

COMPARISON OF THREE OCCUPATIONAL SCALES*

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ABSTRACT

Unidimensional scales of social stratification continue to be widely used in social research, even though questions have been raised about their measurement qualities and theoretical meaningfulness. Three such scales (Siegel's OPS, Duncan's SEI, and Nam-Powers' OSS, and their updates) have received the greatest attention in social research. This paper analyzes differences in the most recent versions of the three scales, in terms of variations in underlying concepts, measurement procedures, interpretation of the scores, properties of the score distributions, and associations with selected independent variables. Users of these scales are advised to consider the nature of these factors in deciding on the best measure to employ in particular research tasks.

INTRODUCTION

Of all research articles in major sociological journals, nearly 30 percent focus on social stratification topics (Miller 1991). In a high percentage of the remaining articles, an indicator of social stratification is used as either an explanatory or control variable in studying some other phenomenon. Selection of appropriate indices or scales of social stratification is therefore of considerable importance to social researchers.

The range of stratification measures is considerable. Some have become widely-recognized indicators and are frequently cited in the research literature. Others were constructed to serve the purposes of a particular research project and have not been used in any other analysis. In his widely-recognized Handbook of Research Design and Social Measurement, Miller (1991) cited the seven scales most widely used in social research: those devised by Edwards (1943), Warner (1949), Hollingshead (1949), Duncan (1961), Siegel (1971), Treiman (1977), and Nam and Powers (1983).

Miller identified three scales that researchers will most likely choose when they want a stratification measure based on occupation. These are Siegel's "Occupational Prestige Scores" (OPS), Duncan's "Socioeconomic Index for All Occupations (SEI)", and Nam and Powers' "Occupational SES Scores" (OSS).

The three measures differ in terms of their stress on prestige or socioeconomic conditions, their mix of data sources, their techniques for calculating scores, and possible interpretations of the resulting scores.

Siegel's scores are regarded as pure prestige scores. Duncan regarded his scores as socioeconomic, but others have regarded them as prestige scores predicted by socioeconomic variables (Featherman and Hauser 1976). Nam and Powers' scores are regarded as pure socioeconomic scores (Miller, 1991).

In their original formulations, Siegel (1971) combined several National Opinion Research Center (NORC) surveys from the mid-1960's, Duncan (1961) combined 1947 NORC survey results with 1950 Census data, and Nam and Powers (U.S. Bureau of the Census 1963; Nam and Powers 1968) used only 1950 Census data. Siegel and Duncan used different procedures for indicating NORC prestige ratings, and Duncan and Nam and Powers used different indicators of census variables. Each employed different kinds of weighting schemes.

Replications of Scales Over Time

Each of these scales has been replicated since the original formulation. Siegel's OPS was updated for 1970 by Hauser and Featherman (1977), for 1980 by Stevens and Hoisington (1987), and for 1989 by Nakao and Treas (1990, 1994). Duncan's SEI was updated for 1970 by Stevens and Featherman (1981), for 1980 by Stevens and Cho (1985), and for 1989 by Nakao and Treas (1992, 1994). Nam and Powers' OSS was updated for 1960 by Nam and Powers (1968), for 1970 by Nam et al. (1975) and Nam and Powers (1983), for 1980 by Nam and Terrie (1988), and for 1990 by Terrie and Nam (1994).

The original scores, in all three cases, were for men only. The updates of Siegel's OPS were for both sexes (Hauser and Featherman 1977; Stevens and Hoisington 1987; Nakao and Treas 1990, 1994). Stevens and Featherman's (1981) update of Duncan's scores for 1970 (in addition to altering the methodology) were both for men and for both sexes. Stevens and Cho's (1985) update to 1980 was likewise for men and for both sexes. Nakao and Treas' (1992, 1994) update of SEI to 1989 was for both sexes only. Nam-Powers scores for 1960 were calculated for men (Nam and Powers 1968) and women (Curtis 1970); for 1970 for men, women, and both sexes (Nam et al. 1975); for 1980 and 1990 for both sexes only (Nam and Terrie 1988; Terrie and Nam 1994).

Siegel's OPS was updated for 1980 and 1989 using methods generally similar to the original (Nakao, Hodges, and Treas 1990; Nakao and Treas 1994). Duncan's SEI was updated for 1970, 1980, and 1989 using various modified methodologies (Stevens and Featherman 1981; Featherman and Stevens 1982; Stevens and Cho 1985; Nakao and Treas 1994). Nam and Powers' OSS has been updated for decennial years using generally consistent methods (Nam and Powers 1968; Nam et al. 1975; Nam and Terrie 1982; Nam and Terrie 1988; Terrie and Nam 1994).

In the present paper, we compare the most recent versions of the OPS, SEI, and OSS¹ scales for both sexes combined. Our objective is to analyze differences among the three measures in terms of variations in underlying concepts, measurement procedures, interpretation of the scores themselves, properties

of the score distributions, and associations with independent variables.

Variations in Underlying Concepts

The several measures of social stratification used in the research literature have varying conceptual bases (Haug 1977). Most scales of occupation are based theoretically, explicitly or implicitly, on the writings of Karl Marx or Max Weber. Wright et al. (1982) grouped census occupation, industry, and class of worker data into a form that approximates Marxian categories of social class, but their approach has not been widely adopted by others. The three scales compared in this analysis have their conceptual base in the work of Weber, who perceived three broad dimensions to social stratification -- class, status, and party -- which, he argued, tap different aspects of inequality (Gerth and Mills 1958, 180-195). Weber identified "class" as occurring when "a number of people have in common a specific causal component of their life chances, in so far as this component is represented exclusively by economic interests in the possession of goods and opportunities for income, and is represented under the conditions of the commodity or labor markets" (Gerth and Mills 1958, 181). He went on to say that status, honor, or prestige is linked to the perceived style of life one has in the community. "Parties" represent the organized groups with which people are affiliated, and which influence their communal actions and positions of power. Though a person may or may not rank equally on the three dimensions empirically, each of the dimensions involves a distinct set of attributes.

It is necessary to specify conceptual foundations of empirical measures we develop in order to attach meanings to the research findings generated from them. In the case of the scales discussed here, the distinction between prestige (or status) and socioeconomic level (or class) is extremely important conceptually.

If prestige is what we intend to measure, and operational measures of it relate to judgments made by persons concerning the "social standing" of other persons or the positions they hold, then our resulting indicators must be interpreted as relating to status attributes such as prestige, respect, honor, and reputation. If, on the other hand, we intend to measure class or socioeconomic level, and operational measures of it are reported objective characteristics such as education and income, then our resulting data should be interpreted as indicating the level of living of those we are studying.

Treiman (1977, 211-212) argued that "on conceptual grounds it is reasonable to suppose that a socioeconomic index is a better indicator than a prestige index of the way occupations serve as resources that facilitate the transmission of advantage from one generation to the next or the conversion of one form of advantage into another. On the other hand, prestige, as a major occupational reward, may be a better indicator of "occupational attainment."

Siegel's scores were derived from questions asked in several surveys during the early 1960's about the respondent's evaluation of the "social standing" of a range of occupations. These

judgments were interpreted by Siegel as indicating prestige of the occupations (Siegel 1971). No external criteria were used to score the occupations. The internal criterion was a hierarchical ordering by respondents of occupational titles into nine categories based on "social standing" of the occupations. It is in this sense that Siegel's scores are regarded as "pure prestige" scores.

An examination of the Duncan approach shows that, although census socioeconomic indicators (education and income) were used as predictors, NORC prestige ratings (as in the Siegel approach) were being predicted (Duncan 1961); hence, the derived "socioeconomic" scores seem to be proxies for prestige scores. Duncan, himself, seemed to waiver on the prestige or socioeconomic interpretation of his scores, and others have disagreed about the proper interpretation (Featherman and Hauser 1976; Hodge 1981; Featherman and Stevens 1982; Nam and Terrie 1982; Nakao and Treas 1994).

The Nam-Powers approach measures "pure socioeconomic status" in the sense that education and income of occupational incumbents were used in calculating scores, and no external criteria were involved. From a strictly conceptual point of view, such differences among the three approaches can be crucial for the meaning we attach to scores.

In social research, we attempt to justify the indicators of theoretical variables we use by establishing the basis for validity of the indicators. One difficulty is that some of the concepts that are developed cannot easily be validated using an

independent criterion. We then resort to "face validity", or acceptance of the indicator as reflecting what phenomenon we are trying to represent. Thus, it is conventional to argue that prestige is indicated by persons' evaluations of the relative value of the occupation in which they are engaged, and that socioeconomic status is indicated by an individual's or family's educational and income characteristics. In a later part of this paper, we will examine validity from a third perspective, which is how similarly and how well each of the scales relates to independent variables that are assumed to be related to social stratification. The overall validity of the three scales must be evaluated by considering these various forms of validity jointly.

Measurement Procedures

Siegel's OPS -- The methodology of the original Siegel scale involved (1) combining the data from three separate NORC surveys in 1963, 1964, and 1965; (2) linking the derived prestige scores for a range of occupations reported in them by regression techniques; (3) combining occupational titles included in the surveys into a single list of titles with prestige scores in a common metric; and (4) translating prestige scores for such occupational titles into scores for a set of detailed occupational categories that mirror the Census Bureau occupational list (Siegel 1971). In each of the surveys, prestige scores were originally derived from judgments made by respondents about the relative social standing of job titles. Respondents had to sort the titles into nine hierarchical

categories, and prestige scores (that could range from 0 to 100) were estimated from a weighted combination of responses. The 1970 and 1980 updates of the Siegel scale were not based on any new data but instead were transformations of the original Siegel data that took account of the changing occupational classification between 1960 and those later dates. The 1989 version of the Siegel prestige scores by Nakao and Treas was based on using the same methodology as Siegel had used but related to a 1989 NORC survey of occupational standing.

Duncan's SEI -- In the original of "A Socioeconomic Index for All Occupations," Duncan (1961) developed a multiple regression equation that used indicators of education and income for forty-five occupations covered in both the 1950 Census and the 1947 NORC to model the socioeconomic-prestige relationship for occupations. The education indicator used was the percent of the experienced civilian labor force in a given occupation who had at least completed high school. The income indicator used was the percent of the experienced civilian labor force in a given occupation with incomes of \$3,500 or more. The prestige rating was the percent of respondents in the NORC survey who rated a particular occupation as in "excellent" or "good" standing (as compared with "average standing", "somewhat below average standing", and "poor standing"). The forty-five occupations were among 88 in the NORC study and 270 in the census (469 when specified by industrial and class-of-worker categories). Age was controlled in the analysis. In Duncan's equation, five-sixths of the variance in occupational prestige

was accounted for by the socioeconomic indicators.

By inserting the education and income indicators for any census detailed occupation into the multiple-regression equation, an estimate could be made of the prestige rating that would have been obtained had that occupation originally been included in the NORC study. The Duncan scores theoretically can take values from 0 to 100, since they are basically predicted percentages.

Stevens and Featherman (1981) produced a 1970-based set of Duncan scores by adhering generally to Duncan's procedures for calculating the scores, but altering the methodology where better estimates of relevant variables could be made. The prestige variable used originally by Duncan was estimated indirectly from other data. The education variable was changed to the percentage of persons with 1 or more years of college, and the income variable was changed to the percentage of persons with incomes of \$10,000 or more. Additionally, the prediction equation was reestimated using the subset of occupational titles employed by Duncan. Although these substantial methodological changes were made, Stevens and Featherman (1981) argued that the essential character of the initial Duncan scores was reproduced for 1970.

In the 1980 version of the Duncan scores (Stevens and Cho 1985), and in light of substantial changes in the occupational classification in the census between 1970 and 1980, a transformation of the occupational classification was required. Average scores of the 1970 components of equivalent 1980 occupations were weighted by the size of each 1970 component category relative to the size of the 1980 category. In effect,

this was a remapping of the occupational classifications in 1970 and 1980 that produced scores for 1980 that were equivalent to those for 1970. As a consequence, the methodological changes introduced by Stevens and Featherman (1981) for 1970 were implicitly maintained for 1980.

Nakao and Treas (1994) used 1989 NORC prestige data and set the prestige component of the Duncan equation to the proportion of respondents who rated an occupation in the upper half "of a ladder of social standing." They then regressed the prestige indicator on the age-standardized proportion of occupational incumbents with one or more years of college in 1980 and the age-standardized proportion with personal incomes of \$15,000 or more in 1979. This approach was believed to be equivalent to the original Duncan formulation, adjusted for changes over time in national distributions of education and income and their relation to the prestige rating.

Nam-Powers' OSS -- The occupational socioeconomic scores developed for the Nam-Powers scale were obtained by (1) arraying the detailed list of census occupations² for the experienced civilian labor force according to the median educational level of the incumbents, (2) arraying the same occupations separately according to the median income level of the incumbents, (3) using the number of persons engaged in each occupation, determining the cumulative interval of persons in each occupation for each of the two arrays, beginning with the lowest-ranked occupation, and (4) averaging the midpoints of the two cumulative intervals of occupants and dividing by the total of persons in all occupations.

For example, if there were 50 million persons in the labor force, of whom 1 million were in occupation X, and the median educational level was higher for occupations containing 35 million persons and lower for occupations containing 14 million persons, the cumulative interval of persons for occupation X in the education array would be 14,000,001-15,000,000. If a similar calculation for the income array resulted in a cumulative interval of 17,000,001-18,000,000, then 14,500,000 (the midpoint on the education scale) plus 17,500,000 (the midpoint on the income scale) would average to 16,000,000; divided by 50,000,000, the total labor force, would result in a score for occupation X of 32. These occupation scores can take values from 0 to 100.

Successive versions of the Nam-Powers occupational scale (Nam et al. 1975; Nam and Powers 1983; Nam and Terrie 1988; Terrie and Nam 1994) used the same methodology that produced the earlier sets of scores. That is, no modification of procedures was required, despite changes in the occupational classification between decennial censuses.

Interpretation of the Scores

For a user of the scores to relate them to a particular research problem, it is necessary to provide a meaningful way of interpreting the values that are generated.

In the case of the updated Siegel OPS, a score can be interpreted as the percentage of respondents in 1989 (the base year for the newer NORC data) who would have rated the occupation as having a generally favorable social standing. In the case of

the updated Duncan SEI, a score can be interpreted in a similar manner. With regard to the Nam-Powers-Terrie updated scale, a score indicates the approximate percentage of persons in the labor force who are in occupations having combined average levels of education and income lower than the given occupation³, as of the 1990 Census.

An important aspect of this difference in interpretation is that, in the Siegel and Duncan approaches, the score for each occupation is determined absolutely for that occupation (that is, independent of the score for any other occupation) because each occupational score is based on its own equation; in the Nam-Powers approach, the score for any occupation depends on the score for all other occupations because the derivation of each occupational score is based on the hierarchical structure of all occupations. In this sense, the Nam-Powers methodology treats occupations in a more holistic framework than do the Siegel or Duncan methodologies. Moreover, the Nam-Powers-Terrie scale can be said to have an interval property, which is lacking in the other two scales.

Properties of the Score Distributions

The three scales being compared, Nakao and Treas' 1989 (1990) updates of the Duncan SEI and Siegel OPS for both sexes and the Nam-Powers-Terrie update of the OSS for both sexes, have been differentiated in terms of their conceptual bases, measurement procedures, and interpretation. We can now ask if these variations result in different patterns of scores for the range of detailed occupations.

In this analysis, we use scores for both sexes combined for comparisons. We compare (a) distributions of occupations based on raw scores and (b) distributions of occupations based on Z-scores (which standardizes the distributions). We also call attention to differences in distributions when occupations and individuals are used as units of analysis.

In comparing the three scales, we first examine disparity of score assignments for the several hundred census detailed occupations in 1990 (see Table 1) and then determine the apparent reasons that differences occur.

Figure 1 shows distributions of the grouped raw scores for occupations for the three scales⁴. (The detailed occupation scores for the three scales are shown in Table 1.) What we see is a substantial difference in score distributions between the Nam-Powers-Terrie scores, on the one hand, and the Siegel and Duncan scores, on the other. Siegel and Duncan scores are more concentrated in a limited range of all scores, whereas Nam-Powers-Terrie scores are more dispersed. These distributions are consequences of the methods used to generate the scores. Note, however, the similarity in raw score distributions for the Siegel and Duncan scales despite differences in measurement methods.

(Figure 1 about here)

Because the three scales have different means and variances, we need to standardize the distributions to properly compare their structures. In Figure 2, we provide comparisons of the grouped standardized scores based on a Z-score transformation. What we observe is greater similarity in the structure of the

three standardized scales than in the structure of the three unstandardized scales. However, the Siegel and Duncan scales remain significantly different from the Nam-Powers-Terrie scale when each is compared to an underlying normal curve. The former two scales have more outliers and possess more skewed distributions whereas the Nam et al. scale is more normally distributed.⁵

(Figure 2 about here)

What might account for these persistent disparities? One critical factor would be the relative contributions of the education and income variables to each set of scores. Since education and income are averaged in the Nam-Powers approach, their contributions are approximately equal. Knowing the typical educational level of an occupation's incumbents enables one to predict the Duncan occupational score fairly accurately. In the case of the Siegel scale, education is also more highly correlated than income with those scores. This is consistent with the analyses of Hodge (1981) and Featherman and Stevens (1982), who point out that education is more highly associated with prestige than is income.

This distinction is also brought out in an examination of specific occupations whose scores vary significantly among the three scales. Occupations whose ranks are much higher on the Duncan than Nam-Powers-Terrie scales include teachers and sales workers whose level of education is average but whose income is relatively low. Occupations whose ranks are much higher on the Nam-Powers-Terrie than Duncan scales include technical machine

operators and persons in supervisory blue-collar positions who have relatively high income for their educational level.

We also note that, with each passing decade, distributions of schooling have become less dispersed (Mare 1995) and, consequently, less and less variation in occupational scores is introduced by that variable. In contrast, income disparities have widened (Levy 1995). This phenomenon has also affected the nature of the disparity in the various sets of scores (Terrie, 1979).

Because there are different numbers of people engaged in various occupations, comparisons of scores for occupations as a whole may not produce the same result as comparisons of scores for individuals (Haug 1977). In fact, when researchers use such scales, they typically apply the published raw scores to samples of the population. Figure 3 shows comparisons of the three scales for individuals (using raw scores). The differences in the distributions of the three scales is accented because the number of incumbents is generally greater in occupations where the scales have their greatest score differences.

(Figure 3 about here)

Relation of Scales to Independent Variables

We can also compare the three scales in terms of how they relate to other variables that research has established are strongly linked to social stratification. Even if the conceptual foundation of the three scales is different and the form of the score distribution varies, the question remains as to how much analysis involving outcome variables is affected by scale

selection. We analyze 1990 Census data to present associations of each of the three scales with sex, race, and housing status.

Table 2 first examines mean scores for men and women for each of the three approaches. We find that the greatest differences in the means is for the Nam-Powers approach. This finding is consistent with studies by Cooney et al. (1982), Mutchler and Poston (1983), and Stafford and Fossett (1991), who found that use of the Nam-Powers approach led to different associations of occupational status and other characteristics for women than did the Duncan approach to status measurement.

(Table 2 about here)

Also shown in Table 2 are mean scores by race for the three scales. Again, the greatest difference in means for whites and blacks is for the Nam-Powers-Terrie scale.

Housing status is observed to vary by one's social position. The 1990 Census asked questions on monthly payment for rented residences. Table 2 shows the relationship of rental value to categories of the three scales. When rental value is regressed on occupational score, the regression slopes are seen to vary among the three scales. The Siegel scale produces the greatest rental value inequality, whereas the Duncan scale is in between and the Nam-Powers-Terrie scale has the least slope. This finding reinforces the notion that the three scales have different relationships to community conditions.

Needed Directions for Social Stratification Indexes

For a while, the literature involving measurement of social stratification was shifting away from unidimensional types of

status indicators. Greater attention was being paid to ways of operationalizing neo-Marxian and structural theoretical indicators in the area of stratification (Wright et al. 1982; Tolbert et al. 1980; Baron and Bielby 1984). This shift was understandable at a time when ideological orientations were undergoing change and alternative views of social stratification were being entertained.

More recently, broader attention has been given to the range of stratification indicators for social research, with particular emphasis on both conceptual and measurement qualities (Grusky and Van Rompaey, 1992). In this context, the Siegel, Duncan and Nam-Powers approaches have been reexamined, and all continue to receive substantial use by the research community.

This newer critical view of stratification measures should serve to improve the quality of social science research, to the extent that appropriate indicators are utilized for specific analytical tasks. Unfortunately, it is too often the case that a measure of social stratification is selected by a researcher without proper consideration of the extent to which it indicates the concept of interest and the nature of assumptions that underlie measurement of the index. Familiarity and tradition are more likely to guide selection of a measure than are such scientific principles.

When a single indicator of social stratification is called for, the analyst must find an indicator that is consistent with the purposes of the study. There exist various measures of each stratification dimension, and researchers and authors can choose

appropriate ones for their purpose. Is it class, status, power, or some more specific aspect of stratification that is intended? Once that question has been answered, which of the alternative measures best meets the need of the research?

Social researchers need to become more aware of conceptual distinctions and their empirical referents. The present paper is designed to call attention to distinctions that researchers often fail to notice between three often-used scales of occupational stratification. Use of the wrong measure can invalidate the research being performed. We must all be on guard to avoid such consequences.

Notes

1. The reader is cautioned that the 1980-based scores for the Nam-Powers scale shown in the early printings of the 5th edition of the Miller (1991) book were published incorrectly, are in error, and should NOT be used. The correct scores for 1980 can be found in the later printings of the Miller book or in Working Paper 88-48, Florida State University Center for the Study of Population. Those for 1990 can be found in Table 1 of this paper.
2. In the 1970 and earlier versions of the Nam-powers index, and in the work by Duncan and associates, occupations are represented by occupation-industry-class of worker combinations which the Bureau of the Census used for detailed occupational classifications. In the 1980 Nam-Powers and 1990 Nam-Powers-Terrie scales, only occupations were classified. Some stratification detail was thereby lost; however, this procedure should simplify assignment of scores by those who collect occupational information in their own surveys or records.
3. The Nam-Powers scores for 1950 through 1980 on diskette are available from the author.

4. Given that the methodologies for constructing the Duncan scale and, to a lesser extent, the Siegel scale has changed with each time revision, comparisons of the three scales based on the most recent versions may not be the same as would comparisons based on earlier versions of the three.

5. Each of the scales has "spikes" (relatively large numbers of cases for particular detailed occupations), which are not matched by the other scales. These relate to the measurement procedures used. For example, the Siegel scale does not differentiate among teachers of different school levels and subjects.

References

- Baron, James N., and William T. Bielby. 1984. The Organization of Work in a Segmented Economy. American Sociological Review 49:4, 454-473.
- Cooney, Rosemary Santana, Alice Sokolove Clague, and Joseph J. Salvo. 1982. Status Attainment of Young White Men and Women: Two Socioeconomic Measures. Pp. 161-199 in Mary G. Powers, ed. Measures of Socioeconomic Status: Current Issues. Boulder: Westview Press.
- Duncan, Otis D. 1961. A Socioeconomic Index for All Occupations. In A. J. Reiss, Jr., ed., Occupations and Social Status. New York: The Free Press of Glencoe.
- Edwards, Alba. M. 1943. Comparative Occupation Statistics for the United States, 1870 to 1940. Washington: U.S. Government Printing Office.
- Featherman, David L., and Robert M. Hauser. 1976. Prestige or Socioeconomic Scales in the Study of Occupational Achievement? Sociological Methods and Research 4, 402-422.
- Featherman, David L., and Gillian Stevens. 1982. A Revised Socioeconomic Index of Occupational Status. In Mary G. Powers, ed., Measures of Socioeconomic Status: Current Issues. Boulder: Westview Press.
- Ganzeboom, Harry B.G., Paul M. DeGraaf, Donald J. Treiman, and Jan De Leeuw. 1992. A Standard International Socio-Economic Index of Occupational Status. Social Science Research 21, 1-56.

- Grusky, David B., and Stephen E. Van Rompaey. 1992. The Vertical Scaling of Occupations: Some Cautionary Comments and Reflections. American Journal of Sociology 97:6, 1712-1728.
- Haug, Marie R. 1977. Measurement in Social Stratification. Annual Review of Sociology 3, 51-79.
- Hodge, Robert W. 1981. The Measurement of Occupational Status. Social Science Research 10, 396-415.
- Hollingshead, August B. 1949. Elmtown's Youth. New York: John Wiley.
- Levy, Frank. 1995. Incomes and Income Inequality. Pp. 1-57 in Reynolds Farley, ed. State of the Union: America in the 1990's. Vol. 1. New York: Russell Sage.
- Mare, Robert D. 1995. Changes in Educational Attainment and School Enrollment. Pp. 155-213 in Reynolds Farley, ed. State of the Union: America in the 1990's. Vol. 1. New York: Russell Sage.
- Miller, Delbert C. 1991. Handbook of Research Design and Social Measurement. Newbury Park, CA: Sage (Fifth Edition).
- Mutchler, Jan E., and Dudley L. Poston. 1983. Do Females Necessarily Have the Same Occupational Status Scores as Males? A Conceptual and Empirical Examination of the Duncan Socioeconomic and Nam-Powers Occupational Status Scores. Social Science Research 12, 353-362.
- Nakao, Keiko, and Judith Treas. 1990. Computing 1989 Occupational Prestige Scores. GSS Methodological Report No. 70. Chicago, Illinois: National Opinion Research Center.

- Nakao, Keiko, and Judith Treas. 1992. The 1989 Socioeconomic Index of Occupations: Construction from the 1989 Occupational Prestige Scores. GSS Methodological Report No. 74. Chicago, Illinois: National Opinion Research Center.
- Nakao, Keiko, and Judith Treas. 1994. Updating Occupational Prestige and Socioeconomic Scores: How the New Measures Measure Up. Pp. 1-72 in Sociological Methodology, 1994, ed. by Peter Marsden. Washington, D.C.: American Sociological Association.
- Nam, Charles B., and Mary G. Powers. 1968. Changes in the Relative Status of Workers in the United States, 1950-1960. Social Forces 47, 158-170.
- Nam, Charles B., and Mary G. Powers. 1983. The Socioeconomic Approach to Status Measurement. Houston: Cap and Gown Press.
- Nam, Charles B., and E. Walter Terrie. 1982. Measurement of Socioeconomic Status from United States Census Data. Pp. 29-42 in Mary G. Powers, ed., Measures of Socioeconomic Status: Current Issues. Boulder: Westview Press.
- Nam, Charles B., and E. Walter Terrie. 1988. 1980-Based Nam-Powers Occupational Status Scores. Florida State University, Center for the Study of Population, Working Paper Series, WPS 88-48.
- Nam, Charles B., John LaRocque, Mary G. Powers, and Joan Holmberg. 1975. Occupational Status Scores: Stability and Change. Proceedings of the American Statistical Association, Social Statistics Section, 1975. Pp. 570-575.

- Siegel, Paul M. 1971. Prestige in the American Occupational Structure. Unpublished doctoral dissertation, University of Chicago.
- Stafford, M. Therese, and Mark A. Fossett. 1991. Measuring Occupational Sex Inequality Over Time Using Nam-Powers SES Scores. Texas Population Research Center Working Paper Series No. 12.1. Austin: University of Texas.
- Stevens, Gillian, and Joo Hyun Cho. 1985. Socioeconomic Indexes and the New 1980 Census Occupational Classification Scheme. Social Science Research 14, 142-168.
- Stevens, Gillian, and David L. Featherman. 1981. A Revised Socioeconomic Index of Occupational Status. Social Science Research 10, 364-395.
- Terrie, E. Walter 1979. Dimensions of Occupational Status Change in the U.S., 1960 to 1970. Unpublished doctoral dissertation. Florida State University.
- Tolbert, Charles M., Patrick M. Horan, and E.M. Beck. 1980. The Structure of Economic Segmentation: A Dual Economy Approach. American Journal of Sociology 85, 1095-1116.
- Treiman, Donald J. 1977. Occupational Prestige in Comparative Perspective. New York: Academic Press.
- U.S. Bureau of the Census. 1963. Methodology and Scores of Socioeconomic Status. Working Paper No. 15. Washington: U.S. Bureau of the Census.
- Warner, W. Lloyd, Marcia Meeker, and Kenneth Eells. 1949. Social Class in America: the Evaluation of Status. Chicago: Science Research Associates.

Wright, Erik Olin, C. Costello, D. Hachen, and J. Sprague. 1982.
The American Class Structure. American Sociological Review
47, 709-726.

Table 1. -- Occupational Scores Based on Three Scales

Occup Code	Persons In Civ. L.F.	1990 Nam et al.	1989 Siegel	1989 Duncan	Occupation Title
3	22750	86	61	74	Legislators (111)
4	31650	77	70	59	Chief executives and general administrators, public administration (112)
5	559750	86	51	70	Administrators and officials, public administration (1132-1139)
6	58700	82	54	55	Administrators, protective services (1131)
7	712100	91	59	74	Financial managers (122)
8	312800	85	54	69	Personnel and labor relations managers (123)
9	127700	91	63	75	Purchasing managers (124)
13	608200	93	59	73	Managers, marketing, advertising, and public relations (125)
14	699650	93	64	85	Administrators, education and related fields (128)
15	223050	83	69	74	Managers, medicine and health (131)
16	45700	77	39	55	Postmasters and mail superintendents (1344)
17	1147650	57	51	64	Managers, food serving and lodging establishments (1351)
18	465100	71	49	54	Managers, properties and real estate (1353)
19	50450	83	49	74	Funeral directors (part 1359)
21	460050	77	51	64	Managers, service organizations, n.e.c. (127, 1352, 1354, part 1359)
22	5942750	86	51	64	Managers and administrators, n.e.c. (121, 126, 132-1343, 136-139)
23	1750200	85	65	76	Accountants and auditors (1412)
24	87350	81	48	60	Underwriters (1414)
25	754400	83	48	67	Other financial officers (1415, 1419)
26	370500	94	61	83	Management analysts (142)
27	563350	80	43	63	Personnel, training, and labor relations specialists (143)
28	24650	54	42	49	Purchasing agents and buyers, farm products (1443)
29	278700	65	50	58	Buyers, wholesale and retail trade except farm products (1442)
33	290500	75	41	62	Purchasing agents and buyers, n.e.c. (1449)
34	37000	72	51	61	Business and promotion agents (145)
35	66550	76	47	55	Construction inspectors (1472)
36	209300	82	50	63	Inspectors and compliance officers, except construction (1473)
37	453050	68	49	68	Management related occupations, n.e.c. (149)
43	187200	94	73	84	Architects (161)
44	162200	96	72	93	Aerospace Engineers (1622)
45	15500	95	61	88	Metallurgical and materials Engineers (1623)

46	9150	94	60	84	Mining Engineers (1624)
47	25850	96	66	89	Petroleum Engineers (1625)
48	76150	96	73	93	Chemical Engineers (1626)
49	16500	96	63	91	Nuclear Engineers (1627)
53	289400	95	69	87	Civil Engineers (1628)
54	1750	94	60	86	Agricultural Engineers (1632)
55	481050	95	64	87	Electrical and electronic Engineers (1633, 1636)
56	200650	92	62	78	Industrial Engineers (1634)
57	226850	94	64	86	Mechanical Engineers (1635)
58	16950	92	59	71	Marine and naval architects (1637)
59	406750	95	71	88	Engineers, n.e.c. (1639)
63	13750	89	51	59	Surveyors and mapping scientists (164)
64	448800	94	74	84	Computer systems analysts and scientists (171)
65	301300	92	53	80	Operations and systems researchers and analysts (172)
66	23800	96	44	90	Actuaries (1732)
67	45700	89	56	75	Statisticians (1733)
68	6250	97	63	92	Mathematical scientists, n.e.c. (1739)
69	36200	99	73	91	Physicists and astronomers (1842, 1843)
73	150800	92	73	87	Chemists, except biochemists (1845)
74	7750	94	63	79	Atmospheric and space scientists (1846)
75	62200	97	70	90	Geologists and geodesists (1847)
76	18850	93	73	84	Physical scientists, n.e.c. (1849)
77	49700	83	58	73	Agricultural and food scientists (1853)
78	74950	90	73	84	Biological and life scientists (1854)
79	33200	86	55	72	Forestry and conservation scientists (1852)
83	22050	93	64	85	Medical scientists (1855)
84	595000	100	86	97	Physicians (261)
85	174950	99	72	96	Dentists (262)
86	49250	99	62	90	Veterinarians (27)
87	35600	99	67	87	Optometrists (281)
88	1650	99	65	91	Podiatrists (283)
89	47100	94	50	87	Health diagnosing practitioners, n.e.c. (289)
95	2145400	81	66	73	Registered nurses (29)
96	218350	95	68	89	Pharmacists (301)
97	127500	67	56	55	Dietitians (302)

98	62700	79	63	61	Respiratory therapists (3031)
99	54000	84	56	74	Occupational therapists (3032)
103	90400	86	61	74	Physical therapists (3033)
104	69250	88	61	76	Speech therapists (3034)
105	70300	77	62	64	Therapists, n.e.c. (3039)
106	22750	73	61	52	Physicians' assistants (304)
113	2800	90	74	86	Earth, environmental, and marine science teachers (2212)
114	5300	98	74	87	Biological science teachers (2213)
115	2800	95	74	87	Chemistry teachers (2214)
116	3950	99	74	89	Physics teachers (2215)
117	1100	68	74	86	Natural science teachers, n.e.c. (2216)
118	2100	95	74	88	Psychology teachers (2217)
119	4600	98	74	87	Economics teachers (2218)
123	1100	97	74	89	History teachers (2222)
124	2050	91	74	80	Political science teachers (2223)
125	2300	98	74	89	Sociology teachers (2224)
126	1050	98	74	85	Social science teachers, n.e.c. (2225)
127	8700	94	74	85	Engineering teachers (2226)
128	25700	81	74	84	Mathematical science teachers (2227)
129	5000	67	74	75	Computer science teachers (2228)
133	650	100	74	93	Medical science teachers (2231)
134	33300	91	74	81	Health specialties teachers (2232)
135	3950	91	74	83	Business, commerce, and marketing teachers (2233)
136	800	97	74	87	Agriculture and forestry teachers (2234)
137	29500	79	74	81	Art, drama, and music teachers (2235)
138	5700	56	74	79	Physical education teachers (2236)
139	300	93	74	86	Education teachers (2237)
143	28800	80	74	82	English teachers (2238)
144	4400	63	74	80	Foreign language teachers (2242)
145	5850	99	74	94	Law teachers (2243)
146	0	94	74	89	Social work teachers (2244)
147	6200	89	74	87	Theology teachers (2245)
148	450	80	74	71	Trade and industrial teachers (2246)
149	0	92	74	79	Home economics teachers (2247)
153	21850	92	74	83	Teachers, postsecondary, n.e.c. (2249)

154	733350	90	74	87	Postsecondary teachers, subject not specified
155	365350	46	55	57	Teachers, prekindergarten and kindergarten (231)
156	3521350	84	64	79	Teachers, elementary school (232)
157	715300	89	66	80	Teachers, secondary school (233)
158	66750	76	65	64	Teachers, special education (235)
159	668450	60	46	62	Teachers, n.e.c. (236, 239)
163	264550	86	57	81	Counselors, Educational and Vocational (24)
164	263350	75	54	72	Librarians (251)
165	34750	77	52	71	Archivists and curators (252)
166	177700	92	63	85	Economists (1912)
167	214750	93	69	83	Psychologists (1915)
168	1500	85	61	80	Sociologists (1916)
169	19250	81	65	78	Social scientists, n.e.c. (1913, 1914, 1919)
173	20650	94	52	86	Urban planners (192)
174	728900	77	52	69	Social workers (2032)
175	103150	33	38	52	Recreation workers (2033)
176	429950	80	69	74	Clergy (2042)
177	111950	59	44	65	Religious workers, n.e.c. (2049)
178	839350	99	75	92	Lawyers (211)
179	42400	99	71	87	Judges (212)
183	112850	78	63	76	Authors (321)
184	83600	89	54	79	Technical writers (398)
185	721300	69	47	61	Designers (322)
186	205050	55	47	57	Musicians and composers (323)
187	110550	81	58	72	Actors and directors (324)
188	220800	64	52	63	Painters, sculptors, craft-artists, and artist printmakers (325)
189	172550	63	45	59	Photographers (326)
193	30600	34	53	44	Dancers (327)
194	105000	54	36	52	Artists, performers, and related workers, n.e.c. (328, 329)
195	286400	80	60	75	Editors and reporters (331)
197	193400	82	48	74	Public relations specialists (332)
198	72600	52	55	60	Announcers (333)
199	104100	45	65	59	Athletes (34)
203	360150	73	68	65	Clinical laboratory technologists and technicians (362)
204	88100	74	52	74	Dental hygienists (363)

205	60450	54	52	58	Health record technologists and technicians (364)
206	143450	74	58	60	Radiologic technicians (365)
207	508200	60	60	44	Licensed practical nurses (366)
208	526950	58	57	51	Health technologists and technicians, n.e.c. (369)
213	414900	80	60	61	Electrical and electronic technicians (3711)
214	17100	86	40	56	Industrial engineering technicians (3712)
215	28550	90	54	64	Mechanical engineering technicians (3713)
216	259100	70	48	62	Engineering technicians, n.e.c. (3719)
217	387100	75	51	62	Drafting occupations (372)
218	86000	66	36	50	Surveying and mapping technicians (373)
223	54250	65	32	53	Biological technicians (382)
224	99200	76	38	62	Chemical technicians (3831)
225	84600	68	44	59	Science technicians, n.e.c. (3832, 3833, 384, 389)
226	132200	93	61	80	Airplane pilots and navigators (825)
227	60750	79	65	64	Air traffic controllers (392)
228	26600	63	43	46	Broadcast equipment operators (393)
229	696650	89	61	76	Computer programmers (3971, 3972)
233	4700	80	48	70	Tool programmers, numerical control (3974)
234	315950	71	57	57	Legal assistants (396)
235	640850	73	41	66	Technicians, n.e.c. (399)
243	3810900	66	44	51	Supervisors and Proprietors, Sales Occupations (40)
253	773350	82	45	66	Insurance sales occupations (4122)
254	978450	73	49	64	Real estate sales occupations (4123)
255	315300	93	53	81	Securities and financial services sales occupations (4124)
256	218900	73	39	66	Advertising and related sales occupations (4153)
257	641500	74	32	62	Sales occupations, other business services (4152)
258	50300	94	53	87	Sales engineers (421)
259	1719000	78	49	64	Sales representatives, mining, manufacturing, and wholesale (423, 424)
263	413000	58	34	49	Sales workers, motor vehicles and boats (4342, 4344)
264	658750	26	30	38	Sales workers, apparel (4346)
265	136900	23	28	40	Sales workers, shoes (4351)
266	225800	47	31	47	Sales workers, furniture and home furnishings (4348)
267	209550	53	31	50	Sales workers, radio, TV, hi-fi, and appliances (4343, 4352)
268	190800	48	32	43	Sales workers, hardware and building supplies (4353)
269	164900	46	30	39	Sales workers, parts (4367)

274	2519700	32	32	39	Sales workers, other commodities (4345, 4347, 4354, 4356, 4359, 4362, 4369)
275	263600	23	34	34	Sales counter clerks (4363)
276	4081150	15	29	33	Cashiers (4364)
277	290950	34	22	37	Street and door-to-door sales workers (4366)
278	145100	12	19	37	News vendors (4365)
283	79100	25	32	37	Demonstrators, promoters and models, sales (445)
284	13350	51	39	45	Auctioneers (447)
285	25350	61	36	49	Sales support occupations, n.e.c. (444, 446, 449)
303	638750	68	51	52	Supervisors, general office (4511, 4513, 4514, 4516, 4519, 4529)
304	31850	82	54	66	Supervisors, computer equipment operators (4512)
305	125900	78	52	65	Supervisors, financial records processing (4521)
306	5550	71	49	58	Chief communications operators (4523)
307	248400	73	42	51	Supervisors, distribution, scheduling, and adjusting clerks (4522, 4524-4528)
308	749050	61	50	47	Computer operators (4612)
309	10650	39	40	40	Peripheral equipment operators (4613)
313	5076650	51	46	38	Secretaries (4622)
314	82750	66	47	45	Stenographers (4623)
315	824850	44	40	35	Typists (4624)
316	249350	45	49	44	Interviewers (4642)
317	130000	37	32	40	Hotel clerks (4643)
318	319000	61	35	57	Transportation ticket and reservation agents (4644)
319	1072950	35	39	37	Receptionists (4645)
323	221850	34	34	40	Information clerks, n.e.c. (4649)
325	9700	45	31	45	Classified-ad clerks (4662)
326	12400	60	35	45	Correspondence clerks (4663)
327	260200	51	31	38	Order clerks (4664)
328	101500	55	36	39	Personnel clerks, except payroll and timekeeping (4692)
329	226750	39	29	52	Library clerks (4694)
335	389950	29	36	37	File clerks (4696)
336	185300	54	31	39	Records clerks (4699)
337	2375550	48	47	38	Bookkeepers, accounting, and auditing clerks (4712)
338	198700	53	42	36	Payroll and timekeeping clerks (4713)
339	205600	46	31	33	Billing clerks (4715)
343	106200	48	28	44	Cost and rate clerks (4716)
344	60550	44	35	34	Billing, posting, and calculating machine operators (4718)

345	33900	40	35	38	Duplicating machine operators (4722)
346	9050	32	36	30	Mail preparing and paper handling machine operators (4723)
347	48700	35	39	34	Office machine operators, n.e.c. (4729)
348	300900	39	40	31	Telephone operators (4732)
353	13150	40	33	33	Communications equipment operators, n.e.c. (4733, 4739)
354	383600	71	42	54	Postal clerks, except mail carriers (4742)
355	382600	71	47	54	Mail carriers, postal service (4743)
356	267950	34	32	36	Mail clerks, except postal service (4744)
357	198250	41	22	39	Messengers (4745)
359	258000	53	35	44	Dispatchers (4751)
363	312700	68	42	47	Production coordinators (4752)
364	700450	41	33	34	Traffic, shipping, and receiving clerks (4753)
365	934500	37	27	37	Stock and inventory clerks (4754)
366	71300	54	34	37	Meter readers (4755)
368	109400	34	28	34	Weighers, measurers, checkers, and samplers (4756, 4757)
373	294550	39	43	42	Expeditors (4758)
374	57750	37	24	34	Material recording, scheduling, and distributing clerks, n.e.c. (4759)
375	382500	67	47	55	Insurance adjusters, examiners, and investigators (4782)
376	646450	60	40	53	Investigators and adjusters, except insurance (4783)
377	80300	58	46	53	Eligibility clerks, social welfare (4784)
378	204300	55	24	42	Bill and account collectors (4786)
379	1864150	41	34	38	General office clerks (463)
383	628500	40	43	35	Bank tellers (4791)
384	38050	53	43	46	Proofreaders (4792)
385	790700	47	41	31	Data-entry keyers (4793)
386	170050	61	38	44	Statistical clerks (4794)
387	337150	35	43	37	Teachers' aides (4795)
389	821150	62	33	51	Administrative support occupations, n.e.c. (4787, 4799)
403	800	7	23	29	Launderers and ironers (503)
404	13050	8	30	25	Cooks, private household (504)
405	42300	7	34	23	Housekeepers and butlers (505)
406	206500	13	29	31	Child care workers, private household (506)
407	516350	5	23	22	Private household cleaners and servants (502, 507, 509)
413	46100	85	60	63	Supervisors, firefighting and fire prevention occupations (5111)
414	78300	86	62	70	Supervisors, police and detectives (5112)

415	61800	68	38	55	Supervisors, guards (5113)
416	24250	69	60	53	Fire inspection and fire prevention occupations (5122)
417	251350	78	53	52	Firefighting occupations (5123)
418	539400	82	60	63	Police and detectives, public service (5132)
423	125050	73	48	53	Sheriffs, bailiffs, and other law enforcement officers (5134)
424	185050	62	40	46	Correctional institution officers (5133)
425	65900	13	32	23	Crossing guards (5142)
426	1008050	42	42	39	Guards and police, except public service (5144)
427	130550	25	37	49	Protective service occupations, n.e.c. (5149)
433	329550	34	35	38	Supervisors, food preparation and service occupations (5211)
434	394900	34	25	34	Barenders (5212)
435	2013050	23	28	32	Waiters and waitresses (5213)
436	2731150	8	31	28	Cooks (5214, 5215)
438	333050	1	23	35	Food counter, fountain and related occupations (5216)
439	286950	13	24	29	Kitchen workers, food preparation (5217)
443	540300	1	21	35	Waiters/waitresses' assistants (5218)
444	1033200	3	17	29	Miscellaneous food preparation occupations (5219)
445	241300	45	45	40	Dental assistants (5232)
446	303800	33	51	37	Health aides, except nursing (5233)
447	2319600	28	42	29	Nursing aides, orderlies, and attendants (5236)
448	222950	47	36	35	Supervisors, cleaning and building service workers (5241)
449	963800	8	20	21	Maids and housemen (5242, 5249)
453	3252650	16	22	28	Janitors and cleaners (5244)
454	13950	30	28	27	Elevator operators (5245)
455	54900	46	32	33	Pest control occupations (5246)
456	82900	45	37	44	Supervisors, personal service occupations (5251)
457	85950	35	36	30	Barbers (5252)
458	842450	32	36	26	Hairdressers and cosmetologists (5253)
459	229500	22	25	40	Attendants, amusement and recreation facilities (5254)
461	67800	41	29	49	Guides (5255)
462	48750	15	20	46	Ushers (5256)
463	115750	69	42	63	Public transportation attendants (5257)
464	39400	38	27	37	Baggage porters and bellhops (5262)
465	66400	33	46	31	Welfare service aides (5263)
466	520450	20	37	44	Family child care providers (part:5264)

467	487050	23	36	33	Early childhood teacher's assistants (part 5264)
468	290200	20	36	33	Child care workers, n.e.c. (part 5264)
469	299800	26	25	34	Personal service occupations, n.e.c. (5258, 5269)
473	931600	38	40	37	Farmers, except horticultural (5512-5514)
474	37350	44	37	45	Horticultural specialty farmers (5515)
475	281700	40	48	45	Managers, farms, except horticultural (5522-5524)
476	13000	56	48	39	Managers, horticultural specialty farms (5525)
477	64200	43	44	40	Supervisors, farm workers (5611)
479	1105100	7	23	27	Farm workers (5612-5617)
483	2450	23	31	37	Marine life cultivation workers (5618)
484	46800	14	26	31	Nursery workers (5619)
485	66400	55	36	43	Supervisors, related agricultural occupations (5621)
486	988600	15	29	31	Groundskeepers and gardeners, except farm (5622)
487	122350	29	21	38	Animal caretakers, except farm (5624)
488	72400	4	21	20	Graders and sorters, agricultural products (5625)
489	7700	33	49	42	Inspectors, agricultural products (5627)
494	6700	48	44	43	Supervisors, forestry and logging workers (571)
495	39400	28	39	38	Forestry workers, except logging (572)
496	155300	16	31	27	Timber cutting and logging occupations (573, 579)
497	9950	47	43	42	Captains and other officers, fishing vessels (part 8241)
498	79850	23	34	33	Fishers (583)
499	4900	32	23	45	Hunters and trappers (584)
503	295050	70	50	49	Supervisors, mechanics and repairers (60)
505	1017500	41	40	32	Automobile mechanics (part 6111)
506	700	32	34	38	Automobile mechanic apprentices (part 6111)
507	298750	47	44	35	Bus, truck, and stationary engine mechanics (6112)
508	124950	75	53	53	Aircraft engine mechanics (6113)
509	67900	39	28	32	Small engine repairers (6114)
514	231600	34	31	30	Automobile body and related repairers (6115)
515	28600	70	53	46	Aircraft mechanics, except engine (6116)
516	168700	54	45	38	Heavy equipment mechanics (6117)
517	30650	39	36	34	Farm equipment mechanics (6118)
518	354000	53	30	36	Industrial machinery repairers (613)
519	25300	46	26	37	Machinery maintenance occupations (614)
523	197450	64	39	45	Electronic repairers, communications and industrial equipment (6151, 6153, 6155)

525	93700	80	51	62	Data processing equipment repairers (6154)
526	50450	51	38	39	Household appliance and power tool repairers (6156)
527	63550	71	41	45	Telephone line installers and repairers (6157)
529	197050	70	36	49	Telephone installers and repairers (6158)
533	106100	66	39	41	Miscellaneous electrical and electronic equipment repairers (6152, 6159)
534	246300	53	42	39	Heating, air conditioning, and refrigeration mechanics (616)
535	29600	62	35	46	Camera, watch, and musical instrument repairers (6171, 6172)
536	23700	53	39	39	Locksmiths and safe repairers (6173)
538	57350	64	37	47	Office machine repairers (6174)
539	24450	59	36	39	Mechanical controls and valve repairers (6175)
543	24900	69	39	45	Elevator installers and repairers (6176)
544	108500	60	43	42	Millwrights (6178)
547	235950	50	32	38	Specified mechanics and repairers, n.e.c. (6177, 6179)
549	589100	49	44	38	Not specified mechanics and repairers
553	11100	44	50	42	Supervisors, brickmasons, stonemasons, and tile setters (6312)
554	46850	59	50	43	Supervisors, carpenters and related workers (6313)
555	80000	74	50	53	Supervisors, electricians and power transmission installers (6314)
556	44150	45	50	41	Supervisors, painters, paperhangers, and plasterers (6315)
557	24950	61	50	48	Supervisors, plumbers, pipefitters, and steamfitters (6316)
558	736500	63	54	50	Supervisors, construction, n.e.c. (6311, 6318)
563	226700	32	36	29	Brickmasons and stonemasons (part 6412, part 6413)
564	750	21	26	33	Brickmason and stonemason apprentices (part 6412, part 6413)
565	62950	36	31	33	Tile setters, hard and soft (part 6414, part 6462)
566	118500	30	34	30	Carpet installers (part 6462)
567	1662550	40	39	34	Carpenters (part 6422)
569	3850	29	29	37	Carpenter apprentices (part 6422)
573	159150	28	34	30	Drywall installers (6424)
575	750100	63	51	45	Electricians (part 6432)
576	24200	43	41	43	Electrician apprentices (part 6432)
577	133650	65	46	43	Electrical power installers and repairers (6433)
579	700000	27	34	31	Painters, construction and maintenance (6442)
583	14450	41	31	37	Paperhangers (6443)
584	59750	31	35	31	Plasterers (6444)
585	513850	50	45	38	Plumbers, pipefitters, and steamfitters (part 645)
587	14450	43	35	36	Plumber, pipefitter, and steamfitter apprentices (part 645)

588	96450	26	38	29	Concrete and terrazzo finishers (6463)
589	51400	45	30	34	Glaziers (6464)
593	78400	39	33	34	Insulation workers (6465)
594	13200	25	33	26	Paving, surfacing, and tamping equipment operators (6466)
595	254650	16	37	27	Roofers (6468)
596	34200	46	35	37	Sheetmetal duct installers (6472)
597	88600	48	43	37	Structural metal workers (6473)
598	23050	37	40	31	Drillers, earth (6474)
599	199250	31	36	30	Construction trades, n.e.c. (6467, 6475, 6476, 6479)
613	45500	69	44	52	Supervisors, extractive occupations (632)
614	40350	35	42	36	Drillers, oil well (652)
615	10350	44	38	35	Explosives workers (653)
616	66450	46	35	36	Mining machine operators (654)
617	39200	39	29	39	Mining occupations, n.e.c. (656)
628	1448050	65	47	49	Supervisors, production occupations (67, 71)
634	161100	66	43	46	Tool and die makers (part 6811)
635	400	53	33	46	Tool and die maker apprentices (part 6811)
636	47300	46	31	47	Precision assemblers, metal (6812)
637	648550	55	47	38	Machinists (part 6813)
639	5450	50	35	41	Machinist apprentices (part 6813)
643	25650	55	40	41	Boilermakers (6814)
644	35800	50	26	38	Precision grinders, filers, and tool sharpeners (6816)
645	3350	69	38	48	Patternmakers and model makers, metal (6817)
646	23300	49	30	37	Lay-out workers (6821)
647	57650	39	45	36	Precious stones and metals workers (Jewelers) (6822, 6866)
649	27100	46	38	37	Engravers, metal (6823)
653	191300	52	50	38	Sheet metal workers (part 6824)
654	2050	44	38	45	Sheet metal worker apprentices (part 6824)
655	4100	38	36	31	Miscellaneous precision metal workers (6829)
656	2350	69	39	49	Patternmakers and model makers, wood (6831)
657	67600	41	44	34	Cabinet makers and bench carpenters (6832)
658	42850	29	39	28	Furniture and wood finishers (6835)
659	1150	39	36	34	Miscellaneous precision woodworkers (6839)
666	125700	20	36	26	Dressmakers (part 6852, part 7752)
667	78700	23	42	26	Tailors (part 6852)

668	82500	25	35	26	Upholsterers (6853)
669	33250	21	36	25	Shoe repairers (6854)
674	15550	28	34	29	Miscellaneous precision apparel and fabric workers (6856, 6859, part 7752)
675	19250	42	32	29	Hand molders and shapers, except jewelers (6861)
676	25300	64	28	43	Patternmakers, lay-out workers, and cutters (6862)
677	96950	49	38	43	Optical goods workers (6864, part 7477, part 7677)
678	79050	64	56	46	Dental laboratory and medical appliance technicians (6865)
679	32200	32	32	28	Bookbinders (6844)
683	379300	31	28	25	Electrical and electronic equipment assemblers (6867)
684	68850	42	30	33	Miscellaneous precision workers, n.e.c. (6869)
686	331550	32	35	33	Butchers and meat cutters (6871)
687	213600	25	35	29	Bakers (6872)
688	73000	24	30	27	Food batchmakers (6873, 6879)
689	186700	62	42	42	Inspectors, testers, and graders (6881, 828)
693	10850	59	40	25	Adjusters and callibrators (6882)
694	78050	61	38	39	Water and sewage treatment plant operators (691)
695	47950	75	43	49	Power plant operators (part 693)
696	168800	72	40	50	Stationary engineers (part 693, 7668)
699	55400	66	43	45	Miscellaneous plant and system operators (692, 694, 695, 696)
703	32200	46	41	33	Lathe and turning machine set-up operators (7312)
704	40500	45	37	36	Lathe and turning machine operators (7512)
705	4950	44	32	36	Milling and planing machine operators (7313, 7513)
706	113450	34	35	27	Punching and stamping press machine operators (7314, 7317, 7514, 7517)
707	18950	44	40	37	Rolling machine operators (7316, 7516)
708	22400	32	37	32	Drilling and boring machine operators (7318, 7518)
709	144550	34	23	30	Grinding, abrading, buffing, and polishing machine operators (7322, 7324, 7522)
713	28950	44	36	33	Forging machine operators (7319, 7519)
714	1400	60	40	45	Numerical control machine operators (7326)
715	44050	44	29	36	Miscellaneous metal, plastic, stone, and glass working machine operators (7329, 7529)
717	25500	28	38	27	Fabricating machine operators, n.e.c. (7339, 7539)
719	108550	36	34	27	Molding and casting machine operators (7315, 7342, 7515, 7542)
723	27550	39	36	30	Metal plating machine operators (7343, 7543)
724	14850	46	40	37	Heat treating equipment operators (7344, 7544)
725	28850	24	35	27	Miscellaneous metal and plastic processing machine operators (7349, 7549)
726	8600	33	37	30	Wood lathe, routing, and planing machine operators (7431, 7432, 7631, 7632)

727	102650	20	34	24	Sawing machine operators (7433, 7633)
728	7050	19	30	25	Shaping and joining machine operators (7435, 7635)
729	5300	13	27	21	Nailing and tacking machine operators (7636)
733	50750	26	22	32	Miscellaneous woodworking machine operators (7434, 7439, 7634, 7639)
734	398600	49	39	37	Printing press operators (7443, 7643)
735	62550	62	40	45	Photoengravers and lithographers (6842, 7444, 7644)
736	93700	52	40	41	Typesetters and compositors (6841, 7642)
737	78950	35	37	31	Miscellaneous printing machine operators (6849, 7449, 7649)
738	88150	19	30	18	Winding and twisting machine operators (7451, 7651)
739	63300	21	34	19	Knitting, looping, taping, and weaving machine operators (7452, 7652)
743	20000	19	28	21	Textile cutting machine operators (7654)
744	1046450	12	28	17	Textile sewing machine operators (7655)
745	62750	12	33	17	Shoe machine operators (7656)
747	193550	13	29	18	Pressing machine operators (7657)
748	283850	11	32	23	Laundrying and dry cleaning machine operators (6855, 7658)
749	89550	21	33	20	Miscellaneous textile machine operators (7459, 7659)
753	41850	18	35	25	Cementing and gluing machine operators (7661)
754	412300	18	25	25	Packaging and filling machine operators (7462, 7662)
755	31000	40	32	30	Extruding and forming machine operators (7463, 7663)
756	131250	41	26	32	Mixing and blending machine operators (7664)
757	79550	61	30	42	Separating, filtering, and clarifying machine operators (7476, 7666, 7676)
758	19900	30	30	26	Compressing and compacting machine operators (7467, 7667)
759	139250	33	30	28	Painting and paint spraying machine operators (7669)
763	10550	42	23	30	Roasting and baking machine operators, food (7472, 7672)
764	13450	23	25	29	Washing, cleaning, and pickling machine operators (7673)
765	35550	17	28	22	Folding machine operators (7474, 7674)
766	99900	49	40	36	Furnace, kiln, and oven operators, except food (7675)
768	58400	27	31	30	Crushing and grinding machine operators (part 7477, part 7677)
769	226550	23	34	26	Slicing and cutting machine operators (7478, 7678)
773	15300	43	38	50	Motion picture projectionists (part 7479)
774	115550	40	38	40	Photographic process machine operators (6863, 6868, 7671)
777	720800	34	30	29	Miscellaneous machine operators, n.e.c. (part 7479, 7665, 7679)
779	1108050	34	33	28	Machine operators, not specified
783	725950	41	42	32	Welders and cutters (7332, 7532, 7714)
784	24900	25	33	21	Solderers and brazers (7333, 7533, 7717)

785	2008050	28	35	27	Assemblers (772, 774)
786	17700	11	26	26	Hand cutting and trimming occupations (7753)
787	22150	40	33	33	Hand molding, casting, and forming occupations (7754, 7755)
789	58300	34	31	34	Hand painting, coating, and decorating occupations (7756)
793	13150	32	42	35	Hand engraving and printing occupations (7757)
795	62300	21	32	28	Miscellaneous hand working occupations (7758, 7759)
796	778750	43	36	32	Production inspectors, checkers, and examiners (782, 787)
797	70800	55	38	39	Production testers (783)
798	12550	29	42	30	Production samplers and weighers (784)
799	174250	15	33	25	Graders and sorters, except agricultural (785)
803	75650	66	38	48	Supervisors, motor vehicle operators (8111)
804	3323900	40	30	34	Truck drivers (8212-8214)
806	163800	52	24	38	Driver-sales workers (8218)
808	492700	33	32	30	Bus drivers (8215)
809	306600	38	28	33	Taxicab drivers and chauffeurs (8216)
813	58550	27	21	35	Parking lot attendants (874)
814	7850	34	25	31	Motor transportation occupations, n.e.c. (8219)
823	42800	69	42	50	Railroad conductors and yardmasters (8113)
824	46700	69	41	50	Locomotive operating occupations (8232)
825	39750	66	40	46	Railroad brake, signal, and switch operators (8233)
826	5800	63	47	49	Rail vehicle operators, n.e.c. (8239)
828	43650	62	54	48	Ship captains and mates, except fishing boats (part 8241, 8242)
829	50100	35	34	37	Sailors and deckhands (8243)
833	5450	64	43	42	Marine engineers (8244)
834	6750	47	28	36	Bridge, lock, and lighthouse tenders (8245)
843	28250	61	45	49	Supervisors, material moving equipment operators (812)
844	249150	41	50	33	Operating engineers (8312)
845	3200	52	34	41	Longshore equipment operators (8313)
848	21400	36	36	35	Hoist and winch operators (8314)
849	79100	48	42	36	Crane and tower operators (8315)
853	97900	37	38	30	Excavating and loading machine operators (8316)
855	77700	31	34	28	Grader, dozer, and scraper operators (8317)
856	486150	35	35	29	Industrial truck and tractor equipment operators (8318)
859	96100	38	27	31	Miscellaneous material moving equipment operators (8319)
864	16550	55	27	50	Supervisors, handlers, equipment cleaners, and laborers, n.e.c. (85)

865	25000	18	33	30	Helpers, mechanics, and repairers (863)
866	109550	13	30	29	Helpers, construction trades (8641-8645, 8648)
867	7000	38	38	38	Helpers, surveyor (8646)
868	5950	36	38	34	Helpers, extractive occupations (865)
869	1377400	23	36	29	Construction laborers (871)
874	47150	20	31	30	Production helpers (861, 862)
875	89700	20	28	25	Garbage collectors (8722)
876	15600	42	37	38	Stevedores (8723)
877	1362850	9	23	38	Stock handlers and baggers (8724)
878	109550	23	37	26	Machine feeders and offbearers (8725)
883	711750	30	27	34	Freight, stock, and material handlers, n.e.c. (8726)
888	504650	16	22	23	Hand packers and packagers (8761)
889	1663600	22	24	29	Laborers, except construction (8769)

Source: E. Walter Terrie, tabulation of 1/1000 PUMSA. See text for definitions and measurement methods.

Table 2. -- Association of Selected Characteristics with Three Occupational Scales: Circa 1990

Characteristic	Nam-Powers-Terrle	Duncan	Siegel
Sex (mean score)	55.1	48.8	43.1
Male	51.4	47.9	43.7
Female	58.7	49.7	42.7
Difference	3.7	0.9	-0.6
Race (mean score)	54.5	49.1	43.8
White	44.6	42.6	39.7
Black	54.5	49.1	43.8
Difference	9.9	6.5	4.1

Housing rental value (regression equation of rental value on occ. score)

Nam-Powers-Terrle $Y = 2.3185x + 343.76$
 Duncan $Y = 3.0855x + 313.23$
 Siegel $Y = 3.7580x + 304.26$

Source: Derived from U.S. Bureau of the Census, 1990 PUMS.

Figure 1. – Distribution of Occupational Scale Scores: Raw Scores based on Occupations

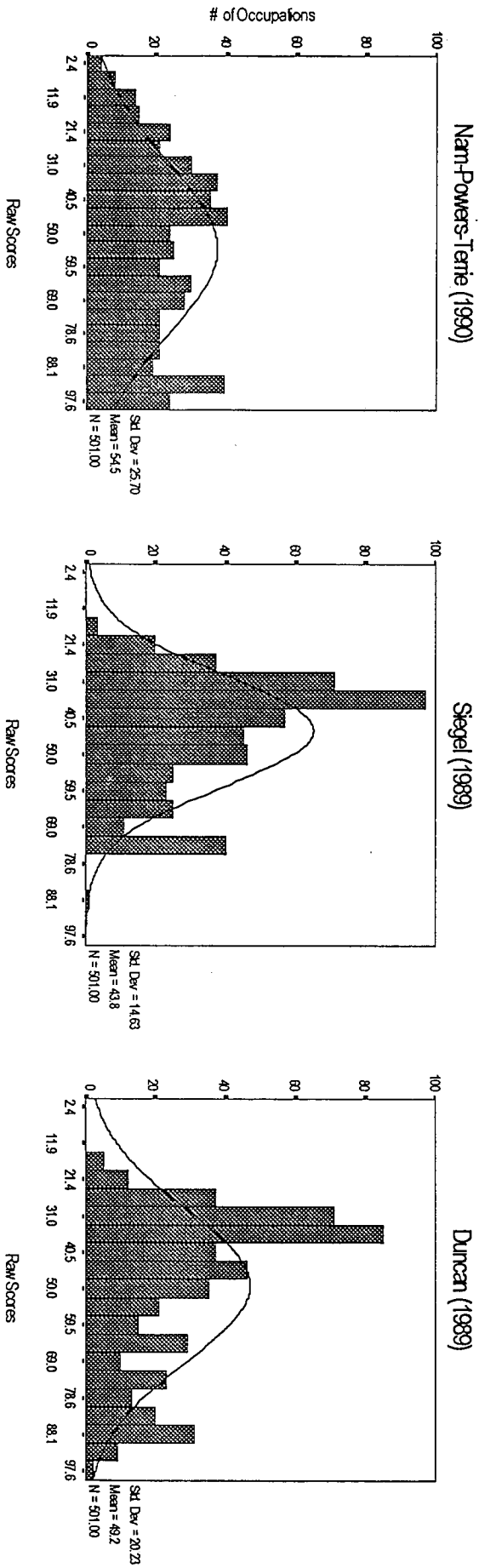


Figure 2. – Distribution of Occupational Scale Scores: Standardized Scores based on Occupations

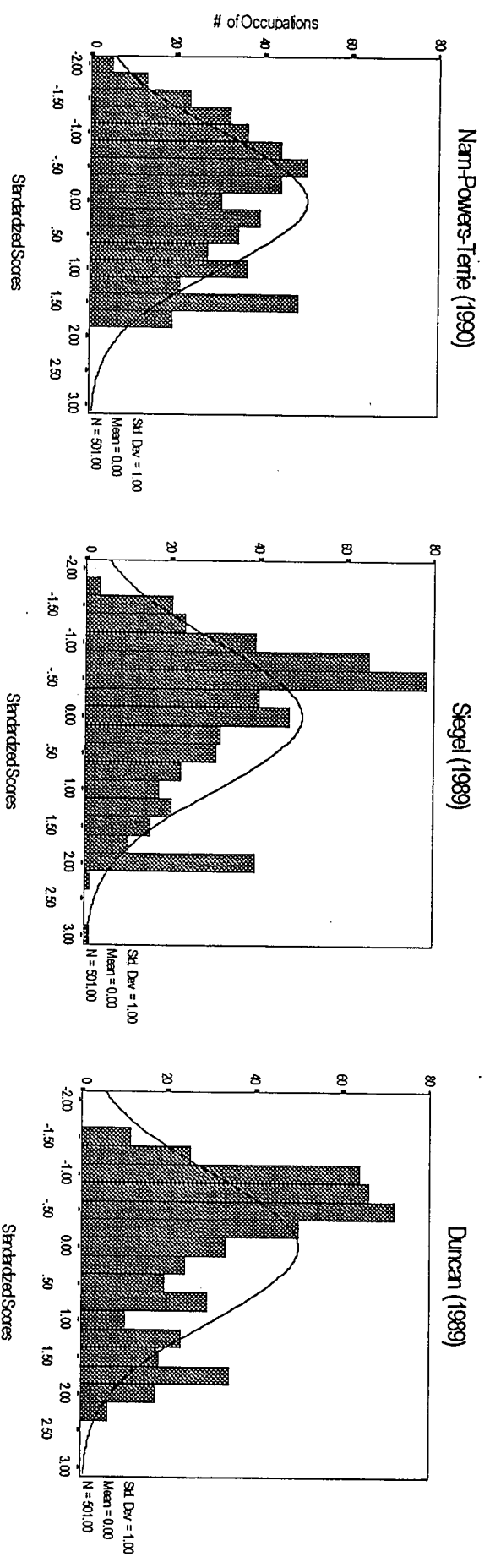


Figure 3. -- Distribution of Occupational Scale Scores: Individuals in 1990 Civilian Labor Force

