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ABSTRACT

This report presents a nationwide followup analysis of the educational experience and economic and social benefits of graduates in vocational education at the secondary, postsecondary, and junior college levels. Tentative cost-benefit comparisons are included, as well as comparative data on dropouts from vocational programs and academic high school graduates. The school level and sex of the graduates were found to be the most significant variables in explaining employment and earnings during the 3 years following graduation. The payoff from junior college-level vocational education proved to be the largest, because of the resulting labor market advantage. The report recommends an increased emphasis on general training at all school levels. (BH)

Final Report

USOE Grant No. 1-7-063003-3587

# THE EFFECTIVENESS OF VOCATIONAL AND TECHNICAL PROGRAMS

## A NATIONAL FOLLOW-UP SURVEY

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in collaboration with

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Bureau of Social Science Research, Inc.

and with the assistance of

Susan Fernbach Meives

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Center for Studies in Vocational and Technical Education
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## HIGHLIGHTS

- A national sample of vocational students who graduated from high school, post-secondary school and junior college vocational programs in 1966 were surveyed three years later to determine the effectiveness of their vocational education. It was found that the three school levels drew students of differing socio-economic backgrounds, with the entrants to junior college vocational programs coming from families with a higher socio-economic status.

- The school level and the sex of the graduates were found to be the most significant variables in explaining employment, wages and earnings during the three-year period following graduation. Junior college graduates enjoyed a labor market advantage relative to those from post-secondary vocational schools, and these, in turn, enjoyed an advantage over the graduates of high school vocational programs.

- Cost-benefit analysis generally confirms this view. Given the comparative costs of vocational education at the high school, post-secondary and junior college levels, and given the comparative benefits in terms of wages and earnings of their graduates, the "pay-off" of vocational education at the junior college level is greater than at the post-secondary or high school level. However, the cost data used in this study were severely limited. A survey of schools revealed that only about 50 per cent would be able and willing to provide sufficiently detailed cost data to permit a rigorous cost-benefit analysis by school level and program area.

- A relatively small proportion of high school graduates take jobs in their field of training. Although a larger proportion of graduates from post-secondary and junior college vocational programs take initial jobs in their program area, they move significantly away from their field of training by the time of their current job. The lack of relatedness is especially obvious in the case of graduates from Agricultural programs, and the tie to the field of training is found to be somewhat greater in the case of graduates in Health and Technical programs. The relatedness of the job to training does not have a significant positive effect on the graduate's employment or earnings, and, indeed, in some cases taking a job in the field of training has a negative effect on earnings. However, graduates who took jobs in their field of training appear to be more satisfied with their work than those who moved to other fields.

- The choice of a specific program area is of less importance than the choice of school level and other characteristics in affecting employment and earnings after graduation. The "pay-off" of a particular program area depends on whether it is located in a high school, post-secondary school or junior college; and it depends on the region of the country,

the urban-rural setting demographic characteristics. Program area, by itself, was of limited significance as an influence on employment and earnings in the various regressions conducted in this study.

- Except in post-secondary vocational schools, vocational education is not a terminal education for half or more of the enrollees. Especially at the junior college level, vocational education is a stepping-stone to additional education, often on a full-time basis in a four-year college.

- These findings call for more generalized training at all school levels as contrasted with specific occupational training; and may call for more flexibility in integrating vocational education with general and academic education. The advantages which graduates of junior college vocational programs appear to enjoy apparently reflect some of these characteristics; and they should be extended in greater measure to vocational and technical education at the post-secondary level and at the high school level.

## PREFACE

This report presents a nationwide follow-up analysis of the educational experience and economic and social benefits of graduates in vocational education at the secondary, post-secondary and junior college levels. It also includes some tentative cost-benefit comparisons as well as comparative data on dropouts from vocational-technical programs and on academic high school graduates.

A detailed report on the junior college segment of the study was prepared by Laure Sharp and Thelma Myint of the Bureau of Social Science Research, under subcontract with Wisconsin's Vocational Center. Their full report can be obtained from the Bureau of Social Science Research. Relevant sections of the report on junior college experience have been incorporated in this report. The cooperative relationship between our Center and the Bureau was a source of continuing encouragement in helping to overcome the inevitable research problems which arose. Much of the value of the report stems from that collaboration.

The research presented in these reports was funded by the Division of Adult and Vocational Research, U. S. Office of Education, Department of Health, Education and Welfare. We are especially grateful to Marc Matland, Bernard Yabroff, and Bernard Michael for their encouragement and advice at all stages of the research.

Professor Kenneth Little, University of Wisconsin, and Professor Richard Whinfield, now with the University of Connecticut, were associated with this research at its initiation and through most of its data-gathering phase. Their help is gratefully acknowledged. Max U. Eninger, Educational Systems Research Institute, was also associated with the project at its initial stages and contributed significantly to the plans, questionnaire design, and initial data gathering.

Susan Fernbach Meives was especially helpful in supervising the data collection and in her analyses of portions of data which she incorporated in her Master's thesis at the University of Wisconsin. David Zimmerman, a graduate research assistant at Wisconsin also assisted effectively in the computer analysis, as did Wayne Bullen.

Professor Teh-wei Hu, Pennsylvania State University, contributed notably to the section on cost-benefit analysis.

Our thanks for imaginative typing goes to Sandra Offerdahl and Genny Mittnacht.

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Madison, Wisconsin

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# CHAPTER I

## INTRODUCTION

Vocational-technical education can be defined as formal instruction for both youth and adults which prepares them for initial entrance into an occupation or for advancement within an occupation which requires training other than a four year (or longer) college degree. The basic purpose of this research has been to provide some measures of the effectiveness of such education. The measures can take various forms. First, the programs can be assessed in terms of how well vocational training currently available produces a work force capable of meeting the occupational demands of the economy. Second, it can be evaluated in terms of its ability to meet the educational, employment-oriented and income needs of various population groups. Although our report throws some indirect light on the first question, it is primarily focused on the second.

There has been marked growth in vocational enrollments in the 1960's, especially since the passage of the Vocational Education Act of 1963. By 1967 there had been a 16 per cent increase over 1960.

In addition to the funds provided by the Vocational Education Act of 1963 and its amendments, assistance for vocational education and training in the 1960's was also available in other federal acts and programs. The Higher Education Facilities Act of 1963 released $50 million for the construction of public community colleges,

technical institutes and two year branches of colleges and universities. The National Student Loan Insurance Act of 1964 made supporting loans available to students of post-secondary business, trade, technical and other vocational schools. Finally, the Manpower Development Training Act of 1962 with its amendments in 1963, 1965, 1966 and 1968, and the Area Redevelopment Act of 1962, provided funds for vocational training and retraining aimed at reducing unemployment and underemployment.

The Adult Basic Education Program initially authorized by the Equal Opportunity Act of 1964 serves as a supplement to national programs directly concerned with vocational and technical training. This program is aimed at eliminating educational deficiencies which limit an individual's employment opportunities and narrow his horizons.

In spite of all the federal dollars allocated for vocational education since the first act in 1917, there are no national data available for an evaluation of the effectiveness of vocational education. The current research was undertaken to further such an evaluation.

The study originated when the University of Wisconsin, through its Center for Studies in Vocational and Technical Education, obtained a grant from the U. S. Office of Education to provide evaluative data on the characteristics of graduates of vocational and technical programs and on the nature of their subsequent job placement and progress. The basic design of the study called for the inclusion of graduates from programs at three levels: high school, post-high school, and junior college. To further refine the evaluation, "comparison segments," in particular dropouts from the same programs and graduates

who had been enrolled in non-technical, non-vocational curricula, were also scheduled to be covered. The original study design called for the development of nationwide stratified random samples of schools for all three levels, with study populations of June 1966 graduates and appropriate "comparison students" selected within each school by random procedures.

For a number of reasons, not the least being a reduction in the grant due to a cut-back in research funds within the Office of Education, this initial study design had to undergo modifications. Sample selection proved to be a much more serious problem than originally envisioned. The compilation of a "universe," an inventory of institutions offering programs in the various vocational and technical program areas, proved to be a complex task. Furthermore, cooperation from some school systems, especially those in large urban areas, was in many cases difficult or time-consuming to obtain. In some states, confidentiality rules about student records eliminated the possibility of obtaining data with respect to a student's school performance. Information through school records for persons other than graduates was seldom available.

Finally, throughout the study, low response rates, largely due to inadequate initial addresses available from the school and the high level of mobility of persons in this age group, presented a major problem and required time-consuming follow-up efforts. These methodological obstacles and efforts at their resolution are described in the next chapter. Here it is only noted that the data collection and its potential for analysis fell short of the total objectives which the

investigators had set for themselves when the study was initiated. However, the basic goal remains: the evaluation of the effectiveness of vocational education at various levels through cross-program and cross-level comparisons, by means of the application of sophisticated statistical technique, using employment and income as primary success criteria.

In addition to the evaluation analysis, the report includes a detailed description of the characteristics of students who graduated from the various programs and their subsequent occupational and educational careers. If our own evaluation is far from complete and well below our initial aspirations, it is felt that the research has at least produced a valuable sample of baseline data as a contribution to nationwide evaluation.

# CHAPTER II

## SAMPLING PROCEDURE AND DATA COLLECTION

### Defining the Universe

The lack of national data on vocational education presented a problem in selecting a sample for the project. Prior to the initiation of the study, therefore, the Center for Studies in Vocational and Technical Education, in cooperation with the U. S. Office of Education and state directors of vocational education, prepared the Directory: Vocational Education Programs, 1966 which listed schools offering federally reimburseable vocational education programs in 1966. This listing, which included the vocational-technical enrollments in all public high schools, post-secondary (non-college) schools, and junior colleges, served as the universe for the project sample. Although this was the most complete and comprehensive directory available, it had inadequacies and inaccuracies, and these were inevitably transferred to the project sample. For example, since a decision was made to stratify the sample by size of program enrollment, schools which did not report enrollments in the Directory survey had to be excluded from the sample. This omission, as well as subsequent problems of lack of cooperation, resulted in the exclusion of some cities from the universe and sample, including New York City, Boston, Detroit, Philadelphia, and Pittsburgh. A number of other large cities in these same areas were included, however.

Sample Selection

The universe was divided into four regions (Northeast, South, North Central and West), and for each region, lists were made of all schools offering courses in each of the program areas (trade and industrial, distributive, health, agriculture, technical and office). Then each program area was subdivided into high, medium, and low enrollment schools. This procedure was done separately for secondary, post-secondary, and junior college level schools. From these lists, a national sample of schools was drawn on a random basis. Twice the desired number of schools was drawn in each cell to provide a list of replacement schools.

At this point, the state directors of vocational education were asked to contact the sample schools in their state and report on their agreement to participate in the study. Replacements were made for those schools which failed to participate. Among the reasons given for nonparticipation were: no courses offered in a particular program area, insufficient time and/or personnel to complete the information requested, too many other education studies, and inaccessible records. Many schools failed to respond at all to contacts, and some sample cells could not be filled with replacements. The particular problems and results for each of the school level samples are given below. Part of the problem of misreporting by schools is revealed in Tables II.1, II.2, and II.3 as the difference between columns 2 and 3. Column 2 represents the number of questionnaires returned by the graduates. Column 3 represents the actual number of usable questionnaires after those with inaccurate or

incomplete data were discarded. It was discovered that some schools incorrectly reported the graduation year of their students and in an effort to keep the sample as originally planned, those graduating in years other than 1966 were not coded.

Secondary Sample

The problem of obtaining a national sample of high school vocational education graduates was the most difficult due to the inadequate record-keeping at this level. In particular, many schools do not keep separate records for vocational students, and many do not keep records of graduates by year of graduation. This was a major problem in this study due to the proposal to focus on 1966 graduates. The problem of misinformation was severe at the secondary school level, but the major errors were corrected when the data from the graduates were coded. The following table contains a breakdown of the final sample as it was used for mailing and a summary of the returns. The final sample for mailing was approximately 50 per cent of the expected sample with the health program area showing the poorest over all. The technical program area also proved difficult in obtaining a sample, and only 15 schools were included. All of the graduates listed by the schools in the sample were mailed questionnaires.

Post-Secondary Sample

Sample selection of schools in the post-secondary level of the study presented fewer problems than the secondary sample. Questionnaires were mailed to graduates of approximately 70 per cent of the

TABLE II.1

SECONDARY SCHOOL SAMPLE

| Program | Questionnaires Sent | Mailed Returns | Usable Returns | Usable as % of Sent |
|---|---|---|---|---|
| Trade & Ind. | | | | |
| Schools | 36 | 36 | 36 | -- |
| Graduates | 1755 | 447 | 423 | 24.1 |
| Distributive | | | | |
| Schools | 32 | 32 | 30 | -- |
| Graduates | 835 | 201 | 192 | 23.0 |
| Health | | | | |
| Schools | 8 | 8 | 8 | -- |
| Graduates | 66 | 25 | 25 | 37.9 |
| Agriculture | | | | |
| Schools | 67 | 59 | 57 | -- |
| Graduates | 792 | 197 | 187 | 23.6 |
| Technical | | | | |
| Schools | 15 | 15 | 15 | -- |
| Graduates | 353 | 146 | 139 | 39.4 |
| Office | | | | |
| Schools | 41 | 41 | 40 | -- |
| Graduates | 1892 | 582 | 566 | 29.9 |
| Academic | | | | |
| Schools | 174 | 166 | 165 | -- |
| Graduates | 1634 | 645 | 633 | 38.7 |
| Total | | | | |
| Schools* | 194 | 186 | 181 | -- |
| Graduates | 7327 | 2243 | 2165 | 39.5 |

*The number of schools in each program area does not add to the final total due to the use of more than one program area from some schools.

schools in the proposed sample. The two weak areas as revealed in Table II.2 are distributive education and agriculture with only 5 and 4 schools, respectively.

TABLE II.2

POST-SECONDARY SCHOOL SAMPLE

| Program | Questionnaires Sent | Mailed Returns | Usable Returns | Usable as % of Sent |
|---|---|---|---|---|
| Trade & Ind. | | | | |
| Schools | 15 | 15 | 15 | -- |
| Graduates | 930 | 355 | 324 | 34.8 |
| Distributive | | | | |
| Schools | 5 | 5 | 5 | -- |
| Graduates | 192 | 98 | 87 | 45.3 |
| Health | | | | |
| Schools | 14 | 14 | 14 | -- |
| Graduates | 680 | 364 | 339 | 49.9 |
| Agriculture | | | | |
| Schools | 4 | 4 | 4 | -- |
| Graduates | 166 | 79 | 56 | 33.7 |
| Technical | | | | |
| Schools | 18 | 18 | 18 | -- |
| Graduates | 731 | 370 | 357 | 48.8 |
| Office | | | | |
| Schools | 16 | 16 | 16 | -- |
| Graduates | 762 | 372 | 363 | 47.6 |
| Total | | | | |
| Schools* | 54 | 54 | 54 | -- |
| Graduates | 3461 | 1638 | 1526 | 44.1 |

*The number of schools in each program area does not add to the final total due to the use of more than one program area from some schools.

Junior College Sample

At the junior college level, about 76 per cent of the original sample schools participated in the study. The representation of programs by schools is fairly evenly divided in this sample with the weakest area in agriculture. The technical and distributive education

TABLE II.3

JUNIOR COLLEGE SCHOOL SAMPLE

| Program | Questionnaires Sent | Mailed Returns | Usable Returns | Usable as % of Sent |
|---|---|---|---|---|
| Trade & Ind. | | | | |
| Schools | 10 | 10 | 10 | -- |
| Graduates | 277 | 137 | 135 | 48.7 |
| Distributive | | | | |
| Schools | 14 | 14 | 14 | -- |
| Graduates | 390 | 203 | 196 | 50.3 |
| Health | | | | |
| Schools | 17 | 17 | 17 | -- |
| Graduates | 501 | 274 | 270 | 53.9 |
| Agriculture | | | | |
| Schools | 10 | 8 | 8 | -- |
| Graduates | 508 | 281 | 278 | 54.7 |
| Technical | | | | |
| Schools | 11 | 11 | 11 | -- |
| Graduates | 658 | 269 | 249 | 37.8 |
| Office | | | | |
| Schools | 11 | 11 | 11 | -- |
| Graduates | 257 | 145 | 145 | 56.4 |
| Total | | | | |
| Schools* | 64 | 61 | 61 | -- |
| Graduates | 2591 | 1309 | 1273 | 49.1 |

*The number of schools in each program area does not add to the final total due to the use of more than one program area from some schools.

areas in the junior college sample returned heavy concentrations of graduates and so the number of questionnaires sent was reduced in these areas through the use of sampling ratios. Two out of three technical graduates were chosen from the rosters sent by the schools. In the distributive education area, all the listed graduates were included

with the exception of one large school where only one in four was chosen. Table II.3 summarizes the junior college sample as sent and returned.

The questionnaires were mailed in the spring and summer of 1969. Two follow-up mailings were made to the graduates to try to increase the response rate. The appendix contains a sample questionnaire. Although a different questionnaire was used for each school level, the information chosen for analysis in this study was obtained through questions similar to those in the sample. Tables II.1, II.2, and II.3 illustrate the varying response rates for the samples.

The Academic "Control" Sample

Students who had been enrolled in academic high school programs were selected to serve as a control or comparison group in analyses of the employment and income experience of graduates of vocational programs. The number of questionnaires sent to persons in the academic sample and the usable responses are indicated in Table II.1. The usable response rate, 38.7 per cent, compares favorably with that of the total sample and with response in particular vocational-technical programs.

Comparative characteristics of the academic program respondents are indicated in Chapter III, and descriptive data on their employment and earnings relative to vocational graduates are discussed in Chapters V and VI. However, the lack of reliability of some of the basic data provided for academic graduates and their high rate of college or university enrollment after high school graduation reduced the value of

refined comparative analyses of academic-vocational employment and earnings in the follow-up period. Although some reference is made in Chapter VI to the results of regression analysis including the academic sample, the academics are excluded from much of the comparative findings.

The Dropout Sample

The original plan to make useful comparisons between graduates and dropouts of vocational programs was also thwarted by the difficulty in obtaining reliable data on dropouts. The most serious conceptual problem was the definition of a vocational dropout used in obtaining the basic universe data from the schools for sample selection. Whereas some schools included only those who dropped out of school entirely, others included many who dropped out of one vocational program for transfer to another vocational or academic program. And, in the questionnaire responses of the "dropouts," it was apparent that many had dropped out of one school only to resume their studies at another school either as a vocational or academic enrollee.

In addition to the inadequacy of the data on dropouts supplied by the schools and the conceptual problems in defining dropouts from vocational programs, the response rate from those who were sent questionnaires was exceptionally low. Relative to the graduates, a much larger proportion of dropouts had changed addresses and could not be located through mail follow-up or telephone inquiries. Furthermore, the gaps in data supplied by the respondents was such that many of the questionnaires had to be discarded.

Consequently, the number of dropouts in several program areas, and in other cells used for comparative analysis in this study, were inadequate for inclusion in the basic evaluation. Descriptive data are provided on dropouts in Chapters IV, V and VI, and some reference is made to the significance of the dropout-graduate variable when introduced into the equations on post-vocational school wage rates. However, it was felt best to omit the data on dropouts in most of the basic evaluative analysis. For purposes of the comparative regression analyses, the following numbers of dropouts and graduates by school level were included:

| | Junior College | Post-High School | High School Vocational |
|---|---|---|---|
| Dropout | 26 | 24 | 44 |
| Graduate | 295 | 701 | 528 |

The lack of adequate academic and dropout samples for inclusion in refined statistical analyses deprives this study of useful "control" groups in evaluating the benefits of graduation from a vocational-technical program. However, the principal purpose of this research is to compare the results of vocational-technical education in three school levels and in six program areas. To a considerable extent, these categories represent control or comparison groups for each other and permit meaningful comparative evaluations.

Non-Response Bias

As a check on non-response bias, a random sample of non-respondents was drawn for follow-up telephone interviews. Twenty graduates were drawn from each program area for the post-secondary,

junior college, and secondary-vocational school levels. This sample was not stratified by size of school enrollment or by region as in the case of the original sample. The useable returns are shown in App.Tbl.1.

In a comparison of some key characteristics, there do not appear to be significant differences between the two samples which are consistent throughout the majority of variables. Table II.4 indicates the characteristics of those who responded to the mail questionnaire and those who did not respond to the mail questionnaire but were interviewed by telephone. Out of 18 tests for differences between the mail and telephone respondents, only 4 produced chi squares significant at .05 or less. In view of these results, in the remainder of this study the telephone respondents are included with the mail respondents in an undifferentiated total sample.

Even though the two samples are not dissimilar in a number of basic characteristics, it should be noted that the telephone sample of "nonrespondents" and the mail respondents are distributed unevenly among the various program areas. Since average follow-up wage rates for some program areas are higher than others, the differences in program distribution of the two samples can result in differences in the wages on the first job following their vocational-technical education.

These results are illustrated in Table II.5. The average starting wage rate is given in each cell along with the per cent of each sample in that program area. If only the figures in the totals column are used, it may be concluded that the non-respondents earn more than the respondents and that the economic benefits measured by

TABLE II.4

DIFFERENCE IN SOME BASIC CHARACTERISTICS BETWEEN RESPONDENTS (MAIL) AND NONRESPONDENTS (TELEPHONE INTERVIEW)

(Percentages)*

| | Post-Secondary | | Junior College | | Secondary Vocational | |
|---|---|---|---|---|---|---|
| | R** | NR | R | NR | R | NR |
| Relatedness of Job to Training | | | | | | |
| Same | 55 | 53 | 46 | 52 | 27 | 24 |
| Highly Related | 25 | 22 | 29 | 27 | 23 | 18 |
| Slightly Related | 13 | 8 | 14 | 13 | 20 | 16 |
| Completely Different | 7 | 17 | 11 | 8 | 30 | 43 |
| Chi Square signif. at: | .05 | | .90 | | .20 | |
| Father's Education | | | | | | |
| None-8th grade | 40 | 27 | 28 | 26 | 30 | 32 |
| 9th-11th grade | 14 | 12 | 16 | 10 | 24 | 26 |
| H.S. graduate | 30 | 42 | 33 | 31 | 33 | 36 |
| More than H.S. | 16 | 19 | 23 | 33 | 13 | 6 |
| Chi Square signif. at: | .20 | | .30 | | .70 | |
| Sex | | | | | | |
| Male | 54 | 63 | 65 | 59 | 53 | 62 |
| Female | 46 | 37 | 35 | 41 | 47 | 38 |
| Chi Square signif. at: | .30 | | .50 | | .30 | |
| Average Age | 25.67 | 23.76 | 25.27 | 25.45 | 21.00 | 21.00 |
| Marital Status | | | | | | |
| Single | 41 | 37 | 44 | 39 | 53 | 45 |
| Married | 55 | 63 | 52 | 60 | 44 | 38 |
| Other | 4 | 0 | 4 | 2 | 3 | 17 |
| Chi Square signif. at: | .30 | | .50 | | .001 | |
| Race | | | | | | |
| Negro | 3 | 6 | 4 | 6 | 8 | 12 |
| White | 89 | 93 | 92 | 92 | 91 | 84 |
| Other | 8 | 1 | 4 | 2 | 2 | 3 |
| Chi Square signif. at: | .10 | | .70 | | .30 | |
| Additional Education | | | | | | |
| Yes | 10 | 18 | 72 | 44 | 59 | 45 |
| No | 90 | 82 | 28 | 56 | 41 | 55 |
| Chi Square signif. at: | .10 | | .001 | | .05 | |

*Percentages may not add to 100 because of rounding.
**R=respondents to the mail questionnaire; NR=nonrespondents to the mail questionnaire who were interviewed by telephone.

TABLE II.5

AVERAGE STARTING HOURLY WAGE BY SCHOOL LEVEL AND PROGRAM FOR RESPONDENTS (MAIL) AND NONRESPONDENTS (TELEPHONE INTERVIEW)

| Program | Post-Secondary | | Junior College | | Secondary Vocational | |
|---|---|---|---|---|---|---|
| | R** | NR | R | NR | R | NR |
| Trade & Industrial | $2.19 | $2.43 | $2.30 | $2.33 | $1.89 | $2.21 |
| Per cent* | 18 | 18 | 10 | 15 | 30 | 19 |
| Distributive | 2.24 | 2.36 | 2.27 | 2.24 | 1.55 | 1.61 |
| Per cent | 4 | 27 | 13 | 25 | 12 | 13 |
| Health | 1.75 | 1.98 | 2.26 | 2.16 | 1.65 | 1.62 |
| Per cent | 23 | 10 | 27 | 25 | 2 | 13 |
| Agriculture | 2.20 | 2.63 | 2.38 | 4.06 | 2.00 | 1.83 |
| Per cent | 3 | 4 | 14 | 5 | 8 | 17 |
| Technical | 2.43 | 2.39 | 2.47 | 2.45 | 2.06 | 2.86 |
| Per cent | 26 | 20 | 20 | 15 | 8 | 17 |
| Office | 1.70 | 1.65 | 2.26 | 2.21 | 1.76 | 1.69 |
| Per cent | 26 | 20 | 15 | 15 | 40 | 22 |
| Total | 2.03 | 2.21 | 2.33 | 2.35 | 1.82 | 1.99 |
| Per cent | 100 | 100 | 100 | 100 | 100 | 100 |

*Per cent of mail and telephone respondents in each program area for each school level.
**R=respondents to the mail questionnaire; NR=nonrespondents to the mail questionnaire who were interviewed by telephone.

this study may be understated. By examining the differences between the two samples by program area, however, this conclusion is seen to result primarily from the distribution of the two samples by program area. In the post-secondary sample, for example, distributive graduates earn one of the highest wage rates, $2.24 per hour for mail respondents and $2.36 per hour for telephone respondents. The percentage of the total

number of graduates in each of these samples who fall in the distributive area is 4 for mail and 27 for telephone. This means that the average starting wage in the post-secondary telephone sample is influenced by their heavy concentration in a program area with higher-paid graduates. On the other hand, the health field, which is one of the lowest paying areas, contributes far less to the telephone sample than it does for the mail sample. This same phenomenon is true to a lesser degree for the secondary vocational graduates. In the junior college group, however, the samples are more evenly matched by program area and the average difference in pay between the mail and telephone respondents is only $.02.

It is more accurate, therefore, to assess the difference in starting wage rate in terms of program alone. In half of the 18 programs (6 programs in each of the 3 school levels), telephone respondents earned more than mail respondents and in half the reverse was true. It is interesting, however, to note that the sum of the differences between the wage rates in programs where the telephone respondents earned more than the mail respondents is $3.91, compared to only $.56 in those programs where the mail respondents earned more than the telephone respondents.

Although there are some significant differences between the respondents and non-respondents, the evidence available from telephone interviews does not indicate the customarily expected bias in favor of the labor market characteristics and performance of respondents relative to non-respondents. There is no consistent evidence that non-respondents were more "disadvantaged" or "deprived" than respondents.

Their lack of response apparently reflected a somewhat random series of causes which were not necessarily related to a less favorable labor market experience.

Regional Sampling and Weighting

As noted above, the population of schools was divided into four regions and subsequently the sample was stratified by size of program enrollment for three school levels. This procedure was designed to obtain an equal proportion of the sample in each region by each school level. Thus, the probability of sampling from each region differed. In order to decrease the possible sampling bias and the variance of the sample, a weighting procedure, with weights being the inverse to those probabilities, would be desirable.

However, due to the difficulties in the actual data collection in this study as noted above, many sample cells could not be filled with replacements. As a result, each region has different proportions of the total sample in each school level and program area, as shown in Chapter III. Thus, the application of the customary weighting procedure is not appropriate and may introduce further bias.

An alternative procedure for overcoming the regional weighting problem is to estimate separate regression equations by region. Based on the coefficients of the regression equations, one can determine the existence and extent of differences among the four regions. This procedure has been followed in the regression analyses in subsequent chapters.

# CHAPTER III

## PERSONAL CHARACTERISTICS OF THE GRADUATES

### Introduction

Although the survey was primarily designed as a follow-up of experience in the labor market, a limited amount of information was gathered on personal characteristics, the educational experience of students in the vocational programs and the attitudes of graduates toward their educational experience and labor market prospects. This chapter presents some cross-tabulations with regard to personal characteristics, and cross-tabulations describing the educational experience and attitudes of the graduates are set forth in the following chapter.

The personal characteristics discussed below in tabular form are also utilized in subsequent regression analyses as independent or explanatory variables which may be related to subsequent labor market and educational experience. Since a principal focus of the survey is on differences by school level and program area, much of the descriptive data on personal characteristics is classified by these two variables. Because of the need for a complete set of data for each respondent to be used in the regression analyses, some reduction in the size of the sample as set forth in the preceding chapter was necessary in order to include only those respondents for whom usable data were available for each and every independent and dependent variable

included in the regression equations. To insure that this procedure did not introduce an unknown bias in the results, the descriptive cross-tabulation tables were run twice, first for the reduced sample and then for the total sample described in Chapter II. This procedure revealed no outstanding differences in the two samples.

Since the regression analyses, utilizing personal characteristics as independent variables, include only the reduced sample, the tabulations presented in this chapter include the reduced sample rather than the total sample of usable responses. Since the variables differ in a number of the regression equations, the number of respondents in variable cells differs slightly according to the regression equation which is being utilized. Table III.1 summarizes the key personal characteristics of the samples broken down by school level. A more detailed summary of personal characteristics, cross-classified by region, program, and rural-urban setting of schools is presented in Appendix Table 2.

Age

In the sample respondents used in the regression analyses, the mean age was 23.7 years. Since all of the secondary school graduates completed school in 1966, it was assumed that the average age of the respondents at the time of the survey would be 21 for both the vocational and academic respondents. Table III.2 indicates the average age for the post-secondary and junior college samples by program area. Overall, there is little difference between the average age of the junior college graduates and the post-secondary school graduates,

TABLE III.1

CHARACTERISTICS OF SAMPLE BY SCHOOL LEVELS

| | Junior College | | Post-High School | | High School Vocational | |
|---|---|---|---|---|---|---|
| **Program** | | | | | | |
| Trade & Industry | 23 | (7.1)* | 145 | (20.0) | 150 | (26.2) |
| Distributive | 15 | (4.7) | 47 | (6.5) | 42 | (7.3) |
| Health | 76 | (23.7) | 119 | (16.4) | 10 | (1.7) |
| Agriculture | 30 | (9.3) | 4 | (0.6) | 58 | (10.1) |
| Technical | 110 | (34.3) | 203 | (28.0) | 69 | (12.1) |
| Office | 67 | (20.9) | 207 | (28.5) | 243 | (42.6) |
| **Graduate Status** | | | | | | |
| Graduate | 295 | (91.9) | 701 | [illegible].7) | 528 | (92.3) |
| Dropout | 26 | (8.1) | 24 | (3.3) | 44 | (7.7) |
| **Sex** | | | | | | |
| Male | 194 | (60.4) | 403 | (55.6) | 281 | (49.1) |
| Female | 127 | (39.6) | 322 | (44.4) | 291 | (50.9) |
| **Age** | | | | | | |
| Mean | 25.8 | | 25 | | -- | |
| Standard Deviation | 6.1 | | 6.5 | | -- | |
| Range | 21-55 yrs. | | 20-61 yrs. | | -- | |
| **Marital Status** | | | | | | |
| Single | 108 | (33.6) | 287 | (39.6) | 284 | (49.6) |
| Married | 196 | (61.1) | 417 | (57.5) | 267 | (46.7) |
| Other | 17 | (5.3) | 21 | (2.9) | 21 | (3.7) |
| **Race** | | | | | | |
| White | 289 | (90.0) | 664 | (91.6) | 535 | (93.5) |
| Non-white | 32 | (10.0) | 61 | (8.4) | 37 | (6.5) |

*Figures in parentheses refer to percentages.

TABLE III.2

AVERAGE AGE OF POST-HIGH SCHOOL AND JUNIOR COLLEGE GRADUATES BY PROGRAM AREA

| | Post-High School | Junior College | Average for Program* |
|---|---|---|---|
| Trade and Industrial | 23.94 | 25.57 | 22.61 |
| Distributive | 23.04 | 23.08 | 22.16 |
| Health | 30.11 | 28.50 | 29.07 |
| Agriculture | 23.51 | 22.92 | 22.24 |
| Technical | 24.35 | 25.48 | 24.07 |
| Office | 22.89 | 23.99 | 22.11 |

*The averages for program contain the secondary vocational graduates' average age of 21.

approximately 25 years for each. Nonetheless, as seen in Table III.1, there is a wide range of ages in both samples, and, as seen in Table III.2, junior college graduates in Health, Trade and Industrial, and Technical programs are on the average older than those in Distributive, Office, and Agriculture programs. Somewhat the same age pattern is found among the post-high school graduates with the exception that those in Trade and Industrial programs are closer to the average age of the sample.

Sex

In the total sample used for regression analyses, males constituted 54.3 per cent, females 45.7 per cent. As is seen in Table III.1, however, males represent a larger proportion of the junior college sample and a slightly smaller proportion of the high school

vocational sample. There is a notable distinction in sex shown by program area (see App.Tbl. 2). Whereas males are clearly the dominant group in Trade and Industrial programs and in Agriculture and Technical programs, females predominate in Office programs and they constitute all but a handful of respondents in our sample of graduates in Health programs. Although males constitute a large proportion of the total sample in Distributive programs at the high school and post-high school levels, the male predominance in Distributive programs is especially notable at the junior college level.

Marital Status

In the total sample, 54.4 were married and 41.9 were single. As is seen in Table III.1, this ratio was reversed only at the high school vocational level, and in the junior college sample over 60 per cent were married. Reflecting sex and age differences, there are notable differences in the percentage of married respondents in the various program areas (App.Tbl. 2). Married respondents predominated in Health, Agriculture, Technical and Office programs, but they were in a minority in Trade and Industrial programs, and were equally represented with single respondents in Distributive programs.

Whereas women were more likely to be married and men more likely to be single at the high school level, in both vocational and academic programs (see Table III.3), at the post-high school and junior college levels married respondents predominated among both men and women.

TABLE III.3

MARITAL STATUS AND SEX OF SAMPLE BY SCHOOL LEVEL
(M = Male; F = Female—percentages)*

| Marital Status | Post-High School | | Junior College | | High School Vocational | | Secondary Academic | |
|---|---|---|---|---|---|---|---|---|
| | M | F | M | F | M | F | M | F |
| Single | 43 | 36 | 46 | 27 | 57 | 43 | 70 | 47 |
| Married | 57 | 59 | 52 | 65 | 40 | 52 | 26 | 51 |
| Other | 1 | 5 | 2 | 7 | 3 | 5 | 3 | 1 |

*Totals may not add to 100 per cent due to rounding.

Race

Our sample of respondents was overwhelmingly white, with only 8 per cent non-white. The racial composition was roughly similar at each of the school levels, with a slightly greater proportion of whites at the high school vocational level, as compared with post-high school and junior college samples. By program area, the only sizable number of non-whites were found in Trade and Industrial, and the percentage of non-whites was especially small in Agriculture, Office and Distributive education. At the junior college level, these racial patterns were also noted, with some concentration of non-whites in Trade and Industrial and in Health programs (see Table III.4).

As might be expected, non-whites in the total sample were found primarily in the cities rather than the rural areas or the suburbs (App.Tbl. 2), and the regional breakdown found that they were somewhat more heavily concentrated in the West and the South, as compared with the Northeast and North Central areas.

TABLE III.4

RACE OF RESPONDENTS BY JUNIOR COLLEGE PROGRAM
(In percentages)

| Program | Negro | White | Other |
|---|---|---|---|
| Trade and Industry | 10.7 | 88.5 | 0.8 |
| Distributive | 3.6 | 95.4 | 1.0 |
| Health | 9.1 | 90.2 | 0.7 |
| Agriculture | 1.5 | 95.9 | 2.6 |
| Technical | 2.0 | 89.0 | 9.0 |
| Office | 1.4 | 90.7 | 7.9 |

Socio-Economic Background

The education and occupation of the respondents' parents can be utilized as a measure of their socio-economic background. As can be seen in Table III.5, respondents in the junior college and high school academic samples have fathers with higher levels of educational achievement than those in the high school or post-high school vocational samples. Whereas approximately one-fifth of the respondents in the junior college and high school academic samples had fathers with more than a high school education, in the two vocational school samples the corresponding percentages are 14.10 and 10.60.

There are also interesting differences in the educational level of the respondents' fathers when the samples at each school level are broken down by program area (see Appendix Tables 3, 4 and 5). At the junior college level, almost one-third of the graduates from

TABLE III.5

FATHERS' EDUCATION BY SCHOOL LEVEL
(Percentages)

| Fathers' Education | Post-High School | Junior College | High School Vocational | High School Academic |
|---|---|---|---|---|
| 5-8 years | 39.55 | 30.54 | 32.45 | 25.67 |
| 9-11 years | 14.47 | 16.59 | 24.28 | 35.63 |
| High school | 31.88 | 32.40 | 32.66 | 35.63 |
| More than high school | 14.10 | 20.47 | 10.60 | 19.92 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 |

Chi Square significant at .001.

Technical programs had fathers who had achieved more than a high school education, as compared with less than one-fourth of those from Health and Agriculture programs, and less than one-fifth of those who had graduated in the other program areas. For graduates from high school and post-high school vocational programs, on the other hand, the fathers of those from Distributive programs had the highest levels of education. At all school levels, the proportion of fathers with more than a high school education was lowest for graduates from Trade and Industry programs, ranging from 9 per cent at the high school vocational level to 16.2 per cent at the junior college level.

The fathers of junior college graduates also held jobs on their way up the occupational ladder, as compared to fathers of graduates of high school and post-high school vocational programs. As seen in Tables III.6, III.7 and III.8, in the majority of program areas, the

TABLE III.6

FATHER'S OCCUPATION, BY STUDENT'S JUNIOR COLLEGE PROGRAM
(In percentages)

| Program | Sample Size | Father's Occupation | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | Prof., Technical & Kind. | Farmer | Managers, Officials, Prop. | Clerical and Sales | Skilled | Semi-Skilled | Service and Unskilled | |
| TRADE AND INDUSTRY | 120 | 9.2 | 19.2 | 15.0 | 10.8 | 23.3 | 15.8 | 6.7 | 100.0 |
| DISTRIBUTIVE ED. | 174 | 9.8 | 1.7 | 35.0 | 13.2 | 20.7 | 11.5 | 8.0 | 100.0 |
| HEALTH | 216 | 12.5 | 13.4 | 11.6 | 6.9 | 29.2 | 15.3 | 11.1 | 100.0 |
| AGRICULTURE | 260 | 7.7 | 46.5 | 10.0 | 6.1 | 12.3 | 8.8 | 8.4 | 100.0 |
| TECHNICAL | 219 | 24.2 | 4.1 | 15.1 | 10.5 | 24.2 | 16.0 | 5.9 | 100.0 |
| OFFICE | 128 | 11.7 | 6.2 | 18.0 | 10.1 | 19.5 | 20.3 | 14.0 | 100.0 |

TABLE III.7

FATHER'S OCCUPATION, BY STUDENT'S POST HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size | Father's Occupation (per cent of students) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Professional | Farmer | Manager | Clerical | Sales | Skilled | Semi-skilled | Service | Unskilled | Total[a] |
| TRADE AND INDUSTRY | 280 | 6.8 | 31.4 | 6.4 | 2.9 | 2.1 | 22.1 | 13.9 | 5.4 | 8.9 | 100 |
| DISTRIBUTIVE | 81 | 22.2 | 0 | 21.0 | 4.9 | 9.9 | 24.7 | 9.9 | 6.2 | 1.2 | 100 |
| HEALTH | 273 | 7.7 | 16.9 | 15.4 | 2.2 | 3.7 | 28.9 | 13.6 | 7.7 | 4.0 | 100 |
| AGRICULTURE | 50 | 6.0 | 56.0 | 10.0 | 2.0 | 2.0 | 6.0 | 14.0 | 0 | 4.0 | 100 |
| TECHNICAL | 316 | 9.5 | 24.7 | 12.3 | 2.2 | 3.8 | 26.9 | 11.1 | 4.8 | 4.8 | 100 |
| OFFICE | 316 | 4.1 | 31.0 | 10.1 | 2.5 | 4.8 | 18.7 | 11.1 | 7.0 | 10.8 | 100 |

[a]Percentages may not equal 100 due to rounding.

TABLE III.8

FATHER'S OCCUPATION, BY STUDENT'S HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size | Father's Occupation (per cent of students) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Professional | Farmer | Manager | Clerical | Sales | Skilled | Semi-skilled | Service | Unskilled | Total[a] |
| TRADE AND INDUSTRY | 327 | 6.1 | 6.1 | 6.7 | 3.4 | 4.0 | 34.6 | 22.3 | 8.3 | 8.6 | 100 |
| DISTRIBUTIVE | 158 | 10.1 | 2.5 | 19.6 | 1.9 | 7.6 | 24.7 | 17.1 | 9.5 | 7.0 | 100 |
| HEALTH | 21 | 14.3 | 4.8 | 9.5 | 4.8 | 9.5 | 23.8 | 9.5 | 9.5 | 14.3 | 100 |
| AGRICULTURE | 167 | 1.8 | 50.3 | 6.0 | 1.8 | 1.8 | 16.8 | 9.6 | 5.4 | 6.6 | 100 |
| TECHNICAL | 116 | 10.3 | .9 | 8.6 | 8.6 | 5.2 | 37.1 | 15.5 | 10.3 | 3.5 | 100 |
| OFFICE | 487 | 10.1 | 4.5 | 12.1 | 3.1 | 4.7 | 35.5 | 16.6 | 8.8 | 4.5 | 100 |

[a]Percentages may not equal 100 due to rounding.

proportion of professional, technical and managerial occupations was greater at the junior college level than at the post-high school and high school levels. This is especially notable for those graduating from technical programs, where almost one-fourth of the fathers of junior college graduates held professional or technical positions in contrast with only 10 per cent of the fathers of students in the post-high school and high school programs. Similarly, at the other end of the occupational scale, a smaller proportion of the fathers of junior college graduates were in service and unskilled occupations in the majority of program areas, as compared with the fathers of high school graduates. The occupational pattern at the post-high school level was closer to the junior college pattern.

One notable feature of the socio-economic background of the graduates is the preponderance of skilled manual occupations held by their fathers. This is especially marked in the case of the graduates of high school vocational programs, where the father of over one-third of the graduates of Trade and Industry, Technical and Office programs were skilled workers. However, family background in the skilled manual trades was also significant among the graduates of post-high school and junior college programs. The major exception is found among graduates of agricultural programs. At the high school and post-high school levels, over half of the agricultural graduates had a farming background, and at the junior college level 46.5 per cent of the fathers were farmers.

It is of some interest to note that over a third of the fathers of graduates of Distribution education programs were employed as managers or proprietors. Although the proportion from this occupational background

is not as high for post-high school and high school vocational graduates (approximately 20 per cent), at these school levels, too, the proportion of fathers who are managers or proprietors was greater for graduates in Distributive education than in the other program areas.

These findings are generally confirmed by the data on the socio-economic index (using the NORC scale) of the father's occupation (see Appendix Tables 5, 6 and 7). For most of the program areas, the occupations of fathers of junior college graduates place them in a higher socio-economic status than the fathers of post-high school and high school vocational graduates. The fathers of graduates from Technical and Distributive programs tended to have a realtively high socio-economic occupational status, and the fathers of graduates of Agriculture and Trade and Industry programs tended to have a relatively low position on the socio-economic occupational index.

The mother's education and occupation may also have some influence on the achievement orientation and social status of their children. As is seen in Tables III.9, III.10 and III.11, the mothers of junior college and post-high school vocational graduates had achieved a higher level of education than those in the high school vocational programs. This is especially notable in the Technical and Agricultural programs. where the educational level of the graduates' mothers was relatively high at the junior college and post-high school levels but not markedly higher than in other programs at the high school level. As in the case of the father's education level, the educational achievement of mothers of graduates from Agricultural programs at the junior college and post-high school level was relatively high, as compared with the mother's

TABLE III.9

MOTHER'S EDUCATION, BY STUDENT'S JUNIOR COLLEGE PROGRAM
(In percentages)

| Program | Sample Size | Mother's Education: Less than 9th Grade | 9th to High School Grad. | More than High School | Total |
|---|---|---|---|---|---|
| TRADE AND INDUSTRY | 130 | 22.3 | 63.9 | 13.9 | 100.0 |
| DISTRIBUTIVE EDUCATION | 183 | 14.8 | 67.7 | 17.5 | 100.0 |
| HEALTH | 239 | 28.5 | 51.4 | 20.1 | 100.0 |
| AGRICULTURE | 270 | 15.2 | 56.7 | 28.2 | 100.0 |
| TECHNICAL | 233 | 15.5 | 56.7 | 27.9 | 100.0 |
| OFFICE | 133 | 25.6 | 63.2 | 11.3 | 100.0 |

TABLE III.10

MOTHER'S EDUCATION, BY STUDENT'S POST HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size | Mother's Education (per cent of students) 0-8 | 9-11 | 12 | More | Total[a] |
|---|---|---|---|---|---|---|
| TRADE AND INDUSTRY | 305 | 30.5 | 19.0 | 32.5 | 18.0 | 100 |
| DISTRIBUTIVE | 87 | 6.9 | 16.1 | 50.6 | 26.4 | 100 |
| HEALTH | 319 | 33.5 | 15.1 | 33.9 | 17.6 | 100 |
| AGRICULTURE | 53 | 9.4 | 1.9 | 52.8 | 35.9 | 100 |
| TECHNICAL | 347 | 19.6 | 12.8 | 46.4 | 21.0 | 100 |
| OFFICE | 352 | 31.0 | 17.9 | 33.8 | 17.3 | 100 |

[a]Percentages may not equal 100 due to rounding.

$x^2 = 76.6$ (df = 15)
significant at .001 level

TABLE III.11

MOTHER'S EDUCATION, BY STUDENT'S HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size | Mother's Education (per cent of students) 0-8 | 9-11 | 12 | More | Total[a] |
|---|---|---|---|---|---|---|
| TRADE AND INDUSTRY | 399 | 18.1 | 30.1 | 42.4 | 9.5 | 100 |
| DISTRIBUTIVE | 184 | 17.4 | 20.7 | 45.1 | 16.9 | 100 |
| HEALTH | 23 | 26.1 | 34.8 | 26.1 | 13.0 | 100 |
| AGRICULTURE | 182 | 23.6 | 17.6 | 43.4 | 15.4 | 100 |
| TECHNICAL | 129 | 16.3 | 21.7 | 49.6 | 12.4 | 100 |
| OFFICE | 537 | 18.8 | 24.4 | 44.9 | 11.9 | 100 |

[a]Percentages may not equal 100 due to rounding.

$x^2 = 24.7$ (df = 15)
not significant at .05 level

educational level for graduates of Agricultural programs in the high schools.

Approximately one-third of the mothers of post-high graduates were working at the time of the interview, and 42 per cent of the mothers of high school graduates were employed. At both school levels, the largest proportion of professionally or technically employed mothers was found among graduates of Agricultural programs (33 per cent for post-high school graduates and 25 per cent for high school graduates). Relatively large percentages of the mothers were employed in clerical occupations and relatively few were employed in unskilled occupations (see Appendix Tables 8 and 9).

The socio-economic index on the occupations of employed mothers was considerably higher than that of employed fathers for graduates at both high school and post high school vocational levels (see Appendix Tables 10 and 11 ). At the post-high school level, over half of the mothers of the students in Distributive and Agricultural programs were in occupations with a NORC rating of 60 or more, whereas fathers with occupational ratings in this category constituted 35 per cent of Distributive graduates and only 10 per cent of Agricultural graduates.

It is seen, then, that students entering and graduating from particular programs and particular levels of vocational-technical education come from varying socio-economic backgrounds. The educational and occupational status of their parents has some influence in directing them toward post-high school vocational schools or junior colleges, and it has influenced their choice of specific program areas. As is discussed in subsequent chapters, these differences in socio-economic

background may also have influenced the results of the students' vocational-technical education.

Personal Characteristics of Junior College Dropouts

Although dropouts are not included in this evaluation of vocational-technical education, it is constructive to draw some comparisons between the personal characteristics of dropouts and graduates. Comparisons of their educational experience and post-vocational experience is discussed in subsequent chapters.

At the junior college level, there were no marked differences between dropouts and graduates with respect to sex ratio and age; however the graduates had a slightly higher proportion of married respondents. As is seen in Table III.12, the socio-economic status of the dropouts and graduates as measured by father's education and occupation, are also quite similar. With regard to education, the findings run somewhat counter to expectations: the fathers of Trade and Industry, Health and Office program dropouts had slightly more years of education than the fathers of graduates from these programs. However, the differences are seldom large enough to be statistically significant.

The differences between the socio-economic index of father's occupation for dropouts and graduates is also relatively small. However, where differences occur they are in accordance with customary assumptions, except for the graduates of Health programs where the occupational index for fathers of dropouts was higher than that of graduates. The most marked difference was found among graduates of Office programs where the fathers of graduates had an occupational

score of 39.5 in comparison with the occupational index of 31.2 for the fathers of dropouts.

TABLE III.12

SOCIO-ECONOMIC STATUS OF DROPOUTS AND GRADUATES, BY PROGRAM
(Junior College Level)

| Program | Dropouts | Graduates |
|---|---|---|
| Father's Median Years of Education | | |
| Trade and Industry | 11.8 | 10.3 |
| Distributive Education | 11.8 | 11.8 |
| Health | 12.0 | 11.2 |
| Agriculture | 11.6 | 11.6 |
| Technical | 11.9 | 11.9 |
| Office | 11.7 | 10.9 |
| Father's Median Occupational Score | | |
| Trade and Industry | Less than 30 | 30.8 |
| Distributive Education | 42.8 | 43.6 |
| Health | 35.0 | 31.9 |
| Agriculture | Less than 30 | Less than 30 |
| Technical | 43.9 | 44.3 |
| Office | 31.2 | 39.5 |

# CHAPTER IV

## THE EDUCATIONAL EXPERIENCE AND STUDENT ATTITUDES

Although the principal focus of this study is on the post-vocational employment and income experience of vocational-technical graduates, some useful information was gathered on the schools' attendants and on the educational experience of the graduates while enrolled in their vocational-technical programs. These characteristics are discussed in this chapter, along with factors explaining the dropouts from the vocational-technical programs and the graduates' attitudes toward their vocational education and preparation for their subsequent careers.

### Regional and Urban-Rural Setting of Schools

For the sample used in the regression analyses of subsequent chapters, graduates were drawn from schools divided into four regions. Approximately one-third of the sample of respondents had graduated from schools in the North Central region, and a little over one-fourth from schools in the West (see Appendix Tbl.2). A little over one-fifth were from schools in the South and the remainder were drawn from schools in the Northeast. These regional patterns differed by the school levels and samples, however, as seen in Table IV.1. Whereas over 45 per cent of the post-secondary graduates came from schools in the North Central region, only 18.9 per cent and 21.9 per cent, respectively, of the

TABLE IV.1

PER CENT OF SAMPLE AT EACH SCHOOL LEVEL, BY REGION

| Region | Post-High School | Junior College | High School Vocational | High School Academic |
|---|---|---|---|---|
| West | 14.10 | 51.78 | 19.30 | 19.16 |
| Northeast | 16.75 | 24.65 | 24.39 | 11.88 |
| North Central | 45.22 | 18.91 | 21.95 | 34.87 |
| South | 23.94 | 4.65 | 34.36 | 34.10 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 |

Chi Square significant at .001.

junior college and high school vocational graduates came from schools in this region. Over half of the junior college graduates came from schools in the West, and over one-third of the high school vocational graduates came from schools in the South. Southern schools were also relatively important in the distribution of the high school academic sample, with a little over one-third from that region and an equal proportion from the North Central region. There was no significant difference between the regional distribution of the total initial sample and the sample as reduced for purposes of regression analysis.

As is seen in the Appendix tabulations on regional distribution, graduates from Trade and Industry programs were predominantly from the North Central region, Distributive program graduates were concentrated in the Northeast, Health program graduates were primarily from the West and South, Agricultural program graduates predominantly from the North Central region, the largest group of Technical program graduates was

from the West, and Office program graduates were primarily from the North Central region and the West.

While the regional distribution of male graduates corresponded closely to that of the total sample, there was a somewhat larger proportion of female graduates from schools in the West, and a somewhat smaller proportion from the North Central region as compared with males and the total sample.

For purposes of analysis, the school settings from which the samples were drawn were divided into five categories: rural, medium-size cities, large cities, very large cities and suburbs. As is seen in App.Tbl. 1 , most of the graduates from rural schools were in the North Central region, the schools in medium-size cities were predominantly in the Northeast and North Central regions, the schools in large cities were primarily in the South and West, the schools in very large cities were primarily in the West and North Central regions, and the suburban schools were predominantly in the West and South. Both regional locations and urban-rural settings were used as explanatory variables in the regression analyses of follow-up experience in the labor market.

Although graduates of the three levels of vocational-technical programs were generally distributed throughout the categories of urban-rural settings, no post-high school graduates were included from schools in very large cities. However, over half were drawn from schools in medium and large cities. (See Appen.Tbl. 1.) Of the 349 graduates included in the sample from rural schools, those coming from post-high school and high school programs predominated. The largest numbers of

junior college graduates included in the sample were from colleges in very large and medium-size cities, with approximately one-fifth coming from colleges located in the suburbs.*

Reasons for Enrolling in a Post-High School Vocational Program

When asked why they chose a post-high school vocational course, the respondents gave a wide variety of reasons and the pattern of responses differed according to the program from which they graduated. As seen in Table IV.2, a substantial number chose to enroll in a secondary vocational school because of a new career interest, and this factor was especially important in the case of those in Health programs, and in Trade and Industry programs. However, more respondents, overall, stressed the increased earnings which they hoped would stem from their vocational-technical training. Almost 42 per cent of the graduates from Office programs and almost 30 percent for those in Technical programs stressed the desire to improve their earning ability.

Reasons for Enrolling in a Junior College

In surveying the junior college graduates, stress was placed on their reasons for selecting a junior college rather than a four-year school. Although the proportions giving this reason varied from program to program--with a high of 67.1 per cent for the Health group as compared to only 34.5 per cent of the Office graduates--it was the dominant reason for all program graduates except Agriculture, where the selection

*More detail on the characteristics of the junior colleges included in this study can be found in the report prepared by the Bureau of Social Science Research. Data on junior colleges include racial composition, students' residential arrangements, entrance requirements, limitation of facilities, staff, per person cost, and growth of junior colleges.

TABLE IV.2

REASON FOR ENROLLING IN POST HIGH SCHOOL VOCATIONAL EDUCATION, BY PROGRAM

| Program | Sample size | Reason for taking post high school vocational course (in percentages) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No future in previous job | Not interested in previous job | Laid off | New career interest | Advised by employer | Influenced by friend | Read about training | Improve earning ability | Other | Total[a] |
| TRADE AND INDUSTRY | 232 | 6.9 | 3.0 | - | 21.5 | 1.3 | 10.0 | 11.7 | 24.1 | 21.6 | 100 |
| DISTRIBUTIVE | 66 | 6.1 | - | - | 15.2 | - | 12.1 | 1.5 | 18.2 | 47.0 | 100 |
| HEALTH | 209 | 2.4 | 1.4 | - | 28.7 | 1.4 | 4.3 | 11.0 | 18.2 | 32.5 | 100 |
| AGRICULTURE | 41 | - | - | - | 9.8 | - | 9.8 | 4.9 | 22.0 | 53.7 | 100 |
| TECHNICAL | 264 | 7.2 | 2.3 | .4 | 15.9 | .8 | 6.1 | 11.4 | 29.9 | 26.1 | 100 |
| OFFICE | 276 | 2.2 | .7 | .7 | 12.0 | - | 8.0 | 16.7 | 42.8 | 21.0 | 100 |

[a]Percentages may not equal 100 due to rounding.

of the junior college for its convenient location was equally popular. From Table IV.3, which shows the reasons given for selecting the junior college by program type, it can be seen that financial reasons were cited by fewer than one-fourth of the respondents from every program. Financial reasons are seen as being more important by graduates from the Distributive Education and Office programs; over a fifth of these respondents said that they had selected a junior college instead of a four-year college because they could not afford the expense that would have been involved in attending the latter. It is worth noting that these are not graduates of especially low socio-economic status; in fact, their fathers are more often in higher status jobs. However, it is possible that these graduates, many of whom have ties in the business world and who aspire to business occupations, are more "money oriented" than students who are more "task oriented" (Technical, Health and Trade and Industry students) and were primarily interested in programs which could satisfy their work interests. For the agricultural students, many of whom come from rural and isolated locations, the convenience of a local college may have both financial and psychological advantages.

In this respect, the dropouts differed rather sharply from the graduates. As is seen in Table IV.4, appreciably higher proportions in every program type chose the two-year college because of locational advantages; special program interest, the main motivator of graduates, was more rarely present among dropouts.

Socio-economic status, as inferred from the father's educational and occupational status, was not seen to be related to the reasons why

TABLE IV.3

REASON FOR ENROLLING IN JUNIOR COLLEGE, BY PROGRAM
(In percentages)

| Program | Sample Size | Interest in Specific Program | Conven. Location | Could not afrd. 4-yr. College | Other | Total |
|---|---|---|---|---|---|---|
| Trade & Industry | 135 | 51.1 | 28.9 | 12.6 | 7.4 | 100.0 |
| Distributive Education | 193 | 37.3 | 15.0 | 20.7 | 26.9 | 100.0 |
| Health | 264 | 67.1 | 15.9 | 12.1 | 4.9 | 100.0 |
| Agriculture | 270 | 37.8 | 38.5 | 13.7 | 10.0 | 100.0 |
| Technical | 245 | 48.6 | 25.7 | 13.9 | 11.8 | 100.0 |
| Office | 139 | 34.5 | 28.8 | 24.5 | 12.2 | 100.0 |

TABLE IV.4

REASON FOR SELECTING JUNIOR COLLEGE INSTEAD OF FOUR-YEAR COLLEGE, BY PROGRAM
(In percentages)

| Program and Groups | Sample Size | Special Program Interest | Location | Financial | Other | Total |
|---|---|---|---|---|---|---|
| Trade & Industry | | | | | | |
| Dropout | 17 | 17.6 | 47.1 | 5.9 | 29.4 | 100.0 |
| Graduate | 135 | 51.1 | 28.9 | 21.6 | 7.4 | 100.0 |
| Distributive Ed. | | | | | | |
| Dropout | 16 | 18.7 | 25.0 | 31.3 | 25.0 | 100.0 |
| Graduate | 193 | 37.3 | 15.0 | 20.7 | 26.9 | 100.0 |
| Health | | | | | | |
| Dropout | 36 | 44.4 | 30.6 | 8.3 | 16.7 | 100.0 |
| Graduate | 264 | 67.1 | 15.9 | 12.1 | 4.9 | 100.0 |
| Agriculture | | | | | | |
| Dropout | 26 | 30.8 | 46.2 | 3.8 | 19.2 | 100.0 |
| Graduate | 270 | 37.8 | 38.5 | 13.7 | 10.0 | 100.0 |
| Technical | | | | | | |
| Dropout | 20 | 20.0 | 60.0 | 15.5 | 5.0 | 100.0 |
| Graduate | 245 | 48.6 | 25.7 | 13.9 | 11.8 | 100.0 |
| Office | | | | | | |
| Dropout | 25 | 20.0 | 40.0 | 24.0 | 16.0 | 100.0 |
| Graduate | 139 | 34.5 | 28.8 | 24.5 | 12.2 | 100.0 |

the graduates selected a junior college instead of a four-year school. Similarly, graduates with less educated fathers did not cite financial reasons for selecting junior college more so than the others did. In all fields, students' choices and decisions do not seem to be immediately motivated by the financial and social status of their families. No doubt the status had a pervasive influence during the student's childhood and adolescence and together with other factors influenced his career goals and aspirations; however, it would be a serious oversimplification to view the junior college attender--especially the student who enrolls in an occupational program--as being primarily there because he cannot afford to attend a four-year college.

Reasons for Selecting Vocational Course

Although students in high school and post-high school vocational programs selected the vocational course because of their work-oriented interests, they were generally motivated by the attractions of the type of work rather than by knowledge of specific pay or working conditions of the employment which might result. As is seen in Tables 4.5 and 4.6, hobby interests played some part in the decision-making process, especially at the high school level, but work motivation predominated, and the general attractiveness of the type of work was especially important for students in Health, Office, Agriculture and Distributive programs at the high school level, and in Health and Distributive programs at the post-high school level. Relatively few of the students chose their vocational course because of the advice of parents, counselors, teachers or employers, with the exception of those who enrolled in Technical courses at the high school level, where

TABLE IV.5

REASON FOR SELECTING PARTICULAR HIGH SCHOOL VOCATIONAL COURSE, BY PROGRAM

| Program | Sample size | Reason (in percentages) | | | | | Total* |
|---|---|---|---|---|---|---|---|
| | | Hobby int. | Attract. to type of work | Advice of prin. | Advice of couns. | Advice of teacher | |
| TRADE & IND. | 200 | 20.0 | 66.5 | 6.0 | 4.5 | 3.0 | 100 |
| DISTRIBUTIVE | 70 | 5.7 | 77.1 | 7.1 | 4.3 | 5.7 | 100 |
| HEALTH | 17 | 11.8 | 88.2 | 0 | 0 | 0 | 100 |
| AGRICULTURE | 82 | 13.4 | 78.1 | 2.4 | 3.7 | 2.4 | 100 |
| TECHNICAL | 63 | 27.0 | 57.1 | 4.8 | 11.1 | 0 | 100 |
| OFFICE | 246 | 2.9 | 84.6 | 5.3 | 6.1 | .8 | 100 |

*Percentages may not equal 100 due to rounding.

11 per cent indicated that the advice of the counselor had influenced their choice. Among the students at the post-high school level, previous job experience was an important motivating factor only in the case of Agriculture programs where over one-fourth indicated that previous experience was the reason for their selecting that course of study.

Even though good pay and working conditions were seldom cited as a reason for choosing the vocational course even at the post-high school level, these factors were relatively more important for students in Technical programs (15.7 per cent), Trade and Industry programs (13.7 per cent) and Office programs (10.8 per cent), than in the case of students in other vocational programs.

TABLE IV.6

REASON FOR SELECTING PARTICULAR POST HIGH SCHOOL VOCATIONAL COURSE, BY PROGRAM

| Program | Sample size | Reason for Selecting Course (in percentages) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Hobby interests | Attracted to type of work | Advice of parents | Advice of counselor | Advice of teacher | Previous job experience in field | Good pay, working conditions | Advice of employer | Other | Total[a] |
| TRADE AND INDUSTRY | 182 | 17.0 | 48.4 | 2.8 | 3.3 | 1.7 | 6.6 | 13.7 | - | 6.6 | 100 |
| DISTRIBUTIVE | 52 | 11.5 | 69.2 | - | 5.8 | 3.9 | 1.9 | 3.9 | - | 3.9 | 100 |
| HEALTH | 216 | .9 | 73.2 | 2.3 | .9 | - | 7.9 | 1.9 | .5 | 12.5 | 100 |
| AGRICULTURE | 38 | 7.9 | 52.6 | - | - | 2.6 | 26.3 | - | - | 10.5 | 100 |
| TECHNICAL | 229 | 16.6 | 47.2 | 3.5 | 2.2 | - | 6.1 | 15.7 | .9 | 7.9 | 100 |
| OFFICE | 249 | 2.8 | 65.1 | 3.6 | 4.0 | 3.2 | 3.2 | 10.8 | .4 | 6.8 | 100 |

[a]Percentages may not equal 100 due to rounding.

In contrast with the job-related (albeit not pay-related) motivation of high school and post-high school students in selecting their vocational course, the decision of junior college students to take a vocational course or program was not primarily job-related. Even though junior college students who select an occupational program may have a fairly definite idea about the type of work they wish to pursue after graduation, most of them undertake the college vocational program in order to become better-educated, rather than to acquire skills that will give them entry into a particular job or advancement in a field of work. Given the choices shown in Table IV.7, over half of the graduates from every program chose the vague "wanted additional education" category as the reason for selecting their college course. The number giving this reason ranged from 75.7 per cent of the graduates in Office programs to 50 per cent of those in Health programs. Over one-fifth of the graduates in Agriculture and Technical programs gave career advancement as a reason for choosing their college vocational course, but job entry as a reason for enrolling in vocational courses was rarely mentioned except in the case of Health graduates, where more than 27 per cent cited this reason for their choice. The detail on the high school curriculum which had been followed by the junior college graduates and the length of their junior college vocational course, as additional factors influencing their choice, can be found in the report prepared by the Bureau of Social Science Research.

Respondents' Ratings of the Quality of Instruction

When asked to rate the quality of their high school vocational instruction, students gave especially high ratings to the instruction in

TABLE IV.7

REASON FOR SELECTING JUNIOR COLLEGE VOCATIONAL COURSE, BY PROGRAM

| Program | Sample Size | Reasons (In percentages) Wanted Additional Education | To Get Ahead in Field | To Enter Job | Other | Total |
|---|---|---|---|---|---|---|
| TRADE & IND. | 134 | 60.5 | 14.8 | 15.7 | 9.0 | 100 |
| DISTRIBUTIVE | 185 | 65.4 | 18.9 | 6.5 | 9.2 | 100 |
| HEALTH | 256 | 50.4 | 14.1 | 27.7 | 7.8 | 100 |
| AGRICULTURE | 266 | 62.4 | 22.2 | 5.2 | 10.2 | 100 |
| TECHNICAL | 240 | 52.1 | 21.7 | 16.3 | 9.9 | 100 |
| OFFICE | 136 | 75.7 | 9.6 | 8.8 | 5.9 | 100 |

Health programs, where 50 per cent rated instruction as "excellent," and 29 per cent rated it as "good," and in Technical programs, where 46 per cent gave an "excellent" rating and 40 per cent a rating of "good." Although respondents who had graduated from Office programs gave fewer ratings of "excellent", over three-fourths felt that the instruction was either "good" or "excellent". Similar ratings were given by respondents who had graduated from Trade and Industry programs.

Whereas the ratings were high in all of the programs, with at least half of the respondents giving ratings in the two highest categories, there was a somewhat higher proportion of "poor" and "fair" of the vocational instruction in Distributive and Agricultural programs at the high school level than in the other programs (Table IV.8).

The ratings for the quality of high school academic instruction, which were taken along with the students' vocational courses, were also

TABLE IV.8

RESPONDENTS' RATINGS OF QUALITY OF HIGH SCHOOL VOCATIONAL INSTRUCTION, BY PROGRAM

| Program | Sample size | Rating (in percentages) | | | | |
|---|---|---|---|---|---|---|
| | | Poor | Fair | Good | Excellent | Total[a] |
| TRADE AND INDUSTRY | 413 | 5.3 | 16.5 | 43.3 | 34.9 | 100 |
| DISTRIBUTIVE | 178 | 8.4 | 29.2 | 36.5 | 25.8 | 100 |
| HEALTH | 24 | 8.3 | 12.5 | 29.2 | 50.0 | 100 |
| AGRICULTURE | 177 | 9.0 | 23.2 | 42.4 | 25.4 | 100 |
| TECHNICAL | 135 | 1.5 | 12.6 | 40.0 | 45.9 | 100 |
| OFFICE | 536 | 4.1 | 18.5 | 52.8 | 24.6 | 100 |

[a]Percentages may not equal 100 due to rounding.

$x^2 = 67.18$ (df = 15)
significant at .001 level

relatively high. However, a smaller proportion of the graduates from programs in Trade and Industry, Distributive, Agriculture and Technical fields rated the quality of their academic instruction as "excellent" as compared with the quality of vocational instruction rated by graduates from these program areas. Just as in the case of the quality of vocational instruction, the quality of academic instruction was given the highest proportion of "excellent" ratings by graduates from Health programs at the high school level (see Table IV.9). On the other hand, respondents who graduated from Agriculture programs at the high school level gave a relatively low proportion of "excellent" ratings for academic instruction as they did in the case of the quality of their vocational instruction.

At the junior college level, students in every program gave higher ratings to their vocational instruction than to the academic subjects which were part of their curriculum (Table IV.10). The great majority of the respondents (over 80 per cent) in every program felt that the quality of vocational instruction which they received was "good" or "excellent". In contrast with the high school response, the most enthusiasm at the junior college level was found in the Agriculture group, with almost two-thirds reporting that the vocational instruction they received was "excellent". However, as in the case of the high school response, the graduates of Agriculture programs were somewhat less enthusiastic about the academic instruction they had received. The ratings given by graduates of Health programs at the junior college level also indicated a considerable satisfaction with their vocational instruction, and only slightly less satisfaction with

TAB.

RESPONDENTS' RATINGS OF QUALITY OF HIGH[illegible]L ACADEMIC INSTRUCTION, BY PROGRAM

| Program | Sample size | Rating (in percentages) | | | | |
|---|---|---|---|---|---|---|
| | | Poor | Fair | Good | Excellent | Total[a] |
| TRADE AND INDUSTRY | 394 | 5.6 | 21.3 | 48.2 | 24.9 | 100 |
| DISTRIBUTIVE | 184 | 5.4 | 20.1 | 41.3 | 33.2 | 100 |
| HEALTH | 23 | [illegible] | 26.1 | 34.8 | 39.1 | 100 |
| AGRICULTURE | 175 | 6.9 | 28.6 | 48.0 | 16.6 | 100 |
| TECHNICAL | 134 | 6.0 | 19.4 | 49.3 | 25.4 | 100 |
| OFFICE | 542 | 2.6 | 15.1 | 55.0 | 27.3 | 100 |

[a]Percentages may not equal 100 due to rounding.

$x^2 = 41.96$ (df = 15)
significant at .001 level

TABLE IV.10

RESPONDENTS' RATINGS OF QUALITY OF VOCATIONAL AND ACADEMIC INSTRUCTION, BY PROGRAM
(Percentage)

| Program | Sample Size | Vocational Instruction | | | | | Sample Size | Academic Instruction | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Poor | Fair | Good | Excellent | Total | | Poor | Fair | Good | Excellent | Total |
| TRADE & INDUSTRY | 135 | 1.5 | 17.8 | 36.3 | 44.4 | 100.0 | 132 | 0.7 | 16.7 | 52.3 | 30.3 | 100.0 |
| DISTRIBUTIVE | 188 | 2.1 | 12.8 | 45.2 | 39.9 | 100.0 | 193 | 4.1 | 20.7 | 58.6 | 16.6 | 100.0 |
| HEALTH | 260 | 0.8 | 6.5 | 38.8 | 53.9 | 100.0 | 249 | 0.8 | 8.4 | 42.2 | 48.6 | 100.0 |
| AGRICULTURE | 268 | 1.1 | 5.2 | 28.0 | 65.7 | 100.0 | 272 | 1.8 | 8.1 | 43.8 | 46.3 | 100.0 |
| TECHNICAL | 239 | 4.6 | 11.3 | 36.4 | 47.7 | 100.0 | 238 | 1.7 | 15.1 | 54.2 | 29.0 | 100.0 |
| OFFICE | 135 | - | 16.3 | 58.5 | 25.2 | 100.0 | 138 | 1.4 | 20.3 | 60.9 | 17.4 | 100.0 |

the academic instruction, similar to the findings at the high school level.

Unlike the high school response, the largest proportion of "poor" or "fair" ratings in the junior college sample was given by graduates of Trade and Industry programs, with almost one in five giving a rating in these two low categories.

Although ratings of the quality of academic instruction were also generally favorable at the junior college level, with no more than 25 per cent of the respondents in any one field reporting it to be either "poor" or "fair", there were fewer "excellent" ratings than in the case of vocational instruction. Here, too, there were differences by program area, however. Whereas close to 50 per cent of the Health graduates rated their academic instruction as "excellent", only 16.6 per cent of the graduates of Distributive programs gave this high rating to their academic instruction.

Respondents' Ratings of High School an

When asked to give an overall rating of the quality of their high school or junior college, greater variance was found in the case of the junior college responses than for those graduated from high school vocational programs. At the high school level (Table IV.11), those giving their school the highest rating ranged from 50 per cent of the graduates of Technical programs to 36.9 per cent of graduates of Distributive programs. At the junior college level (Table IV.12), the range of highest ratings was from 67 per cent for graduates of Agriculture programs to 15.5 per cent of those who graduated from Distributive education programs. In contrast with the junior college

TABLE IV.11

RESPONDENTS' OVERALL RATINGS OF HIGH SCHOOL, BY PROGRAM

| Program | Sample size | Rating (in percentages) Low | Medium | High | Total[a] |
|---|---|---|---|---|---|
| TRADE AND INDUSTRY | 416 | 25.0 | 31.7 | 43.3 | 100 |
| DISTRIBUTIVE | 187 | 26.7 | 36.4 | 36.9 | 100 |
| HEALTH | 24 | 29.2 | 25.0 | 45.8 | 100 |
| AGRICULTURE | 179 | 35.2 | 31.3 | 33.5 | 100 |
| TECHNICAL | 137 | 16.1 | 33.6 | 50.4 | 100 |
| OFFICE | 556 | 27.2 | 32.4 | 40.5 | 100 |

[a]Percentages may not equal 100 due to rounding.

$x^2 = 19.59$ (df = 15)
not significant at .05 level

TABLE IV.12

RESPONDENTS' OVERALL RATINGS OF JUNIOR COLLEGE, BY PROGRAM
(Percentages)

| Program | Sample Size | Rating | | | Total |
|---|---|---|---|---|---|
| | | Low | Medium | High | |
| AGRICULTURE | 275 | 6.5 | 36.5 | 67.0 | 100.0 |
| HEALTH | 265 | 10.2 | 29.4 | 60.4 | 100.0 |
| TRADE & INDUSTRY | 136 | 11.8 | 41.[illegible] | 47.0 | 100.0 |
| TECHNICAL | 245 | 20.4 | 35.5 | 44.1 | 100.0 |
| OFFICE | 139 | 25.9 | 51.1 | 23.0 | 100.0 |
| DISTRIBUTIVE | 193 | 32.6 | 51.8 | 15.5 | 100.0 |

response, the lowest overall rating of high schools was given by respondents who had graduated from Agriculture programs, with only one-third giving a "high" rating and 35 per cent giving a "low" rating.

Dissatisfaction of the respondents with their junior college (low overall rating) was greatest when the respondent was enrolled in a program where the opposite sex predominated. The Agriculture and Health fields, with their almost exclusively male and female respondents, had the greatest number of dissatisfied ratings. As is seen in Table IV.13, men in the predominantly female Office program were more dissatisfied than women (32.2 per cent vs. 21.9 per cent rating the college "low"), and women in the predominantly male Technical program were more dissatisfied than men (30.7 per cent compared to 19.2 per cent with "low" ratings).

TABLE IV.13

RESPONDENTS' OVERALL RATINGS OF JUNIOR COLLEGE, BY SEX AND PROGRAM

| Program and Sex | Sample Size | Overall Ratings (Percentages) Low | Medium | High | Total |
|---|---|---|---|---|---|
| TRADE & INDUSTRY | | | | | |
| Male | 116 | 12.1 | 42.2 | 45.7 | 100.0 |
| Female | 18 | - | - | - | - |
| DISTRIBUTIVE | | | | | |
| Male | 158 | 31.7 | 52.5 | 15.8 | 100.0 |
| Female | 35 | 37.1 | 48.6 | 14.3 | 100.0 |
| HEALTH | | | | | |
| Male | 4 | - | - | - | - |
| Female | 259 | 10.4 | 30.1 | 59.5 | 100.0 |
| AGRICULTURE | | | | | |
| Male | 263 | 6.8 | 26.6 | 65.5 | 100.0 |
| Female | 12 | - | - | - | - |
| TECHNICAL | | | | | |
| Male | 218 | 19.3 | 35.3 | 45.5 | 100.0 |
| Female | 26 | 20.7 | 34.6 | 34.7 | 100.0 |
| OFFICE | | | | | |
| Male | 56 | 32.2 | [illegible] | [illegible].4 | 100.0 |
| Female | 82 | 21.9 | 54.9 | 23.2 | 100.0 |

There were interesting differences between the ratings given by dropouts and graduates at the junior college level. With few exceptions, the dropouts tended to rate the schools lower than the graduates in all categories.*

*Further detail on the ratings of junior college graduates concerning such specific aspects of their schools as physical conditions, instructional facilities, guidance and counseling, and reputation of the college in the community, can be found in the report prepared by the Bureau of Social Science Research.

Respondents' Rating of Preparation for First Full-time Job

As can be seen the summary tabulation (Table IV.14), even though a substantial proportion of the graduates at each school level took a job in a field unrelated to their vocational-technical course, those whose first employment was in the field of their training gave high ratings to the preparation they had received for their first full-time job. Only a handful at each level felt that the vocational-technical course had not prepared them very well for their initial employment. Almost none responded that their preparation had been "poor". The proportion of high school vocational graduates who felt that they had been exceptionally well prepared for their first job was relatively low because of the large number who obtained employment in fields unrelated to their vocational course. When the latter group is omitted (Table IV.15) and analysis by program area, it is seen that the relatively small number of graduates from Health programs remaining in the reduced sample gave the highest ratings to their preparation for full-time employment. A relatively small number of high school vocational graduates from Agriculture programs felt that they were exceptionally well prepared for their first full-time job (20.5 per cent), and a relatively large percentage (15.4) felt that they were either not well prepared or very poorly prepared for their first employment.

At the post-high school vocational level, it is again found that the graduates generally felt that they were well prepared for their first jobs, regardless of program area (see Table IV.16). However, there were significant variations in response by program area.

TABLE IV.14

HOW WELL VOCATIONAL TRAINING PREPARED GRADUATES OF EACH SCHOOL LEVEL FOR THEIR FIRST FULL-TIME JOBS
(Percentages)

| Preparation | Post High School | Junior College | High School Vocational |
|---|---|---|---|
| Exceptionally well | 34.44 | 26.56 | 15.97 |
| Well | 43.07 | 45.78 | 29.05 |
| Not very well | 2.47 | 3.59 | 3.00 |
| Poor | .00 | .31 | .43 |
| Unrelated Field | 20.02 | 23.75 | 51.55 |
| Total | 100.00 | 100.00 | [illegible] |

Chi Square significant at .001.

Those who felt that they were exceptionally well prepared for their first full-time job ranged from 62.4 per cent of the post-high school graduates in Health programs to a low of 20 per cent of the post-high school graduates in Agriculture programs. There was also a relatively low proportion of graduates from Distributive programs who felt that they were exceptionally well prepared and a relatively high proportion felt that they were not well prepared for their first job.

There were such variations in the evaluations of preparation for employment by program area among junior college respondents (Table IV.17). Here, too, as in the case of high school and post-high school vocational graduates, those who had graduated from junior college programs in the Health field gave the highest rating to their preparation for full-time employment, with 44.5 per cent saying that they were exceptionally well prepared and 52.1 per cent saying that

TABLE IV.15

RESPONDENTS' RATING OF PREPARATION FOR FIRST FULL-TIME JOB AFTER HIGH SCHOOL VOCATIONAL EDUCATION, BY PROGRAM

| Program | Sample size | Rating (in percentages) | | | | |
|---|---|---|---|---|---|---|
| | | Exceptionally well-prepared | Well-prepared, some gaps | Not well-prepared, many gaps | Very poorly prepared | Total[a] |
| TRADE AND INDUSTRY | 184 | 34.8 | 57.6 | 7.6 | 0 | 100 |
| DISTRIBUTIVE | 59 | 22.0 | 69.5 | 5.1 | 3.4 | 100 |
| HEALTH | 14 | 50.0 | 50.0 | 0 | 0 | 100 |
| AGRICULTURE | 39 | 20.5 | 64.1 | 10.3 | 5.1 | 100 |
| TECHNICAL | 45 | 46.7 | 46.7 | 6.7 | 0 | 100 |
| OFFICE | 254 | 33.5 | 61.4 | 5.1 | 0 | 100 |

[a]Percentages may not equal 100 due to rounding.

$x^2 = 35.14$ (df = 15)
significant at .001 level

TABLE IV.16

RESPONDENTS' RATING OF PREPARATION FOR FIRST FULL-TIME JOB AFTER POST HIGH SCHOOL VOCATIONAL EDUCATION, BY PROGRAM

| Program | Sample size | Rating (in percentages) | | | | |
|---|---|---|---|---|---|---|
| | | Exceptionally well-prepared | Well-prepared, some gaps | Not well-prepared, many gaps | Very poorly prepared | Total[a] |
| TRADE AND INDUSTRY | 196 | 36.2 | 59.2 | 4.6 | 0 | 100 |
| DISTRIBUTIVE | 48 | 27.1 | 62.5 | 10.4 | 0 | 100 |
| HEALTH | 303 | 62.4 | 35.3 | 2.3 | 0 | 100 |
| AGRICULTURE | 35 | 20.0 | 74.3 | 5.7 | 0 | 100 |
| TECHNICAL | 243 | 35.0 | 60.1 | 4.9 | 0 | 100 |
| OFFICE | 232 | 44.4 | 54.3 | 1.3 | 0 | 100 |

[a]Percentages may not equal 100 due to rounding.

$x^2 = 76.87$ (df = 15)
significant at .001 level

TABLE IV.17

RESPONDENTS' RATINGS OF PREPARATION FOR FIRST FULL-TIME JOB AFTER JUNIOR COLLEGE, BY PROGRAM
(Percentages)

| Program | Sample Size | Exceptionally Well Prepared | Well Prepared | Not Well Prepared | Very Poorly Prepared | Total |
|---|---|---|---|---|---|---|
| TRADE & INDUSTRY | 77 | 36.4 | 59.7 | 2.6 | 1.3 | 100.0 |
| DISTRIBUTIVE | 80 | 31.3 | 60.0 | 6.2 | 2.5 | 100.0 |
| HEALTH | 236 | 44.5 | 52.1 | 3.4 | - | 100.0 |
| AGRICULTURE | 82 | 29.3 | 64.6 | 3.7 | 2.4 | 100.0 |
| TECHNICAL | 130 | 29.2 | 61.6 | 7.7 | 1.5 | 100.0 |
| OFFICE | 80 | 28.8 | 65.0 | 5.0 | 1.2 | 100.0 |

they were well prepared for their first full-time job. Also, as in the case of high school and post-high school vocational graduates, a smaller proportion of those in Agriculture programs at the junior college level (29.3 per cent) felt that they were exceptionally well prepared for their initial employment.

Conclusion

The graduates of vocational-technical programs in our sample were generally well satisfied with their educational experience, regardless of the program area in which they had been enrolled. The majority of respondents rated the quality of their instruction at high levels and felt that the schools and colleges from which they had graduated were high quality. More important, with the exception of the high school graduates who took first jobs in fields unrelated to their training, the overwhelming majority of the graduates felt that they had been well prepared for their first full-time jobs.

However, there were significant variations in the graduates' satisfaction when comparisons were made by school level and by program area. On the whole, junior college graduates tended to be more satisfied with their educational experience than the graduates of post-high school vocational programs, and these, in turn, were more satisfied than the graduates of high school programs. There were exceptions in particular program areas, however.

Generally, with a few notable exceptions, graduates of Health and Technical programs appeared to be more satisfied with important aspects of their educational experience than were those in a number of

other programs. Graduates of Agriculture programs were more prone to give low ratings to their educational experience (especially with regard to preparation for employment) at the high school level than at the other school levels.

As will be seen in the next two chapters, the generally enthusiastic ratings of the graduates do not always correspond with the objective facts of their post-vocational labor market experience. Nevertheless, when comparative analyses are made by school level and by program area, the subjective evaluation made by the graduates corresponds roughly to the objective facts of their employment and earnings in the period which followed their vocational-technical education.

# CHAPTER V

## POST-VOCATIONAL EMPLOYMENT EXPERIENCE

It is the expressed and explicit purpose of vocational and technical education to provide students with the skills needed for gainful employment in the labor market. In this chapter, there is an evaluation of the effectiveness of the various vocational-technical programs at the high school, post-high school and junior college level in accomplishing this labor market objective. The analysis is concerned with the employment, unemployment and labor force status of the graduates from the time of their graduation in 1966 up to the time of the survey in the winter and spring of 1969. In addition to the analysis of the total employment picture during this period, there is a special emphasis on the first full-time job, including job search and the relatedness of the job to the training program, and the current job held by the graduates--that is, the job held at the time of the survey. Although this chapter is concerned with the socio-economic index of the jobs held and the satisfactions or dissatisfactions of the job-holders, the discussion of wages and earnings is reserved for the following chapter.

### Labor Force Status After Graduation

One of the complications in evaluating the employment impact of vocational-technical education is that a proportion of the graduates go

on to further education rather than enter the labor market. Others enter the military service or become housewives, and for these, too, it is difficult to evaluate the employment effects of their previous vocational-technical education. On the one hand, one might argue that since vocational education is designed to further employment, a failure on the part of the graduate to enter employment constitutes a failure of the vocational system. On the other other hand, one would not wish to contend that further education, perhaps induced by the vocational program, is contrary to the interests of society and should be recorded as a demerit for vocational-technical education. Whether military service or home-making constitute similar socially desirable post-vocational education experiences is a matter of one's personal and social values. At any rate, it is clear that one cannot evaluate the labor market effectiveness of vocational-technical education simply by looking at the employment rate, wages or income of the graduates. However, it is legitimate to be concerned about rates of unemployment and underemployment in low-paying jobs, and for those who do seek employment it is appropriate to ask whether one type of vocational program and school level is more effective in achieving their objective than are the others.

As is seen in Table V.1, a notable proportion of the samples at each of the school levels took up no full-time work during the approximately three-year period following their graduation. The percentage with no full-time work ranged from a little over 10 per cent for the post-high school graduates to a little over 50 per cent for those who graduated from high school academic programs. Almost one-fourth of the graduates of vocational-technical programs at the junior

TABLE V.1

FULL-TIME PERMANENT EMPLOYMENT SINCE GRADUATION, BY SCHOOL LEVEL
(Percentages)

| | Post High School | Junior College | High School Vocational | High School Academic | Total |
|---|---|---|---|---|---|
| Some Full-Time Work | 89.83 | 75.93 | 82.42 | 48.97 | 100 |
| No Full-Time Work | 10.17 | 24.07 | 17.58 | 51.03 | 100 |

college level had no full-time work in the period following their graduation, as compared with 17.5 per cent of those who graduated from high school vocational programs.

Aside from those who had no full-time work in the survey, it is interesting to note the differences between the samples in the average time spent in full-time permanent employment since their graduation. Whereas those who graduated from post-high school vocational and junior college vocational programs spent approximately 80 per cent of their time after graduation in full-time permanent employment, the high school vocational graduates spent only two-thirds of their time and the high school academic graduates only half of their time in full-time permanent employment after graduation. The specific percentages are as follows:

junior college - 81 per cent

post-high school - 79 per cent

high school vocational - 55 per cent

high school academic - 51 per cent.

The relatively small percentage of time spent in full-time employment for both of the high school samples is due to the large number of graduates from these schools who went on for additional education following their graduation. As indicated in Table V.2, more than 43 per cent of the academic graduates and over 17 per cent of the high school vocational graduates went directly to further education immediately after their graduation. This table includes only those respondents who eventually held some full-time permanent job during the survey period. The sample has been reduced in this comparison in order to provide meaningful analysis of post-vocational employment experience. For this group, it is seen that a larger percentage of the graduates of post-high school vocational programs went directly to full-time work after graduation, as compared to those graduating from junior college vocational programs. Post-high school graduates were somewhat more likely to go into the military service directly after graduation, and junior college graduates were more likely to go directly to full-time school following their graduation, prior to their taking a full-time job.

These differences in the labor force status of graduates of vocational programs by school level are further illustrated by comparison of the average number of months it took graduates to obtain their first full-time job after graduation. As is seen in Table 5.3, of those who went directly to full-time work (rather than school or other non-labor force activity), high school academic graduates took 1.38 months on average to obtain their first full-time job, as compared with only .71 months for high school vocational graduates, .52 months for junior

TABLE V.2

FIRST LABOR MARKET RELATED ACTIVITY* AFTER 1966 GRADUATION, BY SCHOOL LEVEL
(Percentages)

| Activity | Post-High School | Junior College | High School Vocational | High School Academic |
|---|---|---|---|---|
| Full-Time Job | 86.3 (904)** | 79.5 (491) | 62.8 (576) | 39.3 (101) |
| Full-Time School | 2.4 (25) | 8.7 (54) | 17.3 (159) | 43.6 (112) |
| Military Service | 4.4 (46) | 3.7 (23) | 4.1 (38) | 1.1 (3) |
| Part-Time Job & Part-Time School | 3.7 (39) | 4.7 (29) | 11.2 (103) | 8.9 (23) |
| Other | 3.2 (34) | 3.4 (21) | 4.6 (42) | 7.0 (18) |
| Total | 100.0 (1048) | 100.0 (618) | 100.0 (918) | 100.0 (257) |

Chi Square significant at .001.
*Includes only those who held some full-time job during the survey period.
**Number of observations in parentheses.

TABLE V.3

AVERAGE NUMBER OF MONTHS IT TOOK GRADUATES TO OBTAIN FIRST FULL-TIME JOB, BY FIRST ACTIVITY AND SCHOOL LEVEL

| First Activity After Graduation | Post-High School | Junior College | High School Vocational | High School Academic |
|---|---|---|---|---|
| Full-Time Job | .41 | .52 | .71 | 1.38 |
| Full-Time School | 3.44 | 4.50 | 11.16 | 14.45 |
| Military Service | 8.98 | 7.35 | 11.11 | 7.67 |
| Part-Time Job & Part-Time School | 4.77 | 3.90 | 6.89 | 11.57 |
| Other | 4.41 | 4.67 | 8.86 | 9.89 |
| Total | 1.15 | 1.42 | 4.02 | 8.65 |

college graduates, and only .41 months for post-high school graduates. Those who went directly on to full-time school after graduation, and prior to full-time employment, naturally took much longer to obtain their first full-time job after graduation from the vocational program. The average number of months, by school level indicated in Table 5.3, for those whose first activity after graduation was full-time school reflects the length of their schooling more than their job search. However, the relative length of time before the first full-time employment is in the same order as in the case of those whose first activity was a full-time job, ranging from a low of 3.4 months for post-high school graduates to 14.45 months for high school academic graduates. The same ranking is maintained in comparing all of the graduates at the post-high school, junior college, high school vocational and high school academic levels.

One might conclude from these comparisons that the specialized nature of training given to vocational graduates provides them with a labor market advantage over academic high school graduates in the period immediately following graduation. However, since only 59 per cent of the academic sample went directly into the job market, with almost 44 per cent going on to full-time education, the time taken in obtaining the first full-time job may be complicated by factors such as motivation and ability, as well as specific preparation for the labor market.

Within each of the school samples, there were interesting differences in post-graduation labor force status by program area. In each case, the samples and tabulations include only those who had some

full-time employment during the survey period. In the case of graduates of high school programs (Table V.4), the graduates of Health programs (all female in this reduced sample) had a much higher percentage of full-time employment (72 per cent) than did the graduates of other programs at the high school level. Only 39 per cent of the time of Agriculture graduates and only 40 per cent of the time of Technical graduates was spent in employment during the survey period. However, in the case of the graduates of Agricultural programs, the remainder of their time was accounted for primarily by non-labor force status rather than unemployment. Only 2 per cent of their time was spent in unemployment during the survey period. On the other hand, the unemployment rates for Technical graduates was somewhat higher, with 3 per cent of the time of the males and 7 per cent of the time of females being spent in unemployment during the survey period. Continuing education undoubtedly played a major role in this non-labor force status, and only a small portion of the time of the graduates in all these vocational-technical programs at the high school level was spent in a search for work.

Whereas post-high school vocational graduates spent a larger percentage of their time in employment in the survey period overall, as compared with high school graduates (Table V.5), there is a similar preponderance in employment for graduates of Health programs. Those with the smallest percentage of time in employment at the post-high school level were graduates from Distributive and Trade and Industry programs, with 50 per cent and 60 per cent, respectively, of their time absorbed in employment in the survey period. For graduates of Office programs at the post-high school level, females spent 83 per cent of

TABLE V.4

EMPLOYMENT RATE, UNEMPLOYMENT RATE AND NON-LABOR FORCE RATE, BY HIGH SCHOOL PROGRAM

| Program | Student's Employment Status After Graduation | | | |
|---|---|---|---|---|
| | Percent of time employment | Percent of time un-employment | Percent of time not in labor force | Total[a] |
| TRADE AND INDUSTRY | | | | |
| Male | 55 (297)* | 2 (301) | 42 (297) | 100 |
| Female | 56 ( 57) | 6 ( 56) | 39 ( 50) | 100 |
| Total | 55 (357) | 3 (360) | 41 (350) | 100 |
| DISTRIBUTIVE | | | | |
| Male | 40 ( 83) | 3 ( 83) | 57 ( 84) | 100 |
| Female | 52 ( 81) | 5 ( 82) | 47 ( 79) | 100 |
| Total | 46 (166) | 4 (167) | 52 (165) | 100 |
| HEALTH | | | | |
| Male | - (0) | - (0) | - (0) | 100 |
| Female | 72 ( 22) | 6 ( 21) | 25 ( 20) | 100 |
| Total | 72 ( 22) | 6 ( 21) | 25 ( 20) | 100 |
| AGRICULTURE | | | | |
| Male | 40 (161) | 2 (160) | 58 (161) | 100 |
| Female | 15 (2) | 0 (2) | 85 (2) | 100 |
| Total | 39 (164) | 2 (163) | 59 (164) | 100 |
| TECHNICAL | | | | |
| Male | 40 (106) | 3 (107) | 58 (108) | 100 |
| Female | 44 ( 16) | 7 ( 16) | 49 ( 16) | 100 |
| Total | 40 (122) | 4 (123) | 56 (124) | 100 |
| OFFICE | | | | |
| Male | 38 ( 66) | 5 ( 63) | 60 ( 64) | 100 |
| Female | 62 (406) | 4 (411) | 33 (399) | 100 |
| Total | 59 (475) | 5 (477) | 37 (465) | 100 |

*Sample size in parentheses

[a]Percentages may not equal 100 due to rounding.

TABLE V.5

EMPLOYMENT RATE, UNEMPLOYMENT RATE AND NON-LABOR FORCE RATE, BY POST HIGH SCHOOL PROGRAM

| Program | Student's Employment Status After Graduation: Percent of time employment | Percent of time unemployment | Percent of time not in labor force | Total[a] |
|---|---|---|---|---|
| TRADE AND INDUSTRY | | | | |
| Male | 60 (256)* | 3 (255) | 35 (277) | 100 |
| Female | 67 ( 24) | 3 ( 24) | 26 ( 28) | 100 |
| Total | 60 (280) | 3 (279) | 35 (305) | 100 |
| DISTRIBUTIVE | | | | |
| Male | 42 ( 52) | 2 ( 52) | 54 ( 53) | 100 |
| Female | 65 ( 26) | 2 ( 27) | 30 ( 30) | 100 |
| Total | 50 ( 79) | 2 ( 80) | 45 ( 84) | 100 |
| HEALTH | | | | |
| Male | 88 (6) | 0 (6) | 12 (6) | 100 |
| Female | 82 (296) | 2 (296) | 17 (312) | 100 |
| Total | 82 (304) | 2 (304) | 17 (321) | 100 |
| AGRICULTURE | | | | |
| Male | 69 ( 48) | 1 ( 48) | 29 ( 53) | 100 |
| Female | 90 (2) | 2 (2) | 7 (2) | 100 |
| Total | 70 ( 50) | 1 ( 50) | 28 ( 55) | 100 |
| TECHNICAL | | | | |
| Male | 67 (324) | 2 (324) | 31 (333) | 100 |
| Female | 82 ( 14) | 1 ( 13) | 18 ( 14) | 100 |
| Total | 67 (339) | 1 (338) | 31 (348) | 100 |
| OFFICE | | | | |
| Male | 53 ( 70) | 3 ( 70) | 41 ( 74) | 100 |
| Female | 83 (255) | 3 (255) | 14 (275) | 100 |
| Total | 76 (325) | 3 (325) | 20 (349) | 100 |

*Sample size in parentheses

[a]Percentages may not equal 100 due to rounding.

their time in employment after graduation, whereas males spent only 53 per cent of their time in employment. As in the case of high school graduates, there were very low unemployment rates for graduates of all program areas, with the time not spent in employment partially accounted for by non-labor force status, presumably further education.

The pattern of employment, unemployment and non-labor force status for the graduates of junior college vocational-technical programs is similar to that for the post-high school graduates (Table V.6). Here, again, the graduates of Health programs, almost all female, spent the largest percentage of their post-graduation time in employment, and those graduating from Distributive Education programs spent the smallest portion of their time in employment, as compared with the other program areas. Percentages of time in full-time employment were slightly higher than those of the post-high school graduates overall. At the junior college level, too, the employment experience of female and male Office program graduates presents a contrast, with 89 per cent of the time of female graduates being spent in employment and only 60 per cent of the time of male graduates being spent in employment. As in the case of post-high school graduates, junior college vocational graduates spent very little of their post-graduation period in unemployment. When not employed, they tended to be out of the labor force, primarily assuming further education.

The importance of the relationship of full-time education and full-time employment in the post-graduation period can be seen in Table V.7. Those who attended school on a full-time basis at some point during the post-graduation survey period, obviously had less opportunity for

TABLE V.6

EMPLOYMENT RATE, UNEMPLOYMENT RATE AND NON-LABOR FORCE RATE, BY JUNIOR COLLEGE PROGRAM

| Program | Sudent's Employment Status After Graduation | | | |
|---|---|---|---|---|
| | Percent of time employment | Percent of time un-employment | Percent of time not in labor force | Total[a] |
| TRADE AND INDUSTRY | | | | |
| Male | 70 ( 97)* | 2 ( 97) | 28 (104) | 100 |
| Female | 69 ( 14) | 6 ( 14) | 20 ( 16) | 100 |
| Total | 70 (111) | 2 (111) | 27 (120) | 100 |
| DISTRIBUTIVE | | | | |
| Male | 51 (118) | 1 (117) | 48 (136) | 100 |
| Female | 84 ( 27) | 6 ( 27) | 15 ( 31) | 100 |
| Total | 57 (145) | 2 (144) | 42 (167) | 100 |
| HEALTH | | | | |
| Male | - ( 3) | - ( 3) | - ( 3) | 100 |
| Female | 86 (201) | 2 (200) | 13 (220) | 100 |
| Total | 86 (204) | 2 (203) | 13 (223) | 100 |
| AGRICULTURE | | | | |
| Male | 67 (200) | 1 (199) | 30 (220) | 100 |
| Female | 45 ( 11) | 2 ( 10) | 53 ( 12) | 100 |
| Total | 66 (211) | 1 (209) | 32 (232) | 100 |
| TECHNICAL | | | | |
| Male | 75 (171) | 3 (171) | 24 (181) | 100 |
| Female | 83 ( 25) | 3 ( 25) | 14 ( 26) | 100 |
| Total | 76 (196) | 3 (196) | 23 (207) | 100 |
| OFFICE | | | | |
| Male | 60 ( 46) | 2 ( 46) | 37 ( 49) | 100 |
| Female | 89 ( 62) | 3 ( 62) | 12 ( 75) | 100 |
| Total | 76 (108) | 2 (108) | 22 (124) | 100 |

*Sample size in parentheses.

[a]Percentages may not equal 100 due to rounding.

TABLE V.7

AVERAGE PER CENT OF TIME SPENT IN FULL-TIME EMPLOYMENT SINCE GRADUATION BY SCHOOL LEVEL AND FULL-TIME EDUCATION

| Full-Time Education | Post-High School | Junior College | High School Vocational | High School Academic |
|---|---|---|---|---|
| Yes | 46 | 75 | 51 | 44 |
| No | 82 | 91 | 77 | 66 |
| Total | 79 | 81 | 65 | 51 |

full-time employment during the period. At the post-high school and junior college levels, those who did not go on to further full-time education spent 82 per cent and 91 per cent, respectively, in full-time employment. For those who had some period of full-time schooling after graduation from the vocational program, the respective percentages of time spent in full-time employment was 46 and 75. Similar contrasts are found at the high school level. The percentage of time spent in full-time employment after the graduation of vocational high school students dropped from 71 per cent to 51 per cent if the student pursued full-time education after graduation. The drop for high school academic graduates was from 66 per cent to 44 per cent.

Job Search After Graduation by School Level and Program Area

A surprisingly large proportion of graduates at each school level had no need to search for a job after their graduation, even if they decided to enter full-time employment rather than pursue further education. As can be seen in Appendix Tables 12, 13 and 14, from 40 per cent to 55 per cent of those graduating from various programs at the junior college

level either had a job prior to their graduation and retained it after graduation, or had some job lined up for immediate referral after graduation; at the post-high school level, the percentages in this category ranged from 20 per cent to 40 per cent; and at the high school vocational level, from 12 per cent to 37 per cent. Of those requiring no job search after graduation from junior college programs, a substantial number already had a job prior to graduation and remained with the same employer following their graduation (Appendix Table 15). The graduates requiring no job search varied considerably by program area at the three school levels. At the junior college level, a relatively large proportion of those who had been in Agriculture, Technical and Health programs were in this category. At the post-high school a roughly similar pattern of job search is found. At the high school vocational level, however, a larger proportion from Distributive and Trade and Industry programs required no job search after graduation, as compared with those in Health, Agriculture, Technical and Office programs.

These findings on employment, or employer commitment, prior to graduation have significance for counseling and placement activities in vocational programs. The success of those in Health and Technical programs at the junior college and post-high school levels in lining up employers prior to their graduation may provide some lessons for placement activities at the high school vocational level, where only 12.5 and 16.7 per cent, respectively, of the graduates were able to avoid the necessity of a job search following graduation. On the other hand, the relative success of high school vocational graduates in Trade and Industry and Distributive programs in finding employment or employers

prior to their graduation may have some implications for placement activities on behalf of students in these programs at the post-high school and junior college levels.

Status of the First Job After Graduation by School Level and Program Area

The socio-economic index (using the NORC) of the first jobs held by junior college graduates was somewhat higher than that of the jobs first held by graduates of post-high school and high school vocational programs. As is seen in Table V.8, the higher status jobs went to those in Office and Distributive programs at each of the school levels; but Technical program graduates also achieved a relatively high socio-economic scale on their first jobs. Those who graduated from Health and Trade and Industry programs tended to have relatively low socio-economic indexes on the first jobs obtained after their graduation.

TABLE V.8

AVERAGE INDEX OF SOCIO-ECONOMIC STATUS OF FIRST JOB BY SCHOOL LEVEL AND PROGRAM AREA

| | Post-High School | Junior College | High School Vocational | Total |
|---|---|---|---|---|
| Trade and Industrial | 31.20 | 41.96 | 31.42 | 32.77 |
| Distributive | 53.48 | 54.08 | 42.92 | 49.05 |
| Health | 26.50 | 37.57 | 33.00 | 31.16 |
| Agriculture | 33.77 | 34.47 | 24.85 | 30.47 |
| Technical | 51.37 | 49.22 | 42.06 | 49.20 |
| Office | 53.72 | 57.35 | 48.53 | 51.65 |
| Total | 42.34 | 45.09 | 39.71 | --- |

Current Jobs of Graduates (At the Time of Survey)

By the time of the questionnaire survey, approximately three years after 1966 graduation, junior college graduates had obtained jobs which had a higher socio-economic status (using the NORC scales) than those obtained by high school and post-high school graduates in all program areas, with the exception of Agriculture. For junior college graduates as a whole, the average socio-economic index of occupations was 48.9, as compared with 42.8 for post-high school graduates and 41.5 for high school vocational graduates. It is notable that post-high school graduates enjoyed little advantage over high school vocational graduates, taken as a whole, and in a number of program areas (such as in Health, Trade and Industry) the index for occupations held by post-high school graduates was below that of the high school graduates. However, post-high school graduates of Agricultural programs enjoyed a higher socio-economic status than those graduating from junior college and high school programs in Agriculture. The latter group held jobs with the lowest socio-economic index, 25.6, as compared with graduates from all other program areas at each school level.

There was a general consistency in the socio-economic index of current employment when analysis is made by program area, regardless of school level. Those who graduated from Office, Technical and Distributive programs, on average, had current jobs with a substantially higher socio-economic index than those who graduated from Agriculture, Health, and Trade and Industry programs when the sample of graduates is taken as a whole. The highest status, with an index of 52.9, was enjoyed by those who graduated from Office programs, and the lowest status, with an index

of 31.3, was experienced by those who graduated from Health programs. At the vocational high school level, however, graduates of Trade and Industry programs (33.3) and Agriculture programs (25.6) had jobs with even lower socio-economic indexes than those graduating from Health programs (see Table V.9).

TABLE V.9

AVERAGE SES FOR CURRENT JOB BY SCHOOL LEVEL AND PROGRAM AREA

| | Post-High School | Junior College | High School Vocational | Total |
|---|---|---|---|---|
| Trade and Industrial | 31.94 | 50.93 | 33.38 | 32.28 |
| Distributive | 53.98 | 56.07 | 44.97 | 51.31 |
| Health | 26.36 | 38.57 | 40.25 | 31.39 |
| Agriculture | 40.32 | 39.63 | 25.69 | 34.45 |
| Technical | 52.76 | 53.75 | 43.38 | 51.86 |
| Office | 53.37 | 59.72 | 50.41 | 52.92 |
| Total | 42.86 | 48.97 | 41.59 | --- |

Further detail on the occupations held by the graduates at the time of the survey is found in Tables V.10, V.11 and V.12. Interesting differences among the three school levels are found for graduates of Health programs. At the high school level, 35.7 per cent of the Health graduates were registered nurses at the time of the survey, and 42.9 per cent were in the Clerical occupational category, with none being classified as practical nurses. At the post-high school level, 82.4 per cent of the Health graduates were classified as practical nurses in

TABLE V.10

TYPE OF CURRENT FULL-TIME JOB, BY HIGH SCHOOL PROGRAM

| Program | Sample size | Occupation (in percentages) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Practical nurse | Registered nurse | Professional | Farmer | Manager | Clerk | Sales | Skilled | Semi-skilled | Service | Unskilled | Total[a] |
| TRADE AND INDUSTRY | 243 | .4 | 1.2 | 10.3 | 1.7 | 1.7 | 8.2 | 2.9 | 36.7 | 24.3 | 7.0 | 5.8 | 100 |
| DISTRIBUTIVE | 95 | 0 | 0 | 9.5 | 0 | 5.3 | 50.5 | 11.6 | 8.4 | 8.4 | 3.2 | 3.2 | 100 |
| HEALTH | 14 | 0 | 35.7 | 7.1 | 0 | 0 | 42.9 | 0 | 0 | 14.3 | 0 | 0 | 100 |
| AGRICULTURE | 86 | 0 | 0 | 3.5 | 17.4 | 1.2 | 8.1 | 3.5 | 30.2 | 24.4 | 0 | 11.6 | 100 |
| TECHNICAL | 58 | 0 | 1.7 | 22.4 | 0 | 5.2 | 15.5 | 6.9 | 24.1 | 19.0 | 3.5 | 1.7 | 100 |
| OFFICE | 337 | .3 | 2.7 | 6.2 | 0 | 1.5 | 73.9 | 1.8 | 2.7 | 5.6 | 4.5 | .9 | 100 |

[a]Percentages may not equal 100 due to rounding.

TABLE V.11

TYPE OF CURRENT FULL-TIME JOB, BY POST HIGH SCHOOL PROGRAM

| Program | Sample size | Occupation (in percentages) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Practical nurse | Registered nurse | Professional | Farmer | Manager | Clerk | Sales | Skilled | Semi-skilled | Service | Unskilled | Total[a] |
| TRADE AND INDUSTRY | 204 | 0 | 0 | 8.3 | 6.4 | 3.4 | 3.4 | 1.5 | 48.0 | 15.7 | 9.8 | 3.4 | 100 |
| DISTRIBUTIVE | 59 | 0 | 0 | 45.8 | 0 | 8.5 | 10.2 | 15.3 | 15.3 | 3.4 | 1.7 | 0 | 100 |
| HEALTH | 244 | 82.4 | .8 | 11.1 | 0 | 0 | 3.7 | 0 | 0 | .8 | .0 | .4 | 100 |
| AGRICULTURE | 40 | 2.5 | 0 | 7.5 | 32.5 | 5.0 | 5.0 | 20.0 | 12.5 | 7.5 | 0 | .4 | 100 |
| TECHNICAL | 264 | 0 | 0 | 52.7 | .4 | 2.3 | 5.3 | 2.7 | 27.3 | 6.4 | .8 | 2.3 | 100 |
| OFFICE | 245 | .8 | 0 | 9.8 | .4 | 1.6 | 78.4 | 1.2 | 1.6 | 2.9 | 0 | 1.2 | 100 |

[a]Percentages may not equal 100 due to rounding.

TABLE V.12

TYPE OF CURRENT FULL-TIME JOB, BY SEX AND JUNIOR COLLEGE PROGRAM

| | | Occupation (in percentages)[a] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Size | Practical Nurse[b] | Registered Nurse[c] | Professional | Farmer | Manager | Clerical | Sales | Skilled | Semi- & Unskilled | Total |
| TRADE & INDUSTRY | | | | | | | | | | | |
| Male | 71 | -- | 1.4 | 45.1 | -- | 7.0 | 1.4 | 4.2 | 26.8 | 14.1 | 100 |
| Female | 9 | -- | - | -- | -- | -- | -- | -- | -- | -- | - |
| Total | 80 | -- | 1.3 | 42.5 | -- | 6.3 | 2.5 | 3.8 | 25.0 | 18.8 | 100 |
| DISTRIBUTIVE | | | | | | | | | | | |
| Male | 86 | -- | - | 24.4 | -- | 34.9 | 7.0 | 19.8 | 5.8 | 8.1 | 100 |
| Female | 21 | -- | - | 28.6 | -- | 38.1 | 23.8 | 4.8 | 4.8 | -- | 100 |
| Total | 107 | -- | - | 25.2 | -- | 35.5 | 10.3 | 16.8 | 5.6 | 6.5 | 100 |
| HEALTH | | | | | | | | | | | |
| Male | 2 | -- | - | -- | -- | -- | -- | -- | -- | -- | - |
| Female | 173 | 42.8 | 27.2 | 17.3 | -- | 2.3 | 6.9 | 1.2 | 0.6 | 1.8 | 100 |
| Total | 175 | 42.3 | 28.0 | 17.1 | -- | 2.3 | 6.9 | 1.1 | 0.6 | 1.7 | 100 |
| AGRICULTURAL | | | | | | | | | | | |
| Male | 109 | -- | 0.9 | 10.1 | 23.9 | 12.8 | 0.9 | 15.6 | 11.9 | 23.9 | 100 |
| Female | 0 | -- | - | -- | -- | -- | -- | -- | -- | -- | - |
| Total | 109 | -- | 0.9 | 10.1 | 23.9 | 12.8 | 0.9 | 15.6 | 11.9 | 23.9 | 100 |
| TECHNICAL | | | | | | | | | | | |
| Male | 125 | -- | - | 47.2 | 0.8 | 11.2 | 4.0 | 5.6 | 26.4 | 4.8 | 100 |
| Female | 18 | -- | - | 38.9 | -- | 11.1 | 27.8 | 11.1 | 5.6 | 5.6 | 100 |
| Total | 143 | -- | - | 46.2 | 0.7 | 11.2 | 7.0 | 6.3 | 23.8 | 4.9 | 100 |
| OFFICE | | | | | | | | | | | |
| Male | 37 | -- | - | 51.4 | -- | 10.8 | 13.5 | 16.2 | 5.4 | 2.7 | 100 |
| Female | 54 | -- | - | 13.0 | -- | 1.9 | 83.3 | -- | -- | 1.9 | 100 |
| Total | 91 | -- | - | 28.6 | -- | 5.5 | 55.0 | 6.6 | 2.2 | 2.2 | 100 |

[a]Where total Ns are below 10, per cents are not shown.

[b]Requirements are only 2 years of high school and a state approved training program.

[c]One of the three types of RNs--the Associate Degree RN as opposed to the 4-year Baccalaureate of Diploma RN, which go to make up a tenth of the country's nursing force. Source: U.S.Dept. of Labor, Bureau of Labor Statitics, Occupational Outlook Handbook, 1966-67 edition, Bulletin No. 1450, pp. 98, 123-124.

their current job; and at the junior college level, 42.3 per cent held jobs as practical nurses, and 28 per cent as registered nurses. It is clear that the Health programs at each of the school levels supplied health personnel to complement each other by taking their place at varying levels on the health occupational ladder. Whereas high school programs turn out the largest proportion of registered nurses, they also provide the largest proportion of clerical and semi-skilled workers, some of whom may not be employed in the Health field.

The graduates of Agriculture programs also present an interesting contrast when analysis is made by school level. For those who graduated from post-high school programs in Agriculture, almost 1/3 were farmers at the time of the survey, with the remainder being scattered in a variety of occupational categories. At the junior college level, less than 1/4 were farmers on the current job, and the remainder were primarily in managerial, professional and technical, or in sales and skilled occupations. In contrast, only 17.4 per cent of the graduates of Agriculture programs at the high school level were farmers at the time of the survey, and much larger proportions were in other skilled, semi-skilled or unskilled occupations. As was indicated in the tabulation of socio-economic indexes, graduates of Agricultural programs at the high school level appeared to have taken jobs at relatively low levels in the occupational hierarchy, whereas those from Agriculture programs at the junior college and post-high school levels frequently moved into skilled, professional, technical and managerial positions at higher levels in occupational classifications.

The specialization of graduates of Office programs in their field of training at the high school and post-high school levels is seen at each of the school levels. At the junior college level, however, only 55 per cent of the Office graduates held current jobs classed as "clerical", with most of the remainder being in the professional and technical classification. The movement to professional classification among Office graduates at the high school and post-high school levels was not so evident. The tendency of Technical program graduates to end up in technical occupations is apparent at the junior college and post-high school levels, in contrast with those from Technical programs at the high school level where only a little over 1/5 were in current jobs classified as professional or technical.

Marked differences in current occupational categories are also found among Trade and Industry graduates at each of the school levels. Although a little over 1/3 of the graduates of these programs at the high school level held skilled current jobs, almost an equal proportion were in semi-skilled, service and unskilled occupations at the time of the survey. In contrast, almost 1/2 of the Trade and Industry graduates from post-high school programs were in skilled occupations at the time of the survey; and at the junior college level, although only a little over 1/4 held skilled current jobs, a relatively large proportion (45 per cent) had moved to the professional and technical classifications.

In addition to those who were employed at the time of the survey, a number of the graduates at each school level were unemployed or not in the labor force at the time of the survey. The highest unemployment rates were experienced by post-high school graduates (16.7 per cent) and

high school vocational graduates (16.4 per cent). As is seen in Table V.13, junior college graduates suffered very little unemployment at the time of the survey (2.4 per cent), but almost 1/4 were out of the labor force. Even higher proportions were out of the labor force among high school vocational graduates and high school academic graduates. Military service absorbed approximately 13 per cent of each of these groups, with 2 per cent of the high school academic graduates engaged in full-time education at the time of the survey.

TABLE V.13

CURRENT LABOR FORCE ACTIVITY, BY SCHOOL LEVEL
(percentages)

| | Post-High School | Junior College | High School Vocational | High School Academic |
|---|---|---|---|---|
| Unemployed | 6.7 (71)* | 2.4 (17) | 6.4 (60) | 5.8 (15) |
| Employed | 80.2 (848) | 76.7 (495) | 66.7 (629) | 60.9 (159) |
| Military | 5.8 (61) | 4.0 (26) | 13.3 (125) | 13.0 (34) |
| Full-Time School | 2.3 (24) | 5.4 (35) | 4.6 (43) | 10.3 (27) |
| Other | 5.0 (53) | 11.2 (72) | 9.1 (86) | 10.0 (26) |
| Total | 100.0 (1057) | 100.0 (645) | 100.0 (943) | 100.0 (261) |

*Number of observations.
Chi Square significant at .001.

Relatedness of Job to Training

There has been some controversy among vocational experts as to the importance of the relatedness of a graduate's job to his training in affecting his economic well-being. Whereas Max Eninger, in his follow-up of graduates of trade and industrial programs, found that vocational graduates who entered and stayed in jobs related to their field of study did better in each of the performance measures than direct-to-work academics, others have questioned the economic value of consistency between the field of training and field of post-graduation employment. An effort to assess the relative importance of this factor in determining the employment and earnings of graduates is made in subsequent chapters. Here, we are concerned with the differences in the relationship of job to training by school level and program area, and some attempt is made to determine the factors which influence the relatedness of a graduate's job to his training field.

Part of the debate over the importance of training relatedness stems from definitional problems. Experts differ over the method of ascertaining the relatedness of a graduate's job to his training. In this study, the graduate himself was asked the question: "How related was this job to your vocational course?" He was then given four choices for his response: (1) Same; (2) Highly related; (3) Slightly related; and (4) Completely different. As is seen in Table V.14, most of the post-high school and junior college graduates do enter training-related jobs in their first full-time employment after graduation. The relatedness patterns in post-high school and junior college graduates are very similar, with only 10 per cent or less finding first jobs in a field

TABLE V.14

PER CENT OF SAMPLE IN EACH SCHOOL LEVEL, BY RELATION OF TRAINING TO EMPLOYMENT ON FIRST JOB AFTER GRADUATION

| Relation of Training to Employment | Post-High School | Junior College | High School Vocational |
|---|---|---|---|
| Same | 55.25 | 46.67 | 25.77 |
| Highly Related | 24.79 | 29.77 | 23.22 |
| Slightly Related | 13.34 | 13.49 | 20.47 |
| Completely Different | 6.62 | 10.08 | 30.54 |
| Total | 100.00 | 100.00 | 100.00 |

Chi Square significant at .001.

completely different from that of their training. On the other hand, only a little over 1/4 of high school vocational graduates took their first jobs in the field of their training, and over 30 per cent found their first employment in fields completely different than those in which they had been trained.

When relatedness of current job at the time of the survey to the field of training is examined (Table V.15), it is found that very little change has occurred among the graduates of high school vocational programs. Even though the current job, which may be the same as the first job, is not markedly different in its relationship to training for post-high school and junior college graduates, there is some notable shift away from the field of training, especially at the junior college level.

When analyzed by program area, it is seen that graduates of Health programs tend to have the highest proportion in employment

TABLE V.15

PER CENT OF SAMPLE IN EACH SCHOOL LEVEL BY RELATION OF TRAINING TO EMPLOYMENT ON CURRENT JOB

| Relation of Training to Employment | Post-High School | Junior College | High School Vocational |
|---|---|---|---|
| Same | 50.41 | 44.24 | 25.47 |
| Highly Related | 24.38 | 29.29 | 24.05 |
| Slightly Related | 16.25 | 15.35 | 19.94 |
| Completely Different | 8.95 | 11.11 | 30.54 |
| Total | 100.00 | 100.00 | 100.00 |

Chi Square significant at .001.

related to their field of training (see Tables V.17, V.18 and V.19). This is especially true for the first full-time job after graduation. Ninety-two per cent of the post-high school graduates, 80 per cent of the junior college graduates and 47 per cent of the high school vocational graduates in the Health field were first employed in jobs within their field of training. Even though this percentage was much lower for high school graduates than for those graduating at the other school levels, it still represented the highest proportion among the program areas at the high school level.

On the other hand, graduates of Agricultural programs represented the smallest proportion of those who obtained their first employment within their field of training. This was true at all school levels, but it was especially notable for high school graduates, where a much larger proportion obtained their first and current jobs in fields entirely different from their field of training, as compared with those who obtained their employment within their field of training.

TABLE V.16

RELATEDNESS OF CURRENT AND FIRST JOB TO TRAINING, BY HIGH SCHOOL PROGRAM

| Program and job | | Sample size | Degree of Relatedness (in percentages) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Same | Highly related | Somewhat related | Different | Total[a] |
| TRADE AND INDUSTRY | Current | 244 | 29.1 | 24.2 | 14.3 | 32.4 | 100 |
| | First | 361 | 32.7 | 19.4 | 18.0 | 30.0 | 100 |
| DISTRIBUTIVE | Current | 92 | 20.7 | 22.8 | 22.8 | 33.7 | 100 |
| | First | 136 | 25.7 | 19.1 | 20.6 | 34.6 | 100 |
| HEALTH | Current | 14 | 35.7 | 14.3 | 14.3 | 35.7 | 100 |
| | First | 23 | 47.8 | 8.7 | 13.0 | 30.4 | 100 |
| AGRICULTURE | Current | 83 | 13.3 | 16.9 | 18.1 | 51.8 | 100 |
| | First | 117 | 15.4 | 18.0 | 25.6 | 41.0 | 100 |
| TECHNICAL | Current | 57 | 26.3 | 21.1 | 24.6 | 28.1 | 100 |
| | First | 101 | 22.8 | 21.8 | 17.8 | 37.6 | 100 |
| OFFICE | Current | 333 | 31.2 | 24.3 | 22.8 | 21.6 | 100 |
| | First | 474 | 27.0 | 27.9 | 19.8 | 30.2 | 100 |

[a]Percentages may not equal 100 due to rounding.

Current job: $x^2 = 41.1$ (df = 15) significant at .001 level

First job: $x^2 = 40.7$ (df = 15) significant at .001 level

TABLE V.17

RELATEDNESS OF CURRENT AND FIRST JOB TO TRAINING, BY POST HIGH SCHOOL PROGRAM

| Program and job | | Sample size | Degree of Relatedness (in percentages) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Same | Highly related | Somewhat related | Different | Total[a] |
| TRADE AND INDUSTRY | | | | | | | |
| | Current | 202 | 46.5 | 19.3 | 16.8 | 17.3 | 100 |
| | First | 256 | 57.0 | 21.1 | 10.6 | 11.3 | 100 |
| DISTRIBUTIVE | | | | | | | |
| | Current | 59 | 25.4 | 33.9 | 20.3 | 20.3 | 100 |
| | First | 74 | 37.8 | 28.4 | 17.6 | 16.2 | 100 |
| HEALTH | | | | | | | |
| | Current | 244 | 84.8 | 8.2 | 2.1 | 4.9 | 100 |
| | First | 306 | 92.8 | 6.2 | 1.0 | 0 | 100 |
| AGRICULTURE | | | | | | | |
| | Current | 39 | 25.6 | 33.3 | 23.[illegible] | 18.0 | 100 |
| | First | 48 | 35.4 | 39.6 | 18.8 | 6.3 | 100 |
| TECHNICAL | | | | | | | |
| | Current | 264 | 41.3 | 28.9 | 21.2 | 8.7 | 100 |
| | First | 320 | 44.7 | 31.3 | 17.8 | 6.3 | 100 |
| OFFICE | | | | | | | |
| | Current | 246 | 36.6 | 36.2 | 19.5 | 7.7 | 100 |
| | First | 326 | 36.2 | 35.0 | 19.0 | 9.8 | 100 |

[a]Percentages may not equal 100 due to rounding.

Current job: $x^2 = 198.5$ (df = 15) significant at .001 level

First job: $x^2 = 274.5$ (df=15) significant at .001 level

TABLE V.18

RELATEDNESS OF FIRST FULL-TIME JOB AFTER GRADUATION TO JUNIOR COLLEGE TRAINING, BY PROGRAM

| Program | Sample Size | Degree of Relatedness (in percentages) | | | | |
|---|---|---|---|---|---|---|
| | | Same | Very Highly Related | Only Slightly Related | Wholly Unrelated | Total |
| TRADE & INDUSTRY | 105 | 39.1 | 34.3 | 15.2 | 11.4 | 100.00 |
| DISTRIBUTIVE ED. | 125 | 32.0 | 33.6 | 22.4 | 12.0 | 100.00 |
| HEALTH | 246 | 80.5 | 15.5 | 2.4 | 1.6 | 100.00 |
| AGRICULTURE | 133 | 27.1 | 32.3 | 15.8 | 24.8 | 100.00 |
| TECHNICAL | 178 | 35.4 | 37.1 | 16.3 | 11.2 | 100.00 |
| OFFICE | 115 | 37.4 | 31.1 | 22.6 | 8.7 | 100.00 |

At the post-high school level, a relatively large proportion of the graduates of Trade and Industry programs obtained their first and current jobs in the field of their training, but this was less true at the junior college level for Trade and Industry graduates and contrasted with the situation at the high school level where over 30 per cent held first and current jobs in fields entirely different from that of their training, roughly the same proportion as those with jobs in the same field.

In a comparison of the relatedness of first and current jobs to training, by program field, it is interesting to note that the proportion of those in the field of their training declines between the first and current jobs in each program area except Office programs at the post-high school level, and in each program area with the exception of Technical

and Office programs at the high school level. At the high school level, even the greater proportion of graduates of Agriculture programs are in current jobs entirely different from their field of training (51.8 per cent) as compared with those in entirely different fields on their first jobs (41.0 per cent).

Factors Affecting Relatedness of Job to Training

Although the cross-sectional analysis above provides contrasting insights into the relatedness of employment to training for vocational graduates in various programs and school levels, it leaves a number of important questions unanswered. School level and program area are undoubtedly important in determining whether a vocational-technical graduate is likely to obtain employment in his field of training or not. However, it is important to know how these variables interact with each other in affecting job relatedness, and it is appropriate to inquire into the relative importance of such personal factors as sex, age, marital status and race, as well as such background and environmental factors as parental education, the student's grade-point average in school and the environmental location in which his education and job search occurs. An effort to determine the relative importance of these possible explanatory variables is made in the regression analyses presented in Tables V.19 and V.20. In each case, the first relating to the graduate's first job and the second to his current job at the time of the survey, the dependent variable is "relatedness of job to training." A value of 1 has been assigned in cases where the job is related to the field in which the graduate took his training, and a value of 0 is assigned if the graduate's job is not related to his training. The coefficients in

TABLE V.19

FACTORS AFFECTING RELATEDNESS OF FIRST JOB TO TRAINING, BY SCHOOL LEVEL

Dependent Variable: Relatedness of Job to Training

| Independent Variables | Post High School | | Junior College | | High School Vocational | | Total Sample | |
|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s |
| LEVEL - High School@ | | | | | | | | |
| Post High School | | | | | | | .20** | .02 |
| Junior College | | | | | | | .12** | .03 |
| REGION - South@ | | | | | | | | |
| West | -.003 | .03 | .19* | .09 | .02 | .06 | .03 | .03 |
| Northeast | .05 | .05 | .31** | .10 | .11 | .06 | .10** | .03 |
| North Central | .02 | .03 | .16 | .11 | .05 | .06 | .03 | .03 |
| PROGRAM AREA - Office@ | | | | | | | | |
| Trade and Industry | .15** | .05 | -.09 | .11 | .23** | .08 | .14** | .04 |
| Distributive | -.03 | .06 | .02 | .11 | .08 | .09 | .001 | .04 |
| Health | .13** | .04 | .13 | .08 | .01 | .14 | .17** | .04 |
| Agriculture | .28** | .14 | .10 | .09 | .11 | .10 | .13** | .05 |
| Technical | .13** | .04 | .06 | .08 | -.04 | .08 | .06 | .03 |
| SES | .002** | .001 | -.000 | .001 | .007** | .001 | .003** | .001 |
| FATHER'S EDUCATION | .007* | .004 | -.001 | .006 | -.007 | .007 | .002 | .003 |
| SEX - Female@ | | | | | | | | |
| Male | -.16** | .04 | -.02 | .05 | -.009 | .06 | -.08** | .03 |
| AGE | -.000 | .02 | .002 | .003 | + | | .000 | .002 |
| MARITAL STATUS - Single@ | | | | | | | | |
| Married | -.009 | .02 | .02 | .04 | -.008 | .04 | -.001 | .02 |
| Other | -.01 | .06 | .04 | .09 | .15 | .10 | .06 | .05 |

TABLE V.19 (*continued*)

| Independent Variables | Post High School | | Junior College | | High School Vocational | | Total Sample | |
|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s |
| RACE - White@ | | | | | | | | |
| Non-white | -.03 | .04 | -.11 | .06 | -.24* | .10 | -.12** | .03 |
| SETTING - Rural@ | | | | | | | | |
| Medium | -.01 | .03 | -.13 | .07 | -.06 | .06 | -.04 | .03 |
| Large | .02 | .04 | -.12 | .10 | -.07 | .07 | -.002 | .03 |
| Very Large | no responses | | -.03 | .07 | .13 | .13 | .09* | .04 |
| Suburb | -.05 | .06 | -.12 | .07 | .04 | .07 | .01 | .03 |
| GPA | .02 | .02 | .04 | .03 | .04 | .03 | .29* | .01 |
| $R^2$ | .0852 | | .1517 | | .1136 | | .1302 | |
| Number of Observations | 701 | | 295 | | 528 | | 1524 | |

Notes:

b Partial regression coefficient

s Standard error

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. *Its value is entered into the constant.*

\+ Age of all high school vocational students was coded as 21.

TABLE V.20

FACTORS AFFECTING RELATEDNESS OF LAST OR CURRENT JOB TO TRAINING, BY SCHOOL LEVEL

Dependent Variable: Relatedness of Job to Training

| Independent Variables | Post High School | | Junior College | | High School Vocational | | Total Sample | |
|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s |
| LEVEL - High School@ | | | | | | | | |
| Post High School | | | | | | | .18** | .02 |
| Junior College | | | | | | | .12** | .03 |
| REGION - South@ | | | | | | | | |
| West | .003 | .03 | .18* | .08 | -.03 | .06 | .01 | .03 |
| Northeast | .08 | .05 | .25** | .09 | .05 | .06 | .06* | .03 |
| North Central | .03 | .04 | .07 | .11 | .04 | .06 | .02 | .03 |
| PROGRAM AREA - Office@ | | | | | | | | |
| Trade and Industry | .06 | .05 | -.21* | .10 | .14 | .08 | .06 | .04 |
| Distributive | -.11 | .06 | .007 | .10 | +.04 | .09 | -.03 | .04 |
| Health | .10* | .04 | .10 | .07 | .02 | .14 | .17** | .04 |
| Agriculture | -.28 | .15 | -.01 | .09 | -.07 | .10 | -.07 | .05 |
| Technical | .06 | .05 | -.03 | .08 | -.003 | .08 | .03 | .03 |
| SES | .003** | .001 | .001 | .001 | .008** | .001 | .004** | .001 |
| FATHER'S EDUCATION | .003 | .004 | .005 | .006 | .006 | .007 | .005 | .003 |
| SEX - Female@ | | | | | | | | |
| Male | -.09* | .04 | .04 | .05 | .001 | .06 | -.04 | .03 |
| AGE | .001 | .002 | .002 | .003 | + | | .001 | .002 |
| MARITAL STATUS - Single@ | | | | | | | | |
| Married | -.01 | .02 | .03 | .04 | -.05 | .04 | -.014 | .02 |
| Other | -.11 | .07 | .03 | .08 | .11 | .10 | -.014 | .05 |

TABLE V.20 (continued)

| Independent Variables | Post High School b | Post High School s | Junior College b | Junior College s | High School Vocational b | High School Vocational s | Total Sample b | Total Sample s |
|---|---|---|---|---|---|---|---|---|
| RACE - White@ | | | | | | | | |
| Non-white | -.03 | .04 | -.15* | .06 | -.11 | .10 | -.09 | .03 |
| SETTING - Rural@ | | | | | | | | |
| Medium | -.01 | .03 | -.02 | .07 | -.10 | .06 | -.05 | .03 |
| Large | -.002 | .04 | .01 | .09 | -.12 | .08 | -.05 | .03 |
| Very Large | no responses | | .04 | .07 | .08 | .13 | .05 | .05 |
| Suburb | -.04 | .06 | .05 | .07 | .007 | .07 | .01 | .03 |
| GPA | .02 | .02 | .03 | .03 | .09** | .03 | .05** | .01 |
| $R^2$ | .0736 | | .1963 | | .1543 | | .1599 | |
| Number of Observations | 701 | | 295 | | 528 | | 1524 | |

Notes:
- b Partial regression coefficient
- s Standard error
- * Significant at the .05 level; ** Significant at the .01 level
- @ Base variable against which the others are compared. Its value is entered into the constant.
- + Age of all high school vocational students was coded as 21.

the tables presented indicate the probability that the job is related to the field of training.

The independent variables for the three school levels, for the four regions, and for the six program areas have been described above.

The SES variable, measuring the socio-economic status of the job, utilizes the NORC scale. It is a continuous scale from the lowest status of 0 to the highest of 87.

Father's education was coded as the last year of education completed, with the number 5 representing less than the sixth grade, the numbers 6 through 12 representing the actual year completed, and the numbers 13 through 17 representing school completed past high school. The last number, 17, includes any schooling past a college degree. The variable is entered into the regression equations as a continuous variable.

The sex variable is entered into the equations as a dummy variable, taking the value 1 for male and 0 for female. Age is entered into the regression models as a continuous variable. Marital status is entered into the equations as two dummy variables. The base variable is the "single" category, against which the other two dummy variables "married" and "other" are compared. The race variable has also been entered into the equations in dummy variable form, with "white" chosen as the base category against which "non-white" is compared. The student's grade-point average (GPA) has been entered as a continuous variable in the regression equations. It refers to the grade-point average disclosed by school records for the graduates. The range is from 0 to 4.0 for a straight A average.

The variable for "setting" refers to rural, urban and suburban locations of the graduates' vocational school, high school or junior college. In the case of suburban locations, the sample has been divided between medium, large and very large cities. These have been entered into the equations in dummy variable form, with "rural" being the base variable against which the other categories are compared.

As is noted in the results of the regression analysis for the graduates' first job in Table V.19, the variables which are most significantly associated with increased probabilities that the first job will be related to the graduates' field of training for the sample as a whole are: his attendance at a post-high school or junior college rather than a high school, his location in the Northeast, his graduation from a Trade and Industry, Health or Agriculture program, a high socio-economic status as measured by the NORC scale, and the status as female or white. Location in a very large city and a high grade-point average are significant at the .05 level, and the other variables are not significant at either the .05 or .01 levels.

Since school level is found to be a highly significant variable in increasing the probability that the first job will be related to the field of training, separate regressions were run for each of the school levels. As is seen in Table V.19, the Northeast region continues to be a significant explanatory variable only for the junior college sample, and program area emerges as a significant variable only in the case of Trade and Industry graduates at the high school level, whereas Technical training is added to the list of significant program variables for post-high school graduates in addition to those found to be significant for the total sample.

Whereas the socio-economic status of the job is significantly related to the dependent variable in the case of post-high school and high school vocational graduates, it is not found to be a significant variable in the case of a junior college sample. Similarly, females have a higher probability of close relationship of the first job to training only in the case of post-high school graduates, and this variable is not found to be significant for the junior college and high school vocational samples. Race is found to be a significant variable, only at the .05 level, for high school vocational graduates. The importance of the environmental setting and the student's GPA score is reduced in statistical significance when the regression is run for the separate school levels.

For the sample as a whole, there is little difference in the regression results for the relatedness of training to the graduates' current job, as compared to their first job (see Table V.20). However, those differences which emerge are of some interest and significance. As the respondents move from their first job to their current job, the significance of the program area in which they took their training is reduced as a factor associated with higher probabilities that their job will be related to their training field. Whereas graduation from a Health program, a Trade and Industry program and an Agriculture program significantly increased the probability of training relatedness on the first job, only Health programs were significantly associated with increased probabilities of training relatedness on the respondents' current job. Whereas all of the program areas were positively related to increased probabilities of training relatedness

on the first job, graduation from Distributive and Agriculture programs actually reduced the probabilities of training relatedness (as compared with Office program graduates) on the current job, although these negative relationships were not statistically significant.

For the total sample, such personal factors as sex and race, which significantly influenced the probabilities of training relatedness on the first job, were no longer found to be statistically significant as explanatory variables on the graduates' current job. On the other hand, even greater significance was found in the relationship of the student's grade point average to the relatedness of their training to their current job. Although location in a very large city is still positively related with the probability of training relatedness on the current job, it is no longer statistically significant as compared to training relatedness on the first job.

Thus, for the total sample, such policy variables as school level, participation in a Health program, socio-economic status of the occupation and grade point average become more significant as explanations for the probability of relatedness to training on the current job as compared with the graduates' first job; and some non-policy personal characteristics become less important. These findings may then have some implications for policy if we wish to increase the probability that a vocational graduate's job will be related to his training. Of course, it cannot be claimed that the variables presented in these regression equations fully explain the factors which determine the relatedness of vocational graduates' jobs to their training. Appendix Tables 16 and 17 present the regression results

including partial correlation coefficients, $R^2$ and F-ratios. Although the independent variables, taken as a whole, are statistically significant as an explanation for the probability of training relatedness to the graduates' jobs, they explain the relatively small percentage of the differences in probabilities among the graduates.

In the regression analyses within school levels for the relatedness of training to the current job, we find the same marked decline in the significance of program area at the post-high school level, with only Health programs being significantly associated with higher probabilities of training relatedness, and this only at the .05 level as compared with the .01 level for training relatedness to the graduates' first jobs. At the junior college level, the negative relationship between Trade and Industry programs and the probabilities of training relatedness, which was found to exist for the graduates' first job, is found to be statistically significant at the .05 level in the case of training relatedness to current job. At both the junior college and high school levels, it is found that enrollment in Agricultural and Technical programs reduces the probability of relatedness of training to the current job (as compared with Office programs), although this negative relationship is not statistically significant.

One of the consistent findings in the regression analyses of training relatedness is that the higher the socio-economic status of the job obtained by post-high school and high school vocational graduates, whether their first job or the current job, the greater the probability that the job will be related to the respondent's training. Although SES is also positively associated with the relatedness of

training to first and current jobs, the association is not statistically significant.

At the high school level, in addition to the significance of the socio-economic status of the current job, the students' grade point average also assumes a statistical significance in explaining the probability of training relatedness to current job. It is likely that these two variables are intercorrelated.

Although the urban-rural setting of the respondents' vocational-technical training no longer has a statistically significant bearing on training relatedness to current job in any of the separate school level regressions, the geographic region is statistically significant as a variable for junior college graduates in connection with both the first and the current job. Location in the Northeast significantly increases the probability that the jobs will be related to training, as does location in the West to a somewhat lesser extent.

Satisfaction with First Job

The vocational-technical graduates at the three school levels who obtained employment during the survey period were asked to indicate their degree of satisfaction with their first job. At each school level, those indicating that they were "very satisfied" or "fairly satisfied" considerably exceeded the proportion who stated that they were "not satisfied." On the whole, the graduates of post-high school vocational-technical programs appeared to have somewhat higher levels of satisfaction than those coming from high school and junior college programs. However, there were substantial variations in the level of satisfaction depending upon the program area in which the graduates took their training, especially at the post-high school and junior college levels.

As seen in Tables V.21, V.22, and V.23, graduates of Health programs expressed the highest levels of satisfaction with their first full-time jobs at each of the school levels. Those indicating that they were "very satisfied" with their first job after graduation represented 47.8 per cent of the Health graduates at the high school level, 56.1 per cent at the post-high school level and 63.9 at the junior college level. Relatively small proportions of Health graduates at each of these levels indicated that they were "not satisfied" with their first job. Technical and Office program graduates expressed high levels of satisfaction at the high school and post-high school levels, with Office graduates representing the largest proportion of those who were "very satisfied" with their first job, following the favorable reaction of graduates of Health programs at each of the school levels. Technical and Trade and Industry graduates expressed relatively high levels of "non-satisfaction" at the high school level; but for those graduating from post-high school and junior college programs, the Distributive program graduates expressed the highest levels of dissatisfaction, with 29 per cent at the post-high school and 30.9 per cent at the junior college level indicating that they were "not satisfied" with their first full-time job following their graduation from Distributive education.

In a regression analysis attempting to explain the factors associated with satisfaction on the first job, it is found that the relative significance of school level and program area, when other factors are taken into account in an equation utilizing a number of regressors, with "satisfaction with first job" as the dependent

TABLE V.21

SATISFACTION WITH FIRST JOB, BY HIGH SCHOOL PROGRAM

| Program | Sample size | Degree of Satisfaction (in percentages) Very satisfied | Fairly satisfied | Not satisfied | Total[a] |
|---|---|---|---|---|---|
| TRADE AND INDUSTRY | 353 | 28.3 | 49.0 | 22.7 | 100 |
| DISTRIBUTIVE | 143 | 36.4 | 44.8 | 18.9 | 100 |
| HEALTH | 23 | 47.8 | 34.8 | 17.4 | 100 |
| AGRICULTURE | 113 | 32.8 | 51.3 | 16.0 | 100 |
| TECHNICAL | 98 | 35.7 | 36.7 | 27.6 | 100 |
| OFFICE | 478 | 37.2 | 43.1 | 19.7 | 100 |

[a]Percentages may not equal 100 due to rounding.

$x^2 = 15.89$ (df = 10)
not significant at .05 level

TABLE V.22

SATISFACTION WITH FIRST JOB, BY POST HIGH SCHOOL PROGRAM

| Program | Sample size | Degree of Satisfaction (in percentages) | | | |
|---|---|---|---|---|---|
| | | Very satisfied | Fairly satisfied | Not satisfied | Total[a] |
| TRADE AND INDUSTRY | 249 | 30.5 | 58.2 | 11.2 | 100 |
| DISTRIBUTIVE | 69 | 34.8 | 36.2 | 29.0 | 100 |
| HEALTH | 305 | 56.1 | 38.7 | 5.3 | 100 |
| AGRICULTURE | 48 | 29.2 | 52.1 | 18.8 | 100 |
| TECHNICAL | 319 | 41.1 | 42.1 | 16.9 | 100 |
| OFFICE | 325 | 43.7 | 41.5 | 14.8 | 100 |

[a]Percentages may not equal 100 due to rounding.

$x^2 = 73.76$ (df = 10)
significant at .001 level

TOTAL V.23

SATISFACTION WITH FIRST JOB, BY JUNIOR COLLEGE PROGRAM

| Program | Sample Size | Degree of Satisfaction (in Percentages) Very Satisfied | Fairly Satisfied | Not Satisfied | Total |
|---|---|---|---|---|---|
| TRADE & INDUSTRY | 103 | 36.9 | 41.8 | 21.4 | 100 |
| DISTRIBUTIVE | 123 | 30.1 | 39.0 | 30.9 | 100 |
| HEALTH | 244 | 63.9 | 26.6 | 9.4 | 100 |
| AGRICULTURE | 132 | 39.4 | 41.7 | 18.9 | 100 |
| TECHNICAL | 174 | 34.5 | 44.8 | 20.7 | 100 |
| OFFICE | 113 | 46.0 | 32.7 | 21.2 | 100 |

$x^2 = 65.3$ (10df), significant at .001 level.

variable (see Table V.24). The dependent variable is expressed as a dichotomous variable, with those who indicated that they were "very satisfied" or "fairly satisfied" represented by 1, and those who indicated that they were "not satisfied" represented by 0. The independent variables are similar to those utilized in the previous regression on relatedness of job to training, with the addition of the variable "additional education," a dichotomous variable in which additional education after graduation from vocational and technical programs at each of the school levels is represented by 1, and the absence of any additional education after graduation is represented by 0. In order to include all those respondents who expressed their satisfaction with the first job in addition to data on all of the independent variables, it was necessary to reduce the size of the sample.

TABLE V.24

FACTORS AFFECTING SATISFACTION WITH FIRST JOB, BY SCHOOL LEVEL

Dependent Variable: Satisfaction With First Job

| Independent Variables | Post-High School | Junior College | High School Vocational | Total Sample |
|---|---|---|---|---|
| LEVEL - High School Grad.@ | | | | |
| Post-High School Grad. | | | | .08 |
| Junior College Grad. | | | | -.10* |
| REGION - South@ | | | | |
| West | .007 | -.09 | .11 | .04 |
| Northeast | .06 | -.08 | -.009 | .004 |
| North Central | -.01 | -.17 | -.04 | -.04 |
| PROGRAM AREA - Office@ | | | | |
| Trade and Industry | .009 | -.14 | .17 | .04 |
| Distributive | .10 | -.03 | .13 | .06 |
| Health | -.04 | .25* | .12 | .15* |
| Agriculture | no responses | -.03 | .24 | .13 |
| Technical | .01 | -.06 | .09 | .006 |
| SES | .000 | .003* | .00[illegible] | .002** |
| RELATEDNESS: JOB TO TRAINING | .16** | .35** | .11 | .16** |
| FATHER'S EDUCATION | .003 | .005 | -.003 | .002 |
| SEX - Female@ | | | | |
| Male | -.08 | .24** | - 09 | .02 |
| AGE | .002 | .004 | + | .001 |
| MARITAL STATUS - Single@ | | | | |
| Married | .02 | -.10 | .03 | .006 |
| Other | .02 | -.21 | .11 | .04 |
| RACE - White@ | | | | |
| Non-white | .06 | .04 | -.04 | .04 |
| ADDITIONAL EDUCATION | -.14* | -.07 | .03 | -.03 |
| SETTING - Rural@ | | | | |
| Medium | .03 | .22* | -.05 | .03 |
| Large | .02 | .25 | -.06 | -.01 |
| Very Large | no responses | .14 | .14 | .09 |
| Suburb | .04 | .10 | -.03 | .008 |
| GPA | .02 | .05 | .008 | .03 |
| $R^2$ | .1080 | .2350 | .0721 | .1027 |
| Number of Observations | 283 | 225 | 352 | 870 |

Notes:

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

\+ Age of all high school vocational students was coded as 21.

Although the explanatory variables taken as a whole are not found to be a statistically significant explanation for degree of satisfaction with the first job, it is interesting to note that for the total sample the two significant explanatory variables at the .01 level are the socio-economic status of the job and the relatedness of the job to the respondents' training. The only other variable which increases the probability of satisfaction with the job for the total sample, with significance at the .05 level, is enrollment in a Health program.

The importance of the relatedness of the job to training in influencing job satisfaction is seen in the fact that this variable is significant at the .01 level for both the post-high school and junior college samples in separate regressions. At the post-high school level, there is a significant negative association between taking additional education and the satisfaction of the respondent with his first job. Here, the cause and effect relationship is somewhat obscured because of the lack of specification of the time period of the additional education in relationship to the employment. However, it can be assumed that many of the graduates who were dissatisfied with their first job were thereby induced to enroll in further educational courses.

At the junior college level, in addition to the significance of enrollment in Health programs, a higher socio-economic status of the job and a close relatedness of the job to previous training in explaining higher degrees of satisfaction, it is found that the probability of greater satisfaction is increased for males, relative to females. A separate analysis of this factor by the Bureau of Social Science Research indicated that females graduating from male-dominated programs

such as Trade and Industry, Distributive and Technical, were more dissatisfied with their first job than males from the same programs. The significance of these factors in influencing the degree of satisfaction changes the relative importance of enrollment in a junior college implied in the cross-tabulations. When such factors as sex, program area, socio-economic status of the job and relatedness of job to the training are considered along with other independent variables, it is found that former enrollment in a junior college program, taken as a separate explanatory variable, actually has a significant negative relationship to the probability of satisfaction on the first job. In view of the smallness of the sample used for this analysis, and the small proportion of the total variance explained by all of the independent variables, caution must be exercised in interpreting these results.*

Placement Channels and Mobility of Junior College Graduates

Self-placement was the usual way in which the vocational graduates found their first full-time job after leaving the junior college. Contacts through friends, college instructors and private employment agencies

*For the sample as a whole, the F-ratio is 4.03, statistically significant at the .01 level. An effort has been made to avoid the appearance of great precision in interpreting the results of the regression analyses in this chapter. The reader should be aware of the special problems involved in the use of dichotomous dependent variables in linear regression models. Special caution must be exercised in estimating the parameters and interpreting the correlation coefficient in models using a 0,1 dependent variable. The 1,0 nature of the regressand enables the cond[illegible] probability that the event will occur given the X's and the predi[illegible] or calculated value of y to be interpreted as an estimate of this conditional probability. A detailed discussion of the problems involved in this approach would not be appropriate here. However, given a cautious interpretation and the avoidance of the unwarranted impression of precision, it is felt that this regression model provides insights into the relative importance of key explanatory variables, and that the $R^2$ still indicates a proportion of variation in the dependent variable explained by these independent variables.

were next in importance. Private agencies were especially needed in the case of graduates of Distribution education programs. On the whole, college sources were not very effective in the placement process, with the junior college placement office placing fewer than 10 per cent of the graduates from any program area, and with the college instructor of a Technical program (where the aid was greatest) helping approximately 1 in 6 students to get his first job. Further details on placement channels for junior college graduates are found in the Bureau of Social Science Research Report, contracted as part of this survey.

There was no marked geographic mobility after graduation for the vocational-technical graduates. No residence move to a new town or city was involved for more than 2/3 of the graduates of each program at the junior college level. The ratio of mobile workers after graduation was even lower for those coming from high school and post-high school vocational programs. At the junior college level, the proportion of movers was highest among Agriculture and Trade and Industry graduates, 29.1 per cent and 27.5 per cent, respectively. Further tabular details on geographic moves for junior college graduates is found in the Bureau of Social Science Research Report.

Conclusions

Although the central focus of this study is on the post-high school graduation employment experience of vocational-technical graduates, it must be observed that this is only one dimension to a follow-up evaluation of vocational programs. A notable proportion of the samples at each of the school levels took up no full-time work during the approximately three-year period following their graduation. The

range was from a little over 10 per cent for the post-high school graduates to a little over 50 per cent for those who graduated from high school academic programs. The corresponding proportions for junior college graduates was approximately 1/4, and for high school vocational graduates, approximately 17 per cent. The significance of non-labor force status after graduation is also seen in the proportions who pursued further education, and in the length of time ensuing between graduation and the first full-time job at each of the school levels.

Although there are some notable differences at each of the school levels, it was found that, in general, the graduates of Health programs spent the largest proportion of their time in employment rather than non-labor force activities in the survey period following their graduation. The employment experience of female and male Office program graduates presents a contrast at the post-high school and junior college levels, with 89 per cent of the time of female graduates of junior college programs being spent in employment and only 60 per cent of the time of male graduates being spent in employment in the survey period.

Although further education played a notable role in the post-graduation survey period, relatively few of the graduates at any of the school levels or in any of the program areas experienced significant unemployment or a lengthy period of job search following graduation. A surprisingly large proportion of graduates at each school level had no need to search for a job at all after graduation, even though they decided to enter full-time employment rather than pursue further education. A substantial number already had a job prior to graduation and remained with the same employer following their graduation; and many

others had lined up a job prior to graduation. There were significant variations by program area and school level in this regard, however.

These findings on further education, employment and job search following graduation from a vocational-technical program have implications for counseling and guidance in the schools, as well as for other aspects of educational planning. Although vocational-technical education is often planned as a direct link to the world of work, it must be noted that it often serves as a stepping-off point for further education. The total curriculum of a vocational-technical student should reflect these options. At the same time, the greater success of students in some programs at each of the school levels in finding employment or a potential employer prior to graduation is worthy of further inquiry in order to determine the elements of success and failure on this score.

As might be expected, the socio-economic index of the first jobs held by junior college graduates was somewhat higher than that of the jobs first held by graduates of post-high school and high school vocational programs. At each of the school levels, the higher status jobs went to those in Office and Distributive programs, with Technical graduates often ranking next in the socio-economic status of their first jobs, and with those who graduated from Health and Trade and Industry programs having relatively low socio-economic indexes on the first job after their graduation. The higher status of jobs held by junior college graduates continued to persist on the current job held by the respondents at the time of the survey, possibly three years after their graduation. And graduates of Office, Technical and

Distributive programs, on average, continued to have current jobs with a substantially higher socio-economic index than those who graduated from Agriculture, Health and Trade and Industry programs.

The findings have relevance for those who analyze the continuing problem of the place of Agriculture programs in vocational-technical offerings. For those who graduated from post-high school programs in Agriculture, almost 1/3 were farmers at the time of the survey, with the remainder being scattered in a variety of occupational categories. At the junior college, less than 1/4 were farmers on their current job, and at the high school level only 17.4 per cent of the graduates of Agriculture programs were farmers at the time of the survey. These findings also correlate with data on their relatedness of first and current jobs to training for those in Agriculture, and raise some interesting questions concerning the relevance of vocational Agriculture programs for the immediate employment of their graduates.

Quite aside from the questions of the relatedness of jobs to Agricultural training, it was found that most of the post-high school and junior college graduates do enter training-related jobs in their first full-time employment after graduation. On the other hand, only a little over 1/4 of the high school vocational graduates get their first jobs in the field of their training. In relatedness of current job at the time of the survey to the field of training, it is found that very little change had occurred among the graduates of high school programs. At the post-high school and junior college levels, there is some notable shift away from the field of training, especially at the junior college level. In almost all cases, Health program graduates

tend to have the highest proportion of employment related to their field of training; and graduates of Technical programs also tend to have a high degree of relatedness of job to training. These variations by program area and school level have implications for the structuring of curricula, and these implications are pursued in further detail in the final chapter. At the high school level, there should be broader curricula since graduates seldom go directly into the field of their training in any case. Analysis of the variations on this score within program areas also have policy implications for curricula planning.

Regression analyses generally support the view that school level, program area, the socio-economic status of the job and the graduates' sex are important variables in explaining whether the job will be related to training or not. The implications of these findings for vocational and technical curricula are also discussed further below.

Regardless of the objective aspects of their post-graduation employment experience, the overwhelming majority of the graduates at each school level were satisfied with their first job after graduation. Here, too, however, there were some significant variations by school level and program area. Health graduates tended to express the greatest satisfaction. And those coming from post-high school programs, on the whole, appeared to be more satisfied with their first employment than those at the other school levels. However, the most notable finding in the regression analyses concerned with job satisfaction was that the relatedness of the job to training and the socio-economic status of the job were of the greatest significance in bringing about job satisfaction. Here, too, the implications for vocational and technical curricula are

important. Training a student for a good job in his field of training is apparently an important determinant of his satisfaction as well as the objective economic aspects of his post-graduation labor market experience.

# CHAPTER VI

## POST-VOCATIONAL WAGES AND EARNINGS

As has been noted above, an analysis of income benefits in the three-year period following graduation from vocational and technical programs is complicated by the fact of additional education which reduces the opportunities for employment and earnings. Although the best measure of income benefits is average monthly earnings during the survey period, in that this measure reflects continuity of employment as well as the level of wage rates, earnings will be reduced to the extent that time is taken for additional education rather than labor market activity. Since the principal goal of vocational-technical education is to prepare students for remunerative employment, it might be assumed that an extended non-labor force status following graduation detracts from this goal and that it is legitimate to use the lower earnings which result as a measure of the reduced benefits of vocational-technical education during the survey follow-up. However, additional education is also construed to be an important benefit, and this may actually lead to enhanced earnings in the future.

Thus, as a supplement to the analysis of average monthly earnings, this chapter includes an appraisal of the wage rate on the first job following graduation and on the job held by the respondent at the time of the interview surveys approximately three years after graduation. Hourly wage rates and weekly wage levels on a particular job are free

of the bias which may be introduced by the effect of further education on average earnings during the survey period.

Mean Wages on First Job and Last or Current Job

When described in cross-tabular form, it is noted that junior college graduates received higher hourly wage rates on their first job than post-secondary graduates, and that the latter, in turn, received higher hourly wage rates than secondary school vocational graduates (Table VI.1). The range in mean hourly wage rates was from $1.80 at the high school level to $2.30 at the junior college level.

Graduates at each of the school levels had improved their wage rate position by the time of their last job, or the job they held at the time of the interview survey. However, the ranking of mean wage rates by school level was retained on the last job. The magnitude of increase between first and last hourly wage rate reflected the same order of ranking by school level: .90 per hour for junior college graduates, .70 per hour for post-secondary graduates, and .60 per hour increase for secondary vocational graduates.

As will be apparent in the regression analyses below, however, income differences by school levels cannot be meaningfully evaluated aside from program area, sex and other variables. For the sample as a whole, distinct from school level and other variables, graduates of Technical programs enjoyed the highest mean hourly wage rates on the first job after their graduation ($2.40), followed by those graduating from Agriculture, Distributive programs, Health programs, and Office programs ($1.80). As is seen in Table VI.1, this rank order of hourly wage rates as classified by program area was maintained on the last

TABLE VI.1

MEAN WAGE* ON FIRST JOB AND LAST OR CURRENT JOB
BY PROGRAM, SCHOOL LEVEL AND SEX AND REGION

| Program Area | Wage on First Job | Wage on Last or Current Job |
|---|---|---|
| Distributive | 2.00 | 2.70 |
| Agriculture | 2.10 | 2.80 |
| Office | 1.80 | 2.30 |
| Health | 1.90 | 2.50 |
| Technical | 2.40 | 3.20 |
| **School Level** | | |
| Junior College | 2.30 | 3.20 |
| Secondary | 1.80 | 2.40 |
| Post-Secondary | 2.00 | 2.70 |
| **Sex** | | |
| Female | 1.72 | 2.25 |
| Male | 2.25 | 3.07 |
| **Region** | | |
| North Central | 2.10 | 2.80 |
| North East | 2.00 | 2.70 |
| West | 2.10 | 2.80 |
| South | 1.80 | 2.40 |

*Mean wage per hour.

job in the survey. The magnitude of the increase between the first and last job was roughly in proportion to the differences in initial levels of mean wage rates by program area.

Male graduates experienced a mean hourly wage rate differential of over .50 on the first job, and for the sample as a whole as seen in Table VI.1, this differential widened so that on the last job male graduates received an average hourly wage rate of $3.07 as compared with $2.25 for female graduates.

There were also important regional differences in mean hourly wage rates. Although the differences between the North Central, Northeast and Western regions was only .10 per hour for both the first job and the last job, graduates in the South had average wage rates which were .40 per hour below those of the lowest average in other regions. The differential between the South and the other regions was maintained on the last job even though the improvement in wages between the first and last job in the South was roughly comparable to the improvement experienced in the other regions.

The range of average weekly take-home wages by school level and program area is described in Tables VI.2, VI.3 and VI.4. In the case of high school and post-high school graduates, the range classification is for the first job after graduation only. For junior college graduates, a comparison is made between the range of weekly wages on the first job with that of the last or current job (Table VI.4). It is noted that, at the high school level, the highest average weekly wages are earned by those in Trade and Industry, Technical programs and Agriculture programs. In contrast, approximately 80 per cent of the graduates

TABLE VI.2

AVERAGE WEEKLY TAKE HOME PAY ON FIRST FULL-TIME JOB, BY HIGH SCHOOL PROGRAM

| Program | Sample size | Average Weekly Take Home Pay (in percentages) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 0-59 | 60-79 | 80-99 | 100-119 | 120-129 | 130+ | Total[a] |
| TRADE AND INDUSTRY | 294 | 28.2 | 26.9 | 18.4 | 10.2 | 6.8 | 9.5 | 100 |
| DISTRIBUTIVE | 112 | 37.5 | 35.7 | 16.1 | 3.6 | 3.6 | 3.6 | 100 |
| HEALTH | 15 | 33.3 | 46.7 | 13.3 | 6.7 | 0 | 0 | 100 |
| AGRICULTURE | 86 | 20.9 | 22.1 | 31.4 | 14.0 | 4.7 | 7.0 | 100 |
| TECHNICAL | 83 | 18.1 | 27.7 | 21.7 | 16.9 | 8.4 | 7.2 | 100 |
| OFFICE | 389 | 39.3 | 39.9 | 12.6 | 4.9 | 1.3 | 2.1 | 100 |

[a]Percentages may not equal 100 due to rounding.

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AVERAGE WEEKLY TAKE HOME PAY ON FIRST ME JOB, BY POST HIGH SCHOOL PROGRAM

| Program | Sample size | Average Weekly Take-Home Pay (in percentages) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 0-59 | 60-79 | 80-99 | 100-119 | 120-129 | 130+ | Total[a] |
| TRADE AND INDUSTRY | 184 | 13.0 | 28.3 | 25.5 | 14.7 | 7.1 | 11.4 | 100 |
| DISTRIBUTIVE | 52 | 15.4 | 32.7 | 15.4 | 13.5 | 9.6 | 13.5 | 100 |
| HEALTH | 202 | 31.7 | [illegible].6 | 17.8 | 4.0 | 2.0 | 1.0 | 100 |
| AGRICULTURE | 30 | 6.7 | 16.7 | 36.7 | 23.3 | 6.7 | 0 | 100 |
| TECHNICAL | 226 | 4.0 | 17.7 | 34.5 | 20.8 | 10.6 | 12.4 | 100 |
| OFFICE | 228 | 22.3 | 31.8 | 21.9 | 11.5 | 5.5 | 6.9 | 100 |

[a]Percentages may not equal 100 due to rounding.

TABLE VI.4

COMPARISON OF CURRENT WEEKLY TAKE-HOME PAY WITH THAT OF FIRST WEEKLY TAKE-HOME PAY OF JUNIOR COLLEGE GRADUATES

| Program | Sample Size | Average Weekly Take-Home Pay (in percentages) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 0-59 | 60-79 | 80-99 | 100-119 | 120-129 | 130+ | Median | Total |
| TRADE AND INDUSTRY | | | | | | | | | |
| Current Job | 59 | 3.4 | 13.6 | 13.6 | 35.6 | 13.6 | 20.4 | 110.5 | 100 |
| First Job | 74 | 12.2 | 17.6 | 29.7 | 21.6 | 10.8 | 8.1 | 93.1 | 100 |
| DISTRIBUTIVE EDUCATION | | | | | | | | | |
| Current Job | 88 | 3.4 | 3.4 | 20.5 | 35.2 | 14.8 | 22.7 | 112.5 | 100 |
| First Job | 94 | 7.5 | 38.3 | 19.2 | 16.0 | 8.5 | 10.6 | 83.9 | 100 |
| HEALTH | | | | | | | | | |
| Current Job | 128 | 7.8 | 19.5 | 29.7 | 22.7 | 7.0 | 13.3 | 94.7 | 100 |
| First Job | 162 | 13.6 | 30.3 | 22.2 | 14.8 | 8.0 | 11.1 | 85.0 | 100 |
| AGRICULTURE | | | | | | | | | |
| Current Job | 80 | 3.8 | 5.0 | 23.8 | 25.0 | 20.0 | 22.6 | 100.9 | 100 |
| First Job | 98 | 5.1 | 10.2 | 34.7 | 24.5 | 12.2 | 13.3 | 98.5 | 100 |
| TECHNICAL | | | | | | | | | |
| Current Job | 110 | 2.7 | 7.3 | 17.3 | 16.4 | 14.6 | 41.8 | 123.9 | 100 |
| First Job | 119 | 5.0 | 15.1 | 28.6 | 21.9 | 6.7 | 22.7 | 100.7 | 100 |
| OFFICE | | | | | | | | | |
| Current Job | 72 | 11.1 | 12.5 | 20.8 | 23.6 | 8.3 | 23.6 | 104.3 | 100 |
| First Job | 87 | 18.4 | 28.7 | 24.1 | 14.9 | 6.9 | 6.9 | 81.9 | 100 |

of Office programs at the high school level had an average weekly pay of less than $80.00 on their first job, and less than 2 per cent received more than $100.00 per week.

At the post-high school level (Table VI.3), graduates of Distributive and Technical programs had relatively high weekly take-home pay, and the graduates of Health and Office programs had relatively low weekly wages (Table VI.3). The range of weekly pay for Health graduates at the post-high school level is in contrast with the pattern of the junior college level on the first job. At the post-high school level, approximately 75 per cent of the graduates earned less than $80 per week, and only 7 per cent earned $100 or more. On their first job, after graduation from junior college, only 44 per cent of the graduates of Health programs received less than $80 per week, and approximately one-third received $100 per week or more. Even so, the average weekly take-home pay of Health graduates at the junior college level was below that of the graduates of most of the other program areas with only Distributive education graduates having lower [illegible] take-home pay on the first job. Although the graduates of all the programs at the junior college level improved their weekly earnings between the first job and the last job in the survey period, the improvement was relatively small for graduates of Agriculture and Health programs, as compared with those in other program areas (Table VI.4).

Wages of Dropouts and Graduates

Although the relatively small sample size of dropouts reduces the statistical significance of a comparison between the wage rates of dropouts and graduates on first and current jobs, some interesting

differences are found in the cross-classifications by school level and program area. At each of the school levels, there are some programs in which dropouts received higher wages than graduates. Those graduating from high school vocational programs in Health and Technical curricula received a lower hourly wage rate on their first job than dropouts who had been enrolled in the same programs. On the last or current job, only the graduates of Office programs received wage rates which were lower on average than those who had dropped out of Office programs at the high school level (Table VI.5).

At the post-high school level, the relatively small sample of dropouts from trade and industry programs received a higher wage on their first job than graduates, but this differential was reversed by the time of the last or current job. The wages of graduates exceeded those of dropouts in all of the program areas from the current job at the post-high school level. Generally, the gap between dropouts and graduates was larger on the current job than on the first job held by those leaving post-high school vocational-technical programs, but here, too, the significance of the comparison is reduced because of the small sample of dropouts (Table VI.6).

Unlike the experience at the high school and post-high school levels, dropouts had higher current wages than graduates at the junior college level in Trade and Industry, Distribution education, Agriculture and Technical programs. This disparity also existed in the case of wages on the first job in these programs, with the exception of the Technical area in which graduates had a somewhat higher level of wages on the first job than dropouts, even though dropouts moved ahead in wage

TABLE VI.5

COMPARISON OF STARTING AND CURRENT WAGES OF DROPOUTS AND GRADUATES, BY HIGH SCHOOL PROGRAM

| Program | Average Starting Wage | | Average Current Wage | |
|---|---|---|---|---|
| | Graduate | Dropout | Graduate | Dropout |
| TRADE AND INDUSTRY | 1.95 (336)* | 1.85 (48) | 2.64 (332) | 2.42 (40) |
| DISTRIBUTIVE | 1.65 (135) | 1.63 (23) | 2.17 (128) | 1.96 (17) |
| HEALTH | 1.64 ( 22) | 1.67 ( 2) | 2.07 ( 22) | 1.92 ( 1) |
| AGRICULTURE | 2.25 (102) | 1.72 (32) | 2.59 (102) | 2.47 (26) |
| TECHNICAL | 2.11 ( 95) | 2.44 (17) | 2.81 ( 93) | 2.63 (12) |
| OFFICE | 1.77 (445) | 1.75 (58) | 2.26 (442) | 2.34 (38) |

*Sample size in parentheses

TABLE VI.6

COMPARISON OF STARTING AND CURRENT WAGES OF DROPOUTS AND GRADUATES, BY POST HIGH SCHOOL PROGRAM

| Program | Average Starting Wage | | Average Current Wage | |
|---|---|---|---|---|
| | Graduate | Dropout | Graduate | Dropout |
| TRADE AND INDUSTRY | 2.18 (223)* | 2.25 (12) | 2.94 (214) | 2.89 (13) |
| DISTRIBUTIVE | 2.26 ( 63) | 1.73 (10) | 2.93 ( 63) | 1.94 ( 7) |
| HEALTH | 1.75 (275) | 1.55 ( 9) | 2.32 (274) | 2.11 ( 8) |
| AGRICULTURE | 2.23 ( 42) | 1.73 ( 3) | 2.78 ( 39) | 2.34 ( 2) |
| TECHNICAL | 2.44 (30[illegible]) | 2.38 (10) | 3.24 (302) | 2.97 (10) |
| OFFICE | 1.68 (31[illegible]) | 1.65 (11) | 2.23 (301) | 2.05 (11) |

*Sample size in parentheses

rates on the current job. Dropouts from Health and Office programs at the junior college level were worse off than graduates with regard to wage rates, regardless of the point of time in the survey. Dropouts started at relatively low wages ($1.80 for Health programs and $1.99 for Office programs); and they continued to be at these relatively low levels of wage rates on the current job compared with other dropouts and graduates. (See Table VI.7.)

Although the conclusions to be drawn from these comparisons can be only suggestive in view of the small sample of dropouts, they do give rise to interesting speculation. When we couple the superior wage position of dropouts in some program areas with the fact that employment and earnings are not significantly enhanced by obtaining a job in one's field of training, questions are raised concerning the importance of pursuing and completing a particular program curriculum. It is apparent that a number of students who left school in order to take advantage of a job opportunity before completing their training in a specific program area were able to do at least as well as the graduates of that program area, especially at the junior college level. As noted earlier, however, dropouts from one program area may have enrolled in another program area before entering the job market, and this would explain their relatively high wage rates as well as the lack of relationship of wage rates to the specified field of training.

Regression Analysis of Factors Influencing Wage Rates

Although the cross-tabulations throw some light on the factors influencing wage rates for graduates of vocational and technical programs, the relative importance of particular factors, as influences on

TABLE VI.7

COMPARISON OF STARTING AND CURRENT WAGES OF DROPOUTS AND GRADUATES, BY JUNIOR COLLEGE PROGRAM

| | Average Starting Wage | | Average Current Wage | |
|---|---|---|---|---|
| Program | Graduate | Dropout | Graduate | Dropout |
| TRADE AND INDUSTRY | 2.27 ( 84)* | 2.46 ( 11) | 3.26 ( 83) | 3.31 ( 10) |
| DISTRIBUTIVE EDUCATION | 2.32 (109) | 2.79 ( 12) | 3.34 (119) | 3.43 ( 14) |
| HEALTH | 2.26 (202) | 1.80 ( 21) | 2.95 (211) | 2.35 ( 22) |
| AGRICULTURE | 2.36 (103) | 2.65 ( 16) | 3.12 (103) | 3.47 ( 15) |
| TECHNICAL | 2.52 (150) | 2.31 ( 14) | 3.56 (159) | 3.91 ( 15) |
| OFFICE | 2.26 (104) | 1.99 ( 17) | 3.03 (108) | 3.85 ( 15) |

*Sample size in parentheses.

wage differences, can be fully assessed only through a regression analysis which introduces a number of key independent variables into the equation, with wage per hour as the dependent variable. As is seen in Table VI.8, region, program area, sex, age, marital status, urban-rural setting, and grade point average are significant variables in explaining the differences in wages per hour of vocational-technical graduates on the last or current job held at the time of the survey. The variables as a whole explain 30 per cent of the variance in the wage per hour and the F-Ratio is significant at the .01 level. For the sample as a whole, junior college and post-high school graduates enjoy a few cents per hour more in wages on the current job than do high school graduates. The difference for junior college graduates is not as great as that on the first job (see Appendix Table 18) where they experienced an hourly wage rate of .20 per hour more than high school graduates. Graduates in the West, Northeast and North Central regions experienced significant wage differentials ranging from .21 to .39 per hour above graduates in the South on their current job.

Although all of the graduates except those in Agriculture experienced higher wages than the base group, graduating from Office programs, the differences were significant statistically only for those in Health and Technical programs. As might be expected, the socio-economic status of the current job was positively and significantly related to improved wages.

It is notable that the improvement in wages on the current job due to its relatedness to the field of training is not statistically significant, and in the case of wages on the first job (Appendix Table 18)

TABLE VI.8

FACTORS INFLUENCING WAGE ON LAST OR CURRENT JOB -- TOTAL SAMPLE

Dependent Variable: Wage Per Hour On Last Or Current Job

| Independent Variables | Partial Regression Coefficient | Standard Error | Partial Correlation Coefficient |
|---|---|---|---|
| LEVEL - High School@ | | | |
| Post-High School | .085 | .067 | .033 |
| Junior College | .037** | .080 | .119 |
| REGION - South@ | | | |
| West | .219** | .066 | .085 |
| Northeast | .337** | .074 | .116 |
| North Central | .399** | .065 | .156 |
| PROGRAM AREA - Office@ | | | |
| Trade and Industry | .082 | .088 | .024 |
| Distributive | .107 | .104 | .027 |
| Health | .244* | .095 | .066 |
| Agriculture | -.065 | .127 | -.013 |
| Technical | .173* | .084 | .053 |
| SES | .006** | .001 | .122 |
| RELATEDNESS: JOB TO TRAINING | .007 | .063 | .003 |
| FATHER'S EDUCATION | .005 | .008 | .016 |
| SEX - Female@ | | | |
| Male | .821** | .074 | .277 |
| AGE | .014** | .005 | .073 |
| MARITAL STATUS - Single@ | | | |
| Married | .118* | .046 | .065 |
| Other | .252* | .121 | .054 |
| RACE - White@ | | | |
| Non-white | -.088 | .085 | -.027 |
| ADDED EDUCATION | .074 | .054 | .035 |
| SETTING - Rural@ | | | |
| Medium | .140* | .062 | .058 |
| Large | .202** | .076 | .068 |
| Very Large | .311** | .111 | .072 |
| Suburb | .437** | .084 | .133 |
| GPA | .127** | .034 | .096 |

| | | | |
|---|---|---|---|
| $R^2$ | .3051 | Number of Observations | 1524 |
| F-Ratio | 27.43 ** | Constant | .525 |

Notes:

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

the wage is actually lower when the job is related to the field of training. These findings are in keeping with those concerning employment status discussed earlier, but it should be noted that the employment and wage findings are in contrast with the satisfactions expressed by the graduates when their jobs were in the field of their training. Age and marital status were positively and significantly associated with increased wages on the current job, but the most marked finding is that males received .82 more per hour than females on the current job. As is noted in Appendix Table 18, this sex differential is also marked in the case of wages on the first job of the vocational-technical graduates. Although non-whites have lower wages than whites, the relationship is not statistically significant.

Urban graduates have significantly higher wages on the current job than those graduating from rural schools, with the partial regression coefficient rising with the size of the city and reaching a difference of .43 per hour in the suburbs as compared with rural settings.

Grade point average is significantly associated with wages on both the current and the first job, with 12 per hour being added for each grade point on the current job.

Regression Analysis of Wages by Sex and School Level

Because sex, school level and a number of other key explanatory variables appeared to play a deominant role in influencing wages in analyses of the total sample, it was felt desirable to run separate regression analyses of subsamples classified by categories of the key independent variables. These separate subsample analyses throw

additional light on the factors associated with wage differences, and they overcome some of the problems of colinearity and interactions among variables.

As is seen in Table VI.9, in separate regression runs for male and female graduates with wage on the job at the time of interview, or the last job, as the dependent variable, important changes occur in the significance of the explanatory variables as compared with regression runs of the total sample. Female junior college graduates continue to experience a significant increase in the hourly wage rate, as compared with those at the other school levels, but the school level variable is no longer significant in explaining wage differences for male graduates even though there is a positive increase in wages for junior college and post-high school male graduates relative to those graduating from high school.

The strong regional influence on wages, noted in the total sample, continues to be significant in the case of male graduates, with those in the North Central regions experiencing .62 per hour more on the last job than those in the South on the last job, and with those in the West and the Northeast experiencing over .40 per hour more than those in the South. However, the regional association with wage differences is not nearly so marked in the case of female graduates.

The importance of sex differences is seen in the association of program areas with wages on the graduate's last or current job. Whereas graduates of Health and Technical programs had significant wage increases relative to those in other programs in regression analyses of the total sample, none of the program areas is significantly

TABLE VI.9

FACTORS INFLUENCING WAGE ON LAST OR CURRENT JOB, BY SEX

Dependent Variable: Wage Per Hour On Last Or Current Job

| Independent Variables | Female b | Female s | Male b | Male s | Total Sample b | Total Sample s |
|---|---|---|---|---|---|---|
| LEVEL - High School@ | | | | | | |
| Post-High School Grad. | .003 | .08 | .06 | .11 | .08 | .07 |
| Junior College Grad. | .45** | .10 | .21 | .12 | .37** | .08 |
| REGION - South@ | | | | | | |
| West | .02 | .08 | .44** | .10 | .22** | .07 |
| Northeast | .25** | .10 | .40** | .11 | .34** | .07 |
| North Central | .18* | .09 | .62** | .10 | .40** | .07 |
| PROGRAM AREA - Office@ | | | | | | |
| Trade and Industry | -.21 | .15 | .34** | .13 | .08 | .09 |
| Distributive | .01 | .13 | .35* | .17 | .11 | .10 |
| Health | .18 | .10 | .37 | .54 | .24* | .10 |
| Agriculture | no responses | | .17 | .17 | -.06 | .13 |
| Technical | -.17 | .16 | .39** | .12 | .17* | .08 |
| SES | .005* | .22 | .007** | .002 | .006** | .001 |
| RELATEDNESS: JOB TO TRAINING | .03 | .09 | -.007 | .09 | .007 | .06 |
| FATHER'S EDUCATION | .009 | .01 | .006 | .01 | .005 | .007 |
| AGE | .008 | .005 | .03** | .01 | .01** | .005 |
| MARITAL STATUS - Single@ | | | | | | |
| Married | -.12* | .06 | .26** | .07 | .12* | .05 |
| Other | -.02 | .13 | .64** | .23 | .25* | .12 |
| RACE - White@ | | | | | | |
| Non-white | .14 | .12 | -.23* | .12 | -.09 | .09 |
| ADDED EDUCATION | .03 | .07 | .09 | .08 | .07 | .05 |
| SETTING - Rural@ | | | | | | |
| Medium | .13 | .08 | .23* | .09 | .14* | .06 |
| Large | .31** | .11 | .18 | .11 | .20** | .08 |
| Very Large | .16 | .17 | .50** | .16 | .31** | .11 |
| Suburb | .37** | .10 | .56** | .14 | .44** | .08 |
| GPA | .10* | .05 | .11* | .05 | .13** | .03 |
| $R^2$ | .1470 | | .2263 | | .3051 | |
| Number of Observations | 701 | | 823 | | 1524 | |

Notes:

b Partial regression coefficient

s Standard error

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

associated with wage differences for female graduates. Indeed, female graduates of Trade and Industry programs and of Technical programs have lower wages than those in the base group. On the other hand, male graduates from these two programs have significantly higher wages than the base group, and male graduates of Distributive programs also receive .35 per hour more than the base group, significant at the .05 level.

The continued significance of the socio-economic status of the job is not surprising in view of the obvious close relationship between wage rates and socio-economic status of occupation. However, it is notable that age is not a significant factor in female graduates, unlike male graduates; and that married males experience significant increases in wages whereas married females have significantly lower wages than single females. Widowers and divorced males also have significantly higher wages on the last or current job than single male graduates.

Non-white male graduates have significantly lower wages than whites, whereas the racial factor was not significant in the case of females or of the total sample.

Suburban large-city settings tend to be significantly associated with higher wages for males and females, as in the case of the total sample, but the importance of the nonrural setting is not consistent in the case of females. For male graduates in very large cities or in the suburbs, on the other hand, there are significant differences in wages exceeding .50 per hour.

The grade point average, as a factor related to wage differences, continues to be significant in the separate sex run, but at the .05 rather than the .01 level, as in the case of the total sample.

It is notable that in these separate regression runs, in which the sex variable has been omitted as one of the independent variables, the coefficient of determination is lower than in the case of the total sample.

Similar regression runs for male and female graduates, with the same independent variables but with wage per hour on the first job rather than on the last job, are presented in Appendix Table 19. Although there are similarities in the patterns of significant independent variables, it is noted that there are differences in the first and last job wage rate regression analyses in the significance attributed to program area, age, marital status, urban-rural setting, and the male GPA.

Separate runs by school level (Table VI.10) reveal the importance of the school level of the vocational graduate in explaining differences in wage rates. Region is found to be a significant variable only in the case of high school vocational graduates, with the exception of the North Central region for post-high school graduates. Trade and Industry, Technical and Distributive programs which were significant explanatory variables in the case of the separate male regression analysis proved to be significant only in the case of post-high school graduates when separate runs are made by school level.

Males have substantially higher wages than females in each of the separate school level regressions. However, age is a significant variable only at the junior college level and marital status is

TABLE VI.10

FACTORS INFLUENCING WAGE ON LAST OR CURRENT JOB, BY SCHOOL LEVEL

Dependent Variable: Wage Per Hour On Last Or Current Job

| Independent Variables | Post High School | | Junior College | | High School Vocational | | Total Sample | |
|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s |
| STATUS - Dropout@ | | | | | | | | |
| Graduate | -.062 | .165 | -.017 | .236 | .133 | .143 | .009 | .07 |
| REGION - South@ | | | | | | | | |
| West | .005 | .094 | .088 | .270 | .284* | .111 | .26** | .04 |
| Northeast | .356 | .146 | .100 | .303 | .238* | .106 | .23** | .05 |
| North Central | .206* | .097 | .198 | .326 | .523** | .119 | .31** | [illegible] |
| PROGRAM AREA - Office@ | | | | | | | | |
| Trade and Industry | .421** | .133 | -.115 | .332 | .196 | .146 | .005 | .06 |
| Distributive | .431* | .169 | .267 | .342 | -.202 | .157 | .03 | .07 |
| Health | .135 | .118 | .266 | .244 | .209 | .276 | .22** | .06 |
| Agriculture | -.164 | .405 | -.151 | .283 | .059 | .182 | [illegible] | .08 |
| Technical | .356** | .129 | .021 | .249 | .162 | .194 | [illegible] | .06 |
| SES | .006** | .002 | .004 | .003 | .005* | .002 | .004** | .001 |
| RELATEDNESS: JOB TO TRAINING | .103 | .101 | .026 | .190 | .011 | .082 | .06 | .03 |
| FATHER'S EDUCATION | -.001 | .010 | -.009 | .020 | .016 | .013 | .006 | .005 |
| SEX - Female@ | | | | | | | | |
| Male | .660** | .114 | 1.168** | .178 | .603* | .114 | .55** | .05 |
| AGE | .008 | .005 | .022* | .011 | + | | .01** | .003 |
| MARITAL STATUS - Single@ | | | | | | | | |
| Married | .166** | .062 | .173 | .122 | .008 | .076 | .07* | .03 |
| Other | .232 | .189 | .338 | .287 | .244 | .193 | .18* | .09 |

TABLE VI.10 (continued)

| Independent Variables | Post High School b | Post High School s | Junior College b | Junior College s | High School Vocational b | High School Vocational s | Total Sample b | Total Sample s |
|---|---|---|---|---|---|---|---|---|
| RACE - White@ | | | | | | | | |
| Non-white | .021 | .110 | -.121 | .203 | -.308 | .174 | -.005 | .06 |
| ADDED EDUCATION | -.262* | .197 | -.204 | .119 | .307** | .079 | .05 | .03 |
| SETTING - Rural@ | | | | | | | | |
| Medium | -.301 | .090 | .435* | .216 | .106 | .118 | .09* | .04 |
| Large | .206 | .119 | .726* | .318 | .016 | .140 | .009 | .05 |
| Very Large | no respondents | | .557* | .242 | .103 | .251 | .20** | .07 |
| Suburb | .192 | .171 | .414 | .234 | .435* | .126 | .18** | .06 |
| GPA | .064 | .047 | .050 | .082 | .063 | .056 | .06** | .02 |
| $R^2$ | .3161 | | .2976 | | .2441 | | .2657 | |
| Number of Observations | 725 | | 321 | | 572 | | 1616 | |

Notes:
- b Partial regression coefficient
- s Standard error
- * Significant at the .05 level; ** Significant at the .01 level
- @ Base variable against which the others are compared. Its value is entered into the constant.
- + Age of all high school vocational students was coded as 21.

significant only at the post-high school level.

It is notable that grade point average is no longer a significant variable when separate regression analyses are made by school level, but added education (that is, further education after the vocational graduation), which was not significant in other regression runs, is found to be positively and significantly associated with higher wages for high school vocational graduates and negatively related with wages at the post-high school and junior college levels, in the former case significant at the .05 level.

It should also be noted that a binary variable for graduates versus dropouts, included in this regression analysis, proved not to be statistically significant. However, graduation is negatively associated with wage increases compared to a dropout status at the post-high school and junior college levels. Even though the relationship is not statistically significant, the negative sign is contrary to expectations.

Similar regression analyses by school level, utilizing the same independent variables but wage on the first job as the dependent variable, are presented in Appendix Table 20.

Regression Analyses of Wages by Region and Urban-Rural Setting

Given the influence on wage differences by region and urban-rural setting of the school demonstrated in the regression analyses of the total sample, a further effort to pinpoint the important explanatory variables and reduce the effects of colinearity and interaction was made in separate regression analyses for each of the four regions from which the national sample was drawn and for each of the five urban-rural

settings. The independent variables are the same as those used in the analyses of the total sample.

As can be seen in Table VI.11, the $R^2$ for each of the separate regional regression equations is higher than that of the total sample. The F-ratio in each case is significant at the .01 level.

Although sex continues to be a significant explanatory variable, in the separate regional regression analysis, such variables as school level, program area, and grade point average, which loomed large in the analysis of the total sample lose significance in the separate regional regressions. The junior college graduates had a statistically significant advantage on their current or last job relative to high school and post-high school graduates only in the Western region. Although there was a positive relationship between junior college graduation and wages in the other regions, it was not significant at the .05 level. The only program area with a statistically significant relationship to differences in wages on the graduates' last or current job was that of Agriculture in the Southern region.

Unlike the other regression analyses, including that for the total sample, the relatedness of the current job to the field of training was significantly associated with wages on that job in the Southern region. However, in the Northeast and the North Central region, this variable was negatively associated with wages although it was not significant at the .05 level.

Male graduates experienced a substantial and statistically significant wage advantage over females in each of the separate regional regressions; and married graduates had a significant advantage over

TABLE VI.11

FACTORS INFLUENCING WAGE ON LAST OR CURRENT JOB, BY REGION

Dependent Variable: Wages Per Hour On Last Or Current Job

| Independent Variables | Southern Region | | Western Region | | Northeast Region | | North Central Region | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s |
| LEVEL - High School@ | | | | | | | | | | |
| Post High School | .066 | .115 | -.244 | .168 | .457 | .249 | -.043 | .148 | .08 | .07 |
| Junior College | .346 | .183 | .454** | .148 | .224 | .222 | .367 | .238 | .37* | .08 |
| PROGRAM AREA - Office@ | | | | | | | | | | |
| Trade and Industry | .256 | .167 | .086 | .247 | .055 | .299 | .110 | .168 | .08 | .09 |
| Distributive | -.289 | .189 | -.037 | .269 | .151 | .267 | -.430 | .316 | .11 | .10 |
| Health | .142 | .164 | .002 | .166 | .398 | .254 | .305 | .267 | .24* | .10 |
| Agriculture | .576* | .280 | -.139 | .278 | .202 | .329 | -.475 | .247 | -.06 | .13 |
| Technical | .296 | .163 | .040 | .187 | -.466 | .289 | .217 | .190 | .17* | .08 |
| SES | .002 | .002 | .005 | .264 | .009** | .003 | .009** | .003 | .006** | .001 |
| RELATEDNESS: JOB TO TRAINING | .274** | .099 | .026 | .129 | -.372 | .146 | -.180 | .130 | .007 | .06 |
| FATHER'S EDUCATION | .012 | .012 | .007 | .015 | -.159 | .020 | -.019 | .016 | .005 | .007 |
| SEX - Female@ | | | | | | | | | | |
| Male | .508** | .128 | 1.008** | .154 | .666** | .189 | .979** | .144 | .82** | .07 |
| AGE | .006 | .007 | .015 | .008 | .053* | .021 | .019 | .016 | .01** | .005 |
| MARITAL STATUS - Single@ | | | | | | | | | | |
| Married | .185* | .077 | .232* | .095 | .008 | .108 | .028 | .088 | .12* | .05 |
| Other | .447* | .211 | .216 | .216 | .509* | .231 | -.046 | .319 | .25* | .12 |
| RACE - White@ | | | | | | | | | | |
| Non-white | -.159 | .143 | -.063 | .137 | -.025 | .288 | .034 | .226 | -.09 | .09 |

TABLE VI.11 (continued)

| Independent Variables | Southern Region b | Southern Region s | Western Region b | Western Region s | Northeast Region b | Northeast Region s | North Central Region b | North Central Region s | Total Sample b | Total Sample s |
|---|---|---|---|---|---|---|---|---|---|---|
| ADDED EDUCATION | -.039 | .102 | .027 | .104 | .091 | .107 | .157 | .119 | .07 | .05 |
| SETTING - Rural@ | | | | | | | | | | |
| Medium | .116 | .129 | .460* | .198 | .186 | .221 | .020 | .112 | .14* | .06 |
| Large | .258 | .163 | .460* | .198 | .125 | .308 | .158 | .168 | .20** | .08 |
| Very Large | .065 | .220 | .211 | .214 | no respond. | | .216 | .300 | .31** | .11 |
| Suburb | .482** | .133 | .179 | .178 | .571* | .223 | 1.64** | .390 | .44** | .08 |
| GPA | .210** | .060 | .011 | .067 | .032 | .084 | .154 | .067 | .13** | .03 |
| $R^2$ | .3615 | | .3726 | | .3034 | | .3218 | | .3051 | |
| Number of Observations | 348 | | 401 | | 274 | | 501 | | 1524 | |

Notes:

b Partial regression coefficient

s Standard error

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

single graduates in the Southern and Western regions. The graduate's grade point average was a statistically significant influence on wages only for those graduating in the Southern region, although it was positively associated with wage differences in the other regions as well.

Graduation from a suburban school was statistically significant at the .01 or .05 levels in each of the regions other than the West. In the Western region, graduation from a school located in a medium or large city was associated with significantly higher wages on the last or current job, as compared with those who graduated from rural areas in the Western region.

The relationship of the same independent variables to the wage on the graduate's first job is indicated in Appendix Table 21.

In separate regression runs by each of the five rural-urban settings, with wage on the last or current job as the dependent variable, a number of the explanatory variables which were statistically significant in analyses of the total sample were found to be significant in some settings and not in others. Thus, junior college graduates had significantly higher wages than high school graduates in only the regression runs for medium-sized cities and large cities, whereas post-high school graduates had significantly larger earnings in only the regression runs for large cities. The relationship for post-high school vocational graduates was negative in suburban settings, and the relationship for junior college graduates was negative in rural settings, but neither of these negative relationships were statistically significant (see Table VI.12).

TABLE VI.12

FACTORS INFLUENCING WAGE ON LAST OR CURRENT JOB, BY SETTING OF SCHOOL

Dependent Variable: Wages Per Hour On Last or Current Job

| Independent Variables | Rural | | Medium | | Large | | Very Large | | Suburb | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s | b | s |
| LEVEL - High School Grad.@ | | | | | | | | | | | | |
| Post-High School Grad. | .27 | .23 | .10 | .09 | .57** | .22 | no respondents | | -.22 | .25 | .08 | .07 |
| Junior College Grad. | -.10 | .18 | .50** | .12 | 1.29** | .34 | 1.72 | 1.01 | .56 | .29 | .37* | .08 |
| REGION - South@ | | | | | | | | | | | | |
| West | .67** | .20 | .37** | .10 | .05 | .15 | -.16 | 1.13 | -.07 | .23 | .22** | .07 |
| Northeast | .19 | .19 | .45** | .11 | -.004 | .26 | no respondents | | .11 | .26 | .34** | .07 |
| North Central | .19 | .20 | .26* | .10 | .48** | .17 | -.08 | 1.15 | 1.58** | .45 | .40** | .07 |
| PROGRAM AREA - Office@ | | | | | | | | | | | | |
| Trade and Industry | .72** | .23 | .18 | .13 | .23 | .33 | .49 | .64 | -.20 | .33 | .08 | .09 |
| Distributive | .07 | .29 | .13 | .14 | -.05 | .35 | + | | -.39 | .43 | .11 | .10 |
| Health | -.17 | .37 | .10 | .12 | .07 | .27 | -.60 | .81 | -.59 | .48 | .24* | .10 |
| Agriculture | .79** | .26 | -.16 | .22 | .21 | .52 | no respondents | | -2.21* | 1.09 | -.06 | .13 |
| Technical | .92* | .23 | -.04 | .14 | .20 | .28 | + | | -.27 | .29 | .17* | .08 |
| SES | .01** | .003 | .004* | .002 | -.0001 | .003 | .005 | .006 | .006 | .004 | .006** | .001 |
| RELATEDNESS: JOB TO TRAINING | -.24 | .13 | -.11 | .09 | .18 | .15 | -.28 | .31 | .15 | .19 | .007 | .06 |
| FATHER'S EDUCATION | .02 | .02 | .02 | .01 | -.001 | .02 | -.0009 | .03 | -.05 | .03 | .005 | .007 |
| SEX - Female@ | | | | | | | | | | | | |
| Male | .16 | .21 | .85** | .11 | .77** | .21 | .86** | .24 | 1.04** | .21 | .82** | .07 |
| AGE | .04* | .02 | .009 | .008 | .002 | .007 | .05* | .02 | .04 | .02 | .01** | .005 |
| MARITAL STATUS - Single@ | | | | | | | | | | | | |
| Married | -.02 | .10 | .08 | .07 | .29** | .11 | .34 | .21 | -.13 | .15 | .12* | .05 |
| Other | .39 | .30 | .36 | .19 | .33 | .23 | .53 | .61 | -.46 | .37 | .25* | .12 |

TABLE VI.12 (continued)

| Independent Variables | Rural | | Medium | | Large | | Very Large | | Suburb | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s | b | s |
| RACE - White@ | | | | | | | | | | | | |
| Non-white | .22 | .33 | -.26* | .12 | -.05 | .16 | -.32 | .30 | -.02 | .45 | -.09 | .09 |
| ADDED EDUCATION | .02 | .12 | .002 | .08 | .29* | .13 | -.29 | .21 | .14 | .15 | .07 | .05 |
| GPA | .05 | .07 | .13 | .05 | .006 | .09 | -.12 | .18 | .28* | .11 | .13** | .03 |
| $R^2$ | .3286 | | .3406 | | .3030 | | .4833 | | .3592 | | .3051 | |
| Number of Observations | 348 | | 554 | | 298 | | 111 | | 212 | | 1524 | |

Notes:

b Partial regression coefficient

s Standard error

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

\+ Excessive multi-collinearity prevented variable from entering equation

Similarly, the significance of region, found in analyses of the total sample, is altered in the separate regression runs by rural-urban setting. The significantly higher wages in each of the regions compared to the South, found in analyses of the total sample, continue to appear only in the regression analysis for medium-sized cities. Graduation in the North Central is a statistically significant variable in the regression runs for large cities and suburban areas, and the Western region is a significant variable in rural areas.

The pattern of wage rates by program area differs substantially in the separate regression run for rural areas, as compared with the total sample. In the analysis of the total sample, only Health programs and Technical programs had positive significant relationships with the wage from the last or current job, and graduation from an Agricultural program had a negative (nonsignificant) relationship with the last wage. For those graduating in rural areas, on the other hand, the largest positive coefficients were for Trade and Industry programs, Agriculture, and Technical. Graduation from a Health program actually had a negative relationship to the last wage, although this was not statistically significant. Outside of a statistically significant negative relationship between graduation from an Agricultural program and the last wage in a suburban setting, none of the other program areas were significantly related to wages in the separate regression runs by size of city. Some of these results concerning the statistical significance of program areas are affected by the relatively small size of cells.

Relationship of job to training and father's education continue to have no statistically significant relationship to the wage on the last or current job in the separate regression runs for urban-rural setting.

Among the demographic variables, as in the total sample, males have a statistically significant higher wage than females in each of the separate regression runs for setting, except that of the rural areas. Age is statistically significant (and only at the .05 level) in only the separate analyses for rural areas and very large cities. Marital status is significantly associated with wages on the last job only in the separate regression run for large cities. Although non-white status had a negative relationship with wages in all of the separate urban regression analyses, the relationship was statistically significant only in the analysis for medium-sized cities. Added education was a significant variable only in large cities, and grade point average was a significant variable only in suburban areas. As in the case of a number of the other variables, the small number of observations in very large cities (111 graduates) reduced the reliability of results in this separate regression run.

The results for separate regression runs for each of the five rural-urban settings, with the wage on the first job as the dependent variable, are presented in Appendix Table 22.

Separate Regression Runs by Program Area

The separate regression analyses by program area were also plagued by the relatively small number of observations in many of the cells (see Table VI.13).

In the analysis of Office programs, the statistically significant positive relationships with the wage on the last or current job were found for graduates of the West, those with higher socio-economic status, males, and graduates in very large cities and suburbs.

TABLE VI.13

FACTORS INFLUENCING WAGE ON LAST OR CURRENT JOB, BY PROGRAM AREA

Dependent Variable: Wages Per Hour On Last Or Current Job

| Independent Variables | Office | | Trade and Industry | | Distrib. | | Health | | Agric. | | Technical | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s | b | s | b | s |
| LEVEL - High School@ | | | | | | | | | | | | | | |
| Post High School | .014 | .119 | .001 | .194 | .022 | .447 | .071 | .291 | -.241 | .563 | -.018 | .161 | .08 | .07 |
| Junior College | -.034 | .198 | .409 | .300 | .778 | .606 | .852** | .267 | -.600 | .518 | .072 | .189 | .37* | .08 |
| REGION - South@ | | | | | | | | | | | | | | |
| West | .256* | .128 | .468 | .247 | .201 | .580 | -.022 | .133 | .718 | .478 | .435** | .141 | .22** | .07 |
| Northeast | .158 | .131 | -.065 | .245 | .126 | .466 | .515* | .254 | .181 | .437 | .378* | .192 | .34** | .07 |
| North Central | .206 | .120 | .520** | .197 | .570** | .425 | .405 | .209 | .063 | .389 | .357* | .172 | .40** | .07 |
| SES | .006* | .003 | .004 | .003 | .016* | .006 | -.004 | .004 | .013 | .007 | .005* | .002 | .006** | .001 |
| RELATEDNESS: JOB TO TRAINING | .032 | .118 | .007 | .138 | -.165 | .241 | -.110 | .262 | -.368 | .254 | .154 | .141 | .007 | .06 |
| FATHER'S EDUCATION | .002 | .013 | -.002 | .020 | .010 | .035 | .003 | .018 | .089 | .046 | -.014 | .015 | .005 | .007 |
| SEX - Female@ | | | | | | | | | | | | | | |
| Male | .537** | .113 | .010** | .205 | .906** | .209 | .550 | .403 | no respond. | | .011 | .172 | .82** | .07 |
| AGE | .012 | .012 | .052* | .021 | .035 | .083 | .003 | .006 | .137 | .128 | .023* | .011 | .01** | .005 |
| MARITAL STATUS - Single@ | | | | | | | | | | | | | | |
| Married | -.097 | .076 | .154 | .116 | .176 | .186 | -.095 | .134 | .121 | .257 | .240** | .092 | .12* | .05 |
| Other | .123 | .207 | .769 | .410 | .096 | .614 | -.038 | .205 | .924 | .615 | -.248 | .370 | .25* | .12 |
| RACE - White@ | | | | | | | | | | | | | | |
| Non-white | -.316 | .241 | -.254 | .197 | 1.344* | .541 | .069 | .151 | -2.592* | 1.077 | -.230 | .170 | -.09 | .09 |

| Independent Variables | Office | | Trade and Industry | | Distrib. | | Health | | Agric. | | Technical | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s | b | s | b | s |
| ADDED EDUCATION | .002 | .088 | .243 | .151 | .096 | .195 | -.521 | .141 | .373 | .253 | -.142 | .119 | .07 | .05 |
| SETTING - Rural@ | | | | | | | | | | | | | | |
| Medium | .105 | .093 | .359* | .152 | -.147 | .361 | .305 | .285 | .359 | .336 | -.149 | .233 | .14* | .06 |
| Large | -.045 | .217 | .389 | .225 | .277 | .417 | .792** | .283 | -.484 | .647 | -.041 | .173 | .20** | .08 |
| Very Large | 1.087** | .250 | .380 | .387 | -.058 | .481 | .379 | .549 | no respond. | | .270 | .270 | .31** | .11 |
| Suburb | .369** | .123 | .653* | .287 | .930* | .437 | .015 | .350 | -.289 | 1.008 | .287 | .239 | .44** | .08 |
| GPA | .014 | .060 | .066 | .084 | .303 | .188 | .126 | .092 | .298 | .214 | .116 | .677 | .13** | .03 |
| $R^2$ | .2736 | | .2345 | | .6007 | | .3433 | | .3823 | | .2662 | | .3051 | |
| Number of Observations | 495 | | 300 | | 88 | | 197 | | 82 | | 362 | | 1524 | |

Notes:

b Partial regression coefficient

s Standard error

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

\+ Only one response

In Trade and Industry programs, the positive significantly related variables were North Central region, male, age, and graduation in medium-sized cities and suburbs.

In Distributive Education programs, the positive significantly related variables were North Central region, socio-economic status of the job, males, non-whites, and graduation in a suburban setting.

In Health programs, the variables which were positively and significantly related to wages on the last or current job were graduation at the junior college level, Northeast region, and graduation in a large city. In a separate regression run for Agricultural programs, the only statistically significant variable was the negative relationship between non-white status and wages. Non-whites earned approximately $2.50 less than whites after graduation from an Agricultural vocational program.

In the regression analysis of Technical graduates, region proved to be an important explanatory variable, with all regions showing a statistically significant advantage over the South . Other positive statistically significant variables were socio-economic status of the job, age, and marital status.

Even though small cell size reduces the statistical significance of the separate regressions by program area, there is some interest in the changes in the signs of the relationship of some variables as compared with the results of the regression analysis of the total sample. Thus, junior college graduation, which was positively and statistically significant in the regression analysis for the total sample, is negatively related to wages in the regression equations for Office and

Agricultural programs. Whereas graduation in an urban or suburban setting was positively and significantly related to wages, as compared with rural graduation, in the regression analysis of the total sample, the signs were negative in a number of cases in the separate regression runs by program area.

Appendix Table 13 presents the regression results, using the same regressors, with wages on the first job as the dependent variable.

Factors Influencing Average Monthly Earnings

The wage rate analysis is useful for determining the economic status of the graduates at the beginning and at the end of the three-year survey period; and it overcomes any bias introduced by the fact that some graduates pursued further education which removed them from the labor force for a portion of the survey period. Another useful measure of the labor market experience of the graduates following their vocational-technical program is the calculation of average monthly earnings during the survey period. Since average monthly earnings will reflect not only the level of hourly wages but also the number of hours worked, it provides some insight into the stability and continuity of employment of the graduates following their graduation.

In order to obtain full and comparable data for a regression analysis of earnings, it was necessary to reduce the sample to 1,337 graduates. The results of the regression analysis, with average monthly earnings as the dependent variable, are presented in Table VI.14. The regressors (explanatory variables) are the same as those used in the regression analyses of wage rates, with the exception that the relatedness of job to training is included for both the first job and the

TABLE VI.14

FACTORS AFFECTING AVERAGE MONTHLY EARNINGS -- TOTAL SAMPLE

Dependent Variable: Average Monthly Earnings

| Independent Variables | Partial Regression Coefficient | Standard Error | Partial Correlation Coefficient |
|---|---|---|---|
| LEVEL - High School@ | | | |
| Post High School | 27.41* | 11.56 | .065 |
| Junior College | 95.33** | 14.86 | .174 |
| REGION - South@ | | | |
| West | 4.56 | 12.22 | .010 |
| Northeast | 37.38** | 14.01 | .073 |
| North Central | 56.52** | 12.14 | .128 |
| PROGRAM AREA - Office@ | | | |
| Trade and Industry | 30.83 | 16.46 | .052 |
| Distributive | -19.70 | 19.97 | -.027 |
| Health | 21.75 | 17.48 | .034 |
| Agriculture | 9.60 | 24.21 | .011 |
| Technical | 35.05* | 15.40 | .063 |
| RELATEDNESS: JOB TO TRAINING (First Job) | 23.93 | 16.70 | .040 |
| SES | 1.02** | .25 | .111 |
| RELATEDNESS: JOB TO TRAINING (Last or Current Job) | -8.077 | 16.42 | -.014 |
| FATHER'S EDUCATION | -2.38 | 1.43 | -.046 |
| SEX - Female@ | | | |
| Male | 29.54* | 13.62 | .060 |
| AGE | 4.14** | .89 | .127 |
| MARITAL STATUS - Single@ | | | |
| Married | 35.92** | 8.56 | .115 |
| Other | 37.33 | 22.89 | .045 |
| RACE - White | | | |
| Non-white | -10.42 | 15.95 | -.018 |
| SETTING - Rural@ | | | |
| Medium | 25.16* | 11.63 | .060 |
| Large | 36.38* | 14.14 | .071 |
| Very Large | 22.81 | 20.75 | .030 |
| Suburb | 54.14** | 15.78 | .094 |
| GPA | 16.98** | 6.34 | .074 |

| | | | |
|---|---|---|---|
| $R^2$ | .1942 | Number of Observations | 1337 |
| F-Ratio | 13.18 ** | Constant | -24.68 |

Notes:

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

last or current job; and the added education variable has been omitted.

When differences in average hourly earnings are analyzed for the total sample of graduates taken together, it is found that junior college graduates experienced significantly higher earnings than graduates from high school and post-high school vocational programs. They earned $95 per month more than high school vocational graduates (significant at the .01 level). The advantage results from both higher wages and from fuller employment during the survey period.

Whereas post-high school vocational graduates did not have significantly higher starting or ending wages than high school graduates, they experienced significantly higher earnings, $27 per month more than the high school earnings. This presumably reflects a larger percentage of time in employment during the survey period, as compared with high school graduates.

As in the case of our wage analysis, it is found that students in the Northeast and North Central regions have significantly higher monthly earnings than those in the South. Since the Western region is a significant variable in the wage regressions but not in the earnings regressions, the differences may be explained by a difference in the per cent of time employed in the West as compared with the South.

For the sample of graduates taken as a whole, the only program area in which earnings were significantly higher than those for the base Office group was in the technical area. Here, the earnings advantage was $35 per month. The only group of graduates which have average monthly earnings below those of the base Office group were in Distribution Education programs, but this earnings difference was not statistically significant. As in the case of the regression analyses

of wage rates, the relatedness of jobs to the training field, either for the first or last job during the survey period, bore no statistically significant relationship to differences in average monthly earnings. As might be expected, the socio-economic status of the graduate's last job was significantly related to earnings during the period. However, the socio-economic background of the student, as reflected in the father's education, was not significantly related to monthly earnings.

The demographic variables which proved to be important in explaining wage differences also appeared to be significant in the regression equation for monthly earnings. Males earned approximately $30 per month more than females. This is not as great a difference as in the case of wage rates, possibly indicating that males are more likely to pursue further education or enter the armed forces than females, thereby reducing their time in the labor force.

Each year of age adds $4 in average monthly earnings (significant at the .01 level); and married graduates have average monthly earnings of almost $36 greater than single graduates. Although the racial variable is not significantly related to earnings, possibly because of the small number of non-whites included in the sample, the earnings regression shows the same negative relationship between non-white status and earnings as was indicated in the case of hourly wages.

As in the case of wage differences, graduates in urban and suburban areas have significantly higher earnings than those in rural areas. Suburban students enjoyed $54 per month more in average earnings (significant at the .01 level).

Confirming the findings for the sample as a whole in the wage regressions, it is found that each additional point in the student's grade point average adds almost $17 to his average monthly earnings following graduation from a vocation or technical program.

Separate Regressions of Earnings by Sex, Region, School Level and Program Area

In separate regression analyses of male and female graduates, it is found that those from junior college levels continue to show significantly higher average monthly earnings than those from high school programs, with the difference being especially marked in the case of females (Table VI.15).

Patterns of significant variables similar to those for the total sample are found in the separate regression runs by sex. However, one notable distinction is that male graduates of Trade and Industry programs are found to have significantly higher earnings than the base Office group, whereas female graduates of Trade and Industry programs have significantly lower earnings than those in the base Office group. Confirming the view derived from our regression analyses of wages, that males do better in male-dominated occupations, male graduates of Technical programs also earned significantly more than the base group, whereas the difference for female graduates from Technical programs was not statistically significant.

When separate regression analyses are made in the North and in the South (Table VI.16), it is found that the signs of the variables are generally the same and that they are in accordance with the findings in the regression for the total sample. However, there are some notable differences in the pattern of statistically significant variables in the

TABLE VI.15

FACTORS INFLUENCING MONTHLY EARNINGS OF GRADUATES BY SEX

Dependent Variable: Average Monthly Earnings

| Independent Variables | Regression Coefficients[1] Male | Female | Total Sample |
|---|---|---|---|
| LEVEL - High School@ | | | |
| Post-High School | + | + | 27.41 |
| Junior College | 67.28** | 102.74** | 95.33** |
| REGION - South@ | | | |
| West | + | + | + |
| Northeast | + | 37.12* | 37.38** |
| North Central | 73.62** | 37.34** | 56.52** |
| RELATEDNESS: JOB TO TRAINING (First Job) | + | + | + |
| SES | 1.21** | + | 1.02** |
| PROGRAM AREA - Office@ | | | |
| Trade and Industry | 68.55** | -59.91* | + |
| Distributive | + | - | - |
| Health | + | + | + |
| Agriculture | + | No Responses | + |
| Technical | 60.11* | + | 35.05** |
| RELATEDNESS: JOB TO TRAINING (Last or Current Job) | - | + | - |
| FATHER'S EDUCATION | - | + | - |
| AGE | 9.30** | 2.21** | 4.14** |
| MARITAL STATUS - Single@ | | | |
| Married | 81.35** | -33.43** | 35.92** |
| Other | 125.58** | - | + |
| RACE - White@ | | | |
| Non-white | - | + | - |
| SETTING - Rural@ | | | |
| Medium | 44.93* | + | 25.16* |
| Large | + | 50.59** | 36.38* |
| Very Large | + | + | + |
| Suburb | 67.39* | 42.03* | 54.14** |
| GPA | + | 18.66* | 16.98** |
| $R^2$ | .2453 | .2175 | .1942 |
| Number of Observations | 735 | 602 | 1337 |

Notes:

1 + indicates positive insignificant partial regression coefficient
- indicates negative insignificant partial regression coefficient

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

TABLE VI.16

FACTORS INFLUENCING MONTHLY EARNINGS OF GRADUATES BY REGION

Dependent Variable: Average Monthly Earnings



| Independent Variables | Regression Coefficients North[1] | South | Total Sample |
|---|---|---|---|
| LEVEL - High School@ | | | |
| Post-High School | + | 39.70** | 27.41* |
| Junior College | 101.69** | + | 95.33** |
| REGION - South@ | | | |
| West | -34.20* | | + |
| Northeast - (Base)[2] | | | 37.38** |
| North Central | + | | 56.52** |
| RELATEDNESS: JOB TO TRAINING (First Job) | + | + | + |
| SES | 1.22** | + | 1.02** |
| PROGRAM AREA - Office@ | | | |
| Trade and Industry | + | + | + |
| Distributive | - | - | - |
| Health | + | + | + |
| Agriculture | + | - | + |
| Technical | 40.62* | + | 35.05* |
| RELATEDNESS: JOB TO TRAINING (Last or Current Job) | -3.55* | + | - |
| FATHER'S EDUCATION | - | - | - |
| SEX - Female@ | | | |
| Male | + | + | 29.54* |
| AGE | 5.33** | + | 4.14** |
| MARITAL STATUS - Single@ | | | |
| Married | 40.11** | + | 35.92** |
| Other | + | + | + |
| RACE - White@ | | | |
| Non-white | - | - | - |
| SETTING - Rural@ | | | |
| Medium | + | + | 25.16* |
| Large | + | + | 36.38* |
| Very Large | + | + | + |
| Suburb | 53.36* | + | 54.14** |
| GPA | 15.66* | + | 16.98** |
| $R^2$ | .2014 | .1738 | .1942 |
| Number of Observations | 1034 | 303 | 1337 |

Notes:

1 + indicates positive insignificant partial regression coefficient
- indicates negative insignificant partial regression coefficient

2 The equation for the northern region includes a dummy variable comparing the effects of west, northeast and north central regions on wages. The northeast region is the base group for this variable. Accordingly, the regression coefficients reflect the difference between the stated region and the northeast region.

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

two regions. The equation for the Northern region includes a dummy variable comparing the effects of West, Northeast and North Central regions on wages. The Northeast region is the base group for this variable. Accordingly, the regression coefficients reflect the difference between the stated region and the Northeast region.

Whereas junior college graduates enjoy significantly higher wages in the North, post-high school graduates enjoy statistically significant increases in earnings in the South.

In a separate regression analysis for the Northern region, it is found that graduates from Technical programs and from suburban schools experience significantly higher average monthly earnings than graduates in their respective base comparison groups. The significance of age and marital status is also consistent with the findings for the regression of the total sample.

Probably because of the smaller sample, few of the variables are statistically significant in their relationship to earnings in the regression equation for the Southern region. The only sign which is contrary to that of the regression analysis for the North is that for graduates of Agricultural programs. In the South, this variable is negatively related to average monthly earnings.

In the separate regression runs on earnings by school level, only sex, age and marital status are significant variables for the junior college subsample. However, almost all of the other variables have the same sign as in the regression equation for the total sample. Exceptions are found in the program variables. Whereas Distributive graduates earn more and Agriculture graduates earn less than the base Office group in the

junior college regression, the reverse was the case in the regression analysis for the total sample.

At the post-high school level, graduation from Trade and Industry and Technical programs was significantly related to average monthly earnings with these graduates earning over $60 per month more than those in Office programs. The signs of the other program variables were also similar to those in the regression equation for the total sample. Age, marital status and grade point average were also significant variables in the post-high school regression analysis.

In the separate high school regression equation, only training in the North Central region was a statistically significant variable, and a number of other variables such as training in the Western region, and graduation from Agricultural and Technical programs had negative signs, in contrast to the positive signs in the regression equation for the total sample.

Thus, in the case of average monthly earnings as in the starting and ending hourly wage rates, the labor market benefits of enrollment in particular program areas are partly dependent upon the type of vocational-technical school or college that the student attends. (See Table VI.17.)

The importance of the particular program area is seen when these same regressors are included in separate equations for the six program areas. Enrollment in a junior college program is positively associated with monthly earnings in each of the separate programs, as it is for the total sample, but it is only in Health programs that the relationship is statistically significant, and here there is a substantial advantage of over $190 a month as compared to those graduating from high school Health programs. Although the relationships are not statistically significant,

TABLE VI.17

FACTORS INFLUENCING MONTHLY EARNINGS OF GRADUATES BY SCHOOL LEVEL

Dependent Variable: Average Monthly Earnings

| Independent Variables | Regression Coefficients[1] Junior College | Post-High School | High School Vocational | Total Sample |
|---|---|---|---|---|
| REGION - South@ | | | | |
| West | + | - | - | + |
| Northeast | + | + | + | 37.38** |
| North Central | + | 42.84* | 75.38** | 56.52** |
| PROGRAM AREA - Office@ | | | | |
| Trade and Industry | + | 68.81* | + | + |
| Distributive | + | - | - | - |
| Health | + | + | + | + |
| Agriculture | - | + | - | + |
| Technical | + | 63.67* | - | 35.05* |
| RELATEDNESS: JOB TO TRAINING (First Job) | + | + | + | + |
| SES | + | 1.35** | + | 1.02** |
| RELATEDNESS: JOB TO TRAINING (Last or Current Job) | + | - | - | - |
| FATHER'S EDUCATION | - | - | - | - |
| SEX - Female@ | | | | |
| Male | 69.20* | + | + | 29.54* |
| AGE | 4.80* | 3.94** | + | 4.14** |
| MARITAL STATUS - Single@ | | | | |
| Married | 66.84** | 35.71** | + | 35.92** |
| Other | + | + | + | + |
| RACE - White@ | | | | |
| Non-white | - | + | - | - |
| SETTING - Rural@ | | | | |
| Medium | + | + | + | 25.16* |
| Large | + | + | + | 36.38* |
| Very Large | + | + | + | + |
| Suburb | + | + | + | 54.14** |
| GPA | + | 25.94** | + | 16.98** |
| $R^2$ | .1771 | .1360 | .0970 | .1942 |
| Number of Observations | 255 | 647 | 435 | 1337 |

Notes:

1 + indicates positive insignificant partial regression coefficient
- indicates negative insignificant partial regression coefficient

* Significant at the .05 level; ** Significant at the .01 level

@ base variable against which the others are compared. Its value is entered into the constant.

post-high school graduates have a positive advantage over high school graduates in monthly earnings in each of the separate program areas with the exception of Distributive Education. (See Table VI.18.)

As in the case of the total sample, graduates in other regions have an earnings advantage over Southern graduates in each of the separate program regressions, with three exceptions: Trade and Industry and Office graduates in the West, and Agriculture graduates in the Northeast. On the other hand, Agriculture graduates in the West and Health graduates in the Northeast have very substantial earnings advantages over persons in the same program areas in the South and the differences are statistically significant.

The importance of sex, age and marital status, demonstrated in the regression for the total sample, does not hold up in the separate regressions for all of the program areas. The three demographic variables prove to be statistically significant influences on average monthly earnings for graduates in Trade and Industry programs. Age is a significant variable in the Technical and Office regressions; and marital status is significant in Agriculture and Technical programs. However, male status is negatively associated with earnings in the regressions for Distributive Education and Office programs; age is negatively associated with earnings in the Agricultural programs; and marital status is negatively associated with earnings in Health and Office programs. These relationships are not statistically significant, however.

Non-whites graduating from Agriculture programs have a significant earnings advantage, and non-whites graduating from Office programs have

TABLE VI.18

FACTORS INFLUENCING MONTHLY EARNINGS OF GRADUATES BY PROGRAM AREAS

Dependent Variable: Average Monthly Earnings

| Independent Variables | Regression Coefficients[1] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Trade and Industry | Distributive | Health | Agriculture | Technical | Office | Total Sample |
| LEVEL - High School@ | | | | | | | |
| Post-High School | + | - | + | + | + | + | 27.41* |
| Junior College | + | + | 190.97** | + | + | + | 95.33** |
| REGION - South@ | | | | | | | |
| West | - | + | + | 165.83* | + | - | + |
| Northeast | + | + | 106.52** | - | + | + | 37.38** |
| North Central | + | + | + | + | + | + | 56.52** |
| RELATEDNESS: JOB TO TRAINING (First Job) | + | + | - | - | - | + | + |
| SES | + | 2.79* | - | + | 1.28* | + | 1.02** |
| RELATEDNESS: JOB TO TRAINING (Last or Current Job) | + | - | - | + | + | - | - |
| FATHER'S EDUCATION | - | + | + | + | - | - | - |
| SEX - Female@ | | | | | | | |
| Male | 108.62** | - | + | no responses | + | - | 29.54* |
| AGE | 8.09* | + | + | - | 8.03** | 4.19* | 4.14** |
| MARITAL STATUS - Single@ | | | | | | | |
| Married | 48.80* | + | - | 146.50** | 94.36** | - | 35.92** |
| Other | + | + | - | + | + | - | + |

TABLE VI.18 (continued)

| Independent Variables | Regression Coefficients | | | | | | |
|---|---|---|---|---|---|---|---|
| | Trade and Industry | Distributive | Health | Agriculture | Technical | Office | Total Sample |
| RACE - White@ | | | | | | | |
| Non-white | - | + | + | 432.87* | - | -100.81* | - |
| SETTING - Rural@ | | | | | | | |
| Medium | 105.42** | + | + | + | + | + | 25.16* |
| Large | + | + | 118.91* | - | - | + | 36.38* |
| Very Large | + | + | + | + | - | + | + |
| Suburb | + | + | + | + | - | 44.35* | 54.14** |
| GPA | 29.78* | - | 32.28* | + | - | + | 16.9[illegible] |
| $R^2$ | .2544 | .3370 | .4054 | .4846 | .2156 | .1777 | .1942 |
| Number of Observations | 256 | 73 | 175 | 68 | 337 | 428 | 1337 |

Notes:

1 + indicates positive insignificant partial regression coefficient
- indicates negative insignificant partial regression coefficient

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

a significant earnings disadvantage. The relatively small sample of non-whites, when cross-classified by the six program areas, however, reduces the reliability of the results for this variable.

The separate regressions for program areas generally confirm the earnings advantage of urban and suburban graduates, compared to those in rural areas. However, for Technical graduates there was a negative relationship between average monthly earnings and training in a large city or suburban area. These relationships were not significant at the .05 level.

The graduate's grade point average was positively and significantly related to monthly earnings only in the case of those graduating from Trade and Industry and from Health programs. For the other program areas, there was a mixed pattern of negative and positive relationships between grade point average and earnings; but these relationships were not significant at the .05 level.

In general, the regression analyses of average monthly earnings confirm the findings in the analyses of beginning wages and wages on the last job. In a few cases, disparities between length of employment and hourly wage rates resulted in patterns of average monthly earnings which differed from those of hourly wage rates.

Conclusion

In general, the wages and earnings of vocational graduates are influenced by the type of school they attend, by such environmental factors as the region of the country in which the school is located and its urban or rural setting; by the socio-economic status of the jobs held and by such demographic characteristics as sex, age, marital status and race. Higher grade point averages while in school also have a positive

influence on wages and earnings. More specifically, junior college graduates enjoy labor market advantages over those graduating from high school vocational programs and post-high school vocational programs. The post-high school graduates do not have a distinct wage advantage compared to those coming from high school programs, but because of more continuous employment their earnings exceed those of high school graduates. Generally vocational graduates in the West, Northeast and North Central regions enjoy labor market advantages compared to those coming from the South.

Men have higher wages and earnings than women; additional years of age for the graduates increase wages and earnings; and married graduates have higher wages and earnings than single graduates. Although non-whites appear to be at a disadvantage in the labor market, the analysis of this variable has been hampered by the relatively small sample size.

Graduation in a city or suburban vocational program generally brings higher wages and earnings as compared with graduation from a rural school; and graduation with a higher grade point average is positively related to higher wages and earnings.

The results for particular program areas are related to the school level and other environmental aspects of the program's setting, and the program results are greatly influenced by sex. Graduation from Trade and Industry and Technical programs gives wage and earnings advantages to males, especially if they graduate at the post-high school level. However, women have lower earnings after graduation from these program areas than from Health, Distributive and Office programs.

Graduates from Agriculture programs, who do not do well on wages and earnings relative to the other program areas in the Northern or Western regions, or when the school is located in an urban or suburban setting, appear to have advantages in wages and earnings over those from other program areas in the South and when they come from schools in a rural setting. Graduates from Health programs appear to have some advantages in wages, but primarily at the junior college level, and their wages and earnings are enhanced if they graduate from schools in the North and in large cities.

Just as important as the factors that appear to have a positive influence on wages and earnings are those factors which appear to have little or no influence. The relatedness of the graduate's job to his field of training is not significantly associated with his level of wages or earnings after graduation. The relatedness variable is positive but not significant on the first job, and it is actually negative in most of the regression runs for the graduate's last or current job during the survey period. The educational level attained by the gradute's father, as a measure of socio-economic status, does not have a significant relationship to post-graduation wages and earnings.

It can be concluded that vocational-technical students who wish to enhance their post-graduation wages and earnings would do well to be concerned with the school level and the environmental setting of the school, as related to the program area they select as well as to their sex. Men do best when they graduate from predominantly male fields of training such as Trade and Industry and Technical programs. And, for this purpose, a post-high school vocational program would serve them

well. Women fare better in the traditional female fields of training such as Office and Health programs, the latter being especially effective at the junior college level.

However, the findings also seem to indicate that the choice of a particular program area in vocational-technical education is not as important an influence on future wages and earnings as some would suppose. Being in the right school, region and urban setting and the accomplishment of a high grade point average would seem to serve the vocational-technical graduate better with regard to earnings than the choice of a particular field of training.

# CHAPTER VII

## POST-VOCATIONAL EDUCATION EXPERIENCE

It is one of the expressed purposes of vocational education programs to give students options with regard to further education. While providing skills for those who leave the educational process and enter the labor market, vocational courses also serve to keep students in school who might otherwise drop out. And by staying in school, students might later be afforded an opportunity to go on to college or, if already in a junior college, go on to complete their baccalaureate degree. Thus, one of the values of vocational-technical education may be its option value. Labor market skills are there for those who consider their vocational program to be the end of their educational process, and yet opportunities to go on with further education are available to those who find new academic interests while in the vocational school.

### The Extent of Additional Education

As was indicated in Chapter V, a substantial number of the graduates went on to full-time or part-time education immediately after graduating from their vocational program. Those graduating from high school programs, either vocational or academic, included the largest percentage whose first activity after graduation was further education rather than employment. A larger percentage of junior college vocational graduates listed full-time or part-time school as their initial post-graduation activity as compared with post-high school vocational graduates. (See Table V.2, p. 69.)

There are interesting differences in the pursuit of further education by program area as well as by school level. Tables VII.1, VII.2, and VII.3 indicate the percentages who obtained additional education after their vocational graduation by school level and program area. It is seen that a larger percentage of the junior college vocational graduates had some additional education, in all program areas, as compared with high school and post-high school vocational graduates. Although the percentages of high school graduates with additional education were not markedly different from those of the junior college graduates, there was a sharp contrast between junior college and post-high school vocational programs in this regard. Whereas the percentage with additional education after junior college ranged from 63 per cent to 77 per cent, the range at the post-high school level was from 5 per cent to 36 per cent.

Thus, only 5.3 per cent of those graduating from Health programs at the post-high school level obtained additional education in contrast with 63.8 per cent who graduated from Health programs in the junior college level, and 48 per cent coming from programs at the high school vocational level. Similarly, the 7.2 per cent who obtained additional education after graduation from a post-high school Office program were in sharp contrast with the 63.9 per cent at the junior college level, and the 53.4 per cent at the high school level who went on to additional education after graduating from an Office program.

As seen in Table VII.1, the percentage of high school graduates who obtained additional education is higher for those in Technical, Distributive and Agricultural programs than it is for those in Trade and Industry, Office and Health programs. Less than half of those graduating

TABLE VII.1

WHETHER OR NOT STUDENTS OBTAINED ADDITIONAL EDUCATION AFTER HIGH SCHOOL, BY PROGRAM

| Program | Sample size | Percentage obtaining additional education | Percentage not obtaining additional education | Total |
|---|---|---|---|---|
| TRADE AND INDUSTRY | 423 | 53.7 | 46.3 | 100 |
| DISTRIBUTIVE | 192 | 68.2 | 31.8 | 100 |
| HEALTH | 25 | 48.0 | 52.0 | 100 |
| AGRICULTURE | 187 | 66.3 | 33.7 | 100 |
| TECHNICAL | 139 | 71.9 | 28.1 | 100 |
| OFFICE | 566 | 53.4 | 46.6 | 100 |

$x^2 = 33.9$ (df = 10)
significant at .001 level

TABLE VII.2

WHETHER OR NOT STUDENTS OBTAINED ADDITIONAL EDUCATION AFTER POST HIGH SCHOOL PROGRAM

| Program | Sample size | Percentage obtaining additional education | Percentage not obtaining additional education | Total |
|---|---|---|---|---|
| TRADE AND INDUSTRY | 324 | 11.7 | 88.3 | 100 |
| DISTRIBUTIVE | 87 | 36.8 | 63.2 | 100 |
| HEALTH | 338 | 5.3 | 94.7 | 100 |
| AGRICULTURE | 56 | 21.4 | 78.6 | 100 |
| TECHNICAL | 358 | 7.8 | 92.2 | 100 |
| OFFICE | 363 | 7.2 | 92.8 | 100 |

$x^2 = 91.1$ (df = 10)

significant at .001 level

TABLE VII.3

WHETHER OR NOT STUDENTS OBTAINED ADDITIONAL EDUCATION AFTER JUNIOR COLLEGE PROGRAM

| Program | Sample size | Percentage obtaining additional education | Percentage not obtaining additional education | Total |
|---|---|---|---|---|
| TRADE AND INDUSTRY | 85 | 74.1 | 25.9 | 100 |
| DISTRIBUTIVE | 120 | 73.3 | 26.7 | 100 |
| HEALTH | 213 | 63.8 | 35.2 | 100 |
| AGRICULTURE | 108 | 77.7 | 22.3 | 100 |
| TECHNICAL | 162 | 68.5 | 31.5 | 100 |
| OFFICE | 111 | 63.9 | 35.1 | 100 |

from a Health program at this level obtained additional education as compared with 71.9 per cent of Technical graduates.

At the post-high school level, on the other hand (Table VII.2), only 7.8 of the Technical graduates obtained additional education, and the largest percentages of those going on to further education were found in Distributive and Agricultural programs. Even so, the 36.8 per cent of Distributive graduates with additional education is below that of the lowest percentages with additional education in the various program areas at the high school and junior college levels. It is notable that at both the high school and post-high school vocational levels, the graduates of Health programs were less likely to go on to additional education than those graduating from the other programs.

At the junior college level, too, the graduates of Health programs had a smaller percentage with additional education as compared with graduates from the other program areas (see Table VII.3). However, even though this was the lowest percentage in the cross-program comparisons to the junior college level, it represented almost two-thirds of the Health graduates from junior college programs. The largest percentages with additional education at the junior college level were in Agriculture, Trade and Industry and Distributive programs. In each of these cases, well over 70 per cent had obtained additional education during the three-year period of the follow-up survey.

Factors Influencing Decision to Obtain Additional Education

Using the decision to obtain additional education as a dichotomous dependent variable (additional education = 1; no additional education = 0), an effort was made by regression analysis to ascertain the

factors associated with the decision to go on to further education from a vocational program.

As seen in Table VII.4, as compared with the high school vocational graduates, the probability of some additional education after graduation from a vocational program is significantly greater for those who graduate from junior college, and is significantly less for those who graduate from a post-secondary vocational school. This finding confirms the cross-tabulation results, by program area, set forth in Tables VII.1-VII.3.

Although the independent variables, taken as a whole, explain almost 33 per cent of the variance in the dependent variable (with an F-ratio significant at the .01 level), only male sex, non-marital status and grade point average have statistical significance at the .05 or .01 levels as specific variables associated with the decision to obtain additional education. The probability of males taking additional education is 16 per cent greater than that of females; married graduates are 6 per cent less likely to take additional education than single graduates; and each point in the grade point average adds 5 per cent to the increased probability of taking additional education after graduation from a vocational-technical program.

When separate regressions are run for each of the school levels, using the same independent variables (with the exception of school level) and the same dichotomous dependent variables, even the significance of sex, marital status and grade point average is removed, although their signs generally remain the same as indicated in the regression for the total sample (see Appendix Table 24). Thus, the school level appears to

TABLE VII.4

FACTORS AFFECTING GRADUATE'S DECISION TO OBTAIN ADDITIONAL EDUCATION, TOTAL SAMPLE

Dependent Variable: Decision to Obtain Additional Education

| Independent Variables | Partial Regression Coefficient | Standard Error | Partial Correlation Coefficient |
|---|---|---|---|
| LEVEL - High School@ | | | |
| Post High School | -.48** | .03 | -.39 |
| Junior College | .11** | .04 | .08 |
| REGION - South@ | | | |
| West | .04 | .03 | .04 |
| Northeast | -.02 | .04 | -.01 |
| North Central | -.01 | .03 | -.01 |
| PROGRAM AREA - Office@ | | | |
| Trade and Industry | -.1 | .04 | -.06 |
| Distributive | .03 | .05 | .02 |
| Health | .03 | .05 | .02 |
| Agriculture | .006 | .06 | .003 |
| Technical | -.08 | .04 | -.06 |
| RELATEDNESS: JOB TO TRAINING (First Job) | -.03 | .04 | -.02 |
| SES | -.0003 | .0006 | .04 |
| RELATEDNESS: JOB TO TRAINING (Last or Current Job) | .03 | .04 | .02 |
| FATHER'S EDUCATION | .005 | .004 | .03 |
| SEX - Female@ | | | |
| Male | .16** | .03 | .12 |
| AGE | -.004 | .002 | -.04 |
| MARITAL STATUS - Single@ | | | |
| Married | -.06* | .02 | -.07 |
| Other | .05 | .06 | .02 |
| RACE - White@ | | | |
| Non-white | -.02 | .04 | -.01 |
| SETTING - Rural@ | | | |
| Medium | .008 | .03 | .007 |
| Large | .002 | .04 | .001 |
| Very Large | -.09 | .05 | -.05 |
| Suburb | -.03 | .04 | -.02 |
| GPA | .05** | .02 | .07 |

| | | | |
|---|---|---|---|
| $R^2$ | .3260 | Number of Observations | 1524 |
| F-Ratio | 30.21** | Constant | .42981 |

Notes:

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

be an overriding influence on the decision to obtain additional education after vocational graduation.

Further Education of Junior College Graduates

The relatively large proportions of junior college graduates who obtain additional education call for a more detailed analysis.* As can be seen in Table VII.5, more of the junior college graduates went on to a full-time four-year college than part-time college. Over half of the Agriculture and Distributive Education graduates, a third of the Technical graduates and more than one-fourth of the Trade and Industry and Office graduates had obtained some additional full-time college education after completion of their junior college vocational program. Only in the case of Health graduates were there fewer than 10 per cent with additional full-time college. Part-time college was a more frequent choice of Technical graduates and Health graduates, with one-fouth of the Technical group having attended college on a part time basis.

After transferring to a four-year college, Trade and Industry graduates enrolled mainly in arts and sciences (28.6 per cent) and engineering (25.7 per cent). The Distributive Education graduates generally enrolled in a business course (60.5 per cent), while many Health graduates selected science (28.1 per cent). In contrast, the Agriculture graduates enrolled almost exclusively in agriculture. Technical graduates were more diversified, with a fourth going into engineering courses, a fifth registering in arts and sciences, and about 15 per cent going into business curricula. As might be expected,

*In addition to the summary presented here, a more detailed discussion can be found in Chapter VI of the report prepared by the Bureau of Social Science Research.

TABLE VII.5

ADDITIONAL COLLEGE, BY JUNIOR COLLEGE PROGRAM

| Program | Total N | Total % | Yes[a] | No |
|---|---|---|---|---|
| **A. Full-Time College (in percentages)** | | | | |
| TRADE AND INDUSTRY | 118 | 100 | 29.7 | 70.3 |
| DISTRIBUTIVE | 172 | 100 | 51.2 | 48.8 |
| HEALTH | 233 | 100 | 7.3 | 92.7 |
| AGRICULTURE | 236 | 100 | 52.5 | 47.5 |
| TECHNICAL | 211 | 100 | 33.6 | 66.4 |
| OFFICE | 126 | 100 | 25.4 | 74.6 |
| **B. Part-Time College (in percentages)** | | | | |
| TRADE AND INDUSTRY | 118 | 100 | 15.3 | 84.7 |
| DISTRIBUTIVE | 172 | 100 | 19.2 | 80.8 |
| HEALTH | 233 | 100 | 13.3 | 86.7 |
| AGRICULTURE | 236 | 100 | 10.2 | 89.8 |
| TECHNICAL | 211 | 100 | 27.5 | 72.5 |
| OFFICE | 126 | 100 | 17.5 | 82.5 |

[a]The median number of months of further education was 13 or more for every program.

Over half of the Office graduates enrolled in a business curriculum in college. Females in the Office program who sought further education were more likely to do so either at the non-college level, or to switch to other fields, while men overwhelmingly transferred to a business course after their vocational Office program.

At the time of the survey, it was evident that the graduates of a junior college vocational program were highly oriented toward further education and training. The range varied from a low of 17.9 per cent of the Technical graduates to a high of 48.9 of the Health graduates. Those strongly oriented toward further education had similar characteristics to those who attended full-time college after graduating from junior college. Women had fewer plans for further education than men. Single respondents had more extensive plans for further education than married respondents, especially if the married respondents had children.

On the whole, however, no single factor can be said to promote college orientation other than sex. The decision appears to stem from a combination of personal and environmental factors.

Conclusion

Our findings indicate that it is a mistake to think of a vocational or technical program at the high school or junior college level as a "terminal" education program. Even though many of the vocational graduates went into employment directly, and almost all spent large proportions of the three-year survey period in employment, a very substantial proportion also went on to further education, frequently full-time college. There was much less tendency to do so, however, for those who enrolled in vocational programs in post-secondary vocational schools.

It can be concluded that more emphasis should be given to the educational option value of vocational education than has been the case in the past. The most important function of vocational education may continue to be the preparation for direct labor market entrance. In the case of post-high school vocational schools, and in the case of

women at all school levels, this appears to be true for our sample as well. However, for graduates of the vocational and technical programs at the high school and junior college level, especially males, it is clear that vocational education may be simply a stepping-stone to further education.

When this finding is related to that of other findings, such as the limited significance of the particular field of training or program area for labor market wages and earnings, further weight is given to the need for a flexible emphasis on vocational program curricula. This point is expanded further in the concluding chapter.

# CHAPTER VIII

## EVALUATION OF THE COSTS AND BENEFITS OF VOCATIONAL EDUCATION*

The study thus far has been concerned with the benefits of vocational-technical education in terms of educational experience, satisfactions, employment, income and further education. Although some judgments concerning the relative merits of the various school levels and programs can be derived from a comparative analysis of benefits, a full comparative evaluation requires data on relative costs as well.

The cost data needed for various vocational education levels and various programs are generally unavailable. Many schools do not have detailed cost data, and it is not reasonable to expect a school district to expend substantial resources to collect such data unless it can be made worthwhile for them to do so. The only national source of cost data at the vocational level comes from the Annual Report on Vocational and Technical Education which is compiled from state reports. However, these data have limited use because reported expenditures cover only federally-sponsored programs, nor are they repo[illegible] school level or by type of vocational program. Due to the lack of national data on per-pupil costs, vocational costs must be either collected from individual schools or reliance must be placed on the estimates provided by previous special studies.

*I am indebted to Professor Teh-wei Hu, Pennsylvania State University, for his work on this chapter.

Cost-benefit analyses are essentially couched in economic terms because of the difficulty of measuring non-economic variables. It should be stressed at the outset that there is a recognition of the limitations of such economic ratios. Both costs and benefits of vocational-technical education clearly go well beyond the dollar expenditures spent in training and the income derived from the training. Social-psychological and educational benefits, for both the students and society, are known to exist and there is no intention of according them a secondary role in this report. The economic costs and benefits are measurable and are presented here as only one dimension in the evaluation of vocational-technical education.

A. Availability of School Cost Data*

During the course of this study, a survey was directed to each school concerning the availability of cost data for vocational education. The costs were classified into seven types: administration, professional auxiliary services, instruction, plant operation and maintenance, transportation, fixed charges, and capital outlay (debt services). Two questions asked were: (1) Do your records permit a determination of the kinds of costs by type? and (2) Are you able to ascertain what per cent of such costs are chargeable to your program? There were four alternative answers to the above two questions: (1) The school had positive answers to both questions; (2) the school could only determine the kind of cost but not the per cent to vocational programs; (3) the school could only determine the per cent of costs to

*See the summary of estimated average costs and the sources of data listed at the conclusion of this chapter.

vocational programs; and (4) the school gave negative answers to both questions. The cost questionnaires were sent to high schools and post-high schools, but not to junior colleges. For high schools and post-high schools, we present only the data on availability of vocational program costs. The survey information on cost availability is summarized under three headings: availability by the types of schools, availability by the size of the schools, and the availability by the location or setting of the schools.

Table VIII.1 shows the survey responses of over 2000 high schools and post-high schools. It can be seen that secondary vocational programs have higher positive answers to both questions and lower negative answers to both questions than the post-secondary vocational education. The secondary schools have the best information on administration costs while the post-secondary schools have the best information on instructional costs. More than 50 per cent of the secondary schools would be able to allocate all types of costs for vocational programs, while only about one-third of the post-secondary schools would be able to allocate all types of costs for vocational programs. Thus, it is by no means pointless to try to collect usable data on the cost of vocational programs by the survey method.

Table VIII.2 presents the information on the cost data availability by enrollment size. Enrollment is classified into four categories: less than 500, 500-999, 1000-1999 and 2000 above. It is seen that the small and medium-size schools, up to 999 enrollment, have better cost information than the large size (1000-1999) or very large size (2000 and over) schools. This is a reasonable finding since the

TABLE VIII.1

COST DATA AVAILABILITY BY TYPE OF COST AND BY SCHOOL LEVEL

| Type of Cost | Data Available on Costs (Per Cent of Schools) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Secondary Vocational Programs | | | | Post-Secondary Vocational Programs | | | |
| | By cost type and per cent allocation to vocational programs | By cost type only | By per cent allocation to vocational program only | No cost data available | By cost type and per cent allocation to vocational programs | By cost type only | By per cent allocation to vocational program only | No cost data available |
| Administration* | 78.0 | 5.5 | .0 | 16.5 | 38.7 | 29.0 | 1.6 | 30.7 |
| Professional & Auxiliary Services | 58.4 | 6.3 | .0 | 35.3 | 41.6 | 27.3 | 1.6 | 29.5 |
| Instruction | 67.5 | 6.0 | .0 | 26.5 | 55.5 | 16.0 | 1.6 | 26.9 |
| Plant Operation and Maintenance | 64.1 | 20.2 | 1.5 | 14.2 | 34.8 | 38.6 | .6 | 26.0 |
| Transportation | 55.4 | 13.1 | 2.2 | 29.3 | 37.6 | 29.9 | .6 | 31.9 |
| Fixed Charges | 51.6 | 14.5 | .0 | 33.9 | 35.1 | 16.2 | .0 | 48.7 |
| Capital Outlay | 62.1 | 16.3 | .0 | 21.6 | 43.6 | 27.1 | .0 | 29.3 |

*The sum of each horizontal row under Secondary Vocational Programs and Post-Secondary Vocational Programs, respectively, is 100 per cent.

TABLE VIII.2

COST DATA AVAILABILITY BY TYPE OF COST AND BY SIZE OF SCHOOL STUDENT ENROLLMENT

| | Availability of Cost Data (Per Cent of Schools)* | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | By cost type and per cent allocation to vocational programs | | | | By cost type only | | | | By per cent allocation to vocational program only | | | | No cost data available | | | |
| Type of Cost | 500 | 500-999 | 1000-1999 | 2000 | 500 | 500-999 | 1000-1999 | 2000 | 500 | 500-999 | 1000-1999 | 2000 | 500 | 500-999 | 1000-1999 | 2000 |
| Administration | 45.2 | 56.8 | 64.5 | 41.2 | 15.4 | 34.5 | 32.1 | 19.5 | .5 | .0 | .0 | .0 | 38.9 | 8.7 | 3.4 | 38.3 |
| Professional & Auxiliary Services | 54.7 | 52.3 | 48.2 | 49.6 | 19.2 | 32.2 | 18.9 | 14.6 | .5 | .0 | .0 | .0 | 25.6 | 15.5 | 32.9 | 34.0 |
| Instruction | 56.4 | 66.5 | 50.5 | 61.3 | 14.2 | 23.1 | 11.4 | 12.7 | .5 | .0 | .0 | .0 | 28.9 | 10.5 | 38.1 | 26.0 |
| Plant Operation & Maintenance | 57.6 | 40.8 | 44.1 | 33.9 | 22.6 | 31.5 | 20.6 | 11.8 | .5 | .0 | .0 | .0 | 7.5 | 27.7 | 35.3 | 54.3 |
| Transportation | 52.9 | 42.3 | 36.6 | 33.2 | 18.4 | 13.4 | 22.3 | 29.3 | .5 | .0 | .0 | .0 | 28.2 | 14.3 | 41.1 | 37.5 |
| Fixed Charges | 51.6 | 36.2 | 43.6 | 37.6 | 12.1 | 57.2 | 8.0 | 12.4 | .0 | .0 | .0 | .0 | 36.3 | 6.6 | 48.4 | 50.0 |
| Capital Outlay | 63.5 | 54.9 | 44.6 | 39.1 | 25.7 | 38.8 | 15.7 | 24.2 | .0 | .0 | .0 | .0 | 10.9 | 6.3 | 39.7 | 36.7 |

*The sum of each row under each size classification is 100 per cent, respectively.

smaller the school the less complicated financial arrangements and accounting practices would be. The job of identifying costs of various educational programs would be easier for smaller schools. The chances of getting usable cost information from the small and medium size schools is about 50 per cent, while the chance of getting usable cost information from the large size schools is about 40 per cent.

Table VIII.3 presents the information in t. ost data availability by the school setting, t t is, whether the school is located in a rural area, suburb or ghetto area. We found that ghetto schools can provide almost complete cost information on professional and auxiliary services, instruction, and capital outlay, but they have no information on fixed charges. Rural schools in general have better cost information than suburban ols. About 50 per cent of the rural schools can provide cost inform , while about one-third of the suburban schools can provide c information on vocational programs.

This study has collect information on cost data availability in a national sample of indivi al schools. However, the task of actually gathering cost data from these schools ca s for resources well beyond those available in this research. This deserves a separate study. Therefore, the vocational costs estimates used in this chapter are based on data collected in previous studies and reports.

B. The Costs Estimations

The costs of vocational education are the resources of society drawn away from alternative uses. These costs can rela e to operating and capital resources. Since this study focuses on the different school

TABLE VIII.3

COST DATA AVAILABILITY BY TYPE OF COST AND BY SCHOOL SETTING

| | Availability of Cost Data (Per Cent of Schools)* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | By cost type and per cent allocation to vocational programs | | | By cost type only | | | By per cent allocation to vocational program only | | | No cost data available | | |
| Type of Cost | Rural | Suburb | Ghetto | Rural | Suburb | Ghetto | Rural | Suburb | Ghetto | Rural | Suburb | Ghetto |
| Administration | 51.2 | 32.8 | 47.3 | 23.8 | 31.7 | 7.3 | .0 | .0 | .0 | 5.0 | 35.5 | 45.4 |
| Professional Auxiliary Services | 56.0 | 34.2 | 92.7 | 16.2 | 27.3 | .0 | .9 | .0 | .0 | 6.9 | 38.5 | 7.3 |
| Instruction | 56.0 | 44.1 | 92.7 | 10.8 | 20.6 | .0 | .0 | .0 | .0 | 5.2 | 35.3 | 7.3 |
| Plant | 46.6 | 32.5 | 47.3 | 19.9 | 33.5 | 7.3 | .9 | .0 | .0 | 2.6 | 34.0 | 45.4 |
| Transportation | 44.3 | 27.1 | 47.3 | 20.3 | 34.7 | .0 | .0 | .0 | .0 | 1.4 | 38.2 | 52.7 |
| Fixed Charges | 35.1 | 38.2 | .0 | 13.3 | 16.1 | .0 | .0 | .0 | .0 | 51.6 | 45.7 | 100.0 |
| Capital Outlay | 40.7 | 38.5 | 86.2 | 27.9 | 24.3 | .0 | .0 | .0 | .0 | 31.4 | 37.2 | 13.8 |

*The sum of each row under each setting classification is 100 per cent, respectively.

levels of vocational education, the costs estimation will be discussed in terms of secondary vocational education, post-secondary vocational education and junior college vocational education. The costs by programs are not refined, but will be discussed wherever possible.

Secondary Vocational Education

There are three previous studies dealing with secondary vocational education costs including both operating and capital costs in the period 1964-67: (1) Taussig study in New York City,[1] (2) Corrazini study in Worcester, Mass.,[2] and (3) Swanson study in San Mateo, California.[3] Since costs may vary by size and the location of community, it is useful to compare the costs in these three studies.

The Taussig study of New York City indicates that during 1964-65, per pupil current cost in vocational education is $1,391 and the per pupil capital costs is $306. Thus, the total cost per pupil in secondary vocational education is $1,697. The Corrazini study of Worcester, Mass., indicates that during 1963-64, per pupil current costs is $978 and the capital costs is $147. These are the average figures of the boys and girls trade schools. The total cost per pupil is $1,125. The west coast study by Swanson shows that the average total cost per pupil

[1]Michael Taussig, An Economic Analysis of Vocational Education in the New York City High Schools, paper prepared for the Conference on Vocational Education, The Brookings Institute, April, 1967.

[2]Arthur Corrazini, Vocational Education: A Study of Benefits and Costs (New Jersey: Princeton University, 1966).

[3]J. Chester Swanson, Program-Cost Analyses of Vocational-Technical Education in a Junior College and in a Unified School District (Berkeley: University of California, 1969).

(current and capital costs) for 1967-68 is $905. Based on these three studies, perhaps a reasonable estimate for the national average would be around $1,263, an average of the three estimates, per pupil for secondary vocational education during 1965-66.

There are other costs of attending secondary vocational school such as the opportunity costs and the incidental costs. There are no published data revealing the foregone earnings for the secondary students. Census data do not report earnings by various kinds of secondary education. The incidental costs should represent the expenditures involved in attending school which are over and above the normal daily costs of maintenance for students. There is no information on this cost either, although it will be small relative to the total school cost. Thus, it should be recognized that the estimated cost for secondary vocational education, $1,263, is an underestimation of the total costs.

Post-Secondary Vocational Education

Post-secondary education is defined as the grade levels 13 and 14. Thus far we have only very limited data on the costs by program in post-secondary vocational education. The only available study on the program cost of post-secondary vocational education was conducted for the Center for Studies in Vocational, Adult and Technical Education at the University of Wisconsin by LeRoy Peterson (see Table VIII.4). This study examines costs at the Kenosha Technical Institute during 1965-67. Using the straight-line depreciation method, this study provides total cost, including capital costs and current costs, of two years of post-secondary vocational education, at $2,113 per full-time student. Among the detailed analyses of costs, the study shows costs by programs which

TABLE VIII.4

TOTAL COST OF PROGRAMS PER FULL-TIME EQUIVALENT STUDENT IN KENOSHA TECHNICAL INSTITUTE, 1965-67

| Program | Total Cost |
|---|---|
| Accounting (Office) | $2,083 |
| Fluid Power Technology (Technical) | 2,705 |
| General Business* (Distributive) | 1,593 |
| Practical Nursing* (Health) | 2,249 |
| Secretarial Service (Office) | 2,481 |
| Welding (Trade and Industry) | 2,256 |

*Measured in two years costs instead of one year course as the Peterson report indicates.

Sources: LeRoy J. Peterson, "Cost-Benefit Theory in Vocational and Technical Education," Center for studies in Vocational, Adult and Technical Education, University of Wisconsin, Madison (unpublished manuscript, 1969), p. 31.

do not exactly correspond to the general program classification. However, we can consider Accounting and Secretarial Services as the office program, the Fluid Power Technology as the technical program, General Business as distributive program, Practical Nursing as the health program, and Welding as the trade and industry program. It is clear that the cost per student of the distributive program is the lowest among the programs, while the technical program has the highest cost per student.

In addition to the school costs of providing post-secondary vocational education, there are the foregone earnings and miscellaneous costs of attending the post-secondary vocational school. Miscellaneous costs include fees, books and school supplies. Students are assumed to

live at home, since most of the students that attend the post-secondary school are from the same community. Thus, they do not have to pay the costs of room and board beyond the normal expenses. The miscellaneous costs are estimated in Hirsch's study as $234 per school year in 1960.[4] Based on about a 10 per cent inflation during 1960-65 period, the miscellaneous costs would be $257 per year or $514 for two years.

The foregone earnings of the post-secondary students are the earnings that they could make during the two years of schooling. It is assumed that each year the student has a three-month summer job; thus, eighteen months is the accounting period in determining foregone earnings. Based on our sample of graduates from secondary vocational schools, the average monthly earnings are $231. This earnings figure has taken into account the unemployment factor during the three-year period. Thus, this figure is not the upper limit of monthly foregone earnings of post-secondary students, but it is believed to be a realistic estimate.[5] The estimated foregone earnings for the post-secondary vocational students would be $4,158 ($231 x 18) during 1966-67 period.

Junior College Vocational Education

The cost data for junior college vocational education is the least available information among the three levels of vocational

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[4]Werner Hirsch and Morton Marcus, "Some Benefit-Cost Consideration of Universal Junior College Education," National Tax Journal (March, 1966), pp. 48-57.

[5]The upper limit estimate would be the use of average wage rate of the secondary vocational graduate, assuming 40 hours a week and 78 weeks (excluding 2 summers). The starting average wage rate for secondary vocational graduates in the sample is $1.87. The data also indicate there is an average $0.60 increase over the 33-36 months period. Thus, we assume the second year after graduation would be an increase of $0.20 in the wage rate. The estimated foregone earnings based on the above assumptions is $5,678.

education. The Annual Report on Vocational and Technical Education does not include the classification of junior college level in its reports on enrollments and expenditures.

Chester Swanson's study (see Table VIII.5), based on information from the California San Mateo Junior College information, provides the total costs per student converted from the Weekly Student Contact Hour (WSCH). His estimate shows that the median-cost program for vocational-technical education in the junior college is $1,138 during the 1965-66 school year. Thus, two years of junior college vocational education will cost the school $2,276 for each student. This estimate is close to the Peterson's Wisconsin two-year estimate in spite of the differences in geographic setting and the nature of the schools.

TABLE VIII.5

COSTS OF TWO YEAR POST-SECONDARY VOCATIONAL SCHOOL AND JUNIOR COLLEGE VOCATIONAL EDUCATION PER STUDENT

| Type of Costs | Post-Secondary Vocational School | Junior College Vocational Program |
|---|---|---|
| School Costs* | $2,113 | $2,276 |
| Foregone Earnings | 4,158 | 4,158 |
| Miscellaneous Private Costs** | 514 | 514 |
| Total Costs | $6,785 | $6,948 |

*Post-secondary vocational school cost is based on LeRoy J. Peterson, "Cost-Benefit Theory in Vocational and Technical Education," Center for Studies in Vocational, Adult and Technical Education, University of Wisconsin, Madison (unpublished manuscript, 1969), p. 31. Junior College vocational programs cost is based on J. Chester Swanson, Program-Cost Analysis of Vocational-Technical Education in a Junior College and in a Unified School District (Berkeley: University of California, 1969), p.40.

**Based on the estimates by Werner Hirsch and Morton Marcus, "Some Benefit-Cost Consideration of Universal Junior College Education," National Tax Journal (March, 1966), pp. 48-57.

Although Swanson's report provides the program instruction costs of vocational education per WSCH, it does not provide the total costs in WSCH units for each program. However, the report does indicate that the health program (registered nursing, dental assistance and vocational nursing) ranks the highest in cost among the programs, and the technical program (engineering technician and aeronautics) follows the health program. The lowest cost program in the San Mateo Junior College is Cosmetology.

The foregone earnings for students attending junior college should be the same as the students attending the post-secondary high schools, totaling $4,158 for a two-year period. We also assume that ents in junior college stay at home, thus, the miscellaneous be the same as the costs of the post-secondary high school uents, $257 per year.

Based on the estimated cost of post-secondary vocational education and junior college vocational education, it is apparent that both schools' total costs and the students' private costs are almost the same. Table VIII.5 presents the total costs and private costs of those two kinds of education.

C. Comparison of Benefits and Costs

Earlier chapters have set forth the economic benefits and non-monetary benefits of various levels of vocational education. Among the economic benefits, detailed data have been presented on the wage differentials and the earning differences of graduates at different levels of vocational education. As noted earlier, the wage rate, itself, does not provide a complete picture of the graduates' labor market performance.

It is the measure of earnings that takes into account both the wage rate and the per cent of time employed during the approximate three-year period of labor market experience after their graduation. The net differences in earnings at the different levels of vocational education are measured by the regression equation of average monthly earnings for the total sample. The regression coefficients of the different levels of vocational education have controlled for the differences of socio-economic factors of the graduates and the different vocational programs in which they majored. In these equations, if we take into account both the levels of education and the various vocational programs, only the junior college graduates' earnings are significantly different from those of other graduates. The earnings of post-secondary vocational graduates are not significantly different from those of secondary vocational graduates. This is also consistent with the findings of the wage rates regression equations, in which the post-secondary high school graduates do not have higher wages than the secondary vocational graduates. Thus, in view of the cost of post-secondary vocational education (the total school costs of $2,113 plus the foregone earnings of $4,158 and the miscellaneous costs of $514, giving total social costs of $6,785), post-secondary vocational-technical education is not as economically "efficient" as such education taken at the junior college level, and there is a question as to whether increased earnings due to post-secondary vocational education offset the costs as estimated in this chapter.

Junior college vocational graduates have higher average monthly earnings than both secondary and post-secondary vocational graduates.

The junior college vocational graduates earned about $138 more each month than the secondary vocational graduates and about $137 more than the post-secondary vocational graduates.

The junior college graduates' cost-benefit stream is presented in Table VIII.6. The cost-benefit stream is discounted at the 6 per cent discount rate. The first two years represent the cost of attending a junior college vocational program, while the following years are the net benefit after graduation from the junior college. Each year is assumed to have the same benefit, that is, $1,656 ($138 x 12 months) and discounted by the compounded interest rate of 6 per cent, respectively.

Based on Table VIII.6, a number of investment criteria can be studied. First, for the benefit-cost ratio, the total cost in terms of the present value is $6,751 for the two-year period. The benefits of the sample study period (three years) are $4,185, in terms of the present value. Thus, the benefit-cost ratio is less than one, 0.62. Obviously, we do not expect that junior college [illegible] ld pay off in such a short period. If we assume that the benefit stream continues for another three years, then the benefit-cost ratio would be 1.14. If we assume that the benefit stream continues for a total of 10 years, then the benefit-cost ratio will be 1.71.

The alternative examination of the benefit-cost ratio is the payback period. That is, when will the ratio be equal to one? As Table VIII.6 shows, the junior college vocational program will break even, if the benefit stream extends for six years after graduation. To be exact, based on the above estimates, it takes five years and two months of working experience for the junior college vocational graduate to break even on his investment in junior college.

TABLE VIII.6

COST-BENEFIT STREAM OF JUNIOR COLLEGE VOCATIONAL GRADUATES, DISCOUNTED AT 0 AND 6 PER CENT

| Time Period | Year | 0% | 6% |
|---|---|---|---|
| 0 | 1964-65 | -$3,474* | -$3,474* |
| 1 | [illegible]-66 | - 3,474* | - 3,277* |
| 2 | [illegible]67 | 1,656 | 1,479 |
| 3 | [illegible]68 | 1,656 | 1,392 |
| 4 | [illegible] | 1,656 | 1,314 |
| 5 | [illegible]-70 | 1,656 | 1,235 |
| 6 | 1970-71 | 1,656 | 1,166 |
| 7 | [illegible]1-72 | 1,656 | 1,104 |
| 8 | [illegible]-73 | 1,656 | 1,041 |
| 9 | 1973-74 | 1,656 | 980 |
| 10 | 1974-75 | 1,656 | 925 |
| 11 | 1975-76 | 1,656 | 876 |

*Cost of attending a junior college.

Source: Cost data are based on Table VIII.5. Benefit data are based on Table

The other alternative investment criterion is the net benefit of the junior college vocational program measured in terms of present value. As Table VIII.6 shows, any positive net benefit will be beyond the six-year period after graduation. Six years after graduation, the net benefit of the junior college vocational program is $939, while ten years after graduation it would be $4,761.

The final investment criterion is the internal rate of return, which is the rate which will equate the benefit and cost stream within

a given time period. Again, we assume two different time periods. Within a six-year benefit period, the rate of return is 9.7. Within a ten-year benefit period, the rate of return is 17.6. Since these rates are higher than the assumed market rate of 6 per cent, then the investment in junior college is worthwhile, assuming that the benefit stream does extend to six years and ten years.

It should be noted that we have not been able to examine the cost-benefits of vocational education by programs. This is due to limitations on the availability of cost data by program. The previous vocational studies indicate that the cost of distributive programs is perhaps the lowest among all the programs, while technical is the most expensive one. Health programs depend on the nature of the specific program. If it is a registered nurses' training program, it will be very expensive. If it is a vocational nurse or dental assistant program, the costs are relatively low, compared to those for the registered nurse program. On the benefit side, three programs, distributive, technical, and health, all have higher earnings and wage rates than the other programs.

D. Conclusion

There is a scarcity of usable cost data for the cost-benefit study on vocational education programs. At the present time, the only way to collect reliable cost information is to conduct a sample survey of schools rather than rely on government-published statistics. The published government statistics are compiled neither by school level nor by program. Our survey indicates that the chances of getting cost

information on vocational ed ion from secondary and post-secondary schools ar approximately 50 per cent.

Due to the limited resources of this study, we were unable to collect the needed cost data ourselves. Therefore, the cost information used in this chapter is based on previous studies of vocational education. We found that the costs of post-secondary vocational education and junior college vocational education are very close, while the labor market performances of post-secondary vocational graduates were no better than secondary vocational graduates. On the other hand, the graduates of junior college vocational programs did better than both secondary and post-secondary vocational graduates.

Since the graduates of post-secondary vocational schools are not better off than secondary vocational graduates, the only meaningful benefit-cost comparison would be the junior college vocational educational program. The cost-benefit analyses have shown that, based on the assumption that the future benefits of ocational graduates are identical to those of the past three years, and assuming that their benefit stream will be extended for at least another three years, then junior college vocational education will "pay off" better than secondary vocational education.

The labor market "performance" of post-secondary vocational education in general did not "pay off" better than secondary vocational education. Thus, if society decides to invest in a higher level of vocational education for students of comparable interest, ability and qualifications, it should be junior college rather than post-secondary vocational education. This suggestion is not only based on the economic

analysis of this study, but it is also based on possible non-economic benefits. A junior college may provide more flexibility in that it may be less likely to become terminal education, and can provide more options for further education.

However, the reader must be reminded of the caveats. First, not all programs in junior college vocational education pay off. Nor do all programs in post-secondary vocational education fail to pay off. As we have found in our analysis by program, some programs, such as health, technical, and distributive, have better performance in the labor market than other programs. But these may also be the high-cost programs. Thus, our cost-benefit comparison only suggests which level of higher education a qualified student should attend, rather than which program a student should choose from society's viewpoint.

Moreover, [illegible] complete their vocational education in high school, post-secondary vocational school or junior college may have differing interests, intelligence and qualifications, it does not follow that these three levels are always possible alternatives for any particular individual or society. The benefits derived by a vocational high school or post-high school graduate may not be comparable to those which he might derive from junior college because the latter alternative may not be open to him. And many non-economic costs and benefits of particular students' enrollments at various school levels and programs could not be measured here.

Thus, the implications drawn from these cost-benefit analyses must be viewed with some caution in formulating educational policy.

They should be viewed as only one input of data to be utilized by planners who will wish to incorporate a much larger stream of total information before formulating their plans.

# CHAPTER IX

## CONCLUSIONS AND POLICY IMPLICATIONS

This study has focussed on four principal dimensions in evaluating the effectiveness of vocational and technical education in the United States: the educational experience of the students and their attitudes toward their education; the employment experience, the wages and the earnings of the vocational graduates in a three-year follow-up period following their graduation; the further educational experience following graduation from a vocational program; and an evaluation of the costs and benefits of vocational and technical education.

The study has attempted to avoid the pitfalls of broad generalizations about vocational and technical education by focussing on the differential effects of enrollment at a particular school level, a particular region, a particular urban or rural setting, and in a particular program area. At the same time, we have constantly asked what are the differences and results according to differences in demographic characteristics and grade point averages. Because of the importance that has been placed in the vocational educational literature on the relatedness of the job to the training, a special effort has also been made to relate this variable to the outcome of vocational programs.

The summary and conclusions can best take the form of a discussion of the significance of these variables in influencing attitudes, labor market performance, and further educational experience.

School Level: High School, Post-Secondary and Junior College

Although there is sometimes a tendency to lump all federally financed vocational education together, our study emphasizes the importance of drawing sharp distinctions between the school levels at which vocational education occurs. The difference between high school, post-secondary and junior college vocational education begins at the process of selection, and it continues through the educational experience and attitudes of the students to their post-graduation employment and educational experience.

Using father's education as a proxy for family socio-economic background and, possibly, educational motivation of the student, we have noted significant differences in the characteristics of those who enroll in vocational programs at the junior college, post-secondary and high school levels, as compared with those who enter academic high school programs. The higher educational levels of the fathers of students entering junior college and high school academic programs are in contrast with those who enter post-secondary vocational schools, and even more so with those who enter high school vocational programs. Although our data do not include intelligence scores, the differences in father's education as well as the student's orientation to further education would appear to justify a conclusion concerning higher levels of education motivation for those entering junior college and high school academic programs.

Within the school levels, junior college students enroll primarily in Technical, Health and Office programs; post-secondary students primarily in Technical, Office and Trade and Industry programs; and high school vocational graduates in Office, Trade and Industry,

Technical and Agricultural programs. Thus, the vocational programs at the different school levels serve different clientele and they serve different purposes in skill and occupational training, even though there is a common core of program titles among them.

The graduates of the vocational-technical programs at all school levels were generally well-satisfied with their vocational educational experience, regardless of the program area in which they had been enrolled. They generally rated the quality of their instruction high and gave good ratings to the quality of the schools and colleges they attended. The overwhelming majority felt that they had been well-prepared for their first full-time jobs. However, there were significant differences by school level. On the whole, junior college graduates were more satisfied with their educational experience than the graduates of post-high school vocational programs, and these, in turn, were more satisfied than the graduates of high school programs.

After their vocational graduation, a sizable proportion of the samples at each of the school levels had no need for job search. They either went directly into further education or if the labor market was their goal, they already had a job lined up or were already working while attending school. The graduates requiring no job search varied considerably by program area at the three school levels. At the junior college level, a relatively large proportion of those who had been in Agriculture, Technical and Health programs were in this category. At the post-high school level, a roughly similar pattern of job search is found. At the high school vocational level, however, a large proportion from Distributive, Trade and Industry programs required no job search

after graduation, as compared with those in Health, Agriculture, Technical and Office programs.

These findings on employment or employer commitment, prior to graduation, have significance for counseling and placement activities in vocational programs. The success of those in Health and Technical programs at the junior college and post-high school levels in lining up employers prior to their graduation should provide some lessons for placement activity at the high school vocational level, where only 12.5 and 16.7 per cent, respectively, of the graduates were able to avoid the necessity of a job search following graduation. On the other hand, the relative success of high school vocational graduates in Trade and Industry and Distributive programs in finding employment or employers prior to their graduation has some implications for placement activities on behalf of students in these programs at the post-high school and junior college levels.

The graduates of vocational-technical programs in our sample were generally well-satisfied with their educational experience, regardless of the program area in which they had been enrolled. The majority of the respondents rated the quality of their instruction at high levels and felt that the schools and colleges from which they had graduated were of a high quality. More important, with the exception of the high school graduates who took first jobs in fields unrelated to their training, the overwhelming majority of the graduates felt that they had been well-prepared for their first full-time jobs.

In every economic measure considered, junior college vocational graduates experienced more success than other graduates, vocational and

academic. They experienced significantly higher wages, employment and earnings than the secondary school vocational graduates with whom they were compared in a variety of regression equations; and they also experienced better employment, higher wages and earnings than post-secondary school vocational graduates in almost all of the regression equations.

These conclusions with regard to the labor market experience of graduates at each of the school levels have implications for our limited cost-benefit analysis. There is a scarcity of useable cost data for such analysis of vocational educational programs. Our survey indicates that the chances of getting the cost information on vocational information from secondary and post-secondary schools are approximately 50 per cent. Due to the limited resources of the study, we were unable to collect the needed cost data directly. Therefore, the cost information was based on previous studies of vocational education. We found that the costs of post-secondary vocational education and junior college vocational education are very similar, while the labor market performance of post-secondary vocational graduates was only slightly better than those graduating from high school programs. On the other hand, the graduates of junior college vocational programs experienced significantly higher benefits in employment and earnings than those above. In terms of dollar costs and benefits, we conclude that junior college vocational education "pays off" better than either post-secondary vocational education or secondary school vocational education.

However, as we have noted in Chapter VIII, the reader must be aware of the caveats. Not all programs in junior college vocational

education paid off. And a number of post-secondary vocational education programs also have some substantial benefits. Some of the programs with the highest benefits may also have the highest costs, and our inability to get detailed cost data by program area precludes an analysis of this factor.

We must bear in mind that students who complete their vocational education in high school, post-secondary vocational school or junior college have differing interests, intelligence and qualifications. Therefore, it does not follow that these three levels are always possible alternatives for any particular individual, or for society. The benefits derived by a vocational high school or post-high school graduate may not be comparable to those which he might derive from junior college simply because the latter alternative may not be open to him.

Many non-economic costs and benefits of a particular student's enrollment at the three school levels could not be measured here. However, our findings with regard to the option value of vocational education confirm the advantages of the junior college programs as compared with post-secondary schools. A much larger proportion of junior college graduates went on to further education, often to full-time four-year college, as compared with those at the post-secondary level. Thus, if a high value is also placed on flexibility with regard to career goals and the possibility of continued education for even those who may consider themselves to be in a terminal vocational program, then high marks must be given once again to vocational education at the junior college level.

Region and Urban-Rural Setting

It was generally found that the economic benefits of vocational and technical education are higher for graduates in the West, Northeast and South Central than they are for those who graduate in the South. The only possible exception to this is for those who graduate from Agricultural programs. Similarly, it has been found in most of the regression analyses that graduation from a vocational program located in an urban or suburban area results in better employment, wages and earnings than graduation in a rural area. Here, again, as might be expected, Agricultural programs proved to be an exception.

Demographic Characteristics

The study emphasizes the importance of sex in influencing the results of the vocational-technical education. Males had significantly higher employment, wages and earnings than females in almost all of the regression analyses conducted in the study. The superior labor market experience of males was especially notable at the post-secondary vocational school level, and in such programs as Trade and Industry and Technical. Moreover, males had a much higher probability of going on to further education than females in almost all of the program areas at the various school levels.

In spite of the clarity of this finding, there is uncertainty as to why it occurs. To some extent it may reflect discrimination on the basis of sex in vocational training and in job placement as well as in earnings. However, it may simply be that males and females look upon vocational education from different viewpoints. For females, enrolled primarily in Health and Office programs, vocational education may not

be viewed as the road to permanent and high-paying occupational careers. And females may view vocational programs more as a terminal experience than as a stepping-stone to further education opportunities. Regardless of the factors which explain the contrasting experience of males and females, however, it is important that vocational planners recognize this difference and make some accommodation for the differing roles that vocational education plays for men and women.

Older graduates enjoyed higher wages and earnings as did married graduates. These findings are in keeping with other analyses of labor market performance. There would appear to be some advantage in the labor market stemming from maturity. This finding would accord with those who say that vocational decisions should not be made too early in a student's life, and that procedures should be found for a more lengthy period of general education preceding a specific vocational choice.

The Relatedness of Jobs to Training

It was found that most of the post-high school and junior college graduates entered training-related jobs in their first full-time employment after graduation. On the other hand, only a little over one-fourth of the high school vocational graduates take their first job in the field of their training. There are notable differences by program area. For those who graduated from post-high school programs in Agriculture, almost one-third were farmers at the time of the survey, with the remainder being scattered in a variety of occupational categories. At the junior college level, less than one-fourth were farmers on the current job, and at the high school level, only 17.4 of the graduates of Agriculture programs were farmers at the time of the survey. For graduates in other

programs, it was found that very little change occurred between the first and the last job with regard to its relatedness to the field of training at the high school level. However, at the post-high school and junior college levels, there was a notable shift away from the field of training between the first and the last job; and this shift was especially notable at the junior college level. In almost all cases, Health program graduates tended to have the highest proportion of employment related to their field of training, as do graduates of Technical programs. However, there were very low proportions of graduates at the high school level in all programs whose last jobs were related to their field of training.

Regression analyses indicate that the school level, program area, socio-economic status of the job and male sex are the most important variables in explaining whether the job will be related to training or not.

Contrary to the views of a number of research investigators in the vocational education field, the relatedness of the job to the field of training appears to have no significance in influencing the level of employment, wages and earnings following graduation from a vocational program. In a number of instances, our regression analyses revealed a negative relationship between labor market performance and the relatedness of the job to training. It is clear that many students, at all school levels, were able to enjoy higher wages by moving out of their field of training when they entered the labor market.

If students have a tendency to abandon their field of training, to move progressively away from their field of training after their

first employment, and to suffer no economic loss because of this movement, then serious consideration must be given to the curricula in the vocational education programs. The findings support the view that general training in vocational skills is to be preferred to specific training, that clusters of job skills in vocational training are to be preferred to single job skills. The only contrary conclusion found in our study to this general proposition is the fact that the graduates' satisfactions appear to be influenced by the relatedness of their jobs to their fields of training. The probability of satisfaction was higher if graduates were working in the field for which they had received their skill preparation. However, this result may be more a reflection of the desire "to do what I was trained for" than any real dissatisfaction with the job. If this is true, then training in a broader spectrum or cluster of skills would result in job satisfaction when the employee obtained a job lying within that spectrum or cluster.

The Importance of Program Area

Vocational education has been dominated by the categorical program areas. The allocation of federal funds, the construction of curricula, the organization of data and many other aspects of research have been geared to the traditional program areas. This research project began with the traditional assumption that no meaningful analysis could be made of the effectiveness of a vocational and technical education without analysis dominated by program areas. The sample selection and research methodology were based on this premise.

The research findings support the view that program areas are of some importance in the labor market experience and the post-vocational educational experience of graduates. However, findings lead to the view

that program area is not as important as tradition would have one believe. Although enrollment in Health and Technical programs appears to be of considerable significance in post-graduation labor market experience when the total sample was analyzed, the separate regressions by school level and other factors revealed that program area, in itself, was not as significant as other variables. At the high school level especially, the particular program area was of little significance in the student's post-graduation employment and earnings. At the post-secondary level, program areas which seemed to "pay off" well at the junior level or the high school level, were not necessarily more beneficial than enrollment in other areas.

At any rate, the research indicates that the value of enrollment in a particular vocational or technical program depends upon the environmental setting and a number of other related factors. For example, those who wish to gain the highest wages and earnings from enrollment in a Trade and Industry program would appear to do well to enter a post-secondary vocational school. Those who wish to benefit from a Health program would be advised to enroll in a junior college.

When the limited significance of particular program areas for labor market experience is linked to the findings on the relatedness of jobs to training, the conclusions concerning required flexibility in vocational education are given further emphasis.

Some Additional Program Implications

The findings of this national follow-up of vocational and technical graduates confirm some views that have been increasingly expressed by experts in the field. The most beneficial vocational

training for the individual and for society does not appear to be one with a narrow occupational focus. Employment and earnings are not significantly enhanced by selecting a particular program area and by insisting on taking and keeping a job in that specific field of training. The contrary appears to be the case.

These findings should give further impetus to the incipient movement away from training in narrow skills in the vocational and technical schools. The training should be generalized, especially at the high school level, and preparation for a broad range of skills should take the place of narrow occupational training.

The research indicates that choice of school level, that is, high school, post-secondary vocational school or junior college, may be a more important decision from the standpoint of labor market benefits and from the standpoint of future education. Certainly, if a student has the ability to enter a junior college for his vocational education, especially in such fields as Health or Technical areas, he would be well advised to do so. His employment, wages and earnings are likely to be higher when he graduates, and the probabilities that he will go on to further education are also enhanced.

The research indicates that the notion that vocational education is designed to prepare people for entry into the world of work is only a half-truth. Roughly half of the high school vocational graduates and over half of the junior college vocational graduates went on to additional education after their vocational graduation. It appears that only for those in post-secondary vocational schools is vocational education a terminal education. This finding, too, calls for flexibility in the

vocational program, especially for a closer tie to academic instruction.

Thus, the advantages that appear to lie in vocational education at the junior college level may simply be a reflection of other characteristics of junior college vocational education in a number of program areas. If post-secondary vocational schools were to broaden their curricula, generalizing the skill training and introducing a wider variety of academic subjects, it is likely that their graduates might enjoy the same labor market benefits and educational options as those enjoyed by junior college vocational graduates. The recent movement of a number of area post-secondary vocational schools to become technical colleges would appear to be a move in this direction.

At the high school vocational level, too, the adoption of characteristics which are similar to those experienced at the junior college level would enhance the labor market success and the future educational advancement of its graduates. Narrow and specific vocational training appears to have no useful role at this level. And given the sizable proportion of vocational graduates who go on to further education, a close tie between broad skill training and academic instruction is clearly in order.

APPENDIX TABLE 1

USEABLE RETURNS FOR REGRESSION ANALYSIS IN MAIL AND TELEPHONE INTERVIEWS, BY SCHOOL LEVEL AND PROGRAM

A. Post-High School Graduates

| Program | Useable Returns | | Per Cent of Total | |
|---|---|---|---|---|
| | Mail | Telephone | Mail | Telephone |
| Trade and Industry | 195 | 9 | 18 | 18 |
| Distributive | 47 | 13 | 4 | 27 |
| Health | 257 | 5 | 23 | 10 |
| Agriculture | 37 | 2 | 3 | 4 |
| Technical | 281 | 10 | 26 | 20 |
| Office | 282 | 10 | 26 | 20 |
| Total | 1099 | 49 | 100 | 100 |

B. High School Vocational Graduates

| | Useable Returns | | Per Cent of Total | |
|---|---|---|---|---|
| | Mail | Telephone | Mail | Telephone |
| Trade and Industry | 308 | 9 | 30 | 19 |
| Distributive | 117 | 6 | 12 | 13 |
| Health | 16 | 6 | 2 | 13 |
| Agriculture | 86 | 8 | 8 | 17 |
| Technical | 83 | 8 | 8 | 17 |
| Office | 406 | 10 | 40 | 22 |
| Total | 1016 | 47 | 100 | 100 |

C. Junior College Graduates

| | Useable Returns | | Per Cent of Total | |
|---|---|---|---|---|
| | Mail | Telephone | Mail | Telephone |
| Trade and Industry | 71 | 6 | 10 | 15 |
| Distributive | 89 | 10 | 13 | 25 |
| Health | 185 | 10 | 27 | 25 |
| Agriculture | 96 | 2 | 14 | 5 |
| Technical | 136 | 6 | 20 | 15 |
| Office | 99 | 6 | 15 | 15 |
| Total | 676 | 40 | 100 | 100 |

APPENDIX TABLE 2

NUMBER OF OBSERVATIONS IN VARIABLE CELLS IN REGRESSION ANALYSIS

A. TOTAL - 1,524

B. SCHOOL LEVEL

| | |
|---|---|
| Post-High School | 701 |
| Junior College | 295 |
| High School | 528 |

C. REGION

| | |
|---|---|
| West | 401 |
| Northeast | 274 |
| North Central | 501 |
| South | 348 |

D. PROGRAM

| | |
|---|---|
| Trade and Industry | 300 |
| Distributive | 88 |
| Health | 197 |
| Agriculture | 82 |
| Technical | 362 |
| Office | 495 |

E. SEX

| | |
|---|---|
| Male | 823 |
| Female | 701 |

F. MARITAL STATUS

| | |
|---|---|
| Married | 818 |
| Single | 647 |
| Other | 59 |

G. RACE

| | |
|---|---|
| Non-white | 124 |
| White | 1,400 |

H. SETTING

| | |
|---|---|
| Rural | 349 |
| Medium | 554 |
| Large | 298 |
| Very Large | 11 |
| Suburb | 212 |

I. LEVEL - REGION

| | West | Northeast | North Central | South | Total |
|---|---|---|---|---|---|
| Post-High School | 124 | 77 | 310 | 190 | 701 |
| Junior College | 158 | 43 | 74 | 20 | 295 |
| High School | 119 | 154 | 117 | 138 | 528 |
| Total | 401 | 274 | 501 | 348 | 1528 |

APPENDIX TABLE 2 (continued)



J. LEVEL - PROGRAM

| | Trade and Industry | Distributive | Health | Agriculture | Technical | Office | Total |
|---|---|---|---|---|---|---|---|
| Post-High School | 137 | 43 | 116 | 4 | 200 | 201 | 701 |
| Junior College | 21 | 13 | 71 | 25 | 102 | 63 | 295 |
| High School | 142 | 32 | 10 | 53 | 60 | 231 | 528 |
| Total | 300 | 88 | 197 | 82 | 362 | 495 | 1528 |

K. LEVEL - SEX

| | Male | Female | Total |
|---|---|---|---|
| Post-High School | 391 | 310 | 701 |
| Junior College | 174 | 121 | 295 |
| High School | 258 | 270 | 528 |
| Total | 823 | 701 | 1528 |

L. LEVEL - MARITAL STATUS

| | Married | Single | Other | Total |
|---|---|---|---|---|
| Post-High School | 400 | 280 | 21 | 701 |
| Junior College | 176 | 102 | 17 | 295 |
| High School | 242 | 265 | 21 | 528 |
| Total | 818 | 647 | 59 | 1524 |

M. LEVEL - RACE

| | Non-white | White | Total |
|---|---|---|---|
| Post-High School | 59 | 642 | 701 |
| Junior College | 32 | 263 | 295 |
| High School | 33 | 495 | 528 |
| Total | 124 | 1400 | 1524 |

N. LEVEL - SETTING

| | Rural | Medium | Large | Very Large | Suburb | Total |
|---|---|---|---|---|---|---|
| Post-High School | 193 | 298 | 178 | 0 | 32 | 701 |
| Junior College | 43 | 85 | 17 | 91 | 59 | 295 |
| High School | 113 | 171 | 103 | 20 | 121 | 528 |
| Total | 349 | 554 | 298 | 111 | 212 | 1524 |

O. REGION - PROGRAM

| | Trade and Industry | Distributive | Health | Agriculture | Technical | Office | Tota |
|---|---|---|---|---|---|---|---|
| West | 34 | 15 | 77 | 17 | 145 | 113 | 401 |
| Northeast | 48 | 39 | 26 | 14 | 55 | 92 | 274 |
| North Central | 144 | 14 | 24 | 42 | 79 | 198 | 501 |
| South | 74 | 20 | 70 | 9 | 83 | 92 | 348 |
| Total | 300 | 88 | 197 | 82 | 362 | 495 | 1524 |

P. REGION - SEX

| | Male | Female | Total |
|---|---|---|---|
| West | 199 | 202 | 401 |
| Northeast | 146 | 128 | 274 |
| North Central | 316 | 185 | 401 |
| South | 162 | 186 | 348 |
| Total | 823 | 701 | 1520 |

Q. REGION - MARITAL STATUS

| | Married | Single | Other | Total |
|---|---|---|---|---|
| West | 240 | 140 | 21 | 401 |
| Northeast | 107 | 151 | 16 | 274 |
| North Central | 262 | 228 | 11 | 501 |
| South | 209 | 128 | 11 | 348 |
| Total | 818 | 647 | 59 | 1524 |

APPENDIX TABLE 2 (continued)



R. REGION - RACE

| | Non-white | White | Other |
|---|---|---|---|
| West | 56 | 345 | 401 |
| Northeast | 9 | 265 | 274 |
| North Central | 19 | 482 | 501 |
| South | 40 | 308 | 348 |
| Total | 124 | 1400 | 1524 |

S. REGION - SETTING

| | Rural | Medium | Large | Very Large | Suburb | Total |
|---|---|---|---|---|---|---|
| West | 44 | 122 | 95 | 48 | 92 | 401 |
| Northeast | 37 | 166 | 34 | 0 | 37 | 274 |
| North Central | 214 | 169 | 65 | 44 | 9 | 501 |
| South | 54 | 97 | 104 | 19 | 74 | 348 |
| Total | 349 | 554 | 298 | 111 | 212 | 1524 |

T. PROGRAM - SEX

| | Trade and Industry | Distributive | Health | Agriculture | Technical | Office | Total |
|---|---|---|---|---|---|---|---|
| Male | 268 | 51 | 3 | 82 | 337 | 82 | 823 |
| Female | 32 | 37 | 194 | 0 | 25 | 413 | 701 |
| Total | 300 | 88 | 197 | 82 | 362 | 495 | 1524 |

U. PROGRAM - MARITAL STATUS

| | Trade and Industry | Distributive | Health | Agriculture | Technical | Office | Total |
|---|---|---|---|---|---|---|---|
| Married | 141 | 43 | 133 | 51 | 194 | 256 | 818 |
| Single | 153 | 43 | 39 | 28 | 163 | 221 | 647 |
| Other | 6 | 2 | 25 | 3 | 5 | 18 | 59 |
| Total | 300 | 88 | 197 | 82 | 362 | 495 | 1524 |

V. PROGRAM - RACE

| | Trade and Industry | Distributive | Health | Agriculture | Technical | Office | Total |
|---|---|---|---|---|---|---|---|
| Non-white | 53 | 3 | 28 | 1 | 27 | 12 | 124 |
| White | 247 | 85 | 169 | 81 | 335 | 483 | 1400 |
| Total | 300 | 88 | 197 | 82 | 362 | 495 | 1524 |

W. PROGRAM - SETTING

| | Trade and Industry | Distributive | Health | Agriculture | Technical | Office | Tota |
|---|---|---|---|---|---|---|---|
| Rural | 73 | 12 | 9 | 58 | 59 | 138 | 349 |
| Medium | 119 | 50 | 85 | 19 | 90 | 191 | 554 |
| Large | 71 | 11 | 92 | 4 | 94 | 26 | 298 |
| Very Large | 15 | 5 | 2 | 0 | 45 | 44 | 111 |
| Suburb | 22 | 10 | 9 | 1 | 74 | 96 | 212 |
| Total | 300 | 88 | 197 | 82 | 362 | 495 | 1524 |

X. SEX - MARITAL STATUS

| | Married | Single | Other | Total |
|---|---|---|---|---|
| Male | 418 | 389 | 16 | 823 |
| Female | 400 | 258 | 43 | 701 |
| Total | 818 | 647 | 59 | 1524 |

Y. SEX - SETTING

| | Rural | Medium | Large | Very Large | Suburb | Total |
|---|---|---|---|---|---|---|
| Male | 210 | 265 | 164 | 86 | 98 | 823 |
| Female | 139 | 289 | 134 | 25 | 114 | 701 |
| Total | 349 | 554 | 298 | 111 | 212 | 1524 |

Z. RACE - SETTING

| | Rural | Medium | Large | Very Large | Suburb | Total |
|---|---|---|---|---|---|---|
| Non-white | 7 | 49 | 35 | 28 | 5 | 124 |
| White | 342 | 505 | 263 | 83 | 207 | 1400 |
| Total | 349 | 554 | 298 | 111 | 212 | 1524 |

APPENDIX TABLE 3

FATHER'S EDUCATION, BY STUDENT'S HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size | Years of Father's Education (per cent of students) 0-8 | 9-11 | 12 | 13+ | Total[a] |
|---|---|---|---|---|---|---|
| TRADE AND INDUSTRY | 400 | 35.3 | 29.5 | 26.3 | 9.0 | 100 |
| DISTRIBUTIVE | 182 | 26.9 | 18.7 | 36.[illegible] | 17.6 | 100 |
| HEALTH | 23 | 17.4 | 30.4 | 39.1 | 13.0 | 100 |
| AGRICULTURE | 184 | 44.6 | 18.5 | 29.4 | 7.6 | 100 |
| TECHNICAL | 131 | 19.9 | 27.5 | [illegible] | [illegible] | 100 |
| OFFICE | 533 | 26.5 | 22.7 | 37.5 | 13.3 | 100 |

[a] Percentages may not equal 100 due to rounding.

$x^2 = 56.7$ (df = 15)
significant at .001 level

APPENDIX TABLE 4

FATHER'S EDUCATION, BY STUDENT'S POST HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size | Years of Father's Education (per cent of students) 0-8 | 9-11 | 12 | 13+ | Total[a] |
|---|---|---|---|---|---|---|
| TRADE AND INDUSTRY | 304 | 51.0 | 12.2 | 23.7 | 13.2 | 100 |
| DISTRIBUTIVE | 87 | 18.4 | 8.1 | 43.7 | 29.9 | 100 |
| HEALTH | 317 | 40.7 | 17.4 | 24.3 | 17.7 | 100 |
| AGRICULTURE | 53 | 13.2 | 17.0 | 47.[illegible] | 22.6 | 100 |
| TECHNICAL | 346 | 28.9 | 11.9 | 41.[illegible] | 17.3 | 100 |
| OFFICE | 350 | 46.0 | 16.3 | 26.9 | 10.9 | 100 |

[a] Percentages may not equal 100 due to rounding.

$x^2 = 106.0$ (df = 15)
significant at .001 level

APPENDIX

TABLE 5

FATHER'S EDUCATIONAL SOCIO-ECONOMIC INDEX BY JUNIOR COLLEGE PROGRAM
(In Percentages)

| | | Father's Education | | | | | Father's Socio-economic Status | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Program | Sample Size | Less Than 9th Grade | 9-12 Grade (Incl. H.S. Grad.) | More Than High School | Total | Sample Size | Less Than 30 | 30-49 | Over 50 | Total |
| TRADE & INDUSTRY | 130 | 32.3 | 51.5 | 16.2 | 100.0 | 120 | [illegible] | [illegible].7 | 25.0 | 100.0 |
| DISTRIBUTIVE | 184 | 20.1 | 60.3 | 19.6 | 100.0 | 175 | 25.1 | 41.2 | 33.7 | 100.0 |
| HEALTH | 237 | 30.4 | 46.0 | 23.6 | 100.0 | 216 | 47.2 | 28.3 | 24.5 | 100.0 |
| AGRICULTURAL | 270 | 28.5 | 47.8 | 23.7 | 100.0 | 260 | 66.1 | 15.4 | 18.5 | 100.0 |
| TECHNICAL | 234 | 25.6 | 41.9 | 32.5 | 100.0 | 220 | 32.3 | 28.2 | 39.5 | 100.0 |
| OFFICE | 133 | 32.3 | 50.4 | 17.3 | 100.0 | 128 | 40.6 | 32.8 | 26.6 | 100.0 |

APPENDIX TABLE 6

SOCIO-ECONOMIC INDEX OF FATHER'S OCCUPATION, BY STUDENT'S HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size | Socio-Economic Index (per cent of students) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Less than 30 | 30-39 | 40-49 | 50-59 | 60+ | Total[a] |
| TRADE AND INDUSTRY | 327 | 58.4 | 12.2 | 13.2 | 5.2 | 11.0 | 100 |
| DISTRIBUTIVE | 158 | 42.4 | 10.1 | 19.0 | 7.0 | 21.5 | 100 |
| HEALTH | 21 | 57.1 | 0 | 23.8 | 0 | 19.1 | 100 |
| AGRICULTURE | 169 | 74.0 | 8.9 | 9.5 | 2.4 | 5.3 | 100 |
| TECHNICAL | 116 | 44.8 | 6.9 | 20.7 | 13.3 | [illegible] | 100 |
| OFFICE | 489 | 43.4 | 11.9 | 23.1 | 7.0 | 14.7 | 100 |

[a] Percentages may not equal 100 due to rounding.

APPENDIX TABLE 7

SOCIO-ECONOMIC INDEX OF FATHER'S OCCUPATION, BY STUDENT'S POST HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size | Socio-Economic Index (per cent of students) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Less than 30 | 30-39 | 40-49 | 50-59 | 60+ | Total[a] |
| TRADE AND INDUSTRY | 279 | 68.5 | 7.2 | 12.2 | 2.5 | 9.7 | 100 |
| DISTRIBUTIVE | 81 | 17.3 | 21.0 | 13.6 | 12.4 | 35.8 | 100 |
| HEALTH | 272 | 51.1 | 9.2 | 12.1 | 8.5 | 19.1 | 100 |
| AGRICULTURE | 50 | 78.0 | 2.0 | 6.0 | 4.0 | 10.0 | 100 |
| TECHNICAL | 316 | 54.8 | 9.5 | 12.3 | 6.0 | 17.4 | 100 |
| OFFICE | 316 | 65.8 | 7.0 | 14.2 | 2.9 | 10.1 | 100 |

[a] Percentages may not equal 100 due to rounding.

APPENDIX TABLE 8

OCCUPATION OF EMPLOYED MOTHERS, BY STUDENT'S HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size* | Occupation of Mother (per cent of students) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Professional | Manager | Clerical | Sales | Skilled and semi-skilled | Service | Unskilled | Total[a] |
| TRADE AND INDUSTRY | 156 | 10.3 | 5.1 | 18.0 | 5.1 | 27.6 | 30.1 | 3.9 | 100 |
| DISTRIBUTIVE | 75 | 8.0 | 9.3 | 33.3 | 12.0 | 16.0 | 17.3 | 4.0 | 100 |
| HEALTH | 6 | 16.7 | 16.7 | 0 | 0 | 66.7 | 0 | 0 | 100 |
| AGRICULTURE | 44 | 25.0 | 4.6 | 27.3 | 2.3 | 20.5 | 20.5 | 0 | 100 |
| TECHNICAL | 48 | 16.7 | 6.3 | 31.3 | 4.2 | 14.6 | 27.1 | 0 | 100 |
| OFFICE | 219 | 7.8 | 8.7 | 37.0 | 9.1 | 22.8 | 13.2 | 1.4 | 100 |

*58 per cent of the mothers were not working and were therefore excluded from this table.

[a]Percentages may not equal 100 due to rounding.

APPENDIX TABLE 9

OCCUPATION OF EMPLOYED MOTHERS, BY STUDENT'S POST HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size* | Occupation of Mother (per cent of students) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Professional | Manager | Clerical | Sales | Skilled and semi-skilled | Service | Unskilled | Total[a] |
| TRADE AND INDUSTRY | 82 | 19.5 | 9.8 | 13.4 | 2.4 | 12.2 | 32.9 | 9.8 | 100 |
| DISTRIBUTIVE | 42 | 26.2 | 9.5 | 42.9 | 7.1 | 9.5 | 4.8 | 0 | 100 |
| HEALTH | 85 | 20.0 | 7.1 | 17.7 | 11.8 | 11.8 | 24.7 | 7.1 | 100 |
| AGRICULTURE | 12 | 33.3 | 0 | 41.7 | 0 | 8.3 | 16.7 | 0 | 100 |
| TECHNICAL | 105 | 20.0 | 5.7 | 20.0 | 14.3 | 16.2 | 17.1 | 6.7 | 100 |
| OFFICE | 118 | 15.3 | 5.1 | 21.2 | 9.3 | 11.0 | 32.2 | 5.9 | 100 |

* 67 per cent of the mothers were not working and were therefore excluded from this table.

[a] Percentages may not equal 100 due to rounding.

APPENDIX TABLE 10

SOCIO-ECONOMIC INDEX OF MOTHER'S OCCUPATION, BY STUDENT'S HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size* | Socio-Economic Index (per cent of students) Less than 30 | 30-39 | 40-49 | 50-59 | 60+ | Total[a] |
|---|---|---|---|---|---|---|---|
| TRADE AND INDUSTRY | 156 | 61.0 | 5.0 | 10.7 | 3.1 | 20.1 | 100 |
| DISTRIBUTIVE | 75 | 32.9 | 7.9 | 27.6 | 10.5 | 21.1 | 100 |
| HEALTH | 6 | 66.7 | 0 | 0 | 16.7 | 16.7 | 100 |
| AGRICULTURE | 44 | 37.0 | 6.5 | 17.4 | 10.9 | 28.3 | 100 |
| TECHNICAL | 48 | 43.8 | 2.1 | 25.0 | 4.2 | 25.0 | 100 |
| OFFICE | 219 | 34.5 | 7.5 | 25.7 | 7.5 | 24.8 | 100 |

* 67 per cent of the mothers were not working and were therefore excluded from this table.

[a] Percentages may not equal 100 due to rounding.

APPENDIX TABLE 11

SOCIO-ECONOMIC INDEX OF MOTHER'S OCCUPATION, BY STUDENT'S POST HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size* | Socio-Economic Index (per cent of students) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Less than 30 | 30-39 | 40-49 | 50-59 | 60+ | Total[a] |
| TRADE AND INDUSTRY | 82 | 54.8 | 4.8 | 16.7 | 3.6 | 20.2 | 100 |
| DISTRIBUTIVE | 42 | 14.3 | 4.8 | 21.4 | 9.5 | 50.0 | 100 |
| HEALTH | 85 | 40.0 | 12.9 | 15.3 | 8.2 | 23.5 | 100 |
| AGRICULTURE | 12 | 18.2 | 0 | 18.2 | 9.1 | 54.6 | 100 |
| TECHNICAL | 105 | 37.6 | 7.3 | 28.4 | 1.8 | 24.8 | 100 |
| OFFICE | 118 | 44.2 | 7.5 | 14.2 | 6.7 | 27.5 | 100 |

* 67 per cent of the mothers were not working and were therefore excluded from this table.

[a] Percentages may not equal 100 due to rounding.

APPENDIX TABLE 12

LENGTH OF TIME NEEDED TO OBTAIN FIRST JOB AFTER GRADUATION, BY HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size | Time (in percentages) | | | |
|---|---|---|---|---|---|
| | | None[1] | 3 weeks or less | One month or more | Total[a] |
| TRADE AND INDUSTRY | 356 | 35.7 | 35.7 | 28.7 | 100 |
| DISTRIBUTIVE | 144 | 37.5 | 27.8 | 34.7 | 100 |
| HEALTH | 24 | 12.5 | 25.0 | 62.5 | 100 |
| AGRICULTURE | 119 | 27.7 | 35.3 | 37.0 | 100 |
| TECHNICAL | 102 | 16.7 | 30.4 | 52.9 | 100 |
| OFFICE | 476 | 16.8 | 26.3 | 56.9 | 100 |

[a]Percentages may not equal 100 due to rounding.

[1]Students had job lined up before graduation.

$x^2 = 93.83$ (df = 10)
significant at .001 level

APPENDIX TABLE 13

LENGTH OF TIME NEEDED TO OBTAIN FIRST JOB AFTER GRADUATION, BY POST HIGH SCHOOL VOCATIONAL PROGRAM

| Program | Sample size | Time (in percentages) | | | |
|---|---|---|---|---|---|
| | | None[1] | 3 weeks or less | One month or more | Total[a] |
| TRADE AND INDUSTRY | 256 | 34.4 | 46.1 | 19.5 | 100 |
| DISTRIBUTIVE | 73 | 21.9 | 45.2 | 32.9 | 100 |
| HEALTH | 305 | 33.8 | 56.1 | 10.2 | 100 |
| AGRICULTURE | 48 | 37.5 | 52.1 | 10.4 | 100 |
| TECHNICAL | 318 | 40.9 | 43.4 | 15.7 | 100 |
| OFFICE | 324 | 20.4 | 41.7 | 38.0 | 100 |

[a]Percentages may not equal 100 due to rounding.

[1]Students had job lined up before graduation.

$x^2 = 105.77$ (df = 10)
significant at .001 level

APPENDIX TABLE 14

LENGTH OF TIME NEEDED TO OBTAIN FIRST FULL-TIME JOB AFTER GRADUATION, BY JUNIOR COLLEGE PROGRAM

| Program | Sample Size | Time (percentages) None* | 3 Weeks or Less | 1 Month or More | Total |
|---|---|---|---|---|---|
| TRADE & INDUSTRY | 105 | 49.5 | 25.7 | 24.8 | 100 |
| DISTRIBUTIVE ED. | 122 | 40.2 | 31.1 | 28.7 | 100 |
| HEALTH | 246 | 58.9 | 24.0 | 17.1 | 100 |
| AGRICULTURE | 132 | 65.2 | 12.1 | 22.7 | 100 |
| TECHNICAL | 175 | 63.4 | 16.6 | 20.0 | 100 |
| OFFICE | 113 | 39.8 | 23.9 | 36.3 | 100 |

*Includes those who had located a job prior to graduation and those who remained with their pre-graduation employer.

APPENDIX TABLE 15

JUNIOR COLLEGE RESPONDENTS EMPLOYED BY SAME EMPLOYER BEFORE AND AFTER GRADUATION, BY PROGRAM
(In percentages)

| Program | Sample Size | With Same Employer Yes | No | Total |
|---|---|---|---|---|
| TRADE & INDUSTRY | 105 | 21.0 | 79.0 | 100 |
| DISTRIBUTIVE ED. | 116 | 26.7 | 73.3 | 100 |
| HEALTH | 244 | 33.2 | 66.8 | 100 |
| AGRICULTURE | 133 | 43.6 | 56.4 | 100 |
| TECHNICAL | 180 | 42.8 | 57.2 | 100 |
| OFFICE | 113 | 19.5 | 80.5 | 100 |

APPENDIX TABLE 16

FACTORS AFFECTING RELATEDNESS OF FIRST JOB TO TRAINING TOTAL SAMPLE



Dependent Variable: Relatedness of First Job to Training

| Independent Variables | Partial Regression Coefficient | Standard Error | Partial Correlation Coefficient |
|---|---|---|---|
| LEVEL - High School@ | | | |
| Post High School | .203** | .024 | .210 |
| Junior College | .116** | .032 | .093 |
| REGION - South@ | | | |
| West | .030 | .027 | .029 |
| Northeast | .100** | .030 | .086 |
| North Central | .028 | .026 | .028 |
| PROGRAM AREA - Office@ | | | |
| Trade and Industry | .139** | .035 | .101 |
| Distributive | .0008 | .042 | .000 |
| Health | .166** | .038 | .112 |
| Agriculture | .133** | .051 | .067 |
| Technical | .059 | .033 | .045 |
| SES | .003** | .0005 | .158 |
| FATHER'S EDUCATION | .002 | .003 | .015 |
| SEX - Female@ | | | |
| Male | -.083** | .029 | -.072 |
| AGE | .0003 | .002 | .004 |
| MARITAL STATUS - Single@ | | | |
| Married | -.0008 | .019 | -.001 |
| Other | .060 | .049 | .032 |
| RACE - White@ | | | |
| Non-white | -.116** | .034 | -.087 |
| SETTING - Rural@ | | | |
| Medium | -.044 | .025 | -.045 |
| Large | -.002 | .031 | -.002 |
| Very Large | .089* | .045 | .051 |
| Suburb | .013 | .034 | .010 |
| GPA | .029* | .014 | .054 |

| | | | |
|---|---|---|---|
| $R^2$ | .1302 | Number of Observations | 1524 |
| F-Ratio | 10.21** | Constant | .434 |

Notes:
* Significant at the .05 level; ** Significant at the .01 level
@ Base variable against which the others are compared. Its value is entered into the constant.

APPENDIX TABLE 17

FACTORS AFFECTING RELATEDNESS OF LAST OR CURRENT JOB TO TRAINING--TOTAL SAMPLE



Dependent Variable: Relatedness of Last or Current Job to Training

| Independent Variables | Partial Regression Coefficient | Standard Error | Partial Correlation Coefficient |
|---|---|---|---|
| LEVEL - High School@ | | | |
| Post High School | .179** | .025 | .182 |
| Junior College | .120** | .032 | .095 |
| REGION - South@ | | | |
| West | .014 | .027 | .014 |
| Northeast | .062* | .030 | .052 |
| North Central | .016 | .027 | .015 |
| PROGRAM AREA - Office@ | | | |
| Trade and Industry | .063 | .036 | .045 |
| Distributive | -.033 | .043 | -.020 |
| Health | .169** | .039 | .111 |
| Agriculture | -.065 | .052 | -.032 |
| Technical | .031 | .034 | .023 |
| SES | .004 | .0005 | .198 |
| FATHER'S EDUCATION | .005 | .003 | .041 |
| SEX - Female@ | | | |
| Male | -.040 | .030 | -.035 |
| AGE | .001 | .002 | .014 |
| MARITAL STATUS - Single@ | | | |
| Married | -.014 | .019 | -.019 |
| Other | .014 | .050 | .007 |
| RACE - White@ | | | |
| Non-white | -.086* | .035 | -.063 |
| SETTING - Rural@ | | | |
| Medium | -.046 | .026 | -.046 |
| Large | -.046 | .031 | -.038 |
| Very Large | .048 | .046 | .027 |
| Suburb | .012 | .035 | .009 |
| GPA | .047** | .014 | .087 |

| | | | |
|---|---|---|---|
| $R^2$ | .1599 | Number of Observations | 1524 |
| F-Ratio | 12.98** | Constant | .334 |

Notes:

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

APPENDIX TABLE 18



FACTORS INFLUENCING WAGE ON FIRST JOB -- TOTAL SAMPLE

Dependent Variable: Wage Per Hour On First Job

| Independent Variables | Partial Regression Coefficient | Standard Error | Partial Correlation Coefficient |
|---|---|---|---|
| LEVEL - High School@ | | | |
| Post-High School | .054 | .047 | .030 |
| Junior College | .207** | .055 | .096 |
| REGION - South@ | | | |
| West | .216** | .046 | .120 |
| Northeast | .238** | .052 | .117 |
| North Central | .282** | .046 | .158 |
| PROGRAM AREA - Office@ | | | |
| Trade and Industry | -.004 | .06 | -.002 |
| Distributive | .028 | .073 | .010 |
| Health | .187** | .067 | .072 |
| Agriculture | -.057 | .089 | -.017 |
| Technical | .144* | .058 | .064 |
| SES | .005** | .001 | .137 |
| RELATEDNESS: JOB TO TRAINING | -.049 | .046 | -.028 |
| FATHER'S EDUCATION | .004 | .005 | .021 |
| SEX - Female@ | | | |
| Male | .562** | .051 | .272 |
| AGE | .012** | .003 | .090 |
| MARITAL STATUS - Single@ | | | |
| Married | .075* | .032 | .060 |
| Other | .173* | .084 | .053 |
| RACE - White@ | | | |
| Non-white | .027 | .050 | .012 |
| ADDED EDUCATION | .052 | .038 | .035 |
| SETTING - Rural@ | | | |
| Medium | .077 | .043 | .046 |
| Large | .044 | .053 | .021 |
| Very Large | .078 | .077 | .026 |
| Suburb | .174** | .059 | .077 |
| GPA | .061** | .024 | .067 |

| | | | |
|---|---|---|---|
| $R^2$ | .2830 | Number of Observations | 1524 |
| F-Ratio | 24.65** | Constant | .584 |

Notes:

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

APPENDIX TABLE 19

FACTORS INFLUENCING WAGE ON FIRST JOB, BY SEX

Dependent Variable: Wage Per Hour On First Job

| Independent Variables | Female b | Female s | Male b | Male s | Total Sample b | Total Sample s |
|---|---|---|---|---|---|---|
| LEVEL - High School@ | | | | | | |
| Post-High School Grad. | -.01 | .05 | .14 | .08 | .05 | .05 |
| Junior College Grad. | .25** | .07 | .17 | .09 | .21** | .06 |
| REGION - South@ | | | | | | |
| West | .14** | .05 | .29** | .08 | .22** | .05 |
| Northeast | .16** | .06 | .29** | .08 | .24** | .05 |
| North Central | .05 | .06 | .46** | .07 | .28** | .05 |
| PROGRAM AREA - Office@ | | | | | | |
| Trade and Industry | -.15 | .10 | .15 | .10 | -.004 | .06 |
| Distributive | -.11 | .08 | .26* | .13 | .03 | .07 |
| Health | .14* | .07 | .18 | .40 | .19** | .07 |
| Agriculture | no responses | | .14 | .12 | -.06 | .09 |
| Technical | -.08 | .10 | .31** | .09 | .14* | .06 |
| SES | .004* | .001 | .005** | .001 | .005** | .00 |
| RELATEDNESS: JOB TO TRAINING | -.009 | .06 | -.08 | .07 | -.05 | .05 |
| FATHER'S EDUCATION | .12 | .007 | .007 | .008 | .004 | .00 |
| AGE | .009** | .003 | .02** | .007 | .01** | .00 |
| MARITAL STATUS - Single@ | | | | | | |
| Married | .009 | .04 | .09 | .05 | .08* | .03 |
| Other | .089 | .08 | .33* | .17 | .17* | .08 |
| RACE - White@ | | | | | | |
| Non-white | .08 | .08 | -.009 | .09 | .03 | .06 |
| ADDED EDUCATION | .009 | .044 | .08 | .060 | .05 | .04 |
| SETTING - Rural@ | | | | | | |
| Medium | .09 | .05 | .10 | .07 | .08 | .04 |
| Large | .01 | .07 | .10 | .08 | .04 | .05 |
| Very Large | .19 | .11 | .18 | .12 | .08 | .08 |
| Suburb | .13* | .06 | .28** | .10 | .17** | .06 |
| GPA | .06* | .03 | .03 | .04 | .06** | .02 |
| $R^2$ | .1883 | | .1770 | | .2830 | |
| Number of Observations | 701 | | 823 | | 1524 | |

Notes:

b Partial regression coefficient

s Standard error

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

APPENDIX TABLE 20

FACTORS INFLUENCING WAGE ON FIRST JOB, BY SCHOOL LEVEL

Dependent Variable: Wage Per Hour on First Job

| Independent Variables | Post High School | | Junior College | | High School Vocational | | Total Sample | |
|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s |
| STATUS - Dropout@ | | | | | | | | |
| Graduate | .089 | .124 | -.072 | .146 | .056 | .049 | -.0002 | .07 |
| REGION - South@ | | | | | | | | |
| West | .089 | .071 | .372* | .167 | .356** | .067 | .26* | .04 |
| Northeast | .368 | .110 | .592** | .186 | .028 | .073 | .23** | .05 |
| North Central | .304 | .073 | .722** | .200 | .134 | .082 | .30** | .04 |
| PROGRAM AREA - Office@ | | | | | | | | |
| Trade and Industry | .261 | .100 | .129 | .201 | .090 | .100 | .02 | .05 |
| Distributive | .269 | .127 | .228 | .209 | -.208 | .108 | .05 | .07 |
| Health | .151 | .092 | .430** | .149 | -.043 | .189 | .25** | .06 |
| Agriculture | -.008 | .305 | -.015 | .173 | .013 | .125 | .001 | .08 |
| Technical | .332 | .098 | .133 | .152 | .126 | .104 | .18** | .06 |
| SES | .005 | .002 | .003 | .002 | .004* | .002 | .005** | .001 |
| RELATEDNESS: JOB TO TRAINING | -.029 | .086 | -.022 | .114 | .017 | .057 | -.02 | .04 |
| FATHER'S EDUCATION | -.006 | .008 | .004 | .012 | .011 | .009 | .006 | .005 |
| SEX - Female@ | | | | | | | | |
| Male | .442 | .870 | .624** | .108 | .382** | .079 | .57** | .05 |
| AGE | .010 | .004 | -.014* | .007 | + | | .01** | .003 |
| MARITAL STATUS - Single@ | | | | | | | | |
| Married | .066 | .047 | .089 | .074 | .019 | .052 | .07* | .03 |
| Other | -.060 | .142 | .324 | .175 | .147 | .132 | .17* | .08 |

APPENDIX TABLE 20 (continued)

| Independent Variables | Post High School b | Post High School s | Junior College b | Junior College s | High School Vocational b | High School Vocational s | Total Sample b | Total Sample s |
|---|---|---|---|---|---|---|---|---|
| RACE - White@ | | | | | | | | |
| Non-white | .033 | .083 | .181 | .123 | -.072 | .120 | -.002 | .05 |
| ADDED EDUCATION | -.010 | .081 | -.056 | .073 | .095 | .054 | .05 | .03 |
| SETTING - Rural@ | | | | | | | | |
| Medium | .056 | .067 | .051 | .131 | .045 | .081 | .09* | .04 |
| Large | .198 | .090 | -.037 | .194 | -.048 | .096 | -.003 | .05 |
| Very Large | no respondents | | .182 | .147 | -.095 | .172 | .19** | .07 |
| Suburb | .138 | .128 | .249 | .143 | .092 | .086 | .18** | .06 |
| GPA | .081 | .035 | .010 | .050 | -.027 | .038 | .06** | .02 |
| $R^2$ | .3105 | | .3010 | | .2000 | | .2701 | |
| Number of Observations | 725 | | 321 | | 572 | | 1616 | |

Notes:
- b Partial regression coefficient
- s Standard error
- * Significant at the .05 level; ** Significant at the .01 level
- @ Base variable against which the others are compared. Its value is entered into the constant.
- + Age of all high school vocational students was coded as 21.

APPENDIX TABLE 21

FACTORS INFLUENCING WAGE ON FIRST JOB, BY REGION

Dependent Variable: Wages Per Hour On First Job

| Independent Variables | Southern Region | | Western Region | | Northeast Region | | North Central Region | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s |
| LEVEL - High School@ | | | | | | | | | | |
| Post High School | -.073 | .088 | -.247* | .123 | .651** | .172 | .144 | .095 | .05 | .05 |
| Junior College | .019 | .136 | .015 | .105 | .444** | .153 | .522** | .152 | .21** | .06 |
| PROGRAM AREA - Office@ | | | | | | | | | | |
| Trade and Industry | .121 | .134 | -.116 | .177 | -.184 | .208 | .249** | .109 | -.004 | .06 |
| Distributive | -.359* | .140 | -.035 | .193 | -.100 | .183 | .065 | .202 | .03 | .07 |
| Health | .060 | .123 | -.029 | .120 | .445* | .176 | .167 | .173 | .19** | .07 |
| Agriculture | .349 | .208 | .222 | .198 | -.228 | .229 | -.129 | .160 | -.06 | .09 |
| Technical | .106 | .121 | .179 | .135 | -.278 | .201 | .446** | .122 | .14* | .06 |
| SES | .006** | .002 | .002 | .002 | .003 | .002 | .006** | .002 | .005** | .001 |
| RELATEDNESS: JOB TO TRAINING | .114 | .076 | .039 | .096 | .012 | .110 | -.098 | .086 | -.05 | .05 |
| FATHER'S EDUCATION | -.004 | .009 | .019 | .011 | .001 | .013 | -.009 | -.010 | .004 | .005 |
| SEX - Female@ | | | | | | | | | | |
| Male | .394* | .096 | .514** | .111 | .563** | .132 | .547** | .092 | .56** | .05 |
| AGE | .008 | .005 | .014* | .006 | .007 | .015 | .020* | .008 | .01** | .003 |
| MARITAL STATUS - Single@ | | | | | | | | | | |
| Married | .146* | .057 | .129 | .068 | -.046 | .074 | -.001 | .056 | .08* | .03 |
| Other | .111 | .158 | .332 | .155 | .225 | .160 | -.346 | .205 | .17* | .08 |
| RACE - White@ | | | | | | | | | | |
| Non-white | -.022 | .106 | -.045 | .098 | .278 | .197 | .447** | .146 | .03 | .06 |

APPENDIX TABLE 21 (continued)

| Independent Variables | Southern Region | | Western Region | | Northeast Region | | North Central Region | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s |
| ADDED EDUCATION | -.024 | .077 | .008 | .074 | .068 | .074 | .0186 | .077 | .05 | .04 |
| SETTING - Rural@ | | | | | | | | | | |
| Medium | .051 | .096 | .124 | .123 | .039 | .153 | .099 | .072 | .08 | .04 |
| Large | .170 | .120 | .084 | .142 | -.012 | .214 | .084 | .107 | .04 | .05 |
| Very Large | -.[illegible] | .164 | -.029 | .154 | no responses | | .189 | .193 | .08 | .08 |
| Suburb | .231 | .099 | .059 | .127 | .095 | .155 | .297 | .251 | .17** | .06 |
| GPA | .086 | .045 | -.005 | .048 | .079 | .057 | .015 | .043 | .06** | .02 |
| $R^2$ | .2764 | | .2629 | | .3716 | | .3805 | | .2830 | |
| Number of Observations | 348 | | 401 | | 274 | | 501 | | 1524 | |

Notes:

b Partial regression coefficient

s Standard error

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

APPENDIX TABLE 22

FACTORS INFLUENCING WAGE ON FIRST JOB, BY SETTING OF SCHOOL

Dependent Variable: Wages Per Hour On First Job

| Independent Variables | Rural | | Medium | | Large | | Very Large | | Suburb | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s | b | s |
| LEVEL - High School Grad.@ | | | | | | | | | | | | |
| Post-High School Grad. | .17 | .15 | .06 | .08 | .31* | .13 | no respondents | | -.15 | .16 | .05 | .05 |
| Junior College Grad. | -.09 | .12 | .28** | .10 | .61** | .21 | .07 | .60 | .33 | .18 | .21** | .06 |
| REGION - South@ | | | | | | | | | | | | |
| West | .60** | .12 | .34** | .09 | .16 | .09 | .69 | .66 | .10 | .14 | .22** | .05 |
| Northeast | .14 | .13 | .38** | .09 | .16 | .17 | no respondents | | -.03 | .16 | .24** | .05 |
| North Central | .06 | .13 | .24** | .09 | .43** | .11 | 1.04 | .68 | -.04 | .28 | .28** | .05 |
| PROGRAM AREA - Office@ | | | | | | | | | | | | |
| Trade and Industry | .39** | .14 | .11 | .11 | .07 | .21 | .16 | .37 | .05 | .20 | -.004 | .06 |
| Distributive | -.02 | .19 | .08 | .12 | .11 | .22 | + | | -.12 | .27 | .03 | .07 |
| Health | -.13 | .24 | .17 | .11 | .10 | .17 | .01 | .48 | -.004 | .30 | .19** | .07 |
| Agriculture | .41* | .16 | -.13 | .19 | .36 | .32 | no respondents | | -.02 | .67 | -.06 | .09 |
| Technical | .66** | .15 | .29 | .12 | .28 | .17 | + | | -.06 | .17 | .14* | .06 |
| SES | .009** | .002 | .004* | .002 | .002 | .002 | .0009 | .003 | .007* | .003 | .005** | .001 |
| RELATEDNESS: JOB TO TRAINING | -.08 | .09 | -.06 | .08 | -.05 | .11 | .008 | .18 | -.05 | .11 | -.05 | .05 |
| FATHER'S EDUCATION | -.007 | .01 | .006 | .01 | -.001 | .01 | .04* | .02 | -.02 | .02 | .004 | .005 |
| SEX - Female@ | | | | | | | | | | | | |
| Male | .26* | .13 | .53** | .09 | .52** | .13 | .51** | .14 | .54** | .13 | .56** | .05 |
| AGE | .007 | .01 | .01 | .007 | .009* | .005 | .04** | .01 | -.001 | .01 | .01** | .003 |
| MARITAL STATUS - Single@ | | | | | | | | | | | | |
| Married | -.06 | .06 | .06 | .06 | -.15* | .07 | .15 | .12 | -.03 | .09 | .08* | .03 |
| Other | -.11 | .19 | .19 | .16 | .14 | .14 | -.39 | .36 | .56* | .23 | .17* | .08 |

APPENDIX TABLE 22 (continued)

| Independent Variables | Rural | | Medium | | Large | | Very Large | | Suburb | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s | b | s |
| RACE - White@ Non-white | -.11 | .22 | -.23* | .11 | .24* | .10 | .09 | .17 | .61* | .28 | .03 | .06 |
| ADDED EDUCATION | .06 | .08 | .03 | .07 | .05 | .08 | -.09 | .13 | .10 | .10 | .05 | .04 |
| GPA | .01 | .05 | .11** | .04 | -.007 | .06 | -.05 | .11 | .09 | .07 | .06** | .02 |
| $R^2$ | .3652 | | .2385 | | .4033 | | .4967 | | .3475 | | .2830 | |
| Number of Observations | 348 | | 554 | | 298 | | 111 | | 212 | | 1524 | |

Notes:

b Partial regression coefficient

s Standard error

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

\+ Excessive multi-collinearity prevented variable from entering equation.

APPENDIX TABLE 23

FACTORS INFLUENCING WAGE ON FIRST JOB, BY PROGRAM AREA

Dependent Variable: Wages Per Hour On First Job

| Independent Variables | Office | | Trade and Industry | | Distrib. | | Health | | Agric. | | Technical | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s | b | s | b | s |
| LEVEL - High School@ | | | | | | | | | | | | | | |
| Post High School | .010 | .077 | -.041 | .133 | .910* | .388 | .220 | .175 | -.091 | .393 | .070 | .121 | .05 | .05 |
| Junior College | -.096 | .128 | .176 | .206 | .122* | .510 | .674** | .159 | -.280 | .355 | .089 | .138 | .21** | .06 |
| REGION - South@ | | | | | | | | | | | | | | |
| West | .11** | .082 | .181 | .171 | .075 | .501 | .118 | .074 | .705* | .322 | .401** | .104 | .22** | .05 |
| Northeast | .061 | .085 | .107 | .171 | .916* | .394 | .659** | .141 | -.154 | .302 | .338* | .143 | .24** | .05 |
| North Central | -.019 | .077 | .466** | .137 | .431 | .364 | .288* | .115 | -.195 | .266 | .390** | .127 | .28** | .05 |
| SES | .007** | .002 | .009 | .002 | .005 | .006 | -.005* | .002 | .013** | .004 | .005** | .002 | .005** | .001 |
| RELATEDNESS: JOB TO TRAINING | -.056 | .075 | -.106 | .107 | -.091 | .232 | -.105 | .212 | .015 | .204 | -.007 | .108 | -.05 | .05 |
| FATHER'S EDUCATION | .012 | .009 | .003 | .014 | -.041 | .030 | -.005 | .010 | -.016 | .030 | -.001 | .011 | .004 | .005 |
| SEX - Female@ | | | | | | | | | no | | | | | |
| Male | .345** | .074 | .713** | .141 | .605 | .183 | .319 | .222 | respondents | | .633** | .128 | .56** | .05 |
| AGE | .012 | .008 | .055** | .015 | -.176* | .070 | .004 | .003 | -.020 | .088 | .010 | .008 | .01** | .003 |
| MARITAL STATUS - Single@ | | | | | | | | | | | | | | |
| Married | -.043 | .049 | .035 | .080 | .305 | .159 | .004 | .074 | -.081 | .174 | .085 | .068 | .08* | .03 |
| Other | .033 | .134 | .366 | .283 | -.336 | .531 | -.018 | .113 | -.033 | .432 | .594* | .274 | .17* | .08 |
| RACE - White@ | | | | | | | | | | | | | | |
| Non-white | -.048 | .155 | -.066 | .138 | .797 | .439 | .122 | .084 | -1.55** | .748 | .066 | .126 | .03 | .06 |

APPENDIX TABLE 23 (continued)

| Independent Variables | Office | | Trade and Industry | | Distrib. | | Health | | Agric. | | Technical | | Total Sample | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s | b | s | b | s | b | s |
| ADDED EDUCATION | -.006 | .057 | .072 | .104 | .278 | .107 | .005 | .078 | .243 | .173 | -.071 | .088 | .05 | .04 |
| SETTING - Rural@ | | | | | | | | | | | | | | |
| Medium | .003 | .060 | .243* | .107 | -.377 | .308 | .281 | .157 | .306 | .231 | -.109 | .172 | .08 | .04 |
| Large | -.332* | .140 | .130 | .156 | .253 | .345 | .396* | .156 | -.616 | .428 | .006 | .128 | .04 | .05 |
| Very Large | .817** | .068 | .264 | .268 | .099 | .405 | .627* | .302 | no respond. | | -.121 | .201 | .08 | .08 |
| Suburb | .043 | .079 | .481* | .199 | .052 | .366 | .280 | .193 | .170 | .692 | .076 | .177 | .17** | .06 |
| GPA | .013 | .038 | .009 | .058 | .091 | .160 | .143** | .051 | .147 | .144 | .015 | .050 | .06** | .02 |
| $R^2$ | .2984 | | .2401 | | .5259 | | .5000 | | .3481 | | .2063 | | .2830 | |
| Number of Observations | 495 | | 300 | | 88 | | 197 | | 82 | | 362 | | 1524 | |

Notes:

b Partial regression coefficient

s Standard error

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

\+ Only one response

APPENDIX TABLE 24

FACTORS AFFECTING GRADUATE'S DECISION TO OBTAIN ADDITIONAL EDUCATION, BY SCHOOL LEVEL

Dependent Variable: Decision to Obtain Additional Education

| Independent Variables | Post High School | | Junior College | | High School Vocational | | Total Sample | |
|---|---|---|---|---|---|---|---|---|
| | b | s | b | s | b | s | b | s |
| LEVEL - High School@ | | | | | | | -.48** | .03 |
| Post High School | | | | | | | .11** | .04 |
| Junior College | | | | | | | | |
| REGION - South@ | | | | | | | | |
| West | -.0002 | .03 | -.03 | .15 | .12 | .07 | .04 | .03 |
| Northe[illegible] | .05 | .05 | .05 | .17 | -.[illegible]5 | .06 | -.02 | .04 |
| North [illegible]ral | .03 | .03 | -.003 | .19 | -.09 | .07 | -.01 | .03 |
| PROGRAM AREA - Office@ | | | | | | | | |
| Tra[illegible] and Industry | .02 | .05 | .09 | .18 | -.09 | .09 | -.1 | .04 |
| D[illegible]ibutive | .17** | .06 | -.17 | .18 | .11 | .10 | .03 | .05 |
| He[illegible] | .03 | .04 | -.02 | .13 | .07 | .16 | .03 | .05 |
| Ag[illegible]ulture | -.0[illegible] | .14 | .21 | .16 | -.06 | .11 | .006 | .06 |
| Techn[illegible] | -.03 | .05 | .04 | .14 | -.06 | .09 | -.08 | .04 |
| RELATEDNESS: [illegible] TO TRAINING (First Job) | -.07 | .05 | -.06 | .14 | .007 | .0[illegible] | -.03 | .04 |
| SES | .18** | .0007 | -.002 | .002 | .001 | .001 | -.0003 | .0006 |
| RELATEDNESS: JOB TO TRAINING (Last or Current Job) | .06 | .04 | -.001 | .15 | -.005 | .07 | .03 | .04 |
| FATHER'S EDUCATION | .[illegible]5 | .004 | -.001 | .01 | .009 | .008 | .005 | .004 |
| SEX - Female@ | | | | | | | | |
| Male | .04 | .04 | .06 | .09 | .32 | .07 | .16** | .03 |
| AGE | -.0008 | .002 | -.[illegible]1* | .006 | + | | -.004 | .002 |

APPENDIX TABLE 24 (continued)

| Independent Variables | Post High School b | Post High School s | Junior College b | Junior College s | High School Vocational b | High School Vocational s | Total Sample b | Total Sample s |
|---|---|---|---|---|---|---|---|---|
| MARITAL STATUS - Single@ | | | | | | | | |
| Married | -.01 | .02 | -.01 | .06 | .11 | .04 | -.06* | .02 |
| Other | .09 | .07 | .10 | .14 | .03 | .11 | .05 | .06 |
| RACE - White@ | | | | | | | | |
| Non-white | -.008 | .04 | .05 | .10 | .0009 | .11 | -.02 | .04 |
| SETTING - Rural@ | | | | | | | | |
| Medium | .008 | .03 | -.05 | .12 | .004 | .07 | .008 | .03 |
| Large | .04 | .04 | .11 | .17 | -.001 | .08 | .002 | .04 |
| Very Large | no response | | .01 | .12 | -.36 | .14 | -.09 | .05 |
| Suburb | -.02 | .06 | -.06 | .12 | .02 | .07 | -.03 | .04 |
| GPA | -.02 | .02 | .01 | .04 | .14 | .03 | .05** | .02 |
| $R^2$ | .0762 | | .0690 | | .1422 | | .3260** | |
| Number of Observations | 701 | | 295 | | 528 | | 1524 | |

Notes:

b Partial regression coefficient

s Standard error

* Significant at the .05 level; ** Significant at the .01 level

@ Base variable against which the others are compared. Its value is entered into the constant.

\+ Age of all high school vocational students was coded as 21.

PLEASE READ ALL ANSWER ALTERNATIVES BEFORE MARKING ☒ YOUR ANSWER(s).

## ABOUT YOUR HIGH SCHOOL PERIOD

1. What type of high school program did you complete? (MARK ONE.)

Vocational

- ☐ 1. Trade or industrial occupations
- ☐ 2. Distributive occupations
- ☐ 3. Health occupations
- ☐ 4. Agricultural occupations
- ☐ 5. Technical/technician occupations
- ☐ 6. Office/business occupations

Nonvocational

- ☐ 7. General (Non-college preparatory)
- ☐ 8. Academic (College preparatory)

2. If you followed a vocational program, what specific occupation or occupational field did you study? (WRITE TITLE BELOW.)

_____

Ex: auto mechanic, drafting, carpentry, etc.

3. Did the school offer the course you really wanted to take?

- ☐ 1. Yes → Is that the one you actually did take?
  - ☐ 1. Yes.
  - ☐ 2. No, because
- ☐ 2. No

WRITE IN ←

4. Why did you select the particular vocational course you took? (MARK ALL THAT APPLY.)

- ☐ 1. It coincided with hobby interests
- ☐ 2. Attracted to the type of work
- ☐ 3. Parents advised the course
- ☐ 4. Counselor advised the course
- ☐ 5. Teacher advised the course
- ☐ 6. Took it because my friends did
- ☐ 7. Good pay and working conditions
- ☐ 8. Preferred it to other courses
- ☐ 9. Other reason (Please state below)

_____

(CIRCLE BOX OF MOST IMPORTANT REASON)



5. At the time you selected your vocational course, did you really plan to go to work in that field after high school?

- ☐ 1. Yes, very definitely yes
- ☐ 2. Yes, but not really certain
- ☐ 3. No, but not really certain
- ☐ 4. No, very definitely no

6. Did you have a parent, relative or friend in the same line of work?

- ☐ 1. No
- ☐ 2. Yes, parent
- ☐ 3. Yes, relative
- ☐ 4. Yes, friend

7. How well informed were you about the items below before you selected the vocational course I had . . . . . Good Fair Poor (Information about)

| | Good | Fair | Poor |
|---|---|---|---|
| 1. Nature of work | ☐ | ☐ | ☐ |
| 2. Condition of work | ☐ | ☐ | ☐ |
| 3. Rate of pay | ☐ | ☐ | ☐ |
| 4. Job openings | ☐ | ☐ | ☐ |
| 5. Long term future | ☐ | ☐ | ☐ |
| 6. Job seniority | ☐ | ☐ | ☐ |

8. Did you switch from one to another vocational course during high school?

- ☐ 1. No → Go to Q. 9
- ☐ 2. Yes → Skip to Q. 10

9. Did you ever want to or try to switch to another vocational course during high school?

- ☐ 1. No → Go to Q. 10
- ☐ 2. Yes → What kept you from switching to a different course? (CHECK ALL THAT APPLY)
  - ☐ 1. Parents advised against it
  - ☐ 2. School wouldn't permit it
  - ☐ 3. Other course too crowded
  - ☐ 4. Decided to stay with friends
  - ☐ 5. Instructor advised against it
  - ☐ 6. Couldn't have completed course
  - ☐ 7. Wouldn't have graduated on time
  - ☐ 8. Other reason (Specify below)

_____

## LET'S TALK ABOUT THE PLANS YOU HAD FOR AFTER HIGH SCHOOL GRADUATION

10. What did you plan to do after high school graduation? (Mark what you planned to do even if you later did something different.)

- [ ] 1. Find a full-time job
- [ ] 2. Continue full-time in school
- [ ] 3. Go into military service
- [ ] 4. Part-time job and part-time school
- [ ] 5. Other plans: (specify below)

(SKIP TO Q. 14 IF YOU MARKED 2, 3, 4 OR 5)

11. If you planned to get a full-time job, what kind of a job did you want?

- [ ] 1. Same occupation studied in school
- [ ] 2. Highly related occupation
- [ ] 3. Slightly related occupation
- [ ] 4. Completely different occupation

(SKIP TO Q. 14 IF YOU MARKED 1 OR 2)

12. Why didn't you want a job in the occupational field represented by your vocational course?

- [ ] 1. Didn't think I learned enough
- [ ] 2. Instructor advised against it
- [ ] 3. Decided I didn't like the work
- [ ] 4. Found out the pay was too low
- [ ] 5. Had a job offer in another field
- [ ] 6. Developed new work interests
- [ ] 7. Other reasons (specify below)

13. When did you first decide that you did not want to enter the trade or field studied in high school?

- [ ] 1. Shortly before graduation
- [ ] 2. About 6 months before graduation
- [ ] 3. About a year before graduation
- [ ] 4. During last year of course
- [ ] 5. I never really planned to do so



14. Which actually came first after graduation from high school?

- [ ] 1. Full-time job → Skip to Q. 16
- [ ] 2. Full-time school
- [ ] 3. Military service
- [ ] 4. Part-time school and part-time job
- [ ] 5. Part-time job
- [ ] 6. None of above (EXPLAIN BELOW)

15. Have you ever held a full-time civilian job since leaving high school?

- [ ] 1. Yes
- [ ] 2. No → Skip to Q. 28.

## LET'S TALK ABOUT YOUR FIRST JOB

16. How soon after graduation did you begin your first full-time job?

- [ ] 1. Already had job
- [ ] 2. Immediately
- [ ] 3. About 1 week
- [ ] 4. About 2 weeks
- [ ] 5. About 3 weeks
- [ ] 6. About 1 month
- [ ] 7. About ___ months (WRITE IN)

17. How did you get your first full-time job after high school?

- [ ] 1. On my own, without anyone's help
- [ ] 2. Private employment agency
- [ ] 3. State employment service
- [ ] 4. Thru parents (or relative)
- [ ] 5. Thru personal friend
- [ ] 6. Was already with same employer
- [ ] 7. Thru school teacher
- [ ] 8. Thru school counselor
- [ ] 9. Thru school placement office
- [ ] 10. Other than above -- (EXPLAIN BELOW)

18. Did your first full-time job require a move to a new town or city?

- [ ] 1. No
- [ ] 2. Yes → How many miles away? ___
  Did you move on your own or with parents?
  - [ ] 1. On my own
  - [ ] 2. With parents

19. What type of work did you do on your first full-time job after graduation? Give the title, like auto mechanic, carpenter, salesman, laboratory technician, etc.

• I was a _____

20. How related was your first job to your high school vocational course?

- [ ] 1. Same as what I studied } Go to Q. 21
- [ ] 2. Highly related } Go to Q. 21
- [ ] 3. Only slightly related } Go to Q. 22
- [ ] 4. Completely unrelated } Go to Q. 22

21. How well did your high school vocational course prepare you for your first job?

- [ ] 1. Exceptionally well prepared
- [ ] 2. On the whole, well prepared
- [ ] 3. On the whole, not too well prepared
- [ ] 4. Very poorly prepared

(SKIP TO Q. 24 AFTER Q. 21)

22. Why didn't or couldn't you get your first full-time job in the field you studied?

- [ ] 1. Tried, but couldn't find job (Go to Q. 23)
- [ ] 2. Couldn't get into apprentice program
- [ ] 3. Better type job came along first
- [ ] 4. Didn't want that type of work
- [ ] 5. Instructor advised against it
- [ ] 6. Other reason: (EXPLAIN BELOW)

(SKIP TO Q. 24 IF YOU MARKED 2,3,4,5 OR 6)

23. What methods did you use that were unsuccessful in finding a job in your field of study?

- [ ] 1. State employment service
- [ ] 2. Private employment agency
- [ ] 3. Checking want-ads
- [ ] 4. Asking friends and relatives for help
- [ ] 5. School placement service
- [ ] 6. Asking school personnel for help
- [ ] 7. Calling known employers

24. What was your gross income (before deductions) on this job?

| | | Hrly Rate $ ¢ |
|---|---|---|
| 1. If on hourly rate . . . . . | Started at | _____ |
| | Worked up to | _____ |
| | | Wkly Sal. |
| 2. If on salary. . . . . | Started at | $_____ |
| | Worked up to | $_____ |
| • What was your average weekly take home pay on this job? . . . . . | | $_____ |

25. On the whole, how satisfied were you with the job?

- [ ] 1. Highly satisfied (liked most things)
- [ ] 2. Fairly satisfied (some dislikes)
- [ ] 3. Dissatisfied (many dislikes)
- [ ] 4. Very dissatisfied (disliked most things)

26. How long did your first job last?

- [ ] 1. Still there → Skip to Q. 35
- [ ] 2. _____ Year(s) and _____ Months

27. What was the reason for leaving the job?

- [ ] 1. Laid off (Lack of work)
- [ ] 2. Laid off (Other reason)
- [ ] 3. Quit (Wanted more money)
- [ ] 4. Quit (Disliked type work)
- [ ] 5. Quit (Disliked work conditions)
- [ ] 6. Quit (No future in it)
- [ ] 7. Quit (Other reason—see below)

CIRCLE THE NUMBER OF THE PRIMARY REASON IF YOU CHECKED MORE THAN ONE REASON.

28. How long were you unemployed, looking and available for work before your next full-time job?

- [ ] 1. Got next job immediately
- [ ] 2. Unemployed _____ months, _____ weeks
- [ ] 3. Still unemployed
- [ ] 4. Went into military instead
- [ ] 5. Went back to school instead

## ABOUT YOUR PRESENT JOB

If you do not presently hold a full-time job, skip to Q. 36 after marking your status below.

- [ ] Unemployed
- [ ] Military
- [ ] Full-time school
- [ ] Other

29. Did your present full-time job require a move to a new city?

1. No
2. Yes ➤ How many miles away? _____
Did you move on your own or with parents?
1. On my own
2. With parents

30. What type of work do you do? Give the title, like auto mechanic, salesman, carpenter, etc.

• I am a _____

31. How related is this work to your high school vocational course?

1. Same type of work
2. Highly related
3. Only slightly related
4. Completely unrelated

32. What was your gross income (before deductions) on this job?

Hrly Rate $ ¢

1. If on hourly rate . . . Started at _____ Worked up to _____

Wkly Sal.

2. If on salary . . . . . Started at $_____ Worked up to $_____

• What was your average weekly take home pay on this job? . . . . . $_____

33. On the whole, how satisfied are you with your present job?

1. Highly satisfied (liked most things)
2. Fairly satisfied (some dislikes)
3. Dissatisfied (many dislikes)
4. Very dissatisfied (disliked most things)

34. How long have you been with your present employer?

• About _____ Year(s) and _____ Months

35. What is the name and address of your present employer?

• Company _____

• Address _____

• City-State _____



## ABOUT JOBS OTHER THAN YOUR FIRST OR PRESENT JOB

36. Excluding the first and present job since completing your vocational course, how many other full-time jobs did you have? If none, skip to Q. 41. WRITE IN ANSWER ➤ _____

37. Of the other full-time jobs held, how many were in each category of relatedness (see below) to the occupation studied in your vocational course?

1. Same occupation . . . . . _____
2. Highly related occupation . . . . . _____
3. Slightly related occupation . . . . _____
4. Completely different occupation . _____

38. How many of the other full-time jobs required a residence move to a new town or city? _____

39. How many months were you available for full-time work since completing high school?

• About _____ Months

40. Of that number of months, how many were you without a full-time job while looking and available for work? ➤ About _____ Months

## ABOUT EDUCATION AFTER HIGH SCHOOL

41. What additional kind of education or training have you had since high school?
(MARK ALL THAT APPLY TO YOU. IF STILL ATTENDING, CIRCLE THE NUMBER.)

1. Two year college
2. Four year college/university
3. Private trade/technical school
4. Public trade/technical school
5. Business/commercial school
6. Adult continuation school
7. Military specialist school
8. Company course or school
9. Correspondence course
10. Apprenticeship program
11. None of the above (Skip to Q. 47)

42. How many months of full-time college attendance have you completed since high school?
• About_____ months

43. How many months of part-time college attendance have you completed since high school?
• About_____ months at_____class hrs. weekly.

44. How many months of full-time non-college education or training (see Q. 41 list) have you had since high school? About___ months

45. How many months of part-time non-college education or training (see Q. 41 list) have you had since high school?
• About_____months at about_____class hrs. weekly.

46. What was (is) the main purpose of your post-high school education?

- [ ] 1. Complete a college education
- [ ] 2. Advancement in present field of work
- [ ] 3. Preparation for new field of work
- [ ] 4. General self-development
- [ ] 5. Other (Please specify below)

## ABOUT YOUR MILITARY SERVICE

(IF YOU HAD NONE, MARK HERE [ ] SKIP TO Q. 50)

47. How long were you in service?
• About_____Months

48. Did you have any specialist training in service that was useful for civilian work?

- [ ] 1 No
- [ ] Yes → If so, what type?

_____

49. Did military service influence you to change your occupational plans from what they were before service?

- [ ] 1. No
- [ ] 2. Yes → How was your new occupation preference related to your high school vocational course?

  - [ ] 1. Highly related
  - [ ] 2. Only slightly related
  - [ ] 3. Completely different



## YOUR OPINIONS ABOUT YOUR HIGH SCHOOL EDUCATION

50. Please rate your former school for 1 to 4 on the listed items

1. Poor
2. Fair
3. Good
4. Excellent

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| 1. Quality vocational instruction | | | | |
| 2. Quality academic instruction | | | | |
| 3. Physical condition of school | | | | |
| 4. Physical condition of shops | | | | |
| 5. Teacher interest in students | | | | |
| 6. Student guidance counseling | | | | |
| 7. Job placement of graduates | | | | |
| 8. Reputation in community | | | | |

## ABOUT YOUR PARENTS AND YOU

51. Please circle the highest year of education that your parents completed.

| | Grade School | High School | College |
|---|---|---|---|
| Father | 6 6 7 8 | 9 10 11 12 | 1 2 3 4 4 |
| Mother | 6 6 7 8 | 9 10 11 12 | 1 2 3 4 4 |

< = Less than > = More than

52. What was your father's occupation in your last year of high school?

• He was a_____

[ ] Not applicable to my father

53. What was your mother's occupation in your last year of high school?

• She was a_____

[ ] Not applicable to my mother

54. Did either of your parents ever take a vocational course of any type

| Mother | Father |
|---|---|
| 1. Yes | 1. Yes |
| 2. No | 2. No |
| 3. Not applicable | 3. Not applicable |

55. I am ☐ 1. Male ☐ 2. Female

56. I am ☐ 1. Single ☐ 2. Married ☐ 3. Other

57. I now have _____ dependents (Number)

58. I am ☐ 1. Negro ☐ 2. White ☐ 3. Other

59. Do you have a disability, health or other condition that limits your employability?

☐ 1. No ☐ 2. Yes

60. Please estimate for 1967 your total income from all gainful employment? Do not include income from rent, interest dividends, inheritance or sources other than gainful employment by you.

About _____ thousand dollars

WOULD YOU LIKE TO RECEIVE A REPORT ON OUR FINDINGS?

☐ 1. Yes
☐ 2. No

THANK YOU VERY MUCH

High School Academic Questionnaire

PLEASE READ ALL ANSWER ALTERNATIVES BEFORE MARKING ☒ YOUR ANSWER(s).

## ABOUT YOUR HIGH SCHOOL YEARS

1. What type of high school program did you complete? (MARK ONE.)

Vocational

- ☐ 1. Trade or industrial occupations
- ☐ 2. Distributive occupations
- ☐ 3. Health occupations
- ☐ 4. Agricultural occupations
- ☐ 5. Technical/technician occupations
- ☐ 6. Office/business occupations

Non-vocational

- ☐ 7. General (Non-college preparatory)
- ☐ 8. Academic (College preparatory)

2. If you followed a general or academic program, did you at any time consider taking a vocational course instead:

- ☐ 1. No ➤ Skip to Q. 4
- ☐ 2. Yes

3. What made you decide against a vocational program? Mark all that apply.

- ☐ 1. Parents advised against it
- ☐ 2. Teachers advised against it
- ☐ 3. Counselor advised against it
- ☐ 4. Type of students in program
- ☐ 5. No college preparatory possibility
- ☐ 6. Didn't want to specialize
- ☐ 7. Didn't offer my kind of course
- ☐ 8. Poor reputation of vocational programs
- ☐ 9. Other than above (Specify below)

_____

4. Why did you take an academic or general program? Mark all that apply.

- ☐ 1. Needed for college entry
- ☐ 2. Needed for non-college school entry
- ☐ 3. Parents advised it
- ☐ 4. Teacher(s) advised it
- ☐ 5. Counselor advised it
- ☐ 6. Took it because my friends did
- ☐ 7. Thought it better for a career
- ☐ 8. Vocational program was poor
- ☐ 9. Other than above (Specify below)

_____



5. What did you plan to do after high school graduation? (Mark what you planned to do even if you later did something different. Mark two if two apply.)

- ☐ 1. Find a full-time job
- ☐ 2. Find a part-time job
- ☐ 3. Go full-time to college
- ☐ 4. Go part-time to college
- ☐ 5. Go full-time to non-college school
- ☐ 6. Go part-time to non-college school
- ☐ 7. Go into military service
- ☐ 8. Other plans (Specify below)

_____

6. Which actually came first after graduation from high school?

- ☐ 1. Full-time job ➤ Skip to Q. 8
- ☐ 2. Full-time college
- ☐ 3. Full-time non-college school
- ☐ 4. Part-time job - part-time college
- ☐ 5. Part-time job - part-time non-college school
- ☐ 6. Military service
- ☐ 7. None of the above (Explain below)

_____

7. Have you ever held a full-time job since leaving high school?

- ☐ 1. Yes
- ☐ 2. No ➤ Skip to Q. 16.

## YOUR FIRST FULL-TIME JOB AFTER HIGH SCHOOL GRADUATION

8. How soon after high school graduation did you begin your first full-time job?

- ☐ 1. Already had job
- ☐ 2. Immediately
- ☐ 3. About 1 week
- ☐ 4. About 2 weeks
- ☐ 5. About 3 weeks
- ☐ 6. About 1 month
- ☐ 7. About ____ months (Write in)

9. How did you get your first full-time job after high school?

- ☐ 1. On my own, without anyone's help
- ☐ 2. Private employment agency
- ☐ 3. State employment service
- ☐ 4. Thru parents (or relative)
- ☐ 5. Thru personal friend
- ☐ 6. Was already with some employer
- ☐ 7. Thru school teacher
- ☐ 8. Thru school counselor
- ☐ 9. Thru school placement office
- ☐ 10. Other than above (State below)

_____

10. Did your first full-time job after high school graduation require a move to a new town or city?

- ☐ 1. No
- ☐ 2. Yes → How many miles away?___ Did you move on your own or with parents?
  - ☐ 1. On my own
  - ☐ 2. With parents

11. What type of work did you do on your first full-time job after high school? Give the title, like office clerk, salesman, laborer, factory worker, etc.

• I was a _____

12. What was your gross income (before deductions) on this job?

| | | Hrly Rate $ ¢ |
|---|---|---|
| ☐ 1. If on hourly rate . . . | Started at | ___.___ |
| | Worked up to | ___.___ |
| | | Wkly Sal. |
| ☐ 2. If on salary . . . . . | Started at | $_____ |
| | Worked up to | $_____ |
| • What was your average weekly take home pay on this job? . . . . . | | $_____ |

13. On the whole, how satisfied were you with the job?

- ☐ 1. Highly satisfied (liked most things)
- ☐ 2. Fairly satisfied (some dislikes)
- ☐ 3. Dissatisfied (many dislikes)
- ☐ 4. Very dissatisfied (disliked most things)



14. How long did your first job last?

- ☐ 1. Still there → Skip to Q. 23
- ☐ 2. _____ Year(s) and _____ Months

15. What was the reason for leaving your first job?

- ☐ 1. Laid off (Lack of work)
- ☐ 2. Laid off (Other reason)
- ☐ 3. Quit (Wanted more money)
- ☐ 4. Quit (Disliked type work)
- ☐ 5. Quit (Disliked work conditions)
- ☐ 6. Quit (No future in it)
- ☐ 7. Quit (Other reason - see below)

_____

Circle the number of the primary reason if you checked more than one reason.

16. How long were you unemployed, looking and available for work before you got your next full-time job? • About ____ months, ____ weeks

## ABOUT YOUR PRESENT JOB

If you do not presently hold a full-time job, skip to Q. 24 after marking your status below.

- ☐ Unemployed
- ☐ Military
- ☐ Full-time school
- ☐ Other

17. Did your present job require a residence move to another city?

- ☐ 1. No
- ☐ 2. Yes → How many miles away?___ Did you move on your own or with parents?
  - ☐ 1. On my own
  - ☐ 2. With parents

18. What type of work do you do? Give the title, like office clerk, salesman, factory worker, etc.

• I am a _____

19. What was your gross income (before deductions) on this job?

| | | Hrly Rate $ ¢ |
|---|---|---|
| ☐ 1. If on hourly rate . . . | Started at | ___.___ |
| | Worked up to | ___.___ |
| | | Wkly Sal. |
| ☐ 2. If on salary . . . . . | Started at | $_____ |
| | Worked up to | $_____ |
| • What was your average weekly take home pay on this job? . . . . . | | $_____ |

20. On the whole, how satisfied are you with your present job?

- ☐ 1. Highly satisfied (liked most things)
- ☐ 2. Fairly satisfied (some dislikes)
- ☐ 3. Dissatisfied (many dislikes)
- ☐ 4. Very dissatisfied (disliked most things)

21. If you marked dissatisfied or very dissatisfied to Q. 20, mark whatever reasons listed below apply to your situation.

- ☐ 1. Pay too low
- ☐ 2. Poor working conditions
- ☐ 3. Dislike the type of work
- ☐ 4. Poor supervision
- ☐ 5. Little advancement opportunity
- ☐ 6. Work is not steady
- ☐ 7. Other than above (Specify below)

_____

22. How long have you been with your present employer?

• About _____ Year(s) and _____ Months

23. What is the name and address of your present employer?

Company _____

Address _____

City _____ State _____

## ABOUT JOBS OTHER THAN YOUR FIRST OR PRESENT JOB

24. Excluding the 1st and present job since completing your vocational course, how many other full-time jobs did you have? If none, skip to Q. 28 (Write in ans. ➔) _____

25. How many of the other full-time jobs required a residence move to a new town or city? _____

26. How many months were you available for full-time work since completing high school? About _____ months.

27. Of that number of months, how many were you without a full-time job while looking and available for work? ➔ About _____ months.



## ABOUT EDUCATION AFTER HIGH SCHOOL

28. What additional kinds of education or training have you had since H.S.? (Mark all that apply to you. If still attending, circle the number.)

- ☐ 1. Two year college
- ☐ 2. Four year college/university
- ☐ 3. Private trade/technical school
- ☐ 4. Public trade/technical school
- ☐ 5. Business/commercial school
- ☐ 6. Adult continuation school
- ☐ 7. Military specialist school
- ☐ 8. Company course or school
- ☐ 9. Correspondence course
- ☐ 10. Apprenticeship program
- ☐ 11. None of the above (Skip to Q. 34)

29. How many months of full-time college attendance have you completed since high school? ➔ _____ Months

30. How many months of part-time college attendance have you completed since high school? ➔ _____ months at _____ class hours per week.

31. How many months of full-time non-college, education or training (See Q. 28 list) have you had since high school? ➔ _____ months.

32. How many months of part-time non-college, education or training (See Q. 28 list) have you had since high school? ➔ _____ months at an average of _____ hours per week, excluding study hours.

33. What was (is) the main purpose of your post-high school education?

- ☐ 1. Complete a college education
- ☐ 2. Advancement in present field of work
- ☐ 3. Preparation for new field of work
- ☐ 4. General self-development
- ☐ 5. Other (Specify below)

_____

## ABOUT YOUR MILITARY SERVICE

(If none, mark here ➔ ☐ and skip to Q. 37)

34. How long were you in service?
• About _____ Months

35. Did you have any specialist training in service that was useful for civilian work?

☐ 1. No
☐ 2. Yes → If so, what type?

_____

36. Did your military service influence you to change your occupational plans from what they were before service?

☐ 1. No
☐ 2. Yes → Before, I wanted to be a

_____

After, I wanted to be a

_____

## YOUR OPINIONS ABOUT YOUR HIGH SCHOOL EDUCATION

37. Please rate your former school frankly on the listed items.

1. Poor
2. Fair
3. Good
4. Excellent

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| 1. Type of examinations given | ☐ | ☐ | ☐ | ☐ |
| 2. Quality academic instruction | ☐ | ☐ | ☐ | ☐ |
| 3. Physical condition of school | ☐ | ☐ | ☐ | ☐ |
| 4. Strictness in maintaining discipline | ☐ | ☐ | ☐ | ☐ |
| 5. Teacher interest in students | ☐ | ☐ | ☐ | ☐ |
| 6. Student guidance/counseling | ☐ | ☐ | ☐ | ☐ |
| 7. Job placement of graduates | ☐ | ☐ | ☐ | ☐ |
| 8. Reputation in community | ☐ | ☐ | ☐ | ☐ |

## ABOUT YOUR PARENTS AND YOU

38. Please circle the highest year of education that your parents completed.

| | Grade School | High School | College |
|---|---|---|---|
| Father | <6 6 7 8 | 9 10 11 12 | 1 2 3 4 >4 |
| Mother | <6 6 7 8 | 9 10 11 12 | 1 2 3 4 >4 |

< = Less than > = More than



39. What was your father's occupation in your last year of high school?

• He was a _____

☐ Not applicable to my father

40. What was your mother's occupation in your last year of high school?

• She was a _____

☐ Not applicable to my mother

41. Did either of your parents ever take a vocational course of any type?

| Mother | Father |
|---|---|
| ☐ 1. Yes | ☐ 1. Yes |
| ☐ 2. No | ☐ 2. No |
| ☐ 3. Not applicable | ☐ 3. Not applicable |

42. I am ☐ 1. Male ☐ 2. Female

43. I am ☐ 1. Single ☐ 2. Married ☐ 3. Other

44. I now have _____ dependents (Number)

45. I am ☐ 1. Negro ☐ 2. White ☐ 3. Other

46. Do you have a disability, health or other condition that limits your employability?

☐ 1. No ☐ 2. Yes

47. Please estimate for 1967 your total income from all gainful employment. Do not include income from rent, interest, dividends, inheritance or sources other than gainful employment by you.

• About _____ thousand dollars.

## THANK YOU VERY MUCH

Would you like to receive a report on our findings?

☐ 1. Yes
☐ 2. No

PLEASE READ ALL ANSWER ALTERNATIVES BEFORE MARKING ☒ YOUR ANSWER(s).

## ABOUT YOUR HIGH SCHOOL YEARS

1. How much high school education did you complete? (MARK ONE.)

   ☐ 1. One year
   ☐ 2. Two years
   ☐ 3. Three years
   ☐ 4. Four years-graduated
   ☐ 5. Four years-did not graduate
   ☐ 6. None → Skip to Q. 7

2. In what year did you graduate from or leave high school?

   19____ ☐ June ☐ January

3. What type of high school program did you take? (MARK ONE.)

   **Vocational**
   ☐ 1. Trade/industrial occupations
   ☐ 2. Distributive occupations
   ☐ 3. Health occupations
   ☐ 4. Agricultural occupations
   ☐ 5. Technical occupations
   ☐ 6. Office/business occupations

   **Nonvocational**
   ☐ 7. General (non-college preparatory)
   ☐ 8. Academic (college preparatory)

4. If you followed a vocational program what specific occupation or occupational field did you study in high school?

   _____

   Ex: auto mechanic, drafting, carpentry, etc.

   Write in your answer

5. What is the name and location of your former or last high school?

   Name _____

   City _____ State _____

6. Where are you now located relative to your high school's location?

   ☐ 1. Same town/city
   ☐ 2. Different city, same state
   ☐ 3. Different state, same general region
   ☐ 4. Different region of country



## ABOUT THE PERIOD BETWEEN HIGH SCHOOL AND YOUR LATER VOCATIONAL COURSE

7. How many years and/or months elapsed between when you left high school and when you began the post-high school (PHS) vocational course? →

   If 3 months or less, skip to Q. 19

   Answer below ____Yrs. ____Mos

8. How many months of active military service did you have during this period?

   ☐ 1. None → Skip to Q. 11
   ☐ 2. ____Months → Go to Q. 9

9. Did you have any specialist training in the service that could be useful for civilian work?

   ☐ 1. No
   ☐ 2. Yes → What type of training?

   _____

10. Did military service influence you to change your occupational plans from what they were before service?

    ☐ No
    ☐ Yes → From what occupation?

    _____ To what occupation? _____

11. How many months did you attend college or any other school full-time during this period?

    ☐ 1. None → Skip to Q. 13
    ☐ 2. ____Months → Go to Q. 12

12. What type of course were you enrolled in during this period? (MARK APPROPRIATE BOX & WRITE IN)

    ☐ 1. College (write in below)

    _____

    ☐ 2. Non-college (write in below)

    _____

13. How many months were you unable to work because of illness/disability during THIS PERIOD?

    ☐ 1. None
    ☐ 2. ____Months

14. How many two week or more periods of unemployment did you have during this period? TRY TO RECALL.

☐ 1. None → Skip to Q. 16
☐ 2. _____ Such periods → Go to Q. 15
(Write in)

15. How many months and/or weeks were you unemployed, looking and available for work during this period? TRY TO BE EXACT.

Months _____
Weeks _____

16. How many full-time employers did you have during this period?

☐ 1. None → Skip to Q. 19
☐ 2. _____ Employers → Go to Q. 17
(Write in)

17. What was your gross income (before deductions) at the start and end of this period?

| | | Hrly Rate $ ¢ |
|---|---|---|
| ☐ 1. If on hourly rate . . . | Started at | ___ . ___ |
| | Ended with | ___ . ___ |
| | | Wkly Sal. |
| ☐ 2. If on salary . . . . . | Started at | $ _____ |
| | Ended with | $ _____ |
| • What was your average weekly take home pay during this period? . . . . . | | $ _____ |

18. If you took a vocational course in high school, how related was your first and last full-time job during this period to that vocational course?

☐ Not applicable → Go to Q. 19

| Relatedness of job to course | | First Job | Last Job |
|---|---|---|---|
| • Same type work | 1. | ☐ | ☐ |
| • Highly related | 2. | ☐ | ☐ |
| • Slightly related | 3. | ☐ | ☐ |
| • Wholly different | 4. | ☐ | ☐ |

## ABOUT YOUR POST-HIGH SCHOOL VOCATIONAL COURSE

19. What occupation or occupational field did you study in your post-high school vocational course?

Write in

_____
(OR, GIVE VOCATIONAL COURSE TITLE)



20. What made you decide to take a post-high school vocational course? (Check all that influenced you.)

☐ 1. Job I held had no future
☐ 2. Not interested in job I held
☐ 3. Was laid off previous job
☐ 4. Developed new career interest
☐ 5. Employer advised course
☐ 6. Influenced by friend
☐ 7. Read about training opportunity
☐ 8. Improve earning ability
☐ 9. Other reason (Please state below)

_____
(CIRCLE BOX OF MOST IMPORTANT FACTOR)

21. Did the school offer the course you really wanted to take?

☐ 1. Yes → Is that the one you actually took?
☐ 2. No

☐ 1. Yes
☐ 2. No, because

Write in

_____

22. Why did you select the particular course you did? (MARK ALL THAT APPLY.)

☐ 1. It coincided with hobby interests
☐ 2. Attracted to the type of work
☐ 3. Parents advised the course
☐ 4. Counselor advised the course
☐ 5. Teacher advised the course
☐ 6. Had job experience in the field
☐ 7. Good pay and working conditions
☐ 8. Employer advised course
☐ 9. Other reason (Please state below)

_____
(CIRCLE BOX OF MOST IMPORTANT FACTOR)

23. Did you have a parent, relative or friend in the same line of work?

☐ 1. No
☐ 2. Yes, parent
☐ 3. Yes, relative
☐ 4. Yes, friend

24. How well informed were you about the items below before you selected the vocational course?

| • I had..... | 3 Good | 2 Fair | 1 Poor |
|---|---|---|---|
| | (Information About) | | |
| 1. Nature of work..... | ☐ | ☐ | ☐ |
| 2. Condition of work..... | ☐ | ☐ | ☐ |
| 3. Rate of pay..... | ☐ | ☐ | ☐ |
| 4. Job openings..... | ☐ | ☐ | ☐ |
| 5. Long term future..... | ☐ | ☐ | ☐ |
| 6. Job seniority..... | ☐ | ☐ | ☐ |

25. Did you hold down a job during the time you took the course?

☐ 1. No → Skip to Q. 28
☐ 2. Yes, the whole time
☐ 3. Yes, about _____% of the time

26. About how many hours a week did you work on an average during the period you took the course? → About ____Hrs.

27. Was the job you held related in any way to the course you took?

☐ 1. No
☐ 2. Yes, in the same field
☐ 3. Yes, in a related field

28. Were you married at the time you took the vocational course?

☐ 1. No
☐ 2. Yes → How many children? → Write in number _____

29. When did you start the course? (WRITE IN THE DATE AT THE RIGHT) ____Mo. ____Yr.

## ABOUT THE PLANS YOU HAD FOR AFTER YOUR VOCATIONAL COURSE?

30. At the time you completed the course, what were your plans? (MARK WHAT YOU PLANNED TO DO EVEN IF YOU LATER DID SOMETHING DIFFERENT.)

☐ 1. Find a full-time job
☐ 2. Continue full-time in school
☐ 3. Go into military service
☐ 4. Part-time job and part-time school
☐ 5. Other plans (Specify below)

_____

(SKIP TO Q. 34 IF YOU MARKED 2,3,4 OR 5)



31. If you planned to get a full-time job, what kind of a job did you want?

☐ 1. Same occupation studied in school
☐ 2. Highly related occupation
☐ 3. Slightly related occupation
☐ 4. Completely different occupation

(SKIP TO Q. 34 IF YOU MARKED 1 OR 2)

32. Why didn't you want a job in the occupational field represented by your vocational course?

☐ 1. Didn't think I learned enough
☐ 2. Instructor advised against it
☐ 3. Decided I didn't like the work
☐ 4. Found out the pay was too low
☐ 5. Had a job offer in another field
☐ 6. Developed new work interests
☐ 7. Other reasons (Specify below)

_____

33. When did you first decide against a career in your field of training?

☐ 1. Shortly before course completion
☐ 2. At about the 3/4 mark
☐ 3. At about midway in the course
☐ 4. At about the 1/4 mark
☐ 5. Never really planned to do so

## ABOUT YOUR FIRST JOB AFTER YOUR VOCATIONAL COURSE

34. Which actually came first after completing your vocational course?

☐ 1. Full-time job → Skip to Q. 36
☐ 2. Full-time school or college
☐ 3. Military service
☐ 4. Part-time school and part-time job
☐ 5. Part-time job
☐ 6. None of the above (Explain below)

_____

35. Have you ever held a full-time civilian job since completing the course?

☐ 1. Yes
☐ 2. No → Skip to Q. 49.

48. What was the reason for leaving your 1st full-time job? (Employer)

- [ ] 1. Laid off (Lack of work)
- [ ] 2. Laid off (Other reason)
- [ ] 3. Quit (Wanted more money)
- [ ] 4. Quit (Disliked type work)
- [ ] 5. Quit (Disliked work conditions)
- [ ] 6. Quit (No future in it)
- [ ] 7. Quit (Other reason - See below)

CIRCLE NUMBER OF PRIMARY REASON IF YOU CHECKED MORE THAN ONE REASON.

49. How long were you unemployed, looking and available for work before your next full-time job?

- [ ] 1. Got next job immediately
- [ ] 2. Unemployed _____months, _____weeks
- [ ] 3. Still unemployed
- [ ] 4. Went into military instead
- [ ] 5. Went back to school instead

## ABOUT YOUR PRESENT JOB

If you do not presently hold a full-time job skip to Q. 56 after marking your status below.

- [ ] Unemployed
- [ ] Full-time school
- [ ] Military
- [ ] Other

50. Did the job require a residence move to a new town or city?

- [ ] 1. No
- [ ] 2. Yes → How many miles?_____ • Did you move on your own or with your parents?
  - [ ] 1. On my own
  - [ ] 2. With parents

51. What type of work do you do? (Give title, like auto mech., draftsman, etc.)

• I am a _____.

52. How related is your work now to the post-high school course you took?

- [ ] 1. Some type of work
- [ ] 2. Highly related
- [ ] 3. Only slightly related
- [ ] 4. Completely unrelated



53. How long have you been with your present employer? → _____Yrs. _____Mos.

54. What was your gross income (before deductions) on this job?

Hrly Rate $ ¢

- [ ] 1. If on hourly rate . . . Started at _____.____ / Worked up to _____.____

Wkly Sal.

- [ ] 2. If on salary . . . . . Started at $_____ / Worked up to $_____

• What was your average weekly take home pay on this job? . . . . . $_____

55. What is the name and address of your present employer?

• Company _____

• Address _____

• City _____ State _____

## ABOUT UNEMPLOYMENT, IF ANY

56. Since completing the vocational course, how many years and months were you available for full-time work? (EXCLUDE TIME IN MILITARY, FULL-TIME SCHOOL, OR EXTENDED PERIODS OF ILLNESS.) About _____Yrs. _____Mos.

57. Of the above number of years and months, how many months were you without a full-time job and available for work? About _____Mos.

## ABOUT OTHER JOBS AND EDUCATION

58. Excluding the 1st and present job since completing your vocational course, how many other full-time jobs did you have? If none, skip to Q. 60 (Write in answer → ) _____

59. Of the other full-time jobs held, how many were in each category of relatedness to the occupation studied in your vocational course? (See below)

- [ ] 1. Some occupation . . . . . _____
- [ ] 2. Highly related occupation. . . . . _____
- [ ] 3. Slightly related occupation . . . . . _____
- [ ] 4. Completely different occupation. . . . . _____

60. Since completing your post-high school vocational course, how many months were you unavailable for full-time work for reasons given below?

Months

- [ ] 1. Military . . . . . About _____
- [ ] 2. Full-time college . . . . . About _____
- [ ] 3. Full-time (non-college) school. About _____
- [ ] 4. Illness/disability . . . . . About _____
- [ ] 5. Full-time housewife . . . . . About _____
- [ ] 6. Other reason . . . . . About _____

## ABOUT YOUR PARENTS AND YOU

61. Please circle the highest year of education that your parents completed.

| | Grade School | | | | High School | | | | College | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Father | <5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | >4 |
| Mother | <6 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | >4 |

< = less than  more than = >

62. What was your father's occupation in your last year of high school?

• He was a _____

☐ Not applicable to my father.

63. What was your mother's occupation in your last year of high school?

• She was a _____

☐ Not applicable to my mother. _____

64. Did either of your parents ever take a vocational course of any type?

| Mother | Father |
|---|---|
| ☐ 1. Yes | ☐ 1. Yes |
| ☐ 2. No | ☐ 2. No |
| ☐ 3. Not applicable | ☐ 3. Not applicable |

65. I am ☐ 1. Male ☐ 2. Female

66. I am ☐ 1. Single ☐ 2. Married ☐ 3. Other

67. I now have _____ dependents (Number)

68. I am ☐ 1. Negro ☐ 2. White ☐ 3. Other

69. Do you have a disability, health or other condition that limits your employability?

☐ 1. No ☐ 2. Yes

70. Please estimate for 1967 your total income from all gainful employment. Do not include income from rent, interest dividends, inheritance or sources other than gainful employment by you.

About _____ thousand dollars.

WHAT IS YOUR AGE ? _____

**THANK YOU VERY MUCH**

Junior College Questionnaire

PLEASE READ ALL ANSWER ALTERNATIVES BEFORE MARKING ☒ YOUR ANSWER.

## ABOUT YOUR HIGH SCHOOL YEARS

1. How much high school education did you complete? (MARK ONE.)

   ☐ 1. One year
   ☐ 2. Two years
   ☐ 3. Three years
   ☐ 4. Four years-graduate
   ☐ 5. Four years-nongraduate
   ☐ 6. None ➤ Skip to Q. 6

2. In what year did you graduate from high school?

   19_____ ☐ June ☐ January

3. What type of high school program did you take? (MARK ONE.)

   Vocational
   ☐ 1. Trade/industrial occupations
   ☐ 2. Distributive occupations
   ☐ 3. Health occupations
   ☐ 4. Agriculture occupations
   ☐ 5. Technical occupations
   ☐ 6. Office/business occupations
   Nonvocational
   ☐ 7. General (noncollege preparatory)
   ☐ 8. Academic (college preparatory)

4. If you followed a vocational program, what specific occupation or occupational field did you study in high school? (WRITE YOUR ANSWER BELOW. FOR EXAMPLE: AUTO MECHANIC, DRAFTING, ETC.)

   _____

5. Where are you now located relative to your high school's location?

   ☐ 1. Same town/city
   ☐ 2. Different city, same state
   ☐ 3. Different state, same general region
   ☐ 4. Different region of country



## ABOUT THE PERIOD BETWEEN HIGH SCHOOL AND JUNIOR COLLEGE

6. How many years and/or months elapsed between when you left high school and when you began junior college?

   • About_____years and_____months.

   If 3 months or less, skip to Q. 11

7. How long were you unemployed, (that is, available for work but unable to find work; excluding any period in which you were not available for work) in the period between high school and junior college?

   ☐ 1. Not unemployed.
   ☐ 2. Unemployed about_____months.

8. Did you have any military service between high school and junior college attendance?

   ☐ 1. No
   ☐ 2. Yes ➤ About_____months
   • If yes, did you have any specialist training useful for later civilian work?

   ☐ 1. No
   ☐ 2. Yes ➤ What type of training?

   _____

9. Were you unavailable for full-time work for any period between high school and junior college? (Check all applicable boxes and write in the number of months).

   ☐ 1. Available for work the entire period.
   ☐ 2. Attended full-time school (other than junior college) for about_____months.
   ☐ 3. Was ill (or disabled) for about_____months.
   ☐ 4. Was a full-time housewife for about_____months.
   ☐ 5. Unavailable for reasons other than above for about_____months.

10. What was your gross income (before deductions) at the start and end of this period?

| | | Hrly Rate $ ¢ |
|---|---|---|
| ☐ 1. If on hourly rate . . . | Started at | ___.___ |
| | Ended with | ___.___ |
| | | Wkly Sal. |
| ☐ 2. If on salary . . . . . | Started at | $_____ |
| | Ended with | $_____ |
| • What was your average weekly take home pay on this job? . . . . . | | $_____ |

## ABOUT YOUR JUNIOR COLLEGE VOCATIONAL TRAINING

11. Why did you decide to go to a junior college rather than to a four year college?
- ☐ 1. Convenient location
- ☐ 2. Interested in specific program
- ☐ 3. Could not afford four year college
- ☐ 4. Other (Please state below.)

_____

12. What occupation or occupational field did you study in your junior college vocational course? Write in (or, give vocational course title.)

_____

13. What made you decide to take a junior college vocational course? (Check all that influenced you.)
- ☐ 1. Needed this course for an entry job into my chosen field.
- ☐ 2. Needed this course to get ahead in the field of my choice.
- ☐ 3. Wanted to have more than a high school education.
- ☐ 4. Other reason (Please state below.)

_____

14. Did the junior college offer the course you really wanted to take?
- ☐ 1. Yes → Is that the one you actually took?
  - ☐ 1. Yes
  - ☐ 2. No, because _____
- ☐ 2. No → Which did you really want?

_____



15. What was the length of your junior college vocational course?
- ☐ 1. Less than 6 months
- ☐ 2. 6 to 12 months
- ☐ 3. 12–18 months
- ☐ 4. 18–24 months

16. What degree did you receive after the completion of your junior college education?
- ☐ 1. None
- ☐ 2. Certificate
- ☐ 3. Associate of Arts or Science
- ☐ 4. Other degree _____

17. Please rate your junior college frankly on the listed items

1. Poor
2. Fair
3. Good
4. Excellent

| | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| 1. Quality vocational instruction | ☐ | ☐ | ☐ | ☐ |
| 2. Quality academic instruction | ☐ | ☐ | ☐ | ☐ |
| 3. Physical condition of school | ☐ | ☐ | ☐ | ☐ |
| 4. Physical condition of shops | ☐ | ☐ | ☐ | ☐ |
| 5. Teacher interest in students | ☐ | ☐ | ☐ | ☐ |
| 6. Student guidance/counseling | ☐ | ☐ | ☐ | ☐ |
| 7. Job placement of graduates | ☐ | ☐ | ☐ | ☐ |
| 8. Reputation in community | ☐ | ☐ | ☐ | ☐ |

18. Did you hold down a job while you were going to junior college, not counting on-the-job training connected with course work?
- ☐ 1. No → Skip to Q. 21
- ☐ 2. Yes, the whole time
- ☐ 3. Yes, some of the time

19. Was the job you held related in any way to your junior college vocational training?
- ☐ 1. No
- ☐ 2. Yes, in the same field
- ☐ 3. Yes, in a related field

20. What was your gross income (before deductions) on this job?

| | | Hrly Rate $ ¢ |
|---|---|---|
| ☐ 1. If on hourly rate . . . | Started at | ___.___ |
| | Worked up to | ___.___ |
| | | Wkly Sal. |
| ☐ 2. If on salary . . . . . | Started at | $_____ |
| | Worked up to | $_____ |
| • What was your average weekly take home pay on this job? . . . . . | | $_____ |

## ABOUT THE PLANS YOU HAD FOR AFTER YOUR JUNIOR COLLEGE VOCATIONAL COURSE

21. At the time you completed the course what were your plans?
    - ☐ 1. Find a full-time job
    - ☐ 2. Continue full-time school
    - ☐ 3. Go into military service
    - ☐ 4. Part-time job and part-time school
    - ☐ 5. Other plans (Please state below.)

    _____

    (Skip to Q. 24 if you marked 2,3,4 or 5.)

22. Relative to the course you took, what kind of a job did you want?
    - ☐ 1. In the same occupation
    - ☐ 2. A highly related occupation
    - ☐ 3. A slightly related occupation
    - ☐ 4. Completely different occupation

    if you marked 1 or 2.)

    Why did you want a job in the field of you just completed?
    - ☐ 1. Decided I didn't like the work
    - ☐ 2. Didn't feel I learned enough
    - ☐ 3. Developed new work interest
    - ☐ 4. What I found out about the field made me change my mind
    - ☐ 5. Other reason (Please state below.)

24. Which really came first after completing junior college?
    - ☐ 1. Full-time job → Skip to Q. 28
    - ☐ 2. Full-time school or college → Skip to Q. 27
    - ☐ 3. Military service → Answer Q.25 & Q.26
    - ☐ 4. Part-time school and part-time job → Skip to Q. 27
    - ☐ 5. Part-time job → Skip to Q. 27
    - ☐ 6. Became full-time housewife → Skip to Q. 27
    - ☐ 7. Other (Please state below.)

    _____

25. How many months of active military service did you have?
    - ☐ 1. Still on active duty → Skip to Q. 53
    - ☐ 2. _____ Months



26. Did you have any specialist training in the service that would be useful for civilian work?
    - ☐ 1. No
    - ☐ 2. Yes → What type of training?

    _____

## ABOUT YOUR FIRST FULL-TIME JOB AFTER COMPLETING YOUR JUNIOR COLLEGE VOCATIONAL COURSE

27. Have you ever held a full-time job since graduating from junior college?
    - ☐ 1. Yes
    - ☐ 2. No → Skip to Q. 47

28. Following graduation from junior college, how long did it take you to get your first full-time job?
    - ☐ 1. Had job before graduating
    - ☐ 2. About a week
    - ☐ 3. About 2 weeks
    - ☐ 4. About 3 weeks
    - ☐ 5. About 1 month
    - ☐ 6. About _____ months (Write in the No.)

29. How did you get that first full-time job after completing junior college?
    - ☐ 1. On my own, without anyone's help
    - ☐ 2. Private employment agency
    - ☐ 3. State employment agency
    - ☐ 4. Through parent or relative
    - ☐ 5. Through a friend
    - ☐ 6. Was already with same employer
    - ☐ 7. Through junior college instructor
    - ☐ 8. Through junior college counselor
    - ☐ 9. Through junior college placement office
    - ☐ 10. Other than above (Please state below.)

    _____

30. Were you with the same employer before you completed the course?
    - ☐ 1. No
    - ☐ 2. Yes → How long before?

    • About _____ years _____ months.

31. Did the job require a residence move to a new town or city?

☐ 1. No
☐ 2. Yes → How many miles? _____

32. How well did your vocational training program prepare you for that first full-time job?

☐ 1. Exceptionally well prepared
☐ 2. Well prepared—some gaps
☐ 3. Not well prepared—many gaps
☐ 4. Very poorly prepared

33. What type of work did you do on your first full-time job after completing your junior college vocational course? (Give title, like auto mechanic, salesman, carpenter, etc.)

I was a _____

34. How related was this job to your junior college vocational training?

☐ 1. Same as what I studied } Skip to Q. 36
☐ 2. Very highly related } Skip to Q. 36
☐ 3. Only slightly related } Answer Q. 35
☐ 4. Wholly unrelated } Answer Q. 35

35. Why didn't you or couldn't you get your first job after junior college in the field you studied?

☐ 1. Tried, but couldn't find a job
☐ 2. Didn't get into apprentice program
☐ 3. Better type job came along first
☐ 4. Decided against that type of work
☐ 5. Instructor advised against it
☐ 6. Other reason (Please state below.)

36. What was your gross income (before deductions) on this job?

☐ 1. If on hourly rate . . . } Started at / Worked up to — Hrly Rate $ ¢ ____.____ / ____.____

☐ 2. If on salary . . . . . } Started at / Worked up to — Wkly Sal. $_____ / $_____

• What was your average weekly take home pay on this job? . . . . . $_____



37. On the whole, how satisfied were you with this job?

☐ 1. Very satisfied
☐ 2. Fairly satisfied
☐ 3. Not satisfied

38. How long did your first full-time job (after your junior college vocational training) last?

☐ 1. Still there → Skip to Q.46
☐ 2. About _____ Yr(s) _____ Months

(Write in your answer.)

## ABOUT YOUR PRESENT JOB

39. If you do not presently hold a full-time job, skip to Q. 47 after marking your status below.

☐ 1. Unemployed ☐ 4. Full-time school
☐ 2. Military ☐ 5. Housewife
☐ 3. Part-time job ☐ 6. Other

40. Did this job require a residence move to a new town or city?

☐ 1. No
☐ 2. Yes → How many miles? _____

41. What type of work do you do? (Give title, like auto mechanic, draftsman, etc.)

I am a _____

42. How related is your work now to your junior college vocational training?

☐ 1. Same type of work
☐ 2. Highly related
☐ 3. Only slightly related
☐ 4. Completely unrelated

43. How long have you been with your present employer? About ____ years _____ months.

44. What is your gross income (before deductions) on this job?

☐ 1. If on hourly rate . } Started at / Worked up to — Hrly Rate $ ¢ ____.____ / ____.____

☐ 2. If on salary . . . . } Started at / Worked up to — Wkly Sal. $_____ / $_____

• What was your average weekly take home pay on this job? . . . . . $_____

45. On the whole, how satisfied are you with your job?

- ☐ 1. Very satisfied
- ☐ 2. Fairly satisfied
- ☐ 3. Not satisfied

46. What is the name and address of your present employer?

Company _____

Address _____

City _____ State _____

## ABOUT UNEMPLOYMENT, IF ANY

47. How long were you unemployed, (that is, available for work but unable to find work; excluding any period in which you were not available for work) in the period since leaving junior college and your present job?

- ☐ 1. Not unemployed
- ☐ 2. Unemployed about _____ months
- ☐ 3. Still unemployed, ( _____ months)

48. Since completing your junior college vocational training, was there any period in which you were not available for work (in military service, full-time school, extended illness, housewife)? (CHECK ALL THAT APPLY).

- ☐ 1. None

**Not available for work because:**

- ☐ 2. Military service ( _____ Months).
- ☐ 3. Full-time school ( _____ Months).
- ☐ 4. Illness/disability ( _____ Months).
- ☐ 5. Full-time housewife ( _____ Months).
- ☐ 6. Other _____

_____

(Please specify) (No. of _____ months)



49. Excluding the first and present job since completing your junior college vocational training, how many other full-time jobs did you have? If none, skip to Q. 51

(Write in answer) _____

50. Of the other full-time jobs held, how many were related to the occupation you studied in junior college?

1. Same occupation . . . . . _____
2. Highly related occupation . . . . _____
3. Slightly related occupation . . . _____
4. Completely different occupation _____

51. Since completing junior college, how many months of additional education or training have you had? (Exclude on-the-job training.)

| | Full Time | Part Time |
|---|---|---|
| ☐ 1. College education (months). . . . . | ____ | ____ |
| ☐ 2. Noncollege training (months). . . . . | ____ | ____ |

If none, check here ☐, and skip to Q. 53

52. What type of course or program did you take? (Please write in below.)

_____

53. What plans do you have now for future training or education?

- ☐ 1. Ha[illegible] plans [illegible]er training or
- ☐ 2. [illegible] with co[illegible] courses or training
- ☐ 3. Enroll in four year college
- ☐ 4. Take correspondence course
- ☐ 5. Enroll in public training program
- ☐ 6. Other (Please state below.)

_____

## ABOUT YOUR PARENTS AND YOU

54. How many years of education did your parents complete?
Circle the highest year completed

| | Grade School | High School | College |
|---|---|---|---|
| Father | < 6 6 7 8 | 9 10 11 12 | 1 2 3 4 > 4 |
| Mother | < 6 6 7 8 | 9 10 11 12 | 1 2 3 4 > 4 |

< = less than  more than = >

55. What was your father's occupation in your last year of high school?

He was a _____

☐ Not applicable to my father

56. What was your mother's occupation in your last year of high school?

She was a _____

☐ Not applicable to my mother

57. Your Sex? ☐ 1. Male ☐ 2. Female

58. Your age? _____

59. What is your marital status?

☐ 1. Never married → Skip to Q. 61
☐ 2. Married, no children
☐ 3. Married, children
☐ 4. Other (separated, widowed, divorced)

60. Please indicate the date of your marriage (year only). 19____

61. Your race?

☐ 1. Negro ☐ 2. White ☐ 3. Other

62. Do you have a disability or health condition which limits your employability?

☐ 1. Yes ☐ 2. No

63. What would be your estimate of your total income for 1967? (Include only income from salaries, wages, fees, or business operations. Exclude income from investments, pensions, earnings of family members, etc.)

☐ 1. Under $3,000
☐ 2. $3,000-$4,999
☐ 3. $5,000-$6,999
☐ 4. $7,000-$8,999
☐ 5. $9,000-$9,999
☐ 6. $10,000-$14,999
☐ 7. $15,000 and over

THANK YOU VERY MUCH



500-3.75