THE DIFFERENTIATION OF OCCUPATIONS*

William T. Bielby and Arne L. Kalleberg

Institute for Research on Poverty
University of Wisconsin

Department of Sociology
Indiana University

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ABSTRACT

In this paper we examine the dimensions and determinants of positional inequality in the American occupational structure. Using data from the 1972-1973 Quality of Employment Survey, we construct dimensions of occupational differentiation with multiple discriminant analysis. A causal model is constructed to represent the interrelationships of those dimensions. We find that the differentiation of intrinsic occupational rewards is attributable largely to the educational and task requirements of occupations, while union, supervisory, and organizational resources available to occupational groupings are the strongest determinants of the differentiation of extrinsic rewards. The implications of these findings for functional and conflict theories of inequality in occupational rewards are discussed.

THE DIFFERENTIATION OF OCCUPATIONS

Inequalities associated with a system of social stratification result from two related but analytically distinguishable social processes: the allocation of rewards accruing to different positions in the social system and the process of recruitment to these positions. In the past decade, students of social stratification have been primarily interested in the latter process, focusing on such questions as how individuals move among occupational positions (social mobility) and how they convert their ascribed and achieved statuses into individual attainments (the status attainment process). The actual differentiation of positions, on the other hand, typically has not been considered as problematic but has been treated as an exogenous factor to be "controlled" when assessing social mobility (Boudon, 1973; Hauser et al., 1975). Recently, however, interest has been reawakened in questions concerning the degree of inequality in rewards associated with incumbency in a differentiated occupational structure (e.g., Ramsøy, 1974). From this perspective, issues regarding the causes and types of such inequalities in rewards become important issues to be examined empirically. This paper presents our initial attempt to empirically assess the dimensions and structural determinants of positional inequality in the American occupational structure.

Two central theoretical positions on the determinants of positional inequality can be traced through the social stratification literature; these may be termed the functionalist and the conflict approaches (Dahrendorf, 1959, 1968; Collins, 1971).

According to the functionalist conception (Davis and Moore, 1945), some occupational positions are more difficult to fill than others, requiring

specialized skills, training, and so forth. Occupational positions are also differentially "functionally important"; they differ in their normatively evaluated importance to the "survival" of the social system. Differential rewards exist to ensure that the functionally important positions are filled by qualified personnel.

It has been argued that the functionalist conception is a naive expression of the economist's supply and demand paradigm (Bielby and Hawley, 1973; Simpson, 1956), with functional importance providing a less-than-satisfactory analog to the demand for occupational services. Nevertheless, it is certainly the case that, given the institutional structure of modern capitalism, differential material and nonmaterial occupational rewards to some extent function to facilitate recruitment into occupations that are difficult to fill.

According to the conflict approach, advantaged occupational groupings obtain access to various resources--property, marketable manual or technical skills, authority positions, control over occupational entry, monopolistic labor market structure--that function to maintain reward differentials based on occupation. Giddens, in his recent book (1973), succinctly presents this position as a critique and synthesis of Weberian and Marxian approaches to class in capitalist/industrial societies. Giddens argues that the labor market is a power structure and the locus of conflict between occupationally based interest groups. It is the differential occupational "market capacity" (resources that occupational groups bring to the market) upon which the economic class structure of modern capitalism is based. Structured market capacity is maintained at the macrosocietal level ("mediate structuration") through factors such as differential chances of mobility, state intervention in the economy, and state

underwriting of existing market structures (cf. Parkin, 1971). At the organizational level ("proximate structuration"), differential market capacity is maintained by social relations arising out of the functional division of labor and the authority structure within the organization.

As with the functional position, there also exists among economists an analogy to the conflict approach. The proponents of a "dual" or "segmented" labor market argue that the "perfect competition" model of the labor market is inadequate and assert that labor markets are structurally differentiated with respect to various market resources (and handicaps) differentially available to occupational groupings (Alexander, 1970; Wachtel and Betsey, 1972; Bluestone, 1970; Doeringer and Piore, 1971).

Our objective is, first, to identify the components of material and nonmaterial rewards with respect to which occupational groups are maximally differentiated. Second, we examine how the groups are differentiated with respect to occupational requirements--educational certification, training, and complexity of tasks. Third, we examine occupational differentiation with respect to occupationally and organizationally based resources available to maintain the differential market capacities of occupational groupings. Fourth, having identified the components of the rewards, requirements, and resources dimensions and located the occupational groups on those dimensions, we examine how the positional inequality of occupational rewards is determined by the differentiation of occupational resources and requirements. Of particular interest is whether some occupational rewards are returns to differential market capacity, while others are largely attributable to differential occupational requirements.

Data and Method

The data analyzed in this paper come from the 1972-1973 Quality of Employment Survey conducted by the Survey Research Center of the University of Michigan. This survey's sample of 1496 individuals is representative of the population of currently employed workers in the United States meeting certain sampling criteria (for example, living in households). The distribution of occupations in this sample closely corresponds to the national occupational structure in 1973 (cf. Kalleberg, 1975, Appendix A).

--Table 1 about here--

Table 1 presents our thirty-nine occupational categories, which have been aggregated from a detailed census three-digit cross-classification of occupation by industry into groups as functionally homogeneous as possible given the degree of aggregation required by the relatively small sample size. Groups 1 through 17 represent manual or blue-collar occupations; groups 18 through 39 represent non-manual or white-collar occupations. We have allowed for differentiation by industry along any or all of the three dimensions within the major occupational groupings of service workers, operatives, craftsmen, clerical workers, sales workers, managers, and professionals. Furthermore, this categorization allows for the possibility that the functional distinction between manual and nonmanual occupations may mask real structural differentiation along the reward, requirement, and resource dimensions within these two functional categories.

Occupational requirements are measured by three indicators: (1) the General Educational Development (GED) scores for detailed occupational

categories, which estimate the level of reasoning with respect to dealing with people, data, and things required of an individual in a particular occupation; (2) the Specific Vocational Preparation (SVP) scores for detailed occupational categories, which estimate the training time required to learn to adequately perform the tasks associated with the occupation; and (3) the educational composition of individuals in the detailed occupational categories, which indicates the "certification" requirements of the occupation as well as any required cognitive and noncognitive characteristics that may be indexed by educational attainment.

Occupational rewards are measured by aggregating the perceptions of individuals regarding the availability of potentially rewarding characteristics in their jobs. Scales measuring five dimensions of occupational rewards were developed by computing the mean of the unweighted sum of the survey items representing the particular dimension. (For a discussion of the construction of these scales and their estimated reliabilities, see Kalleberg, 1975.) The five dimensions of occupational rewards are (1) intrinsic (relating to the task itself, such as the extent to which the work is interesting or challenging); (2) convenience (relating to "comfort," such as whether or not travel is convenient or whether or not the hours are good); (3) financial (relating to pay, fringe benefits, job security); (4) social (relating to characteristics of co-workers); and (5) career (relating to promotional opportunities). We thus recognize that occupations provide a wide spectrum of rewards, both material and nonmaterial, to their incumbents and that this diversity of rewards is not sufficiently captured by the frequently used socioeconomic indicators (Ramsøy, 1974). While it is possible that some occupations are advantaged or disadvantaged along all the reward components, it is also likely that some occupations are characterized

by reward trade-offs -- that they are advantaged on one component of rewards while disadvantaged on others. Such trade-offs could reflect a functional process of compensatory differentials related to the nature of the job task (for example, financial rewards accruing to unpleasant jobs), or they could reflect a strategic process whereby occupational groups utilize resources only in pursuit of a specific kind of reward.

Occupational resources that can be utilized by occupational groups to maintain and increase their market capacity may be organizationally based, industrially or occupationally based, or dependent upon the occupational composition of a group with respect to some ascribed characteristic of its incumbents. Our measures include (1) the size of the organization in which the occupation is performed, a proxy measure of potential organizational resources available to incumbents of an occupation; (2) the union-membership composition of the occupation, an indicator of the presence of organized groups that may bargain for occupation-related rewards; (3) reports of whether or not individuals in an occupation have supervisory roles, an indicator of the relative authority position of the occupation; and (4) the sex composition of the occupation, where the absence of female sex-typing of an occupation may enhance market capacity (Oppenheimer, 1968).

While our sample consists of data from 1496 individuals, our methodology is explicitly designed to use the information on how these individuals are grouped into thirty-nine occupations, to obtain measures of the differentiated structure of these occupations. The resulting aggregated measures are indicators of properties of occupational categories, that is, "analytical" properties of a collective obtained by performing a mathematical operation upon some properties of its individual members (cf. Lazarsfeld and Menzel, 1969).

For each of our three dimensions, we use discriminant analysis to find the component or components along which the thirty-nine occupational positions are maximally differentiated. For a given dimension, discriminant analysis selects the linear combination of the measures for which there exists maximum variation among occupational groups, relative to the within-group variation on the same linear combination (Tatsuoka, 1971). To the extent that the variation among occupational groups is not unidimensional, discriminant analysis extracts successive orthogonal components. Our application of this procedure will become clearer in the following sections of the paper, which describe in some detail the differentiation of the thirty-nine occupational categories along each of the dimensions of rewards, requirements, and resources.

Differentiation of Occupational Rewards

The first panel of Table 2 shows the first two discriminant functions for the reward dimension. The coefficients of the REWI column are to be interpreted as follows: When these coefficients are applied to individual standardized scores on the five reward variables, a linear combination is formed that has maximum variation among the thirty-nine occupations relative to the variation of individuals on that composite within occupations. It is in this sense that the discriminant function maximally "differentiates" the occupations. The standardized coefficients are to be interpreted in much the same way as standardized regression coefficients. A one standard deviation change in the intrinsic score results in a one standard deviation change in the first discriminant function; a one standard deviation change on the convenience variable results in a change of -.36 standard deviations on the first discriminant function, and so forth. We locate the

thirty-nine groups on the discriminant dimension by applying the coefficients to the group means for each of the groups on the five reward variables. Thus, the location of a group on the first reward discriminant function, REWI, is determined largely by the mean intrinsic reward for that occupation. Occupations with larger intrinsic rewards will be located higher on the REWI composite than those with smaller intrinsic rewards. The convenience, instrumental, and social reward variables have considerably smaller and negative effects. Thus we interpret the first reward function as an intrinsic reward dimension. It differentiates those occupations with high intrinsic rewards from those with low intrinsic rewards. The 56.4 percent discrimination of the REWI composite indicates that of all the variation among the thirty-nine groups on the five reward variables, 56.4 percent may be accounted for by their variation on the REWI composite.

--Table 2 about here--

The second discriminant function, REW2, is that linear composite of the reward variables uncorrelated with REW1 (across individuals) which has the maximum variation among groups relative to within-group variation. The financial measure makes the largest contribution to the REW2 composite; the career variable also makes a positive contribution. Convenience and intrinsic reward variables make small and negative contributions; the social reward variable also has a negative coefficient. Thus we interpret this second reward discriminant function as an extrinsic reward dimension. It differentiates occupations high in extrinsic rewards (financial, career) from those low in such rewards. This second discriminant

function accounts for an additional 23.5 percent of the differentiation among groups. Thus, the two discriminant functions together account for 79.9 percent of the differentiation in rewards among the thirty-nine occupations.

--Figure 1 about here--

Figure 1 presents a two-dimensional plot of the thirty-nine occupational group scores on the intrinsic REW1 component and extrinsic REW2 component of occupational rewards. It is easily seen that some groups are advantaged on both reward components, for example engineers (34), and managers in manufacturing (28). Conversely, other groups are disadvantaged on both components, for example retail trade service workers (2), operatives in nondurable manufacturing (10), and clerical workers in wholesale and retail trade (21). On the other hand, some occupational categories appear to be characterized by a trade-off between intrinsic and extrinsic rewards. Farmers (6), for example, are high in intrinsic rewards and low in extrinsic rewards; conversely, durable manufacturing operatives (9), transportation, communication, and public utilities clerical workers (20), transport equipment operatives (7), and clerical workers in public administration (23) are high in extrinsic rewards but low in intrinsic rewards. The determinants of the differentiation of occupational rewards will be examined following our presentation of the differentiation of occupational requirements and resources.

Differentiation of Occupational Requirements

The second panel in Table 2 indicates that the first requirement discriminant function, REQ1, (which accounts for 70.0 percent of the requirement differentiation among groups), can be interpreted as a generalized requirements dimension. That is, it differentiates occupations characterized by high education, training, and complexity from those that are low on all three characteristics. Figure 2 shows that all of the professional occupational categories (34-39) and managerial categories (27-33) score high on this dimension, while all of the service occupations (1-4) as well as laborers and operatives (5, 7-11) score low on this dimension. The craft (12-17) and clerical (18-24) occupations are located near the middle of the dimension, with the craftsmen slightly higher.

--Figure 2 about here--

The second requirement dimension, REQ2, which accounts for an additional 27.6 percent of the differentiation in requirements among groups, is less easily interpreted. It is essentially a discrepancy measure of complexity minus training. Categories low in training (SVP) and high in complexity (GED) score high on this dimension, while those high in training and low in complexity score low. From Figure 2 it can be seen that the professional and clerical groups have high scores on REQ2 while the craft occupations are located at the low end of the dimension. Specifically, educators (35,37) score highest and construction craftsmen score lowest. These data support the interpretation that this dimension differentiates occupations in which possession of a credential is a prerequisite for entry (the credential certifying that the worker is competent to perform

a particular complex task), from occupations in which a considerable period of apprenticeship or on-the-job training, instead of a credential, is required. It is interesting to note that those occupations that are generally ranked lowest on prestige or "desirability" scales--laborers, operatives, and service workers--are characterized by little complexity, training, and education, and require relatively little in the way of a credential or training.

Differentiation of Occupational Resources

The third panel of Table 2 reveals that, of our four measures of occupational resources, it is sex-typing (percent women) that maximally stratifies the occupational groups, accounting for over 70 percent of the differentiation among groups. The vertical dimension of Figure 3 shows that nearly all occupational categories other than clerical and service workers are male-dominated, with secretarial (18) and health (4) occupations most severely "female typed." While it is along this component of occupational resources that the thirty-nine occupational groups are maximally differentiated, it remains to be seen if this resource is a major determinant of occupational rewards.

--Figures 3 and 4 about here--

The other two components of the resource dimension, RES2 and RES3, account for an additional 26 percent of the differentiation among groups and represent two alternative types of resources available to occupations. The third panel of Table 2 indicates that unionized occupations in large organizations will score high on RES2. Thus the second resource component, RES2, differentiates occupations with respect to whether they have the bargaining power implied by unionization in large organizations, while the third component, RES3,

differentiates occupations with respect to whether they have the decision-making power implied by supervisory roles in large organizations. Figure 4 presents a two-dimensional plot locating the thirty-nine occupational groups in the second and third resource components. As expected, no occupational categories score high on both of these components, although some apparently "powerless" occupations score low on both components: for example farmers (6) and retail trade and other service workers (2,3). Durable manufacturing operatives and craftsmen (9,14) and public administration clerical workers (23) score high on the second component, union-organizational resources; while engineers (34), professionals in science and higher education (35), managers in manufacturing (28), and craft foremen (12) score high on the second resource component, supervisory-organizational resources. Thus, considering the RES2 and RES3 components as two alternative sources of market capacity, the nonclerical white-collar occupations exhibit nearly universal supervisory-organizational hegemony, while the blue-collar "working class" and the clerical "new working class" are quite fragmented with respect to the alternative union-organizational resources available.

The Determinants of the Differentiation of Occupational Rewards

It is by no means clear from an examination of Figures 1 through 4 that the differentiation of occupational rewards is congruent with either the requirement differentiation or the resource differentiation of occupations. Having identified different dimensions of occupational rewards and how they are differentially allocated to occupations, we now wish to examine how the unequal distribution of these rewards is determined by occupational requirements and

resources. Table 3 presents the correlations of rewards, resources, and requirements among occupations. In Figure 5, we have specified a recursive causal model in which intrinsic and extrinsic occupational rewards are each determined by the two requirement.

--Table 3 and Figure 5 about here--

and three resource dimensions. Before discussing the results of this analysis, we wish to again point out that all of the variables in this analysis are composites constructed to have maximum differentiation among groups. Thus, we have attempted to identify the dimensions of resources, requirements, and rewards along which the occupational categories are maximally stratified. Having done this independently for each of the three dimensions, we present in Figure 5 our assessment of the congruency of the reward stratification of occupations with their requirment and resource stratifications.

Estimates of the structural parameters of the causal model appear in Table 4. The results show that the general requirement dimension, REQ1, has a substantial direct effect (.65) on the level of intrinsic rewards associated with occupations and a small direct effect (.20) on

--Table 4 about here--

the extrinsic rewards to occupations. While these results surely reflect in part a functional process (higher rewards to more complex tasks requiring more training), results for the intrinsic dimension also can be attributed partially to the fact that more complex jobs are more interesting. The second requirement dimension, REQ2, which we interpret as

reflecting requirements of credentials versus requirements of apprenticeship or training, essentially has no direct effect on either component of occupational rewards.

We found above that RES1, sex-typing, is the occupational resource that maximally differentiates the occupational groups. From the estimates in Table 4 it appears that the absence of sex-typing of an occupation has a relatively small independent effect in enhancing market capacity, as measured by the contribution of RES1 to the determination of the two types of occupational rewards (higher scores on RES1 correspond to more female participation in the occupation). From the coefficients in Table 4 it appears that the sex-typing of an occupation contributes more strongly to the reduction of intrinsic rewards than to the reduction of extrinsic rewards.

The largest direct effects on extrinsic rewards come from the remaining two resource dimensions: RES2 union-organizational resources; and RES3 supervisory-organizational resources. It appears that, of occupations in large organizations, both those with union bargaining power and those with supervisory decision-making power use their power to increase their extrinsic rewards (direct effects of .44 and .42 respectively).

The negative direct effect on intrinsic rewards of the second resource dimension reflects the strategic tendency of most unions to pursue extrinsic rather than intrinsic objectives. Giddens (1973) argues that this "economistic" orientation of unions is evidence of a fundamental characteristic of the institutional structure of mature capitalism--the separation of the political and economic spheres and the resulting separation in union strategy of issues of organizational control from those of material rewards. Union leaders in this country historically have bargained for extrinsic rewards in response to pressure

from the rank and file. To obtain such concessions, however, they have yielded to management control over certain "nonnegotiable" areas such as the organization and control of the job task.

The negative direct effect on intrinsic rewards of the third resource dimension, supervisory resources in large organizations, is harder to interpret. Supervisory positions typically are thought of as intrinsically rewarding, and the associated effect of RES3 through REQ1 is indeed positive and moderately large (.65 x .65 = .42). The negative direct effect of RES3 on REW1 may indicate that, controlling for the general requirements of an occupation, supervisory occupational groups prefer to use their power in the pursuit of extrinsic rather than intrinsic goals.

What can be said about the relative impact of occupational requirements and occupational resources on the occupational differentiation of intrinsic and extrinsic rewards? Together, resources and requirements account for 86 percent of the variance in intrinsic rewards and 48 percent of the variance in extrinsic rewards among the thirty-nine occupational categories. We can attribute 42.2 percent of the variance in intrinsic rewards to variation in requirements, 30.6 percent to variation in resources, and 13.2 percent to the joint covariation of resources and requirements.[1] Similarly, only 4.0 percent of the variation in extrinsic rewards can be attributed to the variation in occupational requirements, 37.3 percent to variation in occupational resources, and 6.6 percent to the joint covariation of resources and requirements.

Thus, it appears that the intrinsic rewards to an occupation are stratified largely with respect to the variation in requirements (for example, the requisite training and task complexity of occupations), while

the extrinsic, material rewards to occupations are stratified largely according to the outcome of a strategic process in which occupational groups use the organizational, decision-making, and bargaining resources available to them to increase their extrinsic rewards. The latter finding becomes even more intriguing when we consider the potential for more refined resource measures in accounting for the 52 percent of the variation in extrinsic rewards that remains unexplained in our model. While the resource determinants of positional inequality in material rewards may be interpreted as structural or conflict sources of occupational differentiation, we should be cautious in interpreting the requirement effect on positional inequality in intrinsic rewards solely as the outcome of a functional process. Control over educational requirements, training, and certification can be viewed as potentially significant "structural" sources of differential market capacity. Unfortunately, the present data do not allow us to separate the possible "structural" component of the requirement effect from the "functional" component. Nor do they allow us to separate the extent to which intrinsic rewards provide an inducement for recruitment to positions which are difficult to fill from the intrinsic rewards associated with the complex tasks required of incumbents in those positions.[2]

The preceding discussion of occupational differentiation has not explicitly considered the most common indicators of occupational inequality--namely, measures of occupational status and occupational prestige. We have attempted to demonstrate the utility of ranking occupations on a multidimensional basis, rather than examining the inequalities among occupations in an overall unidimensional sense. The advantage of the present conceptualization is that it separates dimensions of occupational inequality that are theoretically distinct and

allows an examination of how inequalities on certain dimensions produce inequalities on others.

Occupational prestige can be conceptualized alternatively as an occupational reward (perhaps an intrinsic reward such as social esteem) or as a resource of symbolic power available to incumbents of an occupation (Goldthorpe and Hope, 1972). But we agree with researchers of disparate perspectives (Featherman et al., 1974; Goldthorpe and Hope, 1972) that prestige as operationalized in "prestige rankings" measures aggregate perceptions of the overall "goodness" of jobs as constructed from perceptions of occupational rewards, requirements, and positions in authority hierarchies. Measures such as the Duncan socioeconomic index, which has proved quite successful in capturing "the hierarchical structure underlying occupational roles" (Featherman et al., 1974: 2) in the analysis of individual mobility and attainment, are inadequate for our purposes for similar reasons. The "underlying hierarchical structure" involves aspects of occupational reward, requirement, and resource differentiation, and as we have demonstrated above, resources and requirements relate to intrinsic and extrinsic rewards in substantially different ways.[3] The disaggregation of these interrelationships has revealed important insights into the manner in which differential market capacities have been utilized to pursue extrinsic as opposed to intrinsic occupational rewards in the context of the contemporary American occupational structure.

Conclusions

We have found that occupations are differentiated with respect to intrinsic and extrinsic occupational rewards. Service, laborer,

and operative categories are disadvantaged in both reward components, while clerical groups are disadvantaged on intrinsic rewards but exhibit considerable variation in extrinsic rewards. The non-managerial and professional occupations are relatively advantaged with respect to intrinsic rewards, but also are considerably varied on the extrinsic reward dimension.

With respect to occupational requirements, occupations are differentiated along a general dimension indicating educational certification, job-specific training, and task complexity. On this dimension, managerial and professional groups score high, laborers and operatives low, with craft and clerical occupations located in an intermediate position. A secondary dimension of occupational requirements differentiates occupations requiring educational credentials from those requiring apprenticeship or on-the-job training.

Occupations have various resources available to them--differential "market capacity" which may be used by occupational groups to maintain differential rewards. Occupational sex composition, or the sex-typing of jobs, can be a form of differentiated market capacity. Nearly all occupations other than clerical and service occupations are male-dominated, with the white-collar secretarial and health service occupations most severely female typed.

Union bargaining power in the context of large organizations and supervisory roles in large organizations are two alternative occupational resources that differentiate the market capacity of occupational groups. Nonclerical white-collar occupations are advantaged with respect to the resources accessible from supervisory

roles in large organizations, while the manual working-class and clerical "new working class" occupations are quite fragmented with respect to the degree of the alternative union-organizational resources available.

Examining the determinants of positional reward inequality, we have quite strong evidence that the determination of intrinsic and extrinsic occupational reward inequality involves quite different processes. First, we find the differentiation of intrinsic occupational rewards to be substantially determined by the differentiation of educational and task requirements of occupations. This represents an important implication of education and training stratification for the distribution of nonmaterial "goods" and "bads" in American society, an implication that has been ignored by Jencks et al. (1972) in their rather negative findings with respect to the effects of individual-level educational stratification on material inequality.

We found the differentiation of extrinsic occupational rewards to be determined largely by occupational resources. Of the three resources we have identified as available to occupational groups to maintain differential market capacity, the negative resource of female sex-typing has modest disadvantages for both intrinsic and extrinsic rewards. Sex-typing is a complex issue involving female labor force participation patterns, employer discrimination, and changes over the past forty years in the structural position of lower-level clerical and service occupations.

We detected strong evidence of an "economistic" orientation of organized labor, and also found that supervisory resources appear to be utilized for the enhancement of material rather than nonmaterial

rewards. While it is difficult to design an unambiguous test of functional explanations of inequality, because of both the conceptual and the empirical problems mentioned previously, our analysis does provide support for a conflict explanation of the determinants of extrinsic, material positional inequality. The resources available to occupational groups as sources of differential "market capacity," rather than occupational requirements, appear to be the major determinants of such inequality. We can agree with Dennis Wrong (1970) that

> If the inducement of unequal rewards is required to encourage men to convert their talents into skills, exercise their skills conscientiously, and undertake difficult tasks, it is also the case that, having won their rewards, they will use their superior power, wealth, and prestige to widen still further existing inequalities in their favor.

In closing, it is worth noting that, having made substantial progress in recent years in our understanding of the process of individual mobility and attainment, it is time to examine more closely the sources of structured inequality rooted in the institutions of contemporary capitalist industrial society, structures that have the potential for persisting even under a regime of individual mobility governed by complete equality of opportunity. The research reported here suggests that an elaboration of the concepts and measurement of occupational resources and market capacity may prove quite helpful in understanding structured positional inequality. Indeed, it is our expectation that such concepts can also be quite usefully incorporated into models of individual mobility and attainment.

FOOTNOTES

1. The figures were obtained as follows: The direct effects of REQ1 and REQ2 ($.65^2 + .03^2$) and their joint effects (2 x .65 x -.05 x .03) were attributed to the two REQ variables. Similarly, the direct effects and joint effects of RES1, RES2, and RES3 were attributed to the three RES variables. THe difference between the total proportion explained (.800) and the sum of these proportions is due to joint covariance of the RES and REQ variables. The decomposition of the systematic variance in REW2, the extrinsic reward dimension, was calculated in the same manner.

2. Some support for the operation of a functional process may be suggested by the correlation of -.74 between the two residual terms in our causal model, e_1 and e_2. This indicates that for the reward inequality <u>not</u> accounted for by requirements or resources, there exists a trade-off between intrinsic and extrinsic rewards. That is, net of the inequality due to differential requirements and resources, there is a tendency for extrinsic occupational rewards to compensate for a lack of intrinsic rewards, and conversely.

3. To further test the hypothesis that a single hierarchical dimension captures occupational differentiation, we specified a canonical model in which a single unobserved variable was specified to mediate the causal effects of resources and requirements on occupational rewards. Such a model provided a very poor fit to the data. What emerged instead were two highly significant canonical variates, one mediating the determination of intrinsic rewards, the other mediating

the determination of extrinsic rewards. Specifying mean group Duncan SEI as an intervening variable yielded problematic results, given the amount of colinearity between Duncan SEI and both REQ1 and RES3 (see correlations in Table 3).

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Table 1.

Occupational Groups

	Groups	N
1.	Protective service workers	28
2.	Personal service workers--retail trade	36
3.	Personal service workers--other	77
4.	Health service workers	24
5.	Laborers (including farm)	61
6.	Farmers	37
7.	Transport equipment operatives (except truck drivers)	28
8.	Truck drivers	28
9.	Operatives--durable manufacturing	92
10.	Operatives--nondurable manufacturing	71
11.	Operatives--other	37
12.	Craftsmen--foremen, n.e.c.	34
13.	Craftsmen--construction	58
14.	Craftsmen--durable manufacturing	44
15.	Craftsmen--nondurable manufacturing	23
16.	Craftsmen--transportation, communication, public utilities	20
17.	Craftsmen--other	47
18.	Clerical workers--secretaries	55
19.	Clerical workers--manufacturing	25
20.	Clerical workers--transportation, communication, public utilities	25
21.	Clerical workers--wholesale and retail trade	20
22.	Clerical workers--finance, insurance, real estate	28

Table 1.

Continued

Groups	N
23. Clerical workers--public administration	22
24. Clerical workers--other	43
25. Sales--finance, insurance, real estate	23
26. Sales--wholesale and retail trade, other	49
27. Managers and administrators--construction	20
28. Managers and administrators--manufacturing	25
29. Managers and administrators--wholesale trade	23
30. Managers and administrators--retail trade	71
31. Managers and administrators--finance, insurance and real estate	17
32. Managers and administrators--public administration	21
33. Managers and administrators--other	55
34. Professional and technical workers--engineers	39
35. Professional and technical workers--higher education and science	20
36. Professional and technical workers--health professionals	30
37. Professional and technical workers--other education	65
38. Professional and technical workers--technicians, various	21
39. Professional and technical workers--other	51

Table 2.

Discriminant Analyses

Rewards	Standardized Coefficients[a]	
	REW1	REW2
1. Intrinsic	1.00	-.17
2. Convenience	-.36	-.17
3. Financial	-.13	1.00
4. Social	-.20	-.43
5. Career	.07	.39
Percentage of discrimination due to function[b,c]	56.4	23.5

Requirements	Standardized Coefficients	
	REQ1	REQ2
1. Education	.48	.24
2. GED (complexity)	1.00	.81
3. SVP (training)	.68	-1.00
Percentage of discrimination due to function	70.0	27.6

Table 2.

Continued

Resources	Standardized Coefficients		
	RES1	RES2	RES3
1. Size	.11	.99	1.00
2. Supervisor	-.14	-.80	.87
3. Union	.01	1.00	-.37
4. Percent women	1.00	-.17	.05
Percentage of discrimination due to function	70.1	19.3	6.8

[a]The discriminant coefficients for each discriminant function are determined up to a constant of proportionality. They have been scaled such that the largest coefficient equals 1.0.

[b]This measure is computed for the ith discriminant function as $100 \times (\lambda i / \sum_{j=1}^{k} \lambda j)$, where λj is the eigen valve associated with the jth discriminant function and k equals the number of criterion variables in the analysis.

[c]For each of the discriminant functions presented in this table, Bartlett's V statistic indicates that the hypothesis of no difference among the groups on the discriminant function can be rejected with a probablility $p<.0001$.

Table 3.

Correlation Matrix

Variable	1 REW1	2 REW2	3 REQ1	4 REQ2	5 RES1	6 RES2	7 RES3	8 DUNCAN SEI
1 REW1	1.000							
2 REW2	.028	1.000						
3 REQ1	.765	.358	1.000					
4 REQ2	-.246	-.026	-.050	1.000				
5 RES1	-.567	-.259	-.352	.538	1.000			
6 RES2	-.589	.337	-.384	.067	-.019	1.000		
7 RES3	.230	.524	.649	.114	-.046	-.067	1.000	
8 DUNCAN SEI	.489	.500	.844	.283	-.099	-.298	.706	1.000

Table 4.

Standardized Regression Coefficients for a Model of the Determinants of the Differentiation of Occupational Rewards

Exogenous Variables	Endogenous Variables	
	REW1 (intrinsic)	REW2 (extrinsic)
1. REQ1	.65**	.20
2. REQ2	.03	-.01
3. RES1	-.37**	-.16
4. RES2	-.37**	.44*
5. RES3	-.24*	.42*
R^2	.860	.479

*,** Indicate rejection probabilities of .05 and .001, respectively, for conventional t-tests of the hypotheses of zero regression coefficients. They should be interpreted with caution here, since the data are not from a sample of occupational groups but are linear composites of measures assessed across 1496 individuals and aggregated into thirty-nine occupational groups.

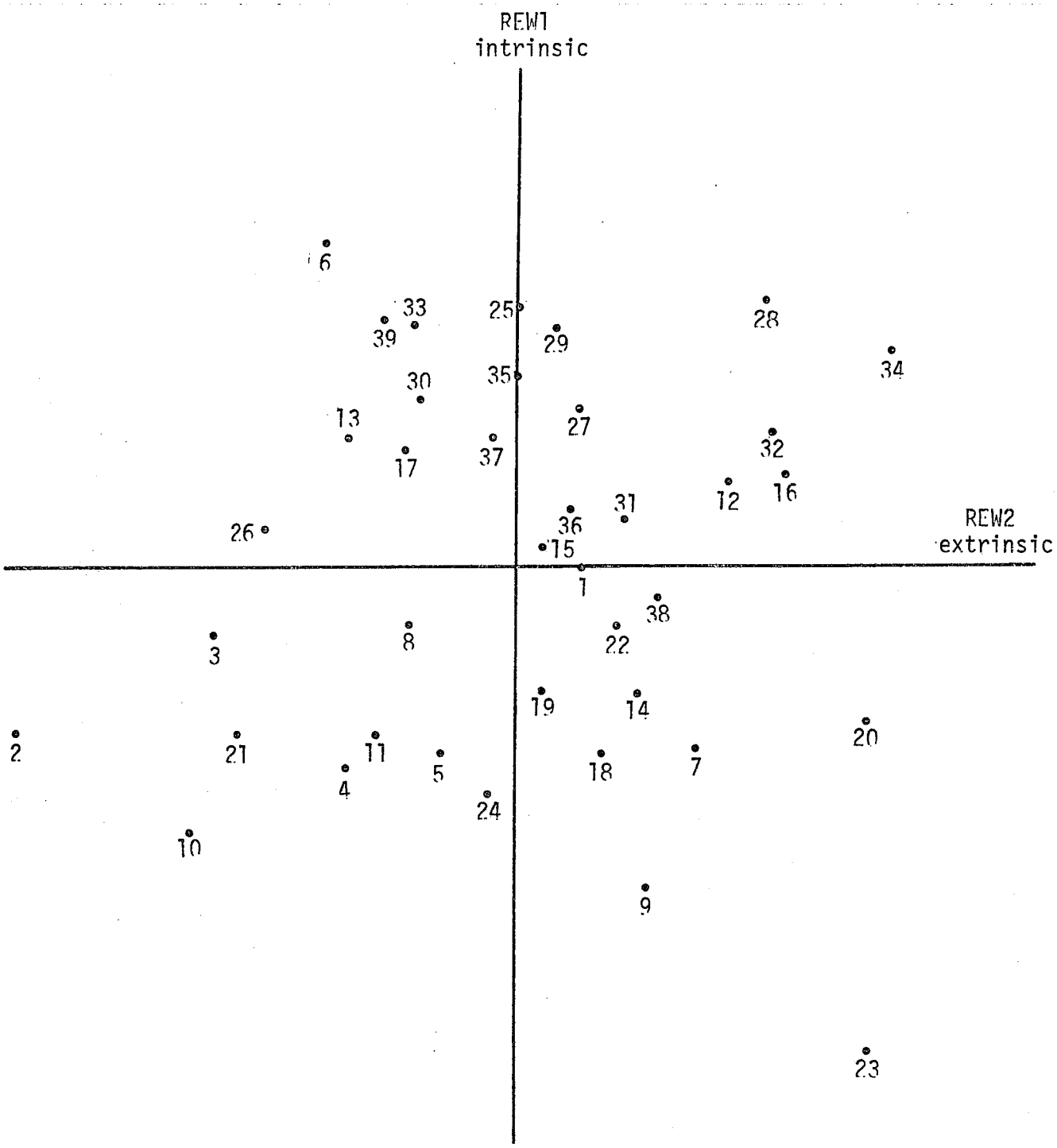

Figure 1. Differentiation of Occupational Rewards: Occupational Group Means on Reward Discriminant Functions

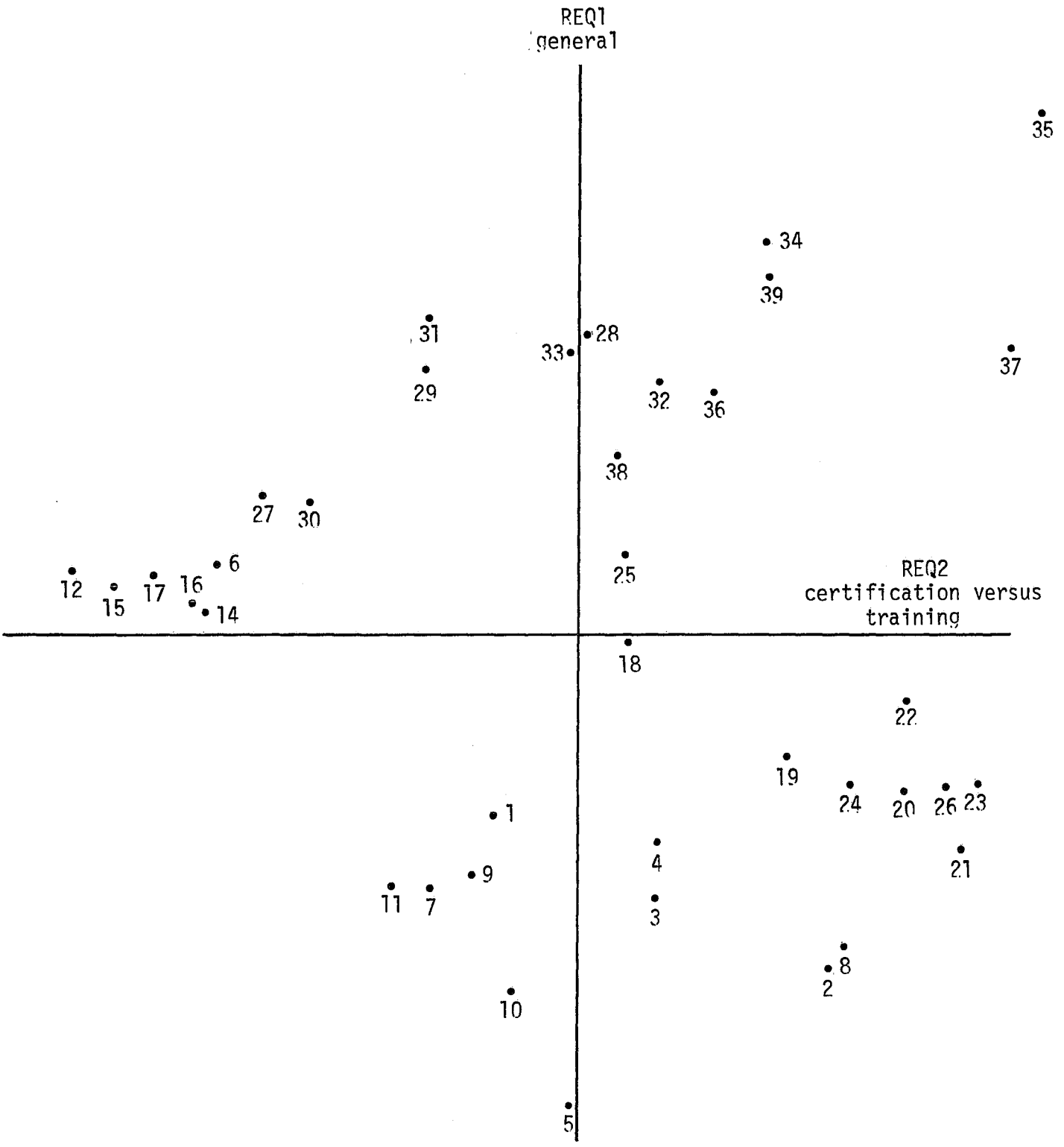

Figure 2. Differentiation of Occupational Requirements: Occupational Group Means on Required Discriminant Functions

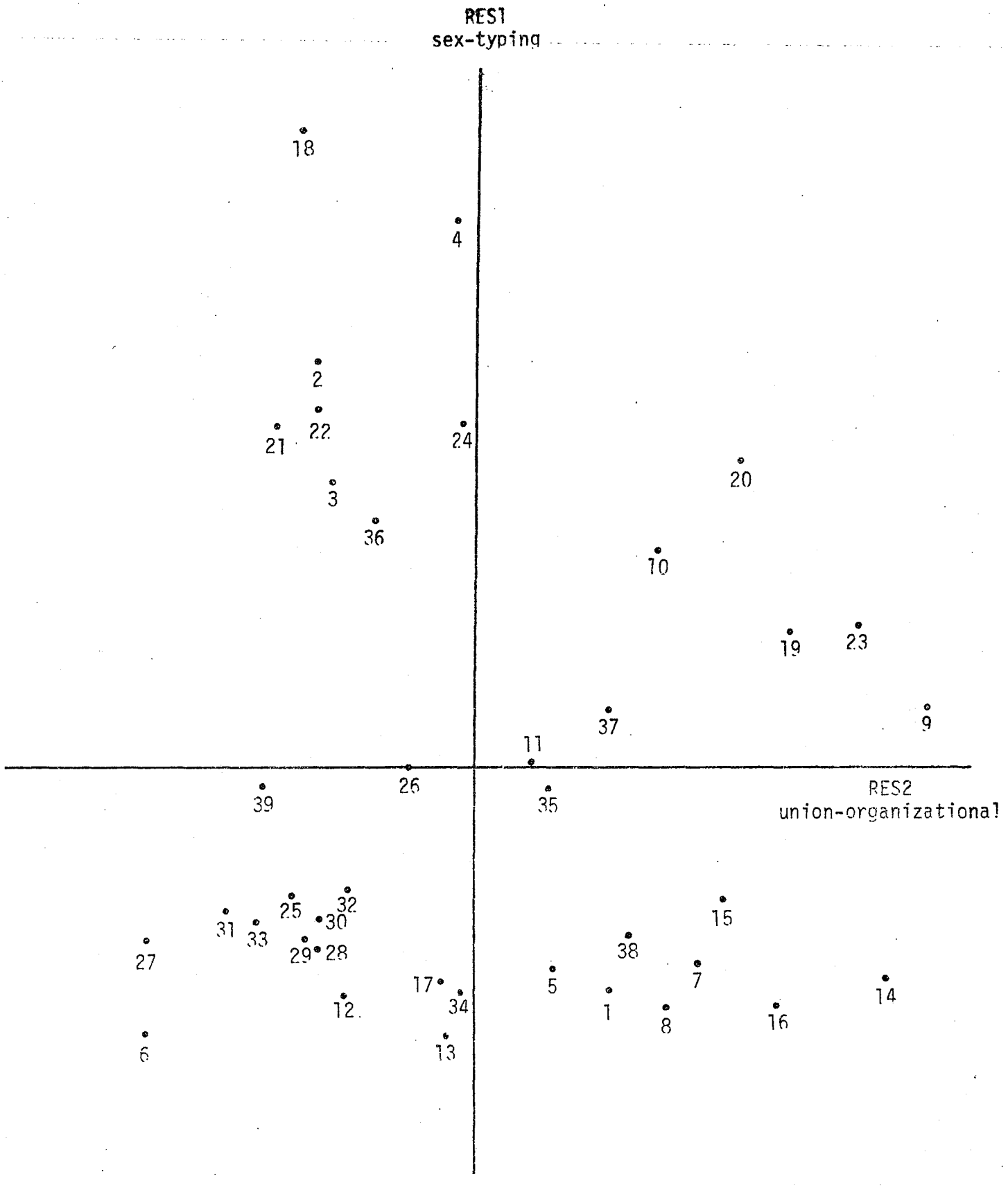

Figure 3. Differentiation of Occupational Resources: Occupational Group Means on Resource Discriminant Functions

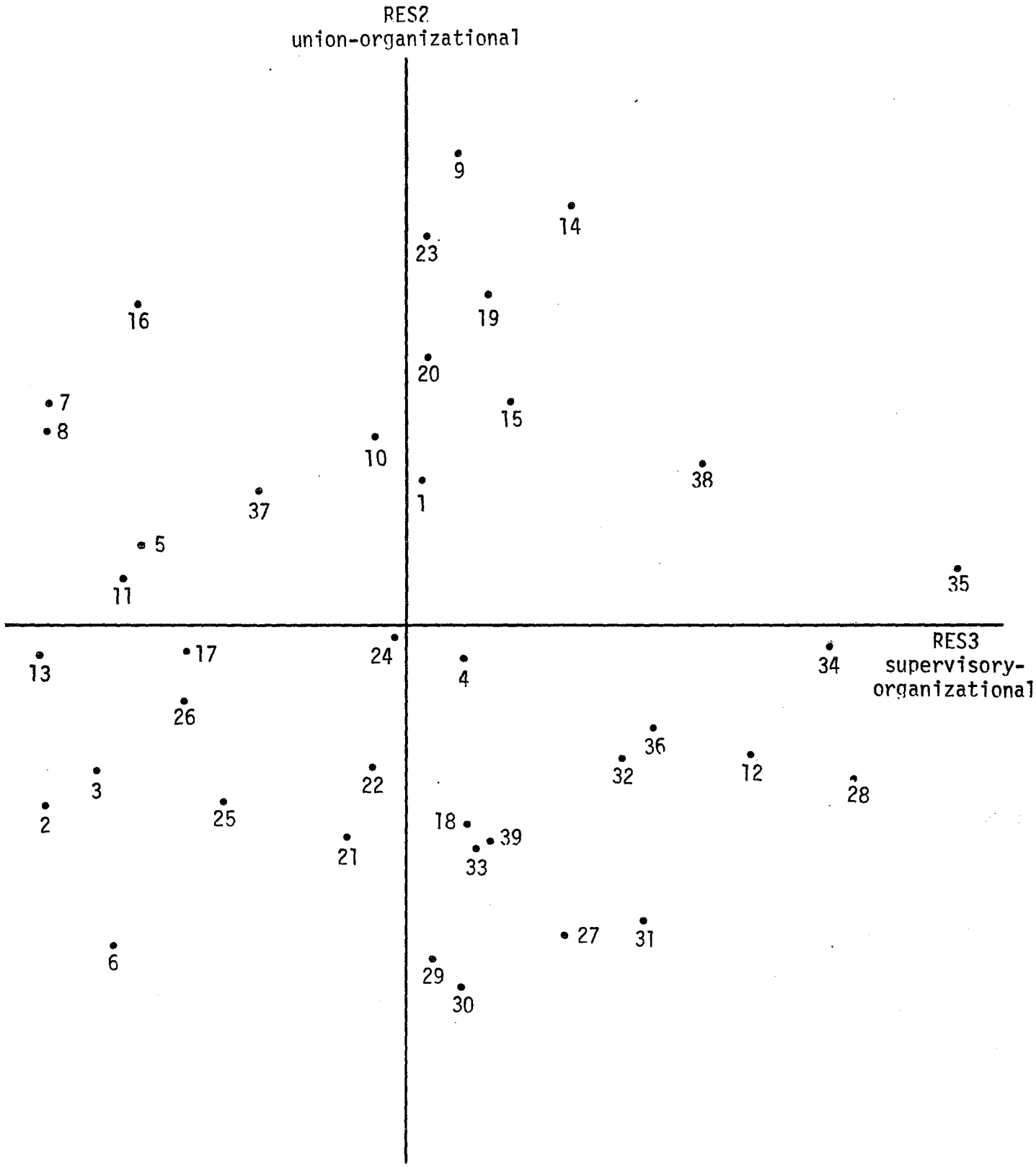

Figure 4. Differentiation of Occupational Resources: Occupational Group Means on Resource Discriminant Functions

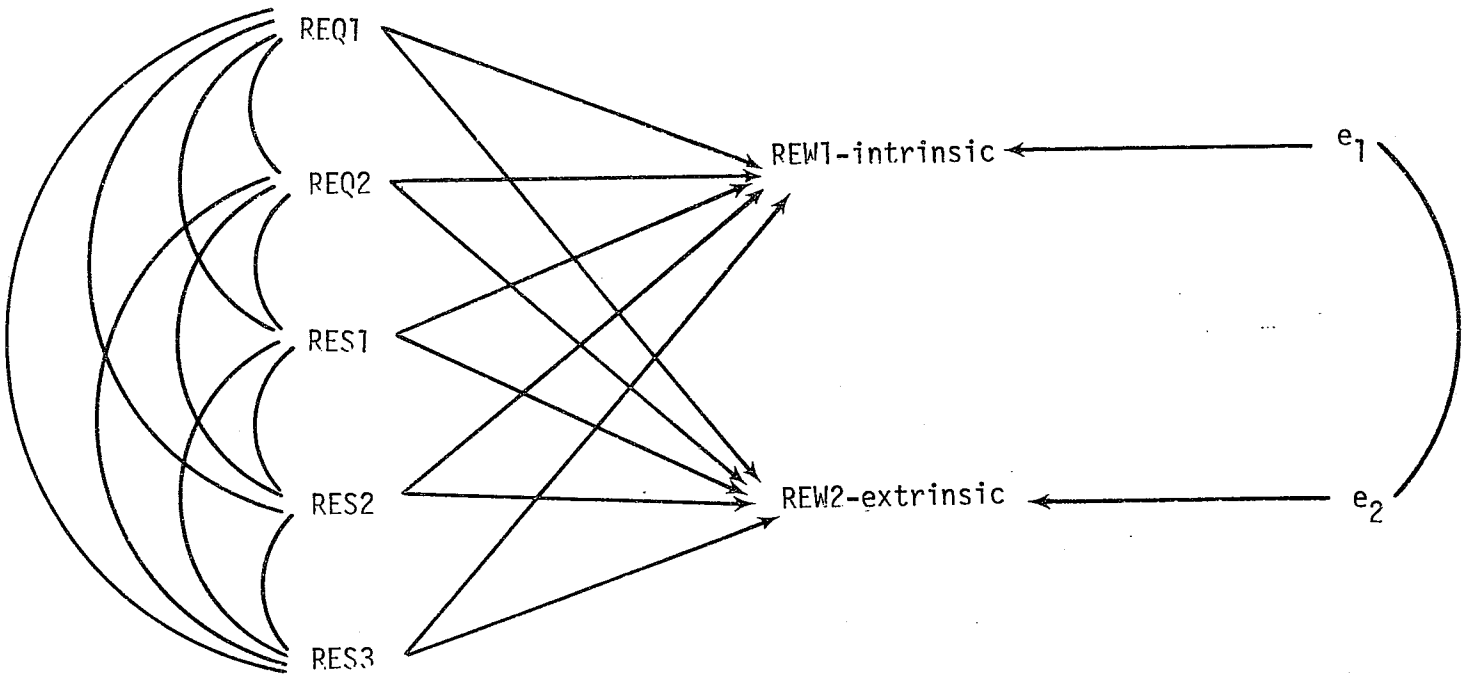

Figure 5. A Causal Model of the Determinants of the Differentiation of Occupational Rewards