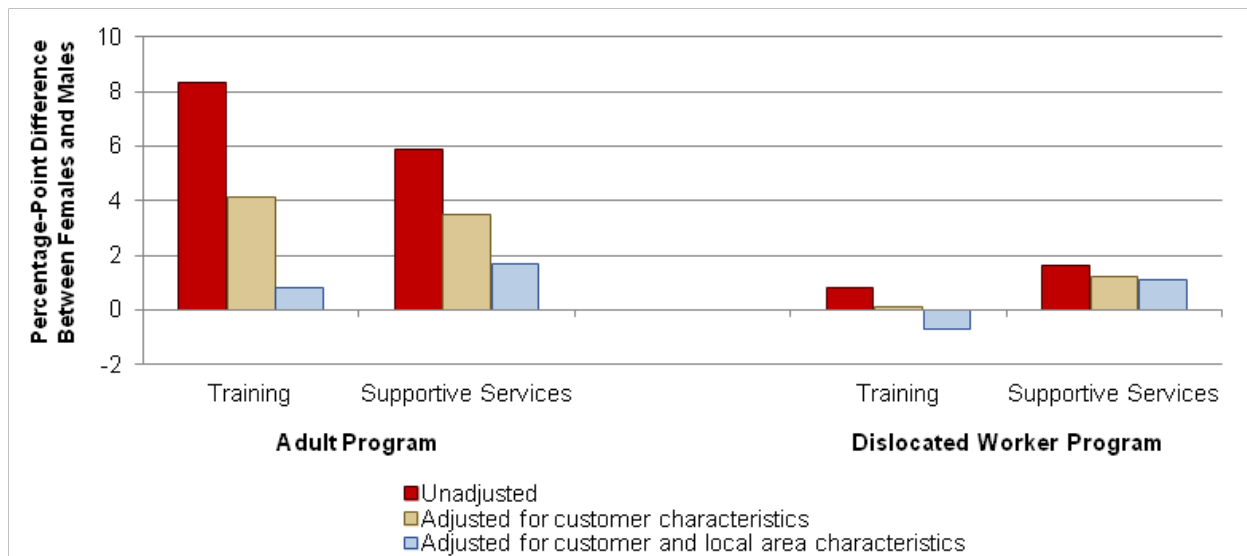
Source: Appendix F, Table F.47.

Among customers who received training, our analysis suggests that local area characteristics do not play a strong role in explaining gender differences in the focus of occupational skills training. This can be seen graphically in Figure IV.3, which displays the results of our staged regression analysis of occupational skills training in the Adult program. Comparing the unadjusted gender differences (first stage, red bars), the estimates that account for customer characteristics (second stage, tan bars), and the estimates that also account for area-level factors (third stage, light blue bars) reveals small

Large unexplained gender differences in the focus of occupational training remain after accounting for customer and local area characteristics.

changes between stages. Across all categories of occupational skills training, no change between the first and third stage exceeds one-seventh of the original unadjusted gender differential. This suggests that, together, customer and local area characteristics explain a minimal portion of the observed differences between females and males in the focus of occupational skills training. Our findings for the Dislocated Worker program were qualitatively similar (see Appendix F, Table F.47).

Figure IV.3. Gender Differences in the Focus of Occupational Skills Training in the Adult Program
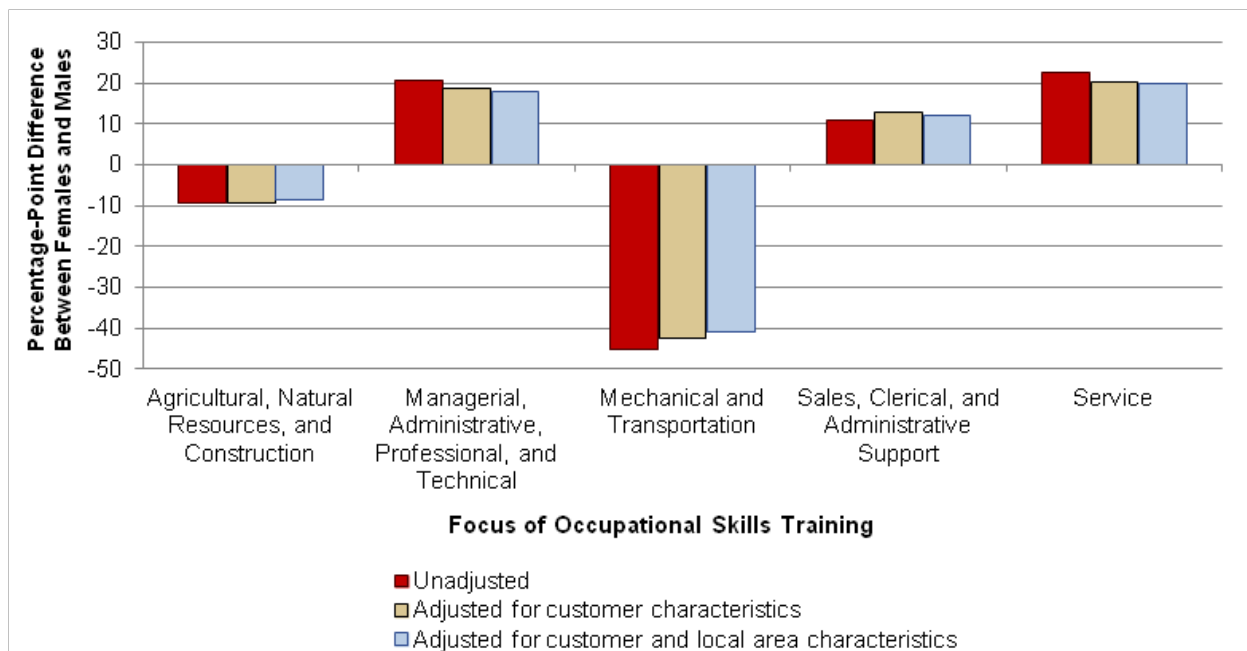
Source: Appendix F, Table F.47.

Note: The chart shows differences between females and males in the percentage receiving occupational skills training in each of the listed occupation groups. The differences were calculated among customers in the Adult program who received any training and for whom the field of training was reported.

C. **Local Variation in Post-Program Earnings**

In this section, we examine the geographic variation in earnings during the year after leaving the Adult and Dislocated Worker programs, using an approach similar to our previous analysis of service receipt.[31] In the first subsection, we describe the strength of association between local area characteristics and area-level averages of post-program earnings. We again focus our discussion on substantial correlations that are large enough to potentially explain 5 percent of the relationship between two measures. In the second subsection, we use a staged regression analysis to assess how much of the observed gender gaps in post-program earnings might be accounted for by the distinct characteristics of the LWIAs in which customers took part in WIA services.

1. **Correlations Between Local Area Characteristics and Post-Program Earnings**

Most of the area-level characteristics we examined were significantly and substantially associated with differences across LWIAs in the average earnings of females who left the Dislocated Worker program, but not of females who left the Adult program. Females' earnings during the year after leaving the Dislocated Worker program tended to be low in relatively disadvantaged areas and in areas with relatively little employment in high-skilled, white-collar industries and occupations. Specifically, post-program earnings were typically lower among females who had received services through the Dislocated Worker program in areas with:

- Higher rates of unemployment

- Lower rates of female labor-force participation

- Higher rates of poverty, single parenthood, and housing vacancies

- Lower shares of employment in industries (such as finance, insurance, and real estate; the information sector; and the professional sector) and occupations (such as management, business, sciences, and the arts) that typically hire skilled workers

- Relatively large fractions of the population living in rural areas

None of these area-level socioeconomic indicators was substantially correlated with the post-program average earnings of females who had participated in the Adult program.

These findings could reflect distinctions between the Adult and Dislocated Worker programs. One difference between the programs is in the clientele they serve. Women in the Dislocated Worker program were much less likely to be in stable employment when they started receiving services than were women in the Adult program. Less than 6 percent of women were employed and had not received a notice of separation from employment when they entered the Dislocated Worker program. In contrast, over 22 percent of women entering the Adult program were stably employed

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[31] Our discussion concentrates on program earnings only because (1) our findings presented in Chapter III revealed relatively small gender differences in post-program employment, (2) our earnings measures account for employment because they include individuals with no earnings, and (3) pre- to post-program changes in earnings might be skewed by gender differences in the extent to which customers seek training and job search assistance after experiencing earnings losses. Interested readers can find results for analyses of additional employment and earnings outcomes in the appendix tables listed in this section.

and might, therefore, have been seeking services to sharpen skills relevant to the jobs they already had. Such potentially different job search and training goals might explain the greater influence of local area characteristics on the outcomes of women leaving the Dislocated Worker program compared to those leaving the Adult program. Another type of difference might lie in the services customers received or in other factors that vary with the populations of customers served.

2.   Local Area Characteristics and Gender Differences in Post-Program Earnings

Our analysis so far suggests that local area characteristics could contribute to gender differences in post-program earnings. Women were more likely than men to receive services in economically disadvantaged areas, and post-program earnings tended to be lower—for dislocated workers, at least—in such areas. We extended the staged regression analysis presented in Chapter III to quantify how much of the gender gap that remained after accounting for customer characteristics and service receipt might subsequently be explained by local area characteristics. Specifically, we compared (1) the gender gap we calculated in the third stage of the analysis presented in Chapter III, which adjusted for differences in customer characteristics and service receipt only, to (2) the estimated gender gap from a fourth stage that additionally accounted for local area characteristics.

Comparing the results from the two stages, we found that local area characteristics explain virtually none of the remaining post-program gender gaps in earnings. For example, adding the adjustment for local area characteristics in the fourth stage changes our estimate of the female earnings disadvantage in the year following participation in the Adult program by only $48 (Table F.52). This change is fairly trivial, given that the (unadjusted) gap between female and male earnings over the same time period was $2,118. Our

> *After accounting for customer characteristics and service receipt, local area characteristics explain virtually none of the remaining female earnings disadvantage.*

analysis indicates an even smaller change in the estimated gender gap in earnings of customers leaving the Dislocated Worker program that is associated with local area characteristics (Table F.53).

Our analysis does not necessarily imply that local area-level factors play no role in explaining the gender gaps in earnings of customers leaving the Adult and Dislocated Worker programs. It does imply, however, that any potential influence of local area characteristics on gender earnings disparities would need to be mediated by variation across areas in service receipt and customer characteristics. For example, local area characteristics could be indirectly associated with gender differentials in earnings if they led to gender differences in the services customers received. Further, differences in the characteristics of local service areas might be reflected in gender differences in the attributes of customers served in those areas—and, as shown in Chapter III, customer characteristics explain a substantial portion of the female earnings disadvantage.

D. Summary

Our analysis suggests that the characteristics of the local area in which customers participate in WIA programs explain some of the gender disparities in service receipt but very little of the gender gap in post-program earnings. Women were slightly more likely than men to be served by American Job Centers located in areas that were disadvantaged. We also found gender differences in the industrial and occupational structure of employment in the areas in which women and men received services. Together, gender differences in customer characteristics and in the characteristics of local service areas appear to explain much of the female advantage in receipt of training and supportive

services from the Adult program. However, customer characteristics and area-level factors together explained very little of the large gender disparity in occupational skills training received from either the Adult or Dislocated Worker program. Although some local area characteristics were significantly associated with earnings after leaving the Dislocated Worker program, area-level factors did not appear to contribute distinctly to gender earnings gaps once customer characteristics and service receipt patterns were taken into account.

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V. SUMMARY AND DISCUSSION

WIA gives American Job Centers the flexibility to tailor service offerings to meet the distinctive needs of their customers, and this includes the needs of women customers. Although WIA contains no special programs for them, women could have a particularly strong need for assistance from the Adult and Dislocated Worker programs in securing a job that leads to self-sufficiency. Women earn less than men and are more likely to face employment barriers such as single parenthood and poverty. Gender gaps in earnings have historically been closely associated with differences in the types of occupations in which females and males are employed (Blau and Kahn 2000). Although almost half the national workforce was female in 2010, women represented only about 19 percent of skilled and semi-skilled workers and about 37 percent of upper- and mid-level managers (Equal Employment Opportunity Commission 2011). Aggregate WIA program data indicate that women were substantially more likely than males to receive WIA-funded training through the Adult and Dislocated Worker programs, but they earned considerably less after exiting the WIA system (Social Policy Research Associates 2011a).

This study focused on women exiting from WIA Adult and Dislocated Worker programs in 2009 to learn more about their characteristics, the services they received, and their post-program labor market outcomes. It helps to address a general research question: *how are adult women served by the WIA programs?* Our analysis is also intended to reveal gender gaps in post-program earnings and how they relate to factors that differ between men and women, such as their characteristics, the types of WIA services they receive, or the labor market opportunities they face.

A. Findings

The majority of women entering the Adult program (59 percent) had at least one characteristic commonly associated with employment barriers. Almost half had low incomes, which was by far the most common barrier we examined. Further, 20 percent were single parents and 13 percent had not finished high school. A relatively small fraction had a disability or limited English proficiency. Approximately 25 percent faced two or more of these barriers. Customers in the Dislocated Worker program appear to have been less disadvantaged. Although no information about family income is collected for this program, the prevalence of each of the individual non-income barriers we examined was lower among customers in the Dislocated Worker program compared to those in the Adult program. In both programs, barriers were more common among women than among men.

The patterns of service receipt suggest that WIA training and supportive services tended to be targeted toward customers facing greater barriers, particularly women. For example, females in the Adult program were over one-third more likely than males to receive any kind of training (31 percent versus 23 percent). Similarly, females were half again more likely than males to receive supportive services (18 percent versus 12 percent). Most of this gender gap in service receipt can be explained by baseline differences in barriers faced, demographics, and other characteristics. As Table V.1 shows, accounting for these factors left relatively small unexplained gender differences in the share of customers receiving training or supportive services.

Our analysis highlights large gender differences in the focus of occupational skills training received in WIA programs (among customers that received any training). WIA training received by females and males tended to focus on very different types of jobs. Our calculations suggest that gender balance would have been achieved only if over 54 percent of the trainees who left the Adult

program had received skills training for a different occupation. Gender differentials in the distribution of occupational skills training were similar in the Dislocated Worker program. Although the extent of gender dissimilarities varied noticeably with employment barriers and other characteristics, our regression analysis could account for very little of the differences. As shown in Table V.1, very large disparities remain after adjusting for barriers, demographics, pre-program labor market experiences, and local area characteristics. A potential limitation to this finding, however, is that the available data do not allow us to account for workers' occupations of employment or fields of training before entering the WIA system; such pre-program factors might influence the focus of WIA occupational skills training.

Table V.1. Unexplained Gender Differentials in Service Receipt, Employment, and Earnings

	Adult Program	Dislocated Worker Program
Types of Services Received (percentage-point difference)		
Training	0.7*	-0.7*
Supportive services	1.7*	1.1*
Occupational Skills Training† (percentage-point difference)		
Agricultural, natural resources, and construction	-8.6*	-4.4*
Managerial, administrative, professional, and technical	17.9*	15.2*
Mechanical and transportation	-41.1*	-51.0*
Sales, clerical, and administrative support	12.0*	19.0*
Service	19.8*	21.2*
Employment Outcomes (percentage-point difference)		
Within one year	-0.4*	-0.8*
In first quarter	1.3*	0.7*
In all four quarters	3.0*	1.9*
Earnings (dollars)		
Earnings during the first year after exit	-1,290*	-2,479*

Source: Appendix F, Tables F.47, F.52, F.53.

Note: The numbers reported in the table represent estimates of the gender differences among customers who left the WIA programs in 2009. The estimates have been adjusted using linear regression methods to account for (1) barriers, demographics, and other pre-program characteristics of customers; (2) the services that customers received (in the analyses of employment outcomes and earnings only); and (3) area-level factors that might affect service receipt.

* Significant at the $p < 0.05$ level.

† Our analysis of occupational skills training includes only those who received any training and for whom the field of training was reported.

After leaving the Adult or Dislocated Worker program, females and males had similar employment rates but females had substantially lower earnings. Females earned approximately 14 percent less than males, on average, during the year after leaving the Adult program: $13,421 versus $15,539, for a difference of $2,118. Among exiters from the Dislocated Worker program, the average earnings of females was approximately 21 percent lower than the average earnings of males during the first year after leaving the program: $15,196 versus $19,340, a difference of $4,144. These differences are proportionately similar to the gender gap of 18 percent among all full-time workers in 2011 (BLS 2012a).

Although some of the gap in post-program earnings appears to be associated with a greater prevalence of pre-program barriers among women, they still have a sizeable earnings disadvantage that cannot be explained. Our analysis suggests that once we account for customer characteristics

(including pre-program earnings), WIA services received, and local area characteristics, the adjusted estimate of the gender earnings gap is $1,290 during the first year after leaving the Adult program, and $2,479 after leaving the Dislocated Worker program. This analysis suggests that about three-fifths of the observed gender gap between women and men leaving each program cannot be explained by the measures included in our analysis.

B. Recommendations

Our study found large gender differences in occupational skills training and post-program earnings that could not be explained by the available administrative data. These results highlight the need to dig more deeply into how WIA serves the needs of its female customers. DOL is currently funding Mathematica to undertake an experimental evaluation study, *WIA Adult and Dislocated Worker Programs Gold-Standard Evaluation* (WIA Gold Standard), that will provide estimates of the effects of WIA on employment and earnings and will include separate analyses on the effectiveness of program components for females and males. Although the WIA Gold Standard study will provide valuable insights into gender differences in program effectiveness with respect to quantitative outcomes (for example, services received, employment, earnings, and self-sufficiency), it is not geared toward understanding why there are gender differences in services received.

We recommend that a process study be undertaken to shed light on how WIA program operations might influence women's choices for services receipt and their job aspirations, particularly relative to those of men. Examples of questions that might be addressed in such a study include:

- Does occupational skills training alleviate or exacerbate the gender segregation across occupations that exists before program entry? Are American Job Center counselors proactively suggesting or referring women and men to traditional occupations for training. Or are customers inclined to pursue traditional training despite counselors' efforts to encourage them to consider training in nontraditional fields?

- Do counselors' recommendations appropriately reflect varying conditions in the local labor market, and do some approaches to service provision lead to better employment earnings and outcomes than others?

- Are services structured to provide information and support that accommodate fully informed choices in occupational training? For example, are customers made aware of the earnings potential and employment opportunities associated with each type of occupational training?

- How is the choice of occupational skills training related to customers' career goals? To what extent do customers seek to use it to move ahead in their existing career path versus retooling their skill set for a new career trajectory?

The process study might also be accompanied by an audit study in which females and males with similar characteristics (other than gender) and histories of employment and training go to an American Job Center to request WIA services. Comparing the different experiences of the women and men in the audit study would reveal the extent to which customers might be treated differently by program staff—consciously or unconsciously—and potentially shed light on other service dynamics that promote gender differences in occupational skills training.

We also recommend four steps that the Employment and Training Administration (ETA) might take to improve DOL's capacity to use WIASRD to monitor women's progress in the Adult and Dislocated Worker programs and to conduct other research about WIA customers. Specifically, we suggest the ETA request that states and American Job Centers:

- **Reduce the consequences of missing data through improved state reporting.** More complete data on occupational skills training would be especially important for monitoring women's experiences in the program.

- **Ensure the use of consistent customer identification numbers**. This would allow for a more comprehensive customer-level understanding of the services received and post-participation outcomes.

- **Request additional data items to facilitate longitudinal analyses.** Increased pre-program information (for example, about the occupation and industry of prior employment) could be particularly valuable for understanding the patterns of WIA service receipt and post-program outcomes. Additional information about customers' participation histories at American Job Centers and other organizations would allow DOL to refine its knowledge of the WIA system and of whether it is providing a "one-stop" system to meet all the service needs of its customers.

- **Encourage consistency in how service receipt is recorded.** There appears to be substantial variation across states, local areas, and American Job Center counselors in (1) the extent to which potential customers are recorded in the WIA system, (2) which tiers of services (core, intensive, and/or training) are recorded, and (3) the way particular services are classified across the tiers. A more standardized approach to recording service receipt would allow DOL to gain a better understanding of WIA service utilization in general. It would also allow for stronger future analyses of gender differences in service receipt and program outcomes.

These changes are consistent with other DOL initiatives to improve the quality of data, such as the Workforce Data Quality Initiative grants and the Workforce Investment Streamlined Performance Reporting (WISPR) system.

C. Conclusion

This report provides insights about women's experiences in the WIA programs by showing associations between individual and local area characteristics, and program services and outcomes. It includes three key findings about WIA customers:

1. Women in the Adult program were about one-fourth more likely than men to receive occupational training and half again more likely to receive supportive services. This difference can largely be explained by the customer and local area characteristics that were available for this study.

2. There were substantial dissimilarities between women and men in the types of occupational skills training they received through both the Adult and Dislocated Worker programs. At most, one-seventh of these disparities can be explained by the customer and local area characteristics examined in this study.

3. Women earned 14 percent less than men after leaving the Adult program and 21 percent less than men after leaving the Dislocated Worker program. Approximately three-fifths of this gender gap cannot be explained by this study's measures of customer and local area characteristics and receipt of WIA services.

These findings raise questions about the underlying causes of the remaining gender differences in occupational skills training and earnings. Future research aimed at learning more about the factors associated with these gender differentials could lead to a better understanding of how WIA affects the experiences and labor market outcomes of women. With this increased understanding, the programs could potentially be structured to achieve more consistent excellence.

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REFERENCES

Ashenfelter, Orley. "Estimating the Effect of Training Programs on Earnings," *Review of Economics and Statistics*, vol. 60, no. 1, February 1978, pp. 47–57.

Berik, Gunseli, and Cihan Bilginsoy. "Still a Wedge in the Door: Women Training for the Construction Trades in the USA." *International Journal of Manpower*, vol. 27, no. 4, 2006, pp. 321–341.

Blau, Francine D., and Lawrence M. Kahn. "Gender Differences in Pay." *Journal of Economic Perspectives*, vol. 14, no. 4, fall 2000, pp. 75–99.

Blinder, Alan S. "Wage Discrimination: Reduced Form and Structural Estimates." *Journal of Human Resources*, vol. 8, no. 4, fall 1973, pp. 436–455.

Chapple, Karen. "'I Name It and I Claim It: In the Name of Jesus, This Job Is Mine': Job Search, Networks, and Careers for Low-Income Women." *Economic Development Quarterly*, vol. 16, November 2002, pp. 294–313.

Chaudry, Ajay, Juan Pedroza, and Heather Sandstrom. "How Employment Constraints Affect Low-Income Working Parents' Child Care Decisions." *Urban Institute Brief*, 23, February 2012. Available at http://www.urban.org/UploadedPDF/412513-How-Employment-Constraints-Affect-Low-Income-Working-Parents-Child-Care-Decisions.pdf (accessed October 3, 2012).

Cotter, David A., Joan M. Hermsen, and Reeve Vanneman. "The End of the Gender Revolution? Gender Role Attitudes from 1977 to 2008." *American Journal of Sociology,* vol. 117, July 2011, pp. 259–289.

D'Amico, Ronald, Kate Dunham, Jennifer Henderson-Frakes, Deborah Kogan, Vinz Koller, Melissa Mack, Micheline Magnotta, Jeffrey Salzman, Andrew Wiegand, Gardner Carrick, and Dan Weissbein. "The Workforce Investment Act After Five Years: Results from the National Evaluation of the Implementation of WIA." ETA Occasional Paper No. 2004-05. Washington, DC: U.S. Department of Labor, Employment and Training Administration, 2004.

Danziger, Sandra, Mary Corcoran, Sheldon Danziger, Colleen Heflin, Ariel Kalil, Judith Levine, Daniel Rosen, Kristin Seefeldt, Kristine Siefert, and Richard Tolman. "Barriers to the Employment of Welfare Recipients." In *Prosperity for All*, edited by Robert Cherry and William M. Rodgers III. New York: Russell Sage Foundation, 2000.

DeNavas-Walt, Carmen, Bernadette D. Proctor, and Jessica D. Smith. "Income, Poverty and Health Insurance in the United States: 2010." Current Population Report P60-239, Washington, DC: U.S. Department of Commerce, Bureau of the Census, September 2011. Available at http://www.census.gov/hhes/www/poverty/data/incpovhlth/2010/index.html (accessed July 20, 2012).

Duncan, Otis Dudley, and Beverly Duncan. "Residential Distribution and Occupational Stratification." *American Journal of Sociology*, vol. 60, no. 5, March 1955, pp. 493–503.

Dunham, Kate, Melissa Mack, Jeff Salzman, and Andrew Wiegand. "Evaluation of the WIA Performance Measurement System: Survey Report." ETA Occasional Paper No. 2005-16. Washington, DC: U.S. Department of Labor, Employment and Training Administration, 2005.

Dunham, Kate, Melissa Mack, Jeff Salzman, and Andrew Wiegand. "Evaluation of the WIA Performance Measurement System: Final Report." ETA Occasional Paper No. 2006-12. Washington, DC: U.S. Department of Labor, Employment and Training Administration, 2006.

Equal Employment Opportunity Commission. "2010 Job Patterns for Minorities and Women in Private Industry (EEO-1)." Washington, DC: EEOC, 2011. Available at http://www1.eeoc.gov/eeoc/statistics/employment/jobpat-eeo1/2010/index.cfm (accessed October 10, 2012).

Fisher, Ronald A. "Frequency Distribution of the Values of the Correlation Coefficient in Samples from an Indefinitely Large Population." *Biometrika*, vol. 10, no. 4, May 1915, pp. 507–521.

Gangl, Markus, and Andrea Ziefle. "Motherhood, Labor Force Behavior, and Women's Careers: An Empirical Assessment of the Wage Penalty for Motherhood in Britain, Germany, and the United States." *Demography*, vol. 46, no. 2, 2009, pp. 341–369.

Goldin, Claudia, and Lawrence F. Katz. "The Cost of Workplace Flexibility for High-Powered Professionals." *The Annals of the American Academy of Political and Social Science*, vol. 638, no. 1, November 2011, pp. 45–67.

Goodman, Christopher J., and Steven M. Mance. "Employment Loss and the 2007–09 Recession: An Overview." *Monthly Labor Review*, April 2011, pp. 3–12.

Gronau, Reuben. "Sex-Related Wage Differentials and Women's Interrupted Labor Careers—the Chicken or the Egg." *Journal of Labor Economics*, vol. 6, no. 3, July 1988, pp. 277–301.

Heckman, James J., Robert J. Lalonde, and Jeffrey A. Smith. "The Economics and Econometrics of Active Labor Market Programs." Chapter 31 in *Handbook of Labor Economics*, vol. 3, part A, pp. 1865–2097, edited by Orley Ashenfelter and David Card. Amsterdam: North-Holland, 1999.

Hegewisch, Ariane, and Hannah Liepmann. "Stuck in Neutral: Occupational Segregation and the Gender Wage Gap in the U.S." Paper presented at the American Economic Meetings, January 2012, San Diego, CA.

Hegewisch, Ariane, and Helen Luyri. "The Workforce Investment Act and Women's Progress: Does WIA Funded Training Reinforce Sex Segregation in the Labor Market and the Gender Wage Gap?" Briefing Paper C72. Washington, DC: Institute for Women's Policy Research, January 2010. Available at http://www.iwpr.org/publications/pubs/the-workforce-investment-act-and-women2019s-progress/ (accessed July 21, 2012).

Heinrich, Carolyn J., Peter Mueser, and Kenneth R. Troske. "Workforce Investment Act Non-Experimental Net Impact Evaluation: Final Report." ETA Occasional Paper No. 2009-10. Washington, DC: U.S. Department of Labor, Employment and Training Administration, 2010.

Hollenbeck, Kevin, Daniel Schroeder, Christopher T. King, and Wei-Jang Huang. "Net Impact Estimates for Services Provided Through the Workforce Investment Act." ETA Occasional Paper No. 2005-06. Washington, DC: U.S. Department of Labor, Employment and Training Administration, 2005.

Huber, Peter J. "The Behavior of Maximum Likelihood Estimation under Nonstandard Conditions." In *Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability 1*, edited by L.M. LeCam and J. Neyman. Berkeley, CA: University of California Press, 1967.

James, David R., and Karl E. Taeuber. "Measures of Segregation." In *Sociological Methodology*, pp. 1–32, edited by Nancy B. Tuma. San Francisco: Jossey-Bass, 1985.

Joy, Lois. "Do Colleges Shortchange Women? Gender Differences in the Transition from College to Work." *American Economic Review Papers and Proceedings*, vol. 90, no. 2, May 2000, pp. 471–475.

Mincer, Jacob, and Haim Ofek. "Interrupted Work Careers: Depreciation and Restoration of Human Capital." *Journal of Human Resources*, vol. 17, winter 1982, pp. 3–34.

Mincer, Jacob, and Solomon Polachek. "Family Investments in Human Capital: Earnings of Women." *Journal of Political Economy*, vol. 82, no. 2, pt. 2, March 1974, pp. S76–S108.

Negrey, Cynthia, Stacie Golin, Sunhwa Lee, Holly Mead, and Barbara Gault. "Working First but Working Poor: The Need for Education and Training Following Welfare Reform." Report to NOW Legal Defense and Education Fund. Washington, DC: Institute for Women's Policy Research, August 2001. Executive Summary available at http://www.iwpr.org/publications/pubs/working-first-but-working-poor-the-need-for-education-training-following-welfare-reform/ (accessed July 21, 2012).

Oaxaca, Ronald. "Male-Female Differentials in Urban Labor Markets." *International Economic Review*, vol. 14, no. 3, October 1973, pp. 693–709.

Ransom, Michael, and Ronald Oaxaca. "Intrafirm Mobility and Sex Differences in Pay." *Industrial and Labor Relations Review*, vol. 58, 2005, pp. 219–237.

Social Policy Research Associates. "PY 2010 WIASRD Data Book." Prepared for Office of Performance and Technology, Employment and Training Administration, U.S. Department of Labor. Oakland, CA: Social Policy Research Associates, November 2011a. Available at http://www.doleta.gov/performance/results/pdf/py_2010_wiasrd_data_book.pdf (accessed March 20, 2012).

Social Policy Research Associates. "PY 2010Q4 WIASRD Data File: Public Use Record Layout." Prepared for Division of Performance Accountability, Office of Performance and Technology, Employment and Training Administration, U.S. Department of Labor. Oakland, CA: Social Policy Research Associates, November 2011b. Available at http://www.doleta.gov/performance/results/doc/WIASRDRecordLayout-PY2010Q4.doc (accessed May 18, 2012).

Sullivan, William F., Jr., Lester Coffey, Lisa Kolovich, Charles W. McGlew, Douglas Sanford, and Richard Sullivan. "Worker Profiling and Reemployment Services Evaluation of State Worker Profiling Models: Final Report." ETA Occasional Paper No. 2007-15. Washington, DC: U.S. Department of Labor, Employment and Training Administration, 2007.

Trutko, John, and Burt Barnow. "Implementing Efficiency Measures for Employment and Training Programs: Final Report." ETA Occasional Paper No. 2010-05. Washington, DC: U.S. Department of Labor, Employment and Training Administration, 2010.

U.S. Department of Commerce, Census Bureau. "Fertility of American Women: 2010 – Detailed Tables." Washington, DC: U.S. Department of Commerce, Census Bureau, 2010. Available at http://www.census.gov/hhes/fertility/data/cps/2010.html (accessed July 20, 2012).

U.S. Department of Labor. "Women's Employment During the Recession." Washington, DC: U.S. Department of Labor, Employment and Training Administration, May 2011. Available at http://www.dol.gov/_sec/media/reports/FemaleLaborForce/FemaleLaborForce.pdf (accessed August 20, 2012).

U.S. Department of Labor. "State Statutory Formula Funding, 2012." Washington, DC: U.S. Department of Labor, Employment and Training Administration, 2012. Available at http://www.doleta.gov/budget/statfund.cfm (accessed July 18, 2012).

U.S. Department of Labor, Bureau of Labor Statistics. "Median Weekly Earnings of Full-Time Wage and Salary Workers by Selected Characteristics." Washington, DC: BLS, March 2012a. Available at http://www.bls.gov/cps/cpsaat37.htm (accessed September 24, 2012).

U.S. Department of Labor, Bureau of Labor Statistics. "Characteristics of Minimum Wage Workers: 2011" Washington, DC: BLS, March 2012b. Available at http://www.bls.gov/cps/minwage2011.htm (accessed July 18, 2012).

U.S. Department of Labor, Bureau of Labor Statistics. "Labor Force Statistics from the Current Population Survey." Washington, DC: BLS, 2012c. Available at http://www.bls.gov/cps/cpsa2011.pdf (accessed July 20, 2012).

White, Halbert. "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity." *Econometrica*, vol. 48, no. 4, May 1980, pp. 817–830.

Widner, Katie L. "Flexible Scheduling and the Gender Wage Gap." *The B.E. Journal of Economic Analysis & Policy*, vol. 9, no. 1, July 2009, doi:10.2202/1935-1682.2197.

Zedlewski, Sheila R. "Work and Barriers to Work among Welfare Recipients in 2002." *Snapshots of America's Families III*, no. 3. Washington, DC: Urban Institute, 2003.

APPENDIX A

DEFINITIONS OF VARIABLES

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This appendix contains the variables used in our analyses. In Section A, we describe the customer-level variables that were developed based on the Workforce Investment Act Standardized Records Data (WIASRD) system. In Section B, we describe the area-level variables, most of which were developed based on the American Community Survey (ACS). For additional information about the underlying data files used to create our analysis measures, see Appendix B.

A.   Customer-Level Variables

Customer-level variables were defined in the same way for all analyses and are based on the variables included in the public-use data files developed by Social Policy Research Associates (2011b). The variables and their definitions are shown in Table A.1.

Table A.1. Definitions of WIASRD Variables

Customer Characteristics	
Demographic Characteristics	
Age	Age is calculated by Social Policy Research Associates (2011b) based on the participant's birth date and participation date, and is rounded down to the nearest integer.
Race/Ethnicity	
Black, non-Hispanic	The person self-identified as having origins in any of the black racial groups of Africa and is not a member of any other single racial/ethnic group.
Hispanic/Latino	The person self-identified as being of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture in origin, regardless of race.
White, non-Hispanic	The person self-identified as having origins in any of the original peoples of Europe, the Middle East, or North Africa and is not a member of any other single racial /ethnic group.
Other	The person self-identified as being a member of a racial/ethnic group not included elsewhere in this table, self-identified as being a member of multiple racial/ethnic groups, or had no race/ethnicity recorded in the WIASRD system.
Pre-Program Characteristics	
Human Capital: Education and Labor Market	
Highest school grade completed	For individuals who did not complete high school, highest grade completed is recorded as the number of actual school grades completed. For individuals who completed high school but did not receive a bachelor's degree (or equivalent), it is recorded as 12 plus the number of years of college (or full-time technical or vocational school) completed. For all other individuals, this variable reflects one of the following discrete educational credentials or levels: completion of the General Education Development test or equivalent; high school diploma; certificate of attendance or completion; associate's diploma or degree; bachelor's degree or equivalent; completion of some education beyond the bachelor's degree; attainment of some other postsecondary degree or certification.
Employment and Earnings Status at Entry into WIA Program	
Employed	The individual is a person who either (a) did any work at all as a paid employee; (b) did any work at all in his or her own business, profession, or farm; (c) worked 15 hours or more as an unpaid worker in an enterprise operated by a member of the family; or (d) was not working but has a job or business from which he or she was temporarily absent because of illness, bad weather, vacation, labor-management dispute, or personal reasons, whether or not paid by the employer for time off, and whether or not seeking another job.
Employed, received notice of termination	The individual is employed but either (a) has received a notice of termination of employment or works for an employer who has issued a Worker Adjustment and Retraining Notification or other notice that the facility or enterprise will close or (b) is a transitioning service member.
Not employed or received layoff notice	The individual does not meet either of the two definitions of "employed" described above.

Table A.1 (continued)

Customer Characteristics	
Average pre-program quarterly earnings	This variable is calculated as the average of the individual's earnings in the three calendar quarters before the quarter of entry into the WIA program. Earnings in each quarter are totaled across all employers identified in the following administrative data sources: in-state unemployment insurance (UI) wage records, the Wage Record Interchange System, federal employment records from the Office of Personnel Management and the United States Postal Service, and military employment records from the Department of Defense. Earnings from all identified employers of the individual should be summed. If the individual appears in several different wage record systems (for example, systems in two different states), earnings are summed for each quarter. The state is required to access these data from its own wage record system; accessing data from other wage record systems is optional but recommended.
Family	
Single parent	The individual is a single, separated, divorced, or widowed individual who has primary responsibility for one or more dependent children under age 18.
Displaced homemaker	The individual is a person who has been providing unpaid services to family members in the home and has been dependent on the income of another family member, but is no longer supported by that income and is unemployed or underemployed and experiencing difficulty in obtaining or upgrading employment.
Poverty Indicators	
Low income	The individual is in one or more of the following categories:
	(1) Receives, or is a member of a family that receives, cash payments under a federal, state, or income-based public assistance program.
	(2) Received an income, or is a member of a family that received a total family income, for the six-month period before participation for the program that, in relation to family size does not exceed the higher of (a) the poverty line, for an equivalent period, or (b) 70 percent of the lower living standard income level, for an equivalent period. Income excludes unemployment compensation, child support payments, payments described in subparagraph (1) above and old age and survivors insurance benefits received under section 202 of the Social Security Act (42 U.S.C. 402).
	(3) Is a member of a household that receives (or has been determined within the six-month period before participation for the program involved to be eligible to receive) food stamps pursuant to the Food Stamp Act of l977 (7 U.S.C. 2011 et seq.).
	(4) Qualifies as a homeless individual, as defined in subsections (a) and (c) of section 103 of the Stewart B. McKinney Homeless Assistance Act (42 U.S.C. 11302).
	(5) Is a foster child on behalf of whom state or local government payments are made.
	(6) Is a person with a disability whose own income meets the income criteria established in WIA section 101(25)(A) or (B), but who is a member of a family whose income does not meet the established criteria.
TANF recipient	The individual is a person who is listed as receiving a welfare grant or has received cash assistance or other support services from the Temporary Assistance for Needy Families (TANF) agency in the six months before participation in the program.
Recipient of other public assistance	The individual is a person who is receiving or has received cash assistance or other support services from one of the following (non-TANF) sources in the six months before participation in the WIA program: General Assistance (state/local government), Refugee Cash Assistance, Food Stamp Assistance, and Supplemental Security Income (SSI-SSA Title XVI). Do not include foster child payments.
Other Considerations	
Persons with disability	The individual indicated that he/she has any "disability," as defined in section 3(2)(a) of the Americans with Disabilities Act of 1990 (42 U.S.C. 12102). Under that definition, a disability is a physical or mental impairment that substantially limits one or more of the person's major life activities. (For definitions and examples of "physical or mental impairment" and "major life activities," see paragraphs (1) and (2) of the definition of the term *disability* in 29 CFR 37.4, the definition section of the WIA nondiscrimination regulations.)
Limited English proficiency	The individual is a person with limited ability in speaking, reading, writing, or understanding the English language (a) whose native language is a language other than English or (b) who lives in a family or community environment where a language other than English is the dominant language.

Table A.1 (continued)

Customer Characteristics	
Veteran or eligible spouse	The individual is in one of the following categories:
	(1) Served in the active U.S. military, naval, or air service for a period of less than or equal to 180 days and was discharged or released from such service under conditions other than dishonorable.
	(2) Served on active duty for a period of more than 180 days and was discharged or released with other than a dishonorable discharge; <u>or</u> was discharged or released because of a service-connected disability; <u>or,</u> as a member of a reserve component under an order to active duty pursuant to section 167 (a), (d), or, (g), 673 (a) of Title 10, U.S.C., served on active duty during a period of war or in a campaign or expedition for which a campaign badge is authorized and was discharged or released from such duty with other than a dishonorable discharge.
	(3) Is the spouse of (a) any person who died on active duty or of a service-connected disability; (b) any member of the Armed Forces serving on active duty who, at the time of application for assistance under this part, is listed, pursuant to 38 U.S.C. 101 and the regulations issued thereunder, by the Secretary concerned, in one or more of the following categories and has been so listed for more than 90 days: (i) missing in action, (ii) captured in the line of duty by a hostile force, or (iii) forcibly detained or interned in the line of duty by a foreign government or power; or (c) any person who has a total disability permanent in nature resulting from a service-connected disability or a veteran who died while a disability so evaluated was in existence.

Services Received	
All Customers	
Tiers of Services Received	
Intensive services	Intensive services may include:
	(1) Comprehensive and specialized assessments of skill levels and service needs, including (a) diagnostic testing and use of other assessment tools and (b) in-depth interviewing and evaluation to identify employment barriers and appropriate employment goals
	(2) Development of an individual employment plan to identify the employment goals, appropriate achievement objectives, and appropriate combination of services for the participant to achieve the employment goals
	(3) Group counseling
	(4) Individual counseling and career planning
	(5) Case management for participants seeking training services
	(6) Short-term pre-vocational services—including development of learning skills, communication skills, interviewing skills, punctuality, personal maintenance skills, and professional conduct—to prepare individuals for unsubsidized employment or training
	(7) Out-of-area job search assistance including (a) relocation assistance, (b) internships, and (c) work experience
	Intensive services beyond those listed in WIA may also be provided.
Training services	The individual received on-the-job training, skill upgrading and retraining, entrepreneurial training, adult basic education (ABE), or English as a second language (ESL) in combination with training, customized training, or other occupational skills training.
Both intensive and training services	The individual received intensive and training services.
Supportive services	The individual received supportive services and/or needs-related payments.
	Supportive services (other than needs-related payments) for customers of the Adult and Dislocated Worker programs include, but are not limited to, assistance with transportation, child care, dependent care, and housing that are necessary for the individual to participate in activities authorized under WIA Title IB.
	Needs-related payments are given to customers to enable them to participate in approved training funded under WIA Title IB.

Table A.1 (continued)

Customer Characteristics	
Customers Who Received Training Services	
Focus of Occupational Skills Training	This variable is based on a set of O*Net occupation codes created by Social Policy Research Associates (2011b) by applying a crosswalk to state-specific occupation codes.
Agricultural, natural resources, and construction	This category includes training for agricultural, forestry, fishing and related workers, and for construction and extractive jobs.
Managerial, administrative, professional, and technical	This category includes training for jobs in managerial, administrative, professional, and technical occupations.
Mechanical and transportation	This category includes training for mechanics, installers, repairers, precision workers, machine setters, set-up operators, operators, tenders, assemblers, hand workers, transportation and related workers, and military jobs.
Sales, clerical, and administrative support	This category includes training for jobs in sales, clerical, and administrative support occupations.
Service	This category includes training for jobs in service occupations.
Outcomes	
Employment (within one year, first quarter, all four quarters)	Individuals are considered employed in a quarter after the exit quarter if earnings in that quarter were greater than zero. Individuals are considered employed within one year if they were employed in any one of the first, second, third, or fourth quarters after program exit; they are considered employed in all four quarters if they were employed in each of the first, second, third, and fourth quarters after program exit.
Earnings (average quarterly post-program earnings, in dollars; average change in quarterly earnings, in dollars)	Earnings in each quarter are determined as the total across all employers identified in the following administrative data sources: in-state UI wage records, the Wage Record Interchange System, federal employment records from the Office of Personnel Management and the United States Postal Service, and military employment records from the Department of Defense. Earnings from all identified employers of the individual should be summed. If the individual appears in several different wage record systems (for example, systems in two different states), earnings are summed for each quarter. The state is required to access these data from its own wage record system; accessing data from other wage record systems is optional but recommended. Average quarterly post-program earnings are calculated as the average of earnings in the four quarters after program exit. Average quarterly pre-program earnings are calculated as the average of earnings for the third through first quarters before the quarter in which a customer registered in the program. The average change in quarterly earnings is calculated as average quarterly post-program earnings minus average quarterly pre-program earnings. Customers who did not have an earnings record in a given quarter were assigned a value of zero for their earnings in that quarter.

Sources: Social Policy Research Associates 2011b.

Notes: Core self-service and informational activities are excluded from analyses. Self-service and informational activities are those core services accessible to the general public electronically or at a Job Center that (1) are designed to inform and educate individuals about the labor market and their employment strengths, weaknesses, and the range of services appropriate to their situation and (2) do not require significant staff involvement with the individual. Staff-assisted core services, excluding self-service and information, include but are not limited to staff-assisted job search and placement assistance, including career counseling; follow-up services, including counseling regarding the workplace; staff-assisted job referrals (such as testing and background checks); staff-assisted job development (working with employer and job seeker); and staff-assisted workshops and job clubs. Workforce information services include, but are not limited to, providing information on state and local labor market conditions; industries, occupations, and characteristics of the workforce; area business-identified skills needs; employer wage and benefit trends; short- and long-term industry and occupational projections; worker supply and demand; and job vacancies survey results. Workforce information also includes local employment dynamics information such as workforce availability, business turnover rates, job creation, job destruction, new hire rates, worker residency, commuting pattern information, and the identification of high-growth and high-demand industries.

All outcomes exclude individuals who were reported as institutionalized, having health or medical problems, or deceased at exit. Official definitions of the common (outcome) measures are in Training and Employment Guidance Letter 17-05, available at http://wdr.doleta.gov/directives/corr_doc.cfm?DOCN=2195 (accessed May 18, 2012).

B. Local Area Characteristics

We developed a series of measures to account for characteristics of the local area in which the customer received WIA services. Customer data from the WIASRD were used to construct measures describing the extent of service receipt in each local workforce investment area (LWIA) using the analysis samples described in Appendix F. Information from the ACS five-year summary file for 2006–2010 was used to develop most of the constructs capturing local labor market and other local socioeconomic characteristics.[32] These constructs were developed into two sets of variables, which were used for different purposes in our analyses. First, we developed thresholds of the area-level characteristics to use as demarcation points when describing the distribution of females and males across geographic areas (Table F.40 in Appendix F). These thresholds, presented in Table A.2, were calculated as the national average of each area-level variable using the number of working-age adults in each LWIA as weights. Second, we developed (unweighted) continuous measures of area-level characteristics for analyses that examined how strongly they correlated with WIA services received (Tables F.41 through F.46 in Appendix F) and with employment and earnings outcomes (Tables F.48 through F.51 in Appendix F).

The geographic units at which area-level variables were measured often corresponded to individual LWIAs. To achieve geographic consistency over time, however, we grouped together multiple LWIAs in cases where boundaries changed during the study period (see Appendix B). Separate intercepts for each of these geographic service areas were included as fixed effects in some of the multivariate regression analyses (Tables F.47, F.52, and F.53 in Appendix F) to account for *all* LWIA-level factors that might affect service receipt or labor market outcomes. See Appendix C for additional information about our analysis methods.

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[32] The ACS data and documentation we used for this study are available at http://www2.census.gov/ acs2010_5yr/summaryfile/ (accessed February 17, 2012). We supplemented these data with information from the 2000 census on the rural share of the population in each local area, a characteristic not available from the ACS. This measure of urbanicity was constructed from census data on urban/rural classifications available from the University of Missouri's Census Data Center. The data are available at http://mcdc2.missouri.edu/websas/geocorr2k.html (accessed March 28, 2012).

Table A.2. Threshold Levels of Local Area Characteristics

Characteristic	Threshold Level
Program Measures[a]	
Above-average share of customers receiving training	61.6
Above-average share of customers receiving supportive services[b]	31.2
Above-average number of customers	1104.5
Economic Activity and Social Barriers	
Unemployment rate is above the national average	7.3
Female labor-force participation rate is above the national average	72.4
Poverty rate is above the national average	10.2
Share of children younger than age 18 who are in a single-parent or non-family household is above the national average	32.7
Share of population with limited English proficiency is above the national average[c]	4.8
Share of housing units that are vacant is above the national average	11.6
Labor Market Structure	
Above-average industrial share of employment in:	
Agriculture, forestry, fishing and hunting, and mining	1.9
Arts, entertainment, and recreation, and accommodation and food services	8.9
Construction	7.2
Educational services	9.2
Finance, insurance, and real estate	6.9
Health care and social assistance	12.9
Information	2.4
Manufacturing	11.0
Professional and related services	10.3
Retail trade	11.5
Transportation and warehousing, and utilities	5.1
Wholesale trade	3.0
Other services (except public administration)	4.9
Public administration	4.9
Above-average occupational share of employment in:	
Agricultural, natural resources, and construction	6.5
Maintenance, production, and transportation	15.9
Management, business, science, and the arts	35.0
Sales and office	25.4
Service	17.2
Geography	
Region	
1: Northeast	n.a.
2: Mid-Atlantic	n.a.
3: Southeast	n.a.
4: Mountain	n.a.
5: Midwest	n.a.
6: West	n.a.
Share of population living in rural areas above the national average[d]	20.8

Source: All characteristics except program measures and the rural share of the local population were derived from the American Community Survey (ACS) five-year summary file for 2006–2010. ACS data and documentation are available at http://www2.census.gov/acs2010_5yr/summaryfile/ (accessed February 17, 2010).

Notes: Entries in the table are percentages unless otherwise indicated. The threshold level is the number that designates local service areas as being above average for all areas on the given measure. Simple averages were used for program measures; averages for the remaining variables were calculated using the number of working-age adults in each LWIA as weights.

[a] Program measures were developed from public-use WIASRD files using the analysis samples described in Appendix F.

[b] Receipt of supportive services includes receipt of both needs-related payments and other supportive services, such as financial assistance with child care or transportation expenses.

[c] Limited English proficiency is defined for the population of individuals at least 5 years of age as speaking English "not well" or "not at all."

[d] This measure is defined as the share of the 2000 census population in a census-defined urban area or urban cluster and constructed using census data from the Missouri Census Data Center at http://mcdc2.missouri.edu/websas/geocorr2k.html (accessed March 28, 2012).

n.a. = not applicable

APPENDIX B

CONSTRUCTING DATA SETS

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The results presented in this report are based primarily on the analysis of two data sets. Most analyses use data from the public-use files constructed from the Workforce Investment Act Standardized Records Data (WIASRD) system. This data system is used to measure the characteristics of WIA customers before their enrollment, the services they received while in the program, and their employment and earnings outcomes after they exited from the program. For some analyses, the information in the WIASRD files is augmented by data from the American Community Survey (ACS), which is used to measure the characteristics of the area in which WIA services were received.

In this appendix, we describe how we constructed the analytic data files from the public-use WIASRD files and the process we used to link the data to local area characteristics from the ACS.

A. WIASRD Analytic Data File

We constructed two data files from the WIASRD public-use data. One file included customers[33] who exited the Adult and Dislocated Worker programs during the 2009 calendar year and received WIA intensive or training services while enrolled. This file was based on the public-use WIASRD file from the fourth quarter of program year 2010, by which point one year of post-program earnings would be available for 2009 exiters. The second file included customers who exited from the Adult or Dislocated Worker programs in 2007, based on the program year 2008 public-use WIASRD file. The two data files are otherwise identical.

Each data file was constructed by first subsetting the public-use WIASRD file to customers who exited during the 2009 or 2007 calendar years. A small share of customers (1.6 and 2.4 percent of 2009 and 2007 exiters, respectively) had seven-year or longer enrollment spells in the WIA programs.[34] To avoid having these outliers potentially skew the results of our analysis, we further restricted each file based on the length of the customers' enrollment periods. Specifically, we limited the file containing 2009 exiters to customers enrolled between January 1, 2003, and December 31, 2009, and restricted the file of 2007 exiters to customers who were enrolled no earlier than January 1, 2001.

The analytic files were cleaned for outlier values on specific variables. Quarterly earnings with the value 999,999.98 were set to missing as that value appeared to be an undocumented missing data code used by some local workforce investment areas (LWIAs) and states when recording earnings data. Ages over 90 were set to missing because it was considered unlikely for such individuals to enroll in WIA programs and to continue participating in the workforce.

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[33] Multiple exits by the same customer during the same calendar year were treated as separate records (see Appendix D). Although this implies that analysis files contain a "customer spell" or "exit" as the unit of analysis, for ease of exposition, we refer to a "customer" or "exiter" as our unit of analysis in this appendix.

[34] These outliers might be due to errors in recording program entrance or exit dates, changes in how the WIA program was administered, the way that information was entered into WIASRD system, or other reasons.

Because a small percentage of individuals were missing values on the main customer characteristics and post-program outcomes of interest to this study (see Appendix F), we decided to exclude these customers from most of our analysis. Almost all of these cases were excluded because of missing values for customer characteristics: gender, age, education, employment status at entry into the WIA system, pre-program earnings, single-parent status, disability, English proficiency, and veteran status.[35,36] Post-program earnings information was missing in only two cases. Customers in the Adult program with missing pre-program values for low-income status, receipt of support through the Temporary Assistance for Needy Families (TANF) program, and receipt of other (non-TANF) public assistance were also excluded, as were customers in the Dislocated Worker program with missing values for the variable measuring displaced homemaker status. These restrictions resulted in excluding approximately 6.4 percent of Adult program customers and 5.8 percent of Dislocated Worker program customers because of missing values. In each program, there was only a negligible difference between the rate of missing values among females and the rate among males. No customers were missing information on service receipt data, except for information on occupational skills training as described in Appendix D.

Finally, we restricted the files of customers who were registered in the WIA Adult or Dislocated Worker programs and eliminated customers who were under 18 years of age or who were registered in the WIA Youth program (see Appendix F).

B. Defining Service Areas with Consistent Boundaries over Time

In the WIASRD system, a customer's LWIA is recorded at the time of entry into the program. Because LWIA boundaries changed over time, relying on the original LWIA codes was problematic for at least two reasons. First, customers located in the same area could be treated as residing in different LWIAs, depending on when they entered the system. For example, if two county-wide LWIAs merged into a single entity in 2008, a customer who entered the WIA system in either county before 2008 would be assigned a different LWIA number than a customer who entered the system after 2008. As a result, the local area characteristics for someone entering WIA in 2007 could differ from the characteristics of someone entering WIA in 2008, even though both resided in the same area. Second, not all of the recorded LWIAs in the WIASRD system can be matched to information from the ACS data because the census crosswalk file (described in the next section) uses LWIA geographic definitions from 2003.

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[35] Individuals with missing values for race/ethnicity (approximately 3 percent in 2009) were included in the "other" category, along with less frequently occurring racial categories such as Asian, American Indian, Pacific Islander, or multiracial.

[36] The missing-value statistics cited in this paragraph were calculated for the 2009 exiter file after constructing geographically consistent LWIAs in the manner described in the next subsection. Percentages are similar for the 2007 data.

To account for changing LWIA boundaries, we constructed a set of analytic service areas that were geographically consistent over the study period. Based on annual LWIA geographic definition files made available by ETA, we identified the following types of changes between years: (1) shifts in LWIA geographic boundaries, (2) splits of a single LWIA into multiple LWIAs, and (3) merging of multiple LWIAs into a single LWIA. For such cases, we formed consistent boundaries by grouping LWIAs into a common, aggregated jurisdiction that incorporated all of the areas affected by the change.[37] In the example described in the previous paragraph, in which two county-wide LWIAs merged into a single LWIA, we would use the two-county area as the geographically consistent service area. If two multicounty LWIAs were redefined so that a county was transferred between them, we aggregated the two LWIAs together in all time periods.

Combining LWIAs, as necessary, to obtain common boundaries over the years resulted in a set of 522 consistent, aggregated LWIAs in the analysis file of 2009 exiters. Area-level program measures based on the WIASRD, such as the training rate, and labor market measures based on the ACS (see Appendix A) were calculated using these consistent-boundary service areas. The vast majority (487 LWIAs, which contained 69 percent of customers) were unchanged relative to the LWIAs originally recorded in the WIASRD system. The remaining 35 geographically consistent service areas were created to account for boundary changes over time. Because most consistent-boundary service areas correspond to individual LWIAs, we refer to them more simply as "LWIAs" in the rest of this report.

C. Linking the ACS to WIASRD

Because census geographic definitions do not naturally align with LWIA boundaries, we used a geographic crosswalk to create the LWIA-level measures. ACS data are available for various census-defined geographic units (county, county subdivision, place, and state level) that can be linked to LWIA using a crosswalk provided by the Department of Labor.[38] For each state, this crosswalk describes how LWIAs were mapped to census geographic identifiers (geo IDs) as of 2003. For example, LWIA 6025 (Oakland, California) is equal to census geo ID 16000US0653000 (Oakland, California), and LWIA 6185 (Alameda County, excluding Oakland) is equal to census geo ID 05000US06001 (Alameda County) minus census geo ID 16000US0653000. After we cleaned the crosswalk definitions to account for initial nonmatches, the series of embedded rules for combining and separating out various census-defined areas allowed us to calculate counts of individuals by subgroup (which were ultimately transformed into rates and proportions) for the LWIAs that existed in 2003. The crosswalk also allowed us to determine the census region of each of the 2003-vintage LWIAs. We then grouped together these LWIAs, as necessary, using the approach described in the previous section. Summing population counts and taking ratios within these consistent-boundary LWIAs allowed us to obtain the final set of area-level measures described in Appendix A.

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[37] As part of this process, we also dropped the 2.7 percent of customers who could not be assigned to any particular geographic substate area because their recorded LWIA number corresponded to a statewide WIA program. In addition, we noticed several geographic areas for which the WIASRD system included no reported exiters in one or both years of data that we analyzed. Based on the 2010 census, these areas represented less than one-half of one percent of the total population in the United States in each of our analysis years.

[38] As discussed in Appendix A, we used information from the ACS five-year summary file for 2006–2010 to develop most of the area-level measures used in our analysis. The crosswalk between LWIAs and census-defined areas is available at http://www.doleta.gov/reports/censusdata/DOC/5-LEP%20Census-LWIADefinitionsWeb.xls (accessed March 20, 2012).

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APPENDIX C

ANALYTIC METHODS

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In this appendix, we describe the analytic methods we used to produce the results presented in this report and in the detailed tables in Appendices F and G. As discussed in Appendix D, we used customer spells (exits) rather than customers (exiters) as the unit of analysis, and we conducted separate sets of analyses for the Adult and Dislocated Worker programs. Customers who were co-enrolled in both programs (about 15 percent of cases in the 2009 analytic sample) were included in both sets of analyses. The appendix is organized into two sections. Section A describes our initial analysis of simple descriptive statistics. Section B describes the multivariate regression analyses.

A. Analyses of Simple Descriptive Statistics

Many of our analyses used simple descriptive statistics to provide information about the distribution of customers' characteristics, the services customers received, and their outcomes. These analyses were designed to (1) provide insights into the differing needs of females using WIA services, by describing different subpopulations of females and comparing females with males; (2) describe the relationships between WIA services and employment and earning outcomes by comparing female and male WIA customers; and (3) examine whether characteristics of the local WIA service areas were significantly associated with the characteristics, service receipt, and outcomes of customers.

1.   Customer-Level Analysis

In our analysis of customers served by the WIA Adult and Dislocated Worker programs, we used percentages to describe the distribution of the following measures: demographic and pre-program characteristics, services received, and employment outcomes. Demographic characteristics include gender, age, and race/ethnicity. Pre-program characteristics include education and prior employment status, average pre-program quarterly earnings, measures of family structure (single-parent and displaced-homemaker status), poverty indicators (low-income status, receipt of assistance through the Temporary Assistance for Needy Families [TANF] program, or receipt of other public assistance), and indicators of other barriers to employment (disability status, limited English proficiency, and veteran status).[39] Measures of service receipt include (1) the tiers of services received (intensive services only, training services only, or both); (2) receipt of needs-related payments or other supportive services, such as transportation or child care support payments; and (3) the focus of occupational skills training (for customers who received training). Employment outcomes include (1) whether a customer was employed in any of the four quarters after exiting the program (that is, employed at all within a year), (2) whether a customer was employed in the first quarter after exiting the program, and (3) whether a customer was employed in all four quarters after exiting the program.

Our analysis used means and standard deviations to describe the two continuous earnings measures: (1) average quarterly earnings during the year after program exit and (2) the change in average quarterly earnings between the three quarters before program participation and the four quarters after exiting the program.

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[39] Displaced homemaker status is only recorded in the WIASRD system for customers who receive services through the Dislocated Worker program, whereas poverty indicators are only recorded for those who participate in the Adult program.

We compared characteristics, services, and outcomes for different subpopulations by stratifying the analysis according to demographic and pre-program characteristics. We used low-income status as the main poverty-related measure (other than earnings) by which we stratified the analysis of customers in the Adult program. In addition, we did not stratify by displaced homemaker, barriers, limited English proficiency, and veteran status because fewer than 10 percent of the females registered in the Adult and Dislocated Worker programs in 2009 fell into these categories.

We summarized differences in the distributions of each categorical analysis measure by gender using the ratio of female-to-male percentages in each category. A female-to-male ratio of 1.25 means that the share of females who fall into a given category is one-quarter greater than the share of males who fall into that category; a ratio of 0.75 means there is a one-quarter lower likelihood that females fall into a category, relative to males. We used chi-squared tests to assess the statistical significance of female-male differences in distributions across categories of characteristics, services, and employment outcomes. We followed a similar approach in our basic descriptive analysis of the distribution of earnings measures by examining the ratio of the mean for females to the mean for males. For these continuous measures, we used *t*-tests to determine the statistical significance of gender differences.

We used the Duncan index of dissimilarity (Duncan and Duncan 1955) to examine the degree to there were differences between females and males in the focus of the occupational skills training they received:

(1) $$D = 100 \times \frac{1}{2} \sum_h |f_h - m_h|,$$

where

D = the Duncan index of dissimilarity,

f_h = the percentage of females in occupational category h,

and

m_h = the percentage of males in occupational category h.

Values of the dissimilarity index range from 0 to 100 and represent the percentage of females (or males) that would need to change occupation groups to eliminate gender differences in the distribution of occupational skills training. Our analysis included five occupation groups: (1) agricultural, natural resources, and construction; (2) managerial, administrative, professional, and technical; (3) mechanical and transportation; (4) sales, clerical, and administrative support; and (5) services. We calculated dissimilarity indices separately for customers in the Adult and Dislocated Worker programs and for different subpopulations of customers in those two programs. One potential limitation of these indices is that they might be biased by the relatively high rates of missing information on occupational skills training. About 30 percent of customers who received training had no occupational focus recorded in the WIASRD system (see Appendix D for details).

2.　Geographic Analysis

We described the areas where participants received their WIA services based on selected characteristics of local workforce investment areas (LWIAs).[40] Because a preliminary factor analysis of local area characteristics derived from ACS did not produce conceptually meaningful constructs, we identified four domains of interest and developed constructs that we felt would best operationalize these domains. Our four domains and the associated constructs were:

1. **Program measures:** the share of customers receiving training, the share of customers receiving needs-related payments or other supportive services, and the number of customers served

2. **Economic activity and social indicators:** the unemployment rate, the female labor-force participation rate, the poverty rate, the share of children younger than age 18 who are in a single-parent or nonfamily household, the share of the population with limited English proficiency, and the share of housing units that are vacant

3. **Labor market structure:** the distribution of employment across industries and occupations

4. **Geography:** the Department of Labor (DOL) region and the percentage of population in a rural area

For each construct listed above (except DOL region), we categorized LWIAs as being above or below the national average. To describe the distribution of customers across areas, we calculated the percentage who received services in LWIAs above the national average. We examined the female-to-male ratio of each percentage measure to assess gender differences in the geographic distribution of WIA customers, and used chi-squared tests to determine whether such differences were significant.

We used Pearson correlation coefficients to characterize the relationship between the area-level measures and the patterns of service receipt and labor market outcomes. We then applied Fisher's "*r* to *Z*" transformation (Fisher 1915) so that we could use a *Z*-test to determine whether gender-specific correlations differed significantly from zero and whether female-male differences in the correlation coefficients were significant.

B.　Multivariate Analysis

Our multivariate analysis provides a more in-depth look at the relationships between our outcomes of interest—both services received and post-program employment and earnings—and customer and local area characteristics.

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[40] As discussed in Appendix B, the geographic definitions of some LWIAs changed over time; in such cases we grouped together two or more LWIAs to form geographic services areas with consistent boundaries across time. Because most LWIAs were unchanged over time, we refer to these consistent service areas as "LWIAs" for ease of exposition.

The general form of the regression equation used to analyze employment and earnings outcomes is:

(2) $$Y_{ij} = \alpha + \beta Female_{ij} + \gamma' X_{ij} + \delta' S_{ij} + \eta_j LWIA_j + \varepsilon_{ij},$$

where

Y_{ij} = a binary indicator of post-program employment status or the level of earnings for customer i receiving WIA services in LWIA j,

$Female_{ij}$ = a binary indicator for whether the customer is female,

X_{ij} = a set of customer demographic or pre-program characteristics,

S_{ij} = a set of customer service receipt measures,

$LWIA_j$ = a binary indicator for LWIA j, which controls for all unique factors specific to the area,

and

ε_{ij} = an error term representing all unmeasured factors influencing the outcome.

We estimated the linear model in equation (2) using ordinary least squares (OLS) and calculated Huber-White standard errors that are robust to heteroskedasticity of the error term (Huber 1967; White 1980).[41] The main parameter of interest is β, which quantifies the gender gap in employment or earnings that remains after controlling for other characteristics included in the model. We used a *t*-statistic to examine whether the gender gap was statistically significant.

We examined the relative importance of customer demographic and pre-program characteristics, services received, and local area characteristics in explaining the gender gap in employment and earnings by adding each set of measures in four stages.[42] We initially calculated the "unadjusted" gender gap, or the gender gap without any controls for other customer characteristics (or service receipt). This unadjusted gap was estimated using a regression model with only a female indicator; that is, setting $\gamma = \delta = \eta = 0$ in equation (2). We then added (in stages) the individual characteristics ($\delta = \eta = 0$), services received ($\eta = 0$), and LWIA fixed effects (no constraints on equation (2)). We compared the sizes of the βs obtained from each model to quantify the change in

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[41] Our use of OLS implies that we estimated a linear probability model (LPM) for binary dependent variables. This was necessary in the last stage of the analysis because it was not feasible to estimate nonlinear probability models that included area-level intercepts. We used the LPM in the other stages for consistency in estimation, which allowed us to attribute differences in gender gaps between different modeling stages to the additional covariates rather than to differences in the models used at each stage. Our use of an LPM did not substantively affect our results—the regression coefficients on the gender variable were very similar to the marginal effects obtained when we initially estimated nonlinear logit or probit binary response models.

[42] We adopted a staged approach instead of the Oaxaca-Blinder decomposition approach (Blinder 1973; Oaxaca 1973) in order to emphasize the portion of the gender gap that remains unexplained after controlling for various groups of attributes (demographic and pre-program customer characteristics, services received, and local area characteristics). The Oaxaca-Blinder decomposition is better suited for assessing how much of the gender gap is explained by *all* observed attributes together, and the staged approach is better suited to capturing changes in the gap associated with each incremental group of attributes that is added to the model.

the gender gap at each stage. For example, taking the relative difference between the β estimated with customer characteristics included in the regression and the unadjusted β allows us to quantify how much the gender gap changes when accounting for other customer characteristics. Should β decrease in size, we would conclude that a portion of the observed gender gap in employment or earnings might actually be attributable to female-male differences in the distribution of other demographic or pre-program characteristics.

We used a similar approach when examining gender differences in WIA services received. This analysis was based on variants of equation (2) in which each element of S_{ij} is used as a dependent variable and no measures of service receipt are included on the right-hand side. This analysis was also implemented in stages. In the first stage, the unadjusted gender gap was calculated by including only the female indicator. We then included demographic and pre-program characteristics in the second stage and, subsequently, LWIA fixed effects in the third stage to assess how the gender gap changed when controlling for customer- and area-level factors.

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APPENDIX D

USING WIASRD FOR RESEARCH AND EVALUATION

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The WIA Standardized Record Data (WIASRD) system serves as the foundation for quarterly and annual reporting to DOL of financial, participant, and performance information from states and from workforce investment boards (WIBs) responsible for service delivery in the local workforce investment areas (LWIAs). The data have tremendous potential for use in research about the WIA system, as shown in the research in this report, in the annual WIASRD Data Book produced by Social Policy Research Associates (2011a), and in non-experimental evaluations of the net effect of WIA services in selected states on participant outcomes (Hollenbeck et al. 2005; Heinrich et al. 2008). The value of the WIASRD for conducting research and evaluation depends crucially on states and WIBs reporting complete and consistent information about WIA participants. In this appendix, we discuss four steps DOL might take to improve these aspects of the WIASRD:

1. Reducing the consequences of missing data through improved state reporting

2. Ensuring the use of consistent customer identification (ID) numbers

3. Requesting additional data items to facilitate longitudinal analyses

4. Encouraging consistency in how service receipt is recorded

Our specific recommendations are discussed in the sections below and are based on challenges encountered while preparing the WIASRD data for the analyses conducted in this research study.

A. Reducing the Consequences of Missing Data

Incomplete data diminish the comprehensiveness of the WIASRD, which in turn reduces its reliability for use in making inferential statements about the population of WIA customers. Although having some missing data is inevitable, the systematic and widespread patterns of missing values for selected WIASRD elements is of concern. Substantial variation in missing data across geographic areas in the WIASRD elements, as well as in economic conditions, policies, and programmatic features of the WIA system, limit the extent to which the patterns and relationships observed in the areas included in a given analysis are applicable to other areas of the country.

The documentation for the public-use data WIASRD files indicates that several variables have high rates of missing values, particularly in some states. For example, as noted in Appendix B, single-parent status is not recorded for any adult exiter[43] in West Virginia. As a result, customers from West Virginia—corresponding to 0.28 percent of all records—were not included in the study's main analyses.

Further, about 30 percent of the customers who had received training were missing information about the focus of occupational skills training, and the rate of missing values varied notably across geographic areas. For example, occupational skills training data were missing for over 90 percent of adult exiters in five states (Alabama, Mississippi, New York, Nevada, and Vermont), whereas no customers had missing values for this variable in seven other states (Alaska, Idaho, Michigan, North Dakota, Ohio, Utah, and Wyoming). There was also substantial variation across LWIAs within states. In California, for example, values for this variable were missing from all cases in 13 out of the 49 LWIAs, but there were also 12 LWIAs in which the share of customers with missing values was

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[43] In this appendix, we use "adult participants" and "adult exiters" to refer to individuals who participated in and exited from either the Adult or Dislocated Worker program. Unless otherwise noted, our calculations are based on the individuals exiting from these programs during the 2009 calendar year.

below the nationwide missing rate of 30 percent. Also, occupational skills training data were missing for at least half of the customers in 5 of the 18 LWIAs in New Jersey, whereas another 5 LWIAs in that state had missing value rates below 15 percent. These place-based differences in data availability imply that findings based on analyses that include the affected variables might not be nationally representative.

- **Recommendation:** To improve the generalizability of results from research using the WIASRD, DOL might consider working with states to identify and resolve challenges that they face in providing complete data. This would allow for a more accurate and complete understanding of the characteristics, behaviors, and outcomes of the WIA customer population, which could better target future workforce interventions.

B. Ensuring the Use of Consistent Customer Identification Numbers

Some WIA customers have multiple enrollments over time or enroll for services in multiple LWIAs; however, the public-use WIASRD files do not consistently allow these customers' distinct enrollments to be linked together. A more comprehensive customer-level understanding of the services received and post-participation outcomes would be possible if linking were feasible. The WIASRD specifications appear to support such an approach by requesting that states assign each customer a unique identification number (ID) that is expected to be "the same for every period of participation . . . and in every local area across the state" within each data extract.[44] In theory, this unique identifier, should allow for the merging of multiple spells within a given time in the absence of personally identifiable information (such as Social Security number or a combination of the customer's name, date of birth, and address).

In practice, however, ID numbers have not necessarily been uniquely assigned to each customer within a state for a given WIASRD extract. When considering all adult exiters (including those who received only core services) during the 2009 calendar year, we found that 17 states had no instances of a repeated ID number.[45] Further, in states with at least one repeated ID number, we noticed numerous LWIAs in which no ID number could be linked to a second instance of the same number anywhere in the same state.[46]

Focusing on LWIAs with clear evidence that unique customer ID numbers were being recorded—that is, at least one ID number in the LWIA could be linked to a second instance of the same number in the state—we found that approximately 3.4 percent of customers had multiple enrollments during the 2009 calendar year. We conducted a similar analysis using the subset of cases receiving either intensive or training services during calendar year 2009, which constitutes the basis for the main analysis file in this report. In LWIAs in which there was clear evidence of unique

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[44] Recent specifications for WIASRD extracts can be found on the Employment and Training Administration website at http://www.doleta.gov/performance/pfdocs/Edit_Checks_Website_051210.pdf (accessed March 20, 2012).

[45] The states with no instances of multiple enrollments were Connecticut, Delaware, Hawaii, Idaho, Maine, Maryland, Michigan, Montana, Nebraska, New Hampshire, New Mexico, North Carolina, Ohio, Vermont, Virginia, West Virginia, and Wyoming.

[46] The absence of a repeated ID number is not necessarily evidence of non-uniqueness of customer IDs. Some WIBs enrolled a small number of customers and multiple enrollments are not very common. Consequently, we limited the sample to WIBs that (1) had at least 200 enrollments and (2) were located in states with at least one instance of a repeated ID number. In approximately 42 percent of such WIBs, no ID number was associated with multiple enrollments.

customer ID numbers, we found that approximately 1.8 percent of such customers receiving noncore services had multiple enrollment spells.

Our investigation also indicated that the ID numbers recorded in the WIASRD system cannot be used to link spells across WIASRD extracts. We discovered this in a feasibility analysis that considered the overlap in enrollment spells across the WIASRD extracts for the fourth quarter of program year 2010 and the first quarter of program year 2011.[47] Limiting the sample to cases that should appear in both extracts based on the WIASRD reporting requirements, we found that an unexpectedly large percentage of spells could not be matched across extracts. Virtually no customer IDs matched in the state of Maryland. We also found relatively low match rates in Alabama (73.7 percent), Tennessee (71.6 percent), and Vermont (49.6 percent). Match rates were above 97 percent in the remaining states, although there were a few specific LWIAs within those states for which the match rate was low. Taken together, our diagnostic investigation suggests the following:

- A large number of states and WIBs did not record consistent ID numbers across multiple enrollment spells for the same customer within the same WIASRD extract.

- Some states and WIBs use different ID numbers for the same customer enrollment spells when preparing each WIASRD extract.

- Multiple enrollments over a one-year period were uncommon but not necessarily rare. We suspect that multiple enrollments might be more common over a longer duration.

In the analyses conducted for this report, we focused on individual enrollment spells rather than customers as the unit of analysis, and analyzed data from each WIASRD extract separately. Although the decision was born of necessity, it was not likely to have substantial implications for this study's findings because our calculations are unlikely to be affected by the relatively small percentage of customers we found with multiple enrollment spells.

Still, lack of consistent customer ID numbers rules out the possibility of learning more about the dynamics of WIA participation, such as the propensity of WIA participants to have multiple enrollment spells and any differences in patterns of service receipt and outcomes across spells.

- **Recommendation:** To facilitate analyses of WIA participation dynamics, DOL might work with states to develop the data and recording infrastructure needed to link together the records of customers with multiple enrollment spells both within and across WIASRD extracts. Improved tracking of individuals over time could help DOL better understand how it is meeting the needs of WIA customers and identify opportunities for increasing the attachment of customers to the workforce system.

C. Requesting Additional Data Items to Facilitate Longitudinal Analyses

In addition to promoting the use of consistent customer ID numbers, the capacity of researchers to analyze WIA program dynamics could be strengthened by including at least three sets of data items in the WIASRD: (1) pre-program occupation and industry of employment, (2) the current or most recent WIB providing services to the participant, and (3) additional details about service receipt. We discuss each of these in the following subsections.

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[47] This analysis included cases enrolled in the Youth program because of the potential for customers to transition from that program to the Adult or Dislocated Worker programs over time.

1.   Pre-Program Occupation and Industry

Rigorous non-experimental comparisons of service receipt and employment outcomes among groups of WIA customers—or between WIA customers and selected comparison groups from other data sources—are feasible only if detailed pre-program data are available. Techniques such as regression analysis and propensity score matching allow researchers to control for the baseline characteristics of customers when comparing post-program outcomes across customers (Hollenbeck et al. 2005; Heinrich et al. 2008). This reduces the potential for biases arising from unmeasured factors (such as labor market potential in the absence of service receipt) by essentially focusing on within-individual *changes* in labor-force outcomes over time. For similar reasons, having pre-program information would also increase the statistical precision of evaluations.

The WIASRD does not contain information on pre-program occupation and industry of employment even for those customers who were working when they entered into the WIA system. These variables are commonly understood to be strong predictors of employment prospects. For example, Hollenbeck et al. (2005) and Heinrich et al. (2008) attempted to use external administrative data from state unemployment insurance (UI) or Wagner-Peyser Employment Service systems to draw in this missing information for their analyses. In addition, pre-layoff occupation and industry are used in the majority of state Worker Profiling and Reemployment System models, due to the recognition that these characteristics typically are found to have strong influences on the likelihood that UI recipients will exhaust their available benefits (Sullivan et al. 2007). In the context of this study, pre-program occupation would be a critical control variable when examining gender differences in outcomes after WIA enrollment, particularly in the analysis of occupational skills training. Without such a measure available, it is not clear whether the observed differentials in the focus of occupational skills training simply reflect baseline differences in the distribution of occupations or whether they could be due to gender-based differences in training referrals.

- **Recommendation:** To improve the rigor of statistical comparisons among WIA participants, DOL should consider adding pre-program occupation and industry (if available) to the list of data elements included in the WIASRD specifications. This could allow DOL to conduct (or sponsor) stronger research about workforce system interventions using both experimental and non-experimental methods.

2.   Updated WIB Information

As discussed in Appendix B, the WIASRD system records the WIB responsible for the LWIA in which a customer initially enrolled for services, but some LWIAs split or merged over the time period covered in our analysis. As a result, it is not necessarily possible to identify the WIB currently responsible for providing services to active customers or the WIB responsible for service provision just before a customer exited from the WIA system. This complicates longitudinal analyses of the association between area-level factors and customer outcomes like those presented in this report, because distinct geographic areas must be aggregated together to maintain consistency across time. Adding updated WIB information (while retaining the identity of the initial WIB) would allow for greater flexibility in such analyses. This information could also allow for improved monitoring of WIB-level service provision by DOL.

- **Recommendation:** DOL might consider requesting information about the current or most recent LWIA in which customers are served to achieve greater flexibility in longitudinal research analyses. This would also result in an improved ability of DOL to monitor ongoing service provision at the local level.

3.   Additional Details About Service Receipt

The WIASRD only records the dates of entry into each tier of services and the date of exit from the WIA system. No information is collected about the start and end dates of specific services received by customers. This limits the capacity of researchers to learn about the duration of specific services or to form more detailed measures of program intensity. It is also not currently possible to study trajectories of program activities over the course of a customer's participation in WIA. Such information could provide exploratory evidence from which to form future evaluation questions. The WIASRD also provides 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 WIA services.[48]

- **Recommendation:** DOL might request that additional information about customers' participation histories at American Job Centers and other organizations be included in WIASRD records. This would allow DOL to refine its knowledge of the WIA system and of whether it is providing a "one-stop" system to meet all the service needs of its customers, by facilitating more thorough and rigorous quantitative analyses of customers' patterns of receipt of specific services over time.

D. Encouraging Consistency in How Service Receipt Is Recorded

Substantial variability across states, LWIAs, and counselors likely exists in the extent to which potential customers are recorded in the WIA system, as well as which tier(s) of services (core, intensive, and/or training) are recorded. As shown in Table D.1, during the 2006 program year, the cross-state distribution of customers (as recorded in the WIASRD) differed rather markedly from the distribution of funding.[49] For example, New York received only 6 percent of the federal funding for local Adult and Dislocated Worker programs but appears to have had over 19 percent of WIA customers. By contrast, California received 12.5 percent of federal funding for local adult programs but accounted for less than 3 percent of customers. These differences are also seen by considering the level of funding per customer, for which the 75 to 25 percentile spread (that is, the interquartile range) across states was over $2,250.[50] Table D.2 shows that virtually all exiters were recorded as receiving noncore (intensive or training) services in the majority of states during the 2007 calendar year, but fewer than 20 percent of customers were recorded as recipients of noncore services in four states.[51] Among customers who received any noncore services, the fraction who received training also varied considerably across states.

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[48] At a minimum, lack of information about services received outside Job Centers reduces the statistical precision of analyses that examine WIA services. This missing information could lead to biased results if the propensity to receive such services is correlated with customer characteristics or with the types of services received through the WIA programs.

[49] We use data from the 2006 program year for illustrative purposes because this period was before the latest economic downturn. More recent data would be likely to reflect differences across states in the distributions of funding and WIA customers that were due to the recession.

[50] These numbers are presented for descriptive purposes only, and we do not intend for them to be interpreted [in the manner of Trutko and Barnow (2010)] as measures of program efficiency.

[51] We considered exiters during the 2007 calendar year because such individuals were likely to have received WIA services during the 2006 program year. These calculations are based on customers who received staff-assisted core services, intensive services, or training. They exclude customers who only received self-assisted core services; states and WIBs are not required to monitor and record the receipt of such services in the WIASRD.

Table D.1. Funding and Participation Levels for the Adult and Dislocated Worker Programs During Program Year 2006, by State

State	Formula Funding for Local Programs		Participation Level		Dollars per Customer
	Dollars	Percentage of Total	Number of Customers	Percentage of Total	
Alabama	15,576,262	1.1	9,060	0.4	1,719
Alaska	5,316,451	0.4	1,473	0.1	3,609
Arizona	21,998,716	1.5	9,882	0.4	2,226
Arkansas	9,825,204	0.7	27,660	1.1	355
California	183,920,912	12.5	74,391	2.9	2,472
Colorado	20,850,354	1.4	7,280	0.3	2,864
Connecticut	11,983,385	0.8	32,711	1.3	366
Delaware	2,532,849	0.2	1,281	0.1	1,977
District of Columbia	4,343,614	0.3	1,080	< 0.1	4,022
Florida	58,128,916	3.9	34,101	1.3	1,705
Georgia	67,444,992	4.6	9,799	0.4	6,883
Hawaii	3,855,094	0.3	4,124	0.2	935
Idaho	3,701,247	0.3	202,978	8.0	18
Illinois	66,521,920	4.5	94,102	3.7	707
Indiana	23,664,398	1.6	34,569	1.4	685
Iowa	6,003,786	0.4	3,077	0.1	1,951
Kansas	13,754,666	0.9	49,602	1.9	277
Kentucky	18,357,748	1.2	11,119	0.4	1,651
Louisiana	26,096,968	1.8	110,730	4.4	236
Maine	3,770,498	0.3	1,950	0.1	1,934
Maryland	11,868,220	0.8	109,540	4.3	108
Massachusetts	20,020,314	1.4	14,903	0.6	1,343
Michigan	84,091,352	5.7	28,721	1.1	2,928
Minnesota	11,267,373	0.8	6,573	0.3	1,714
Mississippi	23,630,776	1.6	141,854	5.6	167
Missouri	27,954,320	1.9	13,705	0.5	2,040
Montana	3,212,405	0.2	1,131	< 0.1	2,840
Nebraska	4,046,354	0.3	13,372	0.5	303
Nevada	4,887,321	0.3	2,240	0.1	2,182
New Hampshire	10,151,359	0.7	1,599	0.1	6,349
New Jersey	39,699,208	2.7	13,414	0.5	2,960
New Mexico	10,948,631	0.7	2,701	0.1	4,054
New York	88,602,096	6.0	485,585	19.1	182
North Carolina	36,966,280	2.5	16,576	0.7	2,230
North Dakota	2,113,826	0.1	15,813	0.6	134
Ohio	70,748,928	4.8	42,648	1.7	1,659
Oklahoma	38,327	0.0	80,315	3.2	< 1
Oregon	30,430,382	2.1	8,402	0.3	3,622
Pennsylvania	49,910,360	3.4	18,048	0.7	2,765
Rhode Island	3,506,796	0.2	1,418	0.1	2,473
South Carolina	31,839,380	2.2	15,045	0.6	2,116
South Dakota	2,283,863	0.2	2,015	0.1	1,133
Tennessee	25,536,638	1.7	19,541	0.8	1,307
Texas	124,351,864	8.4	447,773	17.6	278
Utah	6,853,452	0.5	191,855	7.5	36
Vermont	2,283,525	0.2	529	< 0.1	4,317
Virginia	114,947,752	7.8	9,998	0.4	11,497
Washington	36,901,076	2.5	84,578	3.3	436
West Virginia	7,504,948	0.5	6,054	0.2	1,240
Wisconsin	20,444,552	1.4	12,977	0.5	1,575
Wyoming	2,364,992	0.2	14,661	0.6	161

Source: Program Year 2006 WIA National Summary of Annual Performance Data, available at http://www.doleta.gov/performance/results/pdf/WIA_National_PY_2006_summary_012807_FINAL.xls (accessed August 12, 2012).

Note: Funding levels are total federal formula spending for local WIA Adult and Dislocated Worker programs and exclude state administrative expenditures, national emergency grants, or other statewide programs. Participation levels are a total count of customers across the two programs at all service tiers (core, intensive, and training). Co-enrolling customers are counted only once.

Table D.2. Propensity of Adult and Dislocated Worker Exiters to Be Recorded as Receiving Service from Higher Tiers During Calendar Year 2007, by State

State	Fraction Recorded as Receiving Intensive Services or Training (Out of All Exiters)	Fraction Recorded as Receiving Training (Out of Exiters Who Were Recorded as Receiving Either Intensive Services or Training)
Alabama	1.00	0.76
Alaska	0.98	0.73
Arizona	0.57	0.56
Arkansas	0.99	0.73
California	0.80	0.49
Colorado	0.99	0.66
Connecticut	0.98	0.77
Delaware	0.96	0.98
District of Columbia	0.84	0.65
Florida	0.87	0.87
Georgia	0.88	0.73
Hawaii	0.89	0.47
Idaho	1.00	0.76
Illinois	0.85	0.61
Indiana	0.97	0.32
Iowa	0.89	0.81
Kansas	0.89	0.82
Kentucky	1.00	0.64
Louisiana	0.10	0.88
Maine	0.82	0.74
Maryland	0.93	0.42
Massachusetts	1.00	0.63
Michigan	0.89	0.62
Minnesota	0.96	0.41
Mississippi	0.17	0.49
Missouri	0.72	0.57
Montana	0.98	0.79
Nebraska	1.00	0.92
Nevada	0.98	0.54
New Hampshire	0.92	0.69
New Jersey	0.99	0.76
New Mexico	1.00	0.86
New York	0.13	0.15
North Carolina	1.00	0.77
North Dakota	0.73	0.39
Ohio	0.84	0.69
Oklahoma	0.08	0.34
Oregon	0.92	0.44
Pennsylvania	0.88	0.58
Rhode Island	0.73	0.71
South Carolina	1.00	0.54
South Dakota	1.00	0.44
Tennessee	0.89	0.79
Texas	0.97	0.30
Utah	0.99	0.96
Vermont	1.00	0.82
Virginia	0.96	0.61
Washington	0.96	0.48
West Virginia	0.95	0.58
Wisconsin	0.96	0.61
Wyoming	0.99	0.58

Source: Public-use WIASRD data for program year 2008.

Note: Fractions are calculated based on customers who entered the WIA Adult or Dislocated Worker programs between January 2001 and December 2007; were at least 18 years old at the time of participation; were not registered in the WIA Youth program; received at least one staff-assisted core service, intensive service, or training service during their enrollment in WIA; and exited during the 2007 calendar year.

Genuine differences in service needs undoubtedly exist across customers and geographic areas, and one of the hallmarks of the American Job Centers is the customization of services to meet the needs of the modern workforce. Nonetheless, the variation across states in the fraction of customers recorded as recipients of intensive or training services (versus core services only) documented in Table D.2 seems implausible if states are using consistent definitions. All customers receiving staff-assisted core services should be recorded in the WIASRD system, but local areas are not required to record self-service customers. Dunham et al. (2006) indicate that, in response to the incentives implicit in the WIA performance measures, some states and local areas adopted a broader approach to defining "self-service" to avoid counting certain customers as receiving core services. Dunham et al. (2005) also document systematic relationships between some WIB-level policies and the propensity to provide customers with core services only. Finally, Dunham et al. (2006) indicate that WIBs and individual American Job Centers also appear to vary in how they code the same types of services received by customers after they are enrolled in the WIA system. Thus, systematic differences in recording practices across states and local areas are likely to drive some of the observed deviations between the distribution of caseloads and funding, as well as the observed variation in the propensity for customers to be recorded as receiving higher tiers of services.

Such systematic differences in the recording of similar services can be problematic for efforts to analyze the geographic variability in the relationship between services and outcomes of WIA participants, because of inconsistencies in what the service-receipt data elements actually mean. Of particular concern for conducting evaluations of WIA services is that local practices might be driven in some areas by the desire to "cream skim" (Trutko and Barnow 2010). That is, some states and WIBs might adopt alternative definitions of service receipt in order to avoid recording individuals with poor labor market prospects as WIA participants. This would reduce the likelihood that researchers could form consistently appropriate comparison groups using non-experimental methods. In addition, simple descriptive comparisons could be severely confounded. Controlling for geographic areas using fixed effects within a regression framework to capture geographic differences (as we did in this study) or applying propensity score matching methods only within geographic areas (as in Heinrich et al. 2008) could alleviate some of the analytic problems stemming from these differences in recording practices. However, the findings based on analyses that use such methods should still be interpreted with a measure of caution.

- **Recommendation:** DOL could consider working with stakeholders to develop a more standardized approach to recording service receipt, while preserving the flexibility of frontline American Job Center staff to tailor the package of services offered to meet the diverse needs of WIA customers. This would ultimately allow DOL to develop a more comprehensive and consistent understanding of WIA service utilization and reduce the potential unreliability of existing or planned measures of program effectiveness.

APPENDIX E

USING ES AND VETS DATA FOR RESEARCH AND EVALUATION

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The original design for this study included plans to incorporate into the analysis state-level measures of participation in the Wagner-Peyser Employment Service (ES) and Veterans' Employment and Training Service (VETS) programs. Such measures could have improved our understanding of gender differences in the WIA programs because of the strong overlap between WIA core services and the services provided through these programs. In particular, we might have learned about whether the employment and earnings outcomes of WIA participants varied significantly with participation measures constructed for the other programs. However, our assessment of the available ES/VETS data concluded that they were not complete, detailed, or reliable enough for our analysis. This appendix describes the ES/VETS data, the challenges to using them for this study, and the changes that might be undertaken to make the data suitable for use in future research and evaluation studies.

A. The ES and VETS Data

Participation in the ES and VETS programs is tracked based on two reports submitted by states to the Employment and Training Administration (ETA). Included in these reports are state-level data about the numbers of individuals receiving various types of services such as workforce-information services, career guidance services, job search assistance, referrals to employment, and referrals to federal training programs. The ETA 9002 report has both statewide totals and counts of ES customers broken out by characteristics similar to those used in our analysis of WIA records for this study: demographics, education, pre-program labor market status, disability status, and veteran status. This report also includes information on the number of job openings listed with the public labor exchange by occupation and industry. The VETS 200 report includes separate tabulations of service receipt among veterans who received at least one VETS service through the Local Veterans' Employment Representatives Program and/or the Disabled Veterans' Outreach Program. Both reports also include measures of post-program employment and earnings that are used by ETA to assess the performance of the ES and VETS programs.

The ETA 9002 and VETS 200 reports include aggregate, statewide information, rather than individual-level data. They are filed quarterly, and each report covers the previous four quarters on a rolling basis. For example, data from the fourth quarter of 2010 would include information covering all four quarters in 2010. Table E.1 lists some of the state-level measures related to the ES program that can be constructed using ETA 9002 reports. The information that can be gleaned from VETS 200 reports is broadly similar.

Table E.1. Examples of State-Level ES Program Measures Available from the ETA 9002 Report

Background Characteristics	Program Participation Data	Post-Program Outcomes

Number of customers
 	
Number of customers by:
  Gender
  Age (categorical)
  Race/ethnicity
  Education level
  Disability
  Veteran status
  Migrant/seasonal farm-worker status
  Dislocated-worker status
 	
Employment status at participation
	Number of customers who received workforce information services:
	  Staff-assisted services (any)
	  Staff-assisted career guidance
	  Staff-assisted job search
	  Staff-assisted referral to employment
	  State-assisted referral to WIA services
	
	Number of customers who exited the program
		Number of customers who:
		  Entered employment in the first quarter after program exit
		  Retained employment for six months after the first post-program quarter
		
		Average earnings in six months after the first post-program quarter

B. Challenges to Using ES and VETS Data in This Study

Our investigation of the ES/VETS data identified three challenges that ultimately led us to exclude these data from the study. First, starting in the 2005–2006 program year, ES/VETS data for Texas and Pennsylvania were collected using a different system, as part of a pilot of the Workforce Investment Streamlined Performance Reporting (WISPR) system. Although the data collected through WISPR might be equivalent to the data in the WIA Standardized Record Data (WIASRD) system, further investigation beyond the scope of the current study would be needed to assess the comparability. Texas and Pennsylvania would therefore have had to be excluded from the study if the ES/VETS data were used. Eliminating these states could significant alter our results, as they contain 18.3 percent of the cases from the Adult and Dislocated Worker programs, as reported in the WIASRD, and received 11.8 percent of WIA funding for these programs in 2006 (see Table D.1, Appendix D).

Second, the aggregation of the ES/VETS data to the state level limits their use in the geographic analyses of services received and post-program outcomes we conducted for this study. The relatively small number of states, as compared to the number of local workforce investment areas, would have increased the likelihood that our statistical analysis would fail to detect a truly significant association between the outcomes of WIA participants and the patterns of ES/VETS service receipt. Lack of individual-level data is even more problematic for discerning the relationships between service receipt and outcomes within the ES and VETS programs, for similar reasons.

Third, we were concerned about the reliability of the ES data because they exhibit volatility over time beyond what we would expect to see given normal program fluctuations. We examined quarterly ES data from the reporting periods ending September 30, 2005, through December 31, 2011, to identify the states with excessive volatility, which we defined as a change of at least 50 percent between reporting quarters. Table E.2 identifies these states using two measures—the number of participants reported for the quarter and the number of participants classified as dislocated workers. Although most (17 of 28) states with excessive volatility exhibited it in both measures (Arizona, Washington DC, Delaware, Florida, Hawaii, Iowa, Indiana, Louisiana, Maryland, Michigan, North Carolina, North Dakota, New Mexico, Ohio, South Carolina, South Dakota, and Utah), some states exhibited excessive volatility along only one dimension.

Excessive volatility within a given state was not isolated to a single instance over the period we examined. Out of the 28 states with any excessive volatility between quarters in the total number of participants reported, 20 showed at least two instances of excessive volatility, and 6 had at least three instances. Similarly, 20 of the 28 states with excessive volatility in the number of participants classified as dislocated workers had at least two instances of excessive volatility and 8 had at least four instances.

Part of the volatility might arise because some states reported zeros in a given cell for extended periods. For example, Massachusetts reported the total number of participants classified as dislocated workers as zero for nine successive reporting periods (periods ending March 31, 2008, through March 31, 2010). For the period ending in June 30, 2010, however, this count jumped to over 35,000.

Table E.2. States with Excessive Volatility in the ES Data for Two Sample Measures

Measure	States with One or More Instances of Excessive Volatility		States with Two or More Instances of Excessive Volatility		States with Three or More Instances of Excessive Volatility	
	Number	List of States	Number	List of States	Number	List of States
Total number of participants reported	28	AL, AZ, CT, DC, DE, FL, HI, IA, ID, IL, IN, KS, LA, MD, ME, MI, MN, MS, MT, NC, ND, NM, OH, SC, SD, TN, UT, WI	20	AZ, CT, DC, DE, FL, HI, IA, IN, KS, LA, MD, ME, MI, MN, MS, ND, NM, SD, UT, WI	6	DC, IA, LA, ME, SD, UT
Total number of participants classified as dislocated workers	28	AK, AZ, CO, DC, DE, FL, GA, HI, IA, IN, LA, MA, MD, MI, MO, NC, ND, NE, NH, NM, OH, RI, SC, SD, UT, VA, WA, WY	20	AK, AZ, DC, FL, HI, IA, LA, MA, MD, MI, MO, NE, NM, OH, RI, SC, UT, VA, WA, WY	13	DC, FL, HI, IA, LA, MA, MO, NE, NM, OH, RI, VA, WY

Source: ETA 9002 reports for reporting quarters ending between September 30, 2005, and December 31, 2011.

Note: These data are based on 48 states and the District of Columbia; data are not available for Pennsylvania and Texas. Excessive volatility is defined as a change in the count of participants of at least 50 percent between two consecutive reporting quarters.

C.   Enhancing ES/VETS Data for Use in Research and Evaluation

Two changes would greatly enhance the value of the ES/VETS data for use in research and evaluation studies: (1) releasing individual-level data and (2) improving the integrity of the data. Making available individual-level data (without personally identifiable information) would allow researchers to conduct research on the ES and VETS programs similar to the analyses of WIA programs presented in this study and in the research of Hollenbeck et al. (2005) and Heinrich et al. (2008). Because of the strong overlap between programs noted previously, this research could build a better understanding of core WIA services. To maximize the value of individual-level data, however, additional efforts would be needed to improve the integrity of the information reported by states. Otherwise, the reliability issues described in the previous section would make it difficult to distinguish between true associations in services and outcomes and associations resulting from data inaccuracies.

The implementation of the WISPR system beyond Texas and Pennsylvania could be a large step forward in improving data reliability and consistency. The WISPR system would be used to collect data about the ES, VETS, WIA Adult and Dislocated Worker programs, National Emergency Grants, and Trade Adjustment Assistance programs, and was designed to accomplish the following:

- Establish a standardized set of data elements, definitions, and specifications that can be used to describe the characteristics, activities, and outcomes of job seeker and employer customers served through the American Job Center network

- Facilitate the collection and reporting of valid, consistent, and complete information on job seekers and employer customers in order to support the overall management, evaluation, and continuous improvement of workforce programs at the local, state, and federal levels

- Reduce duplicate record keeping by allowing grantees administering multiple DOL-funded workforce programs to use a single set of data specifications and formats to report on a job seeker's and an employer's interaction with the American Job Center delivery system

If individual-level WISPR data ultimately become available, this source of integrated information about multiple programs would also improve the ability of DOL and researchers to chart the progression of individuals through the workforce system. This could lead to a better understanding of factors that influence the ability of American Job Centers to improve customers' outcomes, and of the challenges that the centers might face in serving all subgroups of customers with equal effectiveness.

APPENDIX F

MAIN DATA TABLES

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This appendix contains data tables showing the results of this study's main analyses upon which the discussion in the body of the report is based. Refer to Appendix A for a full description of the variables included in the analyses, Appendix B for additional details about the data, and Appendix C for a description of the statistical methods that we used.

All tables presenting information on WIA customers are based on a sample of participants who:

- Were at least 18 years old at the start of program participation

- Were registered in the Adult or Dislocated Worker program between January 2003 and December 2009 (between January 2001 and December 2007 in our sensitivity analysis)

- Were not registered in the WIA Youth program

- Received services in a local workforce investment area (LWIA) located in one of the 50 states or the District of Columbia

- Received at least one intensive or training service

- Exited their program during calendar year 2009 (or 2007 for our sensitivity analysis)

- Have information on the characteristics recorded in Appendix Table F.2 and post-program outcomes recorded in Appendix Table F.22

These tables use customer spells (exits) as the unit of analysis, rather than customers (exiters); that is, customers with multiple spells of WIA program enrollment were treated as independent observations in the analysis. We followed this approach because the Workforce Investment Act Standardized Records Data (WIASRD) system does not contain consistent customer IDs in some states and local areas, making it impossible to identify individual customers (see Appendix D for additional details).

Results are presented separately for customers exiting from the Adult and Dislocated Worker programs. Customers who were co-enrolled in the programs, about 15 percent of all customers included in the analyses, are represented in calculations for both programs. Because certain information in the WIASRD system is program specific, some measures can only be used when analyzing one of the two programs. Specifically, low-income status and receipt of TANF or other public assistance in the last six months are reporting requirements only for customers entering the Adult program. Similarly, displaced homemaker status is reported only for customers entering the Dislocated Worker program.

Five additional issues have implications for how to interpret the detailed tables. First, tables examining LWIA-level characteristics (Tables F.40 to F.52) are based on a set of geographically consistent service areas, which were defined to account for changes in LWIA boundaries over time. (Appendix B provides a detailed discussion of how these areas were defined.) Second, missing values are excluded from all tables except F.1, which provides a descriptive overview of the full population of 2009 exiters identified in the WIASRD. Third, we use low family income (see Appendix A for the definition) as the single poverty-related measure (other than earnings) by which we stratify characteristics in the Adult program (Table F.10). In addition, we do not stratify by displaced homemaker status, disability, English proficiency, or veteran status because less than 10 percent of the females registered in the Adult and Displaced Worker programs fall into these categories. Fourth, because only about 25 percent of the customers received training, sample sizes in the tables reporting results for customers who received training services (Tables F.11 through F.19, and the

bottom panels of Tables F.21 and F.47) are 75,841 in the Adult program and 44,929 in the Dislocated Worker program; these customers were located in 460 consistent-boundary LWIAs. Fifth, statistical significance was determined at the $p < 0.05$ level using two-tailed versions of the tests described in Appendix C.

Finally, we use the following abbreviation and symbols in the tables:

- CY: calendar year

- GED: General Educational Development test

- LWIAs: local workforce investment areas

- NA: not available

- TANF: Temporary Assistance for Needy Families program

- WIA: Workforce Investment Act

- WIASRD: Workforce Investment Act Standardized Records Data

- n.a.: not applicable

Table F.1. Customer Demographic and Pre-Program Characteristics, by WIA Program (CY 2009 Exits)

Characteristics	All Customers		Female Customers	
	Adult Program (N = 433,528)	Dislocated Worker Program (N = 226,912)	Adult Program (N = 213,398)	Dislocated Worker Program (N = 103,317)
Demographic Characteristics				
Female	49.2	45.5	n.a.	n.a.
Age				
18–24 years old	17.5	7.9	19.4	7.4
25–54 years old	71.0	75.4	70.1	75.6
55 and older	11.5	16.7	10.5	17.1
Missing	< 0.1	< 0.1	< 0.1	< 0.1
Race/Ethnicity				
Black, non-Hispanic	20.9	16.5	23.0	18.7
Hispanic/Latino	12.9	12.3	12.9	12.0
White, non-Hispanic	57.7	62.5	55.3	59.9
Other	8.5	8.7	8.8	9.4
Pre-Program Characteristics				
Education and Labor Market				
Education				
Below high school	13.5	11.0	12.7	10.0
High school or GED diploma	47.8	45.8	45.8	44.0
Some college	25.5	25.5	28.3	27.5
Bachelor's degree or beyond	11.7	15.7	12.1	16.6
Missing	1.5	2.0	1.1	1.9
Employment status at entry into WIA program				
Employed	19.9	5.2	22.8	5.8
Employed, received notice of termination	0.9	4.6	0.8	4.8
Not employed	79.1	90.1	76.4	89.4
Missing	< 0.1	< 0.1	NA	NA
Average pre-program quarterly earnings				
None	22.1	11.7	22.9	12.2
$1 to $2,499	25.2	14.7	28.5	16.5
$2,500 to $4,999	18.1	17.6	20.0	19.9
$5,000 to $7,499	13.1	18.2	12.6	19.4
$7,500 to $9,999	8.2	13.6	6.7	12.8
$10,000 to $19,999	10.5	18.9	7.3	15.4
$20,000 or more	2.5	4.9	1.5	3.4
Missing	0.3	0.3	0.5	0.4
Family				
Single parent				
Yes	11.6	7.8	19.3	12.4
No	86.1	90.9	78.8	86.3
Missing	2.3	1.3	1.9	1.4
Displaced homemaker				
Yes	NA	4.9	NA	5.9
No	NA	95.1	NA	94.1
Poverty Indicators				
Low income				
Yes	41.2	NA	45.8	NA
No	58.8	NA	54.2	NA
Missing	< 0.1	NA	NA	NA
TANF recipient				
Yes	3.1	NA	5.2	NA
No	96.9	NA	94.8	NA
Missing	< 0.1	NA	NA	NA
Recipient of other public assistance				
Yes	18.6	NA	24.1	NA
No	81.4	NA	75.9	NA

Table F.1 *(continued)*

Characteristics	All Customers		Female Customers	
	Adult Program (N = 433,528)	Dislocated Worker Program (N = 226,912)	Adult Program (N = 213,398)	Dislocated Worker Program (N = 103,317)
Other Considerations				
Persons with disability				
Yes	4.9	3.0	4.5	2.8
No	92.8	95.5	93.2	95.6
Missing	2.3	1.5	2.3	1.6
Limited English proficiency				
Yes	1.8	2.3	2.0	2.4
No	97.4	97.4	97.4	97.1
Missing	0.8	0.3	0.7	0.4
Eligible veteran status				
Veteran or eligible spouse	7.0	8.4	1.6	1.7
Not eligible	93.0	91.6	98.4	98.3

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for all customers and females only, Adults and Dislocated Workers differed significantly from each other in their distributions across categories of each customer characteristic listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.2. Customer Demographic and Pre-Program Characteristics, by WIA Program and Gender (CY 2009 Exits)

Characteristics	Adult Program			Dislocated Worker Program		
	Females (N = 199,785)	Males (N = 205,953)	Female-to-Male Ratio	Females (N = 97,169)	Males (N = 116,553)	Female-to-Male Ratio
Demographic Characteristics						
Age						
18–24 years old	19.1	15.7	1.22	7.2	8.3	0.87
25–54 years old	70.3	72.0	0.98	75.7	75.4	1.00
55 and older	10.6	12.4	0.86	17.1	16.3	1.05
Race/Ethnicity						
Black, non-Hispanic	22.9	18.8	1.22	18.6	14.7	1.26
Hispanic/Latino	13.0	12.8	1.01	12.1	12.8	0.94
White, non-Hispanic	55.6	60.6	0.92	60.0	64.5	0.93
Other	8.5	7.8	1.10	9.2	7.9	1.16
Pre-Program Characteristics						
Education and Labor Market						
Education						
Below high school	12.9	14.6	0.89	10.4	12.1	0.86
High school or GED diploma	46.2	50.6	0.91	44.7	48.2	0.93
Some college	28.5	23.1	1.24	27.9	24.3	1.15
Bachelor's degree or beyond	12.3	11.8	1.04	17.1	15.4	1.11
Employment status at entry into WIA program						
Employed	22.3	16.5	1.35	5.4	4.6	1.18
Employed, received notice of termination	0.8	1.1	0.77	4.6	4.5	1.03
Not employed	76.9	82.5	0.93	90.0	90.9	0.99
Average pre-program quarterly earnings						
None	23.0	21.3	1.08	12.2	11.5	1.06
$1 to $2,499	29.0	22.3	1.30	16.7	13.4	1.25
$2,500 to $4,999	20.0	16.4	1.22	20.0	15.6	1.28
$5,000 to $7,499	12.7	13.8	0.92	19.4	17.2	1.12
$7,500 to $9,999	6.8	9.6	0.70	12.8	14.3	0.90
$10,000 to $19,999	7.2	13.2	0.55	15.4	21.8	0.71
$20,000 or more	1.4	3.4	0.40	3.4	6.3	0.55
Family						
Single parent	20.0	4.4	4.51	12.8	4.0	3.17
Displaced homemaker	NA	NA	NA	5.7	4.0	1.44
Poverty Indicators						
Low income	46.9	38.0	1.23	NA	NA	NA
TANF recipient	5.3	1.1	4.77	NA	NA	NA
Recipient of other public assistance	24.7	13.6	1.81	NA	NA	NA
Other Considerations						
Persons with disability	4.7	5.5	0.86	2.9	3.3	0.88
Limited English proficiency	2.0	1.8	1.15	2.5	2.3	1.11
Veteran or eligible spouse	1.6	12.4	0.13	1.7	14.0	0.12

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, females and males differed significantly from each other in their distributions across categories of each customer characteristic listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.3. Demographic and Pre-Program Characteristics of Female Customers, by WIA Program and Age (CY 2009 Exits)

	Adult Program			Dislocated Worker Program		
Characteristics	Younger Workers: 18–24 Years Old (N = 38,113)	Prime-Age Workers: 25–54 Years Old (N = 140,485)	Older Workers: 55 and Older (N = 21,187)	Younger Workers: 18–24 Years Old (N = 7,032)	Prime-Age Workers: 25–54 Years Old (N = 73,545)	Older Workers: 55 and Older (N = 16,592)
Demographic Characteristics						
Race/Ethnicity						
Black, non-Hispanic	27.8	22.9	13.7	21.7	19.5	13.4
Hispanic/Latino	16.1	13.0	7.7	17.5	12.6	7.4
White, non-Hispanic	47.8	55.5	70.4	52.1	58.5	70.1
Other	8.3	8.6	8.2	8.6	9.3	9.1
Pre-Program Characteristics						
Education and Labor Market						
Education						
Below high school	16.5	12.5	9.7	13.8	10.3	9.2
High school or GED diploma	53.8	44.7	42.6	54.1	44.0	43.6
Some college	25.1	29.6	28.2	25.3	28.2	27.3
Bachelor's degree or beyond	4.6	13.3	19.5	6.9	17.5	19.9
Employment status at entry into WIA program						
Employed	26.2	22.0	17.2	8.4	5.4	4.1
Employed, received notice of termination	0.4	0.9	1.2	3.0	4.9	4.3
Not employed	73.4	77.2	81.6	88.6	89.7	91.6
Average pre-program quarterly earnings						
None	25.0	22.6	21.8	15.7	12.1	11.5
$1 to $2,499	44.5	26.2	19.2	35.0	15.8	13.1
$2,500 to $4,999	20.9	20.0	18.4	27.5	19.6	18.5
$5,000 to $7,499	6.8	13.9	15.6	14.5	20.0	18.7
$7,500 to $9,999	1.8	7.6	10.0	4.9	13.3	14.2
$10,000 to $19,999	0.9	8.2	12.3	2.3	15.8	19.3
$20,000 or more	0.1	1.5	2.7	0.2	3.5	4.6
Family						
Single parent	21.7	22.1	2.9	13.5	15.0	2.8
Displaced homemaker	NA	NA	NA	11.2	5.5	4.4
Poverty Indicators						
Low income	55.4	46.9	32.0	NA	NA	NA
TANF recipient	8.4	5.2	0.4	NA	NA	NA
Recipient of public assistance	28.3	25.8	10.9	NA	NA	NA
Other Considerations						
Persons with disability	2.6	4.9	7.4	1.5	2.8	3.9
Limited English proficiency	1.5	2.2	1.8	1.0	2.7	2.4
Veteran or eligible spouse	0.7	1.8	1.8	1.8	1.7	1.3

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, younger, prime-age, and older workers differed significantly from each other in their distributions across categories of each customer characteristic listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.4. Demographic and Pre-Program Characteristics of Female Customers, by WIA Program and Race/Ethnicity (CY 2009 Exits)

Characteristics	Adult Program				Dislocated Worker Program			
	Black, non-Hispanic (N = 45,705)	Hispanic/ Latino (N = 26,004)	White, non-Hispanic (N = 111,058)	Other (N = 17,018)	Black, non-Hispanic (N = 18,108)	Hispanic/ Latino (N = 11,751)	White, non-Hispanic (N = 58,333)	Other (N = 8,977)
Demographic Characteristics								
Age								
18–24 years old	23.1	23.6	16.4	18.7	8.4	10.5	6.3	6.8
25–54 years old	70.5	70.2	70.2	71.1	79.3	79.0	73.8	76.4
55 and older	6.4	6.2	13.4	10.2	12.2	10.5	19.9	16.8
Pre-Program Characteristics								
Education and Labor Market								
Education								
Below high school	13.0	24.0	10.2	13.7	10.0	24.9	7.4	11.6
High school or GED diploma	47.7	46.2	46.6	39.9	44.4	41.0	46.8	35.8
Some college	30.8	22.4	29.4	26.4	31.8	24.1	27.7	25.7
Bachelor's degree or beyond	8.5	7.4	13.8	20.0	13.8	9.9	18.1	26.9
Employment status at entry into WIA program								
Employed	24.0	18.4	22.8	20.3	5.6	3.9	5.8	4.0
Employed, received notice of termination	0.8	0.6	0.9	0.6	4.8	4.2	4.9	3.0
Not employed	75.3	81.0	76.3	79.1	89.6	91.9	89.2	93.0
Average pre-program quarterly earnings								
None	24.4	28.0	20.6	27.2	13.2	14.7	11.1	14.6
$1 to $2,499	35.1	30.5	26.6	25.4	22.9	19.9	14.3	15.2
$2,500 to $4,999	20.3	19.9	20.3	17.3	21.8	23.1	19.2	17.2
$5,000 to $7,499	10.7	11.2	13.9	12.3	17.7	19.2	20.3	17.1
$7,500 to $9,999	4.6	5.3	8.0	7.0	10.6	10.8	13.9	12.8
$10,000 to $19,999	4.3	4.5	8.8	8.7	11.7	10.9	17.2	17.6
$20,000 or more	0.6	0.6	1.7	2.2	2.0	1.5	3.9	5.5
Family								
Single parent	33.0	22.8	15.3	11.6	23.4	16.3	9.6	7.4
Displaced homemaker	NA	NA	NA	NA	2.3	5.2	6.7	6.7
Poverty Indicators								
Low income	61.4	54.9	40.3	38.7	NA	NA	NA	NA
TANF recipient	8.0	8.2	3.6	4.5	NA	NA	NA	NA
Recipient of other public assistance	37.2	29.8	19.2	19.3	NA	NA	NA	NA
Other Considerations								
Persons with disability	3.9	3.7	5.4	4.4	2.3	2.5	3.1	3.0
Limited English proficiency	1.2	7.7	0.5	5.5	1.1	10.5	0.9	5.4
Veteran or eligible spouse	1.8	1.0	1.7	1.3	2.2	1.2	1.7	1.2

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, Black non-Hispanic, Hispanic/Latino, White non-Hispanic, and other race/ethnicity customers differed significantly from each other in their distributions across categories of each customer characteristic listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.5. Demographic and Pre-Program Characteristics of Female Customers, by WIA Program and Education (CY 2009 Exits)

Characteristics	Adult Program				Dislocated Worker Program			
	Below High School (N = 25,850)	High School or GED Diploma (N = 92,374)	Some College (N = 57,038)	Bachelor's Degree or Beyond (N = 24,523)	Below High School (N = 10,089)	High School or GED Diploma (N = 43,390)	Some College (N = 27,062)	Bachelor's Degree or Beyond (N = 16,628)
Demographic Characteristics								
Age								
18–24 years old	24.3	22.2	16.7	7.2	9.6	8.8	6.6	2.9
25–54 years old	67.7	68.0	72.8	76.0	75.3	74.5	76.7	77.3
55 and older	8.0	9.8	10.5	16.8	15.1	16.7	16.8	19.8
Race/Ethnicity								
Black, non-Hispanic	23.0	23.6	24.7	15.8	18.0	18.5	21.3	15.0
Hispanic/Latino	24.1	13.0	10.2	7.9	29.0	11.1	10.5	7.0
White, non-Hispanic	43.9	56.0	57.2	62.4	42.7	63.0	59.7	63.5
Other	9.0	7.4	7.9	13.9	10.3	7.4	8.5	14.5
Pre-Program Characteristics								
Labor Market								
Employment status at entry into WIA program								
Employed	13.5	21.9	26.1	24.0	4.4	5.2	6.7	4.4
Employed, received notice of termination	0.6	0.9	0.8	0.8	3.2	5.6	4.5	3.3
Not employed	85.9	77.2	73.1	75.2	92.4	89.2	88.8	92.3
Average pre-program quarterly earnings								
None	31.1	23.4	20.8	18.0	15.8	11.7	12.9	10.4
$1 to $2,499	35.1	31.2	28.1	16.1	24.8	17.8	16.2	9.9
$2,500 to $4,999	19.4	21.4	20.8	13.7	27.4	22.3	18.6	11.5
$5,000 to $7,499	9.1	13.1	13.9	12.4	18.8	22.1	19.1	13.2
$7,500 to $9,999	3.1	6.0	7.6	11.8	7.4	13.2	13.7	13.7
$10,000 to $19,999	2.0	4.5	7.9	21.4	5.3	11.6	16.8	29.3
$20,000 or more	0.2	0.5	0.9	6.7	0.6	1.3	2.7	12.0
Family								
Single parent	21.0	22.6	20.8	7.0	13.2	15.0	13.4	5.8
Displaced homemaker	NA	NA	NA	NA	9.0	5.7	5.0	4.9
Poverty Indicators								
Low income	55.1	51.2	45.0	26.8	NA	NA	NA	NA
TANF recipient	9.3	6.3	3.7	0.9	NA	NA	NA	NA
Recipient of other public assistance	33.6	28.0	22.3	8.7	NA	NA	NA	NA
Other Considerations								
Persons with disability	6.0	4.6	4.8	3.7	3.4	2.6	3.2	2.8
Limited English proficiency	6.5	1.7	0.8	1.2	11.0	2.0	1.1	0.9
Veteran or eligible spouse	0.4	1.3	2.3	2.0	0.7	1.4	2.4	1.8

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, customers with different levels of education differed significantly from each other in their distributions across categories of each customer characteristic listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.6. Demographic and Pre-Program Characteristics of Female Customers, by WIA Program and Employment Status at Entry into WIA program (CY 2009 Exits)

Characteristics	Adult Program			Dislocated Worker Program		
	Employed (N = 44,485)	Employed, Received Notice of Termination (N = 1,639)	Not Employed (N = 153,661)	Employed (N = 5,233)	Employed, Received Notice of Termination (N = 4,505)	Not Employed (N = 87,431)
Demographic Characteristics						
Age						
18–24 years old	22.5	9.6	18.2	11.3	4.7	7.1
25–54 years old	69.3	74.4	70.6	75.7	79.6	75.5
55 and older	8.2	15.9	11.2	13.1	15.7	17.4
Race/Ethnicity						
Black, non-Hispanic	24.6	21.2	22.4	19.4	19.2	18.6
Hispanic/Latino	10.8	9.6	13.7	8.8	10.8	12.4
White, non-Hispanic	56.8	62.8	55.1	64.9	63.9	59.5
Other	7.8	6.3	8.8	6.9	6.0	9.5
Pre-Program Characteristics						
Education and Labor Market						
Education						
Below high school	7.8	9.7	14.4	8.5	7.1	10.7
High school or GED diploma	45.5	49.3	46.4	43.0	53.7	44.3
Some college	33.4	28.8	27.1	34.4	27.1	27.5
Bachelor's degree or beyond	13.2	12.2	12.0	14.1	12.1	17.6
Average pre-program quarterly earnings						
None	9.6	12.0	27.0	13.1	8.4	12.4
$1 to $2,499	28.7	17.0	29.1	21.3	9.3	16.8
$2,500 to $4,999	27.7	17.9	17.8	22.2	17.7	20.0
$5,000 to $7,499	16.1	20.6	11.6	19.2	24.9	19.1
$7,500 to $9,999	7.9	12.3	6.4	10.7	17.2	12.7
$10,000 to $19,999	8.6	18.3	6.7	11.9	20.0	15.4
$20,000 or more	1.4	2.0	1.3	1.6	2.5	3.6
Family						
Single parent	23.9	18.5	18.8	14.6	17.5	12.4
Displaced homemaker	NA	NA	NA	12.5	0.8	5.6
Poverty Indicators						
Low income	45.5	30.6	47.5	NA	NA	NA
TANF recipient	2.4	1.5	6.1	NA	NA	NA
Recipient of other public assistance	19.2	13.9	26.4	NA	NA	NA
Other Considerations						
Persons with disability	2.9	3.4	5.3	3.5	2.5	2.9
Limited English proficiency	1.2	0.9	2.3	1.8	3.6	2.5
Veteran or eligible spouse	1.4	2.3	1.6	2.0	2.1	1.6

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, employed, employed with notice of termination, and not employed workers differed significantly from each other in their distributions across categories of each customer characteristic listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.7. Demographic and Pre-Program Characteristics of Female Customers in the WIA Adult Program, by Average Pre-Program Quarterly Earnings (CY 2009 Exits)

Characteristics	None (N = 45,900)	$1 to $2,499 (N = 57,852)	$2,500 to $4,999 (N = 39,992)	$5,000 to $7,499 (N = 25,363)	$7,500 to $9,999 (N = 13,534)	$10,000 to $19,999 (N = 14,427)	$20,000 or More (N = 2,717)
Demographic Characteristics							
Age							
18–24 years old	20.8	29.3	19.9	10.2	5.0	2.5	0.8
25–54 years old	69.2	63.6	70.4	76.8	79.3	79.5	78.1
55 and older	10.1	7.0	9.7	13.1	15.7	18.0	21.1
Race/Ethnicity							
Black, non-Hispanic	24.2	27.7	23.2	19.3	15.6	13.5	10.8
Hispanic/Latino	15.8	13.7	13.0	11.5	10.1	8.1	5.6
White, non-Hispanic	49.8	51.1	56.5	61.0	65.5	68.1	70.0
Other	10.1	7.5	7.3	8.2	8.8	10.3	13.6
Pre-Program Characteristics							
Education and Labor Market							
Education							
Below high school	17.5	15.7	12.5	9.3	6.0	3.6	2.2
High school or GED diploma	47.0	49.8	49.4	47.5	40.7	28.7	17.4
Some college	25.9	27.7	29.7	31.2	32.1	31.2	19.8
Bachelor's degree or beyond	9.6	6.8	8.4	11.9	21.3	36.4	60.6
Employment status at entry into WIA program							
Employed	9.3	22.1	30.8	28.2	25.8	26.6	23.4
Employed, received notice of termination	0.4	0.5	0.7	1.3	1.5	2.1	1.2
Not employed	90.3	77.4	68.5	70.5	72.7	71.3	75.4
Family							
Single parent	20.5	25.6	22.2	16.1	11.5	7.2	4.6
Poverty Indicators							
Low income	58.7	61.2	47.4	29.2	18.9	14.6	12.3
TANF recipient	9.5	7.5	3.1	1.6	0.9	0.4	0.6
Recipient of other public assistance	33.5	34.1	23.7	12.6	6.8	4.1	3.2
Other Considerations							
Persons with disability	8.5	5.1	3.5	2.8	2.1	1.5	1.1
Limited English proficiency	3.7	1.9	1.8	1.2	1.0	0.5	0.3
Veteran or eligible spouse	1.9	1.3	1.6	1.5	1.8	1.8	1.5

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests, customers with different levels of average pre-program quarterly earnings differed significantly from each other in their distributions across categories of each customer characteristic listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.8. Demographic and Pre-Program Characteristics of Female Customers in the WIA Dislocated Worker Program, by Average Pre-Program Quarterly Earnings (CY 2009 Exits)

Characteristics	None (N = 11,889)	$1 to $2,499 (N = 16,228)	$2,500 to $4,999 (N = 19,408)	$5,000 to $7,499 (N = 18,838)	$7,500 to $9,999 (N = 12,464)	$10,000 to $19,999 (N = 15,010)	$20,000 or more (N = 3,332)
Demographic Characteristics							
Age							
18–24 years old	9.3	15.2	10.0	5.4	2.8	1.1	0.4
25–54 years old	74.6	71.5	74.2	78.1	78.3	77.5	76.6
55 and older	16.1	13.4	15.8	16.5	18.9	21.4	23.0
Race/Ethnicity							
Black, non-Hispanic	20.2	25.6	20.4	17.0	15.4	14.1	10.8
Hispanic/Latino	14.5	14.4	14.0	12.0	10.1	8.5	5.3
White, non-Hispanic	54.3	51.6	57.7	62.9	65.3	66.8	69.1
Other	11.1	8.4	8.0	8.1	9.2	10.5	14.8
Pre-Program Characteristics							
Education and Labor Market							
Education							
Below high school	13.4	15.4	14.2	10.1	6.0	3.6	1.7
High school or GED diploma	42.6	47.5	49.9	50.9	46.0	33.6	17.0
Some college	29.4	26.9	26.0	27.4	29.7	30.3	21.5
Bachelor's degree or beyond	14.5	10.1	9.9	11.7	18.3	32.5	59.7
Employment status at WIA participation							
Employed	5.8	6.9	6.0	5.3	4.5	4.1	2.5
Employed, received notice of termination	3.2	2.6	4.1	6.0	6.2	6.0	3.4
Not employed	91.1	90.5	89.9	88.7	89.3	89.9	94.1
Family							
Single parent	13.3	16.4	15.6	13.3	10.9	7.6	4.4
Displaced homemaker	13.0	9.2	5.8	3.8	2.6	1.9	1.6
Other Considerations							
Persons with disability	5.3	4.4	2.7	2.2	1.9	1.5	1.3
Limited English proficiency	3.4	2.9	3.4	2.6	1.9	1.1	0.2
Veteran or eligible spouse	2.8	1.5	1.5	1.4	1.4	1.7	1.4

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests, customers with different levels of average pre-program quarterly earnings differed significantly from each other in their distributions across categories of each customer characteristic listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.9. Demographic and Pre-Program Characteristics of Female Customers, by WIA Program and Single-Parent Status (CY 2009 Exits)

Characteristics	Adult Program		Dislocated Worker Program	
	Single Parent (N = 39,919)	Not a Single Parent (N = 159,866)	Single Parent (N = 12,421)	Not a Single Parent (N = 84,748)
Demographic Characteristics				
Age				
18–24 years old	20.7	18.7	7.7	7.2
25–54 years old	77.8	68.5	88.6	73.8
55 and older	1.5	12.9	3.7	19.0
Race/Ethnicity				
Black, non-Hispanic	37.7	19.2	34.1	16.4
Hispanic/Latino	14.8	12.6	15.4	11.6
White, non-Hispanic	42.5	58.9	45.2	62.2
Other	5.0	9.4	5.3	9.8
Pre-Program Characteristics				
Education and Labor Market				
Education				
Below high school	13.6	12.8	10.7	10.3
High school or GED diploma	52.4	44.7	52.4	43.5
Some college	29.7	28.3	29.2	27.7
Bachelor's degree or beyond	4.3	14.3	7.8	18.5
Employment status at entry into WIA program				
Employed	26.7	21.2	6.2	5.3
Employed, received notice of termination	0.8	0.8	6.4	4.4
Not employed	72.6	78.0	87.5	90.3
Average pre-program quarterly earnings				
None	23.6	22.8	12.7	12.2
$1 to $2,499	37.1	26.9	21.4	16.0
$2,500 to $4,999	22.3	19.5	24.4	19.3
$5,000 to $7,499	10.2	13.3	20.2	19.3
$7,500 to $9,999	3.9	7.5	11.0	13.1
$10,000 to $19,999	2.6	8.4	9.1	16.4
$20,000 or more	0.3	1.6	1.2	3.8
Family				
Displaced homemaker	NA	NA	4.5	5.9
Poverty Indicators				
Low income	81.5	38.3	NA	NA
TANF recipient	14.7	2.9	NA	NA
Recipient of other public assistance	54.0	17.4	NA	NA
Other Considerations				
Persons with disability	2.8	5.2	2.0	3.0
Limited English proficiency	1.9	2.0	3.6	2.3
Veteran or eligible spouse	1.4	1.6	1.6	1.7

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, single and non-single parents differed significantly from each other in their distributions across categories of each customer characteristic listed in the table with the exception of limited English proficiency for the Adult program and eligible veteran status for the Dislocated Worker program. Significance was assessed at the $p < 0.05$ level.

Table F.10. Demographic and Pre-Program Characteristics of Female Customers in the WIA Adult Program, by Low-Income Status (CY 2009 Exits)

Characteristics	Low Income (N = 93,712)	Not Low Income (N = 106,073)
Demographic Characteristics		
Age		
18–24 years old	22.5	16.0
25–54 years old	70.3	70.4
55 and older	7.2	13.6
Race/Ethnicity		
Black, non-Hispanic	29.9	16.6
Hispanic/Latino	15.2	11.1
White, non-Hispanic	47.8	62.5
Other	7.0	9.8
Pre-Program Characteristics		
Education and Labor Market		
Education		
Below high school	15.2	11.0
High school or GED diploma	50.4	42.5
Some college	27.4	29.6
Bachelor's degree or beyond	7.0	16.9
Employment status at entry into WIA program		
Employed	21.6	22.9
Employed, received notice of termination	0.5	1.1
Not employed	77.9	76.1
Average pre-program quarterly earnings		
None	28.7	17.9
$1 to $2,499	37.8	21.2
$2,500 to $4,999	20.2	19.8
$5,000 to $7,499	7.9	16.9
$7,500 to $9,999	2.7	10.3
$10,000 to $19,999	2.3	11.6
$20,000 or more	0.4	2.2
Family		
Single parent	34.7	7.0
Poverty Indicators		
TANF recipient	11.3	NA
Recipient of other public assistance	52.7	NA
Other Considerations		
Persons with disability	4.7	4.8
Limited English proficiency	2.5	1.6
Veteran or eligible spouse	1.4	1.7

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests, low-income and not-low-income customers differed significantly from each other in their distributions across categories of each customer characteristic listed in the table with the exception of the percentage of persons with disability. Significance was assessed at the $p < 0.05$ level.

Table F.11. Service Receipt by WIA Program and Gender (CY 2009 Exits)

Service Measures	Adult Program			Dislocated Worker Program		
	Females (N = 199,785)	Males (N = 205,953)	Female-to-Male Ratio	Females (N = 97,169)	Males (N = 116,553)	Female-to-Male Ratio
All Customers						
Tiers of Service Received						
Intensive only	69.1	77.4	0.89	69.6	70.5	0.99
Training only	2.5	2.0	1.23	2.3	1.7	1.36
Both Intensive and training	28.4	20.5	1.38	28.1	27.9	1.01
Received Supportive Services	18.1	12.3	1.48	17.1	15.5	1.10
Customers Who Received Training Services						
Focus of Occupational Skills Training						
Agricultural, natural resources, and construction	0.3	6.5	0.05	0.2	3.4	0.06
Managerial, administrative, professional, and technical	32.3	16.1	2.01	29.7	18.3	1.63
Mechanical and transportation	4.9	34.9	0.14	4.2	41.6	0.10
Sales, clerical, and administrative support	11.5	3.3	3.47	16.8	2.8	5.97
Service	23.2	6.4	3.63	19.7	3.8	5.23
Not reported	27.7	32.8	0.85	29.4	30.1	0.98

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, female and male customers differed significantly from each other in their distributions across categories of each service measure listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.12. Service Receipt Among Female Customers, by WIA Program and Age (CY 2009 Exits)

Service Measures	Adult Program			Dislocated Worker Program		
	Younger Workers: 18–24 Years Old (N = 38,113)	Prime-Age Workers: 25–54 Years Old (N = 140,485)	Older Workers: 55 and Older (N = 21,187)	Younger Workers: 18–24 Years Old (N = 7,032)	Prime-Age Workers: 25–54 Years Old (N = 73,545)	Older Workers: 55 and Older (N = 16,592)
All Customers						
Tiers of Service Received						
Intensive only	60.6	69.2	83.8	71.0	67.5	78.4
Training only	3.5	2.4	1.2	2.8	2.4	1.6
Both intensive and training	35.9	28.4	15.0	26.2	30.2	20.0
Received Supportive Services	22.9	18.3	8.6	15.7	18.3	12.6
Customers Who Received Training Services						
Focus of Occupational Skills Training						
Agricultural, natural resources, and construction	0.2	0.4	0.2	0.2	0.2	0.1
Managerial, administrative, professional, and technical	30.4	33.2	28.9	28.2	30.7	23.6
Mechanical and transportation	2.6	5.5	7.6	3.1	4.5	3.1
Sales, clerical, and administrative support	9.6	11.7	17.5	7.1	16.2	26.0
Service	29.1	21.8	14.3	26.6	19.5	17.4
Not reported	28.1	27.3	31.5	34.7	28.9	29.7

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, younger, prime-age, and older workers differed significantly from each other in their distributions across categories of each service measure listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.13. Service Receipt Among Female Customers, by WIA Program and Race/Ethnicity (CY 2009 Exits)

Service Measures	Adult Program				Dislocated Worker Program			
	Black, non-Hispanic (N = 45,705)	Hispanic/ Latino (N = 26,004)	White, non-Hispanic (N = 111,058)	Other (N = 17,018)	Black, non-Hispanic (N = 18,108)	Hispanic/ Latino (N = 11,751)	White, non-Hispanic (N = 58,333)	Other (N = 8,977)
All Customers								
Tiers of Service Received								
Intensive only	62.6	73.0	70.5	71.8	64.9	76.6	68.6	76.5
Training only	4.8	1.9	1.7	2.2	3.3	1.5	2.2	1.6
Both intensive and training	32.6	25.2	27.8	26.1	31.8	21.9	29.2	21.9
Received Supportive Services	18.0	21.4	17.8	15.2	16.3	19.9	17.4	13.1
Customers Who Received Training Services								
Focus of Occupational Skills Training								
Agricultural, natural resources, and construction	0.3	0.3	0.3	0.6	0.3	0.1	0.2	0.3
Managerial, administrative, professional, and technical	29.1	27.8	35.6	27.5	28.9	21.1	31.7	25.8
Mechanical and transportation	4.2	5.9	4.6	8.2	4.6	3.9	4.1	4.4
Sales, clerical, and administrative support	8.3	14.3	12.5	12.0	12.0	18.7	18.3	15.1
Service	28.6	23.0	20.9	19.9	22.2	17.9	19.4	17.5
Not reported	29.4	28.8	26.0	31.9	32.0	38.3	26.2	36.9

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, Black non-Hispanic, Hispanic/Latino, White non-Hispanic, and other race/ethnicity customers differed significantly from each other in their distributions across categories of each service measure listed in the table. Significance was assessed at $p < 0.05$ level.

Table F.14. Service Receipt Among Female Customers, by WIA Program and Education (CY 2009 Exits)

Service Measures	Adult Program				Dislocated Worker Program			
	Below High School (N = 25,850)	High School or GED Diploma (N = 92,374)	Some College (N = 57,038)	Bachelor's Degree or Beyond (N = 24,523)	Below High School (N = 10,089)	High School or GED Diploma (N = 43,390)	Some College (N = 27,062)	Bachelor's Degree or Beyond (N = 16,628)
All Customers								
Tiers of Service Received								
Intensive only	78.9	66.6	65.9	75.8	80.1	65.2	67.2	78.7
Training only	1.7	2.6	2.9	2.0	1.1	2.1	3.3	1.8
Both intensive and training	19.4	30.8	31.2	22.2	18.9	32.7	29.6	19.5
Received Supportive Services	18.3	20.0	19.4	8.0	17.9	19.5	17.1	10.3
Customers Who Received Training Services								
Focus of Occupational Skills Training								
Agricultural, natural resources, and construction	0.3	0.4	0.2	0.2	0.1	0.3	0.2	0.1
Managerial, administrative, professional, and technical	8.6	25.4	43.5	52.9	12.6	25.9	34.9	42.5
Mechanical and transportation	8.5	6.0	2.8	2.9	8.4	5.0	3.0	1.7
Sales, clerical, and administrative support	14.5	13.1	9.3	8.1	13.3	18.2	16.6	13.1
Service	32.3	28.7	16.5	8.1	23.5	25.1	14.9	6.8
Not reported	35.8	26.3	27.7	28.0	42.1	25.5	30.5	35.7

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, customers with varying levels of education differed significantly from each other in their distributions across categories of each service measure listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.15. Service Receipt Among Female Customers, by WIA Program and Employment Status at Entry into WIA Program (CY 2009 Exits)

Service Measures	Adult Program			Dislocated Worker Program		
	Employed (N = 44,485)	Employed, Received Notice of Termination (N = 1,639)	Not Employed (N = 153,661)	Employed (N = 5,233)	Employed, Received Notice of Termination (N = 4,505)	Not Employed (N = 87,431)
All Customers						
Tiers of Service Received						
Intensive only	46.0	75.7	75.7	57.4	52.0	71.3
Training only	3.8	2.2	2.1	11.0	3.4	1.7
Both intensive and training	50.1	22.1	22.1	31.6	44.7	27.1
Received Supportive Services	21.6	12.8	17.2	18.9	31.5	16.3
Customers Who Received Training Services						
Focus of Occupational Skills Training						
Agricultural, natural resources, and construction	0.4	0.3	0.3	0.4	0.1	0.2
Managerial, administrative, professional, and technical	43.9	32.3	24.8	39.3	33.2	28.5
Mechanical and transportation	5.6	5.3	4.5	3.7	4.3	4.3
Sales, clerical, and administrative support	9.1	12.0	13.1	11.4	21.0	16.9
Service	19.3	15.3	25.8	16.3	19.5	20.1
Not reported	21.7	34.8	31.6	28.9	21.9	30.0

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, customers with different employment status at entry into WIA program differed significantly from each other in their distributions across categories of each service measure listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.16. Service Receipt Among Female Customers in the Adult Program, by Average Quarterly Earnings Before WIA Participation (CY 2009 Exits)

Service Measures	None (N = 45,900)	$1 to $2,499 (N = 57,852)	$2,500 to $4,999 (N = 39,992)	$5,000 to $7,499 (N = 25,363)	$7,500 to $9,999 (N = 13,534)	$10,000 to $19,999 (N = 14,427)	$20,000 or More (N = 2,717)
All Customers							
Tiers of Service Received							
Intensive only	68.9	66.2	68.2	72.2	74.4	73.1	74.0
Training only	2.5	2.8	2.6	2.2	1.9	2.1	1.5
Both intensive and training	28.6	31.0	29.2	25.6	23.7	24.9	24.5
Received Supportive Services	21.1	22.9	19.2	13.4	9.1	5.6	3.3
Customers Who Received Training Services							
Focus of Occupational Skills Training							
Agricultural, natural resources, and construction	0.3	0.3	0.3	0.3	0.5	0.3	0.0
Managerial, administrative, professional, and technical	28.0	28.9	33.0	33.2	36.6	51.6	66.3
Mechanical and transportation	4.3	4.1	4.4	6.9	8.9	6.3	3.7
Sales, clerical, and administrative support	12.2	12.0	9.9	12.6	14.4	9.0	3.7
Service	26.5	28.1	24.5	16.7	10.4	8.4	7.1
Not reported	28.8	26.6	28.0	30.3	29.2	24.4	19.3

Source:　　Public-use WIASRD data for program year 2010, quarter 4.

Notes:　　See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests, customers with different average quarterly pre-program earnings differed significantly from each other in their distributions across categories of each service measure listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.17. Service Receipt Among Female Customers in the Dislocated Worker Program, by Average Quarterly Earnings Before WIA Participation (CY 2009 Exits)

Service Measures	None (N = 11,889)	$1 to $2,499 (N = 16,228)	$2,500 to $4,999 (N = 19,408)	$5,000 to $7,499 (N = 18,838)	$7,500 to $9,999 (N = 12,464)	$10,000 to $19,999 (N = 15,010)	$20,000 or More (N = 3,332)
All Customers							
Tiers of Service Received							
Intensive only	67.5	71.0	67.8	66.6	68.8	74.5	78.9
Training only	4.4	2.4	1.9	1.6	1.8	2.0	2.6
Both intensive and training	28.0	26.7	30.3	31.8	29.4	23.5	18.6
Received Supportive Services	17.5	16.7	19.3	20.2	17.3	12.6	6.8
Customers Who Received Training Services							
Focus of Occupational Skills Training							
Agricultural, natural resources, and construction	0.1	0.1	0.3	0.3	0.2	0.2	0.1
Managerial, administrative, professional, and technical	29.7	25.2	26.6	28.0	31.8	37.7	47.3
Mechanical and transportation	3.4	4.3	4.7	4.6	4.3	3.6	2.7
Sales, clerical, and administrative support	14.0	13.0	17.2	19.9	20.1	16.7	8.2
Service	18.8	23.1	24.4	21.2	17.5	11.3	6.0
Not reported	34.1	34.3	26.8	26.0	26.1	30.4	35.7

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests, customers with different levels of average quarterly earnings before WIA participation differed significantly from each other in their distributions across categories of each service measure listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.18. Service Receipt Among Female Customers, by WIA Program and Single-Parent Status (CY 2009 Exits)

Service Measures	Adult Program		Dislocated Worker Program	
	Single Parent (N = 39,919)	Not a Single Parent (N = 159,866)	Single Parent (N = 12,421)	Not a Single Parent (N = 84,748)
All Customers				
Tiers of Service Received				
Intensive only	55.0	72.7	55.4	71.7
Training only	2.7	2.4	1.9	2.3
Both intensive and training	42.3	24.9	42.7	26.0
Received Supportive Services	28.6	15.5	28.1	15.5
Customers Who Received Training Services				
Focus of Occupational Skills Training				
Agricultural, natural resources, and construction	0.3	0.3	0.3	0.2
Managerial, administrative, professional, and technical	35.3	31.1	30.5	29.5
Mechanical and transportation	3.6	5.5	4.4	4.2
Sales, clerical, and administrative support	9.3	12.5	14.3	17.3
Service	30.2	20.3	24.3	18.7
Not reported	21.4	30.3	26.2	30.1

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, single and non-single parents differed significantly from each other in their distributions across categories of each service measure listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.19. Service Receipt Among Female Customers in the WIA Adult Program, by Low-Income Status (CY 2009 Exits)

Service Measures	Low Income (N = 93,712)	Not Low Income (N = 106,073)
All Customers		
Tiers of Service Received		
Intensive only	64.4	73.3
Training only	1.7	3.2
Both intensive and training	33.8	23.6
Received Supportive Services	21.6	15.0
Customers Who Received Training Services		
Focus of Occupational Skills Training		
Agricultural, natural resources, and construction	0.3	0.4
Managerial, administrative, professional, and technical	33.6	30.8
Mechanical and transportation	4.0	6.0
Sales, clerical, and administrative support	10.1	13.3
Service	28.7	16.7
Not reported	23.4	32.8

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Based on a series of chi-squared statistical tests, low-income and not-low-income customers differed significantly from each other in their distributions across categories of each service measure listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.20. Duncan Index of Dissimilarity in Female and Male Distributions of the Focus of Occupational Skills Training, by WIA Program and Customer Characteristics (CY 2009 Exits)

Characteristics	Adult Program (N = 75,841)	Dislocated Worker Program (N = 44,929)
Overall	54.4	58.2
Demographic Characteristics		
Age		
18–24 years old	57.2	63.0
25–54 years old	54.2	58.5
55 and older	44.7	52.6
Race/Ethnicity		
Black, non-Hispanic	59.7	61.2
Hispanic/Latino	56.0	64.6
White, non-Hispanic	52.8	57.5
Other	46.2	47.1
Pre-Program Characteristics		
Education and Labor Market		
Education		
Below high school	66.2	70.3
High school or GED diploma	61.2	67.5
Some college	46.7	48.4
Bachelor's degree or beyond	18.1	20.7
Employment status at entry into WIA program		
Employed	43.9	53.0
Employed, received notice of termination	53.4	55.8
Not employed	61.5	58.7
Average pre-program quarterly earnings		
None	60.5	55.8
$1 to $2,499	58.9	62.0
$2,500 to $4,999	58.8	63.0
$5,000 to $7,499	54.6	62.2
$7,500 to $9,999	48.8	60.8
$10,000 to $19,999	40.4	54.8
$20,000 or more	20.0	30.2
Family		
Single parent		
Yes	62.2	63.0
No	53.0	57.9
Displaced homemaker		
Yes	NA	58.2
No	NA	58.1
Poverty Indicators		
Low income		
Yes	57.7	NA
No	50.7	NA
TANF recipient		
Yes	61.6	NA
No	54.2	NA
Recipient of other public assistance		
Yes	65.1	NA
No	52.0	NA
Other Considerations		
Persons with disability		
Yes	44.3	48.8
No	54.8	58.4

Table F.20 *(continued)*

Characteristics	Adult Program (N = 75,841)	Dislocated Worker Program (N = 44,929)
Limited English proficiency		
Yes	51.2	50.8
No	54.4	58.4
Eligible veteran status		
Veteran or eligible spouse	53.4	53.9
Not eligible	54.4	58.8

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: See the appendix text for additional information about the sample and definitions of terms and symbols. The Duncan Index of Dissimilarity is measured on a scale of 0 to 100 and represents the percentage of each group that would need to change occupational focus in training to eliminate gender differences in the distribution across the five reported occupation groups listed in Table F.11.

Table F.21. Gender Differences in Service Receipt Before and After Controlling for Customer Characteristics, by WIA Program (CY 2009 Exits)

Service Measures	Adult Program (N = 405,738)			Dislocated Worker Program (N = 213,722)		
	First Stage	Second Stage		First Stage	Second Stage	
	Estimate of Raw Female-Male Difference	Estimate of Difference with Controls for Customer Characteristics	Percentage Change from First Stage	Estimate of Raw Female-Male Difference	Estimate of Difference with Controls for Customer Characteristics	Percentage Change from First Stage
All Customers						
Received Training Services	8.3*	4.1*	50.3	0.8*	0.1	88.8
Received Supportive Services	5.9*	3.5*	41.0	1.6*	1.2*	23.4
Customers Who Received Training Services						
Focus of Occupational Skills Training						
Agricultural, natural resources, and construction	-9.2*	-9.3*	0.7	-4.6*	-4.7*	2.6
Managerial, administrative, professional, and technical	20.8*	18.8*	9.7	15.9*	16.4*	3.1
Mechanical and transportation	-45.2*	-42.7*	5.4	-53.6*	-53.1*	0.9
Sales, clerical, and administrative support	11.0*	12.9*	16.9	19.7*	19.9*	0.8
Service	22.6*	20.4*	9.8	22.5*	21.5*	4.6

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: See the appendix text for additional information about the sample and definitions of terms and symbols. Estimates are expressed in percentage points and are based on linear regression models in which the dependent variable is a binary indicator for the service receipt measure of interest, and the explanatory variables are a female indicator (in both stages) and the customer characteristics listed in Table F.2 (in the second stage only). Percentage change from the first stage is calculated by taking the difference between the second- and first-stage estimates, dividing by the first-stage estimate, taking the absolute value, and multiplying by 100.

* Significant at the $p < 0.05$ level.

Table F.22. Customer Employment and Earnings Outcomes During the First Year After Program Exit, by WIA Program and Gender (CY 2009 Exits)

Outcome Measures	Adult Program			Dislocated Worker Program		
	Females (N = 199,785)	Males (N = 205,953)	Female-to-Male Ratio[a]	Females (N = 97,169)	Males (N = 116,553)	Female-to-Male Ratio[a]
Employment Outcomes (Percentages)						
Within one year	74.0	72.9	1.02	72.2	73.8	0.98
In first quarter	59.4	55.7	1.07	57.1	57.0	1.00
In all four quarters	45.4	40.5	1.12	45.5	44.1	1.03
Earnings Outcomes (Dollars)						
Average quarterly post-program earnings	3,355 (4,374)	3,885 (5,340)	0.86	3,799 (4,754)	4,835 (6,041)	0.79
Average change in quarterly earnings	-411 (5,042)	-1,436 (6,310)	NA	-2,544 (6,571)	-3,082 (8,172)	NA

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all female-male differences were significant at the $p < 0.05$ level with the exception of the percentage of customers becoming employed in the first quarter after exit (in both programs). Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

[a]This column is calculated as the outcome for females divided by the outcome for males.

Table F.23. Employment and Earnings Outcomes of Female Customers During the First Year After Program Exit, by WIA Program and Age (CY 2009 Exits)

Outcome Measures	Adult Program			Dislocated Worker Program		
	Younger Workers: 18–24 Years Old (N = 38,113)	Prime-Age Workers: 25–54 Years Old (N = 140,485)	Older Workers: 55 and Older (N = 21,187)	Younger Workers: 18–24 Years Old (N = 7,032)	Prime-Age Workers: 25–54 Years Old (N = 73,545)	Older Workers: 55 and Older (N = 16,592)
Employment Outcomes (Percentages)						
Within one year	80.2	74.5	59.5	77.2	75.1	57.5
In first quarter	63.9	60.0	47.4	58.1	59.6	45.7
In all four quarters	46.9	46.5	35.4	43.5	48.2	34.2
Earnings Outcomes (Dollars)						
Average quarterly post-program earnings	2,843 (3,439)	3,583 (4,570)	2,763 (4,417)	2,750 (3,211)	4,116 (4,899)	2,840 (4,450)
Average change in quarterly earnings	928 (3,559)	-474 (5,128)	-2,403 (5,949)	-302 (3,608)	-2,347 (6,560)	-4,369 (7,141)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between younger, prime-age, and older workers were significant at the $p < 0.05$ level. Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

Table F.24. Employment and Earnings Outcomes of Female Customers During the First Year After Program Exit, by WIA Program and Race/Ethnicity (CY 2009 Exits)

	Adult Program				Dislocated Worker Program			
Outcome Measures	Black, non-Hispanic (N = 45,705)	Hispanic/ Latino (N = 26,004)	White, non-Hispanic (N = 111,058)	Other (N = 17,018)	Black, non-Hispanic (N = 18,108)	Hispanic/ Latino (N = 11,751)	White, non-Hispanic (N = 58,333)	Other (N = 8,977)
Employment Outcomes (Percentages)								
Within one year	75.8	73.8	74.0	69.9	72.7	71.3	73.0	67.5
In first quarter	60.7	59.0	59.5	56.2	56.6	54.2	58.8	51.3
In all four quarters	45.0	44.2	46.2	42.8	43.6	41.6	47.7	40.0
Earnings Outcomes (Dollars)								
Average quarterly post-program earnings	3,011 (3,827)	3,083 (3,992)	3,520 (4,494)	3,619 (5,338)	3,295 (4,174)	3,172 (3,962)	4,043 (4,884)	4,047 (5,703)
Average change in quarterly earnings	104 (4,143)	135 (4,280)	-739 (5,295)	-486 (6,284)	-1,926 (5,892)	-1,928 (5,265)	-2,797 (6,862)	-2,959 (7,303)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between black non-Hispanic, Hispanic/Latino, white non-Hispanic, and other race/ethnicity customers were significant at the *p* < 0.05 level. Chi-squared tests were used for the binary employment outcomes, and *t*-tests were used for the continuous earnings outcomes.

Table F.25. Employment and Earnings Outcomes of Female Customers During the First Year After Program Exit, by WIA Program and Education (CY 2009 Exits)

	Adult Program				Dislocated Worker Program			
Outcome Measures	Below High School (N = 25,850)	High School or GED Diploma (N = 92,374)	Some College (N = 57,038)	Bachelor's Degree or Beyond (N = 24,523)	Below High School (N = 10,089)	High School or GED Diploma (N = 43,390)	Some College (N = 27,062)	Bachelor's Degree or Beyond (N = 16,628)
Employment Outcomes (Percentages)								
Within one year	63.8	73.7	77.4	78.2	64.9	72.7	73.2	74.0
In first quarter	46.6	58.9	63.8	64.7	48.1	58.0	58.3	58.5
In all four quarters	31.0	44.5	50.3	52.6	35.6	46.5	46.8	46.7
Earnings Outcomes (Dollars)								
Average quarterly post-program earnings	1,724 (2,654)	2,839 (3,469)	3,882 (4,528)	5,795 (6,711)	2,222 (3,067)	3,308 (3,707)	3,908 (4,510)	5,859 (7,144)
Average change in quarterly earnings	-485 (3,069)	-316 (4,136)	-19 (5,482)	-1,601 (7,814)	-1,719 (4,010)	-2,125 (5,121)	-2,332 (6,180)	-4,487 (10,357)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between customers with different levels of education were significant at the *p* < 0.05 level. Chi-squared tests were used for the binary employment outcomes, and *t*-tests were used for the continuous earnings outcomes.

Table F.26. Employment Earnings Outcomes of Female Customers During the First Year After Program Exit, by WIA Program and Employment status at entry into WIA program (CY 2009 Exits)

	Adult Program			Dislocated Worker Program		
Outcome Measures	Employed (N = 44,485)	Employed, Received Notice of Termination (N = 1,639)	Not Employed (N = 153,661)	Employed (N = 5,233)	Employed, Received Notice of Termination (N = 4,505)	Not Employed (N = 87,431)
Employment Outcomes (Percentages)						
Within one year	90.5	80.0	69.2	81.1	82.7	71.2
In first quarter	84.3	68.0	52.1	72.7	72.5	55.4
In all four quarters	71.5	46.1	37.8	60.8	58.3	43.9
Earnings Outcomes (Dollars)						
Average quarterly post-program earnings	5,547 (5,208)	4,087 (4,599)	2,713 (3,872)	4,420 (4,494)	4,940 (4,770)	3,703 (4,758)
Average change in quarterly earnings	958 (4,443)	-2,115 (5,254)	-789 (5,131)	-769 (4,925)	-2,215 (5,560)	-2,668 (6,689)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between customers with different employment statuses before WIA participation were significant at the $p < 0.05$ level. Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

Table F.27. Employment and Earnings Outcomes of Female Customers in the Adult Program During the First Year After Program Exit, by Average Quarterly Earnings Before WIA Participation (CY 2009 Exits)

Outcome Measures	None (N = 45,900)	$1 to $2,499 (N = 57,852)	$2,500 to $4,999 (N = 39,992)	$5,000 to $7,499 (N = 25,363)	$7,500 to $9,999 (N = 13,534)	$10,000 to $19,999 (N = 14,427)	$20,000 or More (N = 2,717)
Employment Outcomes (Percentages)							
Within one year	55.2	77.4	81.8	80.4	79.7	80.6	82.9
In first quarter	39.6	60.9	68.9	67.3	66.5	68.0	67.9
In all four quarters	27.3	42.5	54.8	55.5	56.1	58.3	57.3
Earnings Outcomes (Dollars)							
Average quarterly post-program earnings	1,901 (3,433)	2,373 (3,052)	3,275 (3,260)	3,995 (3,604)	5,012 (4,319)	7,487 (6,363)	13,841 (12,238)
Average change in quarterly earnings	1,901 (3,433)	1,275 (3,060)	-406 (3,295)	-2,127 (3,632)	-3,594 (4,321)	-5,823 (6,251)	-14,856 (17,163)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between customers with different levels of average quarterly earnings before WIA participation were significant at the $p < 0.05$ level. Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

Table F.28. Employment and Earnings Outcomes of Female Customers in the Dislocated Worker Program During the First Year After Program Exit, by Average Quarterly Earnings Before WIA Participation (CY 2009 Exits)

Outcome Measures	None (N = 11,889)	$1 to $2,499 (N = 16,228)	$2,500 to $4,999 (N = 19,408)	$5,000 to $7,499 (N = 18,838)	$7,500 to $9,999 (N = 12,464)	$10,000 to $19,999 (N = 15,010)	$20,000 or More (N = 3,332)
Employment Outcomes (Percentages)							
Within one year	56.8	72.4	74.4	75.1	74.4	75.2	76.4
In first quarter	40.2	55.2	59.7	61.1	60.6	60.8	60.4
In all four quarters	29.4	39.8	47.2	50.4	50.9	50.6	48.9
Earnings Outcomes (Dollars)							
Average quarterly post-program earnings	2,313 (3,749)	2,395 (2,972)	2,904 (3,074)	3,560 (3,459)	4,266 (4,045)	5,988 (5,862)	10,894 (11,500)
Average change in quarterly earnings	2,313 (3,749)	1,145 (3,023)	-879 (3,123)	-2,645 (3,494)	-4,376 (4,072)	-7,341 (6,007)	-18,517 (16,624)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between customers with different levels of average quarterly earnings before WIA participation were significant at the $p < 0.05$ level. Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

Table F.29. Employment and Earnings Outcomes of Female Customers During the First Year After Program Exit, by WIA Program and Single-Parent Status (CY 2009 Exits)

Outcome Measures	Adult Program		Dislocated Worker Program	
	Single Parent (N = 39,919)	Not a Single Parent (N = 159,866)	Single Parent (N = 12,421)	Not a Single Parent (N = 84,748)
Employment Outcomes (Percentages)				
Within one year	79.7	72.6	80.2	71.1
In first quarter	65.0	58.0	64.7	56.0
In all four quarters	49.1	44.5	51.9	44.5
Earnings Outcomes (Dollars)				
Average quarterly post-program earnings	3,219 (3,883)	3,389 (4,488)	3,791 (4,027)	3,800 (4,852)
Average change in quarterly earnings	626 (4,154)	-670 (5,208)	-1,079 (4,963)	-2,759 (6,748)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between customers who were single parents and those who were not single parents were significant at the $p < 0.05$ level with the exception of average quarterly post-program earnings among customers in the Dislocated Worker program. Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

Table F.30. Employment and Earnings Outcomes of Female Customers in the Adult Program During the First Year After Program Exit, by Low-Income Status (CY 2009 Exits)

Outcome Measures	Low Income (N = 93,712)	Not Low Income (N = 106,073)
Employment Outcomes (Percentages)		
Within one year	74.2	73.9
In first quarter	59.2	59.6
In all four quarters	43.8	46.8
Earnings Outcomes (Dollars)		
Average quarterly post-program earnings	2,834 (3,693)	3,816 (4,852)
Average change in quarterly earnings	596 (3,840)	-1,301 (5,759)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between low-income and not-low-income customers were significant at the $p < 0.05$ level with the exceptions of the percentage of customers who became employed within one year of exiting the program and the percentage of customers who became employed in the first quarter after exiting the program. Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

Table F.31. Employment and Earnings Outcomes of Female Customers During the First Year After Program Exit, by WIA Program and Receipt of Training Services (CY 2009 Exits)

Outcome Measures	Adult Program		Dislocated Worker Program	
	Received Training (N = 61,688)	Did Not Receive Training (N = 138,097)	Received Training (N = 29,530)	Did Not Receive Training (N = 67,639)
Employment Outcomes (Percentages)				
Within one year	83.6	69.7	82.4	67.8
In first quarter	73.6	53.1	71.2	51.0
In all four quarters	60.1	38.8	60.0	39.1
Earnings Outcomes (Dollars)				
Average quarterly post-program earnings	4,819 (5,076)	2,701 (3,845)	4,685 (4,671)	3,412 (4,739)
Average change in quarterly earnings	1,382 (4,708)	-1,212 (4,980)	-1,136 (5,731)	-3,159 (6,815)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between customers who received training and those who did not receive training were significant at the $p < 0.05$ level. Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

Table F.32. Employment and Earnings Outcomes of Female Customers During the First Year After Program Exit, by WIA Program and Receipt of Supportive Services (CY 2009 Exits)

	Adult Program		Dislocated Worker Program	
Outcome Measures	Received Supportive Services (N = 36,195)	Did Not Receive Supportive Services (N = 163,590)	Received Supportive Services (N = 16,628)	Did Not Receive Supportive Services (N = 80,541)
Employment Outcomes (Percentages)				
Within one year	78.3	73.1	82.0	70.2
In first quarter	67.0	57.7	71.5	54.2
In all four quarters	52.0	43.9	59.7	42.5
Earnings Outcomes (Dollars)				
Average quarterly post-program earnings	3,674 (4,157)	3,285 (4,418)	4,395 (4,188)	3,676 (4,854)
Average change in quarterly earnings	1,300 (4,418)	-790 (5,093)	-1,054 (5,176)	-2,852 (6,783)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between customers who received supportive services and those who did not receive supportive services were significant at the $p < 0.05$ level. Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

Table F.33. Employment and Earnings Outcomes of Female Customers Who Received Training Services in the Adult Program During the First Year After Program Exit, by Focus of Occupational Skills Training (CY 2009 Exits)

Outcome Measures	Agricultural, Natural Resources, and Construction (N = 200)	Managerial, Administrative, Professional, or Technical (N = 19,921)	Mechanical and Transportation (N = 3,036)	Sales, Clerical, and Administrative Support (N = 7,109)	Service (N = 14,307)	Not Reported (N = 17,115)
Employment Outcomes (Percentages)						
Within one year	76.0	88.7	82.5	75.7	82.0	82.6
In first quarter	61.5	81.6	72.7	64.6	71.4	70.2
In all four quarters	46.0	71.1	57.1	49.3	55.0	56.7
Earnings Outcomes (Dollars)						
Average quarterly post-program earnings	3,844 (4,493)	7,061 (5,910)	4,498 (4,562)	3,314 (3,918)	3,205 (3,852)	4,254 (4,494)
Average change in quarterly earnings	624 (3,578)	2,690 (5,404)	395 (3,216)	201 (3,467)	900 (3,678)	938 (4,947)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between customers with different occupational foci of training were significant at the $p < 0.05$ level. Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

Table F.34. Employment and Earnings Outcomes of Female Customers Who Received Training Services in the Dislocated Worker Program During the First Year After Program Exit, by Focus of Occupational Skills Training (CY 2009 Exits)

Outcome Measures	Agricultural, Natural Resources, and Construction (N = 63)	Managerial, Administrative, Professional, or Technical (N = 8,767)	Mechanical and Transportation (N = 1,247)	Sales, Clerical, and Administrative Support (N = 4,955)	Service (N = 5,827)	Not Reported (N = 8,671)
Employment Outcomes (Percentages)						
Within one year	92.1	83.5	85.9	81.3	84.7	79.8
In first quarter	76.2	74.3	74.3	71.8	74.0	65.5
In all four quarters	61.9	64.0	60.6	61.4	62.7	53.3
Earnings Outcomes (Dollars)						
Average quarterly post-program earnings	4,409 (3,732)	5,812 (5,398)	4,708 (4,089)	4,294 (3,899)	3,814 (3,283)	4,352 (4,941)
Average change in quarterly earnings	-1,541 (4,547)	-756 (6,331)	-771 (4,784)	-1,612 (4,938)	-966 (4,543)	-1,413 (6,303)

Source: Public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all differences between customers with a different occupational foci of training were significant at the $p < 0.05$ level. Chi-squared tests were used for the binary employment outcomes, and t-tests were used for the continuous earnings outcomes.

Table F.35. Gender Differences in the Employment and Earnings Outcomes Before and After Controlling for Customer Characteristics and Services Received, by Program (CY 2009 Exits)

Outcome Measures	Adult Program (N= 405,738)					Dislocated Worker Program (N= 213,722)				
	First Stage	Second Stage		Third Stage		First Stage	Second Stage		Third Stage	
	Estimate of Raw Female-Male Difference	Estimate of Difference with Controls for Customer Characteristics	Percentage Change from First Stage	Estimate of Difference with Controls for Customer Characteristics and Service Receipt	Percentage Change from First Stage	Estimate of Raw Female-Male Difference	Estimate of Difference with Controls for Customer Characteristics	Percentage Change from First Stage	Estimate of Difference with Controls for Customer Characteristics and Service Receipt	Percentage Change from First Stage
Employment Outcomes (Percentages)										
Within one year	1.2*	-0.3*	127.4	-0.7*	157.5	-1.6*	-1.5*	5.1	-1.3*	17.4
In first quarter	3.7*	1.9*	46.9	1.2*	67.3	0.1	0.5*	251.8	0.5*	264.3
In all four quarters	4.9*	3.9*	19.9	2.9*	40.3	1.4*	2.0*	43.0	1.8*	23.2
Earnings Outcomes (Dollars)										
Average quarterly post-program earnings	-529.5*	-189.5*	64.2	-310.5*	41.4	-1,035.9*	-639.6*	38.3	-612.8*	40.9
Average change in quarterly earnings	1,025.0*	-117.2*	111.4	-235.9*	123.0	537.9*	-505.0*	193.9	-468.9*	187.2

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: See the appendix text for additional information about the sample and definitions of terms and symbols. Estimates are based on linear regression models in which the dependent variable is the outcome measure of interest and the explanatory variables are a female indicator (in all three stages), the customer characteristics listed in Table F.2 (in the second and third stages), and services received (in the third stage only). Because the occupation of training was missing for a relatively large percentage of customers, we included an indicator variable to account for missing values on this variable. * indicates significant at the $p < 0.05$ level. Percentage change from the first stage is calculated by taking the difference between each higher-stage estimate and the first-stage estimate, dividing by the first-stage estimate, taking the absolute value, and multiplying by 100.

Table F.36. Customer Demographic and Pre-Program Characteristics, by WIA Program and Gender (CY 2007 Exits)

Characteristics	Adult Program			Dislocated Worker Program		
	Females (N = 93,776)	Males (N = 72,507)	Female-to-Male Ratio	Females (N = 57,166)	Males (N = 50,055)	Female-to-Male Ratio
Demographic Characteristics						
Age						
18–24 years old	22.4	18.7	1.20	5.8	7.2	0.81
25–54 years old	70.7	72.0	0.98	78.9	77.8	1.01
55 and older	6.9	9.3	0.74	15.3	15.0	1.02
Race/Ethnicity						
Black, non-Hispanic	30.0	27.6	1.09	23.5	19.4	1.21
Hispanic/Latino	15.0	14.4	1.04	11.6	12.5	0.93
White, non-Hispanic	48.1	51.2	0.94	57.2	61.5	0.93
Other	6.8	6.8	1.00	7.7	6.6	1.16
Pre-Program Characteristics						
Education and Labor Market						
Education						
Below high school	13.7	15.9	0.86	10.8	12.7	0.85
High school or GED diploma	49.0	52.2	0.94	48.0	48.4	0.99
Some college	28.7	22.6	1.27	28.5	25.0	1.14
Bachelor's degree or beyond	8.6	9.3	0.92	12.8	14.0	0.91
Employment status at entry into WIA program						
Employed	29.8	25.6	1.16	6.1	5.5	1.10
Employed, received notice of termination	0.8	0.8	0.98	7.0	6.5	1.08
Not employed	69.5	73.6	0.94	87.0	88.0	0.99
Average pre-program quarterly earnings						
None	23.5	22.0	1.07	9.1	9.1	1.00
$1 to $2,499	36.1	27.1	1.33	16.5	12.3	1.34
$2,500 to $4,999	21.9	19.2	1.14	24.3	17.5	1.39
$5,000 to $7,499	10.3	13.6	0.76	22.7	20.3	1.12
$7,500 to $9,999	4.3	7.8	0.55	13.3	15.6	0.85
$10,000 to $19,999	3.4	8.6	0.39	12.3	20.9	0.59
$20,000 or more	0.4	1.6	0.27	1.9	4.3	0.45
Family						
Single parent	33.7	6.0	5.61	19.5	5.4	3.58
Displaced homemaker	NA	NA	NA	2.8	0.5	5.34
Poverty Indicators						
Low income	58.4	42.7	1.37	NA	NA	NA
TANF recipient	8.6	1.8	4.87	NA	NA	NA
Recipient of other public assistance	28.0	12.2	2.31	NA	NA	NA
Other Considerations						
Persons with disability	4.4	6.2	0.70	3.1	4.2	0.74
Limited English proficiency	3.6	3.5	1.04	5.5	5.7	0.96
Veteran or eligible spouse	1.9	15.2	0.12	1.9	17.1	0.11

Source: Public-use WIASRD data for program year 2008.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, females and males differed significantly from each other in their distributions across categories of each customer characteristic listed in the table. Significance was assessed at the *p* < 0.05 level.

Table F.37. Service Receipt Among Customers, by WIA Program and Gender (CY 2007 Exits)

Service Measures	Adult Program			Dislocated Worker Program		
	Females (N = 93,776)	Males (N = 72,507)	Female-to-Male Ratio	Females (N = 57,166)	Males (N = 50,055)	Female-to-Male Ratio
All Customers						
Tiers of Service Received						
Intensive only	45.7	51.7	0.88	49.4	46.8	1.06
Training only	3.0	3.1	0.96	2.2	2.6	0.85
Both intensive and training	51.3	45.2	1.14	48.4	50.6	0.96
Received Supportive Services	29.7	22.1	1.34	27.2	25.2	1.08
Customers Who Received Training Services						
Focus of Occupational Skills Training						
Agricultural, natural resources, and construction	0.5	6.1	0.08	0.3	3.6	0.08
Managerial, administrative, professional, and technical	29.1	14.2	2.04	25.0	17.3	1.45
Mechanical and transportation	5.6	39.5	0.14	4.8	37.5	0.13
Sales, clerical, and administrative support	11.2	4.3	2.59	17.9	3.3	5.40
Service	20.1	4.2	4.76	15.2	3.2	4.81
Not reported	33.5	31.6	1.06	36.8	35.1	1.05

Source: Public-use WIASRD data for program year 2008.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, female and male customers differed significantly from each other in their distributions across categories of each service measure listed in the table. Significance was assessed at the $p < 0.05$ level.

Table F.38. Duncan Index of Dissimilarity for Female and Male Distributions of Focus of Occupational Skills Training, by WIA Program and Customer Characteristics (CY 2007 Exits)

Characteristics	Adult Program (N = 57,752)	Dislocated Worker Program (N = 35,589)
Overall	57.5	55.3
Demographic Characteristics		
Age		
18–24 years old	62.1	62.1
25–54 years old	57.1	55.6
55 and older	43.3	51.5
Race/Ethnicity		
Black, non-Hispanic	63.7	62.2
Hispanic/Latino	58.2	57.9
White, non-Hispanic	54.6	53.9
Other	51.5	44.5
Pre-Program Characteristics		
Education and Labor Market		
Education		
Below high school	63.8	65.4
High school or GED diploma	62.9	64.9
Some college	48.5	44.2
Bachelor's degree or beyond	25.2	23.9
Employment status at entry into WIA program		
Employed	48.6	54.4
Employed, received notice of termination	66.3	58.7
Not employed	63.5	55.1
Average pre-program quarterly earnings		
None	61.5	54.5
$1 to $2,499	61.1	57.6
$2,500 to $4,999	61.6	60.8
$5,000 to $7,499	57.8	59.3
$7,500 to $9,999	49.3	56.5
$10,000 to $19,999	39.9	50.2
$20,000 or more	26.3	27.8
Family		
Single parent		
Yes	63.7	57.1
No	56.4	55.5
Displaced homemaker		
Yes	NA	59.2
No	NA	55.3
Poverty Indicators		
Low income		
Yes	58.8	NA
No	55.2	NA
TANF recipient		
Yes	56.9	NA
No	57.2	NA
Recipient of other public assistance		
Yes	64.5	NA
No	56.2	NA
Other Considerations		
Persons with disability		
Yes	47.0	52.5
No	57.9	55.4

Table F.38 *(continued)*

Characteristics	Adult Program (N = 57,752)	Dislocated Worker Program (N = 35,589)
Limited English proficiency		
Yes	58.8	58.4
No	57.4	55.1
Eligible veteran status		
Veteran or eligible spouse	55.2	48.0
Not eligible	57.5	55.8

Source:　　　Public-use WIASRD data for program year 2008.

Notes:　　　See the appendix text for additional information about the sample and definitions of terms and symbols. The Duncan Index of Dissimilarity is measured on a scale of 0 to 100 and represents the percentage of each group that would need to change occupational focus in training to eliminate gender differences in the distribution across the five reported occupation groups listed in Table F.11.

Table F.39. Customer Employment and Earnings Outcomes During the First Year After Program Exit, by WIA Program and Gender (CY 2007 Exits)

Outcome Measures	Adult Program			Dislocated Worker Program		
	Females (N = 93,776)	Males (N = 72,507)	Female-to-Male Ratio[a]	Females (N = 57,166)	Males (N = 50,055)	Female-to-Male Ratio[a]
Employment Outcomes (Percentages)						
Within one year	86.6	86.0	1.01	86.3	87.0	0.99
In first quarter	76.2	75.4	1.01	77.6	78.4	0.99
In all four quarters	60.0	56.3	1.07	65.2	64.1	1.02
Earnings Outcomes (Dollars)						
Average quarterly post-program earnings	4,249 (4,304)	5,154 (5,469)	0.82	4,947 (4,521)	6,452 (6,082)	0.76
Average change in quarterly earnings	1,490 (4,391)	1,015 (5,187)	n.a.	-903 (5,685)	-1,053 (7,379)	n.a.

Source:　　　Public-use WIASRD data for program year 2008.

Notes:　　　See the appendix text for additional information about the sample and definitions of terms and symbols. Standard deviations are reported in parentheses. Based on a series of statistical tests conducted separately for the Adult and Dislocated Worker populations, all female-male differences were significant at the $p < 0.05$ level.

[a]This column is calculated as the value of the outcome for females divided by the outcome for males.

Table F.40. Distribution of Customers Across LWIAs, by WIA Program and Gender (CY 2009 Exits)

LWIA Characteristics	Adult Program			Dislocated Worker Program		
	Females (N = 199,785)	Males (N = 205,953)	Female-to-Male Ratio	Females (N = 97,169)	Males (N = 116,553)	Female-to-Male Ratio
Program Measures						
Above-average share of all customers receiving training	20.0	13.8	1.45	20.7	19.8	1.04
Above-average share of all customers receiving supportive services	20.3	14.5	1.40	18.8	17.7	1.06
Above-average number of customers	77.7	84.7	0.92	69.8	71.9	0.97
Economic Activity and Social Indicators						
Unemployment rate is above the national average	64.1	67.3	0.95	57.8	59.9	0.96
Female labor-force participation rate is above the national average	59.2	64.5	0.92	56.2	58.2	0.97
Poverty rate is above the national average	32.8	28.4	1.15	37.6	35.1	1.07
Share of children younger than 18 who are in a single-parent or nonfamily household is above the national average	42.3	37.4	1.13	42.2	40.3	1.05
Share of population with limited English proficiency is above the national average	27.5	25.8	1.06	31.2	26.0	1.20
Share of housing units that are vacant is above the national average	35.7	31.8	1.12	31.8	32.4	0.98
Labor Market Structure						
Above-Average Industrial Share of Employment in:						
Agriculture, forestry, fishing and hunting, and mining	32.4	29.0	1.12	35.9	39.8	0.90
Arts, entertainment, and recreation, and accommodation and food services	38.0	38.7	0.98	47.2	46.1	1.02
Construction	39.1	32.4	1.20	35.8	35.4	1.01
Educational services	50.4	52.5	0.96	40.6	41.3	0.98
Finance, insurance, and real estate	39.5	37.1	1.06	42.4	36.7	1.15
Health care and social assistance	38.9	34.6	1.12	46.8	43.5	1.08
Information	32.1	28.9	1.11	34.2	28.3	1.21
Manufacturing	54.8	61.5	0.89	56.8	62.6	0.91
Professional and related services	45.0	44.2	1.02	50.4	46.4	1.09
Retail trade	47.9	44.0	1.09	50.3	52.7	0.95
Transportation and warehousing, and utilities	48.8	51.3	0.95	43.2	42.1	1.02
Wholesale trade	34.0	34.5	0.99	42.5	43.2	0.98
Other services (except public administration)	33.9	29.5	1.15	39.1	36.5	1.07
Public administration	34.6	29.9	1.16	28.6	28.0	1.02
Above-Average Occupational Share of Employment in:						
Agricultural and construction	40.4	36.5	1.11	43.0	45.6	0.94
Management, business, science, and the arts	34.9	34.9	1.00	50.2	46.2	1.09
Mechanics, installers, repairers, production, and transportation	50.2	52.8	0.95	42.2	46.9	0.90
Sales and office	39.8	35.9	1.11	35.3	32.3	1.09
Service	49.3	48.7	1.01	58.1	58.3	1.00
Geography						
Region						
1: Northeast	18.8	18.8	1.00	25.4	20.7	1.22
2: Mid-Atlantic	2.1	1.4	1.54	5.0	4.4	1.13

Table F.40 *(continued)*

LWIA Characteristics	Adult Program			Dislocated Worker Program		
	Females (N = 199,785)	Males (N = 205,953)	Female-to-Male Ratio	Females (N = 97,169)	Males (N = 116,553)	Female-to-Male Ratio
3: Southeast	14.4	10.5	1.37	12.8	12.2	1.05
4: Mountain	11.5	8.4	1.37	5.5	6.2	0.89
5: Midwest	27.8	32.3	0.86	19.5	22.8	0.86
6: West	25.4	28.7	0.88	31.8	33.7	0.94
Share of population living in rural areas is above the national average	47.2	49.1	0.96	42.6	46.9	0.91

Source: American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table shows percentages. Appendix A lists the specific thresholds for the rates and population share measures included in this table. Based on a series of chi-squared statistical tests conducted separately for the Adult and Dislocated Worker populations, females and males differed significantly from each other in their distributions across almost every category of LWIA listed in the table. The exceptions were that females and males were statistically equally likely to live in LWIAs with above-average occupational shares of employment in management, business, sciences, and the arts, and above-average shares of employment in service ocupations. Significance was assessed at the $p < 0.05$ level.

Table F.41. Correlations Between LWIA Characteristics and LWIA-Level Service Receipt in the WIA Adult Program, by Gender (CY 2009 Exits)

LWIA Characteristics	Share of Customers Receiving Training (N = 519 Areas)		Share of Customers Receiving Supportive Services (N = 519 Areas)	
	Females	Males	Females	Males
Program Measures				
Share of all customers receiving training	n.a.	n.a.	0.18†	0.14†
Share of all customers receiving supportive services	0.22†	0.18†	n.a.	n.a.
Number of customers	-0.27†	-0.25†	-0.12†	-0.11†
Economic Activity and Social Indicators				
Unemployment rate	0.02	0.06	0.03	0.00
Female labor-force participation rate	-0.02	-0.05	-0.15†	-0.13†
Poverty rate	0.06	0.06	0.15†	0.11†
Share of children younger than 18 who are in a single-parent or nonfamily household	0.03	0.05	-0.07	-0.09†
Share of population with limited English proficiency	-0.21†	-0.14†	-0.03	-0.01
Share of housing units that are vacant	0.13†	0.12†	0.05	0.02
Labor Market Structure				
Share of Employment by Industry				
Agriculture, forestry, fishing and hunting, and mining	0.07	0.03	0.22†	0.19†
Arts, entertainment, and recreation, and accommodation and food services	-0.06	0.00	-0.04	-0.02
Construction	0.07	0.10†	0.05	0.03
Educational services	-0.07	-0.13†	-0.02	-0.02
Finance, insurance, and real estate	-0.09†	-0.04	-0.18†	-0.16†
Health care and social assistance	0.02	-0.04	-0.03	-0.06
Information	-0.22†	-0.16†	-0.16†	-0.14†
Manufacturing	0.14†	0.07	0.12	0.12†
Professional and related services	-0.20†	-0.10†	-0.25†	-0.22†
Retail trade	0.17†	0.17†	0.08	0.07
Transportation and warehousing, and utilities	0.10†	0.11†	0.11	0.11
Wholesale trade	0.02	0.02	-0.02	0.00
Other services (except public administration)	-0.04	0.01	0.02	0.02
Public administration	-0.02	0.02	-0.04	-0.04
Share of Employment by Occupation				
Agricultural, natural resources, and construction	0.05	0.05	0.16†	0.13†
Maintenance, production, and transportation	0.22†	0.14†	0.23†	0.21†
Management, business, science and arts	-0.18†	-0.15†	-0.24†	-0.20†
Sales and office	-0.01	0.06	-0.13†	-0.12†
Service	0.00	0.01	0.11	0.08
Geography				
Region	0.41†	0.36†	0.42†	0.40†
Share of population living in rural areas	0.20†	0.11†	0.19†	0.16†

Source: American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table reports unweighted Pearson correlation coefficients calculated at the LWIA level, except reported correlations for region, which is a generalized version of the correlation coefficient that accounts for its categorical measurement. This correlation measure is calculated as the square root of the coefficient of determination from a regression of the outcome measure (indicated in the column) on a set of binary indicator variables corresponding to the DOL regions. † indicates significance at the $p < 0.05$ level of the *gender-specific correlations*. * indicates a significant difference *between females and males* at the $p < 0.05$ level.

Table F.42. Correlations Between LWIA Characteristics and LWIA-Level Service Receipt in the WIA Dislocated Worker Program, by Gender (CY 2009 Exits)

LWIA Characteristics	Share of Customers Receiving Training (N = 517 Areas)		Share of Customers Receiving Supportive Services (N = 517 Areas)	
	Females	Males	Females	Males
Program Measures				
Share of all customers receiving training	n.a.	n.a.	0.23†	0.22†
Share of all customers receiving supportive services	0.20†	0.18†	n.a.	n.a.
Number of customers	-0.23†	-0.23†	-0.11†	-0.10
Economic Activity and Social Indicators				
Unemployment rate	0.08	0.07	0.05	0.03
Female labor-force participation rate	-0.07	-0.08	-0.19†	-0.18†
Poverty rate	0.07	0.07	0.17†	0.14†
Share of children younger than 18 who are in a single-parent or nonfamily household	0.02	0.02	-0.04	-0.09
Share of population with limited English proficiency	-0.11†	-0.07	-0.01	-0.02
Share of housing units that are vacant	0.07	0.06	0.10†	0.08
Labor Market Structure				
Share of Employment by Industry				
Agriculture, forestry, fishing and hunting, and mining	0.04	0.02	0.18†	0.20†
Arts, entertainment, and recreation, and accommodation and food services	-0.05	0.00	0.02	0.00
Construction	0.05	0.06	0.05	0.07
Educational services	-0.08	-0.07	0.00	-0.01
Finance, insurance, and real estate	-0.04	-0.01	-0.14†	-0.16†
Health care and social assistance	-0.07	-0.09†	-0.07	-0.05
Information	-0.14†	-0.08	-0.14†	-0.14†
Manufacturing	0.11	0.03	0.07	0.09
Professional and related services	-0.10†	-0.06	-0.21†	-0.22†
Retail trade	0.10†	0.10†	0.12†	0.12†
Transportation and warehousing, and utilities	0.07	0.11†	0.07	0.08
Wholesale trade	0.04	0.06	-0.07	-0.06
Other services (except public administration)	-0.05	-0.03	0.05	0.04
Public administration	0.01	0.01	0.00	-0.04
Share of Employment by Occupation				
Agricultural, natural resources, and construction	0.05	0.04	0.13†	0.16†
Maintenance, production, and transportation	0.15†	0.10†	0.19†	0.21†
Management, business, science, and arts	-0.12†	-0.09†	-0.22†	-0.22†
Sales and office	0.00	0.00	-0.09†	-0.11†
Service	-0.02	-0.02	0.15†	0.12†
Geography				
Region	0.26†	0.27†	0.39†	0.37†
Share of population living in rural areas	0.14†	0.08	0.17†	0.18†

Source: American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table reports unweighted Pearson correlation coefficients calculated at the LWIA level, except reported correlations for region, which is a generalized version of the correlation coefficient that accounts for its categorical measurement. This correlation measure is calculated as the square root of the coefficient of determination from a regression of the outcome measure (indicated in the column) on a set of binary indicator variables corresponding to the DOL regions. † indicates significance at the $p < 0.05$ level of the *gender-specific correlations*. * indicates a significant difference *between females and males* at the $p < 0.05$ level.

Table F.43. Correlations Between LWIA Characteristics and Rates of LWIA-Level Occupational Skills Training in the WIA Adult Program, by Gender (CY 2009 Exits), Part 1

	Share of Customers with Focus of Occupational Skills Training in:					
	Agricultural, Natural Resources, and Construction (N = 460 Areas)		Managerial, Administrative, Professional, and Technical (N = 460 Areas)		Mechanical and Transportation (N = 460 Areas)	
LWIA Characteristics	Females	Males	Females	Males	Females	Males
Program Measures						
Share of all customers receiving training	0.00	-0.04	0.18†	0.14†	-0.02	0.01
Share of all customers receiving supportive services	0.04	-0.05	0.15†	0.00*	-0.07	0.03
Number of customers	0.00	-0.01	-0.04	0.03	0.01	-0.01
Economic Activity and Social Indicators						
Unemployment rate	-0.02	-0.04	-0.04	-0.05	0.05	0.10
Female labor-force participation rate	0.01	-0.07	-0.26†	0.01*	-0.08	-0.12†
Poverty rate	-0.02	0.06	0.21†	-0.01*	0.03	0.09
Share of children younger than 18 who are in a single-parent or nonfamily household	0.05	0.09†	0.07	-0.03	0.04	0.03
Share of population with limited English proficiency	-0.01	-0.06	-0.13†	0.01*	0.02	-0.01
Share of housing units that are vacant	0.05	0.02	0.12	0.01	0.00	0.00
Labor Market Structure						
Share of Employment by Industry						
Agriculture, forestry, fishing and hunting, and mining	-0.04	0.03	0.21	-0.05*	0.01	0.03
Arts, entertainment, and recreation, and accommodation and food services	0.03	0.03	-0.09	0.05*	-0.07	-0.13
Construction	0.01	0.07	0.14	0.06	0.02	-0.02
Educational services	0.01	0.08	-0.03	-0.05	-0.04	-0.12
Finance, insurance, and real estate	0.04	-0.02	-0.20	0.04*	-0.02	-0.03
Health care and social assistance	-0.08	-0.01	0.01	0.00	-0.12	-0.07
Information	0.06	-0.04	-0.16†	0.07*	0.00	-0.08
Manufacturing	-0.08	-0.12†	0.10†	-0.02	0.04	0.18†*
Professional and related services	0.12†	0.03	-0.27†	0.04*	0.02	-0.11†*
Retail trade	-0.11†	-0.01	0.17†	0.11†	0.00	0.05
Transportation and warehousing, and utilities	-0.05	-0.01	0.11†	-0.08*	0.10†	0.22†
Wholesale trade	-0.06	-0.10†	-0.04	-0.04	0.06	0.12†
Other services (except public administration)	0.14†	0.08	0.09	0.06	0.07	-0.01
Public administration	0.10†	0.09	-0.04	-0.07	0.00	-0.06
Share of Employment by Occupation						
Agricultural, natural resources, and construction	-0.04	0.05	0.19†	-0.03*	0.01	0.04
Maintenance, production, and transportation	-0.12	-0.06	0.24†	-0.06*	0.09	0.22†*
Management, business, science and arts	0.14	0.03	-0.24†	0.02*	-0.04	-0.16†
Sales and office	-0.06	0.02	0.01	0.02	-0.09	-0.07
Service	-0.03	-0.03	-0.04	0.07	0.00	0.04
Geography						
Region	0.11	0.18†*	0.52†	0.20†*	0.12	0.12
Share of population living in rural areas	-0.03	0.05	0.25†	-0.01*	0.00	0.05

Source:　American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes:　See the appendix text for additional information about the sample and definitions of terms and symbols. This table reports unweighted Pearson correlation coefficients calculated at the LWIA level, except reported correlations for region, which is a generalized version of the correlation coefficient that accounts for its categorical measurement. This correlation measure is calculated as the square root of the coefficient of determination from a regression of the outcome measure (indicated in the column) on a set of binary indicator variables corresponding to the DOL regions. † indicates significance at the $p < 0.05$ level of the *gender-specific correlations*. * indicates a significant difference *between females and males* at the $p < 0.05$ level.

Table F.44. Correlations Between LWIA Characteristics and Rates of LWIA-Level Occupational Skills Training in the WIA Adult Program, by Gender (CY 2009 Exits), Part 2

	Share of Customers with Focus of Occupational Skills Training in:			
	Sales, Clerical, and Administrative Support (N = 460 Areas)		Service (N = 460 Areas)	
LWIA Characteristics	Females	Males	Females	Males
Program Measures				
Share of all customers receiving training	-0.14†	-0.07	-0.07	0.03
Share of all customers receiving supportive services	-0.18†	-0.09	-0.01	-0.01
Number of customers	0.00	-0.02	0.02	0.03
Economic Activity and Social Indicators				
Unemployment rate	-0.08	-0.12†	0.12†	0.15†
Female labor-force participation rate	0.15†	0.17†	0.15†	-0.04*
Poverty rate	-0.21†	-0.17†	-0.07	0.05
Share of children younger than 18 who are in a single-parent or nonfamily household	-0.11†	-0.13†	0.01	0.07
Share of population with limited English proficiency	0.21†	0.03*	0.01	0.00
Share of housing units that are vacant	-0.16†	-0.08	0.02	0.10
Labor Market Structure				
Share of Employment by Industry				
Agriculture, forestry, fishing and hunting, and mining	-0.04	0.05	-0.21†	-0.08*
Arts, entertainment, and recreation, and accommodation and food services	0.05	-0.05	0.08	0.17†
Construction	-0.03	0.00	-0.12†	0.01*
Educational services	-0.07	-0.06	0.09†	0.05
Finance, insurance, and real estate	0.19†	0.07	0.08	-0.05
Health care and social assistance	-0.09†	0.00	0.07	0.09†
Information	0.16†	0.05	0.06	0.00
Manufacturing	-0.18†	-0.10†	0.00	-0.09
Professional and related services	0.30†	0.13†*	0.08	0.02
Retail trade	-0.18†	-0.10†	-0.05	-0.01
Transportation and warehousing, and utilities	-0.16†	-0.15†	-0.03	-0.11†
Wholesale trade	0.03	0.02	0.01	-0.14†*
Other services (except public administration)	-0.01	0.04	-0.11	-0.04
Public administration	0.08	0.09	0.00	0.12
Share of Employment by Occupation				
Agricultural, natural resources, and construction	-0.01	0.01	-0.19†	-0.02*
Maintenance, production, and transportation	-0.28†	-0.13†*	-0.08	-0.09
Management, business, science and arts	0.23†	0.15†	0.09†	0.01
Sales and office	0.00	-0.07	0.05	-0.04
Service	-0.06	-0.07	0.06	0.19†*
Geography				
Region	0.41†	0.18†*	0.39†	0.19†*
Share of population living in rural areas	-0.23†	-0.03*	-0.12†	0.00

Source: American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table reports unweighted Pearson correlation coefficients calculated at the LWIA level, except reported correlations for region, which is a generalized version of the correlation coefficient that accounts for its categorical measurement. This correlation measure is calculated as the square root of the coefficient of determination from a regression of the outcome measure (indicated in the column) on a set of binary indicator variables corresponding to the DOL regions. † indicates significance at the $p < 0.05$ level of the *gender-specific correlations*. * indicates a significant difference *between females and males* at the $p < 0.05$ level.

Table F.45. Correlations Between LWIA Characteristics and Rates of LWIA-Level Occupational Skills Training in the WIA Dislocated Worker Program, by Gender (CY 2009 Exits), Part 1

	Share of Customers with Focus of Occupational Skills Training in:					
	Agricultural, Natural Resources, and Construction (N = 460 Areas)		Managerial, Administrative, Professional, and Technical (N = 460 Areas)		Mechanical and Transportation (N = 460 Areas)	
LWIA Characteristics	Females	Males	Females	Males	Females	Males
Program Measures						
Share of all customers receiving training	0.01	-0.03	0.13†	-0.03*	0.05	0.11†
Share of all customers receiving supportive services	-0.02	0.01	0.08	-0.11†*	0.02	0.13†
Number of customers	-0.01	-0.01	-0.02	0.04	0.00	-0.05
Economic Activity and Social Indicators						
Unemployment rate	0.00	-0.01	-0.07	-0.17†	0.11†	0.13†
Female labor-force participation rate	0.02	-0.11†*	-0.09	0.23†*	-0.13†	-0.19†
Poverty rate	0.04	0.09†	0.14†	-0.26†*	0.17†	0.28†
Share of children younger than 18 who are in a single-parent or nonfamily household	0.13†	0.12†	0.07	-0.15†*	0.11	0.16
Share of population with limited English proficiency	-0.03	-0.07	-0.10†	-0.01*	-0.07	-0.10
Share of housing units that are vacant	-0.03	0.11†*	0.01	-0.21*	0.08	0.13
Labor Market Structure						
Share of Employment by Industry						
Agriculture, forestry, fishing and hunting, and mining	-0.06	0.08*	-0.03	-0.20†*	0.08	0.19†
Arts, entertainment, and recreation, and accommodation and food services	0.03	0.01	-0.10	-0.03	-0.05	-0.12†
Construction	0.03	0.03	0.04	-0.12†*	0.05	0.03
Educational services	0.02	-0.02	-0.06	-0.04	-0.01	0.09†
Finance, insurance, and real estate	0.00	-0.17†*	0.03	0.33†*	-0.15†	-0.28†*
Health care and social assistance	-0.03	0.06	0.03	-0.06	0.01	0.10
Information	0.02	-0.11†*	0.02	0.32†*	-0.15†	-0.28†*
Manufacturing	-0.05	-0.02	0.07	-0.03	0.07	0.13†
Professional and related services	0.06	-0.09*	-0.03	0.30†*	-0.15†	-0.35†*
Retail trade	-0.03	0.03	-0.01	-0.13†	0.12†	0.16†
Transportation and warehousing, and utilities	-0.01	0.04	0.11	-0.15†*	0.13†	0.22
Wholesale trade	-0.04	-0.13†	-0.03	0.07	-0.03	0.01
Other services (except public administration)	0.16†	0.28†*	0.03	-0.10†*	0.08	-0.05
Public administration	0.06	0.10†	-0.04	-0.13†	0.00	0.01
Share of Employment by Occupation						
Agricultural, natural resources, and construction	-0.03	0.08	-0.05	-0.24†	0.10†	0.17†
Maintenance, production, and transportation	-0.04	0.08	0.10	-0.26†*	0.17†	0.32†*
Management, business, science and arts	0.03	-0.10†*	-0.01	0.35†*	-0.15†	-0.32†*
Sales and office	0.02	-0.10†	0.01	0.14†*	-0.07	-0.08
Service	0.02	0.10†	-0.12†	-0.27†*	0.03	0.11†
Geography						
Region	0.11†	0.18†	0.42†	0.12*	0.16†	0.18†
Share of population living in rural areas	-0.08	0.09*	0.07	-0.21†*	0.13†	0.23†

Source: American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table reports unweighted Pearson correlation coefficients calculated at the LWIA level, except reported correlations for region, which is a generalized version of the correlation coefficient that accounts for its categorical measurement. This correlation measure is calculated as the square root of the coefficient of determination from a regression of the outcome measure (indicated in the column) on a set of binary indicator variables corresponding to the DOL regions. † indicates significance at the *p* < 0.05 level of the *gender-specific correlations*. * indicates a significant difference *between females and males* at the *p* < 0.05 level.

Table F.46. Correlations Between LWIA Characteristics and Rates of LWIA-Level Occupational Skills Training in the WIA Dislocated Worker Program, by Gender (CY 2009 Exits), Part 2

LWIA Characteristics	Share of Customers with Focus of Occupational Skills Training in:			
	Sales, Clerical and Administrative Support (N = 460 Areas)		Service (N = 460 Areas)	
	Females	Males	Females	Males
Program Measures				
Share of all customers receiving training	-0.12†	-0.07	-0.01	-0.03
Share of all customers receiving supportive services	-0.11†	-0.06	0.05	-0.05
Number of customers	-0.02	-0.03	0.03	0.07
Economic Activity and Social Indicators				
Unemployment rate	-0.05	-0.05	0.16†	0.07
Female labor-force participation rate	0.10†	0.07	0.01	-0.02
Poverty rate	-0.21†	-0.11†	-0.01	-0.02
Share of children younger than 18 who are in a single-parent or nonfamily household	-0.16	-0.08	0.00	-0.01
Share of population with limited English proficiency	0.23	0.16	-0.08	0.01
Share of housing units that are vacant	-0.24	-0.13	0.20	0.18
Labor Market Structure				
Share of Employment by Industry				
Agriculture, forestry, fishing and hunting, and mining	-0.04	-0.13†	0.02	-0.02
Arts, entertainment, and recreation, and accommodation and food services	0.05	0.14†	0.03	0.15†
Construction	-0.05	0.01	0.02	0.10†
Educational services	-0.03	-0.01	-0.01	-0.06
Finance, insurance, and real estate	0.17†	0.11†	-0.10†	-0.01
Health care and social assistance	-0.09	-0.09	0.04	-0.02
Information	0.15†	0.13†	-0.13†	-0.06
Manufacturing	-0.12†	-0.11†	0.09†	-0.07*
Professional and related services	0.24†	0.23†	-0.15†	0.02*
Retail trade	-0.12†	-0.15†	0.17†	0.07
Transportation and warehousing, and utilities	-0.15†	-0.13†	0.02	-0.14†*
Wholesale trade	0.06	0.00	0.05	-0.07
Other services (except public administration)	-0.04	0.06	-0.07	0.01
Public administration	0.00	0.03	-0.05	0.09†*
Share of Employment by Occupation				
Agricultural, natural resources, and construction	0.01	-0.09	0.03	0.07
Maintenance, production, and transportation	-0.24†	-0.16†	0.13†	-0.07*
Management, business, science and arts	0.18†	0.17†	-0.17†	-0.03*
Sales and office	0.04	-0.02	0.03	0.01
Service	-0.05	-0.01	0.13†	0.13†
Geography				
Region	0.48†	0.29†*	0.21†	0.17†
Share of population living in rural areas	-0.24†	-0.14†	0.14†	-0.02*

Source: American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table reports unweighted Pearson correlation coefficients calculated at the LWIA level, except reported correlations for region, which is a generalized version of the correlation coefficient that accounts for its categorical measurement. This correlation measure is calculated as the square root of the coefficient of determination from a regression of the outcome measure (indicated in the column) on a set of binary indicator variables corresponding to the DOL regions. † indicates significance at the $p < 0.05$ level of the *gender-specific correlations*. * indicates a significant difference *between females and males* at the $p < 0.05$ level.

Table F.47. Gender Differences in Service Receipt Before and After Controlling for Customer Characteristics and LWIA-Level Factors, by WIA Program (CY 2009 Exits)

Service Measures	Adult Program (N= 405,738 in 519 LWIAs)					Dislocated Worker Program (N=213,722 in 517 LWIAs)				
	First Stage	Second Stage		Third Stage		First Stage	Second Stage		Third Stage	
	Estimate of Raw Female-Male Difference	Estimate of Difference with Controls for Customer Characteristics	Percentage Change from First Stage	Estimate of Difference with Controls for Customer Characteristics and LWIA-Level Factors	Percentage Change from First Stage	Estimate of Raw Female-Male Difference	Estimate of Difference with Controls for Customer Characteristics	Percentage Change from First Stage	Estimate of Difference with Controls for Customer Characteristics and LWIA-Level Factors	Percentage Change from First Stage
All Customers										
Received Training Services	8.3*	4.1*	50.3	0.8*	90.6	0.8*	0.1	88.8	-0.7*	186.4
Received Supportive Services	5.9*	3.5*	41.0	1.7*	70.7	1.6*	1.2*	23.4	1.1*	30.1
Customers Who Received Training Services										
Focus of Occupational Skills Training										
Agricultural, natural resources, and construction	-9.2*	-9.3*	0.7	-8.6*	7.1	-4.6*	-9.3*	0.7	-4.4*	5.1
Managerial, administrative, professional, and technical	20.8*	18.8*	9.7	17.9*	14.1	15.9*	18.8*	9.7	15.2*	4.5
Mechanical and transportation	-45.2*	-42.7*	5.4	-41.1*	9.1	-53.6*	-42.7*	5.4	-51.0*	4.7
Sales, clerical, and administrative support	11.0*	12.9*	16.9	12.0*	8.5	19.7*	12.9*	16.9	19.0*	3.7
Service	22.6*	20.4*	9.8	19.8*	12.2	22.5*	20.4*	9.8	21.2*	5.8

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: See the appendix text for additional information about the sample and definitions of terms and symbols. Estimates are expressed in percentage points and are based on linear regression models in which the dependent variable is a binary indicator for the service receipt measure of interest, and the explanatory variables are a female indicator (in all three stages), the customer characteristics listed in Table F.2 (in the second and third stages), and a set of LWIA-specific intercepts (in the third stage only). Tables G.1, G.2, and G.3 (in Appendix G) display estimated coefficients for all of the explanatory variables included in the third-stage regressions, and list the number LWIAs for which intercepts were created. * indicates significant at the $p < 0.05$ level. Percentage change from the first stage is calculated by taking the difference between each higher-stage estimate and the first-stage estimate, dividing by the absolute value of the first-stage estimate, taking the absolute value, and multiplying by 100.

Table F.48. Correlations Between LWIA Characteristics and LWIA-Level Employment Outcomes from the WIA Adult Program, by Gender (CY 2009 Exits)

LWIA Characteristics	Share of Exiters Employed Within One Year (N = 519 Areas)		Share of Exiters Employed in First Quarter (N = 519 Areas)		Share of Exiters Employed in All Four Quarters (N = 519 Areas)	
	Females	Males	Females	Males	Females	Males
Program Measures						
Share of all customers receiving training	0.42†	0.19†*	0.45†	0.24†*	0.45†	0.24†*
Share of all customers receiving supportive services	0.22†	0.04†*	0.25†	0.12†*	0.27†	0.09*
Number of customers	-0.20†	-0.11†	-0.24†	-0.16†	-0.21†	-0.13†
Economic Activity and Social Indicators						
Unemployment rate	-0.01	-0.04	0.02	-0.05	-0.03	-0.09†
Female labor-force participation rate	-0.08	-0.05	-0.08	0.00	-0.07	0.02
Poverty rate	0.09†	0.05	0.08	0.01	0.06	-0.01
Share of children younger than 18 who are in a single-parent or nonfamily household	0.06	0.05	0.04	0.00	0.00	-0.02
Share of population with limited English proficiency	-0.16†	-0.09†	-0.14†	-0.09†	-0.15†	-0.11†
Share of housing units that are vacant	0.18†	0.11†	0.18†	0.13†	0.14†	0.07
Labor Market Structure						
Share of Employment by Industry						
Agriculture, forestry, fishing and hunting, and mining	0.13†	0.11†	0.10†	0.09	0.13†	0.06
Arts, entertainment, and recreation, and accommodation and food services	-0.04	-0.02	-0.01	0.02	-0.06	-0.02
Construction	0.08	0.14†	0.08	0.11	0.08	0.06
Educational services	0.02	-0.11†*	-0.01	-0.09†	-0.04	-0.09†
Finance, insurance, and real estate	-0.17†	-0.11†	-0.15†	-0.11†	-0.16†	-0.06
Health care and social assistance	0.02	-0.03	0.00	-0.02	-0.01	-0.02
Information	-0.20†	-0.13†	-0.15†	-0.10†	-0.16†	-0.07
Manufacturing	0.06	-0.01	0.02	-0.03	0.06	0.01
Professional and related services	-0.22†	-0.09†*	-0.16†	-0.05	-0.18†	-0.05*
Retail trade	0.21†	0.14†	0.20†	0.13†	0.21†	0.13†
Transportation and warehousing, and utilities	0.08	0.07	0.07	0.04	0.07	0.03
Wholesale trade	-0.10	-0.04	-0.08	-0.07	-0.06	-0.04
Other services (except public administration)	0.02	0.06	0.04	0.06	0.05	0.04
Public administration	0.04	0.09	0.07	0.08	0.06	0.05
Share of Employment by Occupation						
Agricultural, natural resources, and construction	0.11†	0.13†	0.09†	0.09†	0.10†	0.04
Maintenance, production, and transportation	0.20†	0.09†	0.15†	0.06	0.18†	0.07
Management, business, science and arts	-0.21†	-0.14†	-0.18†	-0.10†	-0.19†	-0.07
Sales and office	-0.03	0.01	0.00	0.00	0.00	0.02
Service	0.07	0.05	0.08	0.07	0.05	0.01
Geography						
Region	0.34†	0.20†	0.32†	0.18†	0.34†	0.22†
Share of population living in rural areas	0.21	0.14†	0.18†	0.14†	0.21†	0.11†

Source: American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table reports unweighted Pearson correlation coefficients calculated at the LWIA level, except reported correlations for region, which is a generalized version of the correlation coefficient that accounts for its categorical measurement. This correlation measure is calculated as the square root of the coefficient of determination from a regression of the outcome measure (indicated in the column) on a set of binary indicator variables corresponding to the DOL regions. † indicates significance at the $p < 0.05$ level of the *gender-specific correlations*. * indicates a significant difference *between females and males* at the $p < 0.05$ level.

Table F.49. Correlations Between LWIA Characteristics and LWIA-Level Earnings Outcomes from the WIA Adult Program, by Gender (CY 2009 Exits)

LWIA Characteristics	Average Quarterly Post-Program Earnings (N = 519 Areas)		Average Change in Quarterly Earnings (N = 519 Areas)	
	Females	Males	Females	Males
Program Measures				
Share of all customers receiving training	0.34†	0.20†*	0.48†	0.41†
Share of all customers receiving supportive services	0.16†	-0.03*	0.40†	0.28†*
Number of customers	-0.13†	-0.06	-0.25	-0.22
Economic Activity and Social Indicators				
Unemployment rate	0.01	-0.08	0.10†	0.08
Female labor-force participation rate	-0.11†	-0.03	-0.18†	0.01*
Poverty rate	0.00	-0.09†	0.19†	0.10†
Share of children younger than 18 who are in a single-parent or nonfamily household	-0.01	-0.10†	0.08	0.06
Share of population with limited English proficiency	0.01	-0.01	-0.07	-0.04
Share of housing units that are vacant	0.07	0.06	0.07	0.02
Labor Market Structure				
Share of Employment by Industry				
Agriculture, forestry, fishing and hunting, and mining	0.09†	0.06	0.20†	0.05*
Arts, entertainment, and recreation, and accommodation and food services	0.03	0.00	0.00	0.05
Construction	0.12†	0.11†	0.04	-0.04
Educational services	-0.06	-0.09†	-0.07	-0.16†
Finance, insurance, and real estate	0.03	0.05	-0.19†	-0.10†
Health care and social assistance	-0.06	-0.10†	-0.02	-0.04
Information	-0.02	0.02	-0.17†	-0.09†
Manufacturing	-0.16†	-0.13†	0.05	0.12†
Professional and related services	0.03	0.11†	-0.19†	-0.05*
Retail trade	0.13†	0.12†	0.11†	0.01
Transportation and warehousing, and utilities	0.02	-0.06	0.12†	0.10†
Wholesale trade	-0.04	-0.03	-0.05	-0.02
Other services (except public administration)	0.16†	0.10†	0.08	0.07
Public administration	0.07	0.06	0.05	0.00
Share of Employment by Occupation				
Agricultural, natural resources, and construction	0.12†	0.08	0.16†	0.02*
Maintenance, production, and transportation	-0.08	-0.11†	0.19†	0.17†
Management, business, science and arts	-0.05	0.02	-0.21†	-0.12
Sales and office	0.12†	0.12†	-0.07	-0.10†
Service	0.06	-0.02	0.08	0.04
Geography				
Region	0.28†	0.19†	0.39†	0.32†*
Share of population living in rural areas	-0.05	-0.05	0.14†	0.08

Source:　American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes:　See the appendix text for additional information about the sample and definitions of terms and symbols. This table reports unweighted Pearson correlation coefficients calculated at the LWIA level, except reported correlations for region, which is a generalized version of the correlation coefficient that accounts for its categorical measurement. This correlation measure is calculated as the square root of the coefficient of determination from a regression of the outcome measure (indicated in the column) on a set of binary indicator variables corresponding to the DOL regions. † indicates significance at the $p < 0.05$ level of the *gender-specific correlations*. * indicates a significant difference *between females and males* at the $p < 0.05$ level.

Table F.50. Correlations Between LWIA Characteristics and LWIA-Level Employment Outcomes from the WIA Dislocated Worker Program, by Gender (CY 2009 Exits)

LWIA Characteristics	Share of Exiters Employed Within One Year (N = 517 Areas)		Share of Exiters Employed in First Quarter (N = 517 Areas)		Share of Exiters Employed in All Four Quarters (N = 517 Areas)	
	Females	Males	Females	Males	Females	Males
Program Measures						
Share of all customers receiving training	0.37†	0.29†	0.39†	0.32†	0.33†	0.28†
Share of all customers receiving supportive services	0.17†	0.14†	0.25†	0.24†	0.23†	0.23†
Number of customers	-0.25†	-0.19†	-0.28†	-0.23†	-0.25†	-0.22†
Economic Activity and Social Indicators						
Unemployment rate	-0.16†	-0.10†	-0.12†	-0.13†	-0.19†	-0.20†
Female labor-force participation rate	0.14†	0.07	0.11†	0.10†	0.17†	0.15†
Poverty rate	-0.06	-0.05	-0.05	-0.09†	-0.10†	-0.14†
Share of children younger than 18 who are in a single-parent or nonfamily household	-0.09†	-0.16†	-0.10†	-0.19†	-0.14†	-0.21†
Share of population with limited English proficiency	-0.18†	-0.10†	-0.18†	-0.11†	-0.24†	0.19†
Share of housing units that are vacant	0.07	-0.01	0.12	0.01	0.02	-0.05
Labor Market Structure						
Share of Employment by Industry						
Agriculture, forestry, fishing and hunting, and mining	0.12†	0.12†	0.06	0.07	0.07	0.08
Arts, entertainment, and recreation, and accommodation and food services	-0.10†	-0.11†	-0.02	-0.09†	-0.13†	-0.15†
Construction	0.04	0.02	0.07	0.03	0.02	0.01
Educational services	-0.04	-0.04	-0.08	-0.05	-0.08	-0.05
Finance, insurance, and real estate	-0.11†	-0.10†	-0.11†	-0.08	-0.09†	-0.09
Health care and social assistance	-0.02	-0.02	0.04	-0.03	0.03	-0.02
Information	-0.18†	-0.10†	-0.16†	-0.06	-0.13†	-0.06
Manufacturing	0.14†	0.16†	0.11†	0.12†	0.20†	0.19†
Professional and related services	-0.17†	-0.17†	-0.16†	-0.12†	-0.17†	-0.14†
Retail trade	0.11†	0.12†	0.18†	0.14†	0.15†	0.08†
Transportation and warehousing, and utilities	0.04	0.05	0.05	0.03	0.05	0.06
Wholesale trade	-0.02	0.12†*	-0.06	0.06	0.00	0.02
Other services (except public administration)	-0.08	-0.15†	-0.08	-0.13†	-0.13†	-0.16†
Public administration	0.03	-0.05	0.01	-0.02	-0.05	-0.05
Share of Employment by Occupation						
Agricultural, natural resources, and construction	0.05	0.06	0.03	0.03	-0.02	0.00
Maintenance, production, and transportation	0.18†	0.18†	0.16†	0.13†	0.21†	0.18†
Management, business, science and arts	-0.10†	-0.12†	-0.12†	-0.07	-0.09†	-0.05
Sales and office	-0.07	0.01	-0.02	0.02	-0.01	-0.04
Service	-0.08	-0.10†	0.00	-0.10†	-0.13†	-0.17†
Geography						
Region	0.34†	0.31†	0.37†	0.31†	0.42†	0.36†
Share of population living in rural areas	0.20†	0.12†	0.18†	0.12†	0.23†	0.16†

Source:　American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes:　See the appendix text for additional information about the sample and definitions of terms and symbols. This table reports unweighted Pearson correlation coefficients calculated at the LWIA level, except reported correlations for region, which is a generalized version of the correlation coefficient that accounts for its categorical measurement. This correlation measure is calculated as the square root of the coefficient of determination from a regression of the outcome measure (indicated in the column) on a set of binary indicator variables corresponding to the DOL regions. † indicates significance at the $p < 0.05$ level of the *gender-specific correlations*. * indicates a significant difference *between females and males* at the $p < 0.05$ level.

Table F.51. Correlations Between LWIA Characteristics and LWIA-Level Earnings Outcomes from the WIA Dislocated Worker Program, by Gender (CY 2009 Exits)

LWIA Characteristics	Average Quarterly Post-Program Earnings (N = 517 Areas)		Average Change in Quarterly Earnings (N = 517 Areas)	
	Females	Males	Females	Males
Program Measures				
Share of all customers receiving training	0.12†	0.05	0.29†	0.26†
Share of all customers receiving supportive services	0.01	0.03	0.12†	0.15†
Number of customers	-0.17†	-0.14†	-0.13†	-0.12†
Economic Activity and Social Indicators				
Unemployment rate	-0.29†	-0.29†	0.19†	0.30†
Female labor-force participation rate	0.36†	0.31†	-0.17†	-0.16†
Poverty rate	-0.39†	-0.38†	0.17†	0.18†
Share of children younger than 18 who are in a single-parent or nonfamily household	-0.28†	-0.34†	0.12†	0.11†
Share of population with limited English proficiency	-0.04	-0.07	-0.03	0.03
Share of housing units that are vacant	-0.25†	-0.28†	0.15†	0.15†
Labor Market Structure				
Share of Employment by Industry				
Agriculture, forestry, fishing and hunting, and mining	-0.17†	-0.09†	0.20†	0.17†
Arts, entertainment, and recreation, and accommodation and food services	-0.07	-0.19†	0.07	0.04
Construction	-0.17†	-0.18†	0.10†	0.04
Educational services	-0.06	-0.04	-0.10†	-0.12†
Finance, insurance, and real estate	0.31†	0.23†	-0.21†	-0.23†
Health care and social assistance	-0.17†	-0.07	-0.08	0.01
Information	0.29†	0.26†	-0.23†	-0.18†
Manufacturing	-0.08	0.05*	0.05	0.13†
Professional and related services	0.39†	0.24†*	-0.18†	-0.20†
Retail trade	-0.23†	-0.19†	0.15†	0.17†
Transportation and warehousing, and utilities	-0.12†	-0.03	0.07	0.14†
Wholesale trade	0.05	0.10†	-0.05	-0.03
Other services (except public administration)	-0.02	-0.13†	-0.04	-0.08
Public administration	0.05	-0.09†*	0.10†	-0.02*
Share of Employment by Occupation				
Agricultural, natural resources, and construction	-0.27†	-0.22†	0.20†	0.18†
Maintenance, production, and transportation	-0.30†	-0.16†*	0.19†	0.24†
Management, business, science and arts	0.45†	0.34†*	-0.26†	-0.28†
Sales and office	0.07	0.03	-0.02	-0.05
Service	-0.36†	-0.37†	0.13†	0.13†
Geography				
Region	0.25†	0.28†	0.25†	0.28†
Share of population living in rural areas	-0.25†	-0.18†	0.15†	0.14†

Source: American Community Survey five-year summary file for 2006–2010 and public-use WIASRD data for program year 2010, quarter 4.

Notes: See the appendix text for additional information about the sample and definitions of terms and symbols. This table reports unweighted Pearson correlation coefficients calculated at the LWIA level, except reported correlations for region, which is a generalized version of the correlation coefficient that accounts for its categorical measurement. This correlation measure is calculated as the square root of the coefficient of determination from a regression of the outcome measure (indicated in the column) on a set of binary indicator variables corresponding to the DOL regions. † indicates significance at the $p < 0.05$ level of the *gender-specific correlations*. * indicates a significant difference *between females and males* at the $p < 0.05$ level.

Table F.52. Gender Differences in the Employment and Earnings Outcomes from the WIA Adult Program After Controlling for Customer Characteristics, Services Received, and LWIA-Level Factors, by WIA Program (CY 2009 Exits)

Outcome Measures	First Stage — Estimate of Raw Female-Male Difference	Second Stage — Estimate of Difference with Controls for Customer Characteristics	Percentage Change from First Stage	Third Stage — Estimate of Difference with Controls for Customer Characteristics and Service Receipt	Percentage Change from First Stage	Fourth Stage — Estimate of Difference with Controls for Customer Characteristics, Service Receipt, and LWIA-Level Factors	Percentage Change from First Stage
Employment Outcomes (Percentages)							
Within one year	1.2*	-0.3*	127.4	-0.7*	157.5	-0.4*	133.3
In first quarter	3.7*	1.9*	46.9	1.2*	67.3	1.3*	65.5
In all four quarters	4.9*	3.9*	19.9	2.9*	40.3	3.0*	38.9
Earnings Outcomes (Dollars)							
Average quarterly post-program earnings	-529.5*	-189.5*	64.2	-310.5*	41.4	-322.4*	39.1
Average change in quarterly earnings	1,025.0*	-117.2*	111.4	-235.9*	123.0	-241.2*	123.5

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: All results in this table are based on N = 405,738 exiters from the WIA Adult Program located in 519 LWIAs. See the appendix text for additional information about the sample and definitions of terms and symbols. Estimates are based on linear regression models in which the dependent variable is the outcome of interest, and the explanatory variables are a female indicator (in all four stages), the customer characteristics listed in Table F.2 (in the second, third, and fourth stages), services received (in the third and fourth stages), and a set of LWIA-specific intercepts (in the fourth stage only). Because the occupation of training was missing for a relatively large percentage of customers, we included an indicator to account for missing values on this variable. Tables G.4 and G.5 display estimated coefficients for all of the explanatory variables included in the fourth-stage regressions, and list the number LWIAs for which intercepts were created. * indicates significant at the $p < 0.05$ level. Percentage change from the first stage is calculated by taking the difference between each higher-stage estimate and the first-stage estimate, dividing by the first-stage estimate, taking the absolute value, and multiplying by 100.

Table F.53. Gender Differences in the Employment and Earnings Outcomes from the WIA Dislocated Worker Program After Controlling for Customer Characteristics, Services Received, and LWIA-Level Factors, by WIA Program (CY 2009 Exits)

Outcome Measures	First Stage	Second Stage		Third Stage		Fourth Stage	
	Estimate of Raw Female-Male Difference	Estimate of Difference with Controls for Customer Characteristics	Percentage Change from First Stage	Estimate of Difference with Controls for Customer Characteristics and Service Receipt	Percentage Change from First Stage	Estimate of Difference with Controls for Customer Characteristics, Service Receipt, and LWIA-Level Factors	Percentage Change from First Stage
Employment Outcomes (Percentages)							
Within one year	-1.6*	-1.5*	5.1	-1.3*	17.4	-0.8*	50.3
In first quarter	0.1	0.5*	251.8	0.5*	264.3	0.7*	396.8
In all four quarters	1.4*	2.0*	43.0	1.8*	23.2	1.9*	34.4
Earnings Outcomes (Dollars)							
Average quarterly post-program earnings	-1,035.9*	-639.6*	38.3	-612.8*	40.9	-619.8*	40.2
Average change in quarterly earnings	537.9*	-505.0*	193.9	-468.9*	187.2	-427.1*	179.4

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: All results in this table are based on N=213,722 exiters from the WIA Adult Program located in 517 LWIAs. See the appendix text for additional information about the sample and definitions of terms and symbols. Estimates are based on linear regression models in which the dependent variable is the outcome of interest, and the explanatory variables are a female indicator (in all four stages), the customer characteristics listed in Table F.2 (in the second, third, and fourth stages), services received (in the third and fourth stages), and a set of LWIA-specific intercepts (in the fourth stage only). Because the occupation of training was missing for a relatively large percentage of customers, we included an indicator to account for missing values on this variable. Tables G.4 and G.5 display estimated coefficients for all of the explanatory variables included in the fourth-stage regressions, and list the number LWIAs for which intercepts were created. * indicates significant at the *p* < 0.05 level. Percentage change from the first stage is calculated by taking the difference between each higher-stage estimate and the first-stage estimate, dividing by the first-stage estimate, taking the absolute value, and multiplying by 100.

APPENDIX G

COEFFICIENT ESTIMATES FOR THE FINAL-STAGE REGRESSION MODELS

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This appendix contains the full set of coefficient estimates for the final-stage regression models presented in Appendix F, Tables F.47, F.52, and F.53. Appendix A includes a full description of the variables included in the analysis.

Appendix F provides much of the background for the analyses presented here. It includes a description of the main analysis samples of records from the Adult and Dislocated Worker programs drawn from the WIA Standardized Records Data (WIASRD) system. Most regressions presented in this appendix use the full sample of exiters, but the analyses of occupational skills training (in Tables G.2 and G.3) are limited to customers who received some training and for whom an occupational focus was reported. The regression models differ between the Adult and Dislocated Worker programs because low-income status and receipt of TANF or other public assistance in the last six months are only included for analyses of the Adult program, as these items are not among the reporting requirements for the Dislocated Worker program. Similarly, displaced homemaker status is included only for analyses of the Dislocated Worker program, since it is not a required reporting item for the Adult program.

The regressions presented in this appendix include separate intercepts for each of the consistent-boundary geographic service areas used to define local workforce investment areas (LWIAs), as discussed in Appendices B and F.

All of the explanatory variables included in the regressions are categorical measures. For binary measures, we present the coefficient associated with the presence of the characteristic versus the absence of the characteristic. For multivalued measures, we present the coefficients associated with the difference between the listed category and the (omitted) reference category.

Finally, we use the following abbreviation and symbols in the tables:

- CY: calendar year

- GED: General Educational Development test

- LWIA: local workforce investment areas

- NA: not available

- Ref.: the reference category

- TANF: Temporary Assistance for Needy Families program

- WIA: Workforce Investment Act

- WIASRD: WIA Standardized Records Data

Table G.1. Full Regression Results: Receipt of Training and Supportive Services, by WIA Program (CY 2009 Exits)

	Adult Program		Dislocated Worker Program	
Variable	Received Training Services	Received Supportive Services	Received Training Services	Received Supportive Services
Demographic Characteristics				
Age (ref.: 25–54 years old)				
18–24 years old	1.69* (0.15)	0.17 (0.13)	1.72* (0.29)	-0.81* (0.24)
55 and older	-3.77* (0.14)	-1.45* (0.12)	-6.25* (0.20)	-1.61* (0.17)
Female	0.78* (0.11)	1.71* (0.09)	-0.73* (0.16)	1.11* (0.13)
Race/Ethnicity (ref.: White, non-Hispanic)				
Black, non-Hispanic	-1.60* (0.16)	-0.16 (0.13)	0.07 (0.26)	0.01 (0.20)
Hispanic/Latino	-1.35* (0.18)	-0.40* (0.16)	-0.40 (0.27)	1.12* (0.23)
Other	0.08 (0.20)	-0.50* (0.17)	-0.32 (0.28)	0.09 (0.22)
Pre-Program Characteristics				
Education and Labor Market				
Education (ref.: high school or GED diploma)				
Below high school	-2.96* (0.16)	-0.43* (0.14)	-3.65* (0.25)	1.23* (0.23)
Some college	0.31* (0.13)	-0.01 (0.11)	-0.31 (0.20)	-0.98* (0.16)
Bachelor's degree or beyond	-2.29* (0.16)	-1.99* (0.13)	-3.29* (0.23)	-2.24* (0.18)
Employment status at entry into WIA program (ref.: not employed)				
Employed	8.11* (0.16)	-0.44* (0.14)	6.65* (0.40)	0.10 (0.33)
Employed, received notice of termination	5.52* (0.54)	2.46* (0.43)	1.14* (0.50)	-0.29 (0.43)
Average pre-program quarterly earnings (ref.: $1 to $2,499)				
None	0.68* (0.16)	0.03 (0.14)	3.01* (0.30)	1.36* (0.25)
$2,500 to $4,999	1.01* (0.16)	-0.28 (0.15)	1.07* (0.26)	0.09 (0.23)
$5,000 to $7,499	1.86* (0.18)	-1.15* (0.16)	1.65* (0.27)	0.71* (0.23)
$7,500 to $9,999	2.56* (0.21)	-1.79* (0.18)	1.63* (0.30)	0.31 (0.25)
$10,000 to $19,999	2.60* (0.19)	-2.49* (0.16)	0.30 (0.28)	-0.67* (0.23)
$20,000 or more	1.93* (0.28)	-2.58* (0.22)	-0.18 (0.40)	-1.74* (0.30)

Table G.1 (continued)

Variable	Adult Program		Dislocated Worker Program	
	Received Training Services	Received Supportive Services	Received Training Services	Received Supportive Services
Family				
Single parent	3.03* (0.20)	2.68* (0.18)	2.44* (0.34)	2.97* (0.29)
Displaced homemaker	NA	NA	0.02 (0.27)	-0.11 (0.28)
Poverty Indicators				
Low income	1.68* (0.15)	1.82* (0.13)	NA	NA
TANF recipient	-0.16 (0.36)	-0.80* (0.30)	NA	NA
Recipient of other public assistance	-0.16 (0.36)	-0.80* (0.30)	NA	NA
Other Considerations				
Persons with disability	-6.17* (0.25)	4.03* (0.24)	-1.46* (0.43)	1.53* (0.40)
Limited English proficiency	2.53* (0.48)	0.83 (0.42)	1.22* (0.60)	2.67* (0.52)
Veteran or eligible spouse	0.11 (0.20)	2.39* (0.19)	0.39 (0.29)	1.53* (0.25)
Additional Regression Information				
Number of customers	405,738	405,738	213,722	213,722
Number of LWIAs	519	519	517	517
R-squared	0.4697	0.3797	0.4032	0.3662
Mean of dependent variable (percent)	26.67	15.14	29.93	16.25

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: This table presents the coefficients and standard errors (shown in parentheses) from a series of linear regression models in which (1) the dependent variable is a binary measure of the service receipt indicated in the column header, and (2) covariates include the variables listed in the rows and a series of LWIA-specific intercepts. The coefficients on the female indicator variable displayed in this table correspond to the entries in the top panel of Table F.47. Estimates of the LWIA-specific intercepts are not reported in the table. All reported estimates were multiplied by 100; as a result, they can be interpreted as the difference in percentage points relative to the reference category. For binary covariates, the reference category is the value omitted from the table. For multivalued categorical covariates, the reference category is indicated in parentheses next to the variable name. Appendix F provides additional details about the analysis. * indicates significance at the $p < 0.05$ level.

Table G.2. Full Regression Results: Focus of Occupational Skills Training Among Customers of the WIA Adult Program Who Received Training (CY 2009 Exits)

Variable	Agricultural, Natural Resources, and Construction	Managerial, Administration, Professional, or Technical	Mechanic, Installer, Repairer, or Precision	Sales, Clerical, and Administrative Support	Service
Demographic Characteristics					
Age (ref.: 25–54 years old)					
18–24 years old	0.21	0.83*	-5.64*	-1.64*	6.24*
	(0.18)	(0.38)	(0.31)	(0.27)	(0.38)
55 and older	-0.92*	-4.18*	2.51*	4.44*	-1.85*
	(0.28)	(0.66)	(0.60)	(0.51)	(0.51)
Female	-8.57*	17.86*	-41.07*	11.95*	19.82*
	(0.17)	(0.34)	(0.33)	(0.25)	(0.30)
Race/Ethnicity (ref.: White, non-Hispanic)					
Black, non-Hispanic	-0.44*	-5.31*	1.15*	-0.89*	5.50*
	(0.19)	(0.44)	(0.37)	(0.29)	(0.41)
Hispanic/Latino	-0.66*	-4.66*	2.85*	1.24*	1.23*
	(0.26)	(0.53)	(0.49)	(0.43)	(0.50)
Other	-0.28	-1.88*	2.15*	-1.10*	1.10*
	(0.29)	(0.60)	(0.55)	(0.46)	(0.55)
Pre-Program Characteristics					
Education and Labor Market					
Education (ref.: high school or GED diploma)					
Below high school	1.26*	-9.35*	5.66*	-1.75*	4.19*
	(0.33)	(0.45)	(0.53)	(0.44)	(0.55)
Some college	-1.40*	18.95*	-8.73*	-1.74*	-7.08*
	(0.16)	(0.39)	(0.30)	(0.26)	(0.34)
Bachelor's degree or beyond	-3.68*	33.58*	-17.12*	-2.78*	-10.00*
	(0.21)	(0.63)	(0.49)	(0.42)	(0.47)
Employment status at entry into WIA program (ref.: not employed)					
Employed	0.89*	8.86*	-4.55*	-3.49*	-1.70*
	(0.16)	(0.40)	(0.31)	(0.26)	(0.37)
Employed, received notice of termination	0.54	4.14*	-1.02	-0.15	-3.50*
	(0.79)	(2.01)	(1.73)	(1.40)	(1.48)

Table G.2 (continued)

Variable	Agricultural, Natural Resources, and Construction	Managerial, Administration, Professional, or Technical	Mechanic, Installer, Repairer, or Precision	Sales, Clerical and Administrative Support	Service
Average pre-program quarterly earnings (ref.: $1 to $2,499)					
None	0.56*	2.06*	-0.29	-1.17*	-1.16*
	(0.20)	(0.43)	(0.37)	(0.33)	(0.42)
$2,500 to $4,999	-0.56*	1.17*	1.85*	-1.03*	-1.43*
	(0.19)	(0.45)	(0.37)	(0.33)	(0.44)
$5,000 to $7,499	-0.50	1.85*	4.07*	-0.04	-5.37*
	(0.27)	(0.56)	(0.49)	(0.40)	(0.50)
$7,500 to $9,999	-1.61*	3.11*	5.64*	-0.34	-6.80*
	(0.35)	(0.70)	(0.65)	(0.50)	(0.56)
$10,000 to $19,999	-3.22*	8.15*	1.61*	-3.72*	-2.83*
	(0.36)	(0.70)	(0.63)	(0.45)	(0.54)
$20,000 or more	-3.79*	17.35*	-8.05*	-5.79*	0.28
Family					
Single parent	0.14	4.15*	-4.78*	-1.99*	2.49*
	(0.15)	(0.45)	(0.32)	(0.30)	(0.43)
Poverty Indicators					
Low income	-1.08*	0.38	1.98*	-2.76*	1.48*
	(0.20)	(0.45)	(0.39)	(0.30)	(0.40)
TANF recipient	0.06	-3.42*	-1.67*	3.91*	1.12
	(0.28)	(0.88)	(0.58)	(0.74)	(0.96)
Recipient of other public assistance	0.10	-2.97*	-2.10*	-1.15*	6.12*
	(0.20)	(0.48)	(0.40)	(0.32)	(0.47)
Other Considerations					
Persons with disability	-0.85*	3.41*	-7.01*	4.31*	0.13
	(0.40)	(0.83)	(0.75)	(0.76)	(0.82)
Limited English proficiency	-3.08*	-3.71*	12.03*	-9.40*	4.16*
	(0.44)	(0.88)	(1.08)	(0.86)	(1.08)
Veteran or eligible spouse	-0.94*	0.12	2.17*	-1.70*	0.35
	(0.41)	(0.73)	(0.76)	(0.40)	(0.57)

Table G.2 (continued)

Variable	Agricultural, Natural Resources, and Construction	Managerial, Administration, Professional, or Technical	Mechanic, Installer, Repairer, or Precision	Sales, Clerical and Administrative Support	Service
Additional Regression Information					
Number of customers	75,841	75,841	75,841	75,841	75,841
Number of LWIAs	460	460	460	460	460
R-squared	0.1336	0.2746	0.3480	0.1530	0.2008
Mean of dependent variable (percent)	4.25	36.12	25.43	11.41	22.79

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: This table presents the coefficients and standard errors (shown in parentheses) from a series of linear regression models in which (1) the dependent variable is a binary measure of the service receipt indicated in the column header and (2) covariates include the variables listed in the rows and a series of LWIA-specific intercepts. The coefficients on the female indicator variable displayed in this table correspond to the entries in the bottom panel of Table F.47 for customers who received training through the Adult program. Estimates of the LWIA-specific intercepts are not reported in the table. All reported estimates were multiplied by 100; as a result, they can be interpreted as the difference in percentage points relative to the reference category. For binary covariates, the reference category is the value omitted from the table. For multivalued categorical covariates, the reference category is indicated in parentheses next to the variable name. Appendix F provides additional details about the analysis. * indicates significance at the $p < 0.05$ level.

Table G.3. Full Regression Results: Focus of Occupational Skills Training Among Customers of the WIA Dislocated Worker Program Who Received Training (CY 2009)

Variable	Agricultural, Natural Resources, and Construction	Managerial, Administration, Professional, or Technical	Mechanic, Installer, Repairer, or Precision	Sales, Clerical, and Administrative Support	Service
Demographic Characteristics					
Age (ref.: 25–54 years old)					
18–24 years old	0.46	1.08	-3.35*	-4.05*	5.86*
	(0.37)	(0.79)	(0.75)	(0.50)	(0.74)
55 and older	0.06	-6.60*	-1.63*	7.70*	0.47
	(0.22)	(0.65)	(0.56)	(0.55)	(0.51)
Female	-4.38*	15.19*	-51.04*	19.00*	21.23*
	(0.16)	(0.45)	(0.39)	(0.34)	(0.37)
Race/Ethnicity (ref.: White, non-Hispanic)					
Black, non-Hispanic	0.45*	-3.76*	1.05	-1.63*	3.90*
	(0.23)	(0.64)	(0.55)	(0.45)	(0.51)
Hispanic/Latino	0.04	-5.54*	3.30*	0.50	1.70*
	(0.30)	(0.81)	(0.74)	(0.63)	(0.65)
Other	-0.12	-1.62	0.60	-1.61*	2.75*
	(0.33)	(0.92)	(0.82)	(0.68)	(0.74)
Pre-Program Characteristics					
Education and Labor Market					
Education (ref.: high school or GED diploma)					
Below high school	-0.20	-8.97*	10.45*	-1.35*	0.06
	(0.36)	(0.69)	(0.75)	(0.57)	(0.68)
Some college	-0.58*	16.34*	-11.05*	0.50	-5.21*
	(0.18)	(0.52)	(0.43)	(0.37)	(0.39)
Bachelor's degree or beyond	-1.38*	36.76*	-23.73*	-1.66*	-9.99*
	(0.21)	(0.79)	(0.62)	(0.56)	(0.50)
Employment status at entry into WIA program (ref.: not employed)					
Employed	0.20	3.69*	-3.00*	-0.17	-0.72
	(0.41)	(0.97)	(0.84)	(0.67)	(0.78)
Employed, received notice of termination	-0.43	3.26*	-5.04*	2.61*	-0.39
	(0.35)	(1.04)	(0.87)	(0.77)	(0.75)
Average pre-program quarterly earnings (ref.: $1 to $2,499)					

Table G.3 (continued)

Variable	Agricultural, Natural Resources, and Construction	Managerial, Administration, Professional, or Technical	Mechanic, Installer, Repairer, or Precision	Sales, Clerical and Administrative Support	Service
None	0.28	4.22*	-2.62*	0.16	-2.04*
	(0.32)	(0.87)	(0.75)	(0.64)	(0.75)
$2,500 to $4,999	0.28	-0.77	-0.01	1.35*	-0.86
	(0.27)	(0.73)	(0.63)	(0.56)	(0.66)
$5,000 to $7,499	0.29	1.64*	-0.15	1.89*	-3.67*
	(0.27)	(0.72)	(0.63)	(0.55)	(0.63)
$7,500 to $9,999	0.18	3.98*	0.29	1.28*	-5.72*
	(0.30)	(0.79)	(0.69)	(0.58)	(0.65)
$10,000 to $19,999	0.13	8.89*	-0.80	-0.67	-7.55*
	(0.30)	(0.78)	(0.69)	(0.55)	(0.61)
$20,000 or more	-0.38	21.75*	-9.97*	-4.20*	-7.21*
	(0.46)	(1.30)	(1.19)	(0.83)	(0.79)
Family					
Single parent	0.23	0.16	-1.17*	-2.87*	3.64*
	(0.21)	(0.68)	(0.50)	(0.53)	(0.61)
Displaced homemaker	-1.14*	4.50*	-2.04	-3.68*	2.36
	(0.56)	(1.66)	(1.19)	(1.17)	(1.48)
Other Considerations					
Persons with disability	-1.32*	1.47	-3.24*	3.73*	-0.64
	(0.45)	(1.47)	(1.26)	(1.13)	(1.09)
Limited English proficiency	-0.43	3.73*	-2.01	-2.88*	1.59
	(0.53)	(1.25)	(1.20)	(0.97)	(1.04)
Veteran or eligible spouse	-0.36	1.59*	-1.28	-1.92*	1.97*
	(0.34)	(0.75)	(0.77)	(0.40)	(0.47)
Additional Regression Information					
Number of customers	44,929	44,929	44,929	44,929	44,929
Number of LWIAs	460	460	460	460	460
R-squared	0.0678	0.2016	0.3945	0.1686	0.1672
Mean of dependent variable (percent)	2.77	33.51	34.67	13.18	15.86

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: This table presents the coefficients and standard errors (shown in parentheses) from a series of linear regression models in which (1) the dependent variable is a binary measure of the service receipt indicated in the column header, and (2) covariates include the variables listed in the rows and a series of LWIA-specific intercepts. The coefficients on the female indicator variable displayed in this table correspond to the entries in the bottom panel of Table F.47 for customers who received training through the Dislocated Worker program. Estimates of the LWIA-specific intercepts are not reported in the table. All reported estimates were multiplied by 100; as a result, they can be interpreted as the difference in percentage points relative to the reference category. For binary covariates, the reference category is the value omitted from the table. For multivalued categorical covariates, the reference category is indicated in parentheses next to the variable name. Appendix F provides additional details about the analysis. * indicates significance at the $p < 0.05$ level.

Table G.4. Full Regression Results: Post-Program Employment Outcomes, by WIA Program (CY 2009 Exits)

Variable	Adult Program			Dislocated Worker Program		
	Employed Within One Year	Employed in First Quarter	Employed in All Four Quarters	Employed Within One Year	Employed in First Quarter	Employed in All Four Quarters
Demographic Characteristics						
Age (ref.: 25–54 years old)						
18–24 years old	6.73*	4.66*	2.73*	6.84*	3.86*	1.83*
	(0.17)	(0.20)	(0.20)	(0.34)	(0.39)	(0.39)
55 and older	-13.92*	-10.23*	-9.24*	-15.46*	-11.21*	-11.62*
	(0.23)	(0.24)	(0.23)	(0.28)	(0.28)	(0.27)
Female	-0.39*	1.26*	2.99*	-0.79*	0.72*	1.91*
	(0.15)	(0.16)	(0.16)	(0.21)	(0.22)	(0.22)
Race/Ethnicity (ref.: White, non-Hispanic)						
Black, non-Hispanic	-0.36	-0.92*	-1.58*	0.65*	-0.06	-1.46*
	(0.19)	(0.21)	(0.21)	(0.30)	(0.33)	(0.33)
Hispanic/Latino	2.69*	2.48*	2.11*	3.40*	2.95*	2.36*
	(0.23)	(0.26)	(0.25)	(0.34)	(0.37)	(0.37)
Other	-1.32*	-1.24*	-0.66*	-1.35*	-1.50*	-1.19*
	(0.26)	(0.28)	(0.28)	(0.37)	(0.39)	(0.38)
Pre-Program Characteristics						
Education and Labor Market						
Education (ref.: high school or GED diploma)						
Below high school	-4.37*	-4.80*	-5.69*	-2.29*	-2.46*	-3.40*
	(0.22)	(0.23)	(0.22)	(0.33)	(0.35)	(0.34)
Some college	1.93*	2.22*	2.58*	1.42*	1.32*	1.53*
	(0.16)	(0.18)	(0.18)	(0.23)	(0.25)	(0.25)
Bachelor's degree or beyond	4.30*	4.34*	4.99*	4.00*	3.80*	3.77*
	(0.22)	(0.25)	(0.25)	(0.29)	(0.32)	(0.32)
Employment status at entry into WIA program (ref.: not employed)						
Employed	11.38*	20.33*	21.30*	9.19*	15.08*	14.62*
	(0.15)	(0.19)	(0.21)	(0.38)	(0.45)	(0.49)
Employed, received notice of termination	7.35*	13.07*	6.38*	4.97*	9.04*	5.96*
	(0.61)	(0.74)	(0.79)	(0.45)	(0.54)	(0.58)

Table G.4 (continued)

Variable	Adult Program			Dislocated Worker Program		
	Employed Within One Year	Employed in First Quarter	Employed in All Four Quarters	Employed Within One Year	Employed in First Quarter	Employed in All Four Quarters
Average pre-program quarterly earnings (ref.: $1 to $2,499)						
None	-17.49* (0.21)	-15.70* (0.22)	-9.71* (0.21)	-13.71* (0.39)	-12.35* (0.40)	-8.44* (0.38)
$2,500 to $4,999	4.58* (0.19)	7.15* (0.22)	10.37* (0.23)	2.05* (0.33)	3.75* (0.37)	5.58* (0.36)
$5,000 to $7,499	5.35* (0.22)	8.22* (0.25)	13.57* (0.26)	2.57* (0.33)	4.67* (0.36)	8.54* (0.36)
$7,500 to $9,999	5.88* (0.26)	8.57* (0.30)	15.12* (0.31)	3.40* (0.36)	5.89* (0.39)	10.41* (0.39)
$10,000 to $19,999	7.86* (0.25)	11.01* (0.29)	17.60* (0.30)	6.56* (0.34)	9.28* (0.37)	13.25* (0.37)
$20,000 or more	9.70* (0.44)	12.10* (0.51)	17.73* (0.52)	9.19* (0.50)	11.69* (0.56)	15.39* (0.57)
Family						
Single parent	1.68* (0.22)	0.87* (0.25)	0.17 (0.26)	0.92* (0.33)	-0.27 (0.39)	-1.01* (0.40)
Displaced homemaker	NA	NA	NA	0.99* (0.50)	0.58 (0.53)	-0.01 (0.51)
Poverty Indicators						
Low income	0.22 (0.19)	-0.62* (0.21)	-1.30* (0.21)	NA	NA	NA
TANF recipient	-0.79 (0.43)	-1.50* (0.46)	-2.01* (0.44)	NA	NA	NA
Recipient of other public assistance	-2.14* (0.23)	-2.01* (0.25)	-2.83* (0.25)	NA	NA	NA
Other Considerations						
Persons with disability	-15.21* (0.34)	-12.05* (0.33)	-9.79* (0.30)	-10.77* (0.59)	-9.06* (0.59)	-9.14* (0.55)

Table G.4 (continued)

Variable	Adult Program			Dislocated Worker Program		
	Employed Within One Year	Employed in First Quarter	Employed in All Four Quarters	Employed Within One Year	Employed in First Quarter	Employed in All Four Quarters
Limited English proficiency	1.43*	2.70*	3.22*	-2.63*	-1.93*	-1.00
	(0.53)	(0.56)	(0.59)	(0.65)	(0.71)	(0.71)
Veteran or eligible spouse	-1.74*	-0.61*	-1.40*	-2.04*	-0.85*	-1.40*
	(0.28)	(0.30)	(0.29)	(0.35)	(0.38)	(0.38)
Service Receipt						
Received training services	5.36*	7.91*	11.70*	3.96*	6.04*	7.28*
	(0.31)	(0.36)	(0.38)	(0.39)	(0.45)	(0.49)
Received supportive services	1.03*	1.81*	1.26*	2.13*	2.96*	2.46*
	(0.23)	(0.26)	(0.26)	(0.30)	(0.34)	(0.36)
Focus of Occupational Skills Training (ref.: Managerial, Administrative, Professional, and Technical)						
Agricultural, natural resources, and construction	-5.25*	-8.27*	-13.03*	-1.43	-3.09*	-4.92*
	(0.72)	(0.82)	(0.86)	(1.12)	(1.33)	(1.43)
Mechanical and transportation	0.10	-1.33*	-6.35*	3.96*	3.00*	0.08
	(0.35)	(0.41)	(0.45)	(0.43)	(0.52)	(0.57)
Sales, clerical, and administrative support	-3.06*	-4.12*	-8.49*	-0.25	-0.79	-1.08
	(0.48)	(0.54)	(0.57)	(0.59)	(0.68)	(0.74)
Service	0.72*	0.79	-2.59*	3.78*	3.82*	3.29*
	(0.36)	(0.42)	(0.46)	(0.53)	(0.63)	(0.69)
Missing	1.09*	-0.12	-2.61*	4.61*	3.31*	0.99
	(0.37)	(0.44)	(0.47)	(0.49)	(0.57)	(0.61)
Additional Regression Information						
Number of customers	405,738	405,738	405,738	213,722	213,722	213,722
Number of LWIAs	519	519	519	517	517	517
R-squared	0.1290	0.1516	0.1578	0.1008	0.1255	0.1278
Mean of dependent variable (percent)	73.44	57.54	42.91	73.11	57.06	44.71

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: This table presents the coefficients and standard errors (shown in parentheses) from a series of linear regression models in which (1) the dependent variable is a binary measure of employment indicated in the column header, and (2) covariates include the variables listed in the rows and a series of LWIA-specific intercepts. The coefficients on the female indicator variable displayed in this table correspond to the entries in the top panel of Table F.52. Estimates of the LWIA-specific intercepts are not reported in the table. All reported estimates were multiplied by 100; as a result, they can be interpreted as the difference in percentage points relative to the reference category. For binary covariates, the reference category is the value omitted from the table. For multivalued categorical covariates, the reference category is indicated in parentheses next to the variable name. Appendix F provides additional details about the analysis. * indicates significance at the $p < 0.05$ level.

Table G.5. Full Regression Results: Post-Program Earnings Outcomes, by WIA Program (CY 2009 Exits)

Variable	Adult Program		Dislocated Worker Program	
	Average Quarterly Post-Program Earnings	Average Change in Quarterly Earnings	Average Quarterly Post-Program Earnings	Average Change in Quarterly Earnings
Demographic Characteristics				
Age (ref.: 25–54 years)				
18–24 years	-130.8*	-81.0*	-149.3*	-79.9*
	(13.3)	(14.5)	(29.4)	(30.2)
55 and older	-1,122.7*	-1,154.7*	-1,552.5*	-1,518.6*
	(22.1)	(25.5)	(29.9)	(37.0)
Female	-322.4*	-241.2*	-619.8*	-427.1*
	(13.5)	(14.6)	(22.7)	(26.8)
Race/Ethnicity (ref.: White, non-Hispanic)				
Black, non-Hispanic	-412.1*	-347.8*	-561.5*	-396.2*
	(16.7)	(18.3)	(30.7)	(36.4)
Hispanic/Latino	21.7	69.7*	-19.4	131.9*
	(21.0)	(22.2)	(33.5)	(40.4)
Other	-11.0	22.8	1.7	122.1*
	(27.9)	(31.0)	(44.0)	(53.2)
Pre-Program Characteristics				
Education and Labor Market				
Education (ref.: high school or GED diploma)				
Below high school	-325.0*	-316.0*	-246.3*	-235.7*
	(14.4)	(16.3)	(26.5)	(31.4)
Some college	427.1*	416.9*	358.0*	344.4*
	(15.0)	(16.0)	(23.7)	(26.5)
Bachelor's degree or beyond	1,254.2*	886.5*	1,536.1*	881.6*
	(27.6)	(30.9)	(38.6)	(46.3)
Employment status at entry into WIA program (ref.: not employed)				
Employed	1,397.4*	1,368.1*	826.7*	907.5*
	(17.4)	(18.2)	(44.0)	(46.1)
Employed, received notice of termination	1,125.2*	1,199.2*	958.7*	1,033.5* (67.5)
	(82.3)	(87.2)	(63.4)	
Average pre-program quarterly earnings (ref.: $1 to $2,499)				
None	-254.5*	845.6*	-132.3*	1,142.5*
	(13.9)	(14.0)	(29.6)	(30.0)
$2,500 to $4,999	743.0*	-1,824.2*	438.8*	-2,104.6*
	(14.6)	(14.8)	(23.9)	(24.5)
$5,000 to $7,499	1,472.2*	-3,509.2*	992.7*	-3,961.8*
	(18.3)	(18.6)	(26.2)	(26.7)
$7,500 to $9,999	2,344.8*	-5,065.9*	1,644.1*	-5,682.9*
	(25.3)	(25.6)	(30.9)	(31.4)
$10,000 to $19,999	4,453.1*	-7,655.4*	3,377.4*	-8,632.2*
	(32.0)	(32.7)	(35.5)	(37.2)

Table G.5 (continued)

Variable	Adult Program		Dislocated Worker Program	
	Average Quarterly Post-Program Earnings	Average Change in Quarterly Earnings	Average Quarterly Post-Program Earnings	Average Change in Quarterly Earnings
$20,000 or more	10,659.9* (126.0)	-17,285.3* (173.3)	8,538.5* (114.7)	-19,525.7* (168.0)
Family				
Single parent	-28.8 (19.3)	-65.3* (20.8)	-149.2* (34.1)	-185.8* (36.2)
Displaced homemaker	NA	NA	-165.3* (39.6)	-135.3* (41.3)
Poverty Indicators				
Low income	-156.3* (16.6)	-99.5* (17.8)	NA	NA
TANF recipient	-147.2* (26.8)	-131.9* (27.1)	NA	NA
Recipient of other public assistance	-322.3* (16.8)	-318.0* (17.4)	NA	NA
Other Considerations				
Persons with disability	-826.4* (23.0)	-764.6* (25.4)	-910.9* (50.1)	-785.4* (51.2)
Limited English proficiency	18.2 (39.6)	-9.1 (39.9)	-478.5* (56.0)	-494.6* (57.3)
Veteran or eligible spouse	-89.1* (29.1)	-56.0 (32.9)	-182.0* (40.7)	-75.5 (47.3)
Service Receipt				
Received training services	2,109.2* (37.1)	2,076.3* (38.4)	968.1* (54.0)	1,039.0* (57.0)
Received supportive services	73.4* (21.3)	80.9* (22.2)	129.3* (33.4)	149.9* (34.8)
Focus of Occupational Skills Training (ref.: managerial, administrative, professional, and technical)				
Agricultural, natural resources, and construction	-2,173.5* (79.5)	-2,188.9* (79.3)	-540.3* (141.6)	-543.2* (156.0)
Mechanical and transportation	-1,682.5* (43.2)	-1,613.8* (44.9)	-419.4* (58.6)	-384.1* (61.9)
Sales, clerical, and administrative support	-2,130.4* (47.2)	-2,111.7* (48.5)	-1,142.2* (67.7)	-1,249.9* (71.3)
Service	-1,700.3* (40.6)	-1,689.6* (41.9)	-987.5* (59.9)	-1,117.8* (62.7)
Missing	-1,052.3* (44.5)	-1,018.8* (46.0)	-271.2* (65.2)	-199.5* (70.1)

Table G.5 (continued)

Variable	Adult Program		Dislocated Worker Program	
	Average Quarterly Post-Program Earnings	Average Change in Quarterly Earnings	Average Quarterly Post-Program Earnings	Average Change in Quarterly Earnings
Additional Regression Information				
Number of customers	405,738	405,738	213,722	213,722
Number of LWIAs	519	519	517	517
R-squared	0.348	0.428	0.253	0.427
Mean of dependent variable (dollars)	3,623.9	-931.4	4,363.9	-2,837.8

Source: Public-use WIASRD data for program year 2010, quarter 4.

Note: This table presents the coefficients and standard errors (shown in parentheses) from a series of linear regression models in which (1) the dependent variable is the earnings measure indicated in the column header and (2) covariates include the variables listed in the rows and a series of LWIA-specific intercepts. The coefficients on the female indicator variable displayed in this table correspond to the entries in the bottom panel of Table F.52. Estimates of the LWIA-specific intercepts are not reported in the table. All reported estimates can be interpreted as the difference in dollars relative to the reference category. For binary covariates, the reference category is the value omitted from the table. For multivalued categorical covariates, the reference category is indicated in parentheses next to the variable name. Appendix F provides additional details about the analysis. * indicates significance at the $p < 0.05$ level.

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