

Pension Coverage and Benefits, 1972: Findings From the Retirement History Study

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This article, based on data from the Retirement History Study, examines coverage by an employee pension plan on the longest job and the extent to which covered workers received an employee pension upon retirement and the size of their benefits. It also examines the joint receipt of employee pension and OASDI benefits and the size of the combined benefits. Each of these pension variables is analyzed for differences by class of worker (private wage and salary or government), sex, and characteristics of the longest job (industry, occupation, tenure, recency of job, extent of employment, and annual earnings rate). The majority of completely retired individuals in their early to middle sixties in 1972 did not receive employee pension benefits in that year. Women employed in private industry on their longest job were the most disadvantaged in this regard. Even when they were fortunate enough to receive retirement benefits from employee pension plans, their benefits were substantially lower than those of men or of women employed in government.

SINCE PASSAGE of the Social Security Act in 1935, the social security program's role in providing adequate income protection in retirement and the proper mix of social security and employee pensions to provide income adequacy have been debated. The prevailing philosophy behind the old-age, survivors, and disability insurance (OASDI) program of retirement income is that the monthly cash benefits should provide a basic floor of income protection and that to maintain preretirement standards of living requires that these benefits be supplemented by private pensions and other forms of private income such as voluntary insurance and savings.¹

Coverage under private pension plans has expanded from about 9.8 million workers in 1950

to about 26.1 million in 1970.² This growth in coverage far exceeded the growth in private wage and salary employment during the same period. The most dramatic growth in coverage occurred during the 1950's. The 1960's, however, brought the liberalization of benefit formulas, vesting requirements, and retirement age.³ Despite this growth, many workers in private industry are not covered and many of those who are covered never collect retirement benefits. This failure to collect benefits usually results from (1) restrictive vesting and service requirements, (2) withdrawal of employee pension contributions upon termination of employment, or (3) bankruptcy of business firms and their pension plans. Awareness of the importance of pension income and recognition of these problems in the private pension system contributed to enactment of the Employee Retirement Income Security Act (ERISA) of 1974.

This article, based on longitudinal data from the Social Security Administration Retirement History Study (RHS),⁴ examines private wage and salary and government workers with respect to the incidence of and job factors associated with pension coverage, pension receipt, and size of pension among men and women at retirement. The term pension, as used here, refers to a private employee or union pension, a Federal, State, or local government employee pension; or a military pension.

The specific questions addressed in this article are

What is the incidence of and what are the job factors associated with pension coverage on the

* Alfred M. Skolnik, "Private Pension Plans, 1950-74," *Social Security Bulletin*, June 1976, table 1.

¹ Harry E. Davis and Arnold Strasser, "Private Pension Plans, 1960 to 1969—An Overview," *Monthly Labor Review*, July 1970, pages 45-56.

² See Lola M. Irelan et al., *Almost 65: Baseline Data From The Retirement History Study*, Office of Research and Statistics, Social Security Administration, 1976, chapter 1, and appendixes A and B.

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¹ See Advisory Council on Social Security, *Report of the Quadrennial Advisory Council on Social Security*, Committee on Ways and Means, US House of Representatives (94th Cong. 1st Sess.), 1975, chapter 2.

longest job among private and government wage and salary workers as of 1969?

Of workers covered by a pension on their longest job, how many of those who earned no money in 1972 received income from a pension? What longest job factors are related to the receipt of a pension? How many received both OASDI and employee pension benefits?

What was the annual pension income of workers covered by a pension on their longest job who received a pension in 1972? Do private wage and salary workers receive lower pension income than government workers?

The longest job factors examined for their relationship to pension coverage and pension receipt are Industry, occupation, tenure, recency of job, extent of employment (full-time or part-time), and annual earnings rate

Pension coverage on and job characteristics of the longest job are the focus of the analysis. Only longest job information is studied because RHS data are not available for all jobs held throughout the worklife and because an individual is most likely to have built up vested rights and qualified for pension benefits on his longest job. This restriction results in an underestimate of the proportion of older persons ever covered by a pension. In the RHS sample, for example, 45 percent of the persons who ever worked were covered on either their longest or most recent job, but only 39 percent were covered on their longest job. Use of longest job data also affects the analysis of pension receipt, these effects are discussed later.

The analysis is also restricted to wage and salary workers on the longest job because only 4 percent of the self-employed (table 1) and none of the unpaid workers were covered by a pension on that job. The number of wage and salary workers in the sample is given below by class of workers and sex.

Class of worker	Men	Women
Total number in sample	4,985	2,117
Wage and salary workers		
Private	4,228	1,761
Government	757	356
Federal civilian employees	224	52
State and local employees	408	245
In public administration	133	38
In education	127	189
In other activities	148	18
Armed Forces	46	0
Not ascertained	79	59

Included in the sample are the men in all of the

TABLE 1—Pension coverage on longest job for all workers. Percentage distribution, by class of worker and sex¹

Pension coverage	All workers ²	Wage and salary workers			Self-employed
		Total	Private	Government	
<i>Total</i>					
Total number in sample	8 659	7,065	5,989	1,076	1,516
Total percent	100	100	100	100	100
Covered	39	47	41	82	4
Not covered	61	53	59	18	96
<i>Men</i>					
Total number in sample	6,347	4 958	4 228	730	1,353
Total percent	100	100	100	100	100
Covered	44	55	49	88	4
Not covered	56	45	51	12	96
<i>Women</i>					
Total number in sample	2,312	2,107	1,761	346	163
Total percent	100	100	100	100	100
Covered	27	29	21	71	4
Not covered	73	71	79	29	96

¹ Excludes those for whom pension coverage was not ascertained.

² Includes a small number of unpaid workers and those for whom class of worker was not ascertained.

marital-status categories and women who, at the time of selection in 1969, had no husband in the household⁵.

PENSION COVERAGE ON LONGEST JOB

Coverage Rates

Private wage and salary workers—Forty-nine percent of the men but only 21 percent of the women employed as private wage and salary workers on their longest job were covered by a pension plan on that job.⁶ Coverage rates for both men and women varied with industry, occupation, annual earnings, job tenure, and recency of job (table 2). When each job factor is considered separately, coverage rates for men were highest among those who were (1) employed in manufacturing or professional and related services, (2) professional or clerical workers, (3) employed for 21 or more years on the longest job, (4) earning

⁵ For the method used to identify Federal civilian and State and local government employees, see the Technical Note on page 15.

⁶ Pension coverage on the longest job was measured by responses in the 1969 interview to the following question: "On that job, were you covered by any pension plan, other than social security or railroad retirement? Include profit-sharing plans providing retirement benefits?"

TABLE 2 — Pension coverage on longest job for private wage and salary workers Multiple classification analysis, by job characteristics and sex

Characteristic	Private wage and salary workers					
	Men			Women		
	Percent covered (unadjusted)	Adjusted coefficient	Percent of cases	Percent covered (unadjusted)	Adjusted coefficient	Percent of cases
Grand mean (percent covered)	49			21		
Standard error (in percent)	0.8			1.0		
Sample size	4,228			1,761		
R ²	0.317			0.342		
Industry						
Agriculture	4	-20.6	4.4	(1)	(1)	1.2
Mining	48	9.7	3.7	(1)	(1)	1
Construction	33	-9.7	8.6	(1)	(1)	5
Manufacturing	63	10.2	46.3	31	7.3	30.8
Transportation, communications, and public utilities	51	-4.7	12.3	52	11.7	3.6
Wholesale and retail trade	29	-14.5	14.3	15	-9	21.7
Finance, insurance, and real estate	54	1	3.7	46	8.6	6.1
Service						
Professional and related	58	3.5	2.6	20	-6.1	12.5
Other	23	-18.1	4.3	3	-8.7	23.3
	<i>Eta</i> ² = .116 <i>Beta</i> ² = .050			<i>Eta</i> ² = .116 <i>Beta</i> ² = .035		
Occupation						
Professional and technical	73	9.3	6.5	38	8.1	5.7
Managers and officials	49	-5.9	13.1	32	-5.7	4.3
Clerical	63	9.8	5.5	38	6.2	23.2
Sales	39	-1.3	4.4	10	-6.0	7.4
Craftsmen and foremen	52	-1.8	27.5	(1)	(1)	1.3
Operatives	50	9	27.3	24	-6	25.4
Service	38	6.4	4.4	5	-3.2	30.7
Laborers	35	-2.2	7.6	(1)	(1)	9
Farm, all types	2	-5.0	3.7	(1)	(1)	1.0
	<i>Eta</i> ² = .063 <i>Beta</i> ² = .008			<i>Eta</i> ² = .110 <i>Beta</i> ² = .014		
Annual earnings rate						
Less than \$2,000	11	-16.5	2.5	1	-10.7	21.1
2,000-3,999	15	-26.1	7.5	17	-5.6	24.6
4,000-5,999	42	-10.7	14.0	51	15.5	14.5
6,000-7,499	67	8.4	15.4	64	23.2	5.5
7,500-9,999	76	16.0	16.4	(1)	(1)	2.3
10,000 or more	73	16.0	15.4	(1)	(1)	1.1
Not ascertained	26	-8.7	29.0	11	-3.1	31.1
	<i>Eta</i> ² = .220 <i>Beta</i> ² = .075			<i>Eta</i> ² = .263 <i>Beta</i> ² = .081		
Recency (year left job)						
Still working	66	6.6	47.8	36	5.7	35.2
1966-69	48	2.5	13.1	22	4.4	14.5
1962-65	42	1.4	9.4	21	4.4	10.7
1950-61	32	-5.6	12.5	11	-4.7	13.2
1954 or earlier	16	-17.5	16.7	6	-9.5	25.0
	<i>Eta</i> ² = .146 <i>Beta</i> ² = .031			<i>Eta</i> ² = .096 <i>Beta</i> ² = .026		
Job tenure (in years)						
5 or less	18	-12.8	7.9	3	-8.1	27.7
6-10	23	-11.5	11.1	12	-3.2	19.8
11-15	37	-3.8	14.8	22	-1.3	15.3
16-20	45	2	15.4	32	5.8	12.1
21 or more	65	6.1	49.5	47	11.5	22.3
	<i>Eta</i> ² = .128 <i>Beta</i> ² = .020			<i>Eta</i> ² = .170 <i>Beta</i> ² = .033		
Extent of employment¹						
Full time	49	0.3	95.0	24	0.6	84.3
Part time	20	-13.0	1.6	5	-3.9	13.1
	<i>Eta</i> ² = .008 <i>Beta</i> ² = .001			<i>Eta</i> ² = .024 <i>Beta</i> ² = .001		

¹ Not computed, base fewer than 50

² The small number not reporting on this characteristic was included in the analyses but not shown here

\$7,500 or more per year, and (5) still employed on the longest job at the time of the interview in 1969. Lowest coverage rates among men were found among those who were (1) employed in service industries other than professional and related services or agriculture, (2) earning less than \$2,000 per year, (3) employed for 5 years or less on the longest job, and (4) left their longest job in 1954 or earlier. Similar trends were evident for women except that, within industry, coverage rates were highest among those falling in the transportation, communications, and public utilities category.

In general, women were more likely than men to have had those job characteristics associated with low coverage rates. Twenty-five percent of the women, compared with 17 percent of the men, for example, left their longest job in 1954 or earlier; 28 percent of the women, compared with 8 percent of the men, had tenure of 5 years or less on that job. Moreover, the coverage rates for women were generally lower than those for men within each category of each job factor. Among those employed in manufacturing, for example, 63 percent of the men but only 31 percent of the women were covered by a pension.

When all job characteristics were standardized, however, coverage rates also were the same for men and women. The estimated coverage rates for women and men were 61 percent and 62 percent, respectively, for those possessing the following longest job characteristics: operatives employed full-time in manufacturing for 21 or more years at annual earnings of \$4,000-\$5,999 and still employed on that job in 1969.⁷

Government workers—The vast majority of Federal civilian employees are covered by the Federal civil service retirement system. A few are covered by special employee plans. Although Federal employees with temporary employment status are covered under the OASDHI program, the Federal system does not provide for dual coverage by a Government employee plan and the OASDHI program. Many State and local systems, on the other hand, provide such dual coverage. In 1972, 95 percent of all full-time Federal

civilian employees were covered by a Government employee plan and the remaining 5 percent by the OASDHI program only. In that same year, 58 percent of full-time State and local government employees had dual coverage under an employee plan and the OASDHI program, 31 percent were covered only by an employee plan or insurance contract, and 8 percent were covered only by the OASDHI program.⁸

The data in the following tabulation show that, for the RHS sample of older persons, 88 percent

Type of government worker	Percent with pension coverage on longest job		
	Total	Men	Women
All workers	82	88	71
Federal civilian	89	94	69
State and local employees	79	85	71
In public administration	85	90	(1)
In education	80	90	73
In other activities	73	75	(1)

¹ Not computed, base fewer than 50

of the men and 71 percent of the women employed in government on their longest job were covered by an employee pension on that job. These coverage rates are substantially higher than those for private wage and salary workers. Women employed by the Federal government were no more likely than those employed by State and local governments to have been covered by an employee pension.

Although the coverage rates for men did differ by type of government employer, the differences appear to result from the comparatively low coverage of men employed in State and local government establishments whose primary activity was neither public administration nor education. The coverage rates for the RHS sample are lower than those reported by the 1972 Census of Governments because part-time workers are included in the calculations and because some members of the sample left their government jobs when coverage was less extensive than it is today.

Longest Job Characteristics and Coverage

Private wage and salary workers—Pension coverage on the longest job is moderately related to the characteristics of that job among private

⁷ These estimates are based on the multiple classification analysis results presented in table 2. They were obtained by summing the adjusted coefficients of each job characteristic and the grand mean for men and women separately.

⁸ Bureau of the Census, 1972 Census of Governments, *Compendium of Public Employment*, Vol 3, No 2, table 8, November 1974.

wage and salary workers (table 2) The R^2 (multiple correlation coefficient squared) is 317 for men and 342 for women Although the annual earnings rate is the most important single predictor of pension coverage as indicated by the size of the Eta² and Beta² statistics, the other five job characteristics—industry, occupation, recency of job, tenure, and extent of employment—are the key explanatory variables They account for more of the marginally explained variation in coverage when analyzed together as a variable set Moreover, since they predate and are important predictors of earnings, part of their effect on pension coverage is through earnings The following discussion demonstrates these points For convenience, the variable set containing industry, occupation, recency of job, tenure, and extent of employment is referred to as IORTE

The marginal effect of a predictor or set of predictors is the amount of the total variation in the dependent variable explained by that predictor after the other predictors have explained all of the variation they can It is measured by the squared part correlation, which is defined as

$$(R^2 \text{ with all predictors}) - (R^2 \text{ omitting one set})$$

The marginal effects of IORTE on pension coverage are equal to the R^2 for all six job factors (317) minus the R^2 for earnings alone (220) or 097 The marginal effect of earnings on pension coverage is equal to the R^2 for all six job factors (317) minus the R^2 for the IORTE set (272) or 045 In short, the marginal effects of IORTE on pension coverage are larger than the marginal effect of earnings

The shared effects of IORTE and earnings on pension coverage are equal to the R^2 for all six job factors (317) minus the marginal effects of the two predictor sets (097 and 045) or 175 Since the longest job variables in the IORTE set predate earnings rate and since they explain a moderate amount of the variation in annual earnings (table 3), these shared effects may be interpreted as the effects of IORTE on coverage through earnings

Government workers—Characteristics of the longest job were much more important determinants of pension coverage among women than among men in government employment The R^2 was 201 for men and 501 for women (table 4) Thus, variations in the size of earnings, occupa-

TABLE 3—Annual earnings rate on longest job for wage and salary workers Multiple classification analysis, by job characteristics, class of worker, and sex

Characteristic	Wage and salary workers							
	Private				Government			
	Men		Women		Men		Women	
Grand mean	\$8,240		\$3,550		\$8,890		\$6,510	
Standard error	93		71		208		227	
Sample size	3,003		1,214		612		284	
R^2	0.387		0.487		0.353		0.448	
	Eta ²	Beta ²	Eta ²	Beta ²	Eta ²	Beta ²	Eta ²	Beta ²
Industry	0.070	0.020	0.181	0.026	0.312	0.267	0.277	0.169
Occupation	0.310	0.283	0.297	0.138	0.312	0.267	0.277	0.169
Recency of employment	0.067	0.037	0.155	0.098	0.056	0.070	0.169	0.118
Job tenure	0.060	0.012	0.182	0.026	0.056	0.029	0.208	0.047
Extent of employment	0.007	0.002	0.078	0.020	0.012	0.004	0.085	0.013

tion, tenure, job recency, and extent of employment on the longest job were considerably more important among women than among men in determining pension coverage on that job

As with private wage and salary workers, size of annual earnings was the most important single predictor of pension coverage among government workers both before and after adjusting for the effects of the other predictor variables Because of their combined marginal effects and their effects through earnings, nevertheless, occupation, job recency, tenure and extent of employment together explained most of the variation in pension coverage The marginal effects of the IORTE variables on pension coverage were 052 for men and 119 for women; the marginal effects of earnings were 059 for both The shared effects of IORTE and earnings, interpreted as the effects of IORTE on coverage through earnings, were 090 for men and 323 for women

RECEIPT OF PENSION BENEFITS, 1972

To collect retirement benefits from the plan under which he is covered, a worker must satisfy existing age and service requirements A worker who is a member of a contributory plan⁹ and

⁹In recent years, the trend has been away from requiring employee contributions to private plans According to 1970 Bureau of Labor Statistics estimates, 21 percent of the active workers covered by private plans were in contributory plans in 1969, down from 25 percent in 1962-63 See Harry E Davis and Arnold Strasser, *op cit*, table 1 Most government employee retirement systems, on the other hand, are contributory

stops working before his benefits are 50-percent vested risks losing all employer-purchased benefits if he withdraws his own contributions. Before ERISA's enactment in 1974, most contributory plans cancelled employer-purchased benefits upon withdrawal of employee contributions regardless of the amount of vesting. Nevertheless, employees who left, attracted by a lump-sum benefit, tended to withdraw their contributions.¹⁰

Vested rights give the worker a nonforfeitable right to his accrued pension benefits even if he stops work before retirement age. ERISA requires a private pension plan to guarantee minimum vesting rights for employer contributions. No minimum vesting requirements existed before ERISA. In 1969, 23 percent of all active workers covered by private pension plans were in plans that had no vesting provisions. The most common age-and-service requirements for vesting in 1969 were 5-10 years of service with no age requirement or 11-15 years with an under-age-40 minimum.¹¹

If benefits are not vested, a worker who wants benefits at retirement must remain on the job until he has met the age-and-service requirements for early or normal retirement. The overwhelming majority of pension plans permit early retirement with actuarially reduced benefits. Although the age-and-service requirements for early and normal retirement vary considerably among plans, the most common qualifications in private plans in 1969 were age 55 with 10-15 years of service for early retirement and age 65 with 5-10 years of service for normal retirement.¹²

To what extent did the older workers represented in the RHS lose pension benefits? The study does not contain information on the loss of pension benefits or reasons for such loss. It does, however, include data on the receipt of pensions.¹³ It is possible to approximate the proportion of workers who lost pension benefits from

their longest job by investigating the pension receipt rate in 1972 among workers aged 61-66 who were covered on their longest jobs and who reported no earnings in that year.

The analysis presented here examines data on the proportion of men and women who reported receiving income from a pension in 1972 and the longest-job characteristics associated with such receipt. The analysis is limited to wage and salary workers who reported pension coverage on the longest job and who had no earnings in 1972, henceforth referred to as "covered nonearners." The analysis is further restricted to receipt of a private or union pension by private wage and salary workers and to receipt of a military or a government employee pension by government wage and salary workers, unless otherwise noted.

Two caveats are in order. First, the pension receipt rates reported here may be overestimates of the proportion of retirees receiving benefits from a pension earned on the longest job. The respondent was not asked to specify the job on which his benefits were based. It is possible, therefore, that some respondents lost benefits from their longest job but received them from another job. The pension-receipt rates cited here, however, are believed to be reasonable approximations of the proportion of persons receiving benefits from the longest job because it is unlikely that persons who did not earn pension rights from their longest job could have earned them from a job in which they had shorter tenure.

Second, variations in pension receipt rates were examined by characteristics of the longest job even though some respondents may be receiving their benefits from a different job. This situation may not occur very often. Furthermore, an analysis of all RHS job data indicates substantial stability of occupations and industry across jobs.

Receipt Rates

Private wage and salary workers—Seventy-two percent of the men but only 55 percent of the women private wage and salary workers who were covered by a pension on their longest job and who earned no money in 1972 received benefits from a private or union pension in that year (table 5). Looked at in reverse, a substantial num-

¹⁰ Dan M. McGill, *Fundamentals of Private Pension*, Pension Research Council, Wharton School, University of Pennsylvania, 3d edition, 1975, pages 127-128.

¹¹ Harry E. Davis and Arnold Strasser, *op cit*, table 2.

¹² *Ibid*, tables 1 and 2.

¹³ Pension receipt was measured by responses to the following question: "Did you receive any income during 1972 from the following sources—Pension as military retiree? Pension from Federal, State, and local government employment? Private employer or union pensions?"

TABLE 4—Pension coverage on longest job for government wage and salary workers Multiple classification analysis, by job characteristics and sex

Characteristic	Government wage and salary workers					
	Men			Women		
	Percent covered (unadjusted)	Adjusted coefficient	Percent of cases	Percent covered (unadjusted)	Adjusted coefficient	Percent of cases
Grand mean (percent covered)	88			71		
Standard error (in percent)	1.2			2.4		
Sample size ¹	730			346		
R ²	0.201			0.501		
Occupation²						
Professional and technical	94	2.8	20.3	(*) 86	(*) 5.1	50.3
Managers and official	93	1.0	11.1	(*)	(*)	4.9
Clerical	92	.9	11.8	(*) 71	(*) -8	21.1
Sales			0	(*)	(*)	3
Craftsmen and foremen	87	1	17.8	(*)	(*)	6
Operatives	78	-2.8	8.2	(*)	(*)	3.2
Service	87	-1.0	15.9	(*) 45	(*) -4	18.5
Laborers	80	-2.4	14.5	(*)	(*)	6
Farm, all types			0			0
	<i>Eta</i> ² = .028 <i>Beta</i> ² = .004			<i>Eta</i> ² = .191 <i>Beta</i> ² = .042		
Annual earnings						
Less than \$2,000	(*)	(*)	1.6	(*)	(*)	10.7
2,000-3,999	(*)	(*)	6.4	(*)	(*)	11.8
4,000-5,999	83	-5.1	13.8	(*) 86	(*) 13.2	15.0
6,000-7,499	97	8.7	21.0	(*) 95	(*) 18.3	16.2
7,500-9,999	97	6.2	16.7	(*) 100	(*) 20.7	14.7
10,000 or more	99	7.8	20.5	(*)	(*)	11.6
Not ascertained	74	-9.5	19.9	(*) 39	(*) -24.1	19.9
	<i>Eta</i> ² = .149 <i>Beta</i> ² = .094			<i>Eta</i> ² = .382 <i>Beta</i> ² = .195		
Recency (year left job)³						
Still working at longest	92	-0.6	52.1	(*) 84	(*) -2.5	54.0
1966-69	82	-5.7	14.0	(*)	(*)	13.9
1962-65	94	6.0	13.2	(*)	(*)	6.4
1955-61	88	8.1	10.4	(*)	(*)	7.8
1954 or earlier	65	-5.9	10.1	(*) 37	(*) 8	17.9
	<i>Eta</i> ² = .067 <i>Beta</i> ² = .020			<i>Eta</i> ² = .157 <i>Beta</i> ² = .007		
Job tenure (in years)³						
5 years or less	(*) 76	(*) -4.5	8.7	(*) 21	(*) -27.8	16.2
6-10	82	-5.7	10.4	(*) 55	(*) -5.9	19.4
11-15	85	-1.8	12.7	(*) 73	(*) 3.8	16.2
16-20	82	-4.7	16.7	(*) 94	(*) 16.2	14.5
21 or more	95	4.5	56.0	(*) 92	(*) 8.0	33.8
	<i>Eta</i> ² = .100 <i>Beta</i> ² = .045			<i>Eta</i> ² = .327 <i>Beta</i> ² = .064		
Extent of employment³						
Full time	(*) 88	(*) 0.5	95.6	(*) 74	(*) 1.8	85.0
Part time			1.2			9.8
	<i>Eta</i> ² = .022 <i>Beta</i> ² = .010			<i>Eta</i> ² = .083 <i>Beta</i> ² = .025		

¹ Excludes those for whom coverage was not ascertained

² The small number not reporting on this characteristic was included in

the analyses but not shown here

³ Not computed, base fewer than 50

ber of private workers, especially women who had worked in employment covered by private pension plans, did not receive pension benefits in retirement. This failure to receive private pension benefits cannot be explained primarily by the postponement of benefits until 65 nor by the absence of early retirement provisions since the receipt rates were not appreciably higher among those aged 65-66 than among those under age 65

Among the covered men nonearners, for example, 74 percent of those aged 65-66, compared with 68 percent of those aged 61-62, received employee pension benefits in 1972. The lack of vested rights, withdrawal of employee contributions upon termination of employment, and bankruptcy of the business or its pension plan are undoubtedly the main factors accounting for the nonreceipt of pension benefits.

TABLE 5—Receipt of employee pension,¹ 1972, by wage and salary workers with pension coverage on longest job and who were nonearners Percentage distribution, by class of worker, sex, and age

Receipt of employee pension and age in 1972	Wage and salary workers					
	Private			Government		
	Total	Men	Women	Total	Men	Women
<i>Total</i>						
Total number in sample ²	941	777	164	319	220	99
Total percent.....	100	100	100	100	100	100
Receiving	69	72	55	80	82	77
Not receiving.. . . .	31	28	45	20	18	23
<i>Aged 61-62</i>						
Total number in sample ²	187	160	27	63	47	16
Total percent	100	100	(³)	100	(³)	(³)
Receiving	65	68	(³)	79	(³)	(³)
Not receiving	35	32	(³)	21	(³)	(³)
<i>Aged 63-64</i>						
Total number in sample ²	313	258	55	106	67	39
Total percent	100	100	100	100	100	(³)
Receiving	68	71	58	73	73	(³)
Not receiving	32	29	42	27	27	(³)
<i>Aged 65-66</i>						
Total number in sample ²	441	359	82	150	160	44
Total percent	100	100	100	100	100	(³)
Receiving	71	74	56	86	88	(³)
Not receiving	29	26	44	14	12	(³)

¹ For private workers, private or union pension, for government workers, government employee or military pension

² Excludes those for whom receipt of pension was not ascertained

³ Not computed, base fewer than 50

Government workers—A much larger proportion of government than private workers collected benefits from their pension plans in 1972. Eighteen percent of the men and 23 percent of the women who were covered nonearners did not, however, collect benefits from a government employee pension in that year.¹⁴ The differences in receipt rates were particularly large among the women.

Seventy-seven percent of the covered women nonearners employed in government on their longest job received benefits from a government employee pension in 1972. Only 55 percent of their counterparts in private industry received benefits from a private plan that year. Part of this difference may result from substantial variation in

¹⁴ Among all nonearners in 1972 the proportions of private workers receiving private pensions were 42 percent for men and 12 percent for women, for government workers receiving government employee benefits the proportions were 68 percent for men and 54 percent for women (See table II in Technical Note on page 16.)

job characteristics. To illustrate, 34 percent of all women in government, but only to 22 percent of those in private industry, had 21 or more years of tenure on their longest jobs (tables 2 and 4). Moreover, women in government were much more likely than those in private employment to have been working on their longest job at the time of the initial interview in 1969 (54 percent compared with 35 percent).

The two groups also differed substantially on earnings and occupational level. These characteristics are related to pension receipt as well as to pension coverage, and thus, it is reasonable to conclude that they explain some of the difference in receipt rates. Part of this difference, however, undoubtedly reflects differences in the provisions and stability of government employee and private pension plans.

Benefits From Both OASDI and Employee Plans

A majority of the nonearners who were covered by a private pension on their longest job—70 percent of the men and 53 percent of the women—received benefits from both a private pension and the OASDI system in 1972 (table 6).¹⁵ A sizable number, however, received OASDI benefits only—26 percent of the men and 42 percent of the women.

Like private wage and salary workers, a majority of government employees who were covered nonearners received benefits from both sources in 1972. This was particularly true of State and local government employees, but as many as 50 percent of the Federal civil servants received benefits under both systems.¹⁶ Since most Federal civilian employees are not covered by the social security program as a result of their Government service, these workers earned OASDI coverage on jobs outside the Federal Government.

¹⁵ Receipt of OASDI benefits in 1972 and the size of those benefits were ascertained from the master beneficiary record of the Social Security Administration.

¹⁶ A recent Social Security Administration study of Federal civil-service annuitants showed that 44 percent received OASDI benefits in 1974. This proportion is lower than that obtained from the RHS because it is based on annuitants of all ages, not just on those in their early to middle sixties. See Daniel N. Price and Andrea Novotny, "Federal Civil-Service Annuitants and Social Security: An Update," *Social Security Bulletin*, November 1977.

TABLE 6—Receipt of employee pension¹ and OASDI benefits, 1972, by wage and salary workers with pension coverage on longest job and who were nonearners Percentage distribution, by class of worker and sex

Type of benefit	Wage and salary workers											
	Private			Government								
	Total	Men	Women	Total			Men			Women		
				Total ²	Federal	State/local	Total ²	Federal	State/local	Total ²	Federal	State/local
Total number in sample ³	941	777	164	319	101	161	220	84	99	99	17	62
Total percent	100	100	100	100	100	100	100	100	100	100	(⁴)	100
Employee pension and OASDI	67	70	53	61	50	64	62	52	66	60	(⁴)	61
Employee pension only	2	2	2	19	33	14	20	30	15	17	(⁴)	13
OASDI only	29	26	42	16	11	19	14	12	16	20	(⁴)	24
None	2	2	3	4	6	2	4	6	3	3	(⁴)	2

¹ See table 5, footnote 1

² Includes those for whom employing unit was not ascertained

³ Excludes those for whom receipt of employee pension was not ascertained

⁴ Not computed, base fewer than 50

A smaller proportion of employees in government than in private industry received OASDI benefits only. Eleven percent of the Federal civilian workers and 19 percent of the State and local government workers were in this situation. Most of the Federal employees who received only OASDI benefits probably left the government before retirement and withdrew their contributions from the pension plan. Others may have terminated their Federal employment before serving the 5 years required for vesting, and a few may have had temporary employment status and therefore were not covered by the civil service retirement system.

The above data suggest that for wage and salary workers covered by a pension on their longest job, a reasonably good chance exists that they will receive retirement benefits both from an employee plan and the OASDI program. As indicated earlier, however, substantial proportions of the wage and salary workers studied here—45 percent of the men and 71 percent of the women—were not covered by a pension on their longest job.

Among all nonearners aged 61–66 in 1972 who were wage and salary employees on their longest job, the proportions with dual retirement benefits are less encouraging. Of this group, 48 percent of the men and 21 percent of the women received OASDI benefits plus benefits from an employee pension plan, whether private or government (see Technical Note, table III on page 17). If only private wage and salary workers receiving both OASDI and private pension benefits are considered the proportions are 42 percent for men

and 12 percent for women. Thus the notion that OASDI benefits will be supplemented in retirement by benefits from employee pensions is not presently a reality for the majority of completely retired older persons.

Longest Job Characteristics

Among those who worked on jobs covered by a pension plan, what characteristics of the longest job besides class of worker distinguish those who received benefits in retirement from those who lost out? Regrettably, this analysis must be restricted to men private wage and salary workers because of an insufficient number of cases among women private workers and government workers of both sexes.

Together, the longest job characteristics under study explain 16 percent of the variation in pension receipt among covered men nonearners who were employed in private industry (table 7). To judge from the Eta² and Beta² statistics, recency of the longest job and annual earnings rate are the most important predictors of pension receipt. Given the high proportion of men whose earnings rate was not ascertainable and the lack of variation in the proportion receiving pensions in the top three earnings categories, the effect of the earnings rate on pension receipt is subject to question, however. Recency of job—that is, the length of time between the 1969 interview and the longest job—is positively related to pension receipt. The more recent the longest job, the higher the probability of pension receipt. Eighty

TABLE 7—Receipt of private or union pension,¹ 1972, by male private wage and salary workers with pension coverage on longest job and who were nonearners Multiple classification analysis, by job characteristics

Characteristic	Percent receiving (unadjusted)	Adjusted coefficient	Percent of cases
Grand mean (percent receiving) . . .		72	
Standard error (in percent) . . .		1.6	
Sample size ¹ . . .		777	
R ² . . .		0.157	
Industry			
Agriculture	(*)	(*)	0.1
Mining	(*)	(*)	5.1
Construction	(*)	(*)	5.9
Manufacturing	75	0.6	61.9
Transportation, Communication, and public utilities	72	-2.6	14.3
Wholesale and retail trade	(*)	(*)	6.3
Finance, insurance, and real estate	(*)	(*)	3.6
Service	(*)	(*)	1.0
Professional and related	(*)	(*)	1.7
Other	(*)	(*)	1.7
<i>Eta² = 0.15² Beta² = 0.14</i>			
Occupation			
Professional and technical	81	3.3	8.2
Managers and officials	66	-10.7	11.6
Clerical	82	9.8	6.4
Sales	(*)	(*)	2.8
Craftsmen and foremen	76	2.6	29.5
Operatives	71	6	32.4
Service	(*)	(*)	3.3
Laborers	(*)	(*)	5.7
Farm, all types	(*)	(*)	0
<i>Eta² = 0.27 Beta² = 0.18</i>			
Annual earnings rate			
Less than \$2,000	(*)	(*)	0.6
2,000-3,999	(*)	(*)	2.8
4,000-5,999	68	-4.4	12.4
6,000-7,999	81	4.6	21.2
7,500-9,999	80	3.2	27.7
10,000 or more	80	6.4	21.9
Not ascertained	41	-10.3	13.4
<i>Eta² = 0.119 Beta² = 0.45</i>			
Recency (year left job)⁴			
Still working in 1969	80	6.0	56.0
1966-69	75	1.2	21.0
1962-65	66	6	9.9
1955-61	42	-24.2	6.8
1954 or earlier	(*)	(*)	6.0
<i>Eta² = 0.118 Beta² = 0.70</i>			
Job tenure (in years)⁴			
5 years or less	(*)	(*)	3.3
6-10	(*)	(*)	3.6
11-15	59	-3.2	9.4
16-20	70	1.6	13.0
21 or more	77	1.0	70.1
<i>Eta² = 0.052 Beta² = 0.04</i>			
Extent of employment⁴			
Full time	72	0.6	95.4
Part time	(*)	(*)	1
<i>Eta² = 0.02² Beta² = 0.05</i>			
Age in 1972			
61-62	68	-3.1	20.6
63-64	70	-1.2	33.2
65-66	74	2.2	46.2
<i>Eta² = 0.03² Beta² = 0.02</i>			

¹ Excludes those for whom receipt of pension was not ascertained
² Not computed base fewer than 50
³ Not significant at 0.05
⁴ The small number not reporting on this characteristic were included in the analyses but not shown here

percent of the covered nonearners still employed on the longest job as of the 1969 interview, for example, compared with 66 percent of those who left the job between 1962 and 1965, received retirement benefits from a private pension in 1972

These data on job recency provide some support for the argument that the absence of vesting provisions in pension plans is a major factor that contributed to the loss of pension benefits by persons who retired before ERISA's implementation. The statistics on tenure suggest that stringent vesting requirements—many years of service needed before benefits become vested—also contribute to the loss of pension benefits. The Eta² of 0.52 indicates some relationship between tenure on the longest job and pension receipt. Specifically the proportion of retirees receiving a private pension increased steadily with increases in years of service. Fifty-nine percent of the covered men nonearners in private industry with 11-15 years of service on the longest job, 70 percent with 16-20 years, and 77 percent with 21 or more years received private pension benefits in 1972.

INCOME FROM EMPLOYEE PENSIONS

Income From Employee Pension Alone

Workers whose longest job was in government, whether at the Federal (civilian) or State and local level, had substantially higher pension incomes than those in private industry (table 8). Among covered men nonearners receiving an employee pension in 1972, for example, the median income derived from the pension was \$4,290 for government employees and \$2,230 for private wage and salary workers. Federal civil servants received slightly higher pensions than State and local employees.

Women whose longest job was in private industry had substantially lower income from a private pension in 1972 than did men. The median pension income of those receiving a pension was \$1,200 for women and \$2,230 for men. Among government workers, on the other hand, the median pension income of women (\$3,650) was only slightly lower than that of men (\$4,290). These sex/income variations within class of worker may reflect similar variations in earnings rates.

TABLE 8—Income from employee pension¹ and from OASDI benefits, 1972, by wage and salary workers with pension coverage on longest job and who were nonearners Percentage distribution, by class of worker and sex

Income	Wage and salary workers with—											
	Employee pension						Employee pension and OASDI benefits					
	Men			Women			Men			Women		
	Private	Government			Private	Government ²	Private	Government			Private	Government ²
Total ³		Federal civilian	State and local	Total ³				Federal civilian	State and local			
Total number in sample ³	558	178	69	78	90	76	558	178	69	78	90	76
Total percent	100	100	100	100	100	100	100	100	100	100	100	100
Less than \$500	5	2	4	1	12	5	(⁴)	1	0	1	1	0
500-999	11	4	1	5	29	4	(⁴)	1	3	0	0	0
1,000-1,499	12	4	1	8	19	4	1	1	0	1	0	0
1,500-1,999	16	4	1	4	13	4	1	2	3	1	7	0
2,000-2,499	11	7	3	10	10	9	3	3	3	4	19	5
2,500-2,999	10	11	13	10	6	13	7	6	4	4	12	9
3,000-3,999	13	14	14	13	4	17	26	11	13	13	32	13
4,000-4,999	8	14	17	8	4	16	22	20	19	20	19	26
5,000-5,999	5	12	19	12	1	9	17	18	23	13	6	12
6,000-7,499	4	10	7	14	0	12	14	12	13	10	3	21
7,500-9,999	2	9	9	8	0	5	7	12	10	18	0	10
10,000 or more	2	10	9	0	1	1	3	13	9	4	1	3
Median income ⁵	\$2 230	\$4 290	\$4 580	\$4 000	\$1,200	\$3 650	\$4 660	\$5 310	\$5 190	\$5,400	\$3 340	\$4,850
90-percent confidence interval of median ⁶	\$ 040- \$ 410	\$ 860- 4,710	4 000- 5,260	\$ 230- 5,170	1 000- 1 470	3,060- 4 250	4 360- 4,730	4 860- 5,810	4,680- 5 700	4 800- 6,450	3,060- 3,620	4 600- 6,680

¹ See table 5, footnote 1
² Includes the Armed Forces Federal civilian and State local workers, and those for whom employing unit was not ascertained

³ Excludes those for whom income was not ascertained
⁴ Less than 0.5 percent
⁵ Computed from 15-interval distribution, rounded to nearest \$10

and the fact that earnings are often included in the benefit formulas of employee pension plans

The benefits of all Federal civilian employees, nearly all State and local employees, and slightly more than half of the private wage and salary workers are based on some combination of earnings and years of service¹⁷ The remaining plans generally base benefits on length of service alone or provide a flat benefit to all who fulfill specified service requirements The data in table 9 show that among recipients of a government employee pension the earnings rates of men and women were quite similar but that among private pension recipients the rates for women were substantially lower than those for men

Although men and women government employees receiving a pension earned at the same level, they differed on tenure on the longest job (table 10) Seventy-two percent of the men compared with 50 percent of the women had 21 or more years of government service These differences in tenure may explain why women govern-

ment employees received slightly lower pensions than men Interestingly, women who received a private pension had about as many years of service as their male counterparts These similarities, however, apparently could not compensate for the substantial earnings differences and, as a result, the private pension benefits of women were markedly lower than they were for men

TABLE 9—Annual earnings rate on longest job for covered nonearners receiving an employee pension,¹ 1972 Percentage distribution, by class of worker and sex

Annual earnings rate	Wage and salary workers			
	Private		Government	
	Men	Women	Men	Women
Total number in sample	515	85	150	65
Total percent	100	100	100	100
Less than \$2,000	(²)	0	0	3
2,000-3,999	1	21	5	9
4,000-5,999	13	44	16	14
6,000-7,499	26	22	29	28
7,500-9,999	33	10	22	29
10,000 or more	26	2	28	17
Median earnings	\$3,240	\$5,500	\$7,500	\$7 850
90 percent confidence interval of median	7,880- 8,480	4,910- 5 730	7,140- 8,300	6,700- 8,100

¹ See table 5, footnote 1
² Less than 0.5 percent

TABLE 10—Job tenure on longest job for covered nonearners receiving an employee pension,¹ 1972 Percentage distribution, by class of worker and sex

Job tenure (in years)	Wage and salary workers			
	Private		Government	
	Men	Women	Men	Women
Total number in sample . . .	556	89	177	75
Total percent	100	100	100	100
5 or less	2	1	2	5
6-10	2	2	3	9
11-15	8	8	7	12
16-20	18	19	16	24
21 or more	76	70	72	50

¹ See table 5, footnote 1

Employee Pensions Combined With OASDI Benefits

Most private and some State and local government pension plans are "integrated" with the social security program, but the Federal civil service retirement system is not. When the systems are integrated, the employee pension benefit received upon retirement may be reduced by some fraction of the OASDI primary insurance amount (PIA). The monthly benefit, for example, may equal 1 percent of average pay for each year of service, reduced by 50 percent of the individual's PIA. Alternately, the employee benefit may be accrued at different rates above and below the OASDI maximum taxable earnings ceiling. For each year of service, a pension plan may provide a benefit equal to 2 percent of annual earnings above the OASDI taxable maximum earnings and 1 percent of annual earnings up to the ceiling.

Participants in private pension plans are somewhat more likely than participants in Government employee plans to have their benefits integrated with social security.¹⁸ Therefore, the lower pension incomes of private wage and salary workers may result partly from such differences in integration.

An alternate explanation for the higher government pensions is that some government retire-

ment systems—most notably the Federal civil service retirement system—do not provide dual coverage under an employee plan and the OASDI program. Such systems do provide higher benefits than private plans to compensate for the lack of OASDI coverage.

Private and government workers' combined 1972 retirement incomes from employee plans and OASDI were compared to see if integration or compensation were factors. The data in table 8 show that government workers still have the higher income when benefits from both retirement systems—rather than from the employee plans alone—are considered but that the income gap is much smaller. Among covered men nonearners who received an employee pension in 1972, the difference in median income was \$2,060 when an employee pension alone was the income source. This difference narrowed to \$750 when income was from both systems. Corresponding differences among women were \$2,450 and \$1,510.

The data suggest, then, that differences in the size of government employee and private pensions are partly due to the integration and/or compensation factors. Another possible explanation for higher government pension benefits is that they are more likely to have been adjusted for inflation. Among women, the higher combined income of government workers is further explained by their higher earnings and the fact that the OASDI program and some employee plans base benefits on earnings.

SUMMARY AND CONCLUSIONS

Data from the Retirement History Study indicate that employee pensions are a critical part of retirement income.¹⁹ In spite of this, a majority of the older persons represented in the RHS sample were not covered by a pension plan when they worked and most did not receive pension income when they stopped working. Of all persons who had ever worked, 45 percent were covered by a pension on their longest or most recent job and 39 percent on their longest job only. The likelihood of coverage was greatest among government workers. Federal civilian employees had higher coverage rates than State and local em-

¹⁸ See Raymond Schmitt, "Integration of Private Pension Plans with Social Security," in *Issues in Financing Retirement Income* (U.S. Congress, Joint Economic Committee), Studies in Public Welfare, paper No. 18, 93d Cong., 2d Sess., Joseph Krislov, *State and Local Government Retirement Systems, 1965* (Research Report No. 15), pages 10-13 and table 4, Office of Research and Statistics, 1965, and Bureau of the Census, *op cit*, table 10.

¹⁹ See Alan Fox, "Work Status and Income Change, 1968-72: Retirement History Study Preview," *Social Security Bulletin*, December 1976.

ployees, and the rates for both groups were substantially higher than those for private wage and salary workers

Women, particularly those employed in the private sector, were less likely than men to have been covered by a pension on their longest job. In general, they were more likely than men to have had those job characteristics associated with low coverage rates and, in addition, they had lower coverage rates when equated with men on individual job characteristics.

Among both private industry and government workers, the annual earnings rate was the most important single predictor of coverage on the longest job. Part of the relationship between earnings and coverage, however, appears to have resulted from the effect of the other job factors studied—industry, occupation, tenure, recency of job, and extent of employment—on earnings. In fact, these other job factors combined explain the greatest amount of variation in coverage because of both their direct effect on coverage and their effect through earnings.

A substantial proportion of the older workers who had stopped working by 1972—those with no earnings—did not receive employee pension income in that year. Among nonearners who had been covered by a pension on their longest job, nonreceipt rates ranged from a low of 18 percent among men government workers to a high of 45 percent among women private workers. Lack of vested rights and the withdrawal of contributions at termination of employment may partly explain why so many covered workers receive no pension income upon retirement. The theory that OASDI benefits will be supplemented by income from employee pensions was not, in general, a reality for retired persons.

Government workers fared better than private workers. When income from employee pensions was combined with income from the OASDI program, the differences in income between private and government workers were smaller than when only employee pension income was examined.

In sum, adequate retirement incomes are heavily dependent on income from employee pension plans particularly among nonmarried persons. Unfortunately, most retired persons do not have access to such income and must rely on their social security benefits alone.

Technical Note

THE SAMPLE

The sampling frame for the Retirement History Study (RHS) is the same as that used by the Bureau of the Census for its Current Population Survey (CPS).²⁰ Sample members were persons living in households that had last participated in the CPS before February 1969. They were men in all marital-status categories and women who, at the time of sample selection, had no husband in the household. In any month the CPS panel consists of eight groups of households selected up to 18 months previously. The oldest of these rotation groups is dropped and replaced by a new one each month.

Nineteen of these discontinued CPS rotation groups were used for the Retirement History Study. Information was gathered from sample members and their spouses by Bureau of the Census interviewers, usually in late spring of the survey year. In 1969, 11,153 interviews were completed, 10,169 were completed in 1971; and 9,423 in 1973. (The 1971 and 1973 figures include surviving widows—245 and 495, respectively.)

SAMPLING VARIABILITY

A measure of the sampling variability of an estimate is given by the standard error of the estimate. Generally speaking, the chances are about 68 out of 100 that an estimate will differ from the value given by a complete census by less than one standard error. The chances are about 95 out of 100 that the difference will be less than twice the standard error.

Table I gives approximate standard errors for the estimated percentage of individuals with a certain characteristic. Linear interpolation may be used to obtain values not specifically given. To derive standard errors that are applicable to a wide variety of items, a number of assumptions and approximations were required. As a result, these standard errors provide an indication of

²⁰ For a general but somewhat dated description of the CPS, see Bureau of the Census, *The Current Population Survey—A Report on Methodology* (Technical Paper No. 7), 1963. See also Marvin M. Thompson and Gary Shapiro, "The Current Population Survey: An Overview," *Annals of Economic and Social Measurement*, April 1973.

TABLE I—Approximate standard errors of estimated percentages

Size of base	Estimated percentage									
	2 or 98	5 or 95	8 or 92	10 or 90	15 or 85	20 or 80	25 or 75	30 or 70	40 or 60	50
25	3.1	4.8	6.0	6.6	7.8	8.8	9.5	10.0	10.8	11.0
50	2.2	3.4	4.2	4.7	5.6	6.2	6.7	7.1	7.6	7.8
100	1.5	2.4	3.0	3.3	3.9	4.4	4.8	5.0	5.4	5.5
200	1.1	1.7	2.1	2.3	2.8	3.1	3.4	3.6	3.8	3.9
300	9	1.4	1.7	1.9	2.3	2.5	2.8	2.9	3.1	3.2
500	7	1.1	1.3	1.5	1.8	2.0	2.1	2.2	2.4	2.4
800	5	8	1.0	1.2	1.4	1.6	1.7	1.8	1.9	1.9
1,500	4	6	8	8	1.0	1.1	1.2	1.3	1.4	1.4
3,000	3	4	5	6	7	8	9	9	1.0	1.0
5,000	2	3	4	5	6	7	7	8	8	8
8,000	2	3	3	4	4	5	5	6	6	6
10,000	2	2	3	3	4	4	5	5	5	6

the order of magnitude rather than the precise standard error for any specific item

To make a rough determination of the statistical significance of the difference between two independent percentages, the following procedure may be used. Find estimates of the standard errors of the percentages in question, using table I. Square these standard errors to get variances and add the variances. Take the square root of this sum to get the standard error of the difference. If the absolute difference between the two percentages in question is greater than twice the standard error of the difference, they are said to be significantly different from one another at the 5-percent level.

The percentiles of a variable's distribution are values below which a standard percentage of units of the sample lies. In particular, the 50th percentile is known as the median, and the 25th, 50th, and 75th percentiles are known as quartiles.

TABLE II—Pension coverage on longest job, by receipt of pension, 1972, for wage and salary workers who were non-earners. Number, by class of worker and sex.

Pension coverage, by receipt	Wage and salary workers			
	Private		Government	
	Men	Women	Men	Women
Total number in sample	1,521	908	280	150
Covered	803	169	235	101
Receiving				
Any type	575	95	189	81
Private or union	558	90	13	5
Government employee or military	27	6	180	76
Not receiving any type	203	69	32	18
Not covered	718	739	40	46
Receiving				
Any type	125	70	12	6
Private or union	84	21	4	1
Government employee or military	41	49	10	5
Not receiving any type	581	658	28	39
Not ascertained	0	0	5	3

of the distribution. Estimates of these values are subject to sampling variability that may be estimated in the following way and used to calculate confidence intervals for the percentiles in question.

- (1) Using the appropriate base, determine from table I the standard error of the percentile in question—for example, the standard error of a 50 percent characteristic.
- (2) For 95 percent confidence limits, add to and subtract from the desired percentile twice the standard error found in step 1.
- (3) On the cumulated distribution of the variable in question, find by linear interpolation the values that correspond to the limits in step 2. These values are the 95-percent confidence limits for the percentile.

MULTIPLE CLASSIFICATION ANALYSIS

Multiple classification analysis (MCA), a type of dummy variable multiple regression, shows the category means and the overall ability of each predictor variable to explain variation in the dependent variable both before and after adjusting for the effects of all other predictors. It also shows the combined effect of the predictors on the dependent variable. The specific MCA statistics presented in this article are described below.²¹

Sample size—The number of cases in the analysis excluding those for whom the dependent variable was not ascertained.

Grand mean—If the dependent variable is a dichotomy, the grand mean is the proportion of all persons

²¹ For more detail, see Frank M. Andrews et al., *Multiple Classification Analysis: A Report on a Computer Program for Multiple Regression Using Categorical Predictors*, Ann Arbor: Institute for Social Research, University of Michigan, revised 1973.

TABLE III — Receipt of OASDI benefits and employee pension,¹ 1972, by wage and salary workers who were nonearners Number, by class of worker and sex

Receipt of OASDI benefits and employee pension	Wage and salary workers			
	Private		Government	
	Men	Women	Men	Women
Total number in sample ..	1,521	908	280	150
Receiving OASDI benefits . . .	1 393	770	213	123
Receiving employee pension . .	680	152	154	71
Not receiving employee pension . .	679	602	48	50
Not ascertained	34	16	11	2
Not receiving OASDI benefits	128	138	67	27
Receiving employee pension	20	13	60	18
Not receiving employee pension . .	105	125	14	8
Not ascertained	3	0	3	1

¹ Represents private, union, government employee, or military pension

with a score of 1 (that is, the proportion covered by a pension)

*R*² (multiple correlation coefficient squared) —An estimate of the amount of variation in the dependent variable explained by all predictor variables combined

Unadjusted category mean —If the dependent variable is a dichotomy, the unadjusted category mean is the proportion of persons in each category of each predictor variable with a score of 1 on the dependent variable, unadjusted for the effects of the other predictor variables

Adjusted coefficient —The amount of deviation of the adjusted category mean (adjusted for the effects of all other predictors) from the grand mean The adjusted coefficients can be used to arrive at a predicted average score on the dependent variable for individuals with any combination of job characteristics This is done by summing the adjusted coefficients for each category of interest and adding that value to the grand mean The adjusted coefficient can also be used to obtain the adjusted category mean for each category by adding it to the grand mean

Percent of cases —The proportion of all cases in the sample that falls in each category of each predictor variable

*Eta*² —An estimate of the overall ability of each predictor variable to explain variation in the dependent variable unadjusted for the effects of the other predictors

*Beta*² —An estimate of the overall ability of each predictor variable to explain variation in the dependent variable adjusted for the effects of the other predictors

GOVERNMENT WORKERS

Government workers have been classified by type of government employer on the longest job in the following categories

Type of government worker	Number
Total number in sample	1,113
Federal civilian and postal employees	276
In public administration	248
In other activities	28
Armed Forces	46
State and local employees	653
In public administration	171
In education	316
In other activities	166
Not ascertained	138

The government employer of those workers in agencies whose primary industrial activity was public administration and those in the Armed Forces were determined directly from the Bureau of the Census three-digit industrial code The three-digit industrial code for workers employed by agencies engaged in all other industrial activities, however, gives no indication of the type of government employer

The assignment of these latter workers to a government employer category was based on the three-digit industrial code in conjunction with the distribution of government workers by type of government and industry in the 1970 Census²² If 90 percent or more of all government workers in an industry were employed by a particular type of government, according to 1970 Census data, then all government workers in the RHS study in that industry were assigned to that government employer category If fewer than 90 percent were employed by a single government unit, no assignment was made and type of government employer was deemed not ascertainable

According to the 1970 Census, for example, 98 percent of all government workers in agencies engaged in elementary and secondary school education were employed by State and local governments Therefore, all 263 of the government workers engaged in this industrial activity were assigned to the State and local government (educational activity) category In total, 46 percent of all government workers in the RHS sample were assigned to a specific government employer unit by the use of this method Forty-two percent of the workers were in public administration, and the remaining 12 percent were not assigned to a category.

²² Bureau of the Census, 1970 Census of Population, *Special Reports Industrial Characteristics*, PC(2)-7B, table 37, June 1973