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RURAL POOR WHO COULD BENEFIT FROM JOB RETRAINING IN THE EAST NORTH CENTRAL STATES

U.S. DEPARTMENT OF AGRICULTURE
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ABSTRACT

Low-income status was the lot of 26 percent of open-country residents over 15 years of age in the East North Central States, a 1967 sample survey showed. Many were unprepared to compete in today's labor market. Of those with low income, 37 percent had no economic potential because of age (over 65) or disability, and needed some form of income maintenance to alleviate poverty.

Of those considered to have economic potential, 20 percent could expect to escape poverty through job retraining. If two or more members of a consumer unit (an individual or a family) were retrained, as many as 25 percent of the consumer units might escape poverty.

Fewer than half of those potentially able to escape poverty were interested in retraining, which challenges retraining program administrators to develop innovative training delivery systems.

Very few respondents had potential for becoming successful farmers.

Key Words: Rural poverty, rural families, occupational mobility, job retraining East North Central Region, vocational training.

PREFACE

This report is based on part of the Rural Life Survey (RLS), a study of low-income problems in rural areas of the East North Central States conducted in 1967 by the Economic Development Division, Economic Research Service, in cooperation with the Office of Economic Opportunity. The views expressed in this report do not necessarily reflect those of the Office of Economic Opportunity.

The research was conducted under a memorandum of agreement between the Economic Development Division (EDD), Economic Research Service (ERS), and Michigan Agricultural Experiment Station, Michigan State University. The study was conducted under the general supervision of Max Jordan, EDD, ERS, and Garland Wood and Dale E. Hathaway, Michigan State University.

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HIGHLIGHTS

Well over half of low-income, open-country residents surveyed in 1967 in the East North Central States--53 percent of the men and 64 percent of the women--said they were not interested in a free local training course to upgrade their productivity and income.

Many respondents were unprepared to compete in the labor market, and will likely remain so. Very few of them had potential for becoming sussessful farmers.

Twenty-six percent of all regional open-country residents over age 15 were classed as low-income--defined as income less than one and one-half times the amount needed as a minimum for subsistence. Of the low-income respondents, 37 percent were unemployable because of age or disability, and would need some form of income assistance. An additional 7 percent could benefit from retraining but would still need some assistance.

Of the other 56 percent of low-income respondents, 92 percent of the men and 86 percent of the women lacked job skills of the type needed in occupation which provided adequate incomes. They needed retraining, and nearly all of them had the potential ability to complete a program like those offered under the Manpower Development and Training Act. In addition to their lack of interest, other factors limiting the earning ability of potential retrainees were: distance they lived from large employment centers, expectations that there would be a limited number of jobs available, and continued low-wage employment.

An estimated 17 to 35 percent of the low-income respondents with economic potential (11 to 22 percent of all low-income persons) would be members of families which could be expected to receive adequate incomes as a result of job training.

These rates could conceivably double, if the limiting factors were surmounted.

The scale of retraining needs indicated by the survey shows that such programs will have to be much more extensive in the future than they have been if all needy individuals are to be helped. Significant numbers of the needy are interested in participating and have good potential for completing such programs. If the emphasis is on the most needy, job retraining must be supplemented with basic educational instruction and such employment aids as job counseling, placement, and relocation assistance. Also, innovative delivery systems for manpower training systems are needed, together with new methods for creating interest in job retraining. In other words, those responsible for training need to take a fresh look at both the program content and the ways it is presented to prospective retrainees.

Rural Poor Who Could Benefit From Job Retraining in the East North Central States

by
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BACKGROUND

Available data indicate there is an extensive problem of rural low-incomes in the East North Central States. Over 580,000 rural families in Ohio, Indiana, Illinois, Michigan, and Wisconsin received incomes below the $3,000 poverty line in 1959 -- nearly one-fourth of all rural families in the subregion (table 1). A 1966 Census Bureau survey found that rural poverty rates in the whole North Central Region were 14.6 percent among farm families and 16.0 percent among nonfarm families in the region, and 36 percent of the region's poor families were rural residents, (23, pp. 85-86). 1/ While these estimates were not made for exactly the same States, nor were the same poverty criteria applied, they do illustrate the dimensions of the rural low-income problem in this region.

Table 1.--Rural families in the East North Central States with net money incomes under $3,000, 1959

State	Total rural families 1/	Poor families 2/	Proportion of poor families
	Number	Number	Percent
Ohio.....	640,222	138,240	21.6
Indiana.....	450,591	103,594	23.0
Illinois.....	505,280	134,958	26.7
Michigan.....	509,964	108,215	21.2
Wisconsin....	347,277	98,425	28.3
Total.....	2,453,334	583,432	23.8

Sources: 1/ (26), table 50; 2/ (2).

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1/ Underscored numbers in parentheses refer to items in the Bibliography.

The Rural Life Survey

An intensive, area-wide study of the extent and nature of the rural low-income problem in a region of commercial agriculture was undertaken in the East North Central States in 1967. This study, the Rural Life Survey, (RLS) was conducted by the Economic Research Service in cooperation with the Office of Economic Opportunity.

Based on the Master Sample of Agriculture, the survey sample of approximately 4,000 households consisted of open-country nonfarm households and farm operator households with 1966 farm sales of less than $10,000 (13, pp. 38-56). Survey results cannot be generalized to all the rural population of the region, using the census definition of rural which includes communities of less than 2,500 population, because only open-country households were included.

The consumer unit, either a family or an individual with no relations, was the basic unit of analysis regarding economic well-being. A family unit consisted of persons living together and related by blood, marriage, or adoption, foster children of any age, and unrelated children under 16. An individual without relations was one over 15 years of age living alone or with others unrelated to him by blood, marriage, or adoption.

The consumer unit's index of economic well-being was the ratio of income received to income required. The income required was based on the nonfarm poverty level used by the census in coding the Current Population Survey. Based on a formula developed by Mollie Orshansky (19, pp. 3-29)and implicitly considering the number, age, and sex of consumer unit members, the nonfarm poverty level was reduced by the amount of home-grown food actually received by the consumer unit.

Several conceptual weaknesses of this index of economic well-being were recognized. Consumer unit assets were not taken into account, so a relatively wealthy family could have been classified below the poverty line due to a low level of money income. Also, the extent of the low-income problem tends to be overstated in cross-sectional studies which include among the poor those with "temporary low-income" (15, pp. 39-49). And there are several conceptual weaknesses in the Orshansky formula (4, pp. 462-463), but in the absence of alternative income data and measures of economic well-being, this modified Orshansky formula was utilized in this study. Temporary low-income should be amenable to the same solutions as persistent low-incomes.

Rural Needs for Job Retraining

The massive outmigration from rural areas in the United States during 1940-60 fostered the belief that continued high levels of aggregate demand in the economy and additional net rural outmigration would bring equilibrium to rural labor. Little consideration was given to the plight of rural-to-urban migrants who lacked employable skills.

In a 1960 address to the American Economic Association, Dale Hathaway identified the problems faced by unskilled migrants who found themselves to be marginal members of the nonfarm society, and he called for public policies to cope with these non-self-correcting problems (10,p. 387).

The economist who led much of the early thinking in the area of human capital was also among the first to identify the need for job training as a critical problem in rural areas. T. W. Schultz states that a major cause of poverty, rural and urban, was "long standing disequilibria rooted in inadequate investment in particular classes of people, who are therefore poor" (21, p. 176). He was referring specifically to the poor quality of rural education. As early as 1960, C. E. Bishop also argued that "many farm people will likely need increased training and skills before thay can earn a reasonable income from nonfarm employment"(3, p. 439).

By 1967, national leaders were well aware of the need for job retraining, as well as for improved public school systems, in rural America. This awareness was reflected in the 1967 Manpower Report of the President, (29, p. 119) which stated:

> Educational and training facilities available to rural residents have been shockingly deficient in both quantity and quality as compared with those in urban communities. A revolutionary upgrading of the rural labor force is called for. Called for also, and equally important, is the establishment of educational and training facilities for rural youth, so that they will not be forced to enter the labor force under the same handicaps from which their fathers suffer.

The Commission on Rural Poverty (18, p. 24) also reflected this national awareness when it recommended "that adequate job training opportunities be provided for workers (rural) to maintain and upgrade their skills and to qualify for better jobs."

OBJECTIVES AND CONCEPTS OF RETRAINING STUDY

Objectives

This study of needs and potentials for job retraining was undertaken to determine if a program of job retraining, directed toward the RLS respondents, would provide an effective means for raising them above the poverty line.

The specific objectives of the study were to (1) determine the needs and potentials for retraining members of open-country, low-income households in the East North Central States; (2) determine the potentials of job retraining to provide employment; (3) determine the potential of this employment to add sufficient income to raise families above the poverty line; and (4) briefly examine existing retraining programs, and to propose program changes to enable them to more effectively aid individuals to realize their income and employment potentials.

Low Income and Economic Potential

By the Orshansky formula, all consumer units below a ratio of 1.00 on the index of economic well-being are considered to be "in poverty;" those above this ratio are "nonpoverty." In this study, a more detailed classification of consumer units was utilized:

Categories of economic well-being		Index ratio
Low income	deep poverty	$<.80$
	poverty	.80 - .99
	near poverty	1.00 - 1.19
	hardship	1.20 - 1.49
Adequate income		$\geq$ 1.50

This study focused upon low-income individuals; that is, those whose consumer unit index of economic well-being was below the 1.50 ratio. Unless stipulated otherwise, only low-income respondents are considered in this report. Respondents included ranged from those with "hardship" incomes through those in "deep poverty."

It was recognized that not all low-income persons are capable of being retrained and becoming jobholders and that the rural low-income problem is not amenable to the purely economic solution implied in the objectives of this study. However, respondents who are capable of productive work should be enabled to earn adequate incomes through job retraining and placement.

An ideal measure of productive ability would exclude persons unable to work because of advanced age, physicial disability, or mental or emotional handicaps. However, the RLS data identified as nonproductive only respondents with health disabilities and those over age 65. All other low-income respondents from ages 16 through 64 were classified as potentially economically productive and were included in this study. The low-income nonproductive respondents clearly require some form of income maintenance program if they are to receive adequate incomes.

Theory of Human Capital Investment

The marginal productivity labor theory leads to the conclusion that workers' wage rates differ because workers differ in their productivities, or simply in their productive abilities. Whereas this difference has long been recognized between entry-level workers and trained or experienced workers in a particular occupation, economists had not generally recognized that such productivity differences may exist among entry-level or marginal workers as well. Thus, modern economists tended to concentrate upon physical capital and to neglect the human factor (22, p. 3).

Recognizing that workers do possess different capabilities had led to what Harry G. Johnson considered "a new approach to the economics of labor--more broadly, the economics of the role of human beings in the productive process--based on the concept of "human capital"(12, p. 73). This concept envisages workers as particular types of capital equipment employed in the production process whose productive capacity is developed by a process of investment, through education and on-the-job training, and this investment yields a return over the worker's lifetime.

Estimates of the contribution of education to lifetime earnings have generally indicated that "the payoff rate for continued education at all levels is remarkably high--something in excess of 10 percent for college education and perhaps as high as 50 percent for increments at lower levels (20, p. 9)."

Concerning the relationship between education and poverty, Seymour Wolfbein claimed that about 40 percent of the decline in poverty among U.S. families between 1950 and 1964 resulted from the increased level of educational attainment of household heads during the period (34, p. 102). By means of more precise specification of the relationship between poverty and education in a regression model, Lester Thurow found education to be significantly related to poverty (24, p. 46). The 1963 incidence of poverty was 44 percent among households with family heads having less than 8 years of schooling, 10 percent for heads having completed high school, and under 5 percent when the head had completed 4 years or more of college.

An evaluation of the returns to several forms of educational investment designed as antipoverty programs, conducted by Thomas Ribich, showed that all but job retraining programs had very low benefit-cost ratios, usually less than unity (20). The retraining programs fared much better, apparently because efforts were focused on individuals known to have low incomes.

The studies cited indicate a very definite relationship between education and income. Caution must still be followed, however, in applying the relationships found in cross-section studies of the entire population to families and individuals now in poverty. Length of schooling is not the only factor which causes those with more education to earn higher incomes, and the studies have presented only tentative estimates of returns to human capital investment. Most studies measured average, rather than marginal, returns to this form of investment. However, the marginal contribution to worker productivity of job retraining investment appears to strongly support the concept of human capital investment. Thus, workers who receive low incomes because they possess low levels of productivity (lack of skills) can raise their productivity and their incomes through job retraining.

Potential for Increased Earnings Through Retraining

Recent national experience with manpower training programs provides some insight into the increased earning potentials from job retraining. A limited number of studies of earning experiences of persons trained under Federal Manpower Development and Training Act (MDTA) programs have been completed. The ideal estimate of potential earnings increases obtainable through job retraining should compare the annual earnings record of a large number of trainees with

an equal number of carefully matched controls. While no comparisons of this exact nature have been completed, Earl Main did a study of MDTA trainees which approximated these conditions as closely as could be done within the limitations of existing data (17, P. 79, table IV. 5).

The main study found no significant differences in hourly earnings between training completers and controls. The completers did earn an average of $10 more per week, or $500 annually, than did the controls. The difference resulted from completers having more full-time employment than controls, estimated to be 11 to 22 percent of the period after training.

Changes in hourly earnings of 1965-66 graduates of MDTA institutional training programs, based on 70 percent who reported pretraining and posttraining earnings information, were compiled by the U.S. Department of Labor (32). Neither a control group nor a measure of employment duration were incorporated in this study. However, by looking at different levels of straight-time average hourly earnings of trainees, it was found that trainees with lower levels of pretraining hourly earnings made considerably greater gains than those with relatively higher pretraining hourly earnings.

Overall, the Labor Department study revealed that median hourly earnings increased from $1.44 to $1.73 with retraining, a 29-cent increase per hour. Among the 70 percent of all trainees earning less than $1.75 per hour before training, 74 percent increased earnings, only 7 percent experienced declines, and the earnings of the remaining 19 percent were unchanged. Trainees with pretraining earnings over $1.74 per hour had very different experiences, with only 30 percent increasing, 31 percent remaining unchanged, and 30 percent receiving lower wages after training (table 2).

The available evidence indicates that, while not all persons completing retraining earn more, job retraining does increase incomes by increasing duration of employment and the increases tend to be concentrated among those who need them most -- those receiving relatively lower pretraining hourly earnings.

Skill Levels Possessed and Required

To obtain a measure of the needs of retraining the low-income RLS respondents, it was necessary to measure their skill level and to compare this level with a minimum standard training requirement, a skill level necessary for average performance in jobs which would in turn provide adequate incomes.

The level of vocational training of respondents was determined by quantifying the amount of vocational education, on-the-job training, or other specialized vocational training which they indicated they had participated in, and utilized, within the past 10 years. The procedures followed in quantifying

Table 2.--Posttraining status and mean posttraining earnings, MDTA institutional training graduates, 1965-66

Average hourly earnings before training	Posttraining earnings status relative to pretraining level				Mean posttraining hourly earnings for those with --	
	Decrease or no change		Increase		No increase	Increase
	Dist.	Persons	Dist.	Persons		
	Pct.	No.	Pct.	No.	Dol.	Dol.
Less than $0.75	10.1	488	89.9	4,319	0.65	1.46
$0.75 - $1.24	15.8	2,946	84.2	15,652	0.93	1.74
$1.25 - $1.49	32.1	5,497	67.9	11,620	1.29	2.02
$1.50 - $1.74	39.0	4,085	61.0	6,385	1.47	2.29
$1.75 - $1.99	45.7	2,700	54.3	3,208	1.64	2.48
$2.00 - $2.49	70.6	6,187	29.4	2,576	1.95	2.90
$2.50 or more	100	--	--	--	2.44	3.25
Total	39.2	28,685	60.8	44,476	--	--

Source: (32, tables 2 and 3).

past vocational training were basically those outlined by Sidney Fine (9, pp. 363-375), and are described in the appendix. Respondents' skill levels were expressed in terms of weeks of vocational training received and then converted to the specific vocational preparation (SVP) scale used by the U.S. Department of Labor for classifying occupational skill levels in the Dictionary of Occupational Titles (30,31). 2/

The requirements for average performance on the jobs for which unemployed workers have been retrained under MDTA training programs were used as the base for determining the minimum training standards. A list of over 900 jobs for which workers have been retrained was weighted by total MDTA enrollments in these occupational classifications (33).

2/ The technique used in determining specific vocational prepartion does not account for skills developed through job experience, except when such experience is a part of a specific vocational program.

After recording all SVP measures for the 900 job titles, separated roughly according to male and female occupations, median SVP levels were determined (see appendix). The "median range" SVP established in this manner was SVP 5-7 for males and SVP 4-5 for females. The median range SVP levels were then designated the minimum standard training requirements. Respondents were deemed to be in need of retraining if their computed skill level did not equal this minimum required skill level.

Potential Retrainability

Retrainability of low-income respondents was defined here as the ability to successfully complete a retraining progam of the type provided by MDTA programs and perform in a job that would provide adequate income. It is known that a definite and positive relationship exists between educational level and vocational training received by members of the U.S. work force (28, pp. 5-20). Also, the Department of Labor has defined the ability to do average job performance in required terms of both vocational skill level (SVP) and a general educational development (GED) level (30,31). Therefore, respondents' GED levels were used as the measure of their retrainability.

As defined in (31), GED consists of reasoning, mathematical ability, and language development. In this study, for lack of a better measure, years of schooling completed were used as a proxy for respondents' GED levels. The conversion of years of schooling completed to the GED scale (table 3) was made in accordance with the method used by R. S. Eckaus and must be interpreted with the precautions which he specified (8, P. 185).

To determine retrainability, the 900 MDTA training program job titles were listed by GED level, then the median SVP was computed for each GED level. Median SVP levels for each level of general educational development, and the potential retrainability of respondents with the respective GED levels, are shown in table 3.

Taking respondents' GED levels as the independent variable, it was assumed that they were capable of achieving the median SVP level corresponding to their GED level. Jobs requiring SVP levels 1 and 2 were considered unskilled jobs and incapable of providing adequate incomes. Thus, respondents with GED levels 1 and 2 were classified as retrainable only in programs which combine vocational training with general education. Respondents with GED level 3, equivalent to 6-8 years of schooling, were considered to have questionable retrainability, and those with GED levels above 3 were classified as having good potential retrainability.

Interest in Retraining

Whether job retraining can help consumer units earn adequate incomes depends initially upon the willingness of workers who need retraining to participate in the programs. Theoretically, a person would be interested in participating in a retraining program whenever the net present value of the future income stream from the improved skill is positive (that is, the present value of the added lifetime income attributable to the training exceeds the

Table 3.--Respondents' potential for retraining, by years of schooling completed, GED level, and corresponding SVP level

Years of schooling completed	GED 1/	Median SVP 2/		Potential for retraining
		Male	Female	
0-2	1	2	-	Only with general educational training
3-5	2	3	2	
6-8	3	5	4	Questionable
9-11	4	7	6	Good potential
12-14	5	7	7	
15-17	6	-	-	

Source: 1/ (8, table 2); 2/ (30).

present value of the total cost of the training). 3/

Survey respondents were asked if they would be interested in participating in a free local retraining program which would qualify them for a better job. Two hypotheses were tested: that the poorer respondents would accept more rapidly the idea of retraining, in line with the economic decision rule that they had more to gain from retraining; and that if charges were made for retraining programs, respondents' interest would decrease as costs rose.

The measure of interest in retraining probably tended to overstate the actual training potentials. It is generally recognized that the number responding affirmatively to such a question as the one asked concerning interest in retraining will be considerably greater than the number who would actually participate. However, more interest would undoubtedly have been shown if the hypothetical training program had included the subsistence allowance usually incorporated in MDTA programs. By not including a subsistence allowance in the proposed training program, we thought that normal overresponse was adequately controlled. We assumed, therefore, that all respondents showing interest would participate in retraining programs.

3/ For a detailed specification of this decision rule, see (6, pp. 149-170).

EMPIRICAL FINDINGS

Extent of Low Incomes and Potential Viability

The numbers and percentages of Rural Life Survey individuals over age 15, classified by economic viability and consumer unit index of economic well-being, are given in table 4. Just over a fourth of the individuals were in the low-income category. Sixty-three percent of the low-income individuals, representing a fifth of the total survey individuals over age 15, were classified as showing economic potential.

As noted above, 1,735 potentially viable, low-income respondents were focused upon in this study of needs and potentials for retraining. The amelioration of low incomes for the remaining 1,036 respondents, representing 37 percent of the low-income individuals, cannot be achieved through job retraining. Because of their advanced age or physicial disabilities, some form of income maintenance program will be required if they are to receive adequate incomes.

Retraining Needs

Because the respondents' present skill levels to lie so far below required skill levels, (30,31) an overwhelming need for occupational retraining exists among the respondents in the East North Central States. 4/ Specifically, 92 percent of the potentially economically viable, low-income males, and 86 percent of the females in this subgroup, were determined by this analysis to need vocational retraining (table 5). Even among the higher income persons in the survey, there was an indication of a serious shortage of vocational training of the type which would enable them to compete with other members of the region's labor force for higher paying jobs. Eighty-five percent of the males and 72 percent of the females possessed skill levels below required levels. Need for retraining was quite evenly distributed across all low-income categories.

It appears that the skill-level measure probably underestimated respondents' actual skill-levels, as it recorded only formal occupational training which was received in the last 10 years. Nevertheless, in comparison to those with adequate incomes, those with low incomes were significantly less well off on the skill-level index. Also, rates of 85 percent below the required level

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4/ One hundred twenty-three, or 7.1% of the potentially viable, low-income respondents were excluded from the SVP computation (43 males and 80 females) because they were still in school or their questionnaires were incomplete (328 higher income individuals were also excluded). Throughout the remainder of this study, respondents were considered separately by sex because of basic differences in types of MDTA training programs and in view of expected differential male and female labor force participation and response to retraining opportunities. The differences in levels between sexes is based on the data cited, and does not constitute an attempt to discriminate.

Table 4.--Consumer unit index of economic well-being, by income, age, and health status, 1967 Rural Life Survey

Survey respondents' age and health status	Consumer unit index of economic well-being 1/				Total low income		Total adequate income		Total	
	Deep poverty	Poverty	Near poverty	Hardship	Persons	Proportion	Persons	Proportion	Persons	Proportion
	No.	No.	No.	No.	No.	Pct.	No.	Pct.	No.	Pct.
Healthy, viable, aged--										
Under 25	79	42	69	147	337	12.2	1,474	19.0	1,811	17.2
25-44	182	104	153	362	801	28.9	2,841	36.6	3,642	34.6
45-64	208	88	109	192	597	21.5	2,431	31.1	3,028	28.7
Total	469	234	331	701	1,735	62.6	6,746	86.9	8,481	80.5
	Pct.									
Proportion viable	5.5	2.8	3.9	8.3	20.5	---	79.5	---	100	---
	No.									
Healthy, nonviable, aged 65 or over	271	116	113	133	633	22.8	662	8.5	1,295	12.3
Disabled, nonviable, aged under 65	55	40	17	37	149	5.4	193	2.5	342	3.2
65 and over	114	51	50	39	254	9.2	161	2.1	415	3.9
All respondents	909	441	511	910	2,771	100	7,762	100	10,533	100
	Pct.									
Proportion, all respondents	8.6	4.2	4.9	8.6	26.3	--	73.7	---	100	---

1/ The index is as follows: Deep poverty, less than .80; poverty, .80-1.19; near poverty, 1.00-1.19; hardship, 1.20-1.49

Table 5.--Relationship between potentially viable respondents' skill-levels and median required skill-level, by index of economic well-being and by sex; percentage distributions, Rural Life Survey, 1967

Index of economic well-being	Skill-levels related to median levels required 1/							
	Males				Females			
	Less than	Equal to	More than	Percent less than 1.50	Less than	Equal to	More than	Percent less than 1.50
Less than .80	93.0 (173)	2.2 (4)	4.8 (9)	25.5 (186)	83.8 (197)	5.5 (13)	10.6 (25)	26.6 (235)
.80 - .99	94.4 (84)	0 --	5.6 (5)	12.2 (89)	90.2 (111)	4.1 (5)	5.7 (7)	13.9 (123)
1.00 - 1.19	92.8 (141)	3.3 (5)	3.9 (6)	20.9 (152)	88.5 (146)	0.6 (1)	10.9 (18)	18.7 (165)
1.20 - 1.49	90.7 (274)	4.0 (12)	5.3 (16)	41.4 (302)	84.7 (305)	1.9 (7)	13.3 (48)	40.8 (360)
Total less than 1.50	92.2 (672)	2.9 (21)	4.9 (36)	100 (729)	86.0 (759)	2.9 (26)	11.1 (98)	100 (883)
1.50 or more	84.6 (2716)	5.3 (171)	10.1 (325)	--- (3212)	72.1 (2310)	5.3 (170)	22.6 (726)	--- (3206)
Total	86.0 (3388)	4.9 (192)	9.2 (361)	--- (3941)	75.1 (3069)	4.8 (196)	20.2 (824)	--- (4089)

1/ For the total population, chi-square for males = 31.610 and for females = 81.267 (with 8 degrees of freedom, both are significant at 0.001 level). For income ratios below 1.50 only, chi-square = 4.852 for males and 15.639 for females (with 6 degrees of freedom, not significant for males and significant at 0.02 for females). Skill-levels are adapted from (30, 31).

for males and 72 percent below requirements for females may not be too unrealistic even for respondents with adequate incomes. Three-fourths of the total survey population with jobs in 1966 were employed in the lowest two of five skill-level occupational categories.

Retraining Potentials

The extent and nature of retraining potentials for the respondents with retraining needs are presented in table 6. Most of them were found to have good potential for successful retraining, with 58 percent of the males and fully two-thirds of the females so classified.

At the opposite end of the scale, less than 5 percent of the males and only 3 percent of the females had no potential for successfully completing a regular retraining program. This small group would require basic education in addition to vocational training.

An intermediate group with GED-3 (equivalent to grades 6-8), comprising 37 percent of the males and 30 percent of the females, was found to have questionable retrainability. Although the median SVP for job titles with GED-3 was found to be SVP-5 for males and SVP-4 for females, many of these less well-educated individuals might also require basic education in addition to job retraining. However, in keeping with this measure of "attainable" skill-level implicit in the Dictionary of Occupational Titles, respondents with GED-3 were considered to be potentially retrainable in regular retraining programs.

Therefore, 95 percent of the males and 97 percent of the females with retraining needs were classified as having the potential to successfully complete a regular job retraining program.

Retraining Interest

All potentially viable low-income respondents were originally included in this analysis of interest in retraining because nearly all needed job retraining (92 percent of the males and 86 percent of the females). Respondents still attending school were included in this analysis, inasmuch as considerable need for vocational training has been found in this age group nationally. However, respondents were permitted to exclude themselves if they thought the retraining question was "not applicable due to age or health," and 109 did exclude themselves on this basis. Since the handicapped and aged were previously excluded from the analysis, many of the 109 individuals excluded here were presumably still in school or college. 5/

Only moderate interest in retraining was displayed by the potentially viable, low-income survey population. The analysis revealed that less than half of the males (47) and about a third (36) of the females were interested

5/ The population responding to the retraining interest question differed slightly from the population examined for retraining needs and potentials. In the "needs" analysis, those still in school were excluded because they had not yet had opportunity to participate in all the vocational training they may have planned to receive. Since only 123 (7%) of those eligible were excluded from the "needs" analysis and only 109 (6.3%) were excluded from the "interest" analysis, and since many in each group were undoubtedly the same individuals, it was thought that any bias introduced by this difference in population would be negligible.

Table 6.--Distribution of retraining potentials of low-income respondents with retraining needs, by sex, Rural Life Survey, 1967

GED Level	Potentials for retraining	Males			Females		
		Poor who need retraining	Total poor in survey		Total poor in survey		Poor who need retraining
		Percent					
1	Retrainable only with basic education to supplement GED	0.9	4.8	4.4	2.5	2.9	0.5
2		3.9					2.4
3	Possibly retrainable, may require basic education	36.8	36.8 = 33.9		26.1 = 30.3		30.3
4		33.4				40.2	40.2
5	Good potential for success in retraining program	25.0	58.4 = 53.8		57.4 = 66.8		26.6
6	---	---					---
Total		100	100	92.2	86.0	100	100

in participating in a job retraining program (table 7).

Contrary to the hypothesis based on the economic decision rule, there was no significant difference in retraining interest among low-income respondents in relation to their index of economic well-being. However, respondents quickly lost interest with potential increases in the cost of a retraining program. One-third of the males and 40 percent of the females who were interested in participating in a retraining program were no longer interested even at program costs of less than $100. As shown in table 8, interest declined even more as potential costs increased over $100.

Potential for Earning Adequate Income Through Retraining

There were two potential barriers to Rural Life Survey respondents becoming employed even after completing job retraining. First, survey data indicated that one-fourth of the respondents did not reside within commuting distance (approximately 40 miles) of an employment center with a population of 25,000 or more. While smaller centers might well provide job opportunities to retrained respondents, the commuting distance factor was acknowledged by assuming that only 75 percent of the retrained would readily find employment.

A second adjustment was made in the expected employment rate of the retrained based on evidence from Federal training programs. "Recent studies indicate that 85 percent of those who completed institutional training obtained jobs (some time) after training..." (27, p. 1). (Most MDTA completers were urban residents, so commuting distance should not have been a contributing factor to their not becoming employed).

Thus, of the RLS respondents with potential ability to complete and with interest in job retraining, it was conservatively estimated that only 64 percent (100 x 0.75 x 0.85) would actually find employment. How many with employment would be expected to have earnings large enough to provide their consumer unit with an adequate income?

The study by Earl Main (17) indicated that retraining led to approximately $500 annual increase in consumer unit earnings. However, the noncomparability of RLS data on full-time employment and other respondent characteristics with the controls in Main's study precluded the use of his findings to estimate earning potentials for retrained survey respondents.

An estimate of potentials for earning adequate incomes was obtained by applying the Labor Department data on increased in hourly earnings and the mean posttraining hourly earnings rates of MDTA graduates, given in table 2 above, to each hourly earnings category of the RLS low-income population, presented in table 9. Basic assumptions concerning the labor market behavior of potential RLS retrainees and overall labor market conditions were made to facilitate these estimates. These assumptions are described in the appendix. Included in this estimate were all consumer units in which at least one member had a determinable hourly wage rate for 1966. Implicit in the estimates was the assumption that at least one consumer unit member would be potentially retrainable. Thus, the individual's potential increase in hourly earnings was converted to the consumer unit's potential for earning adequate income.

Table 7.--Potentially viable low-income respondents' interest in retraining, by index of economic well-being and by sex, Rural Life Survey, 1967

Index of economic well-being	Males						Females					
	Interest		No interest		Total		Interest		No interest		Total	
	Persons	Proportion	Persons	Proportion	Persons	Proportion	Persons	Proportion	Persons	Proportion	Persons	Proportion
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Less than .80	89	46.1	104	53.9	193	100	89	36.5	155	63.5	244	100
.80 - .99	35	39.3	54	60.7	89	100	47	38.8	74	61.2	121	100
1.00 - 1.19	67	44.1	85	55.9	152	100	44	28.0	113	72.0	157	100
1.20 - 1.49	154	50.3	152	49.7	306	100	136	37.4	228	62.6	364	100
Total	345	46.6	395	53.4	740	100	316	35.7	570	64.3	886	100

Note: Chi-square for males = 4.007; for females, 5.053. (Neither is significant at 0.10 level).

Table 8.--Changes in retraining interest of potentially viable low-income respondents with increasing potential costs of retraining, by sex, Rural Life Survey, 1967

Potential retraining costs	Males			Females		
	No interest	Interested if free	All low income	No interest	Interested if free	All low income
	No.	Pct.	Pct.	No.	Pct.	Pct.
Free	345	100	46.6	316	100	35.7
Less than $100	232	67.2	30.1	187	59.2	19.4
$100 to $500	66	19.1	8.5	26	8.2	2.7
$500 or more	20	5.8	2.6	4	1.3	0.4

Table 9.--Percentage of consumer units, by hourly earnings and index of economic well-being, Rural Life Survey, 1967

Straight time hourly earnings	Rural Life Survey index of economic well-being					
	Less than .80	.80-.99	1.00-1.19	1.20-1.49	1.50 or more	Percent of total
	Pct.					
Less than $0.75	40.5 (15)	5.4 (2)	5.4 (2)	10.8 (4)	37.8 (14)	1.2 (37)
$0.75 - $1.24	26.7 (24)	5.6 (5)	14.4 (13)	12.2 (11)	41.1 (37)	3.0 (90)
$1.25 - $1.49	14.4 (19)	7.6 (10)	6.1 (8)	10.6 (14)	61.4 (81)	4.4 (132)
$1.50 - $1.74	10.3 (15)	4.1 (6)	8.3 (12)	14.5 (21)	62.8 (91)	4.8 (145)
$1.75 - $1.99	7.4 (12)	1.2 (2)	8.0 (13)	14.2 (23)	69.1 (112)	5.4 (162)
$2.00 - $2.49	2.9 (13)	4.0 (18)	3.4 (15)	10.8 (48)	78.9 (352)	14.9 (446)
$2.50 or more	0.9 (17)	1.4 (27)	2.1 (42)	5.4 (106)	90.3 (1788)	66.2 (1980)
Total	3.8 (115)	2.3 (70)	3.5 (105)	7.6 (227)	82.7 (2475)	100 (2992)

Note: Of the consumer units below index ratio 1.50, 222 (30 percent) had no determinable hourly wage rate. The figures in parentheses are numbers of consumer units.

The computation of the effects of these wage rate changes on the percentage of consumer units is shown in table 10. If all highest wage rate workers underwent retraining, only 27 percent of the consumer units would be expected to continue earning low incomes after retraining. By applying this percentage to potentially viable respondents' consumer units, it was estimated that nearly 75 percent of the consumer units whose highest paid member underwent retraining and obtained employment would be expected to earn adequate incomes.

Summary of Empirical Estimates

The nature of the data utilized in making several of the above estimates prevented the formulation of precise predictions of increased earnings potentials through job retraining. However, it was believed that the estimates presented reasonably close approximations of the effect of job retraining in alleviating low rural incomes in this subregion.

All of the empirical estimates made in this study are summarized in table 11. Included are the absolute percentages of the several estimates and the percentages derived by applying these absolute estimates in sequential order to (a) the total potentially viable population and (b) those of this total who needed retraining. Also included in table 11 is the percentage of the total potentially viable respondents estimated to be prevented from earning adequate incomes due to the influence of each of the control variables listed.

The sequential estimates indicated that a sizeable differential in potential for providing adequate consumer unit income existed between male and female respondents. Twenty-one percent, or 140, of the potentially viable males needing retraining would be expected to earn adequate consumer unit incomes with job retraining. The expected rate among females was 16 percent (123 persons).

The average size of viable survey consumer units was 2.3 persons over age 15. If only one member of each consumer unit was retrained and earning an adequate salary, assumed to be half of the 263 individuals expected to do so, then about 302 persons would reside in a consumer unit which received adequate income. These 302 persons would represent 17 percent of the respondents with economic potential, and 11 percent of all low-income individuals. On the other hand, if each of the 263 persons who were expected to earn adequate incomes represented a separate consumer unit, then about 605 individuals would reside in adequate income consumer units (35 percent of those with economic potential and 22 percent of the total low-income population).

The actual potential for retraining to lead to adequate incomes for respondents lay somewhere between these limits of 19 and 35 percent for respondents with economic potential, and between 11 and 22 percent for all survey individuals. The major limitation to the potential for job retraining to alleviate low rural incomes, as shown in table 11, was the lack of interest in participating in a job retraining program shown by respondents.

IMPLICATIONS OF FINDINGS

Implications of Low-Income Problems Not Amenable to Retraining

There are major implications concerning the role that job retraining cannot play in alleviating rural low-incomes in the East North Central Region. There are numerous, interrelated causes of low-incomes. Where marginal productivity is the primary causal factor, then increases in productivity

Table 10.--Relationship between pretrainingand estimated posttraining hourly earnings and income status for potentially viable, low-income Rural Life Survey consumer units

Pretraining straight time average hourly earnings	Total survey respondents with these earnings who had low incomes		Expected to receive increased earnings with retraining					Expected to receive decrease or no change in earnings				Total expected to have low incomes post-training 1/
	No.	%	%	No.	Mean hourly earnings	Expect low incomes %	Expect low incomes No.	No.	Mean hourly earnings	Expect low incomes %	Expect low incomes No.	No.
	A	E	C	D=A-C	E	F	G=D-F	H=A-D	I	J	K=H-J	L=G+K
Less than $0.75	23	62.2	89.9	21	$1.46	38.7	8	2	$0.65	62.2	1	9
$0.75 - $1.24	53	58.9	84.2	45	$1.74	37.2	17	8	.93	58.9	5	22
$1.25 - $1.49	51	38.7	67.9	35	2.02	21.1	7	16	1.29	38.7	6	13
$1.50 - $1.74	54	37.2	61.0	33	2.29	21.1	7	21	1.47	38.7	8	15
$1.75 - $1.99	50	30.9	54.3	27	2.48	21.1	6	23	1.64	37.2	9	15
$2.00 - $2.49	94	21.1	29.4	28	2.90	9.7	3	66	1.95	30.9	20	23
$2.50 or more	192	9.7	---	---	2.50	--	--	192	2.44	21.1	41	41

1/ Total = 138, or 26.6% of those surveyed.

through job retraining will alleviate much of the low-income problem. But when low worker marginal productivity is only one of several causal factors, or when other factors predominate in causing low-income conditions, then other solutions must be found.

The 37 percent of the survey respondents with no potential for economic viability due to age or health conditions will require some form of income supplements if they are to receive adequate incomes.

An additional 7 percent of the low-income respondents were in this position even though they had received sufficient vocational training (the 57 males and 124 females shown in table 5 to have no need for retraining). Whereas job retraining might upgrade their skills or redirect them into more remunerative occupations, they would undoubtedly require other types of assistance to overcome labor market barriers not directly associated with their productive capacities.

Thus, fully 44 percent of the respondents in this subregion had low-income problems not amenable to job retraining programs.

Implications for Present Training Programs

The extensive low incomes and needs for retraining among Rural Life Survey respondents were clear indications that the present rural system of vocational training (where one exists) in the East North Central States had left a considerable percentage of the rural workers ill-prepared to compete in today's labor force.

Although the limited data available on the place of residence of enrollees in Federal retraining programs was not broken down by geographical regions, even the generous estimate that 20 percent of MDTA participants were rural residents (29, p. 112) indicated that these Federal programs have not concentrated their efforts where the highest rates of unemployment (and underemployment) and low-incomes exist. Inasmuch as the total MDTA enrollment of 599,000 through 1966 (29, p. 277) represented the equivalent of only 3.5 percent of the 1963 labor force with less than 9 years of education, these Federal programs could not have been expected to make a major impact on rural training deficiencies. But they could have indicated, by enrolling and training more rural trainees, that they were concentrating their efforts where the need was greatest.

The importance of retraining rural workers, particularly farmworkers, was illustrated by Dale Hathaway and Brian Perkins (11, p. 185-237). They found that the initial income change experienced when moving from farm to nonfarm employment was an important determinant of whether or not an individual remained in nonfarm employment. With adequate retraining, the rural worker (farm or nonfarm) would be in a position to experience initial income changes sufficient to keep him in the alternative employment and to keep him earning an adequate income.

Another important implication for present training programs concerns the type of training given. Many of the MDTA training programs designed specifically for rural residents have tended to train them in general farming or other

Table 11.--Estimates of factors affecting the potential for job retraining to provide incomes for low-income families, Rural Life Survey, 1967

Control variables	Absolute percentage estimate			Sequential percentage estimated				Percentage needing retraining from earning adequate income by variables	
	Source of estimates	Male	Females	% of total low income viable		% of those in need of retraining			
				Males	Females	Males	Females	Males	Females
Need for ..... retraining....	% of total low-income viable individuals	92.2	86.0	92.2	86.0	100	100	--	--
Potential..... retrainability.	% of those in need of retraining	95.2	97.1	87.8	83.5	95.2	97.1	5	3
Interest in.... retraining....	% of those with retraining potential (% based on total low-income viable population)	46.6	35.7	40.9	29.8	44.4	34.7	51	62
Commuting ..... distance	% of those interested (% based on total RLS population residency)	75.0	75.0	30.7	22.4	33.3	26.0	11	9
Expectation of finding employment.....	% of those within commuting distance (% based on Labor Dept. data on trainees)	85.0	85.0	26.1	19.0	28.3	22.1	5	4
Expectation of earning adequate consumer unit income	% of those expected to find employment (% based on all consumer units with hourly wage rate)	73.4	73.4	19.2	13.9	20.8	16.2	7	6
						N=140	N=123		

on-farm occupations. Vocational education in rural high school also gives instruction in agriculture to rural youth. Since one-third of the survey consumer units were "farm" units, what were the potentials for assisting respondents to become viable farmers through retraining?

A farming potential, based on the possession of some acreage and the extent of which it provided income in 1966, was developed for survey respondents. While 31 percent of them had some acreage potential, half of those with acreage were over age 64 in 1967 (table 12). Of the respondents under age 65 with some acreage potential, only one-third received all or a major share of their 1966 earnings from their acreage. Respondents with major earning from acreage represented only 5 percent of the low-income population. Most with acreage potential were consumer unit heads, and three-fourths of them were over age 44 in 1967.

The implication of these acreage potentials was clear. Even in this region of commercial agriculture, only a very small percentage of the survey population had any potential for becoming viable commercial farmers through job retraining. Many with acreage had already recognized this and had turned to nonfarm employment for part of their income. Thus, retraining for nonfarm employment would, in most instances, facilitate a process which was already well underway in 1966.

Implications of Retraining Needs and Potentials

About 18 percent of all potentially economically viable survey respondents were members of consumer units and had need for retraining (1,612 individuals). Because the sampling rate was 0.6 percent, the total number of residents needing retraining in this subregion would be some 200,000 persons. If non-open-country, low-income workers and workers with barely adequate incomes who have apparent retraining needs were included, the total would be considerably larger, possibly from half to three-fourths of a million individuals.

The apparent scale of retraining needs among the rural population in this subregion implies that retraining programs will have to be much more extensive in the future than they have been to date if they realistically plan to retain all needy individuals. In the longrun, after present skill deficiencies are corrected, there will be continued need to train new entrants to the labor force and to upgrade some percentage of the previously retrained workers. Both shortrun and longrun training, needs require attention.

On the basis of retraining potentials developed in this study, training program administrators can be assured that significant numbers of rural, low-income workers are interested in participating in, and have good potentials for completing, regular MDTA type retraining programs. On the other hand, if retraining is to give priority to the most needy (in terms of potential trainability), then much more effort will have to be exerted in providing basic educational instruction, job counseling, placement, and similar employment aid assistance as well as vocational training.

Table 12.--Potentials for viability in farming based on acreage and its use, for low-income respondents, Rural Life Survey, 1967

Respondent subgroups	Persons	Percentage of subgroup	Percentage with low-income
	No.	Pct.	Pct.
Low-income persons with acreage:	856	100.0	30.9
Over age 64 in 1967	411	48.0	14.8
Under age 65 in 1967	445	52.0	16.1
Low-income persons under age 65 with acreage	445	100.0	16.1
Had no 1966 income from acres	108	24.3	3.9
1966 farm income not classed as "earnings"	85	19.1	3.1
1966 farm income a minor share of earnings	102	22.9	3.7
Total	295	66.3	10.7
Acreage provided major share of 1966 earnings	150	33.7	5.4
Persons with farming potential (i.e., with major share of 1966 earnings from acreage)	150	100.0	5.4
Over age 44 in 1967	113	75.3	4.1
Under age 45 in 1967	37	24.7	1.3

Implications of Retraining Interest and Increased Earnings Potential

As noted above, in defining the concept of "interest in retraining," the natural tendency for more persons to express interest in a hypothetical program than would actually participate in such a program was recognized. It was assumed that this over-response tendency was controlled by not including the possibility of receiving a subsistence allowance while in training. However, many respondents interested in retraining were employed at the time of the survey. It would be essential for them to receive a subsistence allowance while in training to reduce the opportunity cost of their participation.

While a considerable portion of the respondents did express interest in retraining, lack of interest was the greatest limiting factor. Therefore, innovative delivery systems for manpower training programs are needed. New methods for creating interest in job retraining were clearly needed. These new approaches should concentrate on changing the motivations and aspirations of the disinterested respondents and on educating them to the advantages to be gained from retraining.

The degree of interest in retraining also had major implications for the means by which trainees would actually be recruited. Under the MDTA manpower training programs, the primary means of recruiting trainees has been through referrals from State employment service offices. The survey data indicated that this method of publicizing programs and recruiting candidates would probably have to be altered considerably in rural areas of this subregion. As shown in table 13, only 8 percent of the consumer units reported that one of their members visited the employment service office in the past year. It was clear that none of three other public service agencies, the Cooperative Extension Service, the Social Security Administration, and County Welfare Offices, would be better prepared to reach those in need of training than the employment office. These other agencies had even less frequent contact with rural low-income persons than did the employment service.

The major implication to be drawn from this was that totally new program components may be required for recruitment of rural retrainees.

This study estimated that one-fourth of the respondents interested in retraining lived beyond reasonable commuting distance of urban employment centers. Since interest was in retraining given locally, there was considerable need for relatively small, less-than-class size training projects in the smaller communities geared specifically to local skill shortages.

From the experience of MDTA institutional training graduates, it was estimated that 15 percent of the study's retrained workers would be unable to find employment. This attrition could be avoided by linking job retraining with a job guarantee and all necessary supplemental services on the pattern of the Job Opportunities in the Business Sector (JOBS) program.

One-fourth of the respondents potentially retrained and employed were still estimated to earn less than adequate incomes. This implied a need for retraining all needy respondents in occupations with skill levels high enough to provide adequate incomes.

Table 13.--Use of public services by low-income consumer units by index of economic well-being, Rural Life Survey, 1967

Index of economic well-being	Public service office visited by respondent			
	Cooperative extension	Social Security administration	County welfare	Employment service
	Pct.			
Less than .80	10.8	11.3	9.5	5.4
.80 - .99	6.7	8.6	4.8	15.2
1.00 - 1.19	2.7	7.5	9.5	8.8
1.20 - 1.49	5.0	3.2	5.3	7.8
Total	6.5	7.2	7.3	8.3

CONCLUSIONS

Accepting the theory that an individual's earnings level is a function of his marginal productivity, and that his productivity is a function of the amount of investment made in him in the form of education and training, this study found that existing training institutions had left one-fourth of the open-country residents of the East North Central States with less than adequate incomes and skill levels.

The majority of the respondents with potential viability had good potential for completing job retraining and earning adequate incomes, yet more than half of them showed no interest in job retraining. Therefore, retraining has less potential for alleviating rural low-incomes than was hypothesized, largely because of the lack of respondents' economic viability and their lack of interest in retraining.

Nevertheless, between 19 percent and 37 percent of the potentially viable respondents (11 to 22 percent of all low-income respondents) would be enabled to earn adequate incomes through job retraining. Any program which could reasonably be expected to alleviate as much as one-fifth of the rural low-income problem should be given major emphasis in rural development programs in this subregion. And, if the lack of interest in retraining could be overcome, the income-improving effects of retraining could conceivably be doubled.

The need for innovative approaches and programs for reaching families with manpower services were clearly indicated by this study. Regardless of the

extent to which rural-urban distinctions are said to be no longer valid in the United States, people in the rural areas are "left behind," and new institutional arrangements for recruiting and retraining potentially viable workers will have to be extended into the rural areas.

BIBLIOGRAPHY

1. Bird, Alan R. Poverty in Rural Areas of the United States Washington: U.S. Dept. Agr., Agr. Econ. Rpt. No. 93. Nov. 1964.

2. Bird, Alan R., and McCoy. John L. White Americans in Rural Poverty Washington: U.S. Dept. Agr., Agr. Econ. Rpt. No. 124, Nov. 1967.

3. Bishop, C. E. Increasing Mobility of Labor Through Training Programs. In Hildreth, R. J. (ed.), Readings in Agricultural Policy. Lincoln: Univ. Nebr. Press, 1968.

4. Bonnen, James T. "Rural Poverty: Programs and Problems," Jour. Farm Econ. 48 (2):452-465. May, 1966.

5. Booth, E.J.R. "The Economic Dimensions of Rural Poverty, "Amer. Jour. Agr. Econ. 51 (2):428-442. May, 1969.

6. Chesler, Herbert A. The Retraining Decision in Massachusetts: Theory and Practice. In Somers, Gerald G. (ed.), Retraining the Unemployed. Madison: Univ. Wisc. Press. 1968.

7. Clawson, Marion. "Rural Poverty in the United States, " Jour. Farm Econ. 49 (5):1227-1233. Dec. 1967.

8. Eckaus, R. S. Economic Criteria for Education and Training. Rev. Econ. and Statis. 46 (2):181-190. May 1964.

9. Fine, Sidney A. Use of the Dictionary of Occupational Titles to Estimate Educational Investment. Jour. Human Resources III (3):363-375. Summer 1968.

10. Hathaway, Dale E. Migration from Agriculture: The Historical Record and Its Meaning. Amer. Econ. Rev. 50 379-391. May, 1960.

11 Hathaway, Dale E. and Perkins, Brian E. Occupational Mobility and Migration from Agriculture. In Nat. Advisory Comm. on Rural Poverty, Rural Poverty in the United States. Washington: U.S. Govt. Printing Off., 1968.

12. Johnson, Harry G. The Economic Approach to Social Questions. The Public Interest, No. 12 pp. 68-79 Summer 1968.

13. King, A.J. and Janssen, R.J. Master Sample of Agriculture.Jour. Amer. Statis. Assocs. 40:38-56. Mar. 1945.

14. Konyha, Marvin E. Needs and Potentials for Escape from Poverty Through Retraining for Families in the Eastern Corn Belt. Unpublished doctoral thesis. East Lansing: Mich. State Univ. 1970.

15. Lanzilotti, Robert G. The Poverty Syndrome: A Critical Review. Mich. State Univ. Business Topics pp. 39-49. Spring 1966.

16. Larson, Olaf, F. Discussion: Rural Poverty in the United States. Jour. Farm Econ. 49 (5): 1234-1236. Dec. 1967.

17. Main, Earl D. A Nationwide Evaluation of M.D.T.A Institutional Job Training Programs. Chicago: National Opinion Research Center, Univ. Chicago, Oct. 1966.

18. National Advisory Commission on Rural Poverty. The People Left Behind. Washington: U.S. Govt. Printing Off., 1967.

19. Orshansky, Mollie. Counting the Poor: Another Look a the Poverty Profile. Social Security Bul. 28 (1): 3-29. Jan. 1965.

20. Ribich, Thomas I. Education and Poverty. Washington: The Brookings Institution, 1968.

21. Schultz, Theodore W. Investment in Human Capital Amer. Econ. Rev. 51 (1): 1-17. March 1961.

22. Schultz, Theodore W. Public Approaches to Minimize Poverty. In Fishman, Leo (ed.), Poverty Amid Affluence. New Haven: Yale Univ. Press 1966.

23. Sheppard, Harold L. A Search for New Directions in the War Against Poverty. (appendix paper). In Subcommittee on Employment, Manpower, and Poverty of the Committee on Labor and Public Welfare, U.S. Senate (90th Cong. 2nd Sess., Toward Economic Security for the Poor. Washington: U.S. Govt. Printing Off. Oct. 1968.

24. Thurow, Lester C. The Causes of Poverty. Quart. Jour. Econ. 81 (1): 39-57 Feb. 1967.

25. Tweeten, Luther G. Rural Poverty: Incidence, Causes, and Cures, Proc. Ser. P-590R. Stillwater: Okla. State Univ. Expt. Stat. July, 1968.

26. U.S. Bureau of the Census. U.S. Census of Population: 1960. General Social and Economic Characteristics, PC(1)_C (five State volumes). Washington: U.S. Govt. Printing Off. 1961.

27. U.S. Department of Health, Education, and Welfare. Education and Training: A Chance to Advance (Seventh Ann. Rpt. of the Dept. to the Cong. on Training Activities Under the MDTA). Washington: U.S. Govt. Printing Off. April 1969.

28. U.S. Department of Labor, Manpower Administration. Formal Occupational Training of Adult Workers: Manpower/Automation Res. Monog. No. 2 Washington: By the Dept., Dec. 1964.

29. U.S. Department of Labor. Manpower Report of the President and Report on Manpower Requirements, Resources, Utilization, and Training. Washington: U.S. Govt. Printing Off. Apr. 1967; Jan. 1969.

30. U.S. Department of Labor. Selected Characteristics of Occupations (Physical Demands, Working Conditions, Training Time) 1966--A Supplement to the Dictionary of Occupational Titles, 3rd ed. Washington: U.S. Govt. Printing Off. 1966.

31. U.S. Department of Labor. Selected Characteristics of Occupations by Worker Traits and Physical Strength, 1968 (Supplement 2 to the Dictionary of Occupational Titles), 3rd ed. Washington: U.S. Govt. Printing Off. 1968.

32. U.S. Department of Labor, Manpower Administration. The Influence of M.D.T.A. Training on Earnings, Manpower Evaluation Report No. 8. Washington: By the Dept., Dec. 1968.

33. U.S. Department of Labor, Manpower Administration. Register of Projects Approved Under the Manpower Development and Training Act Through June, 1965. Washington: By the Dept., 1965.

34. Wolfbein, Seymour L. Education and Training for Full Employment. New York: Columbia University Press, 1967.

APPENDIX

Procedures for Quantifying Past Vocational Training

High School and College Training. -- If the respondent indicated that he was attending regular school or college at the time of the survey, no specific vocational preparation (SVP) score was calculated for him. To determine the extent of high school vocational training received, the high school program was subdivided as follows:

1. College preparatory program
2. Business program
3. Vocational program
4. General program
5. Only one program given
6. Did not attend high school

For respondents who had taken courses in the high school business or vocational programs, the following computational procedures were utilized:

1. It was assumed that high-school vocational courses given only in grades 11 and 12 were advanced enough to qualify as actual job training.

2. It was assumed that students attended vocational courses 2 hours each school day. The school year was about 180 days long resulting in 630 hours of training which were equivalent to 9 weeks of 40 hours each--the normal work week.

3. Following Fine (9, p. 368), high school vocational training was considered equivalent to half the number of hours of on-the-job training. Thus, each year of high school vocational training, equaling nine 40-hour weeks, was equivalent to 4.5 weeks of SVP equivalents. Allowing for absences from school, and to avoid the use of fractions of weeks, the SVP equivalent of 1 year of high school vocational training was set at 4 weeks.

For female respondents, home economics courses were not considered vocational training, and respondents having taken the college preparatory program received no SVP equivalents. For each respondent who attended college, the following computational procedures were utilized:

1. It was assumed that the first year of college consisted of basic or introductory courses and did not contain any vocational instruction.

2. Beyond the first year of college, each year was regarded as one-half vocational preparation, following Fine (9, p. 368).

3. Since each regular college year usually consists of 30 weeks of class attendance, each year of college completed beyond the first year was considered equivalent to 15 weeks of vocational preparation.

Thus, for respondents having taken vocational programs in high school and for those having completed 2 or more years of college, the SVP weeks equivalent given in table 14 were applied to determine the amount of SVP obtained from high school or college courses.

Table 14.--SVP weeks equivalent of high-school vocational and college training

Years of schooling completed including high school vocational	SVP weeks equivalent	Years of schooling completed, no high school vocational	SVP weeks equivalent
Less than 11	0	--	--
11	4	--	--
12	8	--	--
13	8	Less than 14	0
14	23	14	15
15	38	15	30
Greater than 15	53	Greater than 15	45

Vocational or Technical Training. -- When evaluating the SVP equivalent of training that was exclusively of a vocational or technical nature, only the latest training course taken within the last 10 years was considered, and only training courses lasting more than 6 weeks were included. Training included was vocational or technical training courses, apprenticeship, and formal, Government-sponsored, on-the-job training programs.

Each week of attendance in any of these training programs was considered a full week of vocational preparation, with two exceptions. If the training course was described as "home economics," it was not considered to be vocational training, and if it was described as a "school or college-type course," each week of attendance was considered to be one-half of a week of vocational preparation (table 15). Furthermore, adjustments were made (arbitrarily) for training which had not been used for sometime or which had never been used.

Adding the SVP weeks equivalent of high school vocational courses, years of college attendance, and other vocational and technical training courses taken by each respondent gave a total measure of their vocational preparation in terms of weeks of training. This measure was then converted to the specific vocational preparation (SVP) scale developed by the U.S. Department of Labor (table 16).

Table 15.--SVP ratio of unused training

Year training taken	SVP ratio if never used	Year training taken	Latest year training was used	SVP ratio if recently unused
1956-1961	0.0	1956-1961	before 1965	0.5
1962-1964	0.5	1962-1964	before 1965	0.75
1965-1967	1.0	1965-1967	1965-1967	1.0

Table 16.--SVP equivalents of weeks of vocational training

Training time in weeks	SVP equivalent
0	1
1-4	2
5-13	3
14-26	4
27-52	5
53-104	6
105-208	7
209-520	8
More than 520	9

Source: (30, p. A-5).

Procedures for Determining Median SVP Levels

The job titles which were used to determine the basic training requirements for low-income workers were jobs for which unemployed and underemployed workers have been retrained under Federal programs authorized by the Manpower Development and Training Act (MDTA) of 1962 (as amended). A listing of all MDTA projects approved through June, 1965, was the source used to obtain the list of 917 job titles, 393 of which were institutional courses and 524 of which were OJT (on-the-job training) programs (157 occupations appeared in both types of programs) (33). Seventy-five of the occupations were identified as predominantly female occupations.

The 917 job titles were weighted to reflect differential enrollments in institutional and OJT training programs and the relative frequency with which

training was given in each job title. The "required" SVP value for average performance in each job was obtained from the Dictionary of Occupational Titles (30,31).

The weighted number of job titles, by SVP scale, by sex, and by their relationship to the median SVP, are given in table 17. The median SVP of the job titles was SVP-6 for male categories and SVP-4 for female occupations. A "median range SVP" was established for each sex category. The median range for males was SVP 5-7, which contained 70.5 percent of all weighted job titles. For females the median range was SVP 4-5, which included 83 percent of all titles. These median range required SVP's were designated the minimum standard training requirements against which respondents' skill levels were measured to determine their retraining needs.

It was found that the occupations could be roughly broken down into four broad categories according to SVP scales as follows:

SVP 1 and 2 = unskilled occupations
SVP 3 and 4 = semiskilled
SVP 5 and 6 = skilled
SVP 7, 8, and 9 = highly skilled

Table 17.--Weighted number of MDTA-approved retraining courses, by SVP scales and by sex

Males			Females		
SVP	No. of job titles	Relation to median	SVP	No. of job titles	Relation to median
1	4	Less than median	1	0	Less than median
2	158		2	34	
3	258		3	47	
4	265		4*	612	="median range" (867=82.9%)
5	292		5	255	
6*	613	="median range" (2032=70.5%)	6	66	Greater than median
7	1127		7	31	
8	66	Greater than median	8	1	
9	1		9	0	

*Median SVP level Source: (33).

Therefore, the required SVP for males consisted of either skilled or highly skilled occupations, and for females it included semiskilled and skilled occupations as listed in (30,31).

Basic Assumptions of Labor Market Behavior of Potential RLS Retrainees and Overall Labor Market Conditions

1. For given levels of 1966 hourly earnings, RLS low-income respondents would when retrained, receive the same mean hourly earnings as did the 1965-66 MDTA institutional training graduates.

2. The same percentages of these respondents would receive increases in hourly earnings as did the 1965-66 MDTA institutional training graduates.

3. Among these respondents who would receive higher posttraining hourly wages, the same low-income rate would apply as was experienced by that (post-(training) hourly wages group in the RLS population. That is, the group which earns higher wages due to retraining would respond in the same manner as that higher wage group did without retraining.

4. Among respondents who received no increase in hourly earnings with retraining, the low-income rate would equal the rate for their earnings group in the total RLS population without retraining. That is, even though some respondents would not receive increased hourly rates with retraining, the amount of time they were employed would increase to equal the average for their total hourly earnings group without retraining.

5. Labor market conditions for RLS retrainees would be the same as they were for MDTA institutional training graduates in the Labor Department survey.