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ABSTRACT

The question of whether or not having a master's degree rather than just a bachelor's degree makes a difference in the employment outcomes of graduates 1 year after degree completion is considered. Employment characteristics are examined in relation to the number of years of previous work experience. Also, the enrollment status of recent degree recipients in conjunction with their employment characteristics is considered. The employment status of master's and bachelor's degree recipients is compared by selected major fields of study and by graduates' gender and race/ethnicity. Topics include the following: characteristics of master's and bachelor's degree recipients; labor force status; salaries of master's and bachelor's degree recipients; and job attributes of master's and bachelor's degree recipients. Results of analyses of data from the 1985 Recent College Graduates survey indicate that for individuals employed full-time 1 year after degree completion, having a master's degree had a positive effect on salary. It also significantly affects whether or not an individual can obtain a job that has some career potential and is related to field of study. The field in which a degree is earned is also important to these employment characteristics. Two appendices are: (1) a description of the Recent College Graduates survey, reliability of the estimates, and statistical methodology; and (2) definitions of terms used in the report. Tables are included. (SM)

NATIONAL CENTER FOR EDUCATION STATISTICS

Survey Report **August 1988**

Employment Outcomes of Recent Master's and Bachelor's Degree Recipients

Highlights

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Over a quarter of a million master's degrees and nearly a million bachelor's degrees are awarded each year by higher education institutions in the United States. This report focuses on the question of whether or not having a master's degree rather than just a bachelor's degree makes a difference in the employment outcomes of graduates one year after degree completion.

Results of analyses of data from the 1985 Recent College Graduates (RCG) survey indicate that for individuals employed full-time one year after degree completion, having a master's degree had a positive effect on salary. In particular:

- having a master's degree increased expected average annual salary by about $5,900 per year, even when other important variables such as the gender of graduates and the number of years of previous experience were considered;
- male graduates (after controlling for level of degree, field of study, and prior work experience) earned about $4,500 more than female graduates one year after degree completion; and
- each year of previous work experience added about $400 to the average annual salary for graduates one year after completing a degree.

Data Series:
DR–RCGS- 1985–1.21

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Having a master's degree also increased the probability of obtaining a job related to one's major field of study and which also has some career potential. However, the most important factor in obtaining this type of job within one year after graduating is completing a degree in a professional field (business and management, engineering, education, the health professions or public affairs/social services).

There was no difference in the employment status of master's and bachelor's degree recipients, but employment status was significantly dependent on the field in which the degree was received. Individuals who received a bachelor's or master's degree in an arts and sciences field were less likely to be employed full time and more likely to be enrolled in school one year after degree completion than degree recipients in professional and other fields.

The RCG survey is a biennial survey that gathers information on bachelor's and master's degree recipients one year after degree completion. The 1985 RCG obtained data on individuals who received a master's or bachelor's degree between July 1, 1983, and June 30, 1984. A nationally representative sample of approximately 16,000 bachelor's degree recipients and 2,000 master's degree recipients was selected from 404 U.S. colleges and universities. A questionnaire was mailed to these graduates in the spring and summer of 1985. Information was requested about their employment status, current occupation, salary, and whether or not they had continued in school. The collected data were weighted to reflect the 955,300 bachelor's degree recipients and 277,600 master's degree recipients who graduated during the 1983-84 academic year. All differences cited in the text are significant at or beyond the .05 level. (More details about the survey and the reliability of the data are contained in appendix A.)

Introduction

There are several salient variables to consider when one examines the employment characteristics of recent degree recipients. In addition to the customary characteristics (labor force participation rates, employment/unemployment rates, salary and such), it is important to look at some pertinent measures of what can be termed "job fit" and "long-term possibilities." Any such attempt to gauge the relationship of a job to an individual's field of study and the perceived career potential of a position is certainly germane, especially in light of the fact that many individuals spend a considerable amount of time and money in pursuit of a degree.

In comparing the employment characteristics of recent bachelor's and master's degree recipients, several assumptions must be explored. First, it might be expected that master's degree recipients, who are on the average about 8 years older than bachelor's degree recipients, would have had more work experience than individuals who complete a bachelor's degree. Hence, experience may be a significant factor in comparisons of employment characteristics, particularly with respect to salary. Second, for a given level of work experience, the quality of that experience may be very different for master's as opposed to bachelor's degree recipients. Master's degree recipients may have been working

in fields related to their undergraduate degrees prior to embarking on their graduate education. If this were so, then the quality of previous experience would probably affect how graduates perceive their jobs in terms of career potential and relatedness to their major fields of study. Third, it might be expected that bachelor's degree recipients would be more likely than master's degree recipients to delay entry into the labor force and continue their education immediately after graduation. Finally, it has been shown that major field of study, gender, and race/ethnicity all have significant relationships with the employment characteristics of bachelor's degree recipients (Korb, 1987[1]; Van-Melis Wright, 1988[2]). Whether this is also true for master's degree recipients is a major focus of this report. Furthermore, the distribution of masters's degrees by major field of study relative to the same distribution of bachelor's degrees may affect overall comparisons between degree recipients at these two levels.

While it is not possible with the 1985 RCG survey data to explore the quality of previous work experience in a direct way, it is possible to examine employment characteristics in relation to the number of years of previous work experience. It's also possible to consider the enrollment status of recent degree recipients in conjunction with their employment characteristics, and to compare the employment status of master's and bachelor's degree recipients by selected major fields of study and by graduates' gender and race/ethnicity.

Characteristics of Master's and Bachelor's Degree Recipients

Table 1 presents the distribution of master's and bachelor's degree recipients by gender, race/ethnicity and field of study. As may be seen, males and females were equally represented among master's and bachelor's degree recipients. Furthermore, the minority share of both master's and bachelor's degrees are remarkably similar. Only in terms of major field of study are there measurable differences between master's and bachelor's degree recipients, and the primary differences here are the higher proportion of master's degrees received in education relative to bachelor's degrees, and the lower proportion of master's degrees in the arts and sciences.

Labor Force Status

As table 2 shows, master's degree recipients were more likely to be in the labor force and to be employed than bachelor's degree recipients. Moreover, of those degree recipients who were employed, a higher proportion of master's degree recipients were employed full time. When factors of gender and race/ethnicity of graduates are considered separately, these same differences in the labor force status of master's and bachelor's degree recipients are apparent with two exceptions. The first is that there are no differences in the labor force participation rates or full-time employment status between minority master's and minority baccalaureate graduates. Second, when the gender and race/ethnicity of

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1 Korb, Roslyn, Occupational and Educational Consequences of a Baccalaureate Degree, U.S. Department of Education, National Center for Education Statistics, 1987.

2 Van-Melis Wright, Marie, Benefits of a Bachelor's Degree for Women and Minorities, unpublished report, U.S. Department of Education, National Center for Education Statistics, 1988.

Table 1.--Distribution of 1983-84 bachelor's and master's degree recipients by gender, race/ethnicity, and major field of study: 1985

Graduate characteristics	Type of degree	
	Bachelor's	Master's
Total N	955,275	277,559
	(Percent)	
All graduates	100.0	100.0
Male	49.3	49.8
Female	50.7	50.2
White, non-Hispanic	89.1	89.1
Minority 1/	10.9	10.9
Professional	51.9	*69.7
Business & mngmnt	23.5	22.5
Education	10.1	*29.6
Engineering	9.2	6.3
Health professions	6.7	5.2
Public affairs and social services	2.5	6.1
Arts & sciences	36.4	*22.2
Biology	4.9	--
Math and sciences	8.2	6.7
Social sciences	9.8	4.4
Humanities	8.7	5.8
Psychology	4.7	--
Other 2/	11.7	8.2

-- Too few cases for a reliable estimate.

1/ The minority category is comprised of the following racial/ethnic groups: black, Hispanic, Asian or Pacific Islander, and American Indian/Alaskan.

2/ Includes agriculture and natural resources, architecture and environmental design, area studies, communications, home economics, law, library science, military sciences, and theology.

* The difference between the proportions of master's and bachelor's recipients is statistically significant at the p=.05 level. Caution should be exercised when collectively interpreting several comparisons denoted by an asterisk. The probability that all of the comparisons being considered are statistically significant may be greater than .05.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Recent College Graduates Survey, 1985.

Table 2.--Labor force status of 1983-84 bachelor's and master's degree recipients, by gender, race/ethnicity, and major field of study: 1985

Labor force status	All graduates			White, non-Hispanic			Minority 1/			Field of study		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Profess-ional 2/	Arts and sciences 3/	Other 4/
						(Percent)						
Employed full time:												
Bachelor's	72.8	71.6	70.6	73.4	75.6	71.0	72.8	68.7	67.7	80.6	61.3	73.0
Master's	*80.1	*82.4	*77.7	*80.6	*84.3	77.2	75.2	68.3	83.8	*86.4	62.4	73.5
Employed part time:												
Bachelor's	12.0	9.5	14.6	12.0	9.2	14.9	12.0	12.1	11.9	9.3	16.2	11 6
Master's	*9.6	7 9	11.3	9.4	7.2	11.9	11.6	13.2	9.0	6.4	18.0	14.5
Unemployed:												
Bachelor's	3.4	3.2	3.6	3.1	3.1	3.1	5.8	3.7	7.6	2.9	3.5	5 2
Master's	1.7	1.4	1.9	1.4	0.9	2.0	3 3	5.1	1.3	1.5	2.3	1.3
Not in labor force:												
Bachelor's	11.8	12.4	11.2	11.5	12.1	11 0	14.0	15.6	12.8	7.1	19.0	10.2
Master's	*8.7	*8.3	9.1	8 5	*7.6	9.4	9.9	13.4	5 9	5.7	17.3	10.7

1/ The minority category is comprised of the following racial/ethnic groups: black, Hispanic, Asian or Pacific Islander, and American Indian/Alaskan.

2/ Includes business and management, education, engineering, health professions, and public affairs/social services.

3/ Includes biological science, math, computer science, physical science, social science, humanities, and psychology.

4/ Includes agriculture and natural resources, architecture and environmental design, area studies, communications, home economics, law, library science, military sciences, and theology.

* The difference between the proportions of master's and bachelor's recipients is statistically significant at the p=.05 level. Caution should be exercised when collectively interpreting several comparisons denoted by an asterisk. The probability that all of the comparisons being considered are statistically significant may be greater than .05.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Recent College Graduates Survey, 1985.

graduates are considered conjointly (e.g., white males, white females, minority males, minority females), few differences in the labor force status of master's and bachelor's degree recipients are discernible.

The field of study completed by a graduate--either a master's or baccalaureate graduate--has a decided effect on labor force status. Individuals who complete degrees in professional fields are more likely to be in the labor market and working full time than individuals who complete an arts and sciences major. Additionally, as the data in table 2 suggest, once field of study is accounted for, there are very few differences in the labor force status of master's versus bachelor's degree recipients.

The patterns apparent from table 2 were substantiated when a model predicting full-time employment status as a function of field of study, gender, race/ethnicity, and degree level was developed (table 3). In this model, the most important predictor of full-time employment status was completion of a degree in an arts and sciences field. Individuals who completed a degree in the arts and sciences were less likely to be employed full time than recipients of degrees in other fields, independent of the level of degree received or the gender and race/ethnicity of graduates.

One possible explanation of this finding is that individuals who major in an arts and sciences field are more likely to be enrolled in school one year after degree completion than graduates in other fields. This is especially true of bachelor's degree recipients.

Table 4 presents the percentage of 1983-84 recent college graduates enrolled in school one year after degree completion by field of study, level of degree received, employment status, and personal characteristics. The distributions in table 4 suggest that level of degree is not a significant factor in determining enrollment in school one year after degree completion, but employment status, field of study, and the gender of the recipient all seem to make a difference.

In fact, a model consisting of employment status, field of study, gender, and level of degree demonstrated that if a recent master's or bachelor's graduate was not employed full-time, the probability of being enrolled in school was about 49 percent; for an individual who completed a degree in an arts and sciences field, this probability increased to 59 percent; for a male arts and sciences graduate, the probability increased to 65 percent (table 5). Having a master's rather than a bachelor's degree did not significantly affect the probability of enrollment in school one year after degree completion.

Salaries of Master's and Bachelor's degree recipients

Of major interest in comparing the employment characteristics of master's and bachelor's degree recipients is the salary commanded by graduates soon after completing their degrees. While there is a strong expectation that having a master's degree would positively affect salaries, it might also be expected that previous work experience would have as strong an effect on salaries as the level of education attained.

Table 3.--Model for predicting the 1985 full-time employment status of 1983-84 bachelor's and master's degree recipients 1/

Dependent variable -- Employed full time		
R squared 2/	.081	
Intercept 3/	.637	
Independent variables 4/	**b weights 5/**	**Significance level**
Major in the arts & sciences	-.115	.0001
Years of prior work experience	.015	.0001
Major in a professional field	.076	.0001
Male	.041	.0001
White, non-Hispanic	.051	.0001
Master's degree	-.018	.0947

1/ The model is of the form:

$$y=a+b_1x_1+b_2x_2+b_3x_3+\ldots+b_nx_n+e$$

where y is the dependent variable, a is the intercept, each b is a regression coefficient, each x is an independent variable, and e is the prediction error.

2/ R squared is the proportion of variance in the dependent variable accounted for by all of the independent variables in the model.

3/ The intercept is the mean value of the dependent variable when all the independent variables in the model are equal to zero.

4/ The independent variables are ordered by their order of entry into the regression model.

5/ A b weight is the average change in the dependent variable when the independent variable with a given b weight changes by one unit and all the other independent variables in the model are held constant.

SOURCE: U.S. Department of Education,
National Center for Education Statistics,
Recent College Graduates Survey, 1985.

Table 4.--Percentage of 1983-84 bachelor's and master's degree recipients enrolled in school one year after degree completion, by employment status, gender, race/ethnicity, and major field of study: 1985

Graduate characteristics	Type of degree	
	Bachelor's	Master's *
	(Percent)	
Employed full time	11.3	10.6
Male	12.0	8.9
Female	10.6	12.4
White, non-Hispanic	11.1	9.3
Minority 1/	13.2	21.7
Professional	10.9	10.9
Arts & sciences	13.1	11.5
Other 2/	8.3	5.2
Not employed full time 3/	54.4	50.9
Male	65.1	71.1
Female	45.4	35.1
White, non-Hispanic	54.8	49.3
Minority 1/	51.3	61.1
Professional	41.4	32.6
Arts & sciences	65.9	71.0
Other 2/	44.5	53.7

1/ The minority category is comprised of the following racial/ethnic groups: black, Hispanic, Asian or Pacific Islander, and American Indian/Alaskan.
2/ Includes agriculture and natural resources, architecture and environmental design, area studies, communications, home economics, law, library science, military sciences, and theology.
3/ Includes individuals employed part time, unemployed, or not in the labor force.
* There are no statistically significant differences at the p=.05 level between the proportions of master's and bachelor's degree recipients for this table.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Recent College Graduates Survey, 1985.

Table 5.--Model for predicting the 1985 enrollment in school of 1983-84 bachelor's and master's degree recipients 1/

Dependent variable -- Enrollment in school			
R squared 2/	.220		
Intercept 3/	.486		
Independent variables 4/		b weights 5/	Significance level
Employed full time		-.413	.0001
Major in the arts & sciences		.104	.0001
Male		.057	.0001
White, non-Hispanic		-.034	.0035
Years of prior work experience		.002	.0201
Major in a professional field		.012	.2988
Master's degree		-.008	.4114

1/ The model is of the form:

$$y=a+b_1x_1+b_2x_2+b_3x_3+\ldots+b_nx_n+e$$

where y is the dependent variable, a is the intercept, each b is a regression coefficient, each x is an independent variable, and e is the prediction error.

2/ R squared is the proportion of variance in the dependent variable accounted for by all of the independent variables in the model.

3/ The intercept is the mean value of the dependent variable when all the independent variables in the model are equal to zero.

4/ The independent variables are ordered by their order of entry into the regression model.

5/ A b weight is the average change in the dependent variable when the independent variable with a given b weight changes by one unit and all the other independent variables in the model are held constant.

SOURCE: U.S. Department of Education,
National Center for Education Statistics,
Recent College Graduates Survey, 1985.

One method for comparing salaries of bachelor's and master's degree recipients is to compare the salaries of individuals with the same level of work experience. Table 6 and figure 1 present the average reported annual salaries of master's and bachelor's degree recipients who were working full time and who were grouped by reported number of years of previous work experience.

Table 6 shows that the average reported salary for master's degree recipients with no previous work experienc was about $4,700 more per year than the average salary for bachelor's degree recipients with no previous work experience.

Men who had earned master's degrees averaged approximately $6,400 more per year than those with bachelor's degrees. Women who had earned master's degrees fared less well, earning only about $2,400 more than those with bachelor's degrees. It is also noteworthy that women who entered the job market with master's degrees reported average annual salaries about $1,100 less than men who entered with bachelor's degrees.

Master's degree recipients whose majors were business and management, education, engineering, public affairs, social services, math, computer science, and physical sciences reported significantly higher salaries for their first full-time job than bachelor's degree recipients in the same fields. For example, master's degree recipients in business and management reported average annual salaries that were about $12,700 more than those of baccalaureate graduates in the same field.

For graduates who had previously worked full time, master's degree recipients reported annual salaries significantly higher than bachelor's degree recipients with equivalent experience (figure 1). Master's degree recipients who had 9 to 12 years of previous work experience reported average annual salaries $8,200 higher than bachelor's degree recipients with comparable experience.

When a regression model was used to predict the 1985 average annual salary of full-time employed, 1983-84 master's and bachelor's degree recipients, degree level was the best predictor of salary when degree level, gender, years of experience, field of study, and race/ethnicity were all considered (table 7). With respect to results from this model, the following observation may be noted. The lowest annual average salary was reported by minority female bachelor's graduates who had majored in a field other than a professional field or the arts and sciences and had no previous work experience.

Completing a degree in an arts and sciences field added about $1,400 to average annual salary, but majoring in a professional field added about $3,200. Each year of previous work experience boosted average annual salary by about $400, and if the graduate were male rather than female, expected average salary was about $4,500 higher. Finally, earning a master's degree added about $5,900 to the expected average salary of graduates who were working full time one year after degree completion. Also, the race/ethnicity of graduates did not have a significant effect on salaries when these other characteristics were considered.

Table 6.--Average annual starting salary for 1983-84 bachelor's and master's degree recipients employed full time, by gender, race/ethnicity, and major field of study: 1985

Graduate characteristics	Type of degree		95% confidence interval for the difference in average salary
	Bachelor's	Master's	
All graduates	$17.355	*$22,067	$4,712 ± $185
Male	19,444	*25,858	6,414 ± 566
Female	15,828	*18,275	2,447 ± 228
White, non-Hispanic	17,364	*21,965	4.601 ± 347
Male	19,449	*25,891	6,442 ± 475
Female	15,797	*18,309	2,512 ± 171
Minority 1/	17,311	*22,631	5,320 ± 635
Male	19,415	*25,677	6,262 ± 911
Female	15,978	*19,584	3,606 ± 763
Professional	18,404	*24,883	6,479 ± 225
Business & management	17,036	*29,734	12,698 ± 2,955
Education	13,825	*18,601	4,776 ± 448
Engineering	24,398	*30,471	6,073 ± 517
Health professions	19,614	19,295	319 ± 1,711
Public affairs and social services	14,050	*18,059	4,009 ± 2,659
Arts & sciences	16,312	*20,721	4,409 ± 512
Biology	15,145	--	--
Math and sciences	20,912	*27,181	6,269 ± 1,815
Social sciences	15,928	16,817	889 ± 3,904
Humanities	13,871	16,181	2,310 ± 2,800
Psychology	14,314	--	--
Other 2/	15,416	*18,145	2,729 ± 781

-- Too few cases for a reliable estimate.

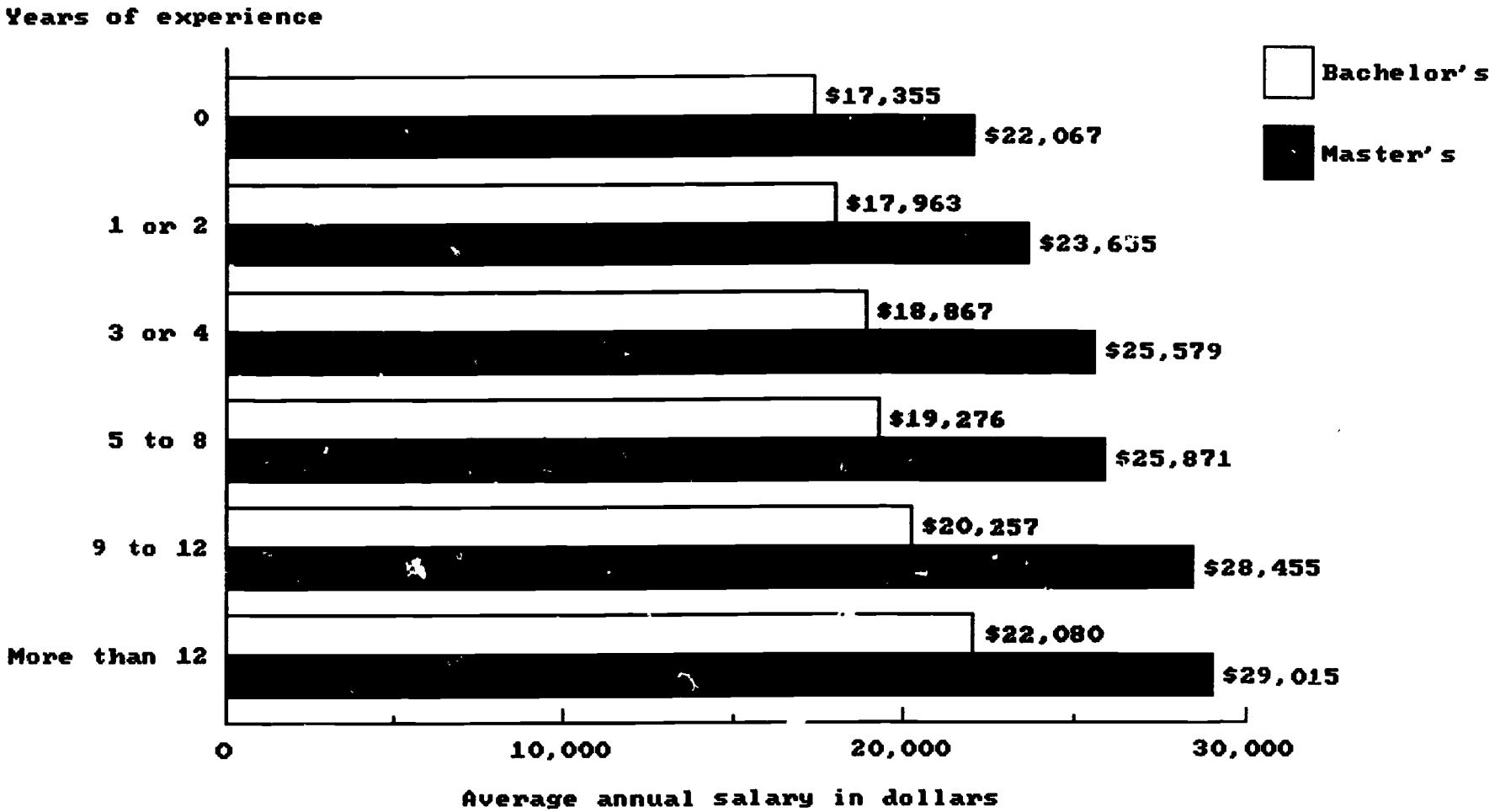
1/ The minority category is comprised of the following racial/ethnic groups: black, Hispanic, Asian or Pacific Islander, and American Indian/Alaskan.

2/ Includes agriculture and natural resources, architecture and environmental design, area studies, communications, home economics, law, library science, military sciences, and theology.

* The difference between the average salary of master's and bachelor's degree recipients is statistically significant at the p=.05 level. Caution should be exercised when collectively interpreting several comparisons denoted by an asterisk. The probability that all of the comparisons being considered are statistically significant may be greater than .05.

SOURCE: U.S. Department of Education,
National Center for Education Statistics,
Recent College Graduates Survey, 1985.

Figure 1.--Average annual salary of 1983-84 degree recipients employed full time, by degree status and prior years of experience: 1985



SOURCE: U.S. Department of Education
National Center for Education Statistics
Recent College Graduates Survey, 1985

Table 7.--Model for predicting the 1985 annual salary of 1983-84 bachelor's and master's degree recipients 1/

Dependent variable -- Annual salary		
R squared 2/	.263	
Intercept 3/	12311.97	
Independent variables 4/	b weights 5/	Significance level
Master's degree	5912.99	.0001
Male	4545.19	.0001
Years of prior work experience	416.67	.0001
Major in a professional field	3240.64	.0001
Major in the arts & sciences	1409.58	.0001
White, non-Hispanic	580.29	.0667

1/ The model is of the form:

$$y=a+b_1x_1+b_2x_2+b_3x_3+\ldots+b_nx_n+e$$

where y is the dependent variable, a is the intercept, each b is a regression coefficient, each x is an independent variable, and e is the prediction error.

2/ R squared is the proportion of variance in the dependent variable accounted for by all of the independent variables in the model.

3/ The intercept is the mean value of the dependent variable when all the independent variables in the model are equal to zero.

4/ The independent variables are ordered by their order of entry into the regression model.

5/ A b weight is the average change in the dependent variable when the independent variable with a given b weight changes by one unit and all the other independent variables in the model are held constant.

SOURCE: U.S. Department of Education,
National Center for Education Statistics,
Recent College Graduates Survey, 1985.

Job Attributes of Master's and Bachelor's Degree Recipients

Perhaps the greatest value that a degree can have for entrants into the job market is to increase the likelihood that they will be able to find employment in a field related to their major and with some career potential. While the vast majority of all graduates report finding jobs related to their major, master's degree recipients reported a much greater rate of "related" employment than bachelor's degree recipients. Ninety-four percent of all master's degree recipients said their job was related to their major field of study compared to 78 percent of all baccalaureate graduates (table 8). Among graduates in an arts and sciences field, individuals with master's degrees were more likely to report their job was related to their field than bachelor's degree recipients. However, among graduates who had majored in a professional field, about the same proportion of master's and bachelor's degree recipients found full-time work related to their major field of study. Male, female, white and minority master's degree recipients were all more likely to report having a job related to their major field of study than those with a bachelor's degree (figure 2).

Master's degree recipients also reported a much higher frequency of being employed in positions that had some career potential than bachelor's degree recipients. Eighty-four percent of all master's degree recipients reported that their current job had some career potential while only 67 percent of graduates with a bachelor's degree said so (table 9). A master's degree in certain specific fields also seems to be more important than a bachelor's degree for obtaining a job with some perceived career potential. The proportion of master's degree recipients in business and management, education, and social sciences that reported their job had some career potential was significantly higher than for bachelor's degree recipients in the same fields.

In examining the proportion of graduates who felt their jobs were both related to their field of study and also held some career potential, it was found that those whose degree was in a professional field were more likely to report positively on both of these job attributes (table 10). Once having a degree in a professional field was accounted for, having a master's degree significantly increased the likelihood that an individual would report positively on both of these job attributes. Additionally, being white increased by over 11 percent the probability of obtaining a job related to one's field of study and having some career potential.

Summary

The results of this study indicate that earning a master's degree has a decided effect on salary one year after degree completion. It also significantly affects whether or not an individual can obtain a job that has some career potential and is related to his or her field of study. The field in which a degree is earned is also important to these employment characteristics. Whether or not an individual is employed full time or is enrolled in school one year after degree completion is relatively independent of the level of degree earned but is highly dependent on the field of study.

Table 8.--Percentage of employed 1983-84 bachelor's and master's degree recipients reporting that their current position is related to their major field of study, by major field of study: 1985

Field of study	Type of degree	
	Bachelor's	Master's
	(Percent)	
All fields of study	78.4	*93.8
Professional	85.2	94.6
Business & mngmnt	86.7	93.7
Education	84.6	95.8
Engineering	93.5	95.7
Health professions	96.0	97.1
Public affairs and social services	69.7	*91.4
Arts & sciences	62.1	*86.7
Biology	65.7	--
Math and sciences	86.0	93.1
Social sciences	51.8	*82.3
Humanities	57.4	*76.5
Psychology	57.7	--
Other **	74.3	*93.0

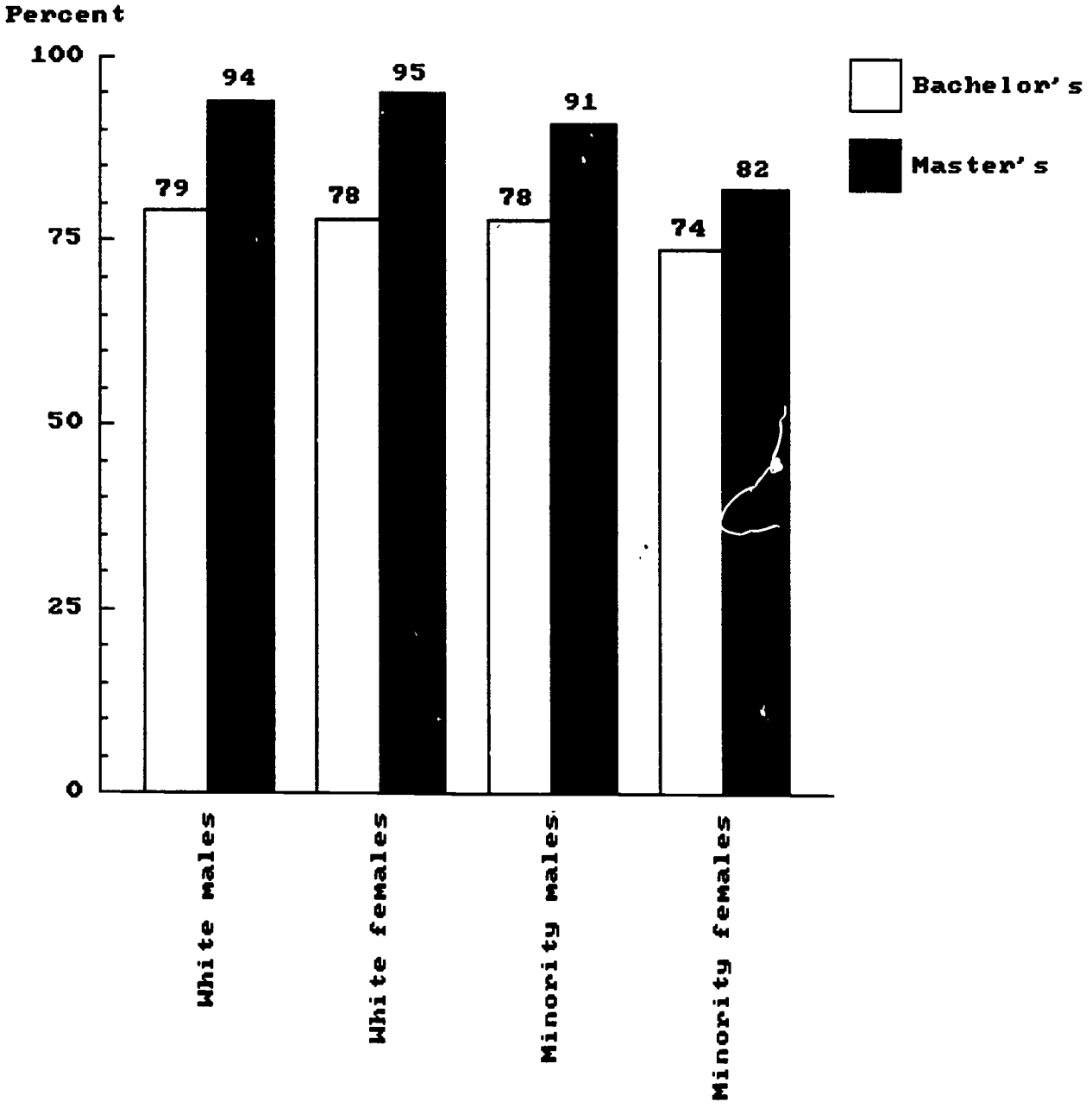
-- Too few cases for a reliable estimate.

* The difference between the proportions of master's and bachelor's recipients is statistically significant at the p=.05 level. Caution should be exercised when collectively interpreting several comparisons denoted by an asterisk. The probability that all of the comparisons being considered are statistically significant may be greater than .05.

** Includes agriculture and natural resources, architecture and environmental design, area studies, communications, home economics, law, library science, military sciences, and theology.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Recent College Graduates Survey, 1985.

Figure 2.--Percentage of employed 1983-84 degree recipients reporting that their current position is related to their major field of study: 1985



SOURCE: U.S. Department of Education
National Center for Education Statistics
Recent College Graduates Survey, 1985

Table 9.--Percentage of employed 1983-84 bachelor's and master's degree recipients reporting that their current position has career potential, by gender, race/ethnicity, and major field of study: 1985

Graduate characteristics	Type of degree	
	Bachelor's	Master's
	(Percent)	
All graduates	66.9	*83.7
Male	69.2	*84.6
Female	64.6	*82.7
White, non-Hispanic	67.9	*85.2
Male	70.0	*85.7
Female	66.0	*84.7
Minority 1/	57.7	65.8
Male	63.4	79.3
Female	53.0	62.2
Professional	73.8	*88.6
Business & mngmnt	73.4	*90.1
Education	67.3	*88.9
Engineering	84.1	83.5
Health professions	81.7	87.5
Public affairs and social services	62.1	79.0
Arts & sciences	56.7	*79.2
Biology	43.1	--
Math and sciences	72.0	82.7
Social sciences	51.6	*80.3
Humanities	51.4	66.6
Psychology	49.2	--
Other 2/	62.6	78.0

-- Too few cases for a reliable estimate.

1/ The minority category is comprised of the following racial/ethnic groups: black, Hispanic, Asian or Pacific Islander, and American Indian/Alaskan.

2/ Includes agriculture and natural resources, architecture and environmental design, area studies, communications, home economics, law, library science, military sciences, and theology.

* The difference between the proportions of master's and bachelor's recipients is statistically significant at the p=.05 level. Caution should be exercised when collectively interpreting several comparisons denoted by an asterisk. The probability that all of the comparisons being considered are statistically significant may be greater than .05.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Recent College Graduates Survey, 1985.

Table 10.--Model for predicting the 1985 employment in a job with perceived career potential and related to one's major field of study for 1983-84 bachelor's and master's degree recipients 1/

Dependent variable -- Employment in a job with perceived career potential and related to one's major field of study	
R squared 2/	.081
Intercept 3/	.458

Independent variables 4/	b weights 5/	Significance level
Major in a professional field	.151	.0001
Master's degree	.158	.0001
White, non-Hispanic	.113	.0001
Major in the arts & sciences	-.056	.0023
Male	.029	.0044
Years of prior work experience	.001	.3508

1/ The model is of the form:

$$y=a+b_1x_1+b_2x_2+b_3x_3+\ldots+b_nx_n+e$$

where y is the dependent variable, a is the intercept, each b is a regression coefficient, each x is an independent variable, and e is the prediction error.

2/ R squared is the proportion of variance in the dependent variable accounted for by all of the independent variables in the model.

3/ The intercept is the mean value of the dependent variable when all the independent variables in the model are equal to zero.

4/ The independent variables are ordered by their order of entry into the regression model.

5/ A b weight is the average change in the dependent variable when the independent variable with a given b weight changes by one unit and all the other independent variables in the model are held constant.

SOURCE: U.S. Department of Education,
National Center for Education Statistics,
Recent College Graduates Survey, 1985.

Apperdix A

Description of the Recent College Graduates Survey

In 1985, the U.S. Department of Education's National Center for Education Statistics conducted a survey of graduates who received a bachelor's or master's degree between July 1, 1983 and June 30, 1984. Sixteen thousand bachelor's and 2,000 master's degree recipients were selected to participate. Graduates were the second stage sample of a two-stage sample selection procedure. The first-stage sample was selected from all institutions awarding bachelor's and/or master's degrees in the 50 states and the District of Columbia whose accreditation is recognized by the U.S. Department of Education. Institutions were stratified on two dimensions: emphasis on education (i.e., the number of bachelor's degrees in education was 50 percent of all bachelor's degrees awarded or the institution granted at least 100 degrees in education); and institutional control (public and private). Within each stratum, institutions were selected with probabilities proportional to size, where size was defined as the total number of bachelor's and master's degrees awarded. Traditionally black insitutions were oversampled by tripling their probability of selection. The purpose was to obtain sufficient numbers of black recent college graduates in the sample in order to obtain reliable estimates. Using this procedure, 404 institutions were selected. Lists of individuals who received bachelor's or master's degrees between July 1, 1983, and June 30, 1984, were obtained from 97 pecent of the sampled institutions.

Graduates were stratified on the basis of level of degree (bachelor's or master's), field of major (education, math, computer science, physical sciences, letters and all other fields), and Hispanic surname. Different sampling rates were applied to bachelor's degree recipients in each of these strata and all other baccalaureate graduates. Master's degree recipients were all sampled at the same rate. A total of 16,000 bachelor's degree recipients and 2,000 master's degree recipients were sampled. The survey and followup procedures yielded an effective response rate of 78 percent. A ratio estimation procedure was used to inflate the sample results to estimates applicable to the total number of bachelor's and master's degree recipients in 1983-84. The 1983-84 Higher Education General Information Survey (HEGIS) of Earned Degrees provided applicable estimates for the total number of graduates in the various strata. The unweighted sample sizes for selected characteristics are presented in table A.1.

Reliability of the Estimates

The estimates in this report are subject to both sampling and non-sampling error. Sampling error arises because a small number of individuals is selected from a population and used to make inferences about that population. We know that estimates derived from one sample would differ from estimates derived from another sample drawn from the same population in the same way. These differences result from sampling variability. One measure of sampling error is the coefficient of variation (CV), which is the standard error of a timate divided by the estimate and represents the variability of an estimate expressed as a percentage of the estimate. This has the effect of standardizing the variation

Table A.1.--Unweighted sample sizes for selected characteristics of 1983-84 graduates

Graduate characteristics	Type of degree	
	Bachelor's	Master's
All graduates	9,347	964
White, non-Hispanic	7,685	857
Male	3,407	402
Female	4,278	455
Minority 1/	1,662	107
Male	713	57
Female	949	50
Professional	4,739	682
Business & mngmnt	1,829	236
Education	1,447	279
Engineering	717	59
Health professions	541	49
Public affairs and social services	205	59
Arts & sciences	3,780	206
Biology	354	23
Math and sciences	1,412	66
Social sciences	744	37
Humanities	917	54
Psychology	353	26
Other 2/	828	76

1/ The minority category is comprised of the following racial/ethnic groups: black, Hispanic, Asian or Pacific Islander, and American Indian/Alaskan.

2/ Includes agriculture and natural resources, architecture and environmental design, area studies, communications, home economics, law, library science, military sciences, and theology.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Recent College Graduates Survey, 1985.

in terms of units and orders of magnitude. The CVs can be used to determine the standard error of an estimate. For example, 84.8 percent of the 1983-84 bachelor's degree recipients were employed one year after graduation. The CV of this estimate is .0046. This means that about .46 percent of the estimate is due to the variation of this estimate among samples. To calculate the standard error of the estimated proportion of employed graduates, multiply the CV by the estimate: [.0046(.848)=.0039]. This standard error may then be used to establish a confidence interval around the estimate. To establish the 95 percent confidence interval around the proportion of employed graduates, multiply the standard error by 1.96: [.0039(1.96)=.0076]. Then add the resulting value to the estimate (.848+.0076) and subtract it from the estimate (.848-.0076). This yields a confidence interval (.848 to .856) which would contain the "true" proportion of employed graduates in 95 percent of the samples that might be drawn from the population of recent baccalaureate recipients. Coefficients of variation for selected characteristics are presented in table A.2. CVs for all other estimates are available on request.

Statistical Methodology

The models referred to in the text were developed using a weighted, step-wise multiple regression algorithm which entered independent variables into the regression equation on the basis of maximizing their contribution to the remaining variance of the dependent variable. All categorical variables used in the regression analyses were dichotomized to preclude the spurious effects of ordering variables which had no intrinsic ordinal properties.

Regression analyses were carried out for four different dependent variables: full-time employment; enrollment in school; salary; and job attributes (the relationship of a job to a graduate's major field of study and reported career potential). All relationships cited in the text that refer to the regression models were significant at or beyond the .001 level.

Table A.2. — Coefficients of variation for selected characteristics *

Total bachelor's employed	.005
Total master's employed	.014
Total bachelor's unemployed	.060
Total master's unemployed	.259
Total bachelor's not in labor force	.026
Total master's not in labor force	.098
Male bachelor's employed	.006
Male master's employed	.020
Male bachelor's unemployed	.093
Male master's employed	.261
Male bachelor's not in labor force	.036
Male master's not in labor force	.169
Female bachelor's employed	.009
Female master's employed	.016
Female bachelor's unemployed	.093
Female master's unemployed	.195
Female bachelor's not in labor force	.047
Female master's not in balor force	.094
White bachelor's employed	.004
White master's employed	.016
White bachelor's unemployed	.068
White master's unemployed	.224
White bachelor's not in labor force	.028
White master's not in labor force	.108
Minority bachelor's employed	.014
Minority master's employed	.264
Minority bachelor's unemployed	.134
Minority master's unemployed	.316
Minority bachelor's not in labor force	.067
Minority master's not in labor force	.166

* Note: CVs of categories not included in this table are available upon request.

Appendix B

Definitions of Terms Used in This Report

Employment Status--Graduates were asked if they were employed for pay during the week of May 4, 1985. A response of "yes" indicated they were employed. The number of reported hours per week indicates full-time/part-time employment (over 30 hours for full-time; 30 hours or less for part-time). Graduates were considered to be unemployed if they were not working but were looking for work.

Job related to major field of study--Graduates were asked if the work of their principal job was closely related or somewhat related, or not related to their degree. Responses of "closly related" and "somewhat related" were collapsed to form the "related" category.

Job has career potential--Graduates were asked to select the statement that best described their principal job. Responses of "job has possible career potential" and "job has definite career potential" were used.

Major Field of Study--The HEGIS taxonomy of instructional programs was used to code student-reported major field of study. Each major field used in this report is an aggregate field composed of several specific programs.

For More Information

For more information about this report, contact Bernard Greene, National Center for Education Statistics, Postsecondary Education Statistics Division, Special Surveys and Analysis Branch, Room 422H, 555 New Jersey Avenue NW, Washington, D.C. 20208, telephone (202) 357-6366. Inquiries concerning data tapes on the 1985 Recent College Graduates survey may be directed to the Education Information Branch, telephone (800) 424-1616.

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