

# APPENDIX H

## GLOSSARY

**A**bility: Ability is one of the four primary characteristics frequently used to perform a job analysis and/or evaluate successful job performance, along with knowledge, skills, and other characteristics. The knowledge, ability, skills, and other factors (KASO) are widely used in such analyses (Beatty, 2008; KnowledgePoint, 1998). The *ability* component represents “an individual’s capability to engage in a specific behavior” (Milkovich & Newman, 2008) and is often viewed as a person’s “natural talents or dexterity” (WorldatWork, 2006)

**Adjective Checklist:** Some adjective checklists assess the *degree* to which a trait is possessed or a behavior is exhibited, while other adjective checklists simply assess whether a particular trait or behavior is a characteristic of an employee or job. Such a checklist may consist of items (statements) representing different levels of effectiveness (e.g., poor, average, or good performance), or it may simply consist of a list of items without any differentiation in levels. If rated, the evaluation is then based on the sum of the ratings of the items describing the ratee’s performance or the job (Beatty, 2008). If the items are not differentiated by level, the evaluation is based on the sum of the items, statements, or traits checked within the adjective checklist. (Milkovich & Newman, 2008).

**Adverse Impact:** Adverse impact refers a personnel decision in which the basis of requirements in effect serves to screen out a disproportionate number of minority or protected group applicants. Adverse impact is established if the selection rate of the protected group is less than four-fifths of that of the majority group or the group with the highest rate. (Kleiman & Durham, 1981, p.105) The Uniform Guidelines On Employee Selection Procedures (1978) defines the four-fifths rule as “a selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact, while a greater than four-fifths rate will generally not be regarded by Federal enforcement agencies as evidence of adverse impact. Smaller differences in selection rate may nevertheless constitute adverse impact, where they are significant in both statistical and practical terms or where a user’s actions have discouraged applicants disproportionately on grounds of race, sex, or ethnic group. Greater differences in selection rate may not constitute adverse impact where the differences are based on small numbers and are not statistically significant, or where special recruiting or other programs cause the pool of minority or female candidates to be atypical of the normal pool of applicants from that group. Where the user’s evidence concerning the impact of a selection procedure indicates adverse impact but is based upon numbers which are

too small to be reliable, evidence concerning the impact of the procedure over a longer period of time and/or evidence concerning the impact which the selection procedure had when used in the same manner in similar circumstances elsewhere may be considered in determining adverse impact. Where the user has not maintained data on adverse impact as required by the documentation section of applicable guidelines, the Federal enforcement agencies may draw an inference of adverse impact of the selection process from the failure of the user to maintain such data, if the user has an underutilization of a group in the job category, as compared to the group's representation in the relevant labor market or, in the case of jobs filled from within, the applicable work force."

**Affirmative Action:** Affirmative actions are steps in any recruiting, hiring, promoting, or job upgrading process that is designed and performed for the purpose of eliminating the effects of past discrimination. "The Equal Employment Opportunity Coordinating Council was established by act of Congress in 1972, and charged with responsibility for developing and implementing agreements and policies designed, among other things, to eliminate conflict and inconsistency among the agencies of the Federal Government responsible for administering Federal law prohibiting discrimination on grounds of race, color, sex, religion, and national origin. . . . Equal employment opportunity is the law of the land. In the public sector of our society this means that all persons, regardless of race, color, religion, sex, or national origin shall have equal access to positions in the public service limited only by their ability to do the job. There is ample evidence in all sectors of our society that such equal access frequently has been denied to members of certain groups because of their sex, racial, or ethnic characteristics. The remedy for such past and present discrimination is twofold. On the one hand, vigorous enforcement of the laws against discrimination is essential. But equally, and perhaps even more important are affirmative, voluntary efforts on the part of public employers to assure that positions in the public service are genuinely and equally accessible to qualified persons, without regard to their sex, racial, or ethnic characteristics. Without such efforts equal employment opportunity is no more than a wish. The importance of voluntary affirmative action on the part of employers is underscored by title VII of the Civil Rights Act of 1964, Executive Order 11246, and related laws and regulations — all of which emphasize voluntary action to achieve equal employment opportunity. . . . The goal of any affirmative action plan should be achievement of genuine equal employment opportunity for all qualified persons." (60-3.17-Policy statement on affirmative action, The Uniform Guidelines on Employee Selection Procedures, 1978).

**Age Discrimination in Employment Act (ADEA) of 1967 (amended 1978, 1986, and 1996):** The original 1967 Age Discrimination in Employment Act (ADEA) was the result of Federal legislation that made employees between the ages of 40 and 65 a protected class. In 1978, the age range was amended to 40 to 70 for most employee groups. The 1986 amendment of the ADEA

basically ended mandatory retirement based on age. The 1996 amendment then allowed exemptions based on jobs related to public safety, such as police, firefighters, and airline pilots.

**Americans with Disabilities Act (ADA):** “Americans with Disabilities Act (ADA) of 1990 (amended). Title I of the Americans with Disabilities Act of 1990 prohibits private employers, state and local governments, employment agencies and labor unions from discriminating against qualified individuals with disabilities in job application procedures, hiring, firing, advancement, compensation, job training, and other terms, conditions, and privileges of employment. The ADA covers employers with 15 or more employees, including state and local governments. It also applies to employment agencies and to labor organizations. The ADA’s nondiscrimination standards also apply to federal sector employees under section 501 of the Rehabilitation Act, as amended, and it’s implementing rules.” (United States Equal Employment Opportunity Commission, 2008). In other words, ADA ensures persons with disabilities equal opportunities in employment with State and local government services, businesses that are public accommodations or commercial facilities, and in the transportation industry.

**Anchor:** With regard to performance evaluation or assessment, an anchor refers to a specific descriptor (e.g., number, behavioral statement, adjective) that represents some degree of performance along a continuum.

**Appeals Procedures:** An appeals procedure is a mechanism that has been created to address pay disagreements. Such procedures provide an opportunity for employees and managers to express their complaints and receive a hearing.

**Balanced Scorecard:** The Balanced Scorecard has become a widely used approach to address the vision and strategy of the organization with regard to its financial results, internal business processes, its learning and growth, and its customer service. Objectives, measures, targets, and initiatives are identified for each of these four areas and then integrated into the organization’s vision and strategy (Kaplan & Norton, 1996).

**Baldrige Assessment:** Baldrige assessment refers to assessment processes associated with the Malcolm Baldrige National Quality Program (BNQP). The Baldrige program is an assessment approach developed, supported, and promoted by the Department of Commerce to assess businesses and other organizations. The Baldrige Award was named for Malcolm Baldrige (1922-1987), the 26th United States Secretary of Commerce. Prior to 1998, the Baldrige Award was limited to no more than six companies annually, and there could be no more than two winners in each of the three designated business sectors: Manufacturing Companies or Subsidiaries, b) Service Companies or Subsidiaries, and c) Small Businesses (with less than 500 employees). In 1998, two additional sectors were included in the award/assessment process:

d) Health Care, and e) Education. In 2005, a Not-for-Profit category was added. The number of potential winners has been expanded to no more than three per sector.

**Behavioral Discrimination Scale (BDS):** A behavioral discrimination scale is a rating scale that tests the frequency with which incumbents exhibit a certain job-related behavior, the degree to which performing such behaviors is satisfactory according to the situation, and what constitutes good versus bad performance. Items are selected on the basis of significance level of their differential statistic score.

**Behavioral Observation Scale (BOS):** A behavioral observation scale is a rating scale in which dimensions are described in behavioral terms. Raters report the frequency with which ratees perform certain behaviors on the job following a Likert scale format. Overall performance scores can be obtained by averaging ratees' scores across each scale.

**Behaviorally Anchored Rating Scale:** A behaviorally anchored rating scale is a scale in which dimensions and scale points are described in *behavioral* terms. The rater, aided by anchors located along the performance continuum, selects the scale point value corresponding to the ratee's behavior. A summary rating can be compiled for each ratee by averaging the scale values across each performance dimension. Such scales are also frequently referred to as Behavioral expectation scales (BES).

**Behavioral Expectation Scale (BES):** *See behaviorally anchored rating scales.*

**Benchmark Conversion:** A benchmark conversion is the "process of matching survey jobs by applying the employer's plan to the external jobs and then comparing the worth of the external job with its internal 'match'" (Milkovich & Newman, 2008). Also see benchmark jobs.

**Benchmark Jobs:** Benchmark jobs are jobs that can be commonly found in most organizations. Since information is usually available on such jobs and since such jobs are usually stable, they can be used for making pay comparisons, both internally and externally. Pay data for benchmark jobs can be obtained from many published surveys. Such jobs can be used to develop a job-worth hierarchy. The use of salary surveys often requires the identification of benchmark jobs within the organization so that these jobs can be used as surrogates for less common jobs that are more unique to the organization and cannot be located in typical salary surveys.

**Bonus:** A bonus is usually a lump-sum payment given to an individual as a reward for achieving a specified goal or target.

**Broadbanding:** Broadbanding has become a widely used approach for addressing perceived inequities due to narrow widths of traditional grades in a classification system. With

broadbanding, pay grades are collapsed into fewer grades, resulting in wider bands for the reduced number of pay grades. Broadbanding leads to considerable overlap among the bands. In design, it provides more flexibility for giving pay increases; however, in practice, the broad bands are often broken into smaller segments within the bands, with various approaches for capping these segments.

**Bureau of Labor Standards (BLS):** The BLS serves as a major resource for obtaining information about pay, workforce characteristics, the relationships between pay and workforce characteristics, various consumer price indices, and other useful information from the United States Federal Government.

**Business Necessity:** Business necessity is the justification for an otherwise discriminatory employment practice, provided there is an overriding legitimate business purpose. It refers to an irresistible demand and that to be retained the practice must not only directly fosters safety and efficiency but also be essential to these goals. (Dessler, 1994)

**Cafeteria Benefit Plan:** A cafeteria benefit plan is one in which employees have a range of choices from which to choose regarding benefits offered by the organization. Such flexibility is designed to accommodate individual employee needs. Such plans are often referred to as a Flexible Benefits Plan (FBP). Cafeteria benefit plans often annually allow employees to select the benefits which are best suited to them as their needs and life styles change. Employees are usually required to maintain a minimal level of health insurance and life insurance coverage.

**Career Ladder:** A career ladder consists of all of the jobs within a Job Family. It represents the logical sequence an individual might follow when moving through a Job Family.

**Cause-and-Effect Diagrams:** A *cause-and-effect diagram (CE diagram)*, also known as the *fishbone diagram*, is a widely used problem-solving tool that is often associated with TQM. This tool was originally conceptualized by Kaoru Ishikawa, a Japanese SPC authority and innovator. Ishikawa won the Deming prize for his writings on quality control and received the Grant Award in 1971 from the ASQC for his contributions to improved education in quality issues. His textbook, ***A Guide to Quality Control***, was translated into English by the Asian Productivity Organization in 1976 and is now a classic SPC text. The cause-and-effect diagram is sometimes referred to as an *Ishikawa diagram* in tribute to his work in this area.

**Central Tendency:** Central tendency is a measure of a distribution that in some way describes or defines the center of that distribution. There are alternative ways to define or examine the center of a distribution. The most common measures of central tendency are the mode, median, mean (both weighted and unweighted), trimmed mean, geometric mean, and harmonic mean. Measures of location are closely related to measures of central tendency. The most

common measures of location are percentile points (of which the median is the 50<sup>th</sup> percentile point), trile points, quartile points, and decile points. Determining which measure of central tendency is appropriate for any given set of data is based on the level of measurement of the data being analyzed. If the data achieve at least interval level scale, the mean (i.e., average) is usually the preferred measure of central tendency.

**Checklist:** A checklist is an instrument used to assess whether a particular trait or behavior is indicative or descriptive of a ratee. It consists of a number of items (i.e., statements). These items or statements, if present, can either simply checked or can be evaluated relative to different levels of effectiveness (e.g., poor, average, or good performance). The rater must choose the items that describe the ratee's performance. A checklist can also be designed as a Mixed Standard Scale (MSS), a Forced Choice Scale (FCS), or other approaches, as described elsewhere.

**Civil Rights Act (CRA) of 1964:** The Civil Rights Act (CRA) of 1964 was passed by Congress in 1964 to make employment discrimination on the basis of race, religion, national origin, and sex unlawful. The CRA is the basis of EEOC's uniform guidelines. (See Title VII.)

**Civil Rights Reform Act (CRA) of 1991:** This legislation served to amend Title VII in order to clarify what standards are to be used in order to prove discrimination. It also modified court procedures, including jury trials and damage awards. Many of the changes focus on guidelines for recovering compensation as well as punitive damages in cases where intentional violations have been proven with regard to Title VII, the Americans with Disabilities Act of 1990, and section 501 of the Rehabilitation Act of 1973.

**Civil Service Reform Act (CSRA) of 1978:** The Civil Service Reform Act of 1978 determined that performance standards must be developed and communicated to ratees. Ratees must participate in the development of performance standards, and appraisals must be based on critical aspects of the job. Further, ratees must be compared to a set of standards, not simply to each other in an overall rank ordering. The Civil Service Reform Act of 1978 (CSRA) applies to labor organizations which represents employees in most agencies of the executive branch of the Federal Government. The regulations implementing the standards of conduct provisions of the CSRA incorporate many provisions of the Labor-Management Reporting and Disclosure Act of 1959 (LMRDA), including those related to labor organization reporting requirements. "For the multitude of Federal employees who were not in the Senior Executive Service and not subject to the merit pay system for managers and supervisors, the act repealed the Government-wide performance rating system that had become something of a routine exercise for managers and employees every year, with no effects on careers. In its place, the act required departments and agencies to construct new performance appraisal systems for all of their employees that would make development of specific performance standards for each job

a joint task of the supervisor and the employee. The results of the appraisals each year would be used specifically as the basis for personnel actions affecting the employee-to recognize and reward employees whose performance warranted it, to identify and assist employees whose performance fell short of goals, and to reassign, demote, or remove employees who continued to have unacceptable performance. By these provisions, the reformers intended to instill throughout Government the values of performance appraisal and responsiveness to managerial directions" (U.S. Office of Personnel Management, 2008). The Civil Service Reform Act of 1978 also abolished the U.S. Civil Service Commission and replaced its functions with three agencies: the Office of Personnel Management; the Merit Systems Protection Board; and EEOC.

**Comparable Worth:** The United States Supreme Court, in interpreting the legislative history of the Equal Pay Act, has consistently held that the theory of the "comparable worth" of jobs was discarded by Congress in favor of the ... "same or similar job" language currently found in the statute. The standard that complainants must meet with respect to this question is to show that the respondent "pays different wages to employees of opposite sexes for equal work on jobs the performance of which requires equal skill, effort and responsibility and which are performed under similar working conditions" (Corning Glass Works v. Brennan, 417 U.S. 188, 194, (1974). Further, in Lemons et al. v. The City and County of Denver (1974), a suit was filed based on the proposition that nurses were underpaid in city positions and in the community in comparison to other and different jobs which the suit asserted were of equal worth to the employer. The court ruled that the suit crossed job description lines into areas of entirely different skills, thus bringing into play a whole new world for the courts. In conclusion, the court rules that "until some better signal from Congress is received we cannot venture into it. ... The equal pay for 'comparable work' concept has been rejected by Congress in favor of 'equal work' in 1962. The jobs to whom the complainants compare themselves are jobs which require different skills and abilities than the work performed by the complainants. [The court found] that the comparison jobs are 'comparable' but are not the 'same' or 'similar' for purposes of the Equal Pay Act." (Lemons, supra, at 229.) "In adopting the 'equal pay for equal work' formula, Congress carefully considered and ultimately rejected the 'equal pay for comparable worth' standard advanced by respondents and several amici. As the legislative history of the Equal Pay Act amply demonstrates, Congress realized that the adoption of the comparable-worth doctrine would ignore the economic realities of supply and demand and would involve both governmental agencies and courts in the impossible task of ascertaining the worth of comparable work, an area in which they have little expertise." (County of Washington v. Gunther, 452 U.S. 161, 182, 1981).

**Compa-Ratio:** A *comparison ratio*, or **compa-ratio**, is a method used to compare an individual's salary relative to his or her pay grade midpoint. It is computed by dividing the salary by the midpoint, thus yielding a salary-to-midpoint ratio. This compa ratio is often used as a measure

of internal equity. Organizations also frequently calculate department compa-ratios. A **department compa-ratio** is computed by dividing the aggregate pay for the department by the aggregate midpoint for the department. (See department compa-ratio and market index.)

**Compensable Factor:** Most jobs are evaluated on the basis of their compensable factors. The compensable factors of a job are the factors the organization is willing to pay for to adequately perform that job, and thus must be work-related. They are often used to help determine the worth of a job. The generic compensable factors identified by the Equal Pay Act (1963) are skill, effort, responsibility, and working conditions, although education, experience required, physical demands, working conditions, visual demands, need to work independently, risks of the job, supervisory responsibility, accountability, and complexity of tasks have been viewed as compensable factors. The identification of compensable factors is essential for job evaluations, which are used to determine job-worth.

**Compensable Factor Degree:** Each compensable factor usually consists of levels (sometimes referred to as degrees). These levels are anchored with words that allow the job evaluation committee to easily rating individual jobs against the compensable factors. “In quantitative job evaluation plans, measurement scales or “yardsticks” that identify specific levels or amounts of a compensable factor. Usually, there are five to seven degrees for each factor” (WorldatWork, 2006).

**Compensable Factor Weights:** Each compensable factor is usually given some weight relative to its value in the total evaluation point system. Some factors are usually worth more than other factors. An arbitrary decision is usually made with regard to the minimum and maximum values for any factor. The process then requires the scaling of each compensable factor relative to the weight of the compensable factor. The compensable factor weight becomes “the percentage weight or ‘influence’ a single compensable factor has in a quantitative job evaluation plan” (WorldatWork, 2006).

**Compensating Differentials:** Compensating differentials are based on “economic theory that attributes the variety of pay rates in the external labor market to differences in attractive as well as negative characteristics in jobs. Pay differences must overcome negative characteristics to attract employees” (Milkovich & Newman, 2008).

**Compensation:** Compensation typically refers to the money employees receive in exchange for their services. Such compensation includes base pay, differentials, bonuses, stock awards, profit sharing, and other forms of pay.

**Compensation Department:** Most organizations of a large enough size have a compensation department. This group is responsible for establishing an orderly, rational structure of jobs based on the worth of these jobs to the organization. It is also responsible for setting pay rates, comparing these rates to the market, determining an appropriate pay policy (e.g., lead, lag, lead/lag) for the organization's desired competitive position. It is also directly involved with providing the organization's ability to attract, motivate, and retain the best employees.

**Compensation Differentials:** Compensation differentials are "differentials in pay among jobs across and within organizations, and differences among individuals in the same job in an organization" (Milkovich & Newman, 2008).

**Compression (in pay):** Pay compression (aka, salary compression) is the result of having very narrow pay differentials among jobs across organizational levels, regardless of employee skills or experience. When the market-rate for a particular job outpaces the pay structure of the organization, compression often occurs.

**Constant Midpoint Progression:** Most pay structures attempt to have constant midpoint progressions. That is, the midpoints from grade to grade should follow some logical progression. This progression is usually based on a constant percent increase from midpoint to midpoint, not a constant monetary increase. This is usually accomplished by determining the midpoint of the lowest grade and the midpoint of the highest grade. Given that information and the use of a calculator or computer that includes a Time Value of Money (TVM) function, a constant midpoint progression can be created that will have equal percent increases from midpoint to midpoint. By letting the *Present Value* (PV) of the TVM equal the midpoint of the lowest grade, letting the *Future Value* (FV) of the TVM equal the midpoint of the highest grade, and letting the *Number of Periods* (N) equal the number of grades minus 1, solving for the *Interest* (I) will yield a percent value to use for establishing the constant midpoint progression.

**Consumer Price Index (CPI):** The Consumer Price Index (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services, based on a typical family's consumption. The market basket is developed from surveys of consumers, based on detailed information provided by families and individuals on what they actually buy during a specified time period.

**Cost-of-Living Adjustments (COLAS):** A Cost-of-Living Adjustment, or COLA, is an annual adjustment in wages that attempts to offset employee purchasing power. COLAs are typically based on the Consumer Price Index (CPI). Compensation administrators often calculate cost-of-living indices and salary differentials with regard to geographic locations. Employees often want to know the salary adjustment needed to remain "whole" with regard to their existing

standard of living if they move from one location to another. Social Security's general benefit increases have been based on cost-of-living increases since 1975.

**Correlation and Correlation Coefficient:** The word *correlate* consists of two terms: *co* and *relate*. When examining whether two variables are related or associated, we are examining whether they go together in some manner or another. To evaluate this relationship, we use a mathematical measure, the *correlation coefficient*. Although there are several mathematical approaches for measuring relationships among variables, the most commonly used form of the correlation coefficient is the *Pearson product-moment correlation coefficient*, named so in honor of Karl Pearson, one of the leading founders of correlation and regression analysis. All correlation coefficients must fall within the range of -1.00 to +1.00. The sign associated with this coefficient indicates the direction of the relationship—either positive or negative. A zero correlation coefficient suggests that no predictable relationship exists between the variables.

**Covariance:** The covariance between any pair of variables is a measure of how the two variables vary together, or co-vary. While it is directly related to the correlation coefficient, the covariance also has value in its own right; and there are numerous applications for this term.

**Criterion Measure:** A criterion measure is a measure of work behavior, such as a supervisor's rating, which is used in evaluating the validity of a test or other instrument or procedure.

**Critical Incidents Technique:** A method that consists of collecting reports from job incumbents and/or supervisors of specific worker behaviors cited as "critical" for job success or failure. May be used as a type of performance appraisal similar to the checklist format, but is most often used as a preliminary step in the development of behaviorally-based rating scales. As a developmental method, consists of a lengthy process which requires the involvement of many employees to judge the criticalness of performance statements and their representativeness of the dimensions generated.

**Deferred Compensation Program:** A deferred compensation program is an approach in which an employee receives compensation at some future date for performance completed at the present time. A variety of deferred compensation approaches exist, such as stock options, pension plans, and other methods of deferring compensation.

**Deming Prize:** In 1950, the Union of Japanese Scientists and Engineers (JUSE) invited Dr. W. Edwards Deming to Japan to teach statistical quality control. While Deming, an American, only received moderate attention regarding his philosophy toward quality in the United States, his lectures were widely accepted in Japan. He strongly influenced the future of quality and productivity in that country, and he is often credited with their postwar success. In 1951, the JUSE established the Deming Prize to commemorate Dr. Deming's achievements and his friendship to Japan, as well as to further promote quality control in that country. The Deming

prize is Japan's most distinguished industrial honor; it is also highly pursued and difficult to win. The Deming Prize is awarded to individuals for achievement, while the Deming Application Prize is awarded to companies.

**Department Compa-Ratio:** Organizations frequently calculate department compa-ratios to obtain a department salary-to-department midpoint ratio. A department compa -ratio is computed by dividing the aggregate pay for the department by the aggregate midpoint for the department. (See compa-ratio and market index.)

**Disparate Impact:** Disparate impact indicates that there is an unintentional disparity between the proportion of a protected group applying for a position and the proportion actually getting the job. (Dessler, 1994)

**Disparate Treatment:** Disparate treatment indicates that there is an intentional disparity between the proportion of a protected group and the proportion actually getting the job (Dessler, 1994).

**Dispersion:** The word dispersion is interchangeable with the words *variability* or *spread*. It is a measure of how a set of data values vary. Dispersion can be measured by various qualitative and quantitative approaches, depending on the level of measurement (see elsewhere) of the data. When the data are based on nominal values, the most common measure of variability, dispersion, or spread is the variation ratio. When the data are ordinal, the range, the interquartile range, the semi-interquartile range, and the median deviation become optional tools. When the data are at least interval, the analyst should consider the mean deviation, the variance, and most importantly, the standard deviation. When the data achieve ratio level status, the coefficient of variation can be computed. In finance and investments, volatility is often used to define variability, reflecting on the fluctuation of stock prices relative to some measure of central tendency.

**Employee Retirement Income Security Act (ERISA) of 1974:** The Employee Retirement Income Security Act of 1974 (ERISA) is a Federal law that sets minimum standards for most voluntarily established pension and health plans in private industry to provide protection for individuals in these plans. ERISA requires plans to provide participants with plan information including important information about plan features and funding. It also defines fiduciary responsibilities for those who manage and control plan assets, as well as requiring plans to establish a grievance and appeals process for participants to get benefits from their plans. This Act also established the Pension Benefit Guaranty Corporation (PBGC). Further, ERISA gives participants the right to sue for benefits and breaches of fiduciary duty (U.S. Department of Labor, 1974).

**Entitlement:** An entitlement is a misbelief held by an employee that he or she is entitled to rewards whether or not he/she performs adequately or whether or not the organization performs well. Entitlement is also often thought of as having a perception of being entitled to a job, regardless of qualifications.

**Equal Employment Opportunity Commission (EEOC):** The EEOC is a Federal agency that was established in 1972 to monitor employers' compliance with Title VII of the Civil Rights Act. The Commission was created by Title VII of the CRA of 1964 and is empowered to investigate job discrimination complaints and sue on behalf of the complainants.

**Equal Pay Act (EPA) of 1938 (amended 1963):** The 1963 legislation of the Equal Pay Act amended the Fair Labor Standards Act (FLSA) of 1938 to prohibit pay differentials or jobs that are substantially equal in regard to skills, efforts, responsibility, and working conditions. However, bona fide factors such as seniority, merit, production-based systems, and other job factors, are considered exceptions (not gender).

**Equity Theory:** Equity theory describes the exchange relationship between rewards and contributions in the employment exchange. As defined by Adams (1965), "The [employment] exchange must be judged as a fair or equitable one, and it must meet the expectations of [both] participants." As elaborated on by Beatty (1984), "The organization expects the employee to perform work and contribute to productivity, while the employee expects the organization to reward in a fair and just manner." As explained by Atchison (1971), equity theory is based on "two overlapping input-output systems in which the inputs to one system are the outputs to the other system." This employment exchange relationship is further clarified by Belcher (1974) as consisting of four components: a) contributions, b) rewards, c) the comparison process, and d) the results (related actions).

**Error:** An action that deviates from the expected, has unwanted consequences, and disrupts ongoing work.

**Exempt Jobs:** Exempt jobs are those jobs not subject to the provisions of the Fair Labor Standards Act (see elsewhere) with regard to minimum wage and overtime work/pay. Most executives, administrators, professionals, and outside sales representatives are exempt employees.

**Exempt Status:** Employees who are paid a bi-weekly salary are not eligible to receive overtime pay. All employees and/or jobs are considered non-exempt unless proven to be exempt using guidelines set forth by the Fair Labor Standards Act, various State laws, and Judiciary code.

**Expatriates:** Expatriates are employees who have been assigned to positions outside their base country for a given period of time in excess of one year. The determination of the time period

is based on either of two approaches: a) the bona fide residence test, which requires the employee (e.g., the taxpayer) to be a bona fide resident of a foreign country or countries for an uninterrupted period that includes a full tax year; or b) the physical presence test, which requires the employee (e.g., the taxpayer) to be present in a foreign country or countries for at least 330 days during a period of 12 consecutive months.

**External Equity.** See market index.

**Face Validity:** Face validity is concerned with whether a measurement instrument or evaluation tool appears to be measuring what it is purporting to measure. A test or evaluation is not necessarily valid just because it has face validity, but most valid tests do have face validity. The presence or absence of face validity will affect the cooperation of the participant in completing an evaluation or assessment task. There is no numerical value for assessing face validity; instead, the assessment of face validity is usually obtained by soliciting subjective comments about the instrument from administrators, managers, supervisors, job incumbents, and other evaluators.

**Factor Analysis:** Factor analysis is a statistical procedure used to identify variables or items that cluster together and to identify clusters that are considerably different from other clusters. The ideal factor analysis would consist of a number of clusters (factors) that are orthogonal to each other but contain items (variables) that are highly interrelated. Factor analysis is often used to reduce a large number of variables into a smaller number of underlying factors.

**Factor Comparison Method:** A factor comparison method is a job evaluation method in which a series of rankings are performed to assess which positions contain more of each specific compensable factor than other jobs being evaluated. The factor rankings for the compensable factors of each position are assigned numerical values, weighted, and then added together to determine the total job score” (WorldatWork, 2006).

**Fair Labor Standards Act (FLSA):** The Fair Labor Standards Act was enacted as a component of President Franklin D. Roosevelt’s New Deal in 1938. The FLSA had three primary goals: 1) to ensure fair and equitable wages for the services performed by employees, 2) to discourage long workweeks by requiring that employers pay at a higher rate for each hour worked over 40 per week, and 3) to limit the working age, hours, and job duties of children. In addition, the FLSA granted employees the right to join a labor organization for the purpose of bargaining collectively through representatives of their own choosing, and the employer must work in conjunction with the union.

**Forced Choice Scale (FCS):** A checklist of performance statements that are equally positive or negative but differ in their ability to discriminate between effective and ineffective work

behaviors. The rater is forced to choose from a group of statements the subset that is most characteristic of the ratee.

**Forced Distribution Scale:** A forced distribution scale is a ranking procedure in which subordinates are sorted into ordered performance categories depicting different levels of performance. The rates are forced to fit a normal distribution (bell-shaped curve) of performance.

**Generic Job Analysis:** A generic job analysis is performed by using a less-detailed data collection process by using a broad job description that covers a large number of related tasks. “The result is often that two employees doing the same broadly defined job could be doing entirely different, yet related, tasks” (Milkovich & Newman, 2008).

**Glass Ceiling:** A glass ceiling is a subtle barrier that prevents women, minorities, and disadvantaged groups from reaching the highest positions within the organization, such as executive positions.

**Good Faith Strategy:** This is an employment strategy aimed at changing practices that have contributed in the past to excluding or underutilizing protected groups. The emphasis is on identifying and eliminating the obstacles to hiring and promoting protected groups. (Dessler, 1994)

**Graphic Rating Scale:** A rating scale that requires raters to mark the point along a continuum that indicates the degree of performance exhibited by the ratee. The continuum contains anchors (numerical or adjectives).

**Halo Error:** A judgment or rating effect in which the evaluator assumes an association between two or more traits that does not exist. Raters assign similar ratings to a given ratee (e.g., all positive or all negative) across all categories of performance. The subsequent rating error results in giving more favorable ratings across the board by a rater who focuses primarily on only one facet of the job or work performance.

**Hay System:** The Hay system is a point factor job evaluation system based on a set of fundamental factors that are universally applicable. The system was developed by Ned Hay in 1948 and continues to be widely used today. The Hay approach to job evaluation is based on three requirements: a) know how, b) problem solving, and c) accountability. These three factors are subdivided into their dimensions. For example, the dimensions for know-how are technical know how, management know how, and human relation skills. For problem-solving, the dimensions are thinking environment and thinking challenge. For accountability, the dimensions are freedom to act, magnitude, and impact. Each dimension is assigned points based on a point-table. The system is primarily used for exempt jobs, although it can be used

for nonexempt jobs as well. The Hay method focuses on the content of the job, not the employee's effectiveness on the job.

**Hierarchy of Jobs (Job Structures):** Job evaluation has come to mean the overall process of developing an organization's job worth *hierarchy* by ordering jobs according to their relative content or worth. It is a systematic approach for determining the worth of jobs and provides the basis for building a hierarchy of jobs. Job evaluation usually comes after job analysis, the creation of job descriptions, and the identification of compensable factors. It is then used to develop a compensation structure, based on this determined job hierarchy.

**Histogram:** A histogram is a graphical tool for displaying data. With histograms, a series of bars is displayed in order to indicate the frequencies associated with each value along a continuum. Histograms are appropriate for continuous data, while bar graphs are appropriate for discrete data.

**I-Bars:** Pay structures are often displayed by I-Bars, which provide a visualization of the structure. An I-Bar resembles the capital letter I, with a horizontal line in the middle. The top of the I-Bar corresponds to the maximum of the pay grade, and the bottom of the I-Bar corresponds to the minimum of the pay grade. The horizontal line in the middle of the I-Bar corresponds to the midpoint. (See pay structure; also see midpoint of the pay grade.)

**Incumbent:** An incumbent is a person who is currently in the job or position.

**Internal Equity:** See compa ratio.

**Internal Alignment:** An important aspect in the development of a hierarchy of jobs and the pay associated with these jobs is to examine the relationships among the skill levels of the jobs, the alignment of equal pay for jobs of equal worth, and appropriate pay differentials for jobs that are not of equal worth. This alignment process usually includes participation among employees and management in the acceptance of these relationships (Milkovich & Newman, 2008).

**Job:** A job is the totality of all work elements existing in combination and interacting over time. The elements of a job can change with time and experience. It is a term contained in the hierarchy of job analysis which spans descending levels of specificity (Dessler, 1994).

**Job Analysis:** Job analysis is the procedure for determining the duties and skill requirements of a job and the kind of person that should perform it. Information is collected in regard to job activities, human behaviors, machines, tools, equipment and work aids used, performance standards, job context, personnel requirements, and other factors. The job analysis provides a systematic process for identifying, analyzing, and evaluating the unique contributions of each job within a hierarchy of jobs. A job analysis is necessary for conducting job evaluations

(Dessler, 1994; Vogeley, 1995). A job analysis often relies on obtaining sources of information about jobs, the level of the jobs, conducting job analysis interviews, and/or using some form of a job analysis questionnaire. Common tools for performing a job analysis include the Position Analysis Questionnaire (PAQ), the Fleishman Job Analysis Survey (F-JAS), the Common Metric System (CMQ) that uses the input of job incumbents and job evaluators through a computerized system that leads to the development of job descriptions (Harvey, 1993), the Position Information Questionnaire (PIQ), and other such tools.

**Job Class:** A job class is a grouping of jobs that are substantially similar for pay purposes (Milkovich & Newman, 2008). (See job grade.)

**Job Description:** A job description is a list of job duties, such as responsibilities, reporting relationships, working conditions, and supervisory responsibilities. It is often the beginning step or the output of a job analysis (Dessler, 1994).

**Job Dimension:** Broad categories of duties, responsibilities, and activities which comprise a job.

**Job Documentation:** Documentation consists of various forms and/or instruments, job analysis questionnaires, job family matrices, job descriptions, and job specifications.

**Job Evaluation:** Job evaluation has come to mean the *overall* process of developing an organization's job worth hierarchy. It is a systematic approach for determining the relative worth of jobs to create a job structure for the organization. The evaluation is based on a combination of job content, skills required, the value of the job to the organization, the organization's culture, the its internal structure, and the external market. The job evaluation process usually follows the job analysis process, the creation of job descriptions, and the identification of compensable factors. It is then used to develop a compensation structure, based on this determined job hierarchy. A *point factor system* is the most common job evaluation method. In simple terms, it is a process or technique that strives to provide a systematic, rational, and consistent approach to defining the relative worth of jobs within an organization. It provides a system for analyzing and comparing different jobs and placing them in rank order according to the overall demands of each job. It is not concerned with the volume of work, or the person doing the job, or with determining pay. Instead, it is used to provide the basis for an equitable and defensible pay structure, particularly in determining equal pay for equal value. Over the past thirty years, the use of point factor job evaluation systems, which were once the primary job evaluation systems, has declined in use, while market pricing has increased in popularity. Market pricing is the process of analyzing salary survey data to establish the external worth of jobs as represented by their dollar value in the labor market.

**Job Evaluation or Job Classification:** Job evaluation is a technique that strives to provide a systematic, rational, and consistent approach to defining the relative worth of jobs within an

organization. Job evaluation is a system for analyzing and comparing different jobs and placing them in a ranking order according to the overall demands of each one. It is not concerned with the volume of work, or with the person doing it, or with determining pay. It is used in order to provide the basis for an equitable and defensible pay structure, particularly in determining equal pay for equal work.

**Job Evaluation (Non-Analytical):** Job evaluation programs can be divided into two main categories: a) non-analytical and b) analytical. In non-analytical job evaluation programs, a job is compared with other jobs as a whole, but such programs have a limited use, because they are unlikely to succeed as a defense against an equal work claim.

**Job Evaluation (Analytical):** In an analytical job evaluation program, a job is split up into a number of different aspects; and each factor is measured separately. The main types of analytical programs are factor comparison, point-factor rating, competency-based programs, and the profile method.

**Job Evaluation based on Job Ranking:** Two common methods of job evaluation have been widely used. The first method is a system based on whole job ranking, where jobs are taken as a whole and ranked against each other. The second method is a system based on awarding points for various aspects of the job.

**Job Evaluation based on Awarding Points:** In the points system, various aspects or parts of the job are assessed and a point value is determined for that component of the job. As an example, the education and experience required to perform the job are assessed; and point values are assigned, where higher educational requirements of the job are assigned higher point values. The most well known point scheme was introduced by Hay management consultants in 1951. This scheme evaluates job responsibilities in the light of three major factors---know how, problem solving and accountability.

**Job Family:** A job family is “a group of jobs having the same nature of work (e.g., accounting) but requiring different levels of skill, effort, responsibility, or working conditions (e.g., a/p accountant, accounting supervisor)” (WorldatWork, 2006).

**Job Grade:** A job grade (i.e., pay grade) is “one of the classes, levels, or groups into which jobs of the same or similar value are grouped for compensation purposes. Usually, all positions in a grade have the same pay range: minimum, midpoint, and maximum. However, sometimes different jobs in the same pay grade have different pay ranges, due to market conditions for some of the positions” (WorldatWork, 2006).

**Job Specification:** A job specification is a list of human requirements (human profile) that is the requisite education, skills, personality traits, etc. It is another product of job analysis. (Dessler, 1994)

**Job Worth:** Job worth is the worth of a job relative to the entire arena of jobs. The most common approach to establishing the worth of a job is through market pricing: using market data to determine the price and, therefore, the worth of each job. Market pricing is, in essence, “job evaluation” without an evaluation of the job’s content, in that no internal standard or value for the job is determined. Such a hierarchy of job worth is thus established entirely by market prices. (Beatty & Beatty, 1984).

**Knowledge:** Knowledge is one of the four primary characteristics of KASO (see below) needed to perform a job analysis. The other characteristics include ability, skills, and other characteristics. Knowledge is often defined as the acquired mental information necessary to perform the job.

**Knowledge, Ability, Skills, and Other Characteristics (KASO):** Knowledge, ability, skills, and other characteristics (KASO) are primary characteristics frequently used to perform a job analysis and/or evaluate successful job performance.

**Lag Policy:** A lag structure policy is based on a philosophy that the structure should match the competitive pay at the start of the plan year. After the onset of the year, the structure will gradually lag further and further behind competitive pay. This is the least expensive of the three policies (i.e., lead, lag, and lead/lag).

**Lead Policy:** A lead structure policy is based on a philosophy that the structure should lead the market throughout the year. The structure eventually matches the competition at year’s end, if the organization’s forecasting of the market is accurate. This is the most aggressive, and therefore, the most expensive of the structure policy philosophies.

**Lead/Lag Policy:** A lead/lag structure policy is based on a philosophy that the structure should match the competitive pay at the middle of the plan year. To accomplish this goal, the structure is designed to lead the competition at the beginning of the plan year, match the competition at mid-year, and lag behind the competition at the end of the plan year. After the onset of the year, the structure will gradually lag further and further behind competitive pay. This is the least expensive of the three policies (i.e., lead, lag, and lead/lag).

**Learning Management System (LMS):** A Learning Management System, or an Integrated Learning Management System, is a system that enables learning managers and Human Resources leaders to use a software system to link and track employee performance and learning, thus gaining actionable intelligence about learning investments.

**Leniency Error:** A leniency error occurs when rater consistently rates an employee higher than the individual's performance merits. The results is that the ratings are concentrated at the high end of the scale and are thus artificially inflated, often leading to pay inflation.

**Levels of Measurement:** There are four basic levels of measurement for a set of data: 1) nominal, ordinal, 3) interval, and 4) ratio. With nominal level data, only the mode is appropriate as a measure of central tendency. With ordinal level data, the mode and the median are appropriate. With interval level data, the mode, median, and mean are appropriate. With ratio level data, the mode, median, mean, geometric mean, and harmonic mean are appropriate.

**Likert Scale:** A rating scale allowing a graded response to a questionnaire item; respondent marks a point along a continuum, typically with five points ranging from strongly disagree to strongly agree).

**Locality Pay:** Locality pay is a pay rate that has been adjusted for geographic areas that have substantially different market conditions, including housing expenses, cost of living expenses, shortage or abundance of labor, and/or other factors.

**M**alcolm Baldrige National Quality Award: The Malcolm Baldrige National Quality Award is the United States' hopeful counterpart to the Deming Prize. The Baldrige Award was named after Malcolm Baldrige (1922-1987), who served as the 26th United States Secretary of Commerce during the Reagan administration from 1981 until Baldrige's death in 1987. He was a "proponent of quality management as a key to U.S. prosperity and long-term strength" (National Quality Program, 1998). Long before he became interested in business and politics, Baldrige worked as a ranch hand in his youth, was a champion roper, and frequently participated in rodeos. He continued these interests throughout his life, was elected to the National Cowboy Hall of Fame in 1984, and died in a horse accident while participating in a rodeo in California in 1987. The award was subsequently named in his honor. The Baldrige Award is granted to no more than six companies annually, and there can be no more than two winners in each of three categories: a) manufacturing companies or subsidiaries, b) service companies or subsidiaries, and c) small businesses with less than 500 employees. From the onset of the program in 1988 through 1997, 32 awards were granted from a total of 648 applicants. The responsibility for the award is assigned to the United States Department of Commerce. The awards are traditionally presented by the President of the United States at a special ceremony in Washington, D.C. The MBNQA is based on points earned in seven general categories. In 1997, the *core values* of the seven categories in the **Criteria for Performance Excellence: Malcolm Baldrige National Quality Award** were listed as follows: 1) leadership, 2) strategic planning, 3) customer and market focus, 4) information and analysis, 5) human resource development and management, 6) process management, and 7) business results.

**Management-by-Objectives:** Management-by-Objectives, or MBO, is a widely used evaluation program. Developed in the 1950s, it is based on measuring ratees' behavior against specified goals. The MBO process is founded on the concept of analyzing the environment, setting organizational goals, setting individual and group goals derived from organizational goals, developing action plans for each goal, determining performance indicators to use in evaluating goal progress and accomplishment, periodically reviewing goal progress, conducting final reviews of goal accomplishments at the end of the time period, establishing self-improvement objectives for the next period based on and deficiencies identified in goal accomplishment in previous period, and establishing performance objectives for the next period. The goals are usually jointly identified by the supervisors and the job incumbents.

**Market Index:** The term "market index" is often used to determine a ratio of an individual's pay relative to the market pay for that same job. This ratio is often used to represent a measure of external equity. It is calculated by dividing the individual's pay by some measure of the market pay for that job, such as the mean or the median.

**Market Pay:** Market pay is the average of what all companies are paying employees who work a similar job. The market pay is typically determined by conducting a market survey, based on the distribution to and responses from a representative group of companies.

**Market Pricing:** Market pricing is the process of analyzing salary survey data to establish the external worth of jobs as represented by their dollar value in the labor market. Thus, the pay structure becomes a direct function of matching pay for the vast majority of jobs with the pay rates found for similar jobs in the external market.

**Market Survey (i.e., Salary Survey):** Most organizations depend on surveying the pay market in order to determine appropriate pay for jobs within its hierarchy of jobs. Market or salary surveys are usually conducted by selecting sample jobs (e.g., benchmark jobs) from within the organization and then surveying external organizations from within the competitive market for that industry.

**Maturity Curve:** In compensation, a maturity curve is a graph of current pay versus the number of years since a professional has earned his or her last degree (YSLD). This model provides a means for determining competitive pay for specific employees with different levels of experience. Such maturity curves are often nonlinear, showing a fairly steep slope during the early years of employment and a tapering of the maturity curve as the employee ages. A maturity curve is similar to a learning curve.

**Maximum of Pay Grade:** The maximum of a pay grade represents the maximum monetary amount for that grade. The maximum is usually calculated from a knowledge of the desired range spread (see elsewhere) and the minimum of the pay grade, as follows:

Maximum = Minimum x (1 + Desired Range Spread)

**Midpoint of Pay Grade:** The midpoint of a pay grade represents a monetary amount that falls at the middle point of the pay grade. Most pay grades are based on a maximum value, a minimum value, and a midpoint that falls halfway between the maximum and minimum values. The midpoint is usually based on some characteristic of the market, arbitrarily selected from among the market mean, median, or other value (such as P<sub>75</sub>, P<sub>25</sub>, etc.). The pay structure is often displayed by an I-Bar (a visual that resembles the capital letter I, with a horizontal line in the middle). The top of the I-Bar corresponds to the maximum of the pay grade, and the bottom of the I-Bar corresponds to the minimum of the pay grade. The horizontal line in the middle of the I-Bar corresponds to the midpoint. (See pay structure.)

**Minimum of Pay Grade:** The minimum of a pay grade represents the smallest monetary amount for that grade. The minimum is usually calculated from a knowledge of the desired range spread and the midpoint of the pay grade, as follows:

$$\text{Minimum} = \frac{\text{Midpoint}}{1 + \left( \frac{\text{Desired Range Spread}}{2} \right)}$$

**Mixed Standard Scale (MSS):** A mixed standard scale is a checklist consisting of sets of three compatible performance statements reflecting low, medium, and high levels of performance for each job dimension. The rater indicates whether the ratee's performance is better than, equal to, or worse than the described behavior.

**Mutually-Defined-Objectives (MDO):** Mutually-defined-objectives is a system similar to MBO. The supervisor and job incumbent mutually define objectives to be defined, worked on, measured, and evaluated during a specified evaluation period. MDOs are based on goals that are consistent with the needs of the job, are worthwhile challenges, sometimes become career development opportunities, provide opportunities for results and/or increased productivity, are defined by measurable outcomes, are specific, are achievable, are within the employee's realm of authority, are supported by determining the results expected, and are based on such measurable items as quantity, quality, timeliness, cost and other measurable factors.

**Nonexempt Employees:** Nonexempt employees are employees who are subject to the provisions of the Fair Labor Standards Act (see elsewhere). They must be paid for every hour of overtime they work. The FLSA and state laws regulate what constitutes "overtime." Not all salaried employees are exempt, and simply paying an employee a salary does not make him or her automatically exempt.

**Nonmonotonic Scale:** A scale that has anchors placed at unequal intervals along the performance continuum.

**Office of Federal Contract Compliance Programs (OFCCP):** This federal office is responsible for implementing executive orders and ensuring compliance of federal contractors with regard to affirmative action, nondiscrimination, and other employment laws (Dessler, 1994).

**Outliers:** Outliers are unusual values that fall outside the generally acceptable range of data. By making an observation relative to the mean and the standard deviation of a distribution (i.e., by determining the z-value for an observation), it is possible to estimate the probability of obtaining a value that far from the mean. Based on statistical theory, at least 75% of the observations in any distribution will fall within  $z = \pm 2.00$ , and at least 89.9% of the observations in any distribution will fall within  $z = \pm 3.00$ . Thus, z-values of  $\pm 2.00$  or  $\pm 3.00$  can serve as benchmarks for determining outliers (see Tchebycheff's theorem). As an example, suppose the pay for a particular individual is the observed value, the average pay for incumbents of that job is the expected value, and the standard deviation of that distribution of pay for the job incumbents is the measure of chance. The z-score is then computed as follows:

$$z = \frac{\text{Observed} - \text{Expected}}{\text{Chance}}$$
$$= \frac{x - \bar{x}}{s}$$

**Paired Comparison Method:** The paired-comparison method, unlike simple rank ordering, offers a formal process for ensuring that each ratee is compared to all other ratees. There will always be  $[(n)(n - 1)] \div 2$  possible pairs of ratees to compare, where  $n$  represents the number of ratees. Each pair is presented to the rater, who picks the employee whose overall performance is better. The final ranking of the ratees is based on the percentage of times each person was selected as the better ratee; various score conversion systems have been developed to calculate the rank ordering. A major drawback of this approach is that it can quickly become cumbersome, especially when there are very many ratees to be evaluated by a single rater. For example, if there are 20 employees to be evaluated, there will be 190 paired comparisons to be made.

**Pay Grade:** See job grade.

**Pay Structure:** An organization's pay structure is an administrative tool designed to reflect that organization's pay philosophy and to provide a visualization of the relationships among pay grades. The visualization of the pay structure consists of a set of I-Bars for each pay grade (see minimum, midpoint, and maximum of pay grades). An examination of this visualization

provides an indication of the internal equity within the structure (see compa-ratio), the progression of the pay grades, and the overlapping of the grades. This visualization is often juxtaposed with percentile bars (see percentile bars) based on the market. This juxtaposition then provides a view of the organization's external equity (see market index).

**Pension Benefit Guaranty Corporation (PBGC):** PBGC is a wholly-owned federal government corporation created by the Employee Retirement Income Security Act of 1974. It insures the pension benefits of millions of American workers and retirees in pension plans. Operations are financed by insurance premiums set by Congress and paid by sponsors of defined benefit plans, investment income, assets from pension plans trusted by PBGC, and recoveries from the companies formerly responsible for the plans. PBGC administers two distinct insurance programs: one for single-employer plans and one for multi-employer plans, in which the benefits usually are negotiated as part of a labor agreement. (Congressional Budget Office, 2005).

**Physical Demands and Work Environment:** Physical demands and the work environment of a job are often described in terms such as Occasionally, Frequently, and Regularly. Occasionally is often defined as the performance of an activity or working within the work environment up to 3 hours per shift. Frequently is often defined as the performance of an activity or working within the work environment for 3 to 6 hours per shift. Regularly is often defined as the performance of an activity or working within the work environment for 6 or more hours per shift.

**Plan-Do-Check-Act:** The plan-do-check-act is a very useful problem-solving tool for providing such a systematic process. This cycle is widely used in TQM and SPC. It is sometimes referred to as the Deming cycle, although Deming originally referred to it as the Shewhart cycle when he introduced it to Japan in 1950 (Deming, 1986, p. 88). Walter A. Shewhart was one of the early founders of SPC and originally conceptualized this cycle. It is also referenced as the Plan-Do-Study-Act (PDSA) cycle.

**Percentile Bars:** A percentile bar is based on the 10<sup>th</sup>, 25<sup>th</sup>, 50<sup>th</sup>, 75<sup>th</sup>, and 90<sup>th</sup> percentiles, as well as the mean. (The 50<sup>th</sup> percentile is also known as the median.) Such bars are usually displayed vertically, although they can also be displayed horizontally. When presented vertically, the distance from the bottom of the bar to the top includes 80% of the data, since it spans the distance from P<sub>10</sub> to P<sub>90</sub>. Most percentile bars include these five percentile points, as well as the mean. The area from P<sub>25</sub> to P<sub>75</sub>, representing the middle 50% of the cases, is usually shaded within the percentile bar. The location of the median (i.e., P<sub>50</sub>), which will always fall within this shaded area, is indicated by placing a straight line beside its corresponding numerical value. The location of the mean is typically denoted by using a circle with a dot in the middle (Beatty, 2000).

**Performance Distribution Assessment (PDA):** Performance distribution assessments are rating scales used typically for jobs that a) consist of iterative behaviors and b) have less than 20 incumbents per position. The best possible rate of occurrence is determined for a series of job-related behaviors associated with specific outcomes. Raters estimate the frequencies with which ratees perform at all performance levels identified for a given job dimension.

**Performance Management:** Performance management is the process of providing ongoing feedback to an employee regarding his or her performance as it relates to the expectations of the manager, the organization, and the requirements of the job as reflected on the Job Description.

**Point Factor Method:** The point factor method is by far the most popular of the major methods of job evaluation. This method requires the evaluator to rate each job on a series of factors (e.g., physical effort, complexity of tasks, education, risk) presumed to contribute to overall job worth. Points are assigned to “degrees” of each factor to indicate the extent to which a job possesses the factor. Job descriptions are often used to develop statements associated with the degrees. Total points for each job are computed in order to compare relative worth and eventually assign salary levels. Job prices are assigned by grouping jobs into job families and into similar point totals within job families. Key jobs (*benchmark jobs*) are then selected within each group and pay data sought from salary surveys. The pay philosophy selected by the organization (e.g., survey midpoint plus 10 percent for the benchmark job) is then used to price all jobs within this job group. (Beatty & Beatty, 1984).

**Position Analysis Questionnaire:** The Position Analysis Questionnaire (PAQ) is a tool commonly used in job analysis to classify job information into seven basic factors: a) information input, b) mental processes, c) work output, d) relationships with other persons, e) job context, f) other job characteristics, and g) general dimensions (Milkovich & Newman, 2008).

**Range:** The range is a measure of variability, dispersion, or spread. It is based on the distance between the highest value and the lowest value in a set of ordered data. In order to be able to determine the range, the data must be at least ordinal level.

**Range (of Pay):** The pay range the monetary value obtained by subtracting the minimum of the pay grade from the maximum of the pay grade.

**Range Penetration:** Range penetration is a concept similar to compa-ratio or position in grade. Range penetration is usually calculated as a ratio that compares the individual’s pay to the minimum of the pay grade, relative to the range of the pay grade. The formula for calculating the range penetration is as follows:

$$\text{Range Penetration} = \frac{\text{Pay} - \text{Minimum}}{\text{Maximum} - \text{Minimum}}$$

**Range Spread:** The range spread is the difference between the maximum value of the pay grade and the minimum value of the pay grade (i.e., the range of the pay grade), relative to the minimum value of the pay grade. This ratio is then usually multiplied by 100 to determine a percent. The formula for calculating the range spread is thus calculated as follows:

$$\text{Range Spread} = \frac{\text{Maximum} - \text{Minimum}}{\text{Minimum}} \times 100$$

**Range Spread (Desired):** Desired range spreads are based on arbitrary decisions. Prior to broadbanding, desired range spreads were fairly simple and consistent. The lower pay grades would typically be assigned small range spreads (perhaps range spreads of 25 to 40 percent), and the range spreads for subsequent pay grades would increase in some incremental fashion to perhaps 45 to 60 percent. There was and is no “correct” range spread for any particular pay grade. However, desired range spreads provide guidance in determining the minimums and maximums of pay grades. (See minimum of pay grade, midpoint of pay grade, and maximum of pay grade.)

**Rank Ordering:** Rank ordering is the simplest type of a ranking method. Raters rank subordinates from best to worst performers, based on their overall performance. Raters can also rank jobs and other workforce characteristics.

**Ranking Technique/Personnel-Comparison Method:** Instruments used to make comparisons between ratees in terms of relative levels of performance; ratees are compared to one another so that they can be ranked. Approaches include *paired comparison*, *rank-ordering*, and *forced-distribution* methods.

**Ratee:** The ratee is the person (employee) whose performance is being evaluated.

**Rater:** The rater is the person (typically supervisor) who rates the performance of others (usually subordinates).

**Rating Scale:** An instrument that is used to assess the degree to which a trait is possessed or a behavior is exhibited by a ratee. Raters are required to rate all ratees by comparing each of them with some standard defined in a declarative statement or in terms of some largely undefined dimension. Ratings are made on a continuum that contains different types of anchors. Approaches include *summated scales*, *graphic scales*, *BARS*, *BOS*, *BDS*, and *PDA*.

**Reliability:** Reliability is a measure of internal consistency, quantifying the degree to which a test score remains stable over repeated measurements. The concept of reliability refers to a

measurement instrument's ability to provide consistently reproducible results. A test which has the quality of reproducibility is one which will provide identical results if we repeatedly measure the same trait under duplicated conditions. Consequently, reliability is synonymous with repeatability or consistency. Our ability to examine the true reliability of a test is impacted by any learning process which occurs as a result of the first administration of the test which can influence results during another setting (such as memory) and by time lapses between the administration of the test over different settings (when additional learning can occur). There are numerous approaches available for determining the reliability of a measurement instrument, including a) **test-retest reliability**, b) **alternate forms reliability**, c) **subdivided tests reliability**, and d) **internal consistency reliability**.

**Reliability of Judgments:** Agreement or consistency in the evaluations of applicants or employees across raters.

**Reverse Discrimination:** Claim that due to affirmative action quota systems, white males are discriminated against. (Dessler, 1994)

**Scaling:** The process by which we record and measure variables according to rules. Scaling can be the process of creating a scale by putting a group of related items a logical sequence.

**Scree Test:** A scree test is a graphical representation of the magnitude of the eigen values in the unrotated matrix of a factor analysis. The test helps identify an appropriate cutoff point for terminating the factors in a factor analysis.

**Skill:** Skill is one of the four primary characteristics frequently used to perform a job analysis and/or evaluate successful job performance, along with ability, knowledge, and other characteristics. The knowledge, ability, skills, and other factors (KASO) are widely used in such analyses (Beatty, 2008; KnowledgePoint, 1998). The **skill** component often refers to an acquired manual skill that is a measurable behavior. Such skills apply to technicians, operators, mechanics, office workers, etc., in which the skill is rather clearly defined (Milkovich & Newman, 2008; WorldatWork, 2006)

**Summated Rating Scale:** A summated rating scale is a scale consisting of several performance statements that are rated using a continuum of discrete categories representing different degrees of performance.

**Task:** A task consists of one or more elements or one or more skills that comprise the activities of a job.

**Tchebycheff's Theorem:** Tchebycheff's theorem is based on mathematics and statistical theory. Under any circumstances, at least 75% of the observations in any distribution will always fall

within two standard deviations of the mean (i.e.,  $z = \pm 2.00$ ). Further, Tchebycheff's theorem reveals that at least 89.9% of the observations in any distribution will fall within three standard deviations of the mean (i.e.,  $z = \pm 3.00$ ). Thus,  $z$ -values of  $\pm 2.00$  and  $\pm 3.00$  can serve as benchmarks for determining outliers. The probability of an observation falling more than two standard deviations from either side of the mean is at most 25 percent, while the probability of an observation falling more than three standard deviations from either side of the mean is at most about 11 percent. Thus, if a distribution is reasonably symmetric, no more than 5.5 percent of the cases will fall 3 standard deviations above the mean, and no more than 5.5 percent of the cases will fall 3 standard deviations below the mean. Compensation analysts often red-circle values that fall at least  $\pm 2.00$  from the mean and double-red-circle values that fall at least  $\pm 3.00$  from the mean. Such values are considered outliers. (See outliers.)

**Test:** In the instance of performance appraisal a test is the actual evaluation of performance in terms of a rating instrument. (Cascio & Bernardin, 1981)

**Title Descriptors:** Title descriptors are titles that are used to help differentiate between Exempt and Non-Exempt positions.

**Title VII of the 1964 Civil Rights Act (CRA):** The section of the Civil Rights Act that states an organization cannot discriminate on the basis of color, race, religion, sex or national origin with respect to employment. (Dessler, 1994) Title VII is an essential component of the Civil Rights Act of 1964. Thus, it is unlawful to fail to hire or refuse to hire or discharge an individual or to limit, segregate, or classify an employee or applicant because of these personal characteristics. The Uniform Guidelines on Employment Selection Procedures issued by the Equal Employment Opportunity Commission (EEOC) in 1978 views evaluations as a selection procedure; consequently, the evaluations themselves may not demonstrate any adverse impact on any person or group protected by the CRA (See Civil Rights Act of 1964.)

**t-test:** An inferential statistics technique for examining the probability of various events occurring. The  $t$ -test utilizes the  $t$ -distribution, which is a probability distribution. It can be used to examine the difference between two group means, the significance of a correlation coefficient, and other statistical analyses.

**Uniform Guidelines:** Approved by the EEOC, civil service commission, Department of Labor, and the Department of Justice, the Uniform Guidelines on Employee Selection Procedures supersedes other guidelines developed by the EEOC alone in 1970 and sets forth "highly recommended" procedures regarding such matters as employee selection, record keeping, pre-employment inquiries and affirmative action programs (Dessler, 1994). "The Uniform Guidelines on Employee Selection Procedures (1978) are intended to establish a uniform Federal position in the area of prohibiting discrimination in employment practices on grounds

of race, color, religion, sex, or national origin. These guidelines have been adopted by the Equal Employment Opportunity Commission, the Department of Labor, the Department of Justice, and the Civil Service Commission" (Uniform Guidelines, 1978).

**V**alidity: The validity of an instrument is concerned with its ability to accurately measure what it is designed to measure. Validity addresses questions regarding whether the instrument is measuring what it is supposed to be measuring, and, if so how well it measures this trait or concept. There are various forms and terms for methods of assessing validity, including 1) concurrent validity, 2) content validity, 3) construct validity, 4) convergent validity, 5) criterion-related validity, 6) differential validity, 7) discriminant validity, 8) face validity, and 9) predictive validity.

**Validity, Concurrent:** Statistical correlation between a predictor (an item on the evaluation form) and actual job performance. Concurrent validity is concerned with predicting present performance. We are attempting to correlate scores on the instrument with some direct measure of the characteristic. For example, a correlation between scores on some test required for renewal of a driver's license and the actual driving ability of the individual on the road would assess the test's concurrent validity. It would be much too expensive to evaluate the actual road performance of all drivers; thus, if an instrument can be used which will closely correspond with present driving ability, it will have great value. As another example, a personality inventory designed to determine mental stability must have concurrent validity if it is to be used in court cases. Here, we are attempting to determine the current state of mind of the individual, not predict future behavior. (Of course, in certain situations, the court may be interested in predicting future or past behavior as well.) All other conditions being equal, concurrent validity should have a higher validity coefficient than predictive validity; the instrument is being correlated with measures which are being assessed simultaneously rather than in the future, when change can become a factor. Thus, an instrument which has good predictive validity should also have good concurrent validity.

**Validity, Content:** The degree to which scores or ratings on the appraisal are representative of all job behaviors required to perform a job. Content validity has also been referred to as "circular validity," "relevance," "intrinsic validity," and "representativeness" in the measurement literature. This form of validity is concerned with the representativeness of the instrument content in regard to the potential item domain. It is important that a scale adequately include a sample of items from all possible items. If an instrument is multidimensional (i.e., purports to assess more than one characteristic), each characteristic should be proportionally represented by its corresponding subscale. To assess the content validity of an instrument, we must first identify a panel of judges with expertise regarding the characteristics of interest. This panel is then asked to determine the appropriateness and

representativeness of the items. All commercial instruments should be examined in regard to content validity during the developmental stages, well before implementation of the instrument in the intended settings. If such a process is followed, there is less chance that the total instrument will be influenced by irrelevant items. Often, face validity is thought of as a subset of content validity.

**Validity, Construct:** The degree to which scores may be interpreted as measuring a property such as motivation. Construct validity, also referred to elsewhere in the literature as “factorial validity” or “trait validity,” is concerned with whether the instrument is measuring what it claims to be measuring. Thus, construct validity gets right at the heart of validity: an identification of the constructs being assessed by the instrument. The process of construct validation is concerned with what the instrument actually measures, not just what it is designed to measure. There are at least five statistical methods of assessing the construct validity of an instrument: 1) discriminant analysis, 2) factor analysis, 3) correlational analysis, 4) pre-post tests of significance, and 5) the multitrait-multimethod matrix approach.

**Validity, Convergent:** Convergent validity examines whether the validity coefficients are significantly different than zero and are sufficiently large enough to encourage further examination. Convergent validity is often used with the *discriminant validity* of traits. That is, we examine to see whether the validity coefficients are higher than the corresponding correlations among different traits measured by different methods within the same heterotrait-heteromethod matrix. Of course, the validities should be higher than the correlations between the variable of interest and correlations with other variables based upon the same method or on other methods. *See discriminant validity.*

**Validity, Criterion-Related:** Scores or ratings on the evaluation are related to some criteria (e.g. expert judgment). Several terms have been used in reference to criterion-related validity, including “predictive validity,” “empirical validity,” and “statistical validity.” Regardless of the nomenclature, criterion-related validity is concerned with obtaining a correlation coefficient between the instrument scores and one or more external variables which are known to directly measure the characteristic of interest. Criterion-related validity coefficients will be less than reliability coefficients, since reliability is a necessary but not sufficient condition for validity. For convenience, we often subdivide criterion-related validity into two types: predictive validity and concurrent validity.

**Validity, Differential:** When large enough minority groups exist, it is often important to obtain separate validation studies for each of these subgroups. We may find that for the general public, certain relationships will hold. However, when we examine subgroups within the population, these relationships may no longer be meaningful.

**Validity, Discriminant:** The correlation between the same traits as rated by different raters should be higher than the correlation between different traits as rated by the same rater. See *convergent validity*.

**Validity, Face:** Face validity is concerned with whether the instrument *appears* to be measuring what it is purporting to be measuring. A test is not necessarily valid just because it has face validity, but most valid tests have face validity. The presence or absence of face validity will affect the motivation of the participant. There is no numerical value for assessing face validity. The assessment of face validity is usually obtained by soliciting subjective comments about the instrument from administrators, users, instrument takers, and potential takers.

**Validity, Predictive:** Predictive validity is concerned with the ability of the instrument to make long range forecasts regarding the characteristic of interest. Thus, we attempt to correlate the scores obtained on the instrument with some measure of the characteristic which is ascertained in the future. Examples of predictive validity are the correlations between selection scores for job applicants and future performance on the job, correlations between graduate entrance examinations and success in graduate school, or correlations between scores on stress instruments and future heart disease. Instruments which have modest but statistically significant predictive validity can be very useful in increasing overall productivity in industrial settings.

**Variability:** Variability is concerned with the variation, dispersion, or spread of a set of values. There are many measures of variation, including the variation ratio, the range, the interquartile range, the semi-interquartile range, the median deviation, the mean deviation, the variance, the standard deviation, and the coefficient of variation. Determining which of these measures is appropriate for any given data is based on the level of measurement of the data being analyzed. If the data achieve at least interval level scale, the standard deviation is usually the measure of variability of preference.