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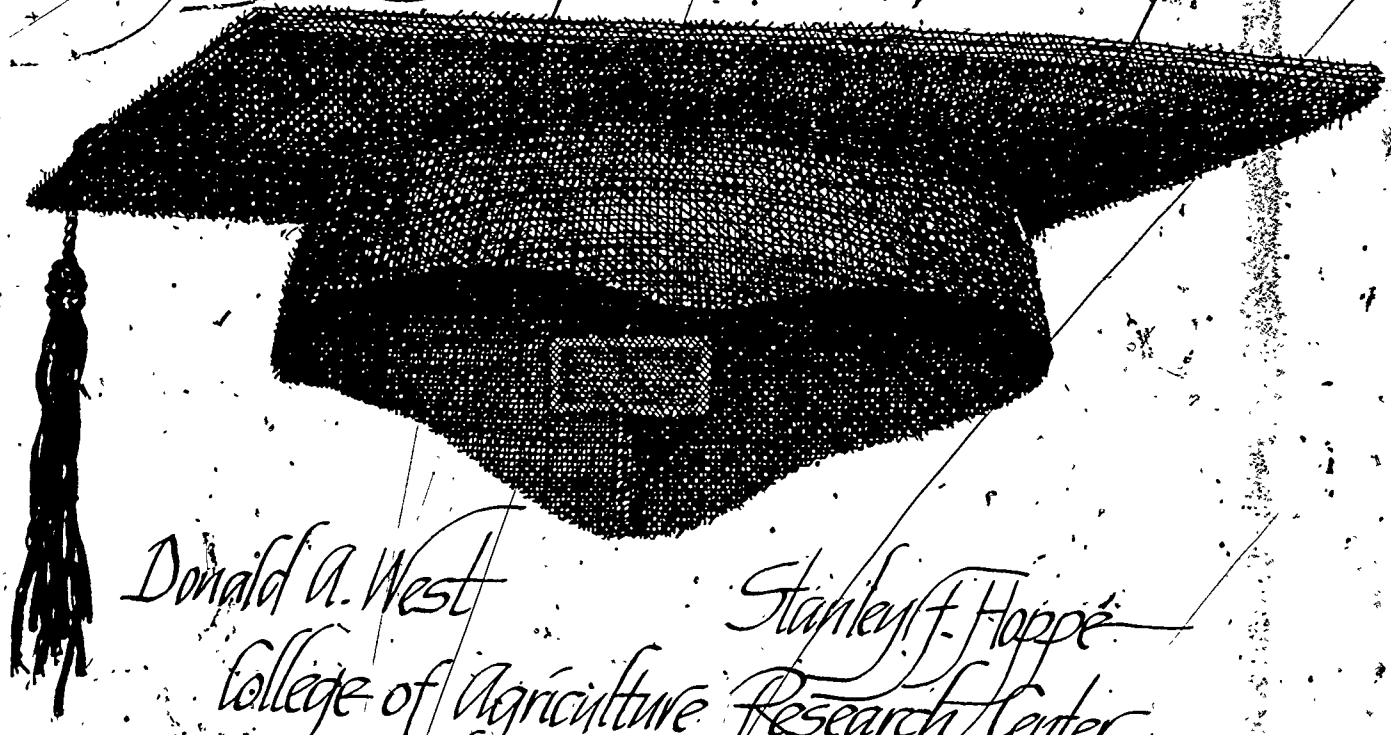
ABSTRACT

Data collected via a 1973-74 mail survey of 1965 and 1966 rural Washington high school graduates were used to analyze the relationship between education, location of work, occupation, and earnings of young adults (24-27 years of age). Respondents (524 males and 535 females) were asked to supply information on their educational background (pre- and post-graduation), their family background (place of residence), and their current occupations (location and salary). Occupation types found in the sample were compared with those of a national group derived from the 1970 Census of Population. Results indicated that: (1) education was an important factor associated with preparation for work, especially in areas of vocational and scientific training; (2) more than one-half the sample continued education after high school; (3) about four-fifths of the men and two-thirds of the women were employed in nonmetropolitan areas; (4) two-fifths of the men and three-fifths of the women were employed in small or large cities; (5) over one-half of the men held jobs in the professional, craftsmen, and operative categories, while 80 percent of the women were employed as professional and clerical workers; (6) when compared with the Census group, a higher proportion of the Washington adults were in professional occupations; and (7) earnings in small cities and towns were comparable to those of urban areas. (JC)

Occupations, Earnings, and Associated Characteristics of Young Adults Graduating from High Schools in Nonmetropolitan Washington



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Summary

This report summarizes information on the education, location of work, occupations and earnings of young adults who graduated in 1965 and 1966 from high schools in nonmetropolitan areas of Washington. The purpose of the study is to describe these employment characteristics for the young adults and identify relationships among them. Information was gathered through a mail survey in late 1972 and early 1973.

Education appeared to be an important factor associated with preparation for work. Over one-third of both men and women said that vocationally oriented classes were the most helpful in preparing them for the type of work they were doing when surveyed. One-third of the males and about one-sixth of the females ranked math, chemistry and physics as most helpful in their current occupations.

More than half of the people surveyed continued their education after high school. About 22% received some additional vocational training. About two-thirds of the respondents attended college and two-fifths completed 2 or more years. A slightly higher proportion of young men than women had college training. A slightly higher percentage of the young women received vocational training.

The population or size of one's place of work was examined for the proportions of young men (95%) and young women (61%) who earned incomes in 1971. About four-fifths of the men and two-thirds of the women were employed in nonmetropolitan areas. Within these areas, large towns (2,500-10,000 population) and small cities (10,000-50,000 population) provided employment for roughly half of both males and females reporting earnings.

A number of respondents moved following their high school graduation. When in high school, all resided in towns or other rural areas. When surveyed, about two-fifths of the men and three-fifths of the young women were employed in small or large cities. Most of this latter group of workers had moved to larger communities than the one in which they attended high school.

Over half of the male respondents had occupations in the professional, craftsmen, and operative categories. About 80% of the employed women were professional and clerical workers. Service workers and laborers represented less than one-fourth of both male and female workers.

In comparison to a *Census of Population* reference group of U.S. workers aged 25-34 years in 1970, a higher proportion of young adults graduating from high schools in nonmetropolitan Washington were in professional occupations. The Washington sample had relatively fewer craftsmen and operatives. The construction and manufacturing industries, which employ the majority of craftsmen and operatives, provide a smaller proportion of total employment in Washington than in the nation as a whole. However, this difference does not fully explain the lower percentage of craftsmen and operatives among survey respondents.

Average earnings in 1971 for the employed young adults from Washington were $6,744 for men and $5,328 for women. Over one-fifth of the employed females were part-time workers and their annual earnings averaged $3,092. In comparison to the 1970 Census reference group, annual earnings of the Washington young men were slighlty lower and those of the women slightly higher.

Additional education beyond high school appears important for those in white-collar occupations. Three-fourths of the men and women in professional occupations had 2 or more years of college education and over half of those in other white-collar occupations had some college training. Additional education appeared less important for skilled blue-collar occupations, laborers, and service workers.

There was no evidence of a significant relationship between education and earnings for men. This finding may arise because of the relative youth of the respondents. Those who devoted considerable time to additional education following high school, with possible interruptions for military service, may have needed more time to obtain the type of employment and experience that yield higher earnings.

Earnings varied more with the size of one's place of work among males than among females. Male respondents employed in small cities had the highest average annual earnings. Earnings varied less among men employed in other locations. Average earnings of those employed on farms were only slightly below earnings of those employed in large cities. The relationship between earnings and place of work was not significant for employed women.

Occupation was associated with earnings of both young men and women. Male white-collar and skilled blue-collar workers earned more than service workers and laborers. Earnings of female professional workers and managers averaged well above those of women in other occupations.

The results apply only to a specific group of graduates from nonmetropolitan high schools at a early period in their life's work. Two implications appear important. One is that high school vocational and science courses appear helpful in preparing respondents for work and for college education that is associated with certain occupations. The second implication is that persons with skills and education similar to those of respondents may find about the same levels of pay in towns and small cities as in large metropolitan areas. With occupational and geographical mobility, these implications may not be valid as the young adults grow older, but they appear to hold at an early point in their working lives.

Introduction

Many American youth experience some difficulty in making the transition from high school to the world of work. One problem is the need to make trade-offs between work and additional education. Often high school students are not well informed about employment opportunities in larger labor markets and are not aware of educational requirements for jobs (6, p. 79-80). It has been estimated that one out of three youths who enter the labor force has trouble locating suitable employment (1, p. 5).

Many youths from nonmetropolitan areas face additional problems in their search for satisfying jobs.[1] Rapid adoption of labor-saving techniques in agriculture has substantially reduced demand for workers. Agriculture is the largest rural industry; other important ones are forestry and fishing.[2] Where local opportunities are limited, young people face the prospect of moving and entering less familiar occupations and surroundings. Additional education and training makes this process easier for many, but some adjustments must be made. Information is needed on education, location of employment, occupation and earnings of youth from nonmetropolitan areas to better understand how these factors are related to successful employment.

This report describes the young adults from nonmetropolitan areas of Washington State who have made the transition from high school graduation to employment. The purpose of the study is to identify occupations and earnings of the young adults and to examine associations among these two measures of labor market success and one's education and geographic location. Such information should be useful to high school students from nonmetropolitan areas now making career choices. Educators and government officials responsible for programs to help young people in the school-to-work transition should also benefit.

Methods and Procedures

The data were collected through a mail survey of 1965 and 1966 graduates of high schools in nonmetropolitan Washington. The nonmetropolitan area of the state, as defined by 1960 *Census of Population*, includes all counties except King, Snohomish, Pierce, Clark and Spokane. Of the nearly 200 nonmetropolitan school districts in the state, 48 were asked to supply names and addresses of 1965-1966 class members. Twenty-two districts, geographically dispersed throughout the state, provided address lists from which 2,335 people were randomly selected.

Mail questionnaires were sent to the persons selected late in 1972 and early in 1973. Those contacted were asked to provide information on their current work, location, education and family background. Respondents were asked to recall high school training, parents' residence, and education after high school.

The results presented in this report are subject to the usual limitations of the mail survey technique.[3] About 25% of the young people selected could not be contacted because of no forwarding address, improper identification or death. Among the 1,754 persons contacted, usable questionnaires were completed by 524 males and 535 females, a response rate of 61%. A test for nonresponse bias based upon the intervals between initial mailing and receipt of the completed questionnaire indicated the absence of bias in education, occupation and earning variables. With these qualifications, inferences are possible from the survey data to the population represented by graduates of the 22 schools providing addresses. Any inferences that extend beyond this population, however, depend critically on how accurately the population samples resemble a larger population of interest.

In the sections which follow, the term "young adults" refers to the persons who responded to the questionnaire. Note that this group represents high school graduates who were generally 24 to 27 years old when surveyed. The results show education, location, occupation and earnings of these young adults at this particular point in the life cycle.

Characteristics of the Young Adults

Education and training

Recognition of the importance of high school education in preparing youths for employment is growing (3). The high school curricula that youths follow appear to be associated with whether or not they plan to continue their education (6, p. 43). Youths enrolled in general and vocational curricula are less likely to continue their education beyond high school than those in the college preparatory curriculum. However, no curriculum appeared to prevent college enrollment. Limited evidence indicates that high school vocational training enables graduates to get jobs sooner and improves job retention and job satisfaction (3, p. 207).

In the mail survey, respondents were asked which one of six categories of high school courses listed in table 1 was the most helpful in preparation for the work they were doing. One-third of the male respondents listed vocational courses as most helpful. The group containing math, chemistry, and physics ranked a close second among young men. No other category was selected by more than 10% of the males.

Vocational courses were also selected as most helpful by 40% of the young women in the sample. No other group of courses was named by more than 17% of the women.

Education and training beyond high school appeared important to a majority of the young adults surveyed. At the time of graduating from high school, more than two-thirds of the males and four-fifths of the females planned to attend college or vocational school. Actually, more than four-fifths of both males and females received some training beyond high school.

Eleven percent of the men and 18% of the women had vocational training beyond high school but did not attend college. An additional 8% of both sexes obtained a combination of vocational training and college education. Sixty-three percent of the males and 58% of the females attended college but received no vocational training.

Amounts of training respondents received are shown in table 2. Seventy-one percent of the males and 65% of the females received some college education and over 40% of both groups completed more than 2 years. Only 3% of the males and 2% of the females had more than 2 years of vocational training.

Location of employment

Many youths from nonmetropolitan areas move, which often results in a change in the population of the commu-

Table 1. High school courses most helpful to respondents graduating in 1965 and 1968 from high schools in nonmetropolitan Washington

	Male respondents		Female respondents	
	Number	Percent	Number	Percent
Voc, Agr, Shop, Industrial Arts, Home and Family Living	156	34	196	40
Math, Chemistry, Physics	154	34	69	14
History, Civics, Political Sci.	21	5	17	4
English, Drama, Language	47	10	84	17
Physical Education, Sports	38	8	18	4
Other Courses	39	9	102	21
Total	455[a]	100	486[a]	100

[a]Totals do not equal the total number of people in the sample because some respondents did not answer all questions.

Table 2. College and vocational training of young adults graduating in 1965 and 1966 from high schools in nonmetropolitan Washington.

	College education				Vocational training			
	Males		Females		Males		Females	
Years of Training	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None[a]	143	29	182	35	402	81	395	75
Up to 2	143	29	161	30	78	16	122	23
2 - 4	168	34	160	30	17	3	11	2
More than 4	43	8	25	5	--	--	--	--
Total	497[b]	100	528[b]	100	497	100	528	100

[a] This category includes those persons who were enrolled in college or vocational schools for a period of less than one month.

[b] Totals exclude 27 males and 7 females who did not answer this question.

nity (size of place) where they work (5, p. 49). Preferences for location and community size as well as availability of employment enter into location decisions (2). Over half of Washington's residents prefer to live in towns or cities with less than 50,000 population, even though more than two-thirds of the state's people live in metropolitan areas (2, p. 9).

The young adults responding to the survey all resided on farms, in rural nonfarm areas or in towns when they were attending high school (table 3).[4] When surveyed 6 to 7 years later, about half of the young adults who were earning money were working in rural areas or towns. The rest were employed in small or large cities.

Between their high school graduation and the time of the survey many young men moved to larger communities. One third resided on farms while attending high school, but less than 20% of the group were employed on farms at the time of the survey. Roughly 60% of those who had resided on farms were working in rural nonfarm locations or in towns or small cities (nonmetropolitan areas). The remaining fourth were employed in large cities (metropolitan areas).

Most males who resided in rural nonfarm areas while attending high school also moved to larger communities between high school and work. Only 11% of this group were employed in rural nonfarm locations. Over 50% of this group were employed in large towns and small cities; one-fifth worked in large cities.

Small and large towns were locations of employment for nearly half of the young men who resided in these places when in high school. Small and large cities were the principal places of employment for the remainder of this group.

Place of work was reported only for those young women who had earnings in 1971. This group consisted of just over 60% of all female respondents (table 3). Most young women who did not report place of work were full-time homemakers. Roughly one-third of both groups of women resided on farms when in high school and slightly less than half resided in small or large towns.

Table 3. Location by place of work and residence when in high school for young adults graduating in 1965 and 1966 from high schools in nonmetropolitan Washington, percentage distribution

Place of work	Residence when in high school: Farm	Rural Nonfarm	Town	Total
MALES -				
Nonmetropolitan areas				
Farm	17	2	3	8
Rural nonfarm	13	11	10	11
Small town, <2,500	13	11	14	13
Large town, 2,500-10,000	16	28	30	25
Small city, 10,000-50,000	18	27	23	23
Metropolitan areas				
Large city, >50,000	24	21	20	22
Total %	100	100	100	100
No. of observations	151	90	224	465
EMPLOYED FEMALES[a]				
Nonmetropolitan areas				
Farm	3	0	0	1
Rural nonfarm	3	7	1	3
Small town, <2,500	15	10	9	11
Large town, 2,500-10,000	19	30	33	28
Small city, 10,000-50,000	22	23	28	25
Metropolitan areas				
Large city, >50,000	38	31	30	33
Total %	100	100	100	100
No. of observations	113	61	141	315

[a]Residence when in high school for females not employed when surveyed: farms, 63 persons; rural nonfarm, 48 persons, and towns, 97 persons.

Among the young women reporting place of work, 33% were employed in large cities. Small cities and large towns in nonmetropolitan areas were also important places of work. Each category contains about one-fourth of the employed females. Only 15% of the employed young women worked in small towns, rural farm, and nonfarm areas.

Occupation

Choice of occupation is an important decision for young adults because of its association with working conditions and job satisfaction (6, p. 140). Occupation is broadly defined in this study to include full-time homemakers, students, members of the Armed Forces, and the many jobs classified into 11 major categories by the Bureau of the Census.[5] The proportions of respondents in each of these categories are in figure 1.

Professional workers make up the largest single occupation category of employed young men. This group, which includes doctors, lawyers, engineers, and teachers, contains about 22% of the men in the sample. The next two largest categories, craftsmen and operatives, contain skilled blue-collar workers and together represent about one-fourth of the males. Smaller percentages of male respondents were employed as managers, sales workers and laborers. Farmers and farm laborers made up about 6% of the male respondents and a similar number were students.

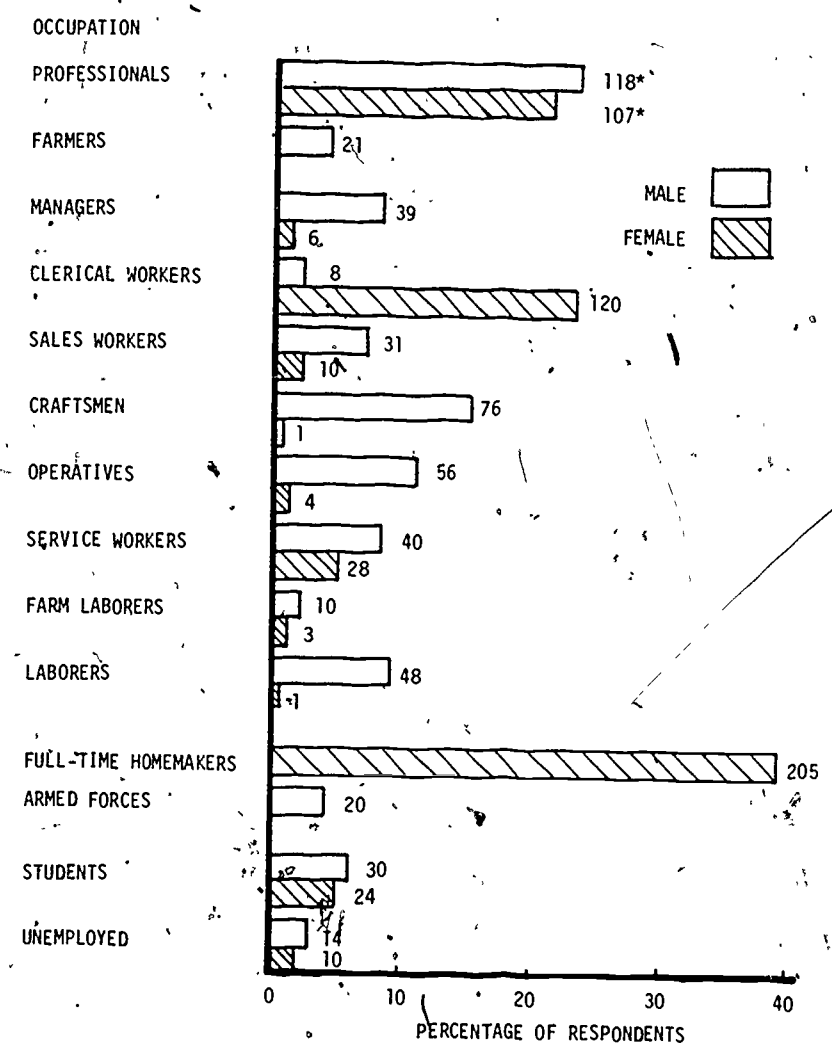
Occupational choices for young women differ from those of the males in several respects. Women can be full-time homemakers, work full-time or work part-time. Slightly over half of the female respondents in our study earned money in occupations included in the 11 census categories. Nearly all of the remainder were full-time homemakers.

Decisions to get a job are also influenced by marital status (7). Marital status of the women varied slightly among full-time workers, part-time workers or full-time homemakers. About 60% of the full-time workers and 80% of the part-time workers were married. All but 3% of the full-time homemakers were married when surveyed.

Among those women employed outside the home, over 40% were professional and clerical workers. Considerably fewer females were in sales, service and other occupations. Only about 2% were employed in blue-collar occupations —craftsmen, operatives or laborers. Approximately 4% of the young women were students.

Comparison with census reference group

Occupations chosen by Washington young people from



1. Occupations of young adults graduating in 1965 and 1966 from high schools in nonmetropolitan Washington. Numbers after bars show number of respondents; 7 male and 16 female respondents did not state an occupation.

nonmetropolitan areas were compared with those of a national group by using data from the 1970 Census of Population (13). The 1970 census gives occupation data for persons aged 25-34 years, the available age group most nearly comparable to the Washington sample (aged roughly 24-27 years). The Washington survey data include narrower ranges of education and age than the Census group. About one-fourth of those in the census data did not complete high school (13, p. 1 & 242) while the survey data in this report are restricted to high school graduates.

Compared to the national group, males from nonmetropolitan Washington were more heavily represented in the professional, farmer, sales, service and laborer categories (appendix II, table 1). The percentages of males from nonmetropolitan areas in the craftsmen and operative categories were roughly two-thirds of those in the census data. The higher percentage of farmers in the Washington sample is understandable because of the nonmetropolitan background of the respondents.

Comparison of Washington and the census data shows that in general, young men graduating from nonmetropolitan high schools in Washington can and do enter a wide range of occupations. The causes of the smaller percentages of craftsmen and operatives among the males with nonmetropolitan backgrounds cannot be determined from the data available. However, the proportion of total employment in industries that hire many craftsmen and operatives is slightly lower in Washington than the nation as a whole. The construction and manufacturing industries nationally contain about 60% of all male craftsmen and operatives (11, p. 778-781). These industries provide 37% of all employment of men in Washington as compared to 40% nationally.

Occupations of the young women were compared similarly. Those from nonmetropolitan Washington entered professional and clerical occupations in greater proportions than did women aged 25-34 years in the nation as a whole. The greatest difference was in the professional category; 38% of the women from nonmetropolitan areas were professional workers as compared to only 22% in the national group. The higher proportion of women from nonmetropolitan Washington in professional occupations may be associated with the many educated beyond high school.

In comparison to women covered in the census data, relatively fewer young women from nonmetropolitan Washington became operatives. This reduction in the

proportion of operatives may be due to fewer opportunities for women operatives in Washington than in other parts of the nation. Construction and manufacturing nationally employ more than three-fourths of women operatives. In Washington, in 1970 only 12% of all employed women worked in construction and manufacturing as compared to 22% nationally.

Annual earnings

The distribution of annual earnings for the respondents is in figure 2. Earnings are amounts that respondents received for working in 1971 and do not include dividends, rents, interest, transfer payments or earnings received by other members of the family. Approximately 95% of the male respondents and 61% of the female respondents reported 1971 earnings. The average annual amount earned by the young men was $6,744.[6] Over three-fifths had annual earnings ranging between $4,000 and $10,000.

Part-time employment of some respondents affects the distribution of earnings. Specific data are not available on part-time employment for males. However, it was assumed that students and those unemployed when they completed the questionnaire worked only part of 1971. Average annual earnings were $3,380 for the male students and $3,167 for those not working when surveyed.

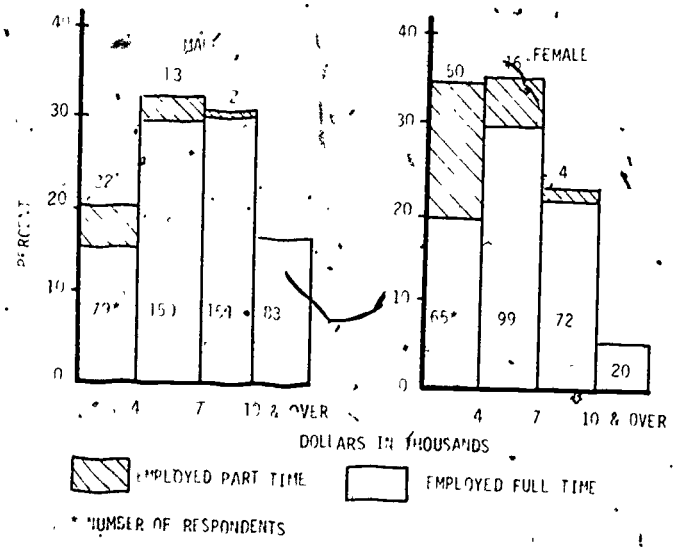
Among the employed females, those working part-time averaged $3,092 while full-time workers earned an average of $6,238. Earnings of part-time workers were most often in the 0-$4,000 category. Very few earned over $7,000. Among full-time workers, only 6% of the females and 17% of the males earned over $10,000.

Annual earnings of the respondents were compared to 1969 earnings of persons aged 25-34 years enumerated in the 1970 U.S. Census of Population (see appendix II, table 2). This comparison must again be qualified: all those responding to the mail survey were high school graduates, and as a group, were younger than persons covered in the census.

Among respondents, 14% of the young men had earnings below $3,000 as compared to 7% of those in the census data. Earnings in excess of $10,000 were reported by 17% of the male respondents as compared to nearly 30% of the census group. The lower earnings for the young men may reflect limited employment opportunities and lower wages. However, the younger average age of the Washington sample provides a more likely explanation. Younger men usually have less work experience and training and consequently, fewer opportunities for advancement and wage increases.

Earnings of young women are harder to compare, since the census did not tell how many females worked part-time. With full-time and part-time workers grouped together, female respondents in the Washington survey had annual earnings higher than the census women aged 25-34 in the labor force during 1969. About 24% of the women from nonmetropolitan areas reported earnings of less than $3,000 as compared to 35% of the females covered in the census. Nearly 6% of the young women in the survey earned more than $10,000 while only 2.5% of those in the census group did so.

We cannot tell whether or not a higher proportion of the young women responding to the survey were full-time workers and are responsible for the higher annual earnings by this group. However, it seems likely that the education and training for our sample provide a stronger explanation for the difference in earnings. Respondents were high school graduates and a majority had some additional training. This training improves their credentials for better paying jobs over those with less education. Young women are less likely than young men to have interrupted their careers for military service. Consequently, female respondents with additional education may have had more time to benefit from their training through increasing earnings.



Relationships Among Characteristics

Relationships among socio-economic characteristics of young people nationally reveal that choices made about education and location subsequently influence occupation and earnings (7, p. 97-117). The amount of education a person receives appears to affect his occupation and earnings. If a young person moves from where he attended high school, the size of the place where he works may change and influence his choice of occupation. These relationships are examined in this section to indicate how choices made during the transition from high school to work are associated with occupation and earnings.

Education, occupation and earnings

The amount of education respondents received is related to their occupations (table 4).[7] College education appears most important for those in white-collar occupa-

2. Annual earnings in 1971 of young adults graduating in 1965 and 1966 from high schools in nonmetropolitan Washington. Numbers on bars are number of respondents. Females were asked if they worked part or full time. Males are assumed to be working full time except for students and those unemployed at the time they completed the questionnaire. Annual earnings for these latter two groups are indicated as part-time earnings. Some 24 male respondents did not report earnings.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tions. More than three-fourths of the professional workers and about half of those in managerial positions had completed 2 or more years of college. About two-fifths of the male clerical and sales workers and men in Armed Forces had similar amounts of training. Four-fifths of the farmers had obtained some college training and 30% had completed more than 2 years.

Some occupations require less formal education than others. Skilled blue-collar and service workers and laborers had less college training than did the white-collar group. Vocational training may be more important in these skilled blue-collar occupations (7, p. 99). However, the separate effect of the type of training was not isolated in this study.

Males and females in the same occupations have similar amounts of education. While a higher percentage of male clerical and sales workers had 2 or more years of college than did females, differences in college training between men and women in professional and service occupations were smaller. Among the young women, homemakers had less college training, although 17% completed more than 2 years.

Earnings of males did not vary greatly with the amount of college education (table 5). This finding is not consistent with results from other surveys of males, aged 25-34 years, that show higher incomes associated with education (15, p. 103, 14, p. 101).

The lack of association in the present data may be due to the age, 24 to 27 years, of members of the sample. Men who have devoted several years to college training and to military service (55% of the males reported military service) may have lacked enough job experience to earn as much as older men with similar training. The young men in skilled trades, such as craftsmen and operatives, however, earned more than the average for all respondents. Some of these jobs require less formal training and the men with these occupations may have the experience needed for higher earnings.

Among the employed young women, higher earnings are associated with higher levels of education (table 5). Women with 2 to 4 years of college education averaged earnings of $7,102 per year. This amount is over $1,000 per year more than females with less than 2 years of college training. Earnings of full-time female workers with more than 4 years of college were lower. Lack of work experience may again explain the lower earnings of this group.

Comparisons among education and earnings for young women working part-time are less accurate because data are not available on hours worked per week or weeks worked per year. The information available on annual earnings suggests that earnings are associated with education in a manner similar to that for full-time workers. Within educational categories, annual earnings of part-

Table 4. College education of young adults graduating in 1965 and 1966 from high schools in nonmetropolitan Washington by occupation, percentage distribution.

Amount of college education	OCCUPATION													
	Professional	Farmer	Manager	Clerical Worker	Sales Worker	Craftsman	Operative	Service Worker	Farm Laborer	Laborer	Homemaker	Armed Forces	Student	Percent of Total
MALES														
0-1 month	11	20	23	25	25	50	47	32	40	40	0	35	7	29
1 mo - 2 yr	14	50	31	38	33	29	39	34	40	41	0	25	21	29
2-4 yr	56	30	38	37	39	17	14	29	20	12	0	35	48	33
4+ yr	19	0	8	0	3	4	0	5	0	7	0	5	24	9
Total %	100	100	100	100	100	100	100	100	100	100	--	100	100	100
No. observed	115	20	39	8	36	70	51	38	10	42	0	20	29	478
FEMALES														
0-1 month	7	0	0	43	56	0	50	50	33	100	46	0	0	35
1 mo- 2 yr	8	0	50	38	33	0	50	28	33	0	37	0	29	30
2 - 4 yr	71	0	50	18	0	100	0	18	33	0	17	0	46	30
4+ yr	14	0	0	1	11	0	0	4	0	0	0	0	25	5
Total %	100	--	100	100	100	100	100	100	100	100	100	--	100	100
No. observed	107	0	6	118	9	1	4	28	3	1	201	0	24	502[a]

Tests of Independence: Males: $X^2 = 146.76$ df = 33 P <.01
Females $X^2 = 215.29$ df = 30 P <.01

[a]Totals exclude 46 males and 33 females who did not answer both questions.


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Table 5. Association between college education and earnings for young adults graduating in 1965 and 1966 from high schools in non-metropolitan Washington, percentage distribution

Amount of College Education	Earnings $0-3,999	$4,000-6,999	$7,000-9,999	$10,000- and over	Percent of Total	Mean Earnings by Education($)
MALES						
None	28	29	30	22	28	7,140
Up to 2 yr	23	32	29	33	30	7,550
2-4 yr	35	33	31	36	33	6,997
Over 4 yr	14	6	10	9	9	6,419
Total %	100	100	100	100	100	
No. observed	93	160	146	78	447[a]	
FEMALES, FULL-TIME WORKERS						
None	28	35	17	17	27	6,067
Up to 2 yr	31	29	17	17	25	5,670
2 - 4 yr	30	34	54	67	42	7,102
Over 4 yr	11	2	11	0	7	5,813
Total %	100	100	100	100	100	
No. observed	54	94	70	18	236[a]	
FEMALES, PART-TIME WORKERS						
None	33	14	40	--	30	2,619
Up to 2 yr	33	14	40	--	30	2,643
2-4 yr	29	57	20	--	34	3,729
Over 4 yr	6	14	0	--	7	3,300
Total %	100	100	100	--	100	
No. observed	52	14	5	0	71[a]	

Tests of Independence: Males: $X^2 = 8.81$, df= 9, nonsignificant
Females: $X^2 = 28.51$, df= 9, $P < .01$

[a]Totals exclude 47 males and 3 females who did not respond.

time workers average roughly half of those of full-time workers.

Earnings and place of work

The size of the place or community where one works may affect his earnings through the type and amount of employment available in the area. Earnings of workers differ by type of industry and location of work (12, p. 681-696). Cities provide more employment in manufacturing and service, while nonmetropolitan areas provide more employment in agriculture, forestry and fishing.[8]

Annual earnings for the male respondents varied significantly with size of place (table 6). The highest average earnings, $8,295, were by those working in small cities (10,000 to 50,000 population). Nearly three-fifths of the young men employed in these small cities had earnings in excess of $7,000. Differences among earnings of men employed in places other than small cities were small. Mean annual earnings of those employed on farms, $6,614, were only about $400 less than earnings of men employed in large cities.

The distribution of earnings by size of place may change as the men become older. The 1970 Census of Population reports for all Washington men in the civilian labor force aged 16 years and over that 1969 median earnings varied from $7,772 in large towns to $8,817 in urbanized areas—areas containing a city of 50,000 population or more (12, p. 171). One cannot say that earnings of male respondents working in metropolitan areas will increase over time relative to earnings in other places, but the possibility should be recognized.

Table 5. Association between college education and earnings for young adults graduating in 1965 and 1966 from high schools in non-metropolitan Washington, percentage distribution

Amount of College Education	Earnings $0-3,999	$4,000-6,999	$7,000-9,999	$10,000- and over	Percent of Total	Mean Earnings by Education($)
MALES						
None	28	29	30	22	28	7,140
Up to 2 yr	23	32	29	33	30	7,550
2-4 yr	35	33	31	36	33	6,997
Over 4 yr	14	6	10	9	9	6,419
Total %	100	100	100	100	100	
No. observed	93	160	146	78	447[a]	
FEMALES, FULL-TIME WORKERS						
None	28	35	17	17	27	6,067
Up to 2 yr	31	29	17	17	25	5,670
2 - 4 yr	30	34	54	67	42	7,102
Over 4 yr	11	2	11	0	7	5,813
Total %	100	100	100	100	100	
No. observed	54	94	70	18	236[a]	
FEMALES, PART-TIME WORKERS						
None	33	14	40	--	30	2,619
Up to 2 yr	33	14	40	--	30	2,643
2-4 yr	29	57	20	--	34	3,729
Over 4 yr	6	14	0	--	7	3,300
Total %	100	100	100	--	100	
No. observed	52	14	5	0	71[a]	

Tests of Independence: Males: $X^2 = 8.81$, df= 9, nonsignificant
Females: $X^2 = 28.51$, df= 9, $P < .01$

[a] Totals exclude 47 males and 3 females who did not respond.

time workers average roughly half of those of full-time workers.

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Table 6. Annual earnings of young adults graduating in 1965 and 1966 from high schools in nonmetropolitan areas by place of work.

(Percentage distribution)

Place of work	Earnings $0-3,999	$4,000-6,999	$7,000-9,999	$10,000 & over	Percent of total	Mean Earnings
MALES						
Nonmetropolitan areas						
Farm	11	10	2	8	7	$6,614
Rural nonfarm	12	10	11	10	11	6,796
Small town, < 2,500	17	11	14	10	13	6,796
Large town, 2,500-10,000	24	28	24	22	25	7,224
Small city, 10,000-50,000	10	18	28	29	22	8,295
Metropolitan areas						
Large city, >50,000	21	23	21	21	22	7,005
Total %	100	100	100	100	100	
No. of Observations	81	160	147	78	466[a]	
FEMALES, FULL-TIME WORKERS						
Nonmetropolitan areas						
Farm	0	0	0	0	0	$ ----
Rural nonfarm	2	2	4	0	3	6,667
Small town, < 2,000	11	11	13	0	11	6,080
Large town, 2,500-10,000	30	21	32	12	26	6,008
Small city, 10,000-50,000	20	29	23	41	26	6,906
Metropolitan areas						
Large city; >50,000	37	37	28	47	35	6,289
Total %	100	100	100	100	100	
No. of Observations	54	94	71	17	236[a]	
FEMALES, PART-TIME WORKERS						
Nonmetropolitan areas						
Farm	0	0	0	-	0	$ --
Rural nonfarm	4	0	0	-	3	500
Small town < 2,000	20	7	0	-	16	2,636
Large town 2,500-10,000	29	27	40	-	29	2,925
Small city 10,000-50,000	20	20	40	-	22	3,533
Metropolitan areas						
Large city >50,000	27	47	20	-	30	3,500
Total %	100	100	100	-	100	
No. of observations	49	15	5	0	69[a]	

Tests of Independence. Males: $X^2 = 25.414$, $p < .05$, df = 15
Females: $X^2 = 13.194$, nonsignificant, df = 15

a. Totals exclude 60 males and 22 females not reporting both place of work and earnings.

Annual earnings of young women respondents were not significantly associated with place of work (table 6). The average earnings of full-time workers employed in small cities exceeded earnings of full-time workers employed in other places, but the differences were small. Part-time workers employed in rural nonfarm areas averaged only $500 in annual earnings. Those working in other locations earned several times as much.

The lack of significant association between earnings and size of place precludes drawing inferences from the survey data about these characteristics for employed women. Moreover, the earnings of these relatively young women could change with age and experience. The 1970 Census of Population data for Washington show that among all women aged 16 years and over in the labor force in 1969, median earnings range from $3,106 for those employed in rural areas to $4,198 for those working in urbanized areas (12, p. 171).

Occupation and Earnings

The final relationship examined was the one between occupation and earnings. Occupational profiles of youth tend to stabilize beyond the age of 20 and resemble those of older workers (4). On the other hand, differences in earnings tend to widen among occupational categories as people become older (7, p. 95, 8, & 117).

Even though the respondents are young and probably not well established in their vocations, a significant association existed between occupations and earnings of males and females (table 7). Male white-collar and skilled blue-collar workers averaged about $7,000 annually in

earnings. Young men employed as service workers and laborers earned less. Average annual earnings of students, assumed to be part-time workers, were $3,360, the lowest of any occupation category.

Among the young women employed full-time, professionals earned an average of $7,454 and managers, $10,400. These averages are considerably above those of women in other occupations. Average earnings for full-time clerical workers, operatives and service workers were near $6,000; workers in other jobs generally earned less.

Comparisons of earnings by occupation among women employed part-time are hampered by the inability to recognize variation in the amount of time worked. Strictly on the basis of annual earnings, part-time professional and managerial workers earned more than those in other categories (table 7). Earnings of part-time clerical and service workers ranked next highest, while part-time sales workers and laborers earned considerably less.

Figure 3 shows that 1969 earnings of men in the United States with various occupations tended to diverge as age increased. Median earnings of professionals rose most rapidly and peaked around 50 years. Earnings of male craftsmen and service workers rose slower, peaked near age 40, and then declined. Should the earnings of the young men surveyed follow this pattern, as they become older differences between earnings of professionals and similar workers should increase relative to earnings in other occupations. Since professional workers also have more education, one might also expect education to become more positively associated with earnings among older workers.

Table 7. Annual earnings of young adults graduating in 1965 and 1966 from high schools in nonmetropolitan Washington by occupation, percentage distribution.

Earnings	Professional	Farmer	Manager	Clerical Worker	Sales Worker	Craftsman	Operative	Service Worker	Farm Laborer	Nonfarm Laborer	Homemaker	Armed Forces	Student	Percent of Total
MALES														
$0-$3,999	14	15	5	13	11	20	14	26	30	28	0	11	60	19
$4,000-$6,999	29	50	32	25	39	20	37	38	50	28	0	63	36	33
$7,000-$9,999	35	10	34	37	39	39	29	28	20	34	0	21	4	31
$10,000 & over	22	25	29	25	11	21	20	8	0	10	0	5	0	17
Total %	100	100	100	100	100	100	100	100	100	100	--	100	100	100
Mean earnings-$	7640	7425	8158	7688	6806	7313	7098	5641	4600	6170	--	6079	3360	--
No. observed	114	20	38	8	36	75	51	39	10	47	0	19	25	482[a]
FEMALES, FULL-TIME WORKERS														
$0-$3,999	11	--	0	18	75	100	33	39	100	--	50	--	100	20
$4,000-$6,999	31	--	20	56	25	0	33	44	0	--	--	--	[illegible]	41
$7,000-$9,999	47	--	29	23	0	0	33	6	0	--	50	--	0	31
$10,000 & over	10	--	50	3	0	0	--	11	0	--	--	--	0	8
Total %	100	--	100	100	100	100	100	100	100	--	100	--	100	100
Mean earnings- $	7454	--10,400	5952	2525	500	5667	6125	3000	--	6000	--	1500	--	
No. observed	97	9	5	93	4	1	3	18	2	0	2	0	2	227[a]
FEMALES, PART-TIME WORKERS														
$0-$3,999	55	--	0	71	100	--	--	67	100	100	100	--	80	74
$4,000-$6,999	27	--	100	19	0	--	--	33	0	0	0	--	20	20
$7,000-$9,999	18	--	0	10	0	--	--	0	0	0	0	--	0	6
$10,000 & over	0	--	0	--	0	--	--	0	0	0	0	--	0	0
Total %	100	--	100	100	100	--	--	100	100	100	100	--	100	100
Mean earnings - $	4273	--	4500	3310	1500	--	--	3208	1500	500	1500	--	2700	--
No. observed	11	0	1	21	5	0	0	12	1	1	7	0	10	70[a]

Tests of independence: -- Males: χ^2 = 79.12, df = 33, $p < .01$
-- Females: χ^2 = 112.25, df = 30, $p < .01$

a. Totals include 42 males and 20 income-earning females who did not provide both occupational earnings.

The effect on earnings of employed women in selected occupations is not as strong as that for men (figure 3), The census data for U.S. women show that earnings of professionals exceed those of clerical and service workers but the relationships are more stable across age categories. Should the earnings of the female respondents follow this pattern, the amount of change in the relationship between women's occupations and earnings would be less than that among the young men.

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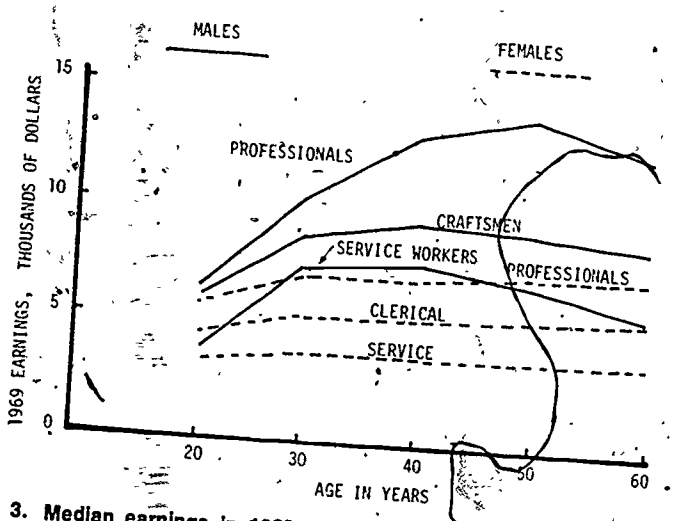

3. Median earnings in 1969 of persons in experienced civilian labor force who worked 50-52 weeks in 1969 by selected occupation and age, 1970. Median earnings are recorded for persons in the age categories 18-24, 25-34, 35-44, and 55-64 years. In the group, median earnings are plotted at midpoints of the intervals. Source: U.S. Bureau of the Census. Census of Population, 1970. U.S. Summary, p. 456-475.

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Notes

[1] Metropolitan areas, as designated by the Bureau of the Census, are urbanized areas that have a population of over 50,000. All other areas are nonmetropolitan (9, p. App-6).

[2] Among the 53,007 persons 14 years of age and over employed in agriculture, forestry and fishing in Washington in 1970, 45,598 or 79% were employed in agricultural production (11, p. 49-636).

[3] Limitations of results from mail surveys are discussed in 6, p. 113-117 and 57-177. See appendix for a more detailed description of methods used in the survey.

[4] Only one school district that provided addresses was in a town whose population exceeded 10,000. This town, Moses Lake, had a population of 10,310 in 1970.

[5] The occupational categories are defined in U.S. Bureau of the Census (12, p. ix-xi). Examples of typical jobs included under occupational classifications are: (a) professionals—accountants, engineers, teachers, and registered nurses; (b) craftsmen—carpenters, machinists and plumbers; (c) operatives—assemblers, meat cutters, truck drivers, and welders; and (d) service workers—hairdressers, dental assistants and firemen.

[6] Respondents were asked to indicate earnings by category rather than by actual amount. The 10 income categories specified in the 1970 Census of Population were used in the questionnaire (10). Averages are computed using the midpoint of each category as earnings for persons in that category.

[7] A Chi-Square test (X^2) was used to determine if a statistically significant relationship existed between education and earnings. Where the test indicates the probability (P) that the variables are independent of each other is less than .05, a significant association between the variables is assumed to exist. The Chi-Square test is used in a similar fashion throughout this section.

[8] For a breakdown of employment by size of place and industry for Washington, see 9, p. 49-169.

Appendix

The population of interest in this study consisted of members of high school classes that graduated in 1965 and 1966 from high schools in nonmetropolitan areas of the state of Washington. These areas, as defined by the 1960 *Census of Population*, include all of the state except King, Snohomish, Pierce, Clark, and Spokane Counties. Address lists of 1965 and 1966 high school class members were solicited from school officials with two objectives in mind. The first was to gather information on occupational choice and socio-economic backgrounds of the young adults after enough time had lapsed following high school for job choices to be made. The second was to gather the data within resource constraints of the mail survey technique.

Nonmetropolitan counties were grouped into 7 areas delineated by consolidating and modifying the 13 planning districts defined in 1969 by Executive Order of the Governor. Names and addresses were obtained from each area. School districts with high school classes averaging less than 10 students were not included. With the application of these criteria, 48 of the state's 196 nonmetropolitan school districts were contacted.

Officials in the 48 school districts were asked to supply address lists of members of their school classes graduating in 1965 and 1966. Twenty-two of the schools contacted responded, supplying a total of 3,023 names and addresses. From these, a sample of 2,335 potential respondents was selected, using random selection procedures.

A mail questionnaire was circulated in the fall of 1972 and follow-up procedures were completed during the spring of 1973. From the initial mailing, 581 (24.9%) questionnaires were returned because of improper identification, no forwarding address, or death of addressee. Usable responses were returned by 1,059 of the remaining 1,754 persons to whom questionnaires were delivered. The response rate among this group was 60.4% (table A-1).

Several factors must be considered in making inferences from the sample data. One is that the method used to obtain names and addresses did not permit collection of data from high school dropouts. The 1970 *Census of Population* for Washington (p. 390) indicates that among persons aged 25-29 years in 1970, 17.2% of the males and 19.3% of the females completed less than 12 years of education. Secondly, the ages of respondents range roughly from 24 to 27 years. Consequently, the information collected represents socio-economic characteristics of the young adults early in their life cycle. The distribution of some characteristics, such as earnings, tends to widen as age increases.

Another consideration is the possibility of nonresponse bias resulting from the mail survey. If characteristics of that portion of addressees who did not respond differ in a systematic way from those who did, sample statistics will contain biases. A test was made for nonresponse bias in the sample data.

Responses were grouped according to the time between initial mailing and return of the questionnaire. Four time intervals were defined: 0-30 days, 31-60 days, 61-90 days, and more than 90 days. Characteristics of respondents including education, occupation, earnings and location (size of place) were classified into categories and cross-tabulated with time intervals. A X^2 test was then used to test for independence between categories of each characteristic and the response interval. The hypothesis that the response interval was independent was accepted at the 10% level of significance for all four characteristics. While this procedure cannot prove the absence of nonresponse bias, there is little reason to believe it exists on the basis of the test.

Inferences are possible from the survey results to the population samples that consist of the classes graduating in 1965 and 1966 from the 22 schools that furnished address lists. Any inferences that extend beyond this population, however, depend critically on how accurately the characteristics of that population resemble a larger population of interest.

Table A-1: Occupational distribution of young adults from nonmetropolitan and U. S. population aged 25-34 years.

Occupation	Washington Sample Males			U.S. Males Aged 25-34*		Washington Sample Females			U.S. Females Aged 25-39*	
	Number	Percent	% of Those in Major Occupation Categories	Number*	Percent	Number	Percent	% of Those in Major Occupation Categories	Number*	Percent
Professional	118	22.7	26.0	2,139,371	19.6	107	20.6	38.2	1,152,166	21.8
Farmer	21	4.0	4.6	164,300	1.5	0	0.0	0.0	5,157	0.1
Manager	39	7.4	8.6	1,052,575	9.7	6	1.2	2.1	144,398	2.7
Clerical Worker	8	1.5	1.8	782,433	7.2	120	23.1	42.9	1,865,245	35.3
Sales Worker	37	7.1	8.2	722,450	6.6	10	1.9	3.6	242,781	4.6
Craftsman	76	14.6	16.8	2,413,034	22.1	1	0.2	0.4	95,017	1.8
Operative	56	10.8	12.4	2,259,107	20.7	4	0.8	1.4	835,248	15.8
Private household work	0	0.0	0.0	3,617	0.0	0	0.0	0.0	117,812	2.2
Service Worker	40	7.7	8.8	640,308	5.9	28	5.4	10.0	752,163	14.2
Farm Laborer	10	1.9	2.2	129,039	1.2	3	0.6	1.1	24,222	0.5
Laborer	48	9.2	10.6	596,414	5.5	1	0.2	.4	49,382	0.9
Homemaker	0	0.0				205	39.5			
Armed Forces	20	3.8				0	0.0			
Student	30	5.8				24	4.6			
Unemployed	14	2.7				10	1.9			
Disabled	3	.6				0	0.0			
Total	520	100.0	100.0	10,902,648	100.0	519	100.0	100.0	5,283,591	100.0

*Source: Census of Population, 1970, pc (2) 8B, Tables 1 & 7.

Table A-2: Earnings distribution of young adults from nonmetropolitan Washington and U.S. population aged 25-34 years.

Earnings[a]	Sample Males		U.S. Males 25-34 Years		Sample Females		U.S. Females 25-34 Years[b]	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
≤ $2,999	70	14.0	766,348	7.0	78	23.8	1,873,906	35.5
3,000-5,999	347	69.4	2,085,756	19.1	229	70.0	2,088,034	39.5
6,000-9,999			4,821,833	44.2			1,164,498	22.0
10,000-14,999	72	14.4	2,510,384	23.0	19	5.8	132,098	2.5
≥ 15,000	11	2.2	718,327	6.6	1	0.3	25,555	0.5
Total	500	100.0	10,902,648	100.0	327	99.9	5,284,051	100.0

[a] Earnings categories were combined because those reported for specific age groups in the census did not conform to those used in the Washington study.

[b] Source: Census of Population, 1970, PC (2) 88, p. 242