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JOB EVALUATION METHODS AND COMPARABLE WORTH: A COMPARISON OF STATE POLICIES

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ABSTRACT

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The differences in the average wages of jobs held mainly by women and jobs held mainly by men are, to use the words of the sociologist C. Wright Mills, no longer a "private trouble" but rather a major social issue. The notion of comparable worth is viewed as a means for raising women's average wages. And it is usually implemented by means of a job evaluation system. A pilot study was implemented for the purpose of determining how different evaluation systems are being used to evaluate professional classifications at bachelor's, master's, and post-master's degree levels, and how several classes are ranked by job evaluation points in each of the different systems.

The main finding from the study has been that most states reported that they use the same job evaluation factors for all of the job classifications included in this survey. Yet, althought the states use different job evaluation factors to evaluate jobs, the ranking produced are fairly similar.

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INTRODUCTION

One of the most significant social changes in the last two decades has been the increasing numbers of women working in the labor market in the United States. As more and more women support themselves and their families, and look forward with concern to what they are going to live on in their old age, they sense sex-based wage discrimination as a serious problem. In other words, the differences in the average wages of jobs held mainly by women and jobs held mainly by men are, to use the words of the sociologist C. Wright Mills, no longer a "private trouble" but rather a major social issue. As Mills states, "our personal troubles and public issues overlap and interpenetrate to form the larger structure of social and historical life" (Vander Zanden, 1990:7). Working women's advocates point out that most women still work in low-paying, traditional female occupations. Many studies have been conducted to explain the wage differential between men and women using different perspectives, and different conclusions have been reached on the sources of these differences.

For example, some women's advocates have suggested that one source of the wage differential is that employers currently pay employees working in the female dominated jobs less than they pay employees working in the male dominated jobs with

similar requirements for education, skill, responsibility, and working conditions. Although the Equal Pay Act of 1963 contains the idea of "equal pay for equal work", women's advocates argue that in practice, because of occupational segregation, women are still in low-paying jobs. This is why they back a policy of "equal pay for comparable worth" as a means for raising women's average wages.

The notion of comparable worth was clearly a significant women's issue in the eighties. As Eleanor Holmes Norton, chair of the Equal Employment Opportunity Commission said "for the average woman who works-who is increasingly the average woman-I do believe this is the issue of the 1980s"(Norton, 1979:1).

Yet, as the 1980s progressed, a number of key questions arose: what does comparable worth mean? How does one measure a job's worth? Who is going to do the assessment? Furthermore, what is the impact of implementing a comparable worth study? These questions have been very complex and difficult because they involve issues on which there is no consensus. But still, answers to these questions are necessary; comparable worth claims are being raised by workers, and their representatives through legislation, collective bargaining, litigation and other means.

Comparable worth is usually implemented by means of a job evaluation system. The term job evaluation refers to "a formal procedure for hierarchically ordering a set of jobs or

positions with respect to their values or worth, usually for the purpose of setting pay rates"(Treiman, 1979:73). The purpose of job evaluation is to produce an acceptable and efficient system of wage differentials for a given unit of wage or salary administration (Hildebrand, 1980:89). However, "the content of comparable worth policies differs notably from state to state. Indeed, state variability of similarly labelled policies is one of the least-discussed aspects of the diffusion of innovation literature"(Evans and Nelson, 1989:74).

The variability among state methods and policies is the main focus of this thesis. A pilot study was implemented in the summer of 1989 with support from the State of Michigan Civil Service Department. The major purpose of that study was to see how different evaluation systems are being used to evaluate professional classifications at bachelor's, master's, and post-master's degree levels, and how several classes are ranked by job evaluation points in each of the different systems.

This thesis will be divided into four sections. First, the historical background of the comparable worth issue will be discussed. Second, the survey research on job evaluation systems among states will be described. Third, the current

method of job evaluation in Michigan will be explained. Fourth, conclusions and recommendations will be offered.

HISTORICAL PERSPECTIVE ON COMPARABLE WORTH

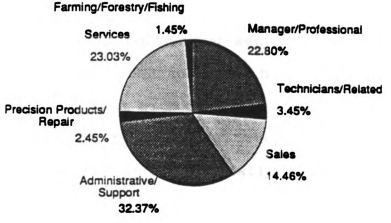
As we move into the 1990s, the question of whether discrimination in employment should be eliminated is no longer an issue. Many efforts have been implemented through voluntary and involuntary programs, of individuals, private organizations, educational institutions, business and government. The questions facing us now are more complex because we are not dealing with "whether" but with "how" and "when".

Since the issue of comparable worth has been primarily seen as a "women's issue", it is imperative to understand women's position in the labor force and the earnings gap between men and women first, before exploring the idea of comparable worth. At this point, it is interesting to look at some statistics portraying the status of women in Michigan, particularly since this is related to the survey which will be described later in this thesis.

First, "the number of women in Michigan's labor force is at its highest level ever--1,902,000 women were in the labor force in 1985. Women now comprise 44% of Michigan's labor force" (Sarri, et al., 1987:32). According to Sarri, et al., "most women (66% in 1985) are in white collar occupations including managerial, professional, technical, sales and

administrative support positions. However, within this broad category women are concentrated in lower-level professional positions and in administrative support(clerical positions)" (Sarri, et al., 1987:35). (See Figure 1).

Figure 1: Employed Women in Michigan by Occupation, 1980.*



Source: U.S. Bureau of the Census, "1980 Census of the Population", Detailed Population Characteristics: Michigan. Washington, D.C., 1983. PC-80-1-D24, Tables 221 and 222.

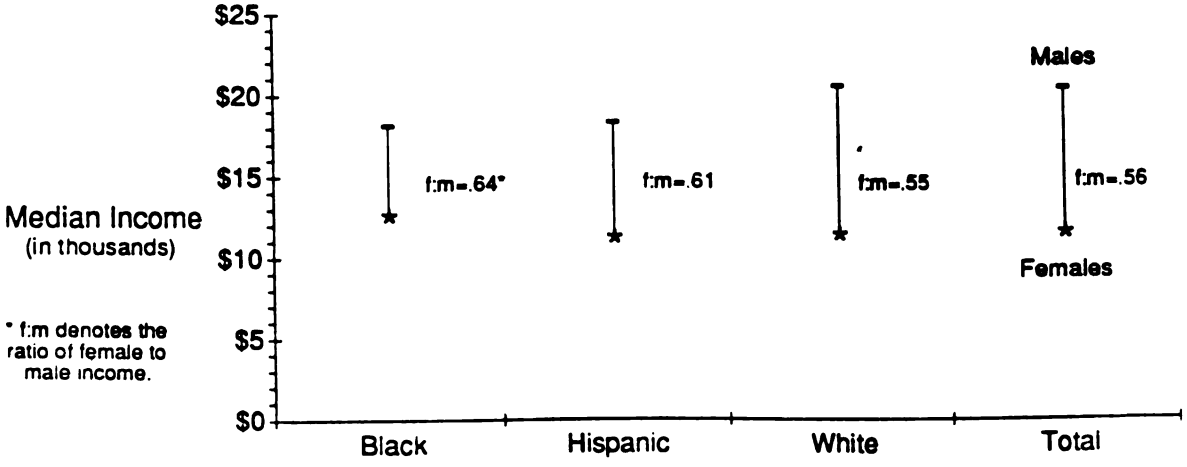
***Originally appearing on page 36 of Sarri, et al., 1987.**

The examination of specific occupations reveals a phenomenal degree of occupational segregation among men and women. For example, "in 1980 in Michigan, 96% of all pre-kindergarten and kindergarten teachers were women. Ninety-nine percent of all secretaries, stenographers, and typists were women. On the other hand, 97% of all mechanics and repairers were men. Ninety-six percent of engineers were men" (Sarri et al., 1987:35). However, women have made some gains. In 1970, 99% of all engineers were men, but this declined to 96% men

in 1980. This suggests that slow progress is being made. Yet, despite some gains, "women are under-represented in many higher paid professional as well as blue collar occupations. For example, in 1980 4% of dentists, 13% of lawyers, and 8% of higher paid blue collar occupations were women"(Sarri et al., 1987:36).

Most significant to the issue of comparable worth are figures on the earnings gap between men and women in Michigan. As Figure 2 indicates, "White males had the highest median income ($20,494) in 1980 with both Hispanic and Black men at similar levels below them. Women, regardless of race, had significantly lower median income--falling between $11,163 and $12,251. If we consider female/male income ratios, however, that of White women at .55 is the lowest" (Sarri, et al., 1987:42).

Figure 2: Median Annual Income of Year-round, Full-time Workers in Michigan By Sex and Race: 1980*



Source: U.S. Bureau of the Census, "1980 Census of the Population", Detailed Population Characteristics: Michigan. Washington, D.C., 1983. PC 80-1-D24, Tables 221 and 222.

***Originally appearing on page 42 of Sarri, et al., 1987.**

When comparisons are made among occupations, "large female/male differences remain despite the fact 'equal pay for equal work' has been the law for many years. These differences are apparent for every occupational group. Particularly noteworthy are the differences for sales and service occupations since these are dominant occupations for women. For sales occupations the ratio is .49, the lowest of all, followed by .54 for service occupations" (Sarri, et al., 1987:44).

From the evidence described above, the characteristics of women workers are not only that they are concentrated in female-dominated jobs, but also that they are in low-paying jobs. Obviously, "salary inequity and comparable worth are still issues of importance for women workers even though some progress has been made"(Sarri, et al., 1987:44).

Why are women concentrated in low-paying jobs? How can we account for the differences between men and women's earnings? To what extent are discriminatory practices to blame? To what extent does the inequity reflect the differences in individual characteristics? And, to what extent does the disparity reflect structural features of the society? Many different perspectives have been offered to address these questions, such as the individual approach and the structural approach. These perspectives analyze the presence of wage differences using very different assumptions and consequently lead to alternative policy recommendations for narrowing the wage gap

between women and men.

THE INDIVIDUAL APPROACH

The basic assumption of this approach is that "inequalities in the labor force reflect differences in the individual workers-differences in ability, training, and the like"(Fox & Hesse-Biber, 1984:70). These differences in the individual workers may result from the way they identify their role in the labor market, the way they are taught or educated to accept certain values, or simply that they choose to do what they think is appropriate for them. From a sociological view, this can be referred to as a socialization process. In this process, women are "socialized to believe that some types of jobs are appropriate and that others are inappropriate for them"(Treiman and Hartmann, 1981:53). They are also socialized to pursued courses of study they think are appropriate for them and in consequence may not have the education or training that other available jobs need. Women also consider their obligations to the family and this may limit their alternatives. This is not the issue of why men "can do" but why women cannot. It is the issue of how many choices society offers to women. From a societal perspective, the wage gap stems from "the constraints imposed by society (for example, employer discrimination) that serve to limit a woman's ability to choose freely" (Blau & Jusenius, 1976:187).

Other perspectives have argued that because of women's

"taste" or preference, they end up in a given occupation. This perspective does not explain why only women should have such tastes, "nor is it clear why a large proportion of women should exhibit the same set of tastes-as demonstrated by their occupational distribution" (Blau & Jusenius, 1976:188).

Human Capital Theory

Human-capital theory is derived from a neoclassical view of economics. The term "human capital" refers to those dimensions that affect one's ability to produce on the job-such things as educational level attained, number of years worked, job training, absenteeism and turnover. This theory states that "because men and women make unequal investments in human capital, they have unequal productive skills; the result is unequal occupational attainments and differences in wages" (Mincer, 1962, quoted in Fox & Hesse-Biber, 1984:73).

However, Treiman and Hartmann's (1981) review of human-capital studies indicates that "only two of the seven studies examined-Corcoran and Duncan (1979) and Mincer and Polachek (1974) --explain a fair percentage of the gap in wages between men and women"(see Appendix 1). From Corcoran and Duncan's study, the largest single factor accounting for the differences in men's and women's wages was work history. However, as Treiman and Hartmann (1981) pointed out "women's lesser experience does not completely account for the earning differential. Furthermore, they argue that women's lesser job

experience needs a fuller explanation than the conventional interpretation that women voluntarily limit their labor-force experience because of family demands. Women's limited job-related experience may reflect discriminatory restriction of occupational opportunities"(Fox & Hesse-Biber, 1984:73).

Another problem with a fundamental assumption of human-capital theory is the difficulty in measuring differences in productivity among jobs. Such things as education, training, and work experience are taken as indirect measures; these variables do not easily translate into measures of productivity. Thus "even those who accept the idea that education enhances productivity do not necessarily accept years of school completed as a good indicator of the quality and extent of job-specific skills learned in school"(Treiman and Hartmann, 1981:19).

Using the Michigan data:

> as of 1984 there were clear income effects from education. In all instances males and females with high school and college education fare better than those with less. However, education, as might be expected, did not overcome sex-linked differences in income. For example, White women with four years of college fare the poorest when compared with White males, whereas Black women had the highest income ratios when compared with Black males. It must be noted that Black males have far lower average incomes than White males, regardless of education. White women with four years or college earn only 46% that of White males, and that results in their having lower annual incomes than White male high school graduates (Sarri, et al., 1987:47).

In general, human-capital theory fails to explain the wage differences between men and women. The reason is the "earning gap between men and women cannot be explained simply by

differences in the characteristics of the workers: such as their educational level and their job experience" and beyond this, the theory does not "provide an adequate account of the underlying mechanism of discrimination because it relies solely on characteristics of
individuals to explain the group's inferior economic position" (Fox & Hesse-Biber, 1984:76).

In sum, the limitations of individual approaches(such as socialization and human capital) are that they fail to consider the problem within the wider social context and they are inherently conservative. These views assert that "women's status reflects their preferences. In other words, it assumes the women freely choose to obtain certain jobs, to acquire less education than men, to enter low-paying work, and to be underemployed"(Fox & Hesse-Biber, 1984:78).

THE STRUCTURAL APPROACH

In contrast to the individual approach, the structural approach focuses on "basic societal institutions-the economy, the legal institution, the family, their policies and practices-that operate to confine women to particular jobs characterized by low-wages, little mobility, and limited prestige" (Fox & Hesse-Biber, 1984:78). This approach focuses on structure instead of individuals and suggests a different strategy for improving women's labor force status. From this perspective, it argues that women's labor force status is

determined by the structure of the labor market not individual preference. One example is the Dual Labor Market perspective.

Dual Labor Market

Piore (1975) argued that labor markets consists of two distinct sectors: "the primary sector consists of professional and managerial-administrative jobs with relatively high wages and status, good working condition ... The secondary sector is the mirror image of the first: jobs are characterized by low wages, poor working conditions, little chance for advancement, lack of stability, and highly personalized employer/employee relations ..." (Doeringer and Piore, 1971; Piore, 1975).

Generally, the two sectors of the labor market are mutually exclusive; workers rarely move from the secondary to the primary sector. In Piore's view, "the sectors are further divided into tiers. Formal education is an absolute prerequisite for entry into the upper tier, the jobs in the lower tier are primarily white-collar and clerical positions, sales jobs, and positions for skilled workers. In the dual market, women are concentrated in a few occupations, primarily in the lower tier of primary-sector jobs (for example, white-collar clerical jobs)" (Fox & Hesse-Biber, 1984:79). As Fox and Hesse-Biber show, in 1979, 22% of employed women were in the upper tier of the primary sector, and 44% were in the lower tier; 34% are in the secondary sector(see Table 1).

Table 1 Male and Female Workers in the Primary and Secondary Labor Markets, 1979.*

	Percentage in occupation	
	Males	Females
Primary sector	62	66
Upper tier	29	22
Professional/technical workers	15	16
Managers and administrators	14	6
Lower tier	33	44
Salespersons	6	7
Clerical workers	6	35
Skilled workers (craftspersons)	21	2
Secondary sector	38	34
Semiskilled workers	29	14
Operators (except transport)	12	11
Transport equipment operators	6	0.5
Laborers (farm and nonfarm)	11	2.5
Service workers	9	20
Total	100	100
Total number (thousands)	56,500	40,446

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Unemployment During 1979: An Analysis* (Washington, D.C.: U.S. Government Printing Office, 1980), Table 21, p. A-20.

NOTE: The classification of occupational categories in primary and secondary sections is from Piore, 1972.

*Originally appearing on page 80 of Fox & Hesse-Biber, 1984.

Not only does gender appear to be an important criterion for placement in primary- and secondary-sector jobs, but also, the dual labor market reinforces the differences in earnings between men and women through what is called the "crowding effect" (Edgeworth, 1922; Bergmann, 1971; Stevenson, 1975). As women are concentrated in the lower-tier primary sector and

in secondary sector jobs this creates an over supply of labor in this sector, thus further reducing or restricting their level of earnings.

The dual labor market theory has its shortcomings as does human-capital theory. They both describe women's inferior economic position, but taken separately, do not provide a complete explanation of how these patterns emerge. For example, the economic and legal context are two important structural influences affecting women's inferior labor-market position. Although women themselves have to make the effort to gain the resources (education, job training) to compete in the labor market, this is only part of the issue here. Society, particularly the economic and legal institutions has to eliminate those barriers in order for women to have better access to favorable positions in the labor market.

PAST EFFORTS TO REDUCE WAGE DIFFERENCES

Structural change is often effected through legal means. Before the notion of comparable worth was extensively debated during the 1980s, the idea of "equal pay for equal work" was used to remedy pay inequities. This concept refers to the case where, if men and women, or minorities and nonminorities performed identical work, they should be paid equally. The word "equal" in this context was interpreted to require that the jobs compared be nearly identical in work content (defined as equal in terms of skill, effort, responsibility, and

working conditions).

The difference between "equal pay for equal work" and "equal pay for comparable worth" is embedded in legislative history and court decisions on the Equal Pay Act and Title VII of the Civil Rights Act of 1964. The Equal Pay Act of 1963 addresses the issue of equal pay for men and women doing equal work. It describes "equal work as that requiring equal skill, effort, and responsibility being performed under similar working conditions"(Treiman and Hartmann, 1981:4). Whereas, "Title VII of Civil Rights Act, prohibits discrimination because of race, color, religion, sex, or national origin in all employment practices, including hiring, firing, promoting, compensation and other terms, privileges, and conditions of employment" (Title VII, p4).

Yet, long after the enactment of both the Equal Pay Act in 1963 and Title VII of Civil Rights in 1964, the sex based wage differentials still exist. Moreover, "the sex segregation of jobs is also persistent; many jobs are stereotyped as 'male' or 'female'(Hartmann, 1985:4). Many studies show that "there is a relationship between the average occupational wage and the extent of female representation in the occupation: the more a job is done by women, the lower its average wage level"(Hartmann, 1985:4). It is the existence of low-paid, predominantly female jobs that causes the issue of comparable worth to arise. Furthermore, as some women's advocates suggest, "raising the issue of comparable worth can

point out women's common oppression by drawing attention to wage structure....."(Comparable Worth, 1980:6).

COMPARABLE WORTH VS. JOB EVALUATION

Even though the concept of comparable worth is still in dispute[1], it can be best understood and discussed in the context of salary-setting policy and practice. What is the relationship between comparable worth and job evaluation? First, let us look at a definition of comparable worth. Remick (1981) defines comparable worth as "the application of a single, bias-free point factor job evaluation system within a given establishment, across job families, both to rank-order jobs and to set salaries"(Remick, 1984:99). Before the comparable worth issue arose, job evaluation was first adopted in the 1930s and 1940s"(Hartmann, 1985:5). It is widely used in both the public and private sectors and it consists of a "formal set of procedures for hierarchically ordering jobs on the basis of their relative skill, effort, responsibility, and working conditions for the purpose of establishing relative pay rates"(Hartmann, 1985:5). In general, comparable worth has usually been implemented by a means of job evaluation systems. But there may be some key differences, as Remick stated "job

[1]The current debate over the interpretation of these two laws (Equal Pay Act and Civil Right Act) is the precise interpretation of the Bennett Amendment. Some interpretations state that the "job being compared to establish claims of pay discrimination against women must meet an Equal Pay Act test of similarity. An alternative interpretation had been that the Bennett Amendment was meant to incorporate only the defenses available to an employer that are enumerated in the Equal Pay Act: that is, if an employer can show that pay differences stem from seniority, merit, differences in productivity, or differences in any other factor other than sex, then those differences in pay, are not illegal"(Treiman and Hartmann, 1981:5).

evaluation is used to justify existing salary practice or simplify salary setting. Comparable worth is used to remedy sex discrimination"(Remick, 1984:99).

METHODS OF JOB EVALUATION

Advocates of comparable worth appear to agree that all present job evaluation systems reflect cultural values and, presumably, bias. The National Academy of Sciences' review of job evaluation categorically states that "job evaluation inherently rests on subjective judgment"(Treiman, 1979:39). As the National Research Council concluded "there is no strictly scientific or technical basis for determining the relative worth of jobs, because 'worth' is ultimately a matter of values"(Hartmann, 1985:26). But they seem to believe that although values cannot be removed, biases can be. Thus, at one point Helen Remick asserts that "the search for a bias free system does not imply the search for a value free one"(Remick, 1983:167). Job evaluation is a way of expressing somebody's values. The nature of job evaluation is subjective, and job ratings will very likely seem arbitrary to anyone who does not share the evaluators' values.

There are several formal and informal job evaluation systems at present. Although they differ in details of design and implementation, almost all share a similar methodology. These are described below.

Types of Job Evaluation Methods

The procedure of job evaluation involves three steps: job description, job ranking, and wage-setting. As described by Treiman:

> The first step typically involves a careful description of each job within the unit being evaluated (the entire firm, a particular plant...). The second step, each job is evaluated with respect to its "worth" to the organization, and all the jobs are hierarchically ranked. The third step, utilizes the results of the job evaluation in the setting of wages or salary rates. In some instances, the evaluation score is automatically translated into a wage or salary level (1979:73-74).

In the process of job description, some issues have to be considered. For example, who can participate in the processes of data collection and analysis? What kind of job information should be included in job description? In general, as Schwab pointed out, "the quality of job evaluation is highly dependent on the quality of the description of the job that is provided" (1980:59).

The most difficult part of job evaluation is the second step, job ranking. There are two issues involved in this step, the selection of compensable factors and factor weight. Treiman argues that "the choice of factors included in job evaluation schemes and the relative weight accorded these factors can have very substantial consequences for the ordering of jobs with respect to their relative worth and hence relative pay" (Treiman, 1984:88).

Many studies have questioned "whether or not the results of comparable worth studies should be rejected because the

measurement instruments which they rely on are either inappropriate or inadequate"(Barker, 1986:12). For comparable worth advocates, currently, the most important concern is whether the job evaluation method is a "bias-free" method. The job evaluation system used in Michigan is a point factor method. There are ten factors in the job evaluation system. These are: knowledge and skill, judgement, responsibility for financial and material resources, responsibility for the well-being of others, responsibility for information, responsibility for communications and public relations, physical effort, mental visual effort, work environment, and work hazards. For each factor, there are several degrees or levels, and each degree corresponds with certain points (see appendix 2).

Traditional job evaluation methods, include simple ranking, classification, factor comparison, and point factor.

Ranking

This is probably the oldest, fastest, and easiest of the qualitative methods. Because it is fast, and inexpensive, it is therefore chosen by small firms. Evaluators rank jobs by overall worth or value to the organization. All the jobs are simple ranked from top to bottom with respect to their "worth" or "value". "After the ranking is completed, the ranked jobs are often aggregated into categories for the purpose of assigning compensation levels" (Treiman, 1979:74).

Classification

This system was originally developed by the federal government to establish its pay program (General Schedule, or GS). It operates by "specifying a number of grades for which broad descriptions are written for various types of jobs. Jobs are compared with the grade description and placed within the appropriate grade"(Remick, 1984:68-69).

This process is described in detail:

> Classification requires a predetermined idealized hierarchical structure, with categories delineated on the basis of such factors as the degree of skill and responsibility thought to be required by various jobs. Each job is fit into the structure by comparing its characteristics with the idealized levels describing each category in the classification. The General Schedule classification of the U.S. Civil Service Commission is probably the best known classification system. Eighteen grades are defined on the basis of eight factors; and as each new job is established it is assigned a GS level that determines the pay range that may be offered. One difficulty with systems of this kind is that jobs with discrepant levels on two or more criteria (e.g., job involving very high educational qualifications, but not exercising any supervisory responsibility) may not fit into the scheme very well and hence require arbitrary judgments for assignment (International Labor Office, 1960:23).

Factor Comparison

This approach involves a series of specific and somewhat complex steps. First, a set of factors on which the evaluation will be based is chosen (these are known as "compensable factors"). Compensable factors are "the specific

characteristics of the jobs which forms the basis for the evaluation and which ultimately determine the order in which the job categories are ranked at the conclusion of the evaluation process" (Barker, 1986:13). The choice of compensable factors is important in two ways. One is that it could alter the pay relationship between jobs. The other is that it could change the relative advantage or disadvantage of particular ethnic or sex groups. For example, as Remick found, some job evaluation systems tend to assign points to characteristics found primarily in male dominated jobs" (Remick, 1978:85). Furthermore, it is considered desirable to keep the number of factors low, four to seven as an acceptable range (Livy, 1975:91).

Next, a set of benchmark jobs is chosen. These jobs are selected as representatives of all the jobs in the organization and are used to establish the basic levels of the system. Then, the benchmark jobs are ranked with respect to their total worth. Finally, a judgment is made for each job regarding the contribution of each of the factors to the total worth of the job; often the criterion of total worth is, in fact, current wages" (Treiman, 1979:75).

This last step involves a very important question: here the "principle criterion for the validity of a job evaluation plan is how closely the job worth hierarchy produced by the plan matches the existing wage hierarchy" (Fitzpatrick, 1949; Fox,1962). In other words, how acceptable the job evaluation

system will be is often seen in terms of how closely it replicates the existing wage system.

The Point Factor System

Here, a set of compensable factors is chosen. Next, points are assigned to "degrees" of each factor to indicate the extent to which a job possesses the factor. Then, total points for each job are computed in order to assign salary levels.

The most commonly used compensable factors are skill, effort, responsibility, and working conditions. These are the categories given in the Equal Pay Act of 1963. The U.S. Department of Labor gives the definitions of skill, effort, responsibility, and working conditions as the following:

> SKILL- has been defined as the education, experience, training and ability required to perform the work of the job[2].
>
> EFFORT- has usually been defined as the mental and physical exertion needed for performance for the job.
>
> RESPONSIBILITY- is the extent to which an employer depends on the employee to perform the job as expected, with emphasis on the importance of job obligation.
>
> WORKING CONDITIONS- is frequently defined as the environmental factors, climate, or hazards present in performing the job.

These statements serve as a formal definitions but as we will see later, there is a great deal of variation in the

---

[2] In practice, the job evaluation systems usually involve using a skill factor, and under the skill factor, several subfactors to evaluate job's worth. For example, in my survey, most of the states use skill as one of the factors to evaluate jobs, and under the skill factor, there are some subfactors, such as: education, experience, and personal contact. Educational attainment is a very important factor in the process of job evaluation and "it is one of the main human-capital effects"(Sarri, et al., 1987:46).

operational definitions adopted among the states. The actual definition used by the states is compared in the following section.

Job evaluation systems are more complex in practice than they were ideally described above. The differences center around political as well as technical issues. Many questions need to be answered. As Remick states, "how can job evaluation sort out real differences in work from cultural stereotypes of what is appropriate for the sex doing the work?" Additionally, there is a need to know which compensable factors should be used in job evaluation, who makes the choices and if there are any difference among the public sector agencies using job evaluation systems. These questions form the background to the survey of job evaluation systems conducted in this study.

SURVEY OF JOB EVALUATION SYSTEMS AMONG STATES

BACKGROUND

In 1985, a Task Force was formed to study job evaluation in Michigan. At the same time, the State Civil Service Department was given the responsibility to revise the job evaluation and classification system. The purpose of revising the Civil Service's job evaluation system was to reduce the number of separate systems that were used in the state employment sector of Michigan. The number of separate job evaluation systems was to be reduced from eleven to five or less. Additionally, the new job evaluation and classification system was to be designed such that within each group, the employees should be neither predominantly male or female.

To develop the new job evaluation system, the employees of the State of Michigan were grouped into five categories. A separate set of rating scales, or compensable factors is being developed for each group. At this time the exact assignment of employees into Groups 3,4, and 5 is still being further developed. However, the preliminary description of the job groups is provided below:

Group 1: all classes requiring less than B.A. degree, classes are non-supervising. There are about 500 classes, or 40,000 employees in this group.

Group 2: all classes requiring B.A. or higher degree. These classes are non-supervising. There are about 217

classes, or 13,000 employees in this group.

Group 3: all supervisors, managers, administrators, (classes not represent by labor unions)

Group 4: Executives

Group 5: Not defined yet, residual category.

On April 1, 1990, the State of Michigan began implementation of the job evaluation for Group 1. The process involved: first, a random sampling procedure to attain job analysis information from employees in every class. For some large classes that were used to test the system, a verification procedure was used to validate the job information gathered from the first sample. Second, a labor-management advisory committee developed the job evaluation factors (Appendix 2). The job evaluation system included ten factors for Group 1 (it is a "point factor" system). Third, the factors were tested for reliability and to determine whether or not the scales would have a similar effect on male-dominated and female-dominated jobs. The preliminary analysis suggests that the factors and the application of the factors have been found to be gender-neutral. Fourth, the results of the job evaluation have been made available to the labor union and the State employers for use in negotiating wages. Fifth, the Civil Service will submit their bargained agreement to the Civil Service Commission for adoption.

The Civil Service has also begun working on developing a job evaluation system for Group 2 jobs. The process is almost

identical with Group 1. That is, the process includes collecting job analysis information, and convening an advisory committee to develop factors for Group 2. In order to develop these factors, the Michigan Civil Service Department conducted a survey of several other jurisdictions which were reported to be developing or using a point factor job evaluation system in a study conducted by International Personnel Management in 1985. Of particular interest to the Civil Service Department at this time is how systems used by other states are being used to evaluate professional classifications at bachelor's, master's, and post-master's degree levels(the Group 2 jobs), and how several "test" classes would be ranked by the evaluation systems used in these other states. This comparison of different state systems for evaluating Group 2 jobs is the central focus of the survey conducted for this thesis.

METHODOLOGY

The research process can be divided into three stages: developing the questionnaire; collecting the data; and, analyzing the data. Each step is described in greater detail, below.

Developing the Questionnaire

Based on preliminary research conducted during the summer of 1985 and a review of the Pay Equity Task Force report in published in July, 1985 by the International Personnel

Management Association, the State Civil Service's classification division identified nineteen states and one province of Canada which we believed were developing or had already implemented a point-factor job evaluation system.

A telephone survey questionnaire was then developed by the classification Development Team to gather information from each of these states. Each jurisdiction was requested to send any additional information they had which would help us understand their system. In particular, the classification team requested a copy of the factors, elements, definitions and weights used by states.

By reviewing the results of the telephone survey, sixteen states and one province were identified as the target group for a second, written survey. Those jurisdictions were Alaska, California, Connecticut, Indiana, Iowa, Louisiana, Minnesota, N.Dakota, New York, Ohio, Ontario, Tennessee, Vermont, Washington, W.Virginia, and Wisconsin.

We then selected several job classes belonging to Group 2 as "test jobs" to be included in this study. These were:

Business and Administrative service:

Accountant VIB

Data System Analyst VIB

Personnel Management Analyst VIB

Engineering and Scientific:

Transportation Engineer VIB

Laboratory Scientist VIB

Research Biologist VIB

Clinical Health Scientist VII

Human Services:

Psychologist VIB

Clinical Social Worker VIB

Social Service Specialist VIB

Registered Nurse I

Librarian VIB

Legal Service:

Attorney III

Physician and Psychiatrist Service:

Psychiatrist II

These classes were selected for two main reasons: they were considered "benchmark" jobs, or jobs with an acknowledged relationship to other job categories in the group; and, these "test jobs" were thought to be commonly found in most state employment systems.[3]

The process of designing the questionnaire was took place several exchanges between my Project Director Carol Mowitz and myself. The content of our discussions included: what kind of

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[3]It should be noted when reviewing Tables 3 to 11, that each state may use a slightly different name or title for the job described in the survey. For example, the title "Staff Attorney" is sometimes called "Attorney 2". The survey respondents were asked to use the job category/title from their state that most directly reflected the job content provided for test jobs in the survey.

format we wanted to use, how many questions we would like to ask, how to design the charts used to rank the jobs. At the end of our discussion we decided to use the open ended questions because we wanted to examine the variability among state methods and policies. We also wanted to leave more space for each state to provide us any further information they had in addition to the questions included in this survey. Moreover, a sample of *** state was provided to show people how to fill out the chart. (For details see Appendix 3).

Collecting the Data

First, we needed to decide what department or person would be most appropriate to respond our survey. The Civil Service Department has an updated mailing list used for contacting individuals about compensation issues. By using this mailing list, we sent out the questionnaire. For example, on the mailing list, there are individuals who work for the Department of Personnel Administration, or Class & Compensation Division in other states. We asked those jurisdictions which were in our sample to return the questionnaire by September 1, 1989. We received fifteen responses, some of which provided us very useful information. However, some of the states could not provide us with the information we sought because they were not using a point factor system to evaluate the selected test jobs.

Analyzing the Data

The main interest was to look at skill factor and to determine how different job evaluation systems define and measure skill for professional job classifications, those which require levels of education ranging from bachelor's to doctorate degrees. The secondary interest was to look at the over all ranking of the test jobs by each of the states' job evaluation methods. The data were analyzed in several different stages. First, a qualitative assessment was made of each set of survey responses, including the supporting documents that were sent in by the respondents. This made it possible to verify if the state was in fact using a point factor system which could be used for further comparison to the system under development by the State Civil Service Department. Then the ratings of the test job categories were compared for similarities across the states. A median ranking order was then calculated for each of the test jobs and the highest and lowest ranking jobs were identified. These results are provided in the next section of this thesis.

SUMMARY OF RESEARCH FINDINGS

The findings can be divided into two sets of states (see complete listing in Table 2). First, there are several states which are not relevant at this time because they do not use

a single point factor system. They are described in greater detail below:

Alaska

The State of Alaska does not utilizes the single point factor system. They could not provide us any information we needed for comparing our system.

California

The State of California has and continues to use the position classification job evaluation system. They have not used nor are they developing a point factor system, so they could not provide us any of the information we needed at this point.

Montana

The State of Montana did develop a point factor system in 1985, but they have not used it yet. At this point, they do not use a point factor system to evaluate and classify those jobs in our survey. They indicated however that they intend to use the same job evaluation factors for all of the jobs included in this survey.

New York

The State of New York does not use a point factor system. The allocation system that resulted from the work of their pay

Table 2 The Job Evaluation System used by 15 states

STATE	EVALUATION SYSTEM
Alaska	Alaska Quantitative Evaluation System (A.Q.E.S.)
California	Position Classification
*Indiana	Oliver System
*Iowa	Single Point Factor System
*Louisiana	Single Point Factor System
*Minnesota	Hay System, a single point factor system.
Montana	Developed a single point factor system, but has not used it, yet.
*N. Dakota	Single Point Factor System
New York	Quantitative Job Evaluation System
*Ohio	Single Point Factor System
*Tennessee	Single Point Factor System
*Vermont	Willis Single Point Factor System
W.Virginia	Single Point Factor System
Wisconsin	Whole Job System
*Washington	Single Point Factor System

*These states are using a single point factor system which can be used for further comparison to the system under development by the Michigan Civil Service Department.

equity project (started in November, 1985) resulted in what is called the Quantitative Job Evaluation System (QJES). At this point, the State of New York could not provide us the information we needed to compare jobs or job ratings to the Michigan System.

Wisconsin

The state reported that a majority of the classification specifications for the survey classes are over 15 years old. The training and experience requirements that are described in great detail in many of the older classification specifications no longer apply. Since 1978, Training and Experience requirements are only valid for those classes which require a license or certification to perform/practice the work. Qualifications for other vacant Civil Service positions are determined and announced at the time of recruitment. Professional classifications no longer identify bachelor's, master's, and/or post-master's degree levels as the basis for entry and/or progression through their respective series.

While the vast majority of the classes in the current Wisconsin Classification Plan were developed using the Whole Job Classification method, many others were developed from occupational surveys which were conducted using various other quantitative job evaluation methods.

W. Virginia

The State of W. Virginia used a point factor system to evaluate about 1,900 job classes for a pay equity study that was not implemented. As they evaluated professional level classes they became increasingly aware of a restriction in the range of factor levels available to reflect differences they perceived in formal education at bachelor's, master's, and post-master's degree levels.

They intend to begin using their point factor system in the near future and would like to resolve the range compression problem if possible.

The following states, which are using single point factor systems, are relevant to us at this time. These form the data set used for further comparisons in this study. Background information about each of these states and their job evaluation systems is provided below.

Indiana

The State of Indiana has used the same job evaluation system, the Oliver system, for many years. The Oliver system is a methodology for evaluating jobs, grouping them, ranking them into a structure and developing a system of pay rates for each group of jobs that is equitable and based on the market for similar jobs. The State of Indiana uses the same job evaluation factors for all of the job classifications included

in the survey. They are four factors in their system: 1) job requirements; 2) difficulty of work; 3) responsibility; 4) personal work relationships.

The job requirement factor measures the nature and extent, and the level of knowledge and abilities needed to perform work acceptably. The difficulty of work factor measures the complexity or intricacy of work and the mental demands, i.e., judgment, originality, and other mental effort required, as affected by the quality and relevance of the available guidelines. The responsibility factor measures the assistance and control provided by the mission of the organization. The personal work relationships factor measures the skill required in work relationships with others and the importance of such relationships to the success of the work. The point totals for each of the 14 test job categories, as ranked by the Indiana system appear in Table 3.

Iowa

The State of Iowa has used the same job evaluation system, a point factor system since 1984. Iowa uses the same job evaluation factors for all of the job classifications included in this survey. The respondent stated on the survey that: "as is true for most point-factor job evaluation systems, our system is time consuming and subjective. Reliability can also be a problem since opinions vary from person to person and over time".

Table 3 Test job categories as evaluated by the system used by the state of Indiana.

CLASSES	JOB REQUIREMENTS*	
	Degree**	Points
1. Accountant	B4	100
2. Attorney	C4	120
3. Clinical Health Scientist	No match	
4. Social Worker III	B4	100
5. System Analyst III	B4	100
6. Chemist II	B4	100
7. Librarian III	B4	100
8. Personnel Officer III	B3	80
9. Psychiatrist III	C6	160
10.Psychologist EVII	C5	140
11.Nurse IV	B3	80
12.Research Biologist	B4	100
13.Social Service Specialist	No match	
14.Highway Engineer III	B4	100

*The Job Requirements factor is one of the four factors use in Indiana.

**Degree refers to c combination of "nature and extent of knowledge" and "level of knowledge and abilities required". For example, there are three levels, A,B,C in the "nature and extent of knowledge". There are six levels, 1 to 6 in the "level of knowledge and ability required". For each combination, points are assigned.

There are four factors which are based on the Equal Pay Act Categories: SKILL, EFFORT, RESPONSIBILITY, AND WORKING CONDITIONS. Additionally, these are mandated by the state code: "The compensation for state jobs will be determined by the skill, responsibility, effort, and working conditions necessary to do each(chapter 79.18, code of Iowa). According to the survey respondent, "The comparable worth study conducted by Arthur Young and Company took those four areas and further subdivided them into thirteen factors."

Within each of the thirteen factors there are several different degrees or levels that are used to evaluate the job class. Each of the levels within the factor have a given point value. The points of the thirteen factors are added together to determine the total point score for the class. The total points then determines in which pay grade the classes should be.

This first category "skill" has three subfactors which are education, experience, and personal contacts. The second category "effort" has five subfactors which are job complexity, guideline/supervision, physical demands, mental/visual demands, and work pace/pressure. The third category "responsibility" has three subfactors which are supervision exercised, scope & effect, and impact of error. The fourth category "working conditions" has two subfactors which are working environment and hazards/risks.

The education factor measures the academic preparation

and/or technical training at the entry level considered to be the normal or typical prerequisite to learning and performing the job at the entry level. This preparation or training refers to that which provides a basis or foundation for the development of adequate job skills and overall job competence. The factor refers to the attainment of knowledge and skills typically obtained through formal educational institutions, rather than through on-the-job experience.

The experience factor evaluates the least amount of time normally required for a person with the specified formal training/educational knowledge of background to acquire the related knowledge and skills to perform the job satisfactorily under normal supervision. Qualifying experience may have been acquired on prior related work or lower-level jobs, either within state government, other former employment, volunteer work, on-the-job training, or any other relevant source.

The personal contacts factor measures the responsibility for effective handling of any personal contacts or interactions with persons not in the supervisory chain. Consideration is given to the frequency, nature or type, importance, the setting in which the contact takes place, and such matters as cooperation, tact, or persuasiveness required to properly fulfill the objectives of the contacts. These contacts may be in person or over the telephone/radio. The type of the contact selected must be the same as the contacts which serve as the basis for the level of purpose

selected(respondent from the State of Iowa). Findings for the fourteen test job categories appear in Table 4.

Louisiana

The State of Louisiana uses the same job evaluation factors for all of the job classifications included in this survey. The job evaluation system which is a single point factor system had nine factors which are education, experience, organizational control, persons contacted, purpose of contacts, complexity, job responsibility, physical demands, and unavoidable hazards.

The first category "skill" has three subfactors which are education, experience, and personal contacts. The education factor measures the minimum educational level required by the job. The minimum educational level is defined as that level of education or formal classroom training that an individual must possess prior to entry into a job in order to become proficient at the job duties within a reasonable time period.

The experience factor is intended to give credit for job related experience which is required in order to become proficient in performing job duties within a reasonable time period. It is used in conjunction with the education factor.

The personal contacts factor includes face to face contacts and telephone and radio dialogue with persons not in the supervisory chain. Contacts credited under this factor are only those which are essential to successful performance of

job duties. This is further divided into two dimensions which are intended to separately measure who is contacted and the purpose of the contact (respondent from State of Louisiana).

Findings for the fourteen test job categories appear in Table 5.

Minnesota

The State of Minnesota has used the same job evaluation system, the Hay system, since 1984. "This system involves comparing jobs with respect to three factors common to all jobs: know how, problem solving, and accountability. Each of these factors is further divided into subfactors. For example, there is substantive know-how, managerial know-how, and human relations know-how" (Treiman, 1979). Minnesota uses the same job evaluation factors for all of the job classifications included in this survey. Findings for the fourteen test job categories appear in Table 6.

North Dakota

The State of North Dakota has used a point factor system for job evaluation for many years. In their point factor system there are four factors: knowledge and skills, complexity, accountability, and special working conditions.

The first category "knowledge and skills" has three subfactors which are technical know, management breadth, and interpersonal skills. The second category "complexity" has two

Table 4 Test job categories as evaluated by the system used by the state of Iowa.

CLASSES	SKILL***						
	Education**		Experience		Personal Contacts		Total
	Dg.*	points	Dg.	points	Dg.	points	
1. Accountant II	6	77	4	36	2c	36	149
2. Attorney 2	8	150	4	36	4d	78	264
3. Clinical Health Scientist	N. C. C.						
4. Social Worker 3	6	77	4	36	3d	60	173
5. Programmer	6	77	3	22	3b	60	135
6. Chemist 2	6	77	4	36	3c	47	160
7. Librarian 2	7	129	3	22	2d	47	198
8. Personnel Mang. Specialist 2	6	77	4	36	3d	60	173
9. Psychiatrist	Not rated						
10. Psychologist 2	7	129	4	36	4d	78	243
11. Nurse	6	77	2	13	3d	60	150
12. Wildlife Biologist 2	6	77	4	36	3d	60	173
13. Social Worker 2	6	77	2	13	3d	60	150
14. Tran. Engineer 1	6	77	5	60	3c	47	184

*Degree or level on the subfactor scale.
**Education, Experience, and Personal contacts are treated as separate subfactors of "Skill". The total is the combined point value of the three subfactors, equally weighted.
***The skill factor is one of the four factors used in Iowa.

Table 5 Test job categories as evaluated by the system used by the state of Louisiana.

CLASSES	SKILL***						
	Education**		Experience		Person Contacts		Total
	Dg.*	points	Dg.	points	Dg.	points	
1. Accountant 2	5	255	3	206	3	52	513
2. Staff Attorney	7	378	3	206	5	101	685
3. Clinical Health Scientist	No match						
4. N.H. Clinical Social Worker	6	316	3	206	4	77	599
5.Programmer Analyst 1	5	255	3	206	3	52	513
6.Laboratory Scientist 2	5	255	2	108	2	28	391
7.Librarian 2	6	316	2	108	3	52	476
8.Human Resource Program Manager 1	5	255	4	304	4	77	636
9.Psychiatrist 1	9	500	3	206	4	77	783
10.Psychologist 2	8	439	3	206	3	52	697
11.Registered Nurse 2	5	255	1	10	3	52	317
12.Research Biologist	No match						
13.Social Service Specialist 2	5	255	4	304	4	77	636
14.Engineer	5	255	4	304	4	77	636

*Degree or level on the subfactor scale.
**Education, Experience, and Personal Contacts are treated as separate subfactors of "skill".
***The skill factor is one of the four factors used in Louisiana.

Table 6 Test job categories as evaluated by the system used by the state of Minnesota.

CLASSES	KNOW HOW*	
	Degree**	points
1. Accounting Officer Intermediate	D12	175
2. Attorney 2	F12	264
3. Clinical Health Scientist	No match	
4. Social Worker Senior	E12	175
5. Systems Analyst	E12	200
6. Bacteriologist 2	E11	175
7. Library/Info.resource Spec. Senior	E12	200
8. Personnel Officer Senior	D12	175
9. Staff Physician	F12	304
10.Psychologist 2	E12	230
11.Registered Nurse	D12	152
12.N.R.Specialist, SR. (Fisheries research)	E12	200
13.Social Service Specialist	No match	
14.Engineer Senior	E12	230

*"Know-how" is one of three compensable factors identified by the Hay system. The others are "Problem Solving" and "Accountability".

** The Hay system uses a combined set of rating levels(degrees) to determine the number of points. For example, using the Attorney 2 category, "F" is the sixth level of the subfactor "substantive know how"; "1" is the first level of the subfactor "managerial know how"; and "2" is the second level of the subfactor "human relations know how". These are combined to create "F12" which corresponds to 264 points.

subfactors which are guidelines and mental challenge. The third category "accountability" has three subfactors which are independence of action, effect of decisions, and control of budget. The fourth category "working conditions" has limited use at present.

Of specific interest in this study are the three subfactors of "Knowledge and Skills". These are further defined as:

> Technical know: this is a measure of the specialized knowledge and skills required in a class which are gained through education, training, and experience or any combination thereof.
>
> Management breadth: managerial breadth is a measure of the breadth of management required of a class. It is concerned solely with the management process. Managerial breadth requires knowledge and skills regarding such concepts as organization, direction, coordination, and evaluation of people. It is not concerned with technical knowledge and skills except as required for managerial integration.
>
> Interpersonal skills: this is a measure of the degree of person-to-person interaction required of the class.

Findings for the fourteen test job categories used in North Dakota appear in Table 7.

Ohio

The State of Ohio has used the same job evaluation system since 1986. They are satisfied with their job evaluation system but noted the job evaluation system was just reviewed for some minimal refinements to get rid of all potential sex bias, and allow union classes to be eligible for some degrees previously restricted to supervisory/managerial classes where it could be proved the scope of responsibility was comparable.

They do not use the same job evaluation factors for all of the job classifications included in this survey. They explained that for the Psychiatrist class, since "originally evaluation system results in pay ranges with only minimum and maximum rates to allow for flexibility in hiring and awarding raises. The class is now covered by contract"(from the survey). Additionally the pay range for the match for our Transportation Engineer was set by legal statute in the state of Ohio.

There are twelve factors in the Ohio job evaluation system. Under the Equal Pay Act Categories, the skill factor has two subfactors which are worker-characteristics and mental skills. The second factor, effort has two subfactors which are mental demands and physical demands. The third factor, responsibility has six subfactors which are supervision exercised, policies & methods, assets, personal contacts, records & reports, and safety of others. The fourth factor, working conditions has two subfactors which are unavoidable hazards and surroundings.

Focusing on the subfactors of skill, the Ohio system defines these as:

> Worker characteristics: this refers to the knowledge, skills, abilities and other characteristics required of the executive for acceptable performance on the job; the requirements for knowledge of and interpretation and application of the principles and procedures of a field of study; the ability to define and solve problems; and the ability to participate in the development of policies and programs and apply the principles and procedures of management and administration. The determination of the level is based on the nature and complexity of the

Table 7 Test job categories as evaluated by the system used by the state of North Dakota.

CLASSES	SKILL***			
	Tech.knowledge* (degree)*	Mngt.Breadth (degree)	Interpersonal (degree)	Total
1. Accountant	Not factored			
2. Attorney	6	A	3	176
3. Clinical Health Scientist	N.C.C.			
4. Clinical Social Worker	6	A	3	153
5. Data System Analyst	Not factored			
6. Laboratory Scientist	N.C.C.			
7. Librarian	Not factored			
8. Personnel Analyst II	6	A	3	153
9. Psychiatrist	N.C.C.			
10. Psychologist II	6	A	3	133
11. Registered Nurse I	5	A	2	101
12. Research Biologist	N.C.C.			
13. Social Services Specialist	N.C.C.			
14. Highway Engineer II	5	B	2	116

* Degree of level on the subfactor level.
** Technical knowledge, Managerial Breadth, and Interpersonal skills are treated as separate subfactors of "skill".
***The skill factor is one of the four factors used in N.Dakota.

knowledge, skill, ability or other executive characteristics required.

Mental skills: this refers to the necessity for, and the extent of analysis, judgment, initiative and ingenuity required in performing the duties of the position. The determination of the degree and the point rating for mental skills is based on the scope, variety and complexity of tasks, and skills required, the importance of decisions made, the extent of planning necessary, the frequency of occurrence of problems and their impact, and the difficulty in achieving solutions to problems. Consideration is given to the extent to which the requirement for mental skills is limited by the repetitive character of the work and the extent of supervision received.

Findings for the fourteen test job categories ranked by the state of Ohio appear in Table 8.

Tennessee

The State of Tennessee has used a point factor system to evaluate its jobs since 1984. The state is satisfied with its job evaluation system but have encountered difficulties using it to grade classes which have high turnover and retention problems, and those classes whose salaries are market-driven. They use the same job evaluation factors for all of the job classifications included in this survey.

There are thirteen factors in Tennessee's job evaluation system. The first category "skill" has two subfactors, knowledge and experience. The second category "effort" has six subfactors, supervision exercised, policy and methods, assets, personal contacts, records and reports, and safety of others. The third category "responsibility" has three subfactors, mental skills, mental demands, and physical demands. The

Table 8 Test job categories as evaluated by the system used by the state of Ohio.

CLASSES	SKILL***				
	Worker character.**		Mental skills		Total
	Degree*	Points	Degree	Points	
1. Accountant	11	28	5	16	44
2. Attorney	10	22	6	24	46
3. Clinical Health Scientist	10	22	5	16	38
4. Clinical Social Worker	9	17	4	10	27
5. Data System Analyst	9	17	4	10	27
6. Laboratory Scientist	10	22	4	10	32
7. Librarian	9	17	5	16	33
8. Personnel Mgmt. Analyst	Not compared				
9. Psychiatrist	Not compared				
10. Psychologist	11	28	6	24	52
11. Registered Nurse	10	22	4	10	32
12. Research Biologist	10	22	5	16	38
13. Social Service Specialist	9	17	4	10	27
14. Tran. Engineer	Set by law.				

*Degree or level on the subfactor scale.
**Worker character and Mental skills are treated as separate subfactors of "skill".
***The skill factor is one of the four factors used in Ohio.

fourth category "working conditions" has two subfactors, unavoidable hazards and surroundings.

There are two special classes and which should receive extra attention. One is 'Attorney', a position on the staff of individual agencies and which does not report to the Attorney General's Office. This class performs legal work comparable to that described in the test job profile given in the survey except that they rarely represent the agencies in court. This function is performed by staff in the Attorney General's Office. Salary for these Attorneys are unavailable. The other special case is Transportation Engineer. The point total score of this class does not correspond to the salary grade because the salary for this class is market-driven. The total points have been included in this survey but are not used for the purposes of setting salaries for this class.

Findings for the fourteen test job categories appear in Table 9.

Vermont

In 1985, the State of Vermont was in a transition period between use of the Hay system and a highly similar system used by Norman Willis & Associates of Seattle. They are now using the Willis system and use the same job evaluation factors for all of the job classification included in this survey. According to the survey respondent, generally speaking, the great majority of employees seem satisfied with the system,

Table 9 Test job categories as evaluated by the system used by the state of Tennessee.

CLASSES	SKILL***				
	Knowledge**		Experience		Total
	Dg.*	points	Dg.	points	
1. Accountant	6	22	1c	4	26
2. Attorney	10	40	1c	4	44
3. Clinical Health Scientist	No match				
4. Clinical Social Worker	8	30	--------		30
5. Data Systems Analyst	6	22	1c	4	26
6. Laboratory Scientist	7	26	1c	4	30
7. Librarian	8	30	2c	8	38
8. Personnel Management Analyst	6	22	3c	12	34
9. Psychiatrist	No match				
10. Psychologist	10	40	-------		40
11. Registered Nurse	5	15	1b	3	18
12. Research Biologist	9	34	1c	4	38
13. Social Services Specialist	6	22	1c	4	26
14. Transportation Engineer	7	26	1c	4	30

*Degree or level on the subfactor scale.
**Knowledge and Experience are treated as separate subfactors of "skill".
***The skill factor is one of the four factors used in Tennessee.

based upon the(low) number of appeals. However, as a result of their comprehensive classification review (1984-86) certain occupational groups (engineering and data processing, in particular) felt that they lost ground in relation to other occupational categories. They have criticized the Willis evaluation system as a result. Yet, according to the survey respondent, the real issue is compensation relative to market rates, rather than internal equity in class ranks.

Findings for the fourteen test job categories ranked by the Vermont system appear in Table 10.

Washington

The State of Washington has used a point factor system to evaluate jobs since 1984. They use the same job evaluation factors for all of the job classifications included in this survey.

There are eight factors in their job evaluation system. The first category, knowledge & skills, has two subfactors, job knowledge and interpersonal skills. The second category, mental demands, has two subfactors, independent judgment and problem solving. The third category, accountability, has two subfactors, freedom to take action and impact on results. The fourth category, working conditions, has two subfactors, physical effort and hazards.

The main factor is defined as:

> Knowledge and skills: encompasses the total amount of understanding, familiarity with facts or information, or

dexterity necessary to perform the job in a satisfactory manner. It may be gained through experience, association, aptitude, training and/or education. There are two parts to this component: one is job knowledge-what the position incumbent must know or know how to do to perform satisfactorily. The other is interpersonal skills-direct contact skills in relationships with people within and outside the organization.

Findings for the fourteen test job categories appear in Table 11.

Comparison Across States

The ratings described above and presented individually in Table 3 to 11 can also be compared across the states. For example, Table 12 shows the Ranking Order Comparison among nine states (only using the skill factor). There were several steps involved in producing this table. First, the State of Michigan Civil Service Department defined the educational or degree requirements for each of the job categories. These were then coded, using "*" for general bachelors, "**" for specific bachelors, "$" for general masters, "$$" for specific masters, "+" for Ph.D, and "++" for M.D.(medicine). These requirement codes are based on the "Summary of Qualification Required" for each of the fourteen job categories in Michigan(see Appendix 3). Then, using the total points for each of the fourteen test job categories, (as evaluated by the each state, see Tables 3 to 11), the overall rank order was produced for each state. Finally, a rank order comparison across the nine states was produces.

Table 10 Test job categories as evaluated by the system used by the state of Vermont.

CLASSES	KNOWLEDGE & SKILLS*	
	Degree**	Points
1. Accountant	E1N***	184
2. Attorney	In exempt service, no rating available.	
3. Clinical Health Scientist	E1Y	212
4. Clinical Social Worker	E1Y	184
5. Data System Analyst	E1N	212
6. Laboratory Scientist	E1X	160
7. Librarian	E1N	160
8. Personnel Management Analyst	E1Y	184
9. Psychiatrist	F1Y	320
10. Psychologist	E1Y	244
11. Registered Nurse	E1N	160
12. Research Biologist	E1N	184
13. Social Services Specialist	E1Y	184
14. Transportation Engineer	E1N	184

*The "knowledge and skill" factor is one of the four factors used in Vermont.
**Degree or level on the skill scale.
***The Vermont system used a combined set of rating levels (degree) to determine the number of points. For example, using the Accountant category, "E" is the fifth level of the subfactor "job knowledge"; "1" is the first level of the subfactor "job knowledge"; and "N" is the second level of the subfactor "interpersonal skills". There are combined to create "E1N" which corresponds to 184 points.

Table 11 Test job categories as evaluated by the system used by the state of Washington.

CLASSES	KNOWLEDGE & SKILL*	
	Degree**	Points
1. Accountant 2	E1N***	160
2. Attorney	No Evaluation	
3. Clinical Health Scientist	No Evaluation	
4. Psychiatric Social Worker II	E1Y	244
5. Computer Analyst/Programmer 3	E1N	184
6. Chemist 2	E1X	160
7. Librarian 3	F1N	212
8. Personnel Analyst 3	E1Y	212
9. Psychiatrist	No Evaluation	
10. Psychologist 5	F1Y	320
11. Registered Nurse 1	D1N	140
12. Wildlife Biologist 2	E1N	160
13. Social Worker 2	E1Y	212
14. Transportation Engineer 3	E1N	184

*The "knowledge and skill" factor is one of the four factors used in Washington.
**Degree or level on the skill scale.
***The Hay system used a combined set of rating levels (degree) to determine the number of points. For example, using the Accountant 2 category, "E" is the fifth level of the subfactor "job knowledge"; "1" is the first level of the subfactor "job knowledge"; "N" is the second level of the subfactor "interpersonal skills". There are combined to create "E1N" which corresponds to 160.

In Table 12, we are able to see the range of rankings for each test job. For example, the class of Accountant was ranked from one(highest) to eleven(near lowest) among nine states. We also see the patten of rank order among the nine states. For example, for those classes which require post-master's degree were ranked "the highest". The classes of Psychiatrist and Psychologist were ranked at the top, numbers 1 and 2 respectively. Those classes which require master degrees were ranked higher than those which require only bachelor's. But this is not in all the cases. The class of Librarian was ranked the lowest in Vermont, even though it requires special master's degree. It is a female-dominated job. Moreover, for those classes which are female-dominated jobs were ranked lower than those which are male-dominated jobs, regardless the educational requirement. For example, Transportation Engineer was ranked higher than Librarian.

Table 13 represents the total points comparison among the nine states. This table not only considers the skill factor but also other factors such as: effort, responsibility, and working conditions. The chart was created by computing the total points each job category received using factors derived from the Equal Pay Act Categories.

Table 14 was created using the same procedures as Table 12. First, using the total points for each of the fourteen test job categories, the rank order was established for the fourteen job categories in each state. Then, the ranking order

comparison was produced among the nine states. From Table 14, we are able to see a few findings. First, the range of rankings for each test job was shown. Second, even under the Equal Pay Act Categories, the same pattern of rank order was created (see comparison Table 12). Psychiatrist and Psychologist were ranked the highest. Registered Nurse and Librarian were ranked the lowest in some states. Again, female-dominated jobs were usually ranked lower than male-dominated jobs.

From these data, Table 15 was produced which shows the median value of the rating for each job category (based only on the skill factor). The reason for using the median is to avoid the effects of extreme numbers which occurs when the mean score is computed. In this table, the classes of Clinical Health Scientist and Psychiatrist were not included because many states reported that either they do not have a comparable class or have not evaluated this class.

Table 16 represents the median value of the rating for each job category under all of the Equal Pay Act Categories. Again, the classes of Clinical Health Scientist and Psychiatrist were not included in this survey because many states reported that they either do not have a comparable class or evaluate this class. In Table 15 and 16, we see that the same pattern of median order was produced, for both "skill" and "Equal Pay Act categories". In both, female-dominated jobs were ranked lower than male-dominated jobs, for

Table 12 Rank Order Comparison(using only skill factor)

Ed.[4] code		classification	Indiana	Iowa	Louisiana	Minnesota	N.Dakota	Ohio	Tennessee	Vermont	Washington
**	1	Accountant	4	11	8	8	1	3	9	5	8
JD	2	Attorney	3	1	3	2	-	2	1	-	-
+	3	Clinical Health Scientist	-	-	-	-	-	2	-	3	-
$$	4	Clinical Social Worker	4	5	7	8	2	9	6	5	2
**	5	Data System Analyst	4	12	9	5	-	9	9	3	6
*	6	Laboratory Scientist	4	8	11	8	-	7	6	11	8
$$	7	Librarian	4	3	10	5	-	6	3	11	3
*	8	Personnel Management Analyst	11	6	4	8	2	-	5	5	3
++	9	Psychiatrist	1	-	1	1	-	-	-	1	-
+	10	Psychologist	2	2	2	3	4	1	2	2	1
**	11	Registered Nurse	11	8	12	12	6	7	12	11	11
$$	12	Research Biologist	4	6	-	5	-	4	3	5	8
*	13	Social Services Specialist	-	8	5	-	-	9	9	5	3
**	14	Trans. Engineer	4	4	5	3	5	-	6	5	6

[4] "*" for general bachelors, "**" for specific bachelors, "$" for general masters, "$$" for specific masters, "+" for Ph.D, and "++" for M.D.

Table 13 Total Points for each Job Class Comparison across Nine States

Ed. Code		Classification	Indiana	Iowa	Louisiana	Minnesota	N.Dokato	Ohio	Tennessee	Vermont	Washington
**	1	Accountant	385	324	1670	275	---	80	94	346	274
JD	2	Attorney	595	504	2367	464	339	92	144	---	---
+	3	Clinical Health Scientist	---	---	-----	---	---	71	---	393	---
$$	4	Clinical Social Worker	385	361	1926	275	276	50	106	324	457
**	5	Data System Analyst	385	327	1803	332	---	57	89	372	306
*	6	Laboratory Scientist	385	353	1474	275	---	57	93	275	277
$$	7	Librarian	425	362	1448	342	---	56	97	266	362
*	8	Personnel Manag. Analyst	395	360	1865	289	260	--	112	324	410
++	9	Psychiatrist	700	---	3421	588	---	--	---	611	---
+	10	Psychologist	620	422	2637	417	226	98	155	452	631
**	11	Registered Nurse	305	382	1559	238	155	80	103	287	264
$$	12	Research Biologist	420	385	----	353	---	68	108	334	287
*	13	Social Service Specialist	---	328	1939	---	---	50	85	339	397
**	14	Trans. Engineer	375	434	2258	393	225	--	121	345	345

Table 14 Rank Order Comparison (Equal Pay Act Categories)

Ed. Code		Classification	Indiana	Iowa	Louisiana	Minnesota	N.Dokato	Ohio	Tennessee	Vermont	Washington
**	1	Accountant	7	12	9	9	--	3	9	5	10
JD	2	Attorney	3	1	3	2	1	2	2	-	--
+	3	Clinical Health Scientist	-	-	-	-	-	5	-	3	--
$$	4	Clinical Social Worker	7	7	6	9	2	10	6	9	2
**	5	Data System Analyst	7	11	8	7	-	7	11	4	7
*	6	Laboratory Scientist	7	9	11	9	-	7	10	12	9
$$	7	Librarian	4	6	12	6	-	9	8	13	5
*	8	Personnel Manag. Analyst	6	8	7	8	3	-	4	9	3
++	9	Psychiatrist	1	-	1	1	-	-	-	1	-
+	10	Psychologist	2	3	2	3	4	1	1	2	1
**	11	Registered Nurse	12	5	10	12	6	3	7	11	11
$$	12	Research Biologist	5	4	-	5	-	6	5	8	8
*	13	Social Service Specialist	-	10	5	-	-	10	12	7	4
**	14	Trans.Engineer	11	2	4	4	5	-	3	6	6

Table 15 Median Order for 14 Test Job Categories(only skill factor)

Classification	Median Order	Range of Order
1 Accountant	8	1,3,4,5,8,8,8,9,9,11
2 Attorney	2	1,1,1,2,2,3,3
3 Clinical Health Scientist	-*	3,4
4 Clinical Social Worker	5.5	2,2,4,5,5,6,6,7,8,9
5 Data System Analyst	9	3,4,5,6,9,9,9,9,12
6 Laboratory Scientist	8	4,6,6,7,8,8,8,11,11
7 Librarian	4	3,3,3,3,4,5,6,10,11
8 Personnel Management Analyst	5	2,3,4,5,5,5,6,8,11
9 Psychiatrist	-*	1
10 Psychologist	2	1,1,2,2,2,2,2,2,3,4
11 Registered Nurse	11	6,7,8,11,11,11,12,12,12
12 Research Biologist	4.5	3,3,4,4,5,5,6,8
13 Social Service Specialist	8	3,5,5,8,9,9,9
14 Transportation Engineer	5	3,4,4,5,5,5,6,6,6

* The classes of Clinical Health Scientist and Psychiatrist were not evaluated in this survey because many states reported that they do not either have this comparable class or evaluate this class.

examples, registered Nurse was ranked lower than Transportation Engineer. Classes which require higher education were ranked higher than those which require only bachelor's Psychologist was ranked the highest among 14 test job categories.

Table 17 identifies and compares the highest and lowest class among the nine states. It also shows the differences in the ranking that results when only the skill factor is used as compared to using factors reflecting all of the Equal Pay Act Categories. Under the skill factor, the class of Psychiatrist, Attorney, and Psychologist were frequently ranked as the highest classes. On the other hand, the class of Registered Nurse, Data System Analyst, Social Services Specialist, Clinical Social Worker, Laboratory scientist and Librarian were ranked the lowest. When all of the factors derived from the Equal Pay Act Categories are used, the class of Psychiatrist, Attorney, and Psychologist were, still ranked the highest. At the same time, many female dominated job categories, Registered Nurse, Librarian Social Services Specialist, and Clinical Social Worker were ranked the lowest. The Accountant is the only exception. Therefore, the result is almost identical. In other words, if we use only the skill factor to evaluate jobs, we see the same pattern of job rankings emerge as when all of the factors derived from Equal Pay Act Categories are used.

Table 16 Median Order for 14 Test Job Categories(Equal Pay Act Categories)

Classification	Median Order	Range of Order
1 Accountant	9	3,5,7,9,9,9,9,10,12
2 Attorney	2	1,1,2,2,2,2,3,3
3 Clinical Health Scientist	-*	3,5
4 Clinical Social Worker	6.5	2,2,6,6,6,7,7,9,9,10
5 Data System Analyst	7	4,7,7,7,7,8,11,11,11
6 Laboratory Scientist	9	7,7,9,9,9,10,10,11,12
7 Librarian	8	4,5,6,6,8,8,9,12,13
8 Personnel Management Analyst	6	3,3,4,4,6,7,8,8,9
9 Psychiatrist	-*	1
10 Psychologist	2	1,1,1,1,2,2,2,3,3,4
11 Registered Nurse	10	3,5,6,7,10,11,11,12,12
12 Research Biologist	5	4,5,5,5,5,6,8,8
13 Social Service Specialist	10	4,5,7,10,10,12,12
14 Transportation Engineer	4	2,3,3,4,4,5,6,6,11

* The classes of Clinical Health Scientist and Psychiatrist were not evaluated in this survey because many states reported that they do not either have this comparable class or evaluate this class.

Table 17 The Comparison of the highest and lowest class among nine states

State	Skill factor (only)		Equal Pay Act Categories	
	Highest	Lowest	Highest	Lowest
Indiana	Psychiatrist	Registered Nurse	Psychiatrist	Registered Nurse
Iowa	Attorney	Data System Analyst	Attorney	Accountant
Louisiana	Psychiatrist	Registered Nurse	Psychiatrist	Librarian
Minnesota	Psychiatrist	Registered Nurse	Psychiatrist	Registered Nurse
N.Dakota	Attorney	Registered Nurse	Attorney	Registered Nurse
Ohio	Psychologist	Social Service Specialist Clinical Social Worker Data System Analyst	Psychologist	Social Service Specialist Clinical Social Worker
Tennessee	Attorney	Registered Nurse	Psychologist	Social Service Specialist
Vermont	Psychiatrist	Laboratory Scientist Librarian Registered Nurse	Psychiatrist	Librarian
Washington	Psychologist	Registered Nurse	Psychiatrist	Librarian

CONCLUSION

As indicated in the research findings described above, there are nine states which are using single point factor system to evaluate their jobs. The others are using different evaluation systems such as the position classification, or the whole job system (shown in Table 2). At this time, there are only nine states that have job evaluation systems which are similar to the system Michigan wishes to develop. These systems were used for the purpose of comparing the fourteen test job categories.

Even though the issue of comparable worth is still in debate, the advocates of comparable worth see comparable worth as a remedy for eliminating wage discrimination, and job evaluation as a mechanism of eliminating pay inequity. A lot of comparable worth activities have been taken by many states. But the content of the comparable worth policies is often ignored. As noted earlier Evans and Nelson have stated "the content of comparable worth policies differs notably from state to state. Indeed, state variability of similarly labelled policies is one of the least-discussed aspects of the diffusion of innovation literature"(Evans and Nelson, 1989:74).

The contribution of this survey is to provide preliminary

data for looking at the content of comparable worth policies and job evaluation methods used by different states. The main finding from this pilot study has been that most states reported that they use the same job evaluation factors for all of the job classifications (Group 2 jobs) included in this survey. Yet, although the states use different job evaluation factors to evaluate jobs, the ranking produced are fairly similary. For example, the class of Registered Nurse was frequently ranked as the lowest class. And, the classes of Psychiatrist and Psychologist were ranked as the highest class (see Table 17). In sum, we see that the female-dominated jobs were frequently ranked lower than male-dominated jobs. In the process of job evaluation, the "skill" factor was often viewed as a very significant factor among other factors.

From this pilot study, we come to realize why the advocates of comparable worth claim that "sex discrimination" exists in the labor force. It is not easy to know to what extent sex discrimination involved in the wage setting, but certainly we see women still get lower pay than men do, regardless their educational attainments. It is very important to see the earning gap between men and women not only as an individual issue but also as an social issue. From a sociological point of view, the earnings gap may decline in the near future, but it is unlikely that it will become zero. Society is formed by different interest groups; some groups hold power, some do not. For those who have power will always make the decisions

for those who do not have the power.

The advocates of comparable worth should also understand that job evaluation is not a solution for eliminating pay inequity. From the research we found, female-dominated jobs were ranked lower than male-dominated jobs. Moreover, no scientific, objective and bias-free method has yet been developed. More research must be done in the area of methodology of job evaluation. Research has to be focused on "the content of the jobs" instead of "who perform the job".

As sociologists, we see how society defines men's and women's roles, and how the value of women's work is determined in the workplace. From a conflict perspectives, women are viewed as a powerless group in this society. They have less access to gain the power in order to control their position in our society. Society, at the same time, limits women's opportunities to improve their working position. From the wider context of cultural value, women have more traditional obligations than men do, that is why whenever women get into the labor market, they may have already lost their battle competing with men. If we want to gain power or improve the social status for women, we have to look at women in a different way. In other words, looking at women as individuals who could have the same ability as men do, not just "women".

APPENDICES

APPENDIX 1

Summary of Studies for Sex differences in Earnings on the Basis of Worker Characteristics only. This chart originally appeared in Mary Frank Fox and Sharlene Hesse Biber, Women at Work, 1984.

Author	Data Source and Population Studied	Measure of Earnings	Statistical Method and Explanatory Variables[a]	Women's Earnings as a Percentage of Men's[b]		Percentage of Gap Explained[c]
				Observed	Adjusted[d]	
		REPRESENTATIVE NATIONAL SAMPLES				
Blinder	SID:[e] White employed household heads, age 25 +, and employed spouses	1969 mean hourly earnings	R, S: 2, 9, 11, 12, 13, 14	56	56	0
Corcoran and Duncan	SID:[e] White employed household heads and employed spouses, age 18–64	1975 hourly earnings	R, S: 1, 5, 6, 9, 11, 12, 13, 14, 17	74	85	44
Gwartney and Stroup	Census: U.S. population, age 25 +	Median annual income 1959	F, R: 1, 2	33	39	9
		Median annual income 1969	F, R: 1, 2	32	40	12
	Full-time, year-round workers	Mean annual income 1959	F, R: 1, 2	56	58	4
Oaxaca[f]	SEO:[g] Urban employees, age 16 +	1967 hourly earnings	R, S: 1, 3, 7–10, 12, 13			
	White			65	72	20
	Black			67	69	6
Sawhill	CPS:[h] Wage and salary workers	1966 annual earnings	R: 1, 3, 10, 13	46	56	18
		NATIONAL SAMPLES, RESTRICTED AGE				
Kohen and Roderick	NLS:[i] Nonstudent, full-time wage and salary workers, age 18–25	1968–1969 hourly earnings	R, S: 1, 3, 4, 7–9, 13–15			
	White			76	78	8
	Black			82	81	−6
Mincer and Polachek	NLS,[i] SEO:[g] Married white wage and salary workers, age 30–44	1967 hourly earnings	R, S: 1, 6, 11	66	80	41

SOURCE: Donald Treiman and Heidi Hartmann, *Women, Work, and Wages: Equal Pay for Jobs of Equal Value* (Washington, D.C.: National Academy Press, 1981), pp. 20–21. Samples: Alan S. Blinder, "Wage Discrimination: Reduced Form and Structural Estimates," *Journal of Human Resources* 8(4), 1973, 436–455; Mary Corcoran and Gregory Duncan, "Work History, Labor-Force Attachment, and Earnings: Differences Between the Races and Sexes," *Journal of Human Resources* 14 (Winter 1979):3–20; James D. Gwartney and Richard Stroup, "Measurement of Employment Discrimination According to Sex," *Southern Economic Journal* 39(4), (1975):575–587; Ariv Ashenfelter and Albert Rees (eds.), *Discrimination in Labor Markets* (Princeton, N.J.: Princeton University Press, 1973); Isabel V. Sawhill, "The Economics of Discrimination Against Women: Some New Findings," *Journal of Human Resources* 8(3), (Summer 1973):383–396; Andrew I. Kohen and Roger D. Roderick, "The Effects of Race and Sex Discrimination on Early-Career Earnings," mimeo. Center for Human Resource Research, College of Administrative Science, Ohio State University, 1975; Jacob Mincer and Solomon Polachek, "Family Investments in Human Capital: Earnings of Women," *Journal of Political Economy* 82(2, Part II), (March–April, 1974):S76–S108.

[a] Statistical methods: F = frequency distribution or tabular standardization, R = regression analysis, S = separate equations for males and females.
Explanatory variables:
1. Education
2. Age
3. Race
4. Mental ability (intelligence)
5. Formal training
6. Actual labor market experience
7. Proxy for labor market experience
8. Marital status
9. Health
10. Hours of work (annual, weekly, full time/part time)
11. Tenure (length of service with current employer)
12. Size of city of residence
13. Region of residence
14. Socioeconomic background (parental education, occupation, income, number of siblings, migration history, ethnicity, etc.)
15. Quality of schooling
16. Record of absenteeism
17. Dual burden (number of children, limits on hours or location, plans to stop work for reasons other than training, etc.)

[b] Average female earnings expressed as a percentage of average male earnings.
[c] Adjusted earnings indicate the ratio of female to male earnings if the two sexes had the same average levels (or composition) on the explanatory variables. When several adjustments are presented in the original study their average is shown here.
[d] This is given by (expected − observed)/(100 − observed).
[e] SID = Panel Study of Income Dynamics
[f] Oaxaca also conducted some investigations using job characteristics as well as worker characteristics.
[g] SEO = Survey of Economic Opportunity
[h] CPS = Current Population Survey
[i] NLS = National Longitudinal Surveys (Parnes)

APPENDIX 2

The Equitable Classification plan

Job Evaluation Factors

For
Group One: Technical,
Office,
Para-professional,
Service Occupations

INDEX TO THE JOB EVALUATION FACTORS

FACTOR		OPERATIONAL* WEIGHT
1	Knowledge and Skill	27.5%
2	Judgement	15.0%
3	Responsibility for Financial and Material Resources	10.0%
4	Responsibility for the Well-Being of Others	10.0%
5	Responsibility for Information	10.0%
6	Responsibility for Communications and Public Relations	7.5%
7	Physical Effort	5.0%
8	Mental Visual Effort	5.0%
9	Work Environment	5.0%
10	Work Hazards	5.0%

*Maximum points per factor as percent of total possible points

6/23/89 NEW
Revised 1/31/90

FACTOR 1 - KNOWLEDGE AND SKILL

This factor ranks the knowledge and skills required to perform work assignments typical of the class at the experienced level which are acquired through education and work experience.

Degree	Description	Points
1	Work assignments do not normally involve reading and writing. Employees in the class may be required to read in order to follow instructions and to write in order to keep lists and complete forms. Work may require the ability to count, add and subtract. Job knowledge and skills normally gained through some general work experience related to the work assignments are required.	28
2	Work assignments require reading and some writing. Employees in the class are required to read and comprehend procedures and policies and to write in order to compile and organize information. Work may require ability to perform arithmetical calculations. Job knowledge and skills normally acquired through considerable general work experience related to the principle work assignments are required.	89
3	Work assignments require reading and writing. Employees in the class are required to write correspondence and reports. Work may require ability to use advanced arithmetic or to understand mathematical concepts. Job knowledge and skills normally acquired through considerable general work experience or some education related to the occupation, and some specialized work experience, are required.	151
4	Work assignments require the ability to read, write, develop and apply information related to a technical or specialized field. The ability to communicate technical or specialized ideas, concepts and information verbally and in writing is required. Work may require skill in the use of mathematics. Job knowledge and skills are normally gained through a directly related educational program and/or specialized, technical experience in the specific area of work.	213
5	Work assignments require employees in the class to possess considerable specialized technical knowledge and skill in such areas as: engineering or the physical or biological sciences, social or health sciences, business, etc. The ability to originate, interpret and communicate complex, specialized, technical concepts is required. Work may require advanced skill in the use of mathematics. Job knowledge and skills are normally acquired through considerable directly related education and/or considerable specialized technical/paraprofessional experience in the specific area of work.	275

Operational Weight: 27.5%

Revised 6/24/87
4/1/88
6/23/89

FACTOR 2 - JUDGEMENT

This factor ranks the judgement required to make decisions and take actions of increasing complexity, importance and consequence in order to carry out work assignments.

Degree	Description	Points
1	Employees in the class routinely exercise limited judgement. Actions are normally determined by specific instructions from the supervisor or by following well defined procedures, methods and practices.	15
2	Employees in the class routinely use judgement in making decisions where alternatives are determined by established policies and procedures, or methods and practices. Guidance and direction are generally available as needed.	49
3	Employees in the class routinely use independent judgement in making decisions without consulting available supervision. Guidelines are available in the form of policies, procedures and practices; however, the employee must use independent judgement to interpret and apply those guidelines to specific situations.	83
4	Employees in the class routinely exercise considerable independent judgement in making decisions without the availability of supervision. Guidelines may be available in the form of policies and procedures. The employee interprets and applies those guidelines with considerable latitude to a complex variety of situations.	116
5	Employees in the class routinely use extensive independent judgement without the availability of supervision or direction. General guidelines may be available in the form of laws, regulations, broad policies and procedures. The employee makes difficult decisions that may include taking immediate actions with limited opportunity to consider various alternatives.	150

Operational Weight: 15.0%

Revised 6/24/87
4/1/88
6/23/89

FACTOR 3 - RESPONSIBILITY FOR FINANCIAL AND MATERIAL RESOURCES

This factor ranks the degree of responsibility and accountability for financial and material resources of the state, including responsibility for: the control and disbursement of funds and other budget items; management of accounts; the safeguarding, use, or maintenance of property, natural resources or equipment of significant value; or the efficiency of operations.

Degree	Description	Points
1	Minimal responsibility for financial or material resources.	10
2	Responsible and accountable for money, materials, property, equipment, accounts, or efficiency of operations with financial impact on the department.	40
3	Responsible and accountable for: equipment, buildings, grounds, monies, etc. of considerable value; or the efficiency of operations with considerable financial impact on the department.	70
4	Responsible and accountable for material resources of significant value, for authorizing substantial expenditures, for conducting audits, etc. with substantial financial impact on the department.	100

Operational Weight: 10.0%

Revised 6/24/87
4/1/88
6/23/89

FACTOR 4 - RESPONSIBILITY FOR THE WELL-BEING OF OTHERS

This factor ranks the degree of responsibility for the well-being of others including responsibility for the protection of people, the provision of health care, educational, rehabilitation and related services, and for assuring the rights or safety of others.

Degree	Description	Points
1	Minimal responsibility for the well-being of others.	10
2	Responsibility for providing or approving services having a limited or indirect effect on the well-being of others.	40
3	Responsibility for directly affecting the quality of life or well-being of others through treatment, rehabilitation, etc.; or responsibility for providing or approving services having considerable indirect effect on the well-being of others.	70
4	Direct responsibility for the protection of people from life-threatening harm, for administering life-saving medical care, or for responding to life-threatening emergencies.	100

Operational Weight: 10.0%

Revised 6/24/87
4/1/88
6/23/89

FACTOR 5 - RESPONSIBILITY FOR INFORMATION

This factor ranks the degree of responsibility for information including responsibility for obtaining, recording, organizing, processing, and analyzing data and information.

Degree	Description	Points
1	Minimal responsibility for information.	10
2	Responsibility for the accuracy of information being recorded, processed, and maintained.	40
3	Responsibility for determining the content of information, deciding what information to collect, developing information and taking actions.	70
4	Responsibility for creating and using information and data through research, analysis, and report writing, or computer programming.	100

Operational Weight: 10.0%

Revised 6/24/87
4/1/88
6/23/89

FACTOR 6 - RESPONSIBILITY FOR COMMUNICATIONS AND PUBLIC RELATIONS

This factor ranks the degree of responsibility for communicating with others orally or in writing, the importance of such communications, and the difficulty of the interpersonal relations required to carry out work assignments.

Degree	Description	Points
1	The work includes responsibility for giving and receiving factual information orally and may involve some limited written communications.	8
2	The work involves responsibility for giving, receiving, interpreting, and explaining information, interviewing others to obtain information, or authoring written communications.	30
3	The work involves responsibility for affecting the development or behavior of others through interpersonal communications; or, for conducting investigative interviews, exchanging complex, critical information, or for explaining policy decisions; or for authoring complex written communications.	53
4	The work involves responsibility for the most complex interpersonal interactions and communications of the highest degree of importance and impact such as serving as departmental spokesperson, defending issues and decisions or providing expert testimony in administrative or legal proceedings, providing crisis intervention, or authoring highly complex written communications.	75

Operational Weight: 7.5%

Revised 6/24/87
4/1/88
6/23/89
1/31/90

FACTOR 7 - PHYSICAL EFFORT

This factor ranks the strength and stamina required to do the job considering the work position, the amount of standing, walking, carrying, etc., required; the weight of materials handled; and the continuity of effort.

Degree	Description	Points
1	Work involves normal physical effort to sit, walk, or stand at will.	5
2	Work involves long periods of confined sitting or standing, walking, bending, reaching, operating office equipment, etc.	20
3	Work involves considerable crawling, bending or stooping in confined spaces, climbing ladders and scaffolding, carrying medium loads, lifting heavy objects, or people.	35
4	Work involves carrying heavy loads, lifting very heavy objects or people (over 100 lbs.), or digging.	50

Operational Weight: 5.0%

Revised 6/24/87
4/1/88
6/23/89

FACTOR 8 - MENTAL/VISUAL EFFORT

This factor ranks the extent and frequency of concentration and attention to detail needed to complete tasks. It does not consider the analytical or reasoning ability required to do the job.

Degree	Description	Points
1	Work involves normal mental/visual effort. Duties may require occasional or intermittent periods of concentration or attention to detail.	5
2	Work involves a moderate degree of mental/visual effort which is a substantial part of the work.	20
3	Work involves considerable mental/visual effort and attention to detail.	35
4	Work involves high levels of mental/visual effort on repetitive production operations for sustained periods.	50

Operational Weight: 5.0%

Revised 6/24/87
4/1/88
6/23/89
2/23/90

FACTOR 9 - WORK ENVIRONMENT

This factor ranks environmental conditions which are inherent to the work site. It does not consider temporary or incidental fluctuations which may be caused by accident, mechanical failure or remodeling.

Degree	Description	Points
1	The work environment is well lighted and adequately heated and ventilated. It is generally free of extreme temperatures or noise or the discomfort of dust, dirt, dampness or unpleasant odors.	5
2	THE WORK ENVIRONMENT IS CHARACTERIZED BY MODERATE PHYSICAL DISCOMFORT DUE TO NOISE, HEAT, COLD, DIRT,OR UNPLEASANT ODORS.	20
3	The work environment is characterized by uncomfortable temperature variations or unpleasant levels of noise, dust and dirt, fumes, odors or dampness.	35
4	The work environment is characterized by temperatures, noise levels, dampness, dust, dirt, noxious fumes, or odors which are extreme.	50

Operational Weight: 5.0%

Revised 6/24/87
4/1/88
6/23/89
2/23/90

FACTOR 10 - WORK HAZARDS

This factor ranks the degree of hazard involved in the work and the probability of incurring work related illness or injury in the normal conduct of the work assuming the observance of all health and safety regulations.

Degree	Description	Points
1	The work involves little or no exposure to work related illness or injury.	5
2	The work involves significant chance of incurring injury or illness. The seriousness may call for professional medical treatment and may require time away from work.	20
3	The work involves significant chance of incurring SERIOUS disabling, or life threatening illness or LONG TERM illness or injury.	35
4.	THE WORK INVOLVES SIGNIFICANT CHANCE OF INCURRING LIFE THREATENING INJURY.	50

Operational Weight: 5.0%

APPENDIX 3

Survey Research for State Michigan Civil Service Department

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

DEPARTMENT OF CIVIL SERVICE

P. O. BOX 30002
LANSING, MICHIGAN 48909

MARTHA BIBBS, State Personnel Director

August 16, 1989

Dear

The Michigan Civil Service Department is currently conducting a survey of several jurisdictions which were reported to be developing or using a point factor job evaluation system in a study conducted by the International Personnel Management Association in 1985. Of particular interest to us at this time is how different systems are being used to evaluate professional classifications at bachelor's, master's, and post-master's degree levels, and how several classes are ranked by job evaluation points in your system.

We would greatly appreciate your organization's participation in our survey. We would be happy to provide you a copy of our findings if you would like one.

Enclosed is a copy of the job description for each of the fourteen classes about which we are gathering information. An example of a partially completed survey form for the State of xxx is also included. Please report on the job class/classes in your jurisdiction which are most similar to the job descriptions we have enclosed and which most nearly match the qualifications requirements listed. We would also appreciate receiving a copy of your job descriptions for the identified classes if they are available.

Please return the completed questionnaire by September 1, 1989. If you have any questions regarding the survey, please call me at (517) 373-1698. Our FAX # is 517 335-0054.

Sincerely,

Katie Garner

Katie Garner
Merit Systems Review

Participant Information Sheet

Person Completing the Survey _____

Title _____

Organization _____

Phone # _____

Address _____

_____

_____

-Is the information you provide for the survey confidential?
Yes____ No____

-Would you like to receive a copy of the results ? Yes___ No___

Directions for completion of the attached form:

1. Please review the job descriptions we have enclosed and determine whether there is a comparable classification in your system. A summary sheet indicating the qualification requirements for each class surveyed is provided for your information.

2. If there is a comparable class in your system, please provide the information requested below. A sample of a partially completed form is provided for your information.

   A. Please list specific job evaluation factors used in your system under each Equal Pay Act Category.

   B. List the assigned degree for each specific job evaluation factor and the number of points.

   C. Show the total number of job evaluation points for each class.

Please answer the questions below:

1. Does your jurisdiction use the same job evaluation factors for all of the job classifications included in this survey?

   Yes_____ No_____

   If No, please describe the differences_____

   _____

   _____

   _____

2. ____A. We previously received a copy of your job evaluation fators dated_____. Are they still being used? Yes___NO___

   ____B. We do not have a copy of your job evaluation factors, please send us a copy of your factors.

   ____C. If you are not able to provide a copy of your factors, please explain how "Skill" is ranked within professional non-supervisory classifications in your system.

3. Is your jurisdiction satisfied with the job evaluation system/systems being used to rank the jobs included in this survey?

   Yes_____ No_____

   If No, please explain reason _____

   _____

   _____

   _____

	Skill	Effort	Responsibility	Working Conditions	Total # of Job Evaluation Points
List specific Job evaluation factors for each category					
1. Accoutant Factor degree assigned					
#of points					
2. Attorney Factor degree assigned					
# of points					
3.Clinical Health Scientist Factor degree assigned					
#of points					
4. Clinical Social Worker Factor degree assigned					
# of points					
5. Data Systems Analyst Factor degree assigned					
# Of points					
6. Laboratory Scientist Factor degree assigned					
# of points					
7. Librarian Factor degree assigned					
# of points					

EQUAL PAY ACT CATEGORIES

List specific Job evaluation factors for each category	Skill			Effort					Responsibility			Working Conditions		Total # of Job Evaluation Points
	Education	Experience	Person Contacts	Job Complexity	Guideline/ Supervision	Physical Demands	Mental/ Visual Demands	Work Pace/ Pressure	Supervision Exercised	Scope & Effect	Impace of Error	Working Environment	Hazards/ Risks	
1. Accoutant Factor degree assigned	6	5	3	2	3	1	2	1	1	3	3	1	1	
#of points	150	120	70	100	125	20	30	20	10	80	90	10	10	835
2. Attorney Factor degree assigned	7	6	4	3	3	1	2	1	1	4	4	1	1	
#of points	180	150	90	120	125	20	30	20	10	100	120	10	10	985
3. Clinical Health Scientist Factor degree assigned		etc.												
#of points														
4. Clinical Social Worker Factor degree assigned														
#of points														
5. Data Systems Analyst Factor degree assigned														
#of points														
6. Laboratory Scientist Factor degree assigned														
# of points														
7. Librarian Factor degree assigned														
#of points														

Summary of Qualifications Required*

Survey Class	Education	# years of Experience
1. Accountant	B.S. with 23 credit in accounting	2
2. Attorney	J. D. and Membership in Michigan State Bar	2
3. Clinical Health Scientist	Ph.D. in a field of Medicine, biology, microbiology, chemistry or biochemistry.	3
4. Clinical Social Worker	M.S.W.	2
5. Data Systems Analyst	B.S. with 32 hours of computer related courses.	2
6. Laboratory Scientist	B.S. in chemistry, biochemistry forensic science or a related area or applied field.	2
7. Librarian	M.A. in library science	2
8. Personnel Management Analyst	B.A. or B.S. any field	2
9. Psychiatrist	M.D. Licensed to practice medicine in Michigan.	0
10. Psychologist	Michigan licensure as a PhD. and psychologist	2
11. Registered Nurse	B.S. in Nursing and Michigan licensure	None
12. Research Biologist	M.S. in wildlife management, wildlife biology, fisheries management, fisheries biology, or a related biological science with a research emphasis.	2
13. Social Services Specialist	B.A., or B.S. in one of the following areas: social welfare social work, human resources, human resources development, sociology, psychology, family ecology, cocnsumer/community services, family and child development, counseling and guidance, criminal justice, gerontology,	2

	special education, education of the emotionally disturbed, or education of the gifted.	
14.Transportation Engineer	B.S. in engineering.	2

*The journey level (full-functioning, experienced) is the level being surveyed in each class series.

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