

CHAPTER 34

Job Evaluation in Organizations

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1. INTRODUCTION

Why is it that Sam Jones, engineer, makes more money than Ann Banks, who is also an engineer in the same company? Is this an example of sex discrimination in wages? What if we were also to report that Ann Banks makes more money in her engineering job than Ted Adams, an entry-level programmer? Would this lessen your suspicions about the wage-setting practices of our fictitious company? If your response is one of uncertainty, then you probably recognize that several factors need to be considered in determining wages for individuals. First, any wages paid to employees should satisfy an internal consistency criterion. Jobs *inside an organization* are compared to a set of standards and each other to determine their relative contributions to the organization's objectives. To satisfy employee expectations about fairness, more valuable jobs should receive higher "scores" in the comparison process. In our example above, internal consistency triggers the question: How does the work of an engineer compare with that of an entry-level computer programmer? The second wage-determination factor is external competitiveness. Wages for jobs inside an organization should be compared against *wages outside the organization paid by competitors*. How much do other employers pay engineers, and how much do we wish to pay our engineers in comparison to what other employers would pay them? Finally, wages are also a function of the distinctive contributions that individual employees make on their jobs. The level of individual contributions depends on an assessment of *performance and/or seniority of people doing the same job or possessing the same job skills*. Before we jump to the conclusion that Sam Jones should not be making more than Ann Banks because they both are engineers, we must first assess whether their individual contributions have been identical. The pay differential may be warranted if Sam consistently performs better than Ann or if he has more seniority.

Of these three factors affecting wages, this chapter concentrates on only one: the process of determining internal consistency. Specifically, we focus on ways that organizations compare jobs in terms of their relative contributions to the goals of the firm. To the extent this process of ensuring internal consistency is successful, several positive outcomes can be expected. Research suggests that internal consistency may improve both employee satisfaction and performance (Lawler 1986). Alternatively, a lack of internal consistency can lead to turnover, grievances and decreased motivation (Livernash 1957). Without a fair structure, employees may resent the employer, resist change, become depressed, and "lack that zest and enthusiasm which makes for high efficiency and personal satisfaction in work" (Jacques 1961).

The first stage in determining the relative worth of jobs is to assess what the content of these jobs is! This process, as described elsewhere in this Handbook, is called job analysis. A job analyst is charged with the responsibility of acquiring valid (relevant) and reliable (consistent) information about the contents and requirements of jobs. The information obtained through job analysis is usually codified and documented in a job description. It provides a foundation for various human resource management functions, such as establishing selection criteria, setting performance standards, and determining compensation. For our purposes here, the most important function of job analysis is to provide input information into determining the relative worth of jobs within an organization. This process of systematically comparing the contents and requirements of jobs to determine their relative worth (rank ordering) within the organization is called job evaluation. One of the outcomes of this evaluation process is usually a hierarchy of jobs arranged from most valuable to least valuable.

The resulting job structure can be used as a guide in setting pay rates. For the rates to be equitable, jobs that are higher in the structure should be paid more than jobs that are lower in the job structure. This is an important point! Even though this chapter focuses primarily on the ways that organizations determine the relative value (i.e., compared to each other) of jobs, at some point a comparison must be made to external market wages. This external comparison may be the source of an important conflict. Occasionally, jobs that are similar in worth to the organization may be dissimilar in price in the labor market! Suppose, for example, that for a particular organization "skill" and "effort" are judged by top management to be equally important in achieving corporate objectives. Some jobs in that organization may require more skill than effort and other jobs may require more effort than skill.

These jobs will nonetheless be valued similarly in the job structure. The market rates for these jobs, however, may be quite different. Other organizations may not value skill and effort equally. Or perhaps market supply is lower and market demand is higher for people capable of performing the skilled jobs, resulting in higher market wages for the "skill" jobs relative to the "effort" jobs. Thus, for the organization to attract the most qualified workers, it may have to offer wages that are higher than it would offer on the basis of internal consistency alone.

The balance between internal consistency and external competitiveness is a key issue in any employer's compensation strategy. One firm may emphasize an integrated approach to all human resource management, and internal consistency of pay would be part of that strategy. If so, there would be a relatively close correspondence between its job structure and its pay structure. Another firm may emphasize the relationship between its pay level and pay levels in the labor market. In this firm, there may not be as close a correspondence between the company's job structure, as originally determined through job evaluation, and its pay structure. Indeed, as we shall discover, the firm may not even systematically develop a job structure through job evaluation, choosing rather to adopt the external market's evaluation of jobs (i.e., adopt wholesale the market rate without considering internal worth).

This tension between value as assessed within an organization and value as assessed by competitors in the external labor market is but one of several conflicts that may arise in deciding on wages for jobs. Indeed, other "actors" have also influenced the wage-determination process.

1.1. The Influence of Society and Its Values on Job Evaluation

In some societies, at different times through history, egalitarian value systems have been adopted by entire countries. An egalitarian philosophy implies a belief that all workers should be treated equally (Matthew 20.1–16). To some extent, this philosophy underlies the job-evaluation process in those remaining countries that can be classified as communist or socialist. Although some differentials do exist across different jobs, the size of these differentials is much smaller than if this societal influence were not present. Given the recent movement toward capitalism around the world, it is evident that an egalitarian policy may not continue to exert a strong influence over the valuation of jobs.

A second example of societal impacts on wage determination is illustrated by the "just wage" doctrine (Cartter 1959). In the 13th century, skilled artisans and craftsmen began to prosper at the expense of nobles and landowners by selling goods and services to the highest bidders. The church and state reacted by proclaiming a schedule of "just wages" that tended to reflect that society's class structure and that were consistent with the prevailing notion of birthrights. In essence, the policy explicitly denied economic factors as appropriate determinants of pay.

The proliferation of computers and accompanying information explosion in the recent past has forever changed the way work is done. Not surprisingly, countless companies (like Bayer) have been forced to make "retain, reject, or redesign" decisions about their job-evaluation systems. Most have chosen the redesign option in order to keep the values that have made them so successful but incorporate their new perspectives regarding employee autonomy, teamwork, responsibility, and the like (Laabs 1997). Sometimes referred to as competencies or value driver, job characteristics such as leadership required and customer impact are beginning to form the basis for a whole new set of compensable factors (Kanin-Lovers et al. 1995; McLagan 1997).

1.2. The Influence of Individuals on Job Evaluation

Normally great pains are taken to ensure that position evaluation is kept entirely independent from person evaluation (i.e., job evaluation is kept distinct from performance evaluation, which involves the evaluation of individuals as they perform jobs). Seasoned job evaluators counsel novices to determine the worth of a job independent of its incumbent. The focus should always be on the work, not the worker. After all, a job is relatively stable, whereas the person holding that job may change regularly. For the purposes of determining job worth, individuals are viewed as interchangeable. To deal with the distinction between job and person value, organizations traditionally have set upper and lower limits on job worth (called pay grade minimums and pay grade maximums) and allowed salary to fluctuate within that grade as a function of individual performance or worth.

For certain jobs, though, the worth of the job is inextricably linked to the incumbent performing the job (Pierson 1983). This exception is particularly evident for managerial and executive positions. The person's unique abilities and knowledge may shape the job. For these jobs, the relative importance of the individual occupying the job leads to increased emphasis on personal attributes in job valuation. The top jobs in almost any organization seem to be designed more around the talents and experience of the individuals involved than around any rigidly defined duties and responsibilities. For professional workers, too, the nature of their work and the knowledge they bring to the task may make it difficult to distinguish job worth from individual worth. Thus, for professionals such as scientists or engineers, pay may reflect individual attributes, accomplishments, or credentials (i.e., a B.S. in Chemistry, a Ph.D. in Engineering).

2. TRADITIONAL JOB EVALUATION

The traditional way to value jobs involves a mix of internal organizational factors as well as external market conditions in setting pay rates. Various job-evaluation techniques have evolved different strategies for incorporating both of these essential influences into the wage-setting process.

In spite of the long-standing existence and recent expansion of some alternative individual (such as commissions and bonuses), market-based (free agent auctions), and parsimonious (delaying and broadbanding) compensation schemes, formal job evaluation continues to stand the test of time. Like the employment interview, which has been criticized harshly but still is most useful, job evaluation has been accused of being “a barrier to excellence” and “an institutional myth” (Emerson 1991; Quaid 1993). Nevertheless, it, too, remains as an essential building block for human resource management. In fact, over 70% of the organizations in this country are estimated to use job evaluation (Bureau of National Affairs 1976).

As noted in the following sections, for both the ranking method and the factor comparison method, external and internal factors are incorporated throughout the job-evaluation process. In the classification method and the point method, internal factors and external factors are considered separately at first and are later reconciled with each other. In the point method, for example, point totals denoting relative internal worth can be reconciled with market data through statistical procedures such as regression analysis.

Determining which of the job-evaluation processes (outlined in the pages that follow) provides the best fit for a given organization depends on numerous considerations. One may be more appropriate than the other, but there is no one best scheme (Fowler 1996).

2.1. Ranking Method

Ranking simply involves ordering the job descriptions from highest to lowest based on a predetermined definition of value or contribution. Three ways of ranking are usually considered: simple ranking, alternation ranking, and paired comparison ranking. Simple ranking requires that evaluators order or rank jobs according to their overall value to the organization. Alternation ranking involves ordering the job descriptions alternately at each extreme (e.g., as shown in Figure 1).

Agreement is reached among evaluators on which job is the most valuable, then the least valuable. Job evaluators alternate between the next most valued and next-least valued, and so on, until all the jobs have been ordered. For example, evaluators agreed that the job of master welder was the most valued of the six jobs listed above and receiving clerk was the least valued. Then they selected most and least valued jobs from the four remaining titles on the list. After this, a final determination would be made between the last two jobs.

The paired comparison method involves comparing all possible pairs of jobs under study. A simple way to do paired comparison is to set up a matrix, as shown in Figure 2.

The higher-ranked job is entered in the cell. For example, of the shear operator and the electrician, the electrician is ranked higher. Of the shear operator and the punch press operator, the shear operator is ranked higher. When all comparisons have been completed, the job with the highest tally of “most valuable” rankings (the biggest winner) becomes the highest-ranked job, and so on. Some evidence suggests that the alternation ranking and paired comparison methods are more reliable (produce similar results more consistently) than simple ranking (Chesler 1948).

Caution is required if ranking is chosen. The criteria or factors on which the jobs are ranked are usually so poorly defined (if they are specified at all) that the evaluations become subjective opinions

<i>Jobs</i>		<i>Rank</i>
<i>Number</i>	<i>Title</i>	<i>Most valued</i>
1	Shear operator	Master welder
2	Electrician	Electrician
3	Punch press operator	
4	Master welder	
5	Grinder	
6	Receiving clerk	Receiving clerk
		<i>Least valued</i>

Figure 1 Alternation Ranking.

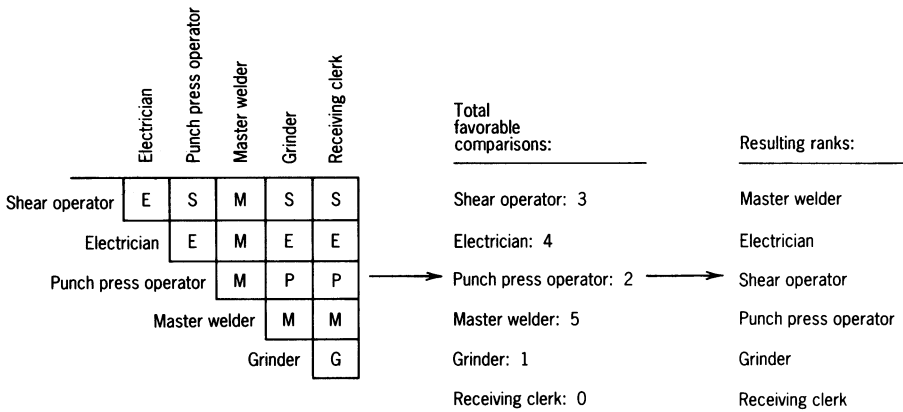


Figure 2 Paired Comparison Ranking. (From Milkovich and Newman 1993)

that are difficult, if not impossible, to explain and justify in work-related terms. Further, evaluators using this method must be knowledgeable about every single job under study. And as the organization changes, it is difficult to retain command of all this job information. Even if such a person exists, the sheer number of rankings to complete becomes onerous, if not impossible. For example, using the paired comparison process where 50 jobs are involved requires $(n)(n - 1)/2 = 1225$ comparisons. Some organizations try to overcome these difficulties by ranking jobs within single departments and merging the results. However, without greater specification of the factors on which the rankings are based, merging ranks is a major problem.

2.2. Classification Method

The classification method has been in use for over 100 years. It originated as a technique to reform abuses in hiring and paying government workers. Variations of the classification method are still widely used by public-sector employers. The basic procedure is simple: create a set of job categories and sort jobs into them. The categories should be conceived such that jobs that fall into the same category are more similar to each other than to any jobs in other categories. Then, for pay purposes, jobs are treated equally within each category and are treated differently across categories.

Each category is defined by a *class description*. For example, the federal government classification method describes grade 1 as all classes of positions the duties of which are to be performed under immediate supervision, with little or no latitude for the exercise of independent judgment, (1) the simplest routine work in office, business, or fiscal operations, or (2) elementary work of a subordinate technical character in a professional, scientific, or technical field. These class descriptions should be detailed enough to differentiate jobs but general enough to make it fairly easy to slot jobs. While detailed class descriptions make some evaluations more consistent, they can limit the variety of jobs that can readily be classified. It would be difficult, for example, to slot clerical jobs into classes created with sales jobs in mind.

Job classes can be made more concrete by anchoring them with benchmark jobs. For a job to be used as a benchmark, it must be commonly known, relatively stable in content, and perceived to be paid fairly. Where feasible, there should be at least one benchmark job for each job class.

The appropriate number of job classes depends on the diversity of jobs and on promotion paths. A common rule of thumb is 7 to 14 classes (Belcher 1974). Some argue for having many classes, saying that employees favor frequent advancement to higher grades. Today, however, prevailing opinion argues for having fewer classes, saying that it reduces needless bureaucracy.

A problem with the classification method is that it provides incentive for incumbents to “aggrandize” a job title to get it into a higher classification. This may seem appropriate to a manager whose immediate concern is to secure a pay raise for a subordinate; but others may see it as underhanded, and it may even lead to a pay discrimination lawsuit.

2.3. Factor Comparison Method

In the factor comparison method, jobs are evaluated based on two criteria: (1) a set of compensable factors and (2) wages for a select group of benchmark jobs. The two criteria are combined to form a job-comparison scale, which is then applied to nonbenchmark jobs. Unfortunately, the method’s

complexity often limits its usefulness (Benge et al. 1941). A simplified explanation of this method would include the following steps:

2.3.1. Conduct Job Analysis

As with all job-evaluation methods, information about the jobs must be collected and job descriptions prepared. The Factor Comparison Method differs, however, in that it requires that jobs be analyzed and described in terms of the compensable factors used in the plan. The originators of the method, Benge et al. (1941), prescribed five factors: mental requirements, skill requirements, physical factors, responsibility, and working conditions. They considered these factors to be universal (applicable to all jobs in all organizations) but allowed some latitude in the specific definition of each factor among organizations.

2.3.2. Select Benchmark Jobs

The selection of benchmark jobs is critical because the entire method is based on them. Benchmark jobs (also called key jobs) serve as reference points. The exact number of benchmarks required varies; some rules of thumb have been suggested (15 to 25), but the number depends on the range and diversity of the work to be evaluated.

2.3.3. Rank Benchmark Jobs on Each Factor

Each benchmark job is ranked on each compensable factor. In Table 1, a job family consisting of six jobs is first ranked on mental requirements (rank of 1 is highest), then on experience/skills, and so on.

This approach differs from the straight ranking plan in that each job is ranked on each factor rather than as a whole job.

2.3.4. Allocate Benchmark Wages across Factors

Once each benchmark job is ranked on each factor, the next step is to allocate the current wages paid for each benchmark job among the compensable factors. Essentially, this is done by deciding how much of the wage rate for each benchmark job is associated with mental demands, how much with physical requirements, and so on, across all the compensable factors. This is done for each benchmark job and is usually based on the judgment of a compensation committee. For example, in Table 2, of the \$5.80 per hour paid to the punch press operator, the committee had decided that \$0.80 of it is attributable to the job's mental requirements, another \$0.80 is attributable to the job's experience/skill requirements, \$2.40 is attributable to the job's physical requirements, \$1.10 is attributable to the job's supervisory requirements, and \$0.70 is attributable to the job's other responsibilities. The total \$5.80 is thus allocated among the compensable factors. This process is repeated for each of the benchmark jobs.

After the wage for each job is allocated among that job's compensable factors, the dollar amounts for each factor are ranked. The job that has the highest wage allocation for mental requirements is ranked 1 on that factor, next highest is 2, and so on. Separate rankings are done for the wage allocated to each compensable factor. In Table 3, the parts-inspector position has more of its wages allocated to mental demands than does any other job and so it receives the highest rank for that factor.

There are now two sets of rankings. The first ranking is based on comparisons of each benchmark job on each compensable factor. It reflects the relative presence of each factor among the benchmark jobs. The second ranking is based on the proportion of each job's wages that is attributed to each factor. The next step is to see how well the two rankings agree.

TABLE 1 Factor Comparison Method: Ranking Benchmark Jobs by Compensable Factors^a

Benchmark Jobs	Mental Requirements	Experience/Skills	Physical Factors	Supervision	Other Responsibilities
A. Punch press operator	6	5	2	4	4
B. Parts attendant	5	3	3	6	1
C. Riveter	4	6	1	1	3
D. Truck operator	3	1	6	5	6
E. Machine operator	2	2	4	2	5
F. Parts inspector	1	3	5	3	2

^aRank of 1 is high.

Source: Milkovich and Newman 1993.

TABLE 2 Factor Comparison Method: Allocation of Benchmark Job Wages across Factors

Benchmark Jobs	Current Wage Rate (\$/hr)	Factors				
		Mental Requirements \$	Experience/ Skills \$	Physical Factors \$	Supervision \$	Other Responsibilities \$
A. Punch press operator	5.80	= 0.80	+ 0.80	+ 2.40	+ 1.10	+ 0.70
B. Parts attendant	9.60	= 2.15	+ 2.35	+ 1.90	+ 0.60	+ 2.60
C. Riveter	13.30	= 2.50	+ 3.10	+ 2.45	+ 4.50	+ 0.75
D. Truck operator	8.50	= 3.40	+ 3.20	+ 0.60	+ 0.80	+ 0.50
E. Machine operator	11.80	= 3.60	+ 2.90	+ 1.75	+ 2.90	+ 0.65
F. Parts inspector	11.40	= 4.50	+ 2.20	+ 1.20	+ 2.50	+ 1.10

Source: Milkovich and Newman 1993.

TABLE 3 Ranking Wage Allocations^a

Benchmark Jobs	Factors					
	Mental Requirements \$	Experience/Skills \$	Physical Factors \$	Supervision \$	Other Responsibilities \$	
A. Punch press operator	0.80	6	2.40	2	1.10	4
B. Parts attendant	2.15	5	1.90	3	0.60	1
C. Riveter	2.50	4	3.10	1	4.50	3
D. Truck operator	3.40	3	3.20	6	0.80	6
E. Machine operator	3.60	2	2.90	4	2.90	5
F. Parts inspector	4.50	1	2.20	5	2.50	2

Source: Milkovich and Newman 1993.

2.3.5. Compare Factor and Wage-Allocation Ranks

The two rankings are judgments based on comparisons of compensable factors and wage distributions. They agree when each benchmark is assigned the same location in both ranks. If there is disagreement, the rationale for the wage allocations and factor rankings is reexamined. Both are judgments, so some slight tuning or adjustments may bring the rankings into line. The comparison of the two rankings is simply a cross-checking of judgments. If agreement cannot be achieved, then the job is no longer considered a benchmark and is removed.

2.3.6. Construct Job Comparison Scale

Constructing a job-comparison scale involves slotting benchmark jobs into a scale for each factor based on the amount of pay assigned to each factor. Such a scale is illustrated in Figure 3. Under mental requirements, the punch press operator is slotted at \$0.80, the parts attendant at \$2.15, and so on. These slottings correspond to the wage allocations shown in Figure 3.

2.3.7. Apply the Scale

The job-comparison scale is the mechanism used to evaluate the remaining jobs. All the nonbenchmark jobs are now slotted into the scales under each factor at the dollar value thought to be appro-

\$ Value	Mental requirements	Experience/skills	Physical demands	Supervision	Other responsibilities
.00					
.20					Truck operator
.40			Truck operator	Parts attendant	Machine operator
.60					Punch press operator
.80	Punch press operator	Punch press operator		Truck operator	Riveter
1.00			— STOCKER —		— STOCKER —
.20	STOCKER		Parts inspector	Punch press operator	Parts inspector
.40				STOCKER	
.60			Machine operator	Parts inspector	
.80			Parts attendant		
2.00	Parts attendant				
.20		Parts inspector			
.40		Parts attendant			
.60	Riveter		Punch press operator		
.80		STOCKER	Riveter		
		Machine operator		Machine operator	Parts attendant
3.00		Riveter			
.20	Truck operator	Truck operator			
.40	Machine operator				
.60					
.80					
4.00					
.20					
.40	Parts inspector			Riveter	
.60					
.80					
5.00					

Figure 3 Job Comparison Scale. (From Milkovich and Newman 1993)

priate. This is done by comparing the factors in the job descriptions of nonbenchmark jobs with the factors in the reference points. Consider the position of parts stocker, a nonbenchmark job. The evaluator reads the stocker job description, examines the first compensable factor on the job comparison scale (mental requirements), and locates two benchmark jobs between which the mental requirements of the stocker job rank. After examining the job descriptions for punch press operator and parts attendant the stocker job might be judged to require greater mental demands than those required for the punch press operator but less than those for the parts attendant and might be slotted at a rate of \$1.40 for mental requirements. The final worth of each job is derived from a summation of the dollars allocated to the job across all compensable factors.

Historically, only about 10% of employers using formal job evaluations have used the factor comparison approach (Nash and Carroll 1975). The method is complex and difficult to explain, particularly to employees who are dissatisfied with the final ranking their job achieves. In addition, as the agreed-upon wage rates of the benchmark jobs change, the relationships among the jobs may change, and the allocation of the wages among the factors must be readjusted. So continuous updating is required.

In spite of these difficulties, the factor comparison approach represents a significant improvement over simple ranking and classification. First, the criteria for evaluating jobs (i.e., the compensable factors) are agreed upon and made explicit. Second, the use of existing wage rates of benchmark jobs as one of the criteria for designing and explaining the pay structure is unique. In a sense, factor comparison more systematically links external market forces with internal, work-related factors. Finally, in the factor comparison approach, we see the use of a scale of degrees of worth (dollars) for each compensable factor in the job-comparison scale.

These three features—defining compensable factors, scaling the factors, and linking an agreed-upon wage structure with the compensable factors—are also the basic building blocks on which point plans are based.

2.4. Point Method

Like factor comparison, designing a point system is rather complex and often requires outside assistance by consultants. But once designed, the plan is relatively simple to understand and administer, which accounts for its widespread use. Indeed, it is the system used by the vast majority of companies in this country (Milkovich and Newman 1993).

Point methods have three common characteristics: (1) compensable factors, with (2) numerically scaled factor degrees to distinguish different levels within a factor, and (3) weights reflecting the relative importance of each factor.

With the point method, as with all job-evaluation plans, the first step is job analysis. The next steps are to choose the factors, scale them, establish the factor weights, and then evaluate jobs.

2.4.1. Conduct Job Analysis

Information about the jobs to be evaluated is the cornerstone of all job evaluation. While ideally, all jobs will be analyzed, the relevant work content—the behaviors, tasks performed, abilities/skills required, and so on—of a representative sample of jobs forms the basis for deriving compensable factors.

2.4.2. Choose Compensable Factors

Compensable factors play a pivotal role in the point method. In choosing factors, an organization must decide: “What factors are valued in our jobs? What factors will be paid for in the work we do?” Compensable factors should possess the following characteristics:

Work Related They must be demonstrably derived from the actual work performed in the organization. Some form of documentation (i.e., job descriptions, job analysis, employee and/or supervisory interviews) must support the factors. Factors that are embedded in a work-related logic can help withstand a variety of challenges to the pay structure. For example, managers often argue that the salaries of their subordinates are too low in comparison to other employees or that the salary offered to a job candidate is too low for the job. Union members may question their leaders about why one job is paid differently from another. Allegations of illegal pay discrimination may be raised. Line managers, union leaders, and compensation specialists must be able to explain differences in pay among jobs. Differences in factors that are work related help provide that rationale. Properly selected factors may even diminish the likelihood of these challenges arising.

Business Related Compensable factors need to be consistent with the organization’s culture and values, its business directions, and the nature of the work. Changes in the organization or its business strategies may necessitate changing factors. While major changes in organizations are not daily occurrences, when they do occur, the factors need to be reexamined to ensure that they are consistent with the new circumstances.

Acceptable to the Parties Acceptance of the pay structure by managers and employees is critical. This is also true for the compensable factors used to slot jobs into the pay structure. To achieve acceptance of the factors, all the relevant parties' viewpoints need to be considered.

Discriminable In addition to being work related, business related, and acceptable, compensable factors should have the ability to differentiate among jobs. As part of differentiating among jobs, each factor must be unique from other factors. If two factors overlap in what they assess in jobs, then that area of overlap will contribute disproportionately to total job points, which may bias the results. Factor definitions must also possess clarity of terminology so that all concerned can understand and relate to them.

There are two basic ways to select and define factors: Adapt factors from an existing standard plan or custom design a plan. In practice, most applications fall between these two. Standard plans often are adjusted to meet the unique needs of a particular organization, and many custom-designed plans rely heavily on existing factors. Although a wide variety of factors are used in conventional, standard plans, they tend to fall into four generic groups: skills required, effort required, responsibility, and working conditions. These four were used originally in the National Electrical Manufacturers Association (NEMA) plan in the 1930s and are also included in the Equal Pay Act (1963) to define equal work (Gomberg 1947). The Hay System is perhaps the most widely used (Milkovich and Newman, 1993). The three Hay factors are know-how, problem solving, and accountability (note that Hay Associates does not define its guide chart–profile method as a variation of the point method) (Hay Associates 1981). Adapting factors from existing plans usually involves relying on the judgment of a task force or job evaluation committee. More often than not, the committee is made up of key decision makers (or their representatives) from various functions (or units, such as finance, operations, engineering, and marketing). Approaches vary, but typically it begins with a task force or committee representing key management players. To identify compensable factors involves getting answers to one central question: Based on our operating and strategic objectives, what should we value and pay for in our jobs? Obviously, custom designing factors is time consuming and expensive. The argument in favor of it rests on the premise that these factors are more likely to be work related, business related, and acceptable to the employees involved.

In terms of the optimal number of factors, it is generally recommended to stay below 10 in order to avoid dilution of effect, information overload, and factor redundancy. Five to 7 factors are usually a manageable number to capture the essence of jobs in an organization. With regard to the number of total points to be allocated across the factors, most firms choose either 500 or 1000 points.

2.4.3. Establish Factor Scales

Once the factors to be included in the plan are chosen, scales reflecting the different degrees within each factor are constructed. Each degree may also be anchored by the typical skills, tasks, and behaviors taken from benchmark jobs that illustrate each factor degree. Table 4 shows the National Metal Trade Association's scaling for the factor of knowledge.

Belcher (1974) suggests the following criteria for determining degrees:

1. Limit to the number necessary to distinguish among jobs.
2. Use understandable terminology.
3. Anchor degree definition with benchmark job titles.
4. Make it apparent how the degree applies to the job.

Using too many degrees makes it difficult for evaluators to accurately choose the appropriate degree and may result in a wide variance in total points assigned by different evaluators. The threat this poses to acceptance of the system is all too apparent.

Some plans employ 2D grids to define degrees. For example, in the Hay plan, degrees of the factor know-how are described by four levels of managerial know-how (limited, related, diverse, and comprehensive) and eight levels of technical know-how (ranging from professional mastery through elementary vocational). An evaluator may select among at least 32 (4×8) different combinations of managerial and technical know-how to evaluate a job.

2.4.4. Establish Factor Weights

Once the degrees have been assigned, the factor weights must be determined. Factor weights are important because different weights reflect differences in importance attached to each factor by the employer. There are two basic methods used to establish factor weights: committee judgment and statistical analysis. In the first, a standing compensation committee or a team of employees is asked to allocate 100% of value among the factors. Some structured decision process such as Delphi or other nominal group technique may be used to facilitate consensus (Elizur 1980). For the statistical method, which typically utilizes multiple regression analysis, the weights are empirically derived in

TABLE 4 Illustration of a Compensable Factor Scheme**I. Knowledge**

This factor measures the knowledge or equivalent training required to perform the position duties.

First Degree

Use of reading and writing, adding and subtracting of whole numbers; following of instructions; use of fixed gauges, direct reading instruments and similar devices; where interpretation is not required.

Second Degree

Use of addition, subtraction, multiplication, and division of numbers including decimals and fractions; simple use of formulas, charts, tables, drawings, specifications, schedules, wiring diagrams; use of adjustable measuring instruments; checking of reports, forms, records and comparable data; where interpretation is required.

Third Degree

Use of mathematics together with the use of complicated drawings, specifications, charts, tables; various types of precision measuring instruments. Equivalent to 1 to 3 years applied trades training in a particular or specialized occupation.

Fourth Degree

Use of advanced trades mathematics, together with the use of complicated drawings, specifications, charts, tables, handbook formulas; all varieties of precision measuring instruments. Equivalent to complete accredited apprenticeship in a recognized trade, craft, or occupation; or equivalent to a 2-year technical college education.

Fifth Degree

Use of higher mathematics involved in the application of engineering principles and the performance of related practical operations, together with a comprehensive knowledge of the theories and practices of mechanical, electrical, chemical, civil or like engineering field. Equivalent to complete 4 years of technical college or university education.

Source: Milkovich and Newman 1993.

such a way as to correlate as closely as possible to a set of pay rates that is agreed upon by the parties involved (Delbecq et al. 1975). The criterion is usually the pay rate for benchmark jobs, and the predictors are the jobs' degree levels on each of the factors.

Initial results of either the committee judgment or statistical approach for deriving factor weights may not lead to completely satisfactory results. The correspondence between internal value (the job-evaluation results) and the external value (what the market says you should be paying) may not be sufficiently high. Several procedures are commonly used to strengthen this relationship. First, the sample of benchmark jobs may be changed through adding or deleting jobs. Second, the factor degree levels assigned to each benchmark job may be adjusted. Third, the pay structure serving as the criterion may be revised. And finally, the factor-weighting scheme may be modified. Thus, a task force beginning with exactly the same factors and degrees could end up with very different job-evaluation plans, depending on the benchmark jobs used, the pay rates chosen as the criterion, and the method employed to establish the weights.

2.4.5. Evaluate Jobs

To translate weights and factor scales into actual job points, the maximum number of points to be used in the system is first divided among the factors according to their weights. The points for each factor are then attached to that factor's scale. For example, if a factor is weighted 20% in a 500-point system, then a total of 100 points is assigned to this factor; and if there are five degrees on the factor, then each degree is worth 20 points.

In the point method, each job's relative value, and hence its location in the pay structure, is determined by the total points assigned to it. A job's total point value is the sum of the numerical values for each degree of compensable factor that the job possesses. In Table 5, the point plan has four factors: skills required, effort required, responsibility, and working conditions. There are five degrees for each factor.

In addition to factor definitions, the evaluator will be guided by benchmark jobs and written descriptions that illustrate each degree for each respective factor. Thus, the evaluator chooses a degree

TABLE 5 The Point Method of Job Evaluation: Factors, Weights, and Degrees

(3) Weights	(1) Factors	(2) Degrees				
40%	Skills required	1	2	3	4	5
30%	Effort required	1	2	3	4	5
20%	Responsibility	1	2	3	4	5
10%	Working conditions	1	2	3	4	5

Source: Milkovich and Newman 1993.

for each factor according to the correspondence between the job being evaluated and the benchmark jobs or descriptions for each factor scale. Then the ratings are multiplied by the factor weights and the products are summed. In the above example, skills required carries a greater weight (40% of the total points) for this employer than does working conditions (10% of the total points). Thus, a job's 240 total points may result from two degrees of skills required ($2 \times 40 = 80$), three each of effort required ($3 \times 30 = 90$) and responsibility ($3 \times 20 = 60$), and one of working conditions ($1 \times 10 = 10$); ($80 + 90 + 60 + 10 = 240$).

Once the total points for all jobs are computed and a hierarchy based on points established, then jobs are compared to each other to ensure that their relative locations in the hierarchy are acceptable. Almost without fail, certain naturally occurring clusters of jobs will emerge.

2.5. Single-Factor Systems

The premise underlying single-factor approaches is that the job content or value construct is unidimensional. In other words, proponents argue that internal value of jobs can be determined by evaluating them against each other on a single factor, instead of the more traditional 5- to 10-factor systems. The two most widely known single-factor plans are Jaques's time span of discretion (TSD) and Arthur Young's decision banding (Jaques 1970). In time span of discretion, each job is made up of tasks and each task is judged to have an implicit or explicit time before its consequences become evident. Jaques defines TSD as "the longest period of time in completing an assigned task that employees are expected to exercise discretion with regard to the pace and quality of the work without managerial review" (Jaques 1964). According to Jaques, TSD is distinct from job evaluation in that it represents measurement (of time units) rather than subjective judgement.

The single factor used in the decision banding method is the decision making required on the job (Patterson and Husband 1970). It identifies and describes six types of decisions that may be required on the job. In order from simplest to most complex, they are: defined, operational, process, interpretive, programming, and policy making. Under this approach, results of job analysis are examined to determine the highest level of decision-making required of the job. Each job is then placed in the corresponding decision band.

Over 50 years ago, Lawshe and others demonstrated that a few factors will yield practically the same results as many factors (Lawshe 1947). Some factors may have overlapping definitions and may fail to account for anything unique in the criterion chosen. In multifactor plans, 3 to 5 factors explained most of the variation in the job hierarchy. In a study conducted 30 years ago, a 21-factor plan produced the same job structure that could be generated using only 7 of the factors. Further, the jobs could be correctly slotted into classes using only 3 factors. Yet the company decided to keep the 21-factor plan because it was "accepted and doing the job."

3. OTHER METHODS OF VALUING JOBS

3.1. Market-Based Pay Systems

For every organization, prevailing wages in the labor market will affect compensation. For some jobs and some organizations, market wage levels and ability to pay are virtually the only determinants of compensation levels. An organization in a highly competitive industry may, by necessity, merely price jobs according to what the market dictates. For most companies, however, to take all their jobs (which may number in the hundreds or thousands) and compare them to the market is not realistic. One can only imagine the effort required for a company to conduct and/or participate in wage surveys for thousands of jobs every year. Alternatively, one computer company was able to slot thousands of jobs into 20 pay grades using a version of the point factor method.

Market pricing basically involves setting pay structures almost exclusively through reliance on rates paid in the external market. Employers following such an approach typically match a large percentage of their jobs with market data and collect as much summarized market data as possible. Opting for market pricing usually reflects more of an emphasis on external competitiveness and less of a focus on internal consistency (the relationships among jobs within the firm).

Market pricers often use the ranking method to determine the pay for jobs unique to their firms. Often called rank to market, it involves first determining the competitive rates for positions for which external market data is available and then slotting the remaining (nonbenchmark) jobs into the pay hierarchy. At Pfizer, for example, job analysis results in written job descriptions. This is immediately followed by labor market analysis and market pricing for as many jobs as possible. After that, the internal job relationships are reviewed to be sure they are “reasonable in light of organization needs.” The final step is pricing those jobs not included in the survey. These remaining jobs are compared to the survey positions “in terms of their total value to Pfizer.” This internal evaluation seeks to ensure consistency with promotion opportunities and to properly reflect “cross-functional job values” (e.g., production vs. clerical jobs).

3.2. Knowledge-Based Pay Systems

As we indicated earlier, some organizations consider individual employee characteristics, in accordance with internal organizational factors and external market conditions, in setting pay rates. Increasing foreign and domestic competition and rapid technological change have inspired innovative individual and team pay-for-performance and knowledge- and skill-based pay systems. Such systems are posited to engender (1) greater mutual commitment between individuals and organizations, and (2) stronger linkages between the rewards given to employees and the performance of the organization.

Technically, knowledge-based pay systems do not involve job evaluation. Instead, they are an alternative to systems that do involve job evaluation. Knowledge-based pay systems pay employees based on what they *know* rather than what particular job they are doing (Gupta., et al 1986). Generally, such systems base pay on the depth of knowledge in a particular field (e.g., scientists and teachers) (Luthans and Fox 1989). For instance, all else equal, a sixth-grade teacher with a Master’s degree will be paid more than a sixth-grade teacher with a Bachelor’s degree under this system.

3.3. Skill-Based Pay Systems

Similarly, skill-based pay systems reward employees for their breadth of knowledge pertaining to different jobs (e.g., proficiency in a number of various production jobs). For instance, if one person could operate machines A, B, and C, she may be paid \$15 per hour (even if she only works on machine A all year). Her colleague may be qualified to work on machines A and C, and therefore he would only make \$13 per hour (even if he worked on both machines over the course of the year). As can be seen, pay is driven by the quantity of tasks a person is qualified to perform.

The chief advantages of knowledge- and skill-based pay systems are leaner staffs and greater flexibility in scheduling. Advocates claim they benefit employees: job satisfaction increases because employees get a sense of having an impact on the organization, and motivation increases because pay and performance are closely linked. Potential disadvantages include higher pay rates and increased training costs, the administrative burden of maintaining records, the erosion of knowledge/skills if not used, and the challenge of managing an equitable job rotation. These disadvantages may or may not be offset by having a leaner workforce and greater productivity.

4. CREATING THE JOB-EVALUATION SYSTEM

4.1. Implementing Job Evaluation

The major decisions involved in the design and administration of job evaluation include:

1. What are the objectives of job evaluation?
2. Which job-evaluation method should be used?
3. Should a single plan or multiple plans be used?
4. Who should participate in designing the system?

4.2. Specifying the Macro Objectives of Job Evaluation

From a macro standpoint, job evaluation allows an organization to establish a pay structure that is internally equitable to employees and consistent with the goals of the organization. Once an organization decides on its strategic goals and its value system, job evaluation can help to reward jobs in a manner consistent with the strategic mission. For example, organizations in mature industries may decide that continued success depends on greater risk taking amongst employees, particularly in new product development. Compensable factors can be chosen to reinforce risk by valuing more highly those jobs with a strong risk-taking component. Once this emphasis on risk taking is communicated to employees, the first step in reshaping the value system has begun.

Since they guide the design and administration of job evaluation, strategic plans and business objectives need to be clearly and emphatically specified. Unfortunately, these initially established objectives too often get diluted, discarded, or muddled in the midst of all the statistical procedures

performed. Another complication can be the bureaucracy that tends to accompany the administration of job evaluation. Job evaluation sometimes seems to exist for its own sake, rather than as an aid to achieving the organization's mission (Burns 1978). So an organization is best served by initially establishing its objectives for the process and using these objectives as a constant guide for its decisions.

4.3. Specifying the Micro Objectives of Job Evaluation

Some of the more micro objectives associated with job evaluation include:

- Help foster equity by integrating pay with a job's contributions to the organization.
- Assist employees to adapt to organization changes by improving their understanding of job content and what is valued in their work.
- Establish a workable, agreed-upon pay structure.
- Simplify and rationalize the pay relationships among jobs, and reduce the role that chance, favoritism, and bias may play.
- Aid in setting pay for new, unique, or changing jobs.
- Provide an agreed-upon device to reduce and resolve disputes and grievances.
- Help ensure that the pay structure is consistent with the relationships among jobs, thereby supporting other human resource programs such as career planning, staffing, and training.

4.4. Choosing the Job-Evaluation Method

Obviously, the organization should adopt a job-evaluation method that is consistent with its job-evaluation objectives. More fundamentally, however, the organization should first decide whether job evaluation is necessary at all. In doing so, it should consider the following questions (Hills 1989):

- Does management perceive meaningful differences between jobs?
- Can legitimate criteria for distinguishing between jobs be articulated and operationalized?
- Will job evaluation result in clear distinctions in employees' eyes?
- Are jobs stable and will they remain stable in the future?
- Is traditional job evaluation consistent with the organization's goals and strategies?
- Do the benefits of job evaluation outweigh its costs?
- Can job evaluation help the organization be more competitive?

Many employers design different job-evaluation plans for different job families. They do so because they believe that the work content of various job families is too diverse to be adequately evaluated using the same plan. For example, production jobs may vary in terms of working conditions and the physical skills required. But engineering and marketing jobs do not vary on these factors, nor are those factors particularly important in engineering or marketing work. Rather, other factors such as technical knowledge and skills and the degree of contact with external customers may be relevant. Another category of employees that might warrant special consideration, primarily due to supervisory responsibilities, is management.

The most common criteria for determining different job families include similar knowledge/skill/ability requirements, common licensing requirements, union jurisdiction, and career paths. Those who argue for multiple plans, each with unique compensable factors, claim that different job families have different and unique work characteristics. To design a single set of compensable factors capable of universal application, while technically feasible, risks emphasizing generalized commonalities among jobs and minimizing uniqueness and dissimilarities. Accurately gauging the similarities and dissimilarities in jobs is critical to establish and justify pay differentials. Therefore, more than one plan is often used for adequate evaluation.

Rather than using either a set of company-wide universal factors or entirely different sets of factors for each job family, some employers, such as Hewlett-Packard, start with a core set of common factors, then add other sets of specialized factors unique to particular occupational or functional areas (finance, manufacturing, software and systems, sales, management). These companies' experiences suggest that unique factors tailored to different job families are more likely to be both acceptable to employees and managers and easier to verify as work related than are generalized universal factors.

4.5. Deciding Who Will Participate in the Job Evaluation Process

Who should be involved in designing job evaluation? The choice is usually among compensation professionals, managers, and/or job incumbents. If job evaluation is to be an aid to managers and if

maximizing employee understanding and acceptance is an important objective, then all these groups need to be included.

4.5.1. Compensation/Job-Evaluation Committees

A common approach to gaining acceptance and understanding of pay decisions is through use of a compensation (job-evaluation) committee. Membership on these committees seems to vary among firms. They all include representatives from key operating functions, and increasingly, with the emphasis on employee empowerment, they are including nonmanagerial employees. In some cases, the committee's role is only advisory; in others its approval may be required for all major decisions.

4.5.2. Employee-Manager Participation

Participation in the design and administration of compensation plans seems related to increased trust and commitment on the part of employees and managers. Lack of participation makes it easier for employees and managers to imagine ways the structure might have been rearranged to their personal liking. For example, an operating manager may wish to elevate the job title for a star performer in order to exceed the maximum pay permitted for the existing job title. This is less likely to occur if the people affected by job-evaluation outcomes are involved in the design and administration processes. Some evidence has been found, however, for the assertion that incumbents tend to rate their jobs higher than their supervisors. Hence, there is a need for a system of checks and balances in the process (Huber 1991).

4.5.3. Unions

Management probably will find it advantageous to include union representation as a source of ideas and to help promote acceptance of the results. For example, at both AT&T and Borg-Warner, union-management task forces have participated in the design of new job-evaluation systems. When this occurs, the union joins with management to identify, negotiate, and resolve problems related to the job-evaluation process. As noted below, not everyone buys into this notion of cooperation.

Other union leaders, however, feel that philosophical differences prevent their active participation in job evaluation (Burns 1978). They take the position that collective bargaining yields more equitable results than does job evaluation. In other cases, jobs are jointly evaluated by union and management representatives, and disagreements are submitted to an arbitrator.

5. MAINTAINING THE JOB-EVALUATION SYSTEM

As an administrative procedure, job evaluation invites give and take. Consensus building often requires active participation by all those involved. Employees, union representatives, and managers may be included in discussions about the pay differences across various jobs. Job evaluation even involves negotiations among executives or managers of different units or functions within the same organization. So viewed as an administrative procedure, job evaluation is used for resolving conflicts about pay differences that inevitably arise over time.

5.1. Handling Appeals and Reviews

Once the job structure or structures are established, compensation managers must ensure that they remain equitable. This requires seeing that jobs that employees feel have been incorrectly evaluated are reanalyzed and reevaluated. Likewise, new jobs or those that experience significant changes must be submitted to the evaluation process.

5.2. Training Job Evaluators

Once the job-evaluation system is complete, those who will be conducting job analyses and evaluations will require training, especially those evaluators who come from outside the human resource department. These employees may also need background information on the entire pay system and how it is related to the overall strategies for managing human resources and the organization's objectives.

5.3. Approving and Communicating the Results of the Job-Evaluation Process

When the job evaluations are completed, approval by higher levels in the organization (e.g., Vice President of Human Resources) is usually required. Essentially, the approval process serves as a control. It helps ensure that any changes that result from job evaluation are consistent with the organization's overall strategies and human resource practices. The particular approval process differs among organizations. Figure 4 is one example.

The emphasis on employee and manager understanding and acceptance of the job-evaluation system requires that communications occur during the entire process. Toward the end of the process,

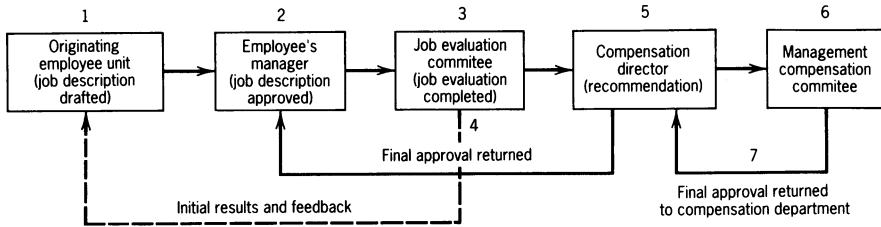


Figure 4 Job Evaluation Approval Process. (From Milkovich and Newman 1993)

the goals of the system, the parties' roles in it, and the final results will need to be thoroughly explained to all employees.

5.4. Using Information Technology in the Job-Evaluation Process

Almost every compensation consulting firm offers a computer-based job evaluation system. Their software does everything from analyzing the job-analysis questions to providing computer-generated job descriptions to predicting the pay classes for each job. Some caution is required, however, because "computer assisted" does not always mean a more efficient, more acceptable, or cheaper approach will evolve. The primary advantages for computer-aided job evaluation according to its advocates include:

- Alleviation of the heavy paperwork and tremendous time saving
- Marked increase in the accuracy of results
- Creation of more detailed databases
- Opportunity to conduct improved analyses (Rheame and Jones 1988)

The most advanced use of computers for job evaluation is known as an expert system. Using the logic built by subject matter experts and coded into the computer, this software leads a job evaluator through a series of prompted questions as part of a decision tree to arrive at a job-evaluation decision (Mahmood et al. 1995).

But even with the assistance of computers, job evaluation remains a subjective process that involves substantial judgment. The computer is only a tool, and misused, it can generate impractical, illogical, and absurd results (Korukonda 1996).

5.5. Future Trends in the Job Evaluation Process

Job evaluation is not going to go away. It has emerged and evolved through the industrial, and now the informational, revolution. Unless everyone is paid the same, there will always be a need to establish and institutionalize a hierarchy of jobs in the organization. The process should, and will, continue to be improved upon. The use of computer software will dramatically simplify the administrative burdens of job evaluation. Furthermore, new technologies and processes will enable organizations to combine internal job-evaluation information with labor market data to strengthen the internal consistency-external competitiveness model discussed above.

6. EVALUATING THE JOB-EVALUATION SYSTEM

Job evaluation can take on the appearance of a bona fide measurement instrument (objective, numerical, generalizable, documented, and reliable). If it is viewed as such, then job evaluation can be judged according to precise technical standards. Just as with employment tests, the reliability and validity of job evaluation plans should be ascertained. In addition, the system should be evaluated for its utility, legality, and acceptability.

6.1. Reliability: Consistent Results

Job evaluation involves substantial judgment. Reliability refers to the consistency of results obtained from job evaluation conducted under different conditions. For example, to what extent do different job evaluators produce similar results for the same job? Few employers or consulting firms report the results of their studies. However, several research studies by academics have been reported (Arvey 1986; Schwab 1980; Snelgar 1983; Madigan 1985; Davis and Sauser 1993; Cunningham and Graham 1993; Supel 1990). These studies present a mixed picture; some report relatively high consistency (different evaluators assign the same jobs the same total point scores), while others report lower

agreement on the values assigned to each specific compensable factor. Some evidence also reports that evaluators' background and training may affect the consistency of the evaluations. Interestingly, an evaluator's affiliation with union or management appears to have little effect on the consistency of the results (Lawshe and Farbo 1949; Harding et al. 1960; Moore 1946; Dertien 1981).

6.2. Validity: Legitimate Results

Validity is the degree to which a job-evaluation method yields the desired results. The desired results can be measured several ways: (1) the hit rate (percentage of correct decisions it makes), (2) convergence (agreement with results obtained from other job-evaluation plans), and (3) employee acceptance (employee and manager attitudes about the job-evaluation process and the results) (Fox 1962; Collins and Muchinsky 1993).

6.2.1. Hit Rates: Agreement with Predetermined Benchmark Structures

The hit rate approach focuses on the ability of the job-evaluation plan to replicate a predetermined, agreed-upon job structure. The agreed-upon structure, as discussed earlier, can be based on one of several criteria. The jobs' market rates, a structure negotiated with a union or a management committee, and rates for jobs held predominately by men are all examples.

Figure 5 shows the hit rates for a hypothetical job-evaluation plan. The agreed-upon structure has 49 benchmark jobs in it. This structure was derived through negotiation among managers serving on the job-evaluation committee along with market rates for these jobs. The new point factor job-evaluation system placed only 14, or 29%, of the jobs into their current (agreed-upon) pay classes. It came within ± 1 pay class for 82% of the jobs in the agreed-upon structure. In a study conducted at Control Data Corporation, the reported hit rates for six different types of systems ranged from 49 to 73% of the jobs classified within ± 1 class of their current agreed-upon classes (Gomez-Mejia et al. 1982). In another validation study, Madigan and Hoover applied two job-evaluation plans (a modification of the federal government's factor evaluation system and the position analysis questionnaire) to 206 job classes for the State of Michigan (Madigan and Hoover 1986). They reported hit rates ranging from 27 to 73%, depending on the scoring method used for the job-evaluation plans.

Is a job-evaluation plan valid (i.e., useful) if it can correctly slot only one-third of the jobs in the "right" level? As with so many questions in compensation, the answer is "it depends." It depends on the alternative approaches available, on the costs involved in designing and implementing these plans, on the magnitude of errors involved in designing and implementing these plans, and on the magnitude of errors involved in missing a "direct hit." If, for example, being within ± 1 pay class translates into several hundred dollars in pay, then employees probably are not going to express much confidence in the "validity" of this plan. If, on the other hand, the pay difference between ± 1 class is not great or the plan's results are treated only as an estimate to be adjusted by the job-evaluation committee, then its "validity" (usefulness) is more likely.

6.2.2. Convergence of Results

Job-evaluation plans can also be judged by the degree to which different plans yield similar results. The premise is that convergence of the results from independent methods increases the chances that the results, and hence the methods, are valid. Different results, on the other hand, point to lack of validity. For the best study to date on this issue, we again turn to Madigan's report on the results of three job-evaluation plans (guide chart, PAQ, and point plan) (Madigan 1985). He concludes that the three methods generate different and inconsistent job structures. Further, he states that the measurement adequacy of these three methods is open to serious question. An employee could have received up to \$427 per month more (or less), depending on the job-evaluation method used.

These results are provocative. They are consistent with the proposition that job evaluation, as traditionally practiced and described in the literature, is not a measurement procedure. This is so because it fails to consistently exhibit properties of reliability and validity. However, it is important

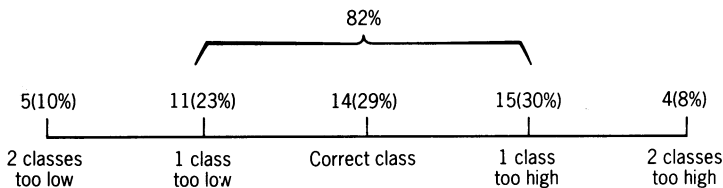


Figure 5 Illustration of Plan's Hit Rate as a Method to Judge the Validity of Job Evaluation Results. (From Milkovich and Newman 1993)

to maintain a proper perspective in interpreting these results. To date, the research has been limited to only a few employers. Further, few compensation professionals seem to consider job evaluation a measurement tool in the strict sense of that term. More often, it is viewed as a procedure to help rationalize an agreed-upon pay structure in terms of job- and business-related factors. As such, it becomes a process of give and take, not some immutable yardstick.

6.3. Utility: Cost-Efficient Results

The usefulness of any management system is a function of how well it accomplishes its objectives (Lawler 1986). Job evaluation is no different; it needs to be judged in terms of its objectives. Pay structures are intended to influence a wide variety of employee behaviors, ranging from staying with an employer to investing in additional training and willingness to take on new assignments. Consequently, the structures obtained through job evaluation should be evaluated in terms of their ability to affect such decisions. Unfortunately, little of this type of evaluation seems to be done.

The other side of utility concerns costs. How costly is job evaluation? Two types of costs associated with job evaluation can be identified: (1) design and administration costs and (2) labor costs that result from pay structure changes recommended by the job evaluation process. The labor cost effects will be unique for each application. Winstanley offers a rule of thumb of 1 to 3% of covered payroll (Winstanley). Experience suggests that costs can range from a few thousand dollars for a small organization to over \$300,000 in consultant fees alone for major projects in firms like Digital Equipment, 3M, TRW, or Bank of America.

6.4. Nondiscriminatory: Legally Defensible Results

Much attention has been directed at job evaluation as both a potential source of bias against women and as a mechanism to reduce bias (Treiman and Hartmann 1981). We will discuss some of the studies of the effects of gender in job evaluation and then consider some recommendations offered to ensure bias-free job evaluation.

It has been widely speculated that job evaluation is susceptible to gender bias. To date, three ways that job evaluation can be biased against women have been studied (Schwab and Grams 1985).

First, direct bias occurs if jobs held predominantly by women are undervalued relative to jobs held predominantly by men, simply because of the *jobholder's gender*. The evidence to date is mixed regarding the proposition that the gender of the jobholder influences the evaluation of the job. For example, Arvey et al. found no effects on job evaluation results when they varied the gender of jobholders using photographs and recorded voices (Arvey et al. 1977). In this case, the evaluators rightfully focused on the work, not the worker. On the other hand, when two different job titles (special assistant—accounting and senior secretary—accounting) were studied, people assigned lower job-evaluation ratings to the female-stereotyped title “secretary” than to the more gender-neutral title, “assistant” (McShane 1990).

The second possible source of gender bias in job evaluation flows from the *gender of the individual evaluators*. Some argue that male evaluators may be less favorably disposed toward jobs held predominantly by women. To date, the research finds no evidence that the job evaluator's gender or the predominant gender of the job-evaluation committee biases job-evaluation results (Lewis and Stevens, 1990).

The third potential source of bias affects job evaluation indirectly through the *current wages paid for jobs*. In this case, job-evaluation results may be biased if the jobs held predominantly by women are incorrectly underpaid. Treiman and Hartmann argue that women's jobs are unfairly underpaid simply because women hold them (Treiman and Hartmann 1995). If this is the case and if job evaluation is based on the current wages paid in the market, then the job-evaluation results simply mirror any bias that exists for current pay rates. Considering that many job-evaluation plans are purposely structured to mirror the existing pay structure, it should not be surprising that the current wages for jobs influence the results of job evaluation, which accounts for this perpetual reinforcement. In one study, 400 experienced compensation administrators were sent information on current pay, market, and job-evaluation results (Rynes et al. 1989). They were asked to use this information to make pay decisions for a set of nine jobs. Half of the administrators received a job linked to men (i.e., over 70% of job holders were men, such as security guards) and the jobs given the other half were held predominately by women (e.g., over 70% of job holders were women, such as secretaries). The results revealed several things: (1) Market data had a substantially larger effect on pay decisions than did job evaluations or current pay data. (2) The jobs' gender had no effects. (3) There was a hint of possible bias against physical, nonoffice jobs over white-collar office jobs. This study is a unique look at several factors that may affect pay structures. Other factors, such as union pressures and turnover of high performers, that also affect job-evaluation decisions were not included.

The implications of this evidence are important. If, as some argue, market rates and current pay already reflect gender bias, then these biased pay rates could work indirectly through the job-evaluation process to deflate the evaluation of jobs held primarily by women (Grams and Schwab

1985). Clearly the criteria used in the design of job evaluation plans are crucial and need to be business and work related.

Several recommendations help to ensure that job evaluation plans are bias free (Remick 1984). Among them are:

1. Ensuring that the compensable factors and scales are defined to recognize the content of jobs held predominantly by women. For example, working conditions should include the noise and stress of office machines and the working conditions surrounding computers.
2. Ensuring that compensable factor weights are not consistently biased against jobs held predominantly by women. Are factors usually associated with these jobs always given less weight?
3. Ensuring that the plan is applied in as bias-free a manner as feasible. This includes ensuring that the job descriptions are bias free, that incumbent names are excluded from the job-evaluation process, and that women are part of the job-evaluation team and serve as evaluators.

Some writers see job evaluation as the best friend of those who wish to combat pay discrimination. Bates and Vail argue that without a properly designed and applied system, “employers will face an almost insurmountable task in persuading the government that ill-defined or whimsical methods of determining differences in job content and pay are a business necessity” (Bates and Vail 1984).

6.5. Acceptability: Sensible Results

Acceptance by the employees and managers is one key to a successful job-evaluation system. Any evaluation of the worthiness of pay practices must include assessing employee and manager acceptance. Several devices are used to assess and improve the acceptability of job evaluation. An obvious one is the inclusion of a formal appeals process, discussed earlier. Employees who feel their jobs are incorrectly evaluated should be able to request reanalysis and reevaluation. Most firms respond to such requests from managers, but few extend the process to all employees, unless those employees are represented by unions who have a negotiated grievance process. They often justify this differential treatment on the basis of a fear of being inundated with appeals. Employers who open the appeals process to all employees theorize that jobholders are the ones most familiar with the work performed and know the most about changes, misrepresentations, or oversights that pertain to their job. No matter what the outcome from the appeal, the results need to be explained in detail to any employee who requests that his or her job be reevaluated.

A second method of assessing acceptability is to include questions about the organization’s job structure in employee attitude surveys. Questions can assess perceptions of how useful job evaluation is as a management tool. Another method is to determine to what extent the system is actually being used. Evidence of acceptance and understanding can also be obtained by surveying employees to determine the percentage of employees who understand the reasons for job evaluation, the percentage of jobs with current descriptions, and the rate of requests for reevaluation.

As noted earlier, stakeholders of job evaluations extend beyond employees and managers to include unions and, some argue, comparable worth activists. The point is that acceptability is a somewhat vague test of the job evaluation—acceptable to whom is an open issue. Clearly managers and employees are important constituents because acceptance makes it a useful device; but others, inside and outside the organization, also have a stake in job evaluation and the pay structure.

7. SUMMARY

In exchange for services rendered, individuals receive compensation from organizations. This compensation is influenced by a wide variety of ever-changing dynamics, many of which are identified in this chapter. The central focus of this chapter, though, was on just one of these influences: the internal worth of jobs. We introduced the different systems for evaluating jobs, the procedures necessary to operationalize these systems, and the criteria for evaluating the effectiveness of these systems in an organization.

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