DOCUMENT RESUME

ED 040 470 CG 005 505

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TITLE Dimensions of Work Experience Among Economically Disadvantaged Youth.
INSTITUTION American Orthopsychiatric Association, New York, N.Y.; New York State Div. for Youth, New York
PUB DATE Mar 70
NOTE 19p.; Paper presented at the American Orthopsychiatric Association Convention, San Francisco, California, March 23-26, 1970

EDRS PRICE EDRS Price MF-$0.25 HC-$1.05
DESCRIPTORS Achievement, Community Programs, *Economically Disadvantaged, *Educational Programs, Mobility, Persistence, Social Background, *Urban Youth, *Work Experience, Youth

ABSTRACT

Factor analysis was used to derive four relatively independent factors or general dimensions of the work experience of economically disadvantaged, urban youth. The factors were named and interpreted as follows: (1) supportive context of job: characteristics referring to supportive aspects of the job, such as friendliness of boss, friendliness of coworkers, perceived fairness of pay, and the consequences of interest and satisfaction; (2) state of job and field mobility: characteristics related to rate of mobility with respect to jobs and occupational fields; (3) job achievement: characteristics related to achievement oriented standards; and (4) persistence: characteristics indicating persistent, steady work. The factors were analyzed in relation to another set of work variables and to a set of social background variables. They appear to provide a basis for the selection of criteria with which to assess the effect of community work training programs for disadvantaged. (KJ)

DIMENSIONS OF WORK EXPERIENCE AMONG ECONOMICALLY DISADVANTAGED YOUTH

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PAPER PRESENTED AT THE 47th ANNUAL MEETING (1970)
of the
AMERICAN ORTHOPSYCHIATRIC ASSOCIATION

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The present study was part of a larger investigation evaluating the effects of four community work training programs on the post-program employment of trainees and was undertaken to determine those aspects of employment which might be used as criteria in assessing program effectiveness. In order to derive a small set of basic and relatively independent dimensions of the work experiences of youths who had applied to the programs, the youths' scores on 21 measures of employment characteristics were subjected to a factor analysis.

The interrelation of the diverse aspects of the work experiences of disadvantaged youth has not been specified in prior studies. For example, is the amount of time a youth works during a given period related to the number of jobs he holds during the same period? In what manner, if any, are such characteristics as pay, perceived friendliness of boss and co-workers, and learning opportunities of the job interrelated? It was hoped that through the factor analysis such interrelationships could be clarified and, on this basis, a reasonable, small set of criteria for program evaluation could be derived.

This study was supported in part by Ford Foundation Grant 63-208. The authors wish to express their appreciation to Jacob Cohen for his advice and criticism.

Subjects. Subjects were 282 youths who had applied to four training programs located in low income neighborhoods of New York City from 1962-1965. The programs required applicants to be 16, 17, or 18 years old and school dropouts, and were meant to provide services to so-called unemployable youths. Follow-up interviews--which included collection of data on complete job histories--were given to these youths two to four years after date of program application.

Subjects were primarily Negro (50%) or Puerto Rican (40%) youths who had completed an average of 9.6 grades of school, and whose natural parents were not living together (62%) at time of interview. About one-fifth (22%) were married and about one-quarter (26%) were parents at the time of interview. Official arrest records indicated that about one-fourth (23%) had been arrested for fingerprintable offenses prior to their application to programs.

Measures. Although the follow-up interview items covered the entire span of subject's job history, only the more recent period, relative to time of follow-up interview, was used for analysis of subject's job experiences. This was done to reduce distortions of memory. All measures in the present analysis refer to subjects' reported job experiences either during a one-year time interval called the Criterion Period or at time of the follow-up interview. In order to perform other analyses, not pertinent to the present study, the total population of subjects had been divided into five subsamples, each with its own follow-up period. The Criterion Period was defined as the one year period just prior to the initiation of follow-up activity for a particular subsample. It

was the most recent one-year period (relative to the interview) whose dates are identical for all members of a subsample. Only youths who were available for work during the Criterion Period (i.e., not in military service, correctional institutions, day school, training program, or hospitals) and who held at least one job during this period were included as subjects. At the commencement of the one-year Criterion Period mean age of subjects was 18 years, 10 months with a standard deviation of 12 months.

The measures were selected and constructed so as to avoid high intercorrelations obviously predictable in advance of the analysis. The complete set of 21 measures is given in Appendix A.

Statistical Analysis. Intercorrelations (product-moment) of the 21 measures were obtained, subjected to a centroid factor analysis, and the axes rotated by Kaiser's Varimax method.[1] The centroid analysis indicated that the first four centroid factors accounted for 66% of the common variance and none of the remaining eight centroid factors accounted for over 6%. It was therefore decided to rotate in four dimensions.

---------- TABLE 1 about here ----------

Findings

The results of the factor analysis are reported in Table 1. The four factors which emerged were named and interpreted as follows.

Factor One: Supportive Context of Job. This factor reflects perceived supportive aspects of subjects' most recent job and appears

to represent one type of liked job situation. It had its major loadings on the following variables referring to most recent job: interest (.56), friendliness of boss (.53), friendliness of co-workers (.48), and subject's belief that he was paid what the work was worth (.41). It appeared also in average liking for full-time jobs held during the Criterion Period (.42).

Factor Two: Rate of Job and Field Mobility. This factor reflects mobility with respect to jobs and occupational fields. It had its major loadings on number of full-time jobs held (.89) and number of different occupational fields worked in (.80) during the one-year Criterion Period. It also appeared in other variables related to number of jobs; namely, number of full-time jobs from which subject had been fired or laid off (.53) and number of full-time jobs subject left for reasons other than job dissatisfaction (.40). Since it was not found related to number of weeks worked during Criterion Period, one may conclude that subjects scoring high on Factor Two tended to hold relatively many short-lived jobs and that subjects scoring low tended to hold relatively few, but long-term jobs.

Factor Three: Job Achievement. This factor reflects job achievement as ordinarily understood. It contains both objective and subjective variables and was revealed primarily in these characteristics of full-time Criterion Period jobs: average pay (.64), average level of job (.59), average liking of job (.52), and average learning offered by the job (.47). It also had loadings on number of weeks worked full-time during Criterion

Period (.41); and for most recent job, whether or not subject considered pay enough to get along on (.38) as well as the job's degree of interest (.36). Loadings of Factor Three appear to express another type of liked job situation. Unlike Factor One, however, social relations and equity of pay are not relevant to this factor, while actual pay level, occupational level, and opportunity for learning something useful, are.

Factor Four: Persistence. This factor represents the dimension of persistence and steadiness of employment in the labor market. It had its major positive loadings on number of weeks worked full-time during the Criterion Period (.55) and working at time of interview (.54); it had negative loadings on number of weeks worked part-time during the Criterion Period (-.31) and number of full-time jobs from which subject was fired or laid-off during the Criterion Period (-.32). This factor appears to express a state of steady, full-time employment. The negative relation with part-time work and the tendency not to be fired or laid off also suggests the orientation of a "hard worker."

Interrelation of Factors and Reliability

Factor scores were calculated for each subject by using the set of variables loading highest on a factor.* The components of each factor

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*Variables with high loadings on more than one factor were used as score components only for the factor on which they loaded highest.

as measured by factor-scores are given in Table 1.*

The intercorrelation of factor scores showed a relation between Factors One and Three (r=.38) and between Three and Four (r=.21) and all other interrelations were smaller. In general, the factors, as measured, may be considered relatively independent of each other.

Reliability (internal consistency) of the factor score measures as estimated by Cronbach's alpha were, for the four factors, .64, .86, .69 and .43, respectively. By generally used standards, the reliability of measures of Factors Two and Three is acceptable, that of Factor One is close-to-acceptable, but that of Factor Four is somewhat low and could be improved. Since the measures chosen for the factor analysis had been selected to avoid predictably high intercorrelations, it should be relatively easy to construct more reliable measures of a factor by adding other related variables to the measure.

Further Analysis

Relation of Factors to Other Work Criteria. As a means of assessing their utility and coherence, the factors were examined in relation to another set of work measures omitted in the factor analysis. Table 2 presents the measures and significant correlations with the factors.

---------- TABLE 2 about here ----------

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*The component variable was weighted by its factor loading and divided by its standard deviation. The factor score was the sum of the weighted component variables.

Liking of most recent job was found most related to Factor One (Supportive Context of Job); the number of jobs subject left in the Criterion Period and the number left for reasons of dissatisfaction were most related to Factor Two (Rate of Job and Field Mobility); pay of most recent job was most related to Factor Three (Job Achievement); and duration of most recent job was most related to Factor Four (Persistence). All these relations support the previous interpretation of the factor-dimensions.

During the follow-up interview subjects had been asked "When you think of the jobs you've had, do you feel satisfied with the way things are going?" This item, a measure of satisfaction with subject's general employment situation, was found to correlate with Factors One, Three and Four. It may be inferred that these three dimensions are important predictors of general job satisfaction for the youths in this study.

Duration of most recent job correlated negatively with Factor Two (Rate of Job and Field Mobility), strengthening the interpretation that subjects whose rate of mobility is high tended to have had relatively short-lived jobs. High-scorers on Factor Two also tended to have spent less time before starting to look for a new job and were more likely to state that their ideas about work had changed in the past few years, although the magnitude of these correlations was low.

It is of interest that high-scorers on Factor Four (Persistence) tended to have left more jobs because of definitely expressed dissatisfactions; but tended less often to have been fired, as reported earlier. It would appear that leaving a job for reasons of dissatisfaction has

two bases and is characteristic of both highly mobile subjects and highly persistent ones.

Relation of Factors to Social Background Characteristics. To aid in further clarifying the meaning of the four factors, their relationship to a set of 53 demographic and social background measures was examined. The measures related to subjects' ethnicity, religion, and place of birth; family/parental background; subjects' personal history; and age.

In general, correlations between these measures and the factor scores were not high.

The most reliable relationships (as indicated by significance level of .001) concern Factor Four (Persistence). Married subjects tended to score high on this dimension (r=.27), as did older subjects (r=.23). Negro subjects tended to score low (r=-.22).

Relations significant at the .01 level indicate that married and older subjects also tended to score high (r=.17 and r=.16, respectively) on Factor Three (Job Achievement). In addition, white subjects (r=.17) and subjects who had completed more grades of school (r=.18) tended to score high on this dimension.

Discussion

In considering this factor analysis, one should bear in mind that it is based upon subjects' own reports and is restricted (a) to experiences in the New York City labor market 1964-1968, (b) to a specific age group, (c) to a specific segment of the youth population, and (d) mainly to a

one-year evaluative time span. Without such restrictions, different relationships and a different set of factors might well have emerged.

With this caution, it can be noted that the factors emerging in the present analysis appear to reflect meaningful and relatively independent aspects of the work experience of the group under study; and, to the extent they are generalizable to applicants of other training programs for economically disadvantaged youth, they may be useful as criteria with which to evaluate the effectiveness of these programs.

Factors One (Supportive Context of Job) and Three (Job Achievement) connote two kinds of liked job situation, the former oriented to interest, social relations, and equitable pay; the latter to actual pay, job level, and opportunity for learning. This is generally consonant with the theory of Herzberg.[2] He postulates two sources of dissatisfaction/satisfaction: (1) "hygiene" characteristics of jobs (such as pleasant interpersonal relations and perceived fair company policy), the <u>absence</u> of which is a source of dissatisfaction; and (2) "motivation" characteristics (such as opportunity for achievement, recognition, and learning), the <u>presence</u> of which is a positive source of satisfaction. These two sources of dissatisfaction/satisfaction as postulated by Herzberg appear closely related to Factors One and Three respectively.

The criterion implications of Factor Two (Rate of Job and Field Mobility) are unclear. The dimension to which Factor Two refers appears related to the particular phase of vocational development of this age group, a phase Super and others[3, 4] have variously called exploration,

trial, transition, or floundering. One might expect job mobility to be strongly related to other aspects of work experience such as pay, liking, level of job, rate of employment, etc. Since this was not the case, (mobility was relatively independent of the other work dimensions) one may infer that differences on this dimension are due not to differences in jobs held but rather to individual differences in subjects' attitudes toward maintaining jobs. However, whether numerous job changes are to be considered favorable or unfavorable outcomes at this stage in subject's development is open to question and cannot be resolved without further study.

Factor Four (Persistence) suggests a "hard worker" orientation and, if steady full-time employment is considered desirable, it has obvious criterion import.

Differences on demographic and social background variables were significantly related to the scores for Factor Three (Job Achievement) and Factor Four (Persistence). Subjects who were more mature with respect to age and to the assumption of marital/parental responsibilities scored higher on these dimensions. This probably reflects employer preferences for hiring and retaining older, married youths as much as increased ability and motivation on the part of the youths, themselves. That unemployment rates decrease sharply as age increases has been noted by the U.S. Department of Labor as a present national trend.[5]

The finding of a relation between Factor Three (Job Achievement) and ethnicity suggests that, in addition to demands for maturity and

occupational skills, the influence of racial and/or ethnic prejudice enters into employment. Both Puerto Rican and Negro subjects tended to score lower on Job Achievement than all other subjects, who were primarily American whites. This finding has been supported in further analysis which statistically controlled for a large set of background variables. To the extent that this result is due to discriminatory hiring policies or to anticipated discrimination on the part of subjects, the result implies that minority group subjects were capable of holding higher-level jobs than they actually held, namely the higher-level jobs that white subjects held.

In general, however, demographic and social background characteristics did not correlate highly with the factor dimensions. This is probably related to the restricted nature of the sample, i.e., school dropouts from low-income neighborhoods. Nevertheless, efforts devoted to finding variables predictive of variations in job experience within the group comprising disadvantaged youth would be very worthwhile. The findings in this study imply that broad demographic and social background variables may be less predictive than other characteristics, e.g., psychological characteristics of subjects or the quality of their family life. It would be of great benefit if salient predictors of work dimensions could be derived which would enable programs to anticipate an applicant's probable future work record.

Summary

Factor analysis was used to derive four relatively independent factors or general dimensions of the work experience of economically

disadvantaged, urban youth. The factors were named and interpreted as follows: (1) Supportive Context of Job: characteristics referring to supportive aspects of the job, such as friendliness of boss, friendliness of co-workers, perceived fairness of the pay, and the consequences of interest and satisfaction; (2) Rate of Job and Field Mobility: characteristics related to rate of mobility with respect to jobs and occupational fields; (3) Job Achievement: characteristics related to achievement-oriented standards, (i.e., pay, level of job, learning offered by the job, and the consequences of interest and satisfaction); (4) Persistence: characteristics indicating persistent, steady, work. The factors were analyzed in relation to another set of work variables and to a set of social background variables. They appear to provide a basis for the selection of criteria with which to assess the effect of community work training programs for disadvantaged youth.

APPENDIX A

Measures used in the factor analysis were as follows:

Extent and Type of Subjects' Experience with Labor Market During Criterion Period

1. Weeks worked full-time.
2. Weeks worked part-time.
3. Weeks worked at low-paying ($70 or less per week) long-hour (over 45 hours per week) jobs.
4. Weeks worked at high-paying (over $70) long-hour (over 45 hours per week) jobs.
5. Weeks worked at jobs of 35-45 hours per week which also have undesirable, hours (nights, weekends, shifts).
6. Number of full-time jobs held.
7. Number of occupational fields worked in.

Nature of Full-Time Jobs Held During Criterion Period

8. Average* weekly pay of jobs held.
9. Average level of jobs.

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*Averages in Variables 8 through 12 were obtained by multiplying the value of each job on a particular measure (pay, level, etc.) by the number of weeks worked at that job, summing over all jobs, and dividing by total weeks worked.

10. Average learning on jobs. From question, "Did you learn anything useful on the job?" (Yes/No).

11. Average liking for jobs. From 5-point scaled question (liked very much to disliked very much).

12. Average distance to site of jobs. From a constructed 4-point scale based on job location and subject's mode of travel.

Termination of Full-Time Jobs Held and Job-Seeking Behavior During Criterion Period

13. Number of jobs from which subject was fired or laid off.

14. Number of jobs subject left of own accord for reasons other than job dissatisfaction.

15. Subject required to fill out application form in order to get at lease one job. (Yes/No).

Disposition at Time of Follow-up

16. Subject working at full-time job. (Yes/No).

Most Recently-Held Job

17. Interest of job. From a 5-point scaled question (very interesting to very disinteresting).

18. Friendliness of boss. From a 5-point scaled question (very friendly to very unfriendly).

19. Friendliness of co-workers. From a 5-point scaled question (very friendly to very unfriendly).

20. Subject's yes/no response to: "Was the pay enough to get along on."

21. Subject's yes/no response to: "Were you paid what the work was worth."

References

[1]Harmon, H. 1967. Modern Factor Analysis. University of Chicago Press, Chicago. Chapter 14.

[2]Herzberg, F. 1966. Work and the Nature of Man. World Publishing Co., New York.

[3]Super, D. 1957. The Psychology of Careers. Harper and Row. New York.

[4]Super, D. et al. 1957. Vocational Development, A Framework for Research. Teachers College Press, Columbia University, New York.

[5]Ryscavage, P.M. and Willacy, H.W. 1968. Employment and Unemployment in 1967. Employment and Earnings and Monthly Report on the Labor Force. U.S. Department of Labor.

TABLE 1

ROTATED FACTOR LOADINGS[1]

Variable	Factor One	Factor Two	Factor Three	Factor Four
Interest of MRJ[2]	.56	.12	.36	.18
Friendliness of Boss at MRJ	.53	-.03	.14	.05
Friendliness of Co-workers at MRJ	.48	-.08	.16	.04
Paid What Work Worth at MRJ	.41	.13	.13	-.09
Distance to CP[3] Jobs	-.22	.02	.04	.04
Number of Jobs in CP	.04	.89	-.13	-.02
Number of Fields in CP	-.04	.80	-.08	-.04
Number of CP Jobs Fired, Laid Off	.19	.53	-.22	-.32
Number of CP Jobs Left of Own Accord (reasons other than job dissatisfaction)	-.03	.40	.11	.07
Application Form in CP	-.26	.25	.17	-.14
Weeks Worked "Undesirable" Hours	-.10	.11	.09	-.04
Pay of CP Jobs	-.01	.00	.64	.10
Level of CP Jobs	.02	-.06	.59	.09
Liking for CP Jobs	.42	-.08	.52	-.18
Learning on CP Jobs	.26	-.07	.47	.01
Paid Enough to Get Along On, MRJ	.17	.10	.38	-.04
Weeks Worked Full-Time in CP	-.14	-.05	.41	.54
Working at Time of Interview	-.07	-.16	.08	.54
Weeks Worked Part-Time in CP	-.01	-.04	.04	-.31
Weeks Worked High-Pay Long-Hour, CP	.13	.06	.22	.22
Weeks Worked Low-Pay Long-Hour, CP	.11	-.04	-.11	.16
Sum of Squares of Loadings	1.49	2.06	1.94	0.99

Note.--Where variables were coded such that a low scale score actually signified a high score on the variable as named above, scale scores were reversed.

[1]Underlined loadings indicate variables used in the scoring of the factors.

[2]Most Recent Job

[3]Criterion Period

TABLE 2

RELATION OF FACTORS TO OTHER WORK VARIABLES

Other Work Variables	Factor One	Factor Two	Factor Three	Factor Four
Liking of Most Recent Job	.67***		.39***	.12*
Duration of Most Recent Job		-.37***	.31***	.54***
Pay of Most Recent Job	.24***		.56***	.27***
Weeks Until Look for Job		-.13*		
Number of Jobs Left		.58***		.18**
Number of Jobs Left Because Dissatisfied		.46***		.22***
Satisfied with Way Things are Going	.37***		.33***	.25***
Ideas About Work Changed		.17**		

* $p < .05$
** $p < .01$
*** $p < .001$