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Gender, Race, and Employer-Provided Job Training in Low Wage Jobs

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Introduction

Job training is an important factor in enhancing the economic well-being of workers. Technological advances, especially with computers, have led to dramatic improvements over the past decade or so in productivity and the demand for skilled workers. There are concerns, however, that many workers will be left behind in the shift toward a more “high-tech” economy. In particular, the persistence of gender and racial differences in earnings raises concerns that some workers may not be receiving enough training to be successful in the new economy.

Along with the shift in demand for skilled workers, there has been a relatively important shift in how and where job training takes place. Historically, public policy has focused on developing training programs for workers in educational institutions and other organizations outside the workplace. Over the years these programs, especially for disadvantaged workers, proliferated and there was little coherence to the federal, and state, programs that were available. These programs have become more streamlined and coordinated through the Workforce Investment Act, which establishes regional boards to coordinate training activities.

There also has been a growing recognition that workers learn best in their work environment. Numerous institutional innovations, such as youth apprenticeships, school-to-work programs, and others have placed much greater emphasis on experiential learning. Research on training also has focused increasingly on formal

training offered by employers and the obstacles employers face in provided general training to their workforce.

In this paper I examine the willingness of employers to provide formal training to women and minorities. The analysis focuses on the role of firm, worker and job characteristics in the receipt of job training.

Literature Review

In this review, I summarize the literature on employer-provided job training. I focus on three broad set of factors: worker, firm and job characteristics.

Worker Characteristics

Research on the relationship between workers' characteristics and employer-provided job training is not very conclusive. Studies have consistently shown that more educated workers receive more training (Frazis, Gittleman, Horrigan and Joyce 1998; Frazis, Gittleman, and Joyce 2000; Lynch and Blank 1998; Swaim 1995). This pattern of training suggests that less educated workers are likely to be "trapped" in low-skilled jobs as long as employers are less likely to train them.

Surprisingly, the evidence on gender differences in company-provided job training is rather ambiguous. For example, Veum (1996), using the NLSY, found that no racial or gender differences in receipt of formal job training by employers or in the number of hours of training received. He does find however, that white women are more likely to receive higher training per hour worked because they are more likely to

be located in entry-level positions that are associated with higher levels of training. Lynch (1991) found women to receive more formal training but there were no gender differences in on-the-job training.

In one of the few longitudinal studies examining gender differences in company job training, Knoke and Ishio (1998:141) found that “the women’s training disadvantage widened after controlling for theoretically important human capital, occupational, industrial, organizational and family-stage variables.” They suggest that because female employees confront higher expectations about their household and child-rearing responsibilities than their male counterparts, employers are more likely to offer training to men.

Mixed results also are reported in the literature regarding the effects of race and ethnicity on employer-provided training. Swaim (1995) reports that training rates in rural areas are much lower for racial and ethnic minorities—only 25% of Blacks and Hispanics receive training in their job, compared with 41% of other workers. Knoke and Kalleberg (1994) find that the percent of white employees in an establishment is negatively associated with the provision of training by the firm. Gittleman, Horrigan and Joyce (1998), however, do not find any statistically significant effect of race on training (either formal or informal).

Firm Characteristics

There is a relative consensus in the literature about the role of firm characteristics in influencing job training. Large firms, branches and service firms are

more likely to offer formal training programs (Frazis, Herz, and Horrigan 1995; Frazis, Gittleman, Horrigan, and Joyce 1998; Lynch and Black 1998). Lynch and Black argue that the strong relationship between firm size and training effort “may be because smaller employers face higher per-unit costs in the provision of formal training due to the high initial set-up costs or that they are more concerned about losing trained employees to competitors” (1998: 69).

Nonmanufacturing firms are more likely to offer formal training programs than are manufacturing firms (Frazis, Herz, and Horrigan 1995; Frazis, Gittleman, Horrigan and Joyce 1998; Lynch and Black 1998; Veum 1995). Researchers, however, do not agree on the magnitude of these differences by industry. Frazis, Herz and Horrigan (1995) report, for instance, that formal training varies as little as 15% across industries, while Lynch and Black (1988) find about a 40% difference.

There are somewhat contradictory findings regarding the effects of unionization on training effort. Frazis, Gittleman, and Joyce (2000), for instance, find that the presence of a union tends to reduce the probability of employer-provided formal training. Other research (Frazis, Herz and Horrigan 1995; Knoke and Kalleberg 1994) suggests unionization has a positive effect on training effort.

Other firm characteristics may influence formal job training as well. Osterman (2001) suggests that tight labor markets may increase the likelihood that employers will provide training. Thus, firms with more vacancies may increase training as a way to retain good workers. Finally, there is some evidence that employers providing health benefits are more likely to offer training to their employees. There may be a couple of reasons for this relationship. These may be a “standard package” offered by employers

to attract good workers. Also, offering health benefits usually means that employers feel they are more likely to retain their workers, which provides an incentive to offer job training.

Job Characteristics

Few studies have evaluated the effects of job characteristics on formal job training. Many studies have used broad occupational categories to examine the link between job requirements and training (e.g., Veum 1996). This approach may not capture the diversity in skill requirements within general occupational categories. I focus on four important job characteristics: customer contact, whether reading/writing is required; whether arithmetic is required; whether a PC is required; and whether previous training is required.

Methodology

Data for this analysis were collected from phone surveys of a stratified random sample of Wisconsin employers (N=1266). Approximately 60% (N=751) of the interviews were conducted with Milwaukee Metropolitan Area (located in four counties: Milwaukee, Ozaukee, Washington, and Waukesha Counties), and 40% (N=515) were conducted outside the Milwaukee area. The sample was stratified by firm size and industry. Forty percent of the sample included service firms and 60% were among firms in industries other than the service industry. Within each of the industries, 20% were

small businesses (1-9 employees), 35% were medium size firms (20-99 employees), and 40% were large businesses (100 plus employees). The sample was obtained from Survey Sampling, Inc., which obtains their lists of employers through a variety of sources, including business licenses, unemployment compensation files, phone books, etc.

The respondent in each interview was the person in charge of hiring. This person is in the best position to accurately respond to questions about the background of employees (e.g., education, work experience, etc.) because much of this information is collected from job applications. In most cases this person was the personnel manager or human resource director. Once the appropriate person was identified, two screening questions were administered to determine whether the business fell within the study's scope. Cases were included if the firm had hired employees who did not possess a college degree and had hired such an employee in the last year. Businesses that did not meet either criteria were considered ineligible and the interview was terminated. Small businesses tended to have higher screen out rates because the firms either had no workers other than the owners or because they had not hired any employees who did not possess a college degree.

Interviews in Milwaukee were completed in 1999, and the employer interviews in the rest of the state were completed in the summer of 2000. The interview averaged just under 23 minutes in length. As many as 37 calls were made to each unresolved number. The overall response rate in the Milwaukee interviews was 70% and outside Milwaukee it was 59%. This response rate is good compared to other recent employer surveys (Holzer, 1996).

The interviews obtained information on the characteristics of the firm, characteristics of the job and worker for the last hire and the last welfare hire. This is the primary strategy to obtain information on hiring practices because many of the training and hiring practices may differ substantially across categories of workers within the firm. This methodological strategy provides a random sample of positions and has been employed by most of the employer surveys examining hiring practices (Holzer, 1996; Holzer and Stoll, 2001).

Variables

The two dependent variables in this analysis: whether or not a worker has received any job training from their employer and the number of hours of training provided from employers. In more than 60% of the firms did the last person hired receive job training. The number of hours of training was highly skewed, so this variable was logged to create a normal distribution. On average, workers received about two hours of formal training after being hired.

The models for job training include three categories of variables: firm characteristics, worker characteristics, and job characteristics. Among the firm characteristics, firm size and industry have been shown to influence the level of training offered by employers. Firm size is measured by the number of full-time employees and I categorize firms into small (25 or few employees), medium (26-100 employees) and large (more than 100 employees). Industry is coded as a dichotomous variable: 1=manufacturing; 0=service. We also included a variable indicating whether the employer provides health care to workers (1=yes; 0=no).

Research on the relationship between unionization and job training is inconclusive. I include a variable that identifies whether any employees in the firm are unionized (1=yes; 0=no).

Osterman (2001) argues that in tight labor markets, employers are more inclined to invest in training as a means of retaining good workers. To examine this thesis, we asked employers how many vacancies they currently have. Three categories were used: 1) no vacancies; 2) one to five vacancies; and 3) six or more vacancies.

The skill level of the workforce in a firm should influence the training effort made by an employer. We asked employers how many of their employees are in jobs that do not require any particular skills, education, previous training or experience when they were hired. The percentage of unskilled workers was calculated as the number of these workers over the total workforce. Three categories were used: 1) no unskilled workers; 2) 1-25% unskilled workers; and 3) greater than 25% unskilled workers.

Finally, we include a regional dummy variable (1=Milwaukee; 0=elsewhere in Wisconsin) that identifies the location of the establishment.

Among the worker characteristics, we consider gender (1=male; 0=female), race (1=white; 0=other), and education (1=high school diploma or higher; 0=no high school diploma). As I indicated above, there are somewhat contradictory findings regarding the effects of race and gender on formal job training. Few of these studies have taken into consideration the variety of firm and job characteristics that are examined in this analysis.

Finally, we consider several job characteristics that may influence employer provided job training. We asked employers a series of questions about the job that the

last person hired filled. First we asked whether this position involved speaking directly with customers in person or over the phone on a daily basis. Second, we asked if this position involved reading or writing reports, memos, or lengthy instructions on a daily basis. Third, we asked respondents if the position involved doing arithmetic including making change on a daily basis. Finally, we asked if the position required using a personal computer on a daily basis. All of these variables were coded 1=yes and 0=no.

Findings

In Table 2 I report the logistic regression analysis of whether the last person hired in the firm received any formal training after they were hired. When we consider both gender and race effects while controlling for firm and job characteristics, we find a negative relationship between race and receipt of formal training. Gender was not statistically related to whether or not the recent hire received formal training.

[Table 2 about here]

Among the firm characteristics, firm size is the strongest correlate with formal training. As most of the literature suggests, large firms are much more likely to provide formal training than are small businesses. Among the job characteristics, jobs requiring customer contact were more likely to provide formal job training. Also, positions requiring previous training are less likely to provide formal training.

To further explore the gender and racial dimensions of job training, I first examine the relationships between firm and job characteristics for men and women separately. There are several interesting interaction effects across gender and racial groups. Firm

size has a strong, positive relationship with formal training for men, but not women. Working in the manufacturing sector decreases the likelihood that men receive formal training, but has no effect on women. There also is an interaction effect between race and gender with formal training. For men, whites are less likely to receive formal training than are African Americans. And for women, there is no race effect on formal training.

I next examine the same models separately for African Americans and whites. Overall, there are fewer interactions in these models than there were in the gender models. There are two primary exceptions. Working in Milwaukee increases the likelihood for receiving formal training for African Americans but has no effect for whites. Also, customer contact increases the likelihood for whites but not for African-Americans.

In the next set of analyses I use the same models to estimate the number of hours of formal training received. The models also include a dichotomous variable indicating whether or not the firm provided formal training to the last person hired (1=yes; 0=no). In the full model, whites receive more training than African Americans while controlling for firm and job characteristics. Also, workers required to use a personal computer obtain more formal training after being hired. One of the strongest relationships is receipt of health care and length of formal training. Workers receiving health care benefits are likely to receive more formal training than those who do not receive health care benefits. This finding suggests that good jobs come as a package, with health care, training and other benefits coming together in jobs.

[Table 4 about here]

When I examine the models separately for men and women, the health care variable is strongly related to length of training for both. We once again find an interaction effect between gender and race. Race has a strong effect on length of formal training for men, with whites receiving more training than African Americans, but it has no effect for women.

The separate models for race also find the strong relationships between health care and length of formal training received after being hired. Gender also has a positive effect for whites (males receiving more training), but not for African Americans. These findings tend to show that white males receive more formal training than other workers, even when controlling for firm and job characteristics.

Summary and Conclusions

The findings about gender and job training tend to be similar to much of the social stratification literature. Human capital models tend to work well for white males, but not for women and minorities. The analysis of formal training among men and women demonstrates that many factors, such as firm size, tend to be beneficial for men but do not have the same effects for women.

Table 1. Descriptive Statistics for All Respondents, and by Gender and Race

	<u>All</u>	<u>Men</u>	<u>Women</u>	<u>White</u>	<u>Black</u>
<i>Firm Characteristics</i>					
Medium Size Firm (26-100 employees)	.30	.33	.29	.30	.30
Large Firm (101+ employees)	.38	.35	.39		.34
					.47
Unionized Employees (1=yes)	.20	.19	.21	.18	.27
Low Number of Vacancies (1-5)	.39	.42	.37	.40	.38
High Number of Vacancies (6+)	.27	.23	.29	.23	.34
Low % Unskilled (.01-.26)	.28	.27	.29	.28	.27
High % Unskilled (.26+)	.49	.53	.46	.48	.52
Health Care Provided	.73	.76	.71	.71	.79
Region (1=Milwaukee)	.59	.57	.61	.51	.78
Industry (Manufacturing=1)	.22	.31	.14	.21	.25
<i>Worker Characteristics</i>					
Gender (1=Male)	.45	XX	XX	.43	.50
Race (1=White)	.74	.71	.76	XX	XX
H.S. Diploma (1=yes)	.89	.88	.89	.91	.82
<i>Job Characteristics</i>					
Customer Contact (1=yes)	.60	.41	.75	.63	.48
Reading/Writing Required (1=yes)	.52	.47	.56	.52	.49
Arithmetic Required (1=yes)	.59	.56	.61	.61	.49
PC Required (1=yes)	.39	.24	.52	.42	.30
Previous Training Required (1=yes)	.12	.14	.11	.12	.12
<i>Job Training</i>					
Number of Hours of Training (log)	2.04	2.00	2.06	1.98	2.12
Received Any Training (1=yes)	.63	.60	.65	.60	.69
N	1266	560	690	883	317

Table 2. Logistic Regression Analysis of Formal Training Received by Gender

	<u>All</u>	<u>Men</u>	<u>Women</u>	
Medium Size Firm (26-100 employees)	.488** (.176)	.832** (.269)	-.257 (.246)	
Large Firm (101+ employees)	.459* (.212)	1.148** (.336)	-.042 (.288)	
Unionized Employees (1=yes)	.063 (.173)	.167 (.276)	-.032 (.231)	
Low Number of Vacancies (1-5)	-.146 (.156)	-.037 (.232)	-.188 (.218)	
High Number of Vacancies (6+)	.081 (.208)	-.024 (.327)	.217 (.281)	
Low % Unskilled (.01-.26)	-.086 (.192)	-.324 (.318)	.156 (.248)	
High % Unskilled (.26+)	.077 (.174)	-.455 (.284)	.545* (.234)	
Health Care	.162 (.162)	.412 (.256)	-.016 (.216)	
Region (1=Milwaukee)	-.041 (.136)	-.117 (.209)	-.020 (.187)	
Industry (Manufacturing=1)	-.279 (.184)	-.717** (.259)	.261 (.293)	
Gender (1=Male)	.080 (.144)	XXX (.144)	XXX (.144)	
Race (1=White)	-.340* (.160)	-.490* (.243)	-.196 (.221)	
H.S. Diploma (1=yes)	.075 (.213)	.159 (.326)	.020 (.296)	
Customer Contact (1=yes)	.421* (.167)	.608* (.326)	.342 (.238)	
Reading/Writing Required (1=yes)	.257 (.145)	.297 (.224)	.186 (.199)	
Arithmetic Required (1=yes)	.174 (.141)	.129 (.221)	.109 (.190)	
PC Required (1=yes)	-.035 (.155)	-.087 (.251)	.101 (.203)	
Previous Training Required (1=yes)	-.440* (.211)	-.375 (.320)	-.396 (.298)	
Constant	.536*** (.063)	.477*** (.092)	-.049* (.454)	
-2 Log Likelihood	1376.763	603.441		741.269
Cox & Snell R Square	.039	.108	.030	

Table 3. Logistic Regression Analysis of Formal Training Received By Race

	<u>White</u>	<u>Black</u>
Medium Size Firm (26-100 employees)	.349 (.198)	1.019 (.411)
Large Firm (101+ employees)	. (.247)	492* (.449)
Unionized Employees (1=yes)	.217 (.209)	-.202 (.325)
Low Number of Vacancies (1-5)	-.094 (.177)	-.378 (.354)
High Number of Vacancies (6+)	-.111 (.244)	.569 (.438)
Low % Unskilled (.01-.26)	.052 (.220)	-.539 (.437)
High % Unskilled (.26+)	.161 (.196)	-.265 (.428)
Health Care	.235 (.184)	.021 (.382)
Region (1=Milwaukee)	-.176 (.152)	.638* (.320)
Industry (Manufacturing=1)	-.178 (.216)	-.553 (.384)
Gender (1=Male)	-.030 (.167)	.386 (.305)
H.S. Diploma (1=yes)	-.057 (.275)	.264 (.365)
Customer Contact (1=yes)	.573** (.193)	-.090 (.355)
Reading/Writing Required (1=yes)	.252 (.169)	.396 (.302)
Arithmetic Required (1=yes)	.196 (.161)	.219 (.310)
PC Required (1=yes)	-.167 (.176)	.433 (.349)
Previous Training Required (1=yes)	-.333 (.246)	-.839 (.451)
Constant	-.338 (.373)	-.421 (.651)
-2 Log Likelihood	1031.900	322.843
Cox & Snell R Square	.041	.093

Table 4. OLS Analysis of Number of Hours (log) of Formal Training Received by Gender

	<u>All</u>	<u>Men</u>	<u>Women</u>
Medium Size Firm (26-100 employees)	-7.305(-2) (.084)	-6.268(-2) (.130)	.189(-2) (.197)
Large Firm (101+ employees)		-3.860 (-2)	-8.283(-2) .117(-2)
Unionized Employees (1=yes)	4.360(-2) (.081)	.129 (.128)	-0.008(-3) (.189)
Low Number of Vacancies (1-5)	1.179(-2) (.097)	-9.106(-2) (.112)	-0.008 (.179)
High Number of Vacancies (6+)	5.032 (.097)	-7.491(-2) (.155)	.106 (.127)
Low % Unskilled (.01-.26)	-8.874(-2) (.091)	-.141 (.146)	-5.187(-2) (.116)
High % Unskilled (.26+)	-4.691(-2) (.083)	-6.729(-2) (.132)	-1.397(-2) (.108)
Region (1=Milwaukee)	.125 (.065)	.227* (.101)	2.878(-2) (.086)
Industry (Manufacturing=1)	9.919(-2) (.090)	.110 (.127)	9.484(-2) (.136)
Health care (1=yes)	.383*** (.077)	.381** (.124)	.371*** (.099)
Gender (1=Male)	.116 (.068)	XXX XXX	XXX XXX
Race (1=White)	.150* (.074)	.300** (.114)	3.307(-2) (.100)
H.S. Diploma (1=yes)	7.909(-2) (.104)	6.069(-2) (.160)	8.226(-2) (.138)
Customer Contact (1=yes)	3.054(-2) (.081)	6.472(-2) (.206)	-1.383(-2) (.112)
Reading/Writing Required (1=yes)	6.290(-2) (.068)	2.769(-2) (.108)	9.101(-2) (.090)
Arithmetic Required (1=yes)	.142 (.067)	.156 (.108)	.131 (.087)
PC Required (1=yes)	.177* (.072)	.209 (.123)	.166 (.092)
Previous Training Required (1=yes)	2.990(-2) (.100)	4.147 (.148)	3.235(-2) (.138)
Formal Training Provided	3.085*** (.065)	3.143*** (.102)	3.029** (.099)
Constant	-.667*** (164)	-.662** (.241)	-.525* (.216)
R-square	.687	.689	.691

Table 5. OLS Analysis of Number of Hours (log) of Formal Training Received by Race

	<u>White</u>	<u>Black</u>
Medium Size Firm (26-100 employees)	-6.012(-2) (.093)	-.201 (.198)
Large Firm (101+ employees)		6.905(-2) -.291
Unionized Employees (1=yes)	(.113) -6.005(-2) (.096)	(.220) 8.806(-2) (.157)
Low Number of Vacancies (1-5)	7.083(-3) (.083)	-4.706(-2) (.174)
High Number of Vacancies (6+)	4.446(-2) (.113)	-3.669(-2) (.207)
Low % Unskilled (.01-.26)	-.129 (.103)	-5.147(-2) (.205)
High % Unskilled (.26+)	-6.612(-2) (.092)	-3.143(-3) (.195)
Region (1=Milwaukee)	9.337(-2) (.071)	.294 (.162)
Industry (Manufacturing=1)	5.199(-2) (.104)	.279 (.186)
Health Care Provided (1=yes)	.330*** (.086)	.518** (.178)
Gender (1=Male)	.168* (.078)	-4.250(-2) (.149)
H.S. Diploma (1=yes)	.103 (.129)	3.341(-2) (.183)
Customer Contact (1=yes)	-6.799(-2)* (.092)	.253 (.170)
Reading/Writing Required (1=yes)	.138 (.079)	-9.200(-2) (.144)
Arithmetic Required (1=yes)	5.187(-2) (.075)	.294* (.150)
PC Required (1=yes)	.169* (.081)	.104 (.164)
Previous Training Required (1=yes)	4.708(-2) (.113)	-.115 (.224)
Formal Training (1=yes)	3.112*** (.073)	2.917*** (.146)
Constant	1.141*** (4.047)	-.640 (.335)
R-square	.713	.632

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