

UC Berkeley

Fisher Center Working Papers

Title

Networks and Access in Labor Markets for Youth: Minorities and Women

Permalink

<https://escholarship.org/uc/item/1ww7402r>

Authors

O'Regan, Katherine M.
Quigley, John M.

Publication Date

1992-04-01

Peer reviewed



Institute of
Business and
Economic Research

University of
California at
Berkeley

CENTER FOR REAL ESTATE AND URBAN ECONOMICS

WORKING PAPER SERIES

WORKING PAPER NO. 92-205

**NETWORKS AND ACCESS IN
LABOR MARKETS FOR YOUTH:
MINORITIES AND WOMEN**

By

**KATHERINE M. O'REGAN
JOHN M. QUIGLEY**

These papers are preliminary in nature:
their purpose is to stimulate discussion
and comment. Therefore, they are not to
be cited or quoted in any publication
without the express permission of the
author.

WALTER A. HAAS SCHOOL OF BUSINESS

NETWORKS AND ACCESS IN LABOR MARKETS FOR YOUTH:
MINORITIES AND WOMEN

by

Katherine M. O'Regan
Yale University

and

John M. Quigley
University of California
Berkeley

Working Paper #92-205

April 1992

Paper prepared for the Special Conference in Honor of Edwin S. Mills, Evanston, IL, April 10-12, 1992. Support for this research has been provided by the U.S. Department of Transportation and the Transportation Center and the Center for Real Estate and Urban Economics at the University of California, Berkeley.

**NETWORKS AND ACCESS IN LABOR MARKETS FOR YOUTH:
MINORITIES AND WOMEN**

by

Katherine M. O'Regan
Yale University
and
John M. Quigley
University of California
Berkeley

Abstract

Some networks may be more useful than others in affecting labor market outcomes. In particular social networks containing non minority workers or male workers may have better and more extensive labor market contacts. This paper considers indirect evidence on the importance of networks and access in affecting urban youth employment. We measure the extent to which selected labor market outcomes for urban youth living at home are related to proxies for their access to informal networks.

Outcome measures include employment and unemployment, industry affiliation and job location. Proxies for labor market contacts include the labor market circumstances of other household members -- mothers, fathers, and siblings.

The empirical analysis is based upon 1980 PUMS data with more than 55,000 observations on at-home youth in the 47 largest US metropolitan areas. The large samples permit the analysis to be conducted separately for male and female youth in three race/ethnicity groupings: white, black, and hispanic. Although the pattern of results is similar for the six groups, important differences are found, both in the outcomes for youth and in the conditioning influences.

NETWORKS AND ACCESS IN LABOR MARKETS FOR YOUTH:
MINORITIES AND WOMEN

by

Katherine M. O'Regan
and
John M. Quigley

I. Introduction

It is by now widely acknowledged that accessibility has important effects on the probability of employment for urban workers, as well as the occupation or industry of employment, and the location of that employment. In this, the notion of employment access has several different dimensions. Until recently, the principal dimension of access analyzed by economists has been physical or spatial in nature. Urban residents living in areas isolated from job concentrations have been found to have lower employment probabilities and different patterns of occupational and industrial affiliations than those better served by transportation networks and those less physically remote from employment concentrations.¹

More recently, it has been recognized that social access may be as important as physical access in conditioning labor market outcomes, particularly in low-wage labor markets. Social access

1 The classic papers reporting these phenomena and analyzing their causal factors include Kain [1968], Price and Mills [1985], and Ellwood [1986]. More recent work includes Ihlandfeldt and Sjoquist [1991]. Holzer [1991] provides a concise review of much of this literature.

to employment includes the networks of informal informational contacts available to potential workers, networks which may assist them in learning about available job openings and employment opportunities. Direct observation on job search strategies indicates, for example, that a large percentage of job seekers obtain information on specific jobs from friends and relatives, as contrasted with information obtained from formal announcements or employment agencies (See, for example, Holzer [1987]). For example, it appears that about half of all jobs are obtained through contacts (Rees and Shultze [1970], Granovetter [1974], Corcoran, et al. [1980]). Moreover, jobs obtained in this manner are generally associated with higher earnings and more prestigious occupations (Granovetter [1974], Bridges and Villemez [1986], Staiger [1990]).

The importance of social networks in affecting access to employment immediately suggests that some networks may be far more useful than others in conditioning labor market outcomes. Networks which include more employed members may be presumed to be more effective in locating available jobs.² Thus job searchers in networks with low employment rates may be further disadvantaged (Montgomery [1991], O'Regan [forthcoming]).

It is also likely that employed social contacts differ in their knowledge of, and influence over, the hiring decisions of

2 For example, Granovetter [1974] found that 71 percent of those who found their jobs through personal referrals were employed at the same firm as the individual who provided the referral

firms. Whites and males may be more useful in providing knowledge or more authoritative in providing references than are minorities or women. Empirical work has shown that more men than women obtain jobs through contacts (Corcoran et al. [1980], Montgomery [1990]), and blacks appear to be less successful than whites in using contacts to obtain employment (Rees and Shultze [1970], Holzer [1987]).

The interactions between these two dimensions of labor market access reinforce the importance of the spatial aspects of urban labor markets, so emphasized in the work of Edwin Mills [1967]. The development of social contacts is conditioned by spatial structure and transport opportunities. Many informal contacts arise in a spatially limited area, through institutions whose members live in geographic proximity -- schools, neighborhood organizations, day care centers, and the like. Moreover, the networks of lower-income people have been shown to be more spatially limited (Fischer [1982]). Finally, the opportunity set from which to create networks increases with age and experience; thus youth may have the most spatially limited networks.

Individuals create their networks out of the available pool of contacts. To the extent that the pool of contacts is residence-based, location theory suggests that networks will be more homogeneous in demographic character. Thus spatial segregation by income, race and social class will exacerbate the

"in-breeding" noted by observers of social networks³ -- social contacts tend to be segregated by race, ethnicity, sex, and income. Low-income and minority youth are likely to be members of networks which include a disproportionate fraction of minority, low-income or unemployed persons, the least effective networks for labor market success.

This paper provides a detailed examination of labor market outcomes for urban youth located in the largest US metropolitan areas. We observe labor market outcomes by sex and by racial or ethnic group for some 55,000 youth living at home. We use this rich body of data, available in the 1980 Public Use Micro Sample (PUMS Sample B) and its transportation supplement (administered to half the sample), to conduct a variety of indirect tests of the differential impact of networks on outcomes. Specifically, we consider the networks provided to these at-home youth by other household members -- mothers, fathers, and siblings. We note variations in labor market outcomes -- employment, occupation, industry and job location -- separately for white, black, and hispanic youth by sex.

The results are strongly supportive of the importance of social access in affecting labor market outcomes. Even controlling for MSA-wide influences, youth are far more likely to be employed if parents or siblings are employed and are much more likely to be not employed if parents or siblings are not

³ See Marsden [1988] and the cites therein.

employed. They are far more likely to have the same industrial affiliation as employed parents and are less likely to have the same industrial affiliation as parents who are not currently employed. They are more likely to be employed in the same part of the metropolitan area as an employed parent. These associations vary by racial and ethnic group and by the sex of the parent and the offspring. The results of these indirect tests strongly suggest that some youth are at a distinct disadvantage in the labor market due to the character of their social networks.

II. Tests

We observe the labor market outcomes for each of the youth aged 16-19 living at home, residing in the 47 largest metropolitan areas (MSAs), and reported in the PUMS data. We also observe the labor market outcomes for the head parent (according to the census definition). In addition, we observe outcomes separately for mothers and fathers and work-aged siblings, if any. We measure the similarity of the outcomes for youth with those of these adult family members.

The basic expectation is that youth with "better" networks will fare better in the labor market. A specific prediction is that youth whose networks include employed parents or siblings have greater access to jobs and are more likely to be employed themselves. To test this, we estimate the probability that a youth is employed, conditional on parental employment, and the

probability that a youth is not employed, conditional upon parental employment.⁴ If the employment status of the parent affects the likelihood of the youth's employment, then the probability that a youth is employed, given that her parent is employed, should be higher than if her parent is not employed. Similarly, the probability that a youth is not employed, given that her parent is not employed, should be higher than if her parent is employed.

Table 1 presents ratios of youth employment probabilities, conditional upon the employment status of the head parent. The numerator is the estimated probability that a youth is employed, conditioned upon the parent being employed. The denominator is the estimated probability that a youth is employed, conditioned upon the parent being not employed. Ratios are presented separately by the race and sex of youth. As indicated in columns 1 and 2, the ratios are all larger than one. The table suggests that, in the aggregate, male youth are 1.69 times as likely to be employed if their head parent is employed than if their head parent is not employed, and they are 1.35 times as likely to be not employed if the head parent also is not employed. The ratios are large, for females as well as males, and they are especially large for employed blacks. A black male is 60 percent more likely to be employed if his head parent is employed; a black

⁴ The category "not employed" includes those who are unemployed and also those who are not in the labor force. Appropriate analysis of the probability of "unemployment" would require limiting the sample to youth who explicitly claim to be in the labor force.

TABLE 1

Ratio of Employment Probabilities of Youth by Sex
Conditional Upon Employment Status of Head Parent*

	Uncontrolled		Controlled by MSA	
	Male (28,822)	Female (26,589)	Male (28,822)	Female (26,589)
All Youth				
Probability:				
Youth employed	1.69	1.75	1.72	1.73
Not employed	1.35	1.34	1.32	1.31
Weighted average	1.66	1.70	1.67	1.67
White Youth				
Probability:				
Youth employed	1.40	1.33	1.47	1.39
Not employed	1.29	1.24	1.28	1.22
Weighted average	1.40	1.33	1.47	1.37
Black Youth				
Probability:				
Youth employed	1.60	1.76	2.01	1.88
Not employed	1.14	1.15	1.12	1.14
Weighted average	1.49	1.59	1.76	1.66
Hispanic Youth				
Probability:				
Youth employed	1.41	1.61	1.38	1.56
Not employed	1.21	1.21	1.17	1.14
Weighted average	1.34	1.53	1.33	1.45

Notes: *Categories are not mutually exclusive. Youth with both parents are included in two categories, each a calculation of the youth's employment probability conditioned on the employment status of the mother only or the father only.

Numbers in parentheses are sample sizes.

female is 76 percent more likely to be employed if her head parent is employed.

There are, of course, a number of competing explanations for the strikingly large ratios reported in columns 1 and 2. In the first place, youth and their contacts live in the same metropolitan area, subject to the same general labor market conditions. In tight labor markets, we should expect employment ratios to be larger even if networks and contacts play no role in job access. Similarly, in depressed areas, we may expect unemployment ratios to be larger due to regional economic conditions, regardless of the effects of networks. To control for these local labor market influences, we calculate the ratios separately at the metropolitan level and then aggregate. Each ratio thus compares the average employment probabilities of youths whose head parents are employed to the employment probabilities of youths in the same city whose head parents are not employed. Columns 3 and 4 present the results controlling in this way for metropolitan-wide differences. Controlling for MSA does not affect the results.

The results reported in Table 1 may be affected by the schooling patterns of adolescents. In particular, full-time students are less likely to be employed in the labor market, even though they have a full-time "occupation." Table 2 thus repeats the analysis excluding all youth who are full-time or part-time students. Columns 1 and 2 report the raw ratios while columns 3

TABLE 2

Ratio of Employment Probabilities of Youth by Sex
Conditional Upon Employment Status of Head Parent*
(non-students only)

	Uncontrolled		Controlled by MSA	
	Male (7,144)	Female (6,070)	Male (7,144)	Female (6,070)
All Youth				
Probability:				
Youth employed	1.60	1.81	1.64	1.89
Not employed	1.70	1.73	1.66	1.70
Weighted average	1.61	1.80	1.64	1.84
White Youth				
Probability:				
Youth employed	1.42	1.51	1.55	1.67
Not employed	1.70	1.74	1.67	1.67
Weighted average	1.45	1.53	1.56	1.66
Black Youth				
Probability:				
Youth employed	1.64	1.81	1.80	1.90
Not employed	1.28	1.30	1.29	1.29
Weighted average	1.53	1.65	1.60	1.64
Hispanic Youth				
Probability:				
Youth employed	1.24	1.46	1.23	1.44
Not employed	1.30	1.30	1.30	1.32
Weighted average	1.25	1.42	1.22	1.38

Notes: *Categories are not mutually exclusive. Youth with both parents are included in two categories, each a calculation of the youth's employment probability conditioned on the employment status of the mother only or the father only.

Numbers in parentheses are sample sizes.

and 4 report the ratios computed separately by MSA and aggregated. Again, the results indicate large positive ratios for at-home-not-in-school youth. In many cases, the magnitudes of the associations are larger for youth who are not in school. Controlling for MSA, black males are 80 percent more likely to be employed if their head parents are employed, and black females are 90 percent more likely to be employed if their head parents are employed.

Table 3 presents the same ratios of employment probabilities conditioned upon the employment status of siblings. The comparison is between youth with siblings aged 16 years or older who have at least one sibling employed and those youth whose work-aged sibling(s) are not employed. Again, the pattern of results is consistent with those reported in Tables 1 and 2. When there is close contact with an employed worker, employment probabilities are much larger.

Table 4 presents the conditional employment ratios by race, cross-classified by the sex of the parent and the offspring. A comparison of the first two columns shows that, overall, the employment status of youth is more highly correlated with the father's labor market status than with the mother's. The strength of this association varies by race. For whites, the differences are consistent, but small. For blacks, the differences are much larger.

TABLE 3

Ratio of Employment Probabilities of Youth Conditional Upon Sibling Employment Status
(for youth with siblings only)

	Uncontrolled		Controlled by MSA	
	Male (16,708)	Female (15,416)	Male (16,708)	Female (15,416)
All Youth				
Probability:				
Youth employed	1.61	1.64	1.60	1.66
Not employed	1.42	1.40	1.40	1.39
Weighted average	1.53	1.55	1.52	1.55
White Youth				
Probability:				
Youth employed	1.44	1.40	1.45	1.42
Not employed	1.41	1.36	1.41	1.36
Weighted average	1.36	1.31	1.43	1.40
Black Youth				
Probability:				
Youth employed	1.70	1.93	1.77	2.04
Not employed	1.19	1.23	1.19	1.21
Weighted average	1.24	1.32	1.42	1.56
Hispanic Youth				
Probability:				
Youth employed	1.62	1.74	1.58	1.80
Not employed	1.34	1.30	1.35	1.31
Weighted average	1.45	1.60	1.48	1.55

Note: Numbers in parentheses are sample sizes.

TABLE 4

Ratio of Employment Probabilities of Youth(s) Conditional Upon Employment Status of Parent by Sex (controlled by MSA)

	Youth With		Youth With			
	Mother*	Father*	Mother* Male	Mother* Female	Father* Male	Father* Female
All Youth	(53,562)	(43,658)	(27,796)	(25,766)	(22,924)	(20,734)
Probability:						
Youth employed	1.22	1.46	1.17	1.27	1.43	1.34
Not employed	1.15	1.21	1.13	1.18	1.24	1.17
Weighted average	1.19	1.35	1.15	1.23	1.42	1.32
White Youth	(39,018)	(34,475)	(20,473)	(18,545)	(18,210)	(16,265)
Probability:						
Youth employed	1.18	1.22	1.15	1.21	1.29	1.21
Not employed	1.17	1.15	1.15	1.19	1.17	1.12
Weighted average	1.17	1.22	1.15	1.20	1.28	1.20
Black Youth	(9,293)	(5,068)	(4,624)	(4,669)	(2,568)	(2,500)
Probability:						
Youth employed	1.43	1.62	1.38	1.62	1.57	1.36
Not employed	1.09	1.14	1.08	1.11	1.18	1.11
Weighted average	1.29	1.53	1.25	1.41	1.47	1.30
Hispanic Youth	(5,251)	(4,115)	(2,699)	(2,552)	(2,146)	(1,969)
Probability:						
Youth employed	1.35	1.42	1.22	1.60	1.43	1.28
Not employed	1.15	1.16	1.11	1.23	1.18	1.11
Weighted average	1.24	1.38	1.16	1.39	1.38	1.25

Notes: *Categories are not mutually exclusive. Youth with both parents are included in two categories, each a calculation of the youth's employment probability conditioned on the employment status of the mother only or the father only.

Numbers in parentheses are sample sizes.

When the sex of the youth is controlled, a clear association emerges. Female youth employment is more highly correlated with the employment status of the female parent than is male youth employment. Male youth employment is more highly correlated with the employment status of the male parent than is female youth employment. Correlations are highest for youth of both sexes when conditioned on the same sex parent.

Table 5 confirms these results for youth who are not in school. As indicated in the table, however, the sample sizes for these latter comparisons are much smaller.

It may be tempting to attribute these results to unobserved, household-specific, attributes -- "tastes for work" or even genetic differences in behavioral propensities. There are, however, a number of implications of the network hypothesis which cannot be attributed to household unobservables. Some of these can be tested for, at least indirectly. If the employment correlations reported in Tables 1 through 5 are indicative of job access, then job-related information is gained through the parents and siblings who provide labor market contacts. Youth with employed parents should be more likely not only to be working, but to be working at a specific location and in a specific job. Although we do not have firm level data to test this, evidence consistent with these implications can be found using the general location and industry data reported in PUMS.

TABLE 5

**Ratio of Employment Probabilities of Youth(s) Conditional
Upon Employment Status of Parent by Sex
(non-students only)**

	Youth With		Youth With			
	Mother*	Father*	Mother*	Female	Male	Father*
			Male	Female		Female
All Youth	(12,535)	(9,809)	(6,773)	(5,762)	(5,408)	(4,401)
Probability:						
Youth employed	1.19	1.40	1.15	1.27	1.41	1.39
Not employed	1.28	1.51	1.24	1.36	1.58	1.40
Weighted average	1.23	1.41	1.19	1.32	1.43	1.39
White Youth	(8,693)	(7,479)	(4,800)	(3,893)	(4,163)	(3,316)
Probability:						
Youth employed	1.12	1.35	1.11	1.18	1.36	1.32
Not employed	1.28	1.51	1.29	1.36	1.58	1.40
Weighted average	1.19	1.37	1.19	1.26	1.39	1.33
Black Youth	(2,344)	(1,180)	(1,197)	(1,147)	(628)	(552)
Probability:						
Youth employed	1.56	1.51	1.45	1.85	1.41	1.43
Not employed	1.21	1.39	1.20	1.22	1.46	1.29
Weighted average	1.38	1.44	1.31	1.47	1.36	1.34
Hispanic Youth	(1,498)	(981)	(776)	(722)	(617)	(533)
Probability:						
Youth employed	1.24	1.36	1.09	1.54	1.26	1.46
Not employed	1.22	1.21	1.10	1.41	1.34	1.18
Weighted average	1.23	1.34	1.10	1.45	1.26	1.40

Notes: *Categories are not mutually exclusive. Youth with both parents are included in two categories, each a calculation of the youth's employment probability conditioned on the employment status of the mother only or the father only.

Numbers in parentheses are sample sizes.

Table 6 extends the conditional probability analysis to incorporate the location of employment. For this analysis, the sample includes all employed at-home youth for whom place-of-work information is available, both for the youth and for the parent.⁵ The table presents ratios of youth employment location probabilities, conditional on the work location of the head parent. Again, in all instances, ratios greatly exceed one, indicating a strong positive association between the location of employment of youth and their parents. White suburban youth are 184 percent more likely to work in the central city if the head parent works in the central city; they are 21 percent more likely to work in the suburbs if the head parent also works in the suburbs. Central city hispanic youth are 29 percent more likely to work in the central city if the head parent also works there, and they are 2.23 times as likely to work in the suburbs if the head parent does. Of course, given the wide geographic area covered by these spatial categories, this association could arise from proximity to the boundaries separating central cities from suburbs. It seems doubtful, however, that this could account for the strikingly high levels of association.

If networks linking youth to knowledge about specific jobs give rise to these associations in employment status and location, then the type of employment found by youth should also

⁵ Because the samples available through the PUMS transportation supplement are so much smaller, we do not consider separately the sex of the head parent nor the sex of the at-home offspring.

TABLE 6

**Ratio of Employment Location Probabilities for Employed Youth
Conditional Upon Work Location of Head Parent
(Controlled by MSA)**

<u>Residential Location</u>	<u>Work Location of Head Parent*</u>		
	<u>Central City</u>	<u>Non-Central City</u>	<u>Weighted Average</u>
A. Central City			
White (1,686)	1.16	2.01	1.33
Black (423)	1.30	1.26	1.34
Hispanic (300)	1.29	2.23	1.34
B. Non-Central City			
White (5,822)	2.84	1.21	1.72
Black (227)	1.37	1.15	1.24
Hispanic (314)	2.47	1.54	1.68

Note: * In households with both mothers and fathers, the father is classified as "head" by the U.S. Census Bureau. Thus these conditional probabilities ignore the influence of the second parent, if any, on outcomes.

Numbers in parentheses are sample sizes.

be correlated with that of the parent. Table 7 presents analogous ratios by industry. It presents the ratio of the probability of each industry affiliation conditioned on the industry affiliation of the head parent.⁶ Again, almost all ratios exceed one; a youth is more likely to work in a particular industry if her head parent does than is another youth living in the same MSA whose head parent works in some other industry. The ratios are highest for white youth, and for hispanic males, all of whom are more than twice as likely to work in a particular industry if it is the industry in which their head parent works. The ratios are lowest for black youth. Within each race or ethnicity category, ratios are always higher for male youth than for female youth.

The most obvious alternative explanation for this association by industry is some form of mimicking behavior on the part of youth: Living in a household in which a construction worker resides increases the likelihood that a youth will pursue a job in construction, to imitate a parent and not to capitalize on the information available about the construction field gained through parental networks.

If the observed industry correlation arises from mimicking behavior, then the **current** employment status of the parent should not affect the strength of the association. The last two rows of Table 7 present the weighted average ratios for two groups:

⁶ "Industry affiliation" is defined as the industry in which the person is currently employed or most-recently employed.

TABLE 7

**Ratio of Probabilities of Industry Affiliations of Youth, by Race and Sex,
Conditional Upon Industry Affiliation of Head Parent***

<u>Industry</u>	<u>White</u>		<u>Black</u>		<u>Hispanic</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
Farming	15.27	8.71	3.85	-	13.36	1.48
Mining	0.78	1.19	-	-	-	-
Construction	4.51	4.44	2.87	-	7.17	-
Manufacturing: Non durable	2.91	2.77	1.16	1.17	1.33	2.16
Durable	2.48	2.32	1.88	1.61	1.62	1.32
Transportation	3.19	3.23	1.65	1.22	2.92	0.86
Trade	1.24	1.12	1.10	0.99	1.20	1.14
FIRE	4.20	2.18	2.52	0.80	4.91	0.26
Services:						
Personal	2.13	1.62	1.26	1.42	2.19	0.98
Professional	2.86	1.41	0.88	0.84	2.13	1.09
Public	1.50	1.71	0.54	1.45	1.16	4.40
Weighted Average	2.37	2.09	1.38	0.95	2.46	1.13
Sample Size	(20,354)	(18,308)	(3,990)	(3,959)	(2,469)	(2,298)
Parent Currently: Employed	2.51	2.18	1.26	0.82	3.06	1.39
Not employed	0.84	0.48	0.49	0.28	0.29	0.39

Note: * In households with both mothers and fathers, the father is classified as "head" by the U.S. Census Bureau. Thus these conditional probabilities ignore the influence of the second parent, if any, on outcomes.

- No observations in this category.

youth whose parents are currently employed and youth whose parents are not currently employed. For youth with employed parents, the strong industry correlation remains. For youth whose head parent is not currently employed, the correlation disappears. In fact, there is a negative association; youth whose head parents are not employed are less likely to be employed in the industry of their parents' affection. (Again, we control for MSA-wide differences in employment prospects in the calculations.) This suggests that specific information is gained through parents, information about specific employment opportunities and the general prospects for employment in various industries.

An additional indication that these industry correlations arise from network access is found in the pattern of industry correlations. By tradition, some industries rely more heavily on referrals for filling jobs than do others. Montgomery [1990] reports the fraction of jobs obtained through a referral (the "referral rate"), by industry, using the National Longitudinal Sample of Youth. The highest referral rate is in construction, where it is estimated that 47.5 percent of jobs are obtained through referral. Referral rates are much lower in public administration (28.9 percent) and in personal and professional services (29.4 and 29.5 percent, respectively). In Table 7, the highest correlations by industry are in construction, and the lowest are in public administration. Montgomery also finds that almost all referral rates are roughly ten percentage points

higher for males than for females, which is consistent with the higher industry correlations for male youth reported in Table 7.

A strikingly similar pattern is found for the associations by industry when the results are cross-classified by the sex of the parent. These results are presented in Table 8. Youth-parent correlations are higher with the male parent than with female parent within each category. The correlations are lowest for black youth with either mothers or fathers.

The last two rows of Table 8 present correlations calculated separately by the parent's current employment status. Positive industry correlations remain, and they generally increase for youth whose parents are currently employed in an industry. These positive correlations disappear for youth whose parents are not currently employed.

In interpreting these results, it is worth emphasizing that most workers who obtain jobs by referral are, in fact, referred by members of the same sex. For example, Montgomery [1990] reports that 86.5 percent of male workers who obtained jobs from personal referrals were referred by a male contact. Similarly 69.8 percent of female workers who found their jobs through contacts were referred by a female social contact. The pattern of industrial affiliations for father-son and mother-daughter pairs, reported in Table 9, is consistent with the network interpretation. The ratios for female youth are higher than for male youth when conditioned on the industry affiliation of the

TABLE 8

**Ratio of Probabilities of Industry Affiliations of Youth,
by Race, Conditional Upon Industry Affiliation of Parent by Sex**

<u>Industry</u>	<u>Youth with Mothers*</u>			<u>Youth with Fathers*</u>		
	<u>White</u>	<u>Black</u>	<u>Hispanic</u>	<u>White</u>	<u>Black</u>	<u>Hispanic</u>
Farming	7.72	-	7.20	16.27	3.35	13.55
Mining	0.08	-	-	1.22	-	-
Construction	4.11	5.63	4.91	5.03	3.89	1.94
Manufacturing:						
Non durable	1.98	1.65	1.43	2.96	1.06	3.07
Durable	2.35	1.43	1.56	2.39	1.61	2.11
Transportation	2.56	1.52	1.89	2.79	1.47	2.27
Trade	0.85	0.98	0.90	1.21	1.12	1.32
FIRE	1.74	1.51	1.37	2.87	1.98	0.54
Services:						
Personal	1.23	0.98	1.24	1.94	1.83	1.67
Professional	1.14	0.76	0.98	1.79	1.08	1.42
Public	1.47	0.95	1.16	1.77	0.49	3.01
Weighted Average	1.08	0.73	1.25	2.38	1.48	2.27
Sample size	(28,370)	(6,774)	(3,352)	(33,604)	(4,668)	(3,908)
Parent Currently:						
Employed	1.57	1.04	2.15	2.48	1.44	2.41
Not employed	0.47	0.28	0.40	0.99	0.45	0.27

Note: * Categories are not mutually exclusive. Youth with both parents are included in two categories, each a calculation of the youth's industry probability conditioned on the industry affiliation of the mother only or the father only.
- No observations.

TABLE 9

Ratio of Probabilities of Industry Affiliations of Youth with Single Parent, by Race, Conditional Upon Industry Affiliation of Parent by Sex

Industry	Mother				Father							
	White		Black		White		Black		Hispanic			
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
Farming	5.96	9.80	-	-	6.62	0.59	15.32	6.36	4.28	-	14.81	1.49
Mining	0.09	-	-	-	-	-	0.65	1.22	-	-	-	-
Construction	3.05	9.12	2.59	0.0	4.33	10.32	5.05	3.78	2.97	-	1.99	-
Manufacturing: Non durable	2.09	1.78	1.97	1.86	0.70	2.21	3.28	2.92	0.43	0.99	2.05	1.73
Durable	1.95	2.97	1.17	3.00	0.99	0.96	2.63	2.05	1.28	0.18	1.67	1.15
Transportation	2.36	5.88	0.41	0.46	1.40	2.61	3.01	2.94	1.21	1.61	3.08	0.34
Trade	0.84	0.87	0.95	1.06	0.89	0.90	1.28	1.14	1.16	1.17	1.32	1.30
FIRE	2.65	1.33	0.99	0.26	1.40	1.02	5.08	2.28	-	1.68	1.11	-
Services: Personal	1.20	1.31	0.96	0.85	1.53	1.57	2.27	1.59	2.39	1.21	2.81	0.62
Professional	1.35	1.08	0.82	0.77	0.96	1.01	2.89	1.34	1.09	1.06	3.52	0.86
Public	0.87	2.03	0.67	1.13	0.97	6.28	1.81	1.28	0.74	0.73	3.02	4.23
Weighted Average	1.09	1.25	0.66	0.68	1.05	1.39	2.63	2.02	1.33	0.71	2.35	1.00
Sample Size	14,869	13,501	3,383	3,391	1,709	1,643	17,745	15,859	2,387	2,281	2,044	1,864
Parent Currently: Employed	1.65	1.78	0.93	0.78	1.66	1.77	2.74	2.15	1.13	0.64	2.34	1.13
Not employed	0.42	0.48	0.21	0.20	0.37	0.46	0.88	0.34	0.36	0.34	0.12	0.29

Note: - No observations.

female parent. The ratios for male youth are higher than for female youth when conditioned on the industry affiliation of the male parent. Across groups, white youth and hispanic males have the highest ratios, and black youth the lowest.

Again, when the parent's current employment status is considered, positive industry correlations remain only for those youth whose parent is currently employed in an industry.

The higher industry association between youth and parents of the same sex cannot be attributed simply to the importance of "role models." The correlations of the industrial affiliation of white and black female youth with the affiliation of the father are higher in absolute magnitude than they are with the affiliation of the mother. The lower correlations with mothers, even for female youth, and the lack of any correlation for black youth with either parent suggests that the effectiveness of contacts varies by the characteristics of the contact. Male parents, and non-black parents, may be more influential in gaining access to jobs for those they know, most importantly their children.

III. Conclusions

This paper has presented evidence that the employment outcomes for youth are strongly associated with those of other adult members of their households. They are more likely to be employed if their mothers, fathers or siblings are employed, and

they are more likely to be not employed if their mothers, fathers or siblings are not employed.

The strength of this association varies by race and ethnicity, with particularly strong associations for black youth. The strength of this association also varies by sex. Employment outcomes for female youth are more strongly associated with the outcomes for their mothers than with those of their fathers, while employment outcomes for males are more strongly associated with the outcomes for their fathers than for their mothers.

We attribute this result, in part, to the information and informal contacts provided by employed household members to youth living in the same household. An alternative explanation is that members of the same household are exposed to the same local labor market conditions, resulting in a correlation of employment outcomes caused by the tightness of the labor market. We investigate this by conducting the analysis separately for each of the 47 MSAs. When local labor market conditions are held constant in this way, the results are quite similar.

Another competing explanation emphasizes the importance of mimicking behavior (perhaps arising merely because parents are "role models" for their offspring), or unmeasured "tastes for work," perhaps even basic genetics that vary by household. Our analysis casts some doubt on these as independent explanations of employment outcomes, at least for at-home youth. We find, for example, after controlling for residential location, that

employed youth are more likely to work in the central city if their employed parent does so, and they are more likely to work in the suburbs if their employed parent works in the suburbs.

Similarly, at-home youth are far more likely to work in the same industry as their mother or father, even after controlling for metropolitan-wide labor market conditions. An explanation for this in terms of "tastes" rather than information is less persuasive. The relative magnitudes of correlations gives stronger support to the interpretation in terms of networks. Industry correlations are highest for those industries in which other researchers have documented a higher reliance on referrals for filling jobs. Industry associations are large and positive if the parent is currently employed. They are negative if the parent is not currently employed.

If these industry correlations reflect the labor market access gained through parents, then the pattern indicates that some youth are at a distinct disadvantage in the labor market due to the character of their social networks. Black parents, and all female parents, appear to be less effective job contacts. Youth who must rely on these contacts in their labor market search should be expected to have less favorable employment outcomes.

REFERENCES

- Bridges, William P. and Wayne J. Villemez (1986) "Informal Hiring and Income in the Labor Market " American Sociological Review 51:574-582.
- Corcoran, Mary et al. (1980) "Information and Influence Networks in Labor Markets" in Greg Duncan and James Morgan, (eds) Five Thousand Families: Patterns of Economic Progress Vol 7 (Ann Arbor: Institute for Social Research).
- Ellwood, David T. (1986) "The Spatial Mismatch Hypothesis: Are There Teenage Jobs Missing in the Ghetto?" in Richard B. Freeman and Harry J. Holzer, (eds) The Black Youth Unemployment Crisis (Chicago: University of Chicago Press)
- Fischer, Claude S. (1982) To Dwell Among Friends: Personal Networks in Town and City (Chicago: University of Chicago Press).
- Granovetter, Mark (1974) Getting a Job: A Study of Contacts and Careers (Cambridge: Harvard University Press).
- Holzer, Harry J. (1991) "The Spatial Mismatch Hypothesis: What Has the Evidence Shown?" Urban Studies 28:105-122.
- Holzer, Harry J. (1987) "Informal Job Search and Black Youth Unemployment" American Economics Review 77:446-452.
- Ihlanfeldt, Keith R. and David L. Sjoquist (1991) "The Role of Space in Determining the Occupations of Black and White Workers" Regional Science and Urban Economics 21:295-315.
- Kain, John F. (1968) "Housing Segregation, Negro Employment, and Metropolitan Decentralization" Quarterly Journal of Economics 82:175-197.
- Marsden, Peter V. (1988) "Homogeneity in Confiding Relations" Social Networks 10:57-76.
- Montgomery, James D. (1990) "Social Networks and Persistent Inequality in the Labor Market" presented at the December, 1990 AEA meetings.
- Montgomery, James D. (1991) "Social Networks and Labor Market Outcomes: Toward an Economic Analysis" American Economic Review 81:1408-1418.
- Mills, Edwin S. (1967) "An Aggregative Model of Resource Allocation in a Metropolitan Area" American Economic Review 57:197-211.

O'Regan, Katherine M. (forthcoming) "The Effects of Social Networks and Concentrated Poverty on Black Youth Unemployment" The Annals of Regional Science.

O'Regan, Katherine M. and John M. Quigley (1991) "Labor Market Access and Labor Market Outcomes for Urban Youth" Regional Science and Urban Economics 21:227-293.

Price, Richard and Edwin S. Mills (1985) "Race and Residence in Earnings Determination" Journal of Urban Economics 17:1-18.

Rees, Albert and George Shultze (1970) Workers and Wages in an Urban Labor Market (Chicago: Chicago Press).

Staiger, Doug (1990) "The Effect of Connections on the Wages and Mobility of Young Workers" unpublished mimeo, MIT.