

Methodology/Disclaimer

The Salary Assessor® & Survey Software and Databases

ERI Economic Research Institute's data is used by expert witnesses, attorneys, CPA firms, consultants, researchers, Internal Revenue Service, businesses, and corporations. **ERI's** team of PhD's provides data analysis once performed by corporate statisticians, operations researchers, industrial engineers, compensation and job analysts, and similar mid-level management support jobs which have largely disappeared from corporate America.

Today, **ERI** is the world's largest survey firm in terms of collection, compiling, and analysis of compensation, jobs, and cost-of-living data. **ERI** provides analysis of competitive pay for 9,600 areas in North America and Europe, 1,200 industries, and myriad organizational sizes. Most of the Fortune 500 companies are users of **ERI's** data.

ERI collects survey data for jobs and cost of living and evaluates each source for validity and reliability. Compensation data is compiled in terms of mean and median salaries for jobs of similar duties, responsibilities, skills, and functions. Cost-of-living data is provided by geographic location. **ERI** produces surveys and software analyses by which managers, advisors, and Boards of Directors may make recommendations and/or decisions. **ERI** does not provide fee-for-service consulting; our sole focus is providing valid and reliable information to our subscribers.

Professional & Consultant Editions

The **Salary Assessor & Survey** software and databases come with two editions, Professional and Consultant, the former being the most widely used by subscribers as it relates to salary planning and competitive benchmarking of an organization's non-executive pay rates versus competition. In 1987 **ERI** found that many did not subscribe to what was then the Competitive Salary Assessor because corporations did not want analysts involved in executive compensation analyses. The solution was to spin these jobs off into a separate product, **ERI's Executive Compensation Assessor® & Survey**, which has over the years evolved into a full survey of all publicly available records. At the time, License Codes controlling access to certain program features were not used by **ERI**. Today License Codes can provide this division within the **Salary Assessor**, with the Consultant Edition now including the ~400 executive job titles in addition to the almost 6,000 job titles of the Professional Edition. The Professional Edition contains all jobs except director level executive job titles and higher. The Consultant Edition contains all Professional Edition jobs, plus the ~400 executive job titles, with a focus on direct cash compensation. Total compensation elements such as stock options, SARs, LTIPs, SERPs, etc., along with the retrieval of source data (proxies, 10-Ks, annual reports, etc.) require a subscription to the **Executive Compensation Assessor**.

Overview

The methodology for the **Salary Assessor & Survey** software and databases, as found below, is further defined in the help menus. In general, Canadian cities are combined with US cities with Canadian dollars to the north and US dollars to the south. Similarly, UK Pounds Sterling are to the north and Euros to the south in the UK/EU edition. For both modules, US/Canada and UK/EU may be combined with a subscription to **ERI's Consultant Assessor Series**.

The **Salary Assessor (SA)** software and databases provide detailed pay analysis for over 5,000 job titles in the US and Canada. This data aids with market pricing of jobs, the assessment of an organization's wage/salary competitiveness, along with internal equity, the assessment of pay for jobs as they uniquely relate to each other within the particular organization. The **Salary Assessor & Survey** software database assists with precise up-to-date evaluations of market pay. It is the only source of its kind that reports data compiled from all available sources; see www.eri.com/index.cfm?FuseAction=Home.ERIEmployerSupplied for more information. **ERI's** survey library collects thousands of wage and salary surveys and sources every year. Where sufficient local salary information is reported, **ERI** shows actual local salary rates. Where a job is not surveyed in the local market, we apply a geographic differential to national averages to impute the local salary rate. Founded nearly 20 years ago as an outsource of salary survey analyses, **ERI** has evolved into a geographic- and industry-specific salary survey, cost-of-living, and executive compensation benchmark survey firm dedicated to research and analytics. **ERI** researchers collect skill measures of modern-day work, and assist organizations with their compensation planning via salary software and special reports. Traditional salary surveys sometimes reflect non-random samples; but **ERI's** databases have grown so robust, many **ERI** products can be better characterized as a census. Our focus is data; we do not provide fee-for-service consulting.

ERI's patented online survey site conducts surveys, extracts compensation data from publicly filed government records, gathers data available via web services, job boards and other new technologies, leases data from other survey vendors, and produces surveys and software analyses that can be archived. These **ERI Salary Surveys** are basically small extracts of the total **ERI Salary Assessor** databases, plus participant data, and are limited, in most part, to data measures that can be supported by documents retrieved from the Internet, with these documents having served as the original source document.

Job data is matched and reported according to the **Survey Description**. Data is adjusted for geographic area (298 US and Canadian metro areas or more than 7,500 areas if run with the **Geographic Assessor® & Survey** software and databases), industry, organization size revenue, assets, or fiscal year budget (FYB), and salary planning date (data is trended forward and backwards). 700 areas are profiled in the UK edition. Default benchmark listings are available for jobs in 2,000 industries.

The **Salary Assessor & Survey** software and databases are designed to be as simple to access as "taking a survey down from the shelf, and looking up survey data for a particular job." Unlike a book, however, this program will perform functions that must otherwise be calculated by hand (e.g., applying a geographic differential adjustment to a specific job, or trending data forward and backwards to specific planning dates). Unlike the task of comparing many surveys' data against one another and determining what your organization should pay the job, the **Salary Assessor & Survey** software and databases have already performed this "compensation analyst" work for you, compiling and analyzing more surveys over a longer time period than you would likely be able to reproduce yourself.

The **Salary Assessor & Survey** software database does not reproduce data reported by any copyrighted, privately conducted survey. This would be copyright infringement and would undermine the sales of individual surveys. Many surveys are produced by small proprietors struggling to maintain quality control in an industry dominated by large consulting firms and federal government surveys. These survey publishers need both your and our support. **ERI** performs a subjective combination of this data, that is, the analysis, projection and refinement of combined survey data based upon **ERI** modeling techniques. Jobs found within the **Salary Assessor & Survey** software database are those for which multiple salary survey sources are available and for which reported data has been condensed, modified, and compiled.

Selection of Jobs and Matching of Comparable Jobs

ERI utilizes Semantic Analysis, a proprietary and customized form of contextual text mapping, in the collection of data and the selection of comparable jobs using the Search String field in the Enter New Job function. **ERI Assessor Series®**, the **eDOT® Project**, **ERI** Internet applications and Distance Learning Center use Semantic Analysis* for advanced skill set matching. This new methodology allows a subscriber to specifically define job function, related skills and experience by typing in descriptive words (or job title).

*The effectiveness of contextual text mapping (Semantic Analysis) requires a "universe" of prose in which to operate. **ERI**'s library of copyrighted descriptions, its **eDOT Project** (patent pending), historical library of competitive compensation information (since 1986), Internet mining (with CareerJournal and other job boards), and study of work (PAQ data since 1974), create a unique, not duplicated, universe of data for creating competitive salary estimates, job availability assessments, and updating of the **enhanced Dictionary of Occupational Titles™** job demands. Others may claim they use Semantic Analysis, but none can duplicate the breadth of data accessed by **ERI**.

Semantic Analysis allows subscribers to benchmark their rates against the most current data available. All **Assessor Series®** and **eDOT** databases are updated on a real time basis with the **ERI** file servers gathering data at the rate of over a 2.5 million unique inputs a month, meaning some data elements are changed and improved every minute. Subscribers need not wait for quarterly DVD releases, as more current updates are often available from the Internet.

Survey Means and Medians

The salary calculations available from the **Salary Assessor & Survey** software and databases are the result of salary surveys collected and analyzed by **ERI**. **ERI** has over twenty-five years of experience in this field. National average data is carefully constructed. It is noted that individual wage surveys may or may not represent a true weighted average or mean. However, **ERI**'s overall results drawn from multiple wage surveys should represent more accurately a true weighted average or mean. **ERI** defines "mean" as the weighted average wage resulting from **ERI**'s analysis of all survey data available for the particular job, industry, company size, and geographic area. Since salary surveys have different effective dates, **ERI** selects a calendar year's quarter beginning date as a common benchmark and updates all salary survey

data to that date, so that "apples are compared to apples." **ERI** defines the "median" as the value at which half of all incumbents earn more and half of all incumbents earn less than the calculated salary. Our experience is that, because of the skewed nature of salary data, those that pay "average salaries" really pay "above average," as weighted means almost always exceed medians.

Until 1997, **ERI** had chosen to collect, calculate, and report median salary levels (only) rather than weighted averages or other measures of central tendency. The median value tends to be less influenced by extremes than a survey mean. As wage and salary distributions are skewed for most jobs, the mean generally falls close to, but slightly higher than, the median. For this reason, some view a median value as a better target for market pricing and competitive pay. Based upon subscriber requests, **ERI** reports both survey mean and median wages/salaries and defaults initial analyses to the survey mean.

Salaries by Experience/Size Tables

The Salaries by Experience/Size table provides detailed pay range data for a single job, matched by **Survey Description**. Subscribers may view pay data by percentile, median, and mean, cross referenced by years of experience. Pay may be further refined by subscriber specification of geographic area, industry, organization size, and salary planning date.

Base Salaries

The Base Salary Table and Graph illustrate how a salary continuously changes as the organization size and years of experience change.

Total Compensation

The Total Compensation Table and Graph illustrate how the total salary (base salary + incentive) continuously changes as the organization size and years of experience change. Please note: Incentive data represents an average of all employees in the job, including organization data where no incentive or cash bonus was paid.

Incentive

The Incentive Table and Graph illustrate average incentives paid according to organization size and years of experience. This average includes all survey data where no incentive or cash bonus is reported paid. It therefore represents an average of all employees in the job, rather than the norms for organizations that pay incentives.

Salaries by Level Table

While **ERI** has been gathering wage data since the 1980's, our original data was gathered by years of experience and all incumbent market values. In the late 1990's we also began to gather data by levels within a job. To assure reliability, we verified for several years to make sure our quality standards were met. In addition, the software programming needed to be modified. Software programming of the Salaries by Level tab was completed in time for us to incorporate levels in the July 2003 release.

The data sources used for reporting by level differ from those sources used for salaries by years of experience. The Salary Assessor's Salaries by Level tab is based on matching **ERI** Survey Descriptions with job/survey descriptions of available wage survey sources. (Please also see the Definition of Levels topic. These definitions are printed at the bottom of the Salaries by Level report in the Salary Assessor Descriptions section.)

Benchmark List Table

To assist with planning or auditing pay for multiple jobs at one location, the multiple job Benchmark List Table enables you to enter and view up to 99 jobs' salaries in one location. This allows you to view a list of benchmark or key jobs with **ERI** calculated salaries and compare your current pay practice to local market pricing calculations.

Geographic List Table

To assist with planning or auditing pay for one job in multiple (branch) locations, the multiple location Geographic List Table enables you to enter and view up to 99 areas' salaries for one job. On one table (or one printout report), you may view a listing of branch offices with **ERI** calculated salaries, and compare your current pay practice to local market pricing.

Calculation of Populations

ERI uses a Total Survey Population when stating the number of employees involved in **ERI**'s time series analysis for a given job. In the **Salary Assessor**, this information is available under View>Survey

Populations. The Total Survey Population is illustrated below:

Assume six ("6") Wage Survey sources report data for Job "A" in Omaha, Nebraska; and assume the true number of employees in Omaha for Job "A" is 125 incumbents.

If the number of employees in Job "A" from each of the 6 surveys were totaled, the total from the 6 surveys might be 350 employees. In this illustration, the total number of employees reported by the 6 Wage Surveys (350) may exceed the actual number of employees in this job in Omaha (125) by 225.

The reason the total number of employees reported by the 6 surveys can exceed the actual number of employees in Omaha is survey participants (companies) often participate in more than one survey. When organizations participate in multiple surveys, a single employee could be counted more than once. Using the approach of totaling the job population reported by all surveys *may* result in overstating the actual total number of employees in a given job in a given location. As it is not possible to determine the degree to which organizations participate in multiple surveys in a given year for a given job, ERI shows the total number of employees involved in our analysis.

To provide subscribers information, ERI calculates a Total Survey Population for each job for each area. This is accomplished by taking the total number of employees reported by all the surveys for the job/area in question. If the Total Survey Population drops too low for a given job in a given location, data from the nearest contiguous geographic area may be added to the time series analysis. To prevent contiguous data from distorting the analysis, the contiguous data is first adjusted by a geographic differential so as to express the contiguous wage data in terms of the origin city/area being analyzed.

Data sources utilized by ERI are often copyrighted. Copyright protection does not permit the recording of copyrighted numbers, such as n's. In deference to copyright protection, this screen shows total survey populations aggregated by metropolitan areas or counties. ERI statistically groups survey data in terms of employee population and wages. For this reason, ERI's Total Survey Population for a given job in a given area is expressed as grouped data with the following groupings utilized:

| | |
|-----------------|--|
| <20 | <20 surveyed employees, contiguous data included |
| >= 20 & <35 | Between 20 and 34 surveyed employees |
| >= 35 & <60 | Between 30 and 59 surveyed employees |
| >= 60 & <95 | Between 60 and 94 surveyed employees |
| >= 95 & <140 | Between 95 and 139 surveyed employees |
| >= 140 & <195 | Between 140 and 194 surveyed employees |
| >= 195 & <260 | Between 195 and 259 surveyed employees |
| >= 260 & <420 | Between 260 and 419 surveyed employees |
| >= 420 & <515 | Between 420 and 514 surveyed employees |
| >= 515 & <620 | Between 515 and 619 surveyed employees |
| >= 620 & <735 | Between 620 and 734 surveyed employees |
| >= 735 & <860 | Between 735 and 859 surveyed employees |
| >= 860 & <995 | Between 860 and 994 surveyed employees |
| >= 995 & <1140 | Between 995 and 1139 surveyed employees |
| >= 1140 & <1295 | Between 1140 and 1294 surveyed employees |
| >= 1295 & <1460 | Between 1295 and 1459 surveyed employees |
| >= 1460 & <1635 | Between 1460 and 1634 surveyed employees |
| >= 1635 & <1820 | Between 1635 and 1819 surveyed employees |
| >= 1820 & <2015 | Between 1820 and 2014 surveyed employees |
| >= 2015 & <2220 | Between 2015 and 2219 surveyed employees |
| >= 2220 & <2435 | Between 2220 and 2434 surveyed employees |
| >= 2435 & <2660 | Between 2435 and 2659 surveyed employees |
| >= 2660 & <2895 | Between 2660 and 2894 surveyed employees |
| >= 2895 & <3140 | Between 2895 and 3139 surveyed employees |
| >= 3140 & <3395 | Between 3140 and 3394 surveyed employees |
| >= 3395 & <3660 | Between 3395 and 3659 surveyed employees |
| >= 3660 & <3935 | Between 3660 and 3934 surveyed employees |
| >= 3935 & <4220 | Between 3935 and 4219 surveyed employees |
| >= 4220 & <4515 | Between 4220 and 4514 surveyed employees |
| >= 4515 & <4820 | Between 4515 and 4819 surveyed employees |
| >= 4820 & <5135 | Between 4820 and 5134 surveyed employees |

| | |
|-----------------|--|
| >= 5135 & <5460 | Between 5135 and 5459 surveyed employees |
| >= 5460 & <5795 | Between 5460 and 5794 surveyed employees |
| >= 5795 & <6140 | Between 5795 and 6139 surveyed employees |
| >= 6140 & <6495 | Between 6140 and 6494 surveyed employees |
| >= 6495 & <6860 | Between 6495 and 6859 surveyed employees |
| >= 6860 & <7235 | Between 6860 and 7234 surveyed employees |
| >= 7235 & <7620 | Between 7235 and 7619 surveyed employees |
| >= 7620 & <8015 | Between 7620 and 8014 surveyed employees |
| >= 8015 & <8420 | Between 8015 and 8419 surveyed employees |
| >= 8420 & <8835 | Between 8420 and 8834 surveyed employees |
| >= 8835 & <9260 | Between 8835 and 9259 surveyed employees |

Statistical Methodology

The **Salary Assessor** and **Executive Compensation Assessor & Survey** utilize polynomial regressions analyses techniques.

Structures

Certain **Geographic Assessor & Pay Survey** differentials may be utilized. These linear regression equations are expressed in terms of "structures."

- Wage Earner Structure
- Low Salary Structure
- Mid Salary Structure
- High Salary Structure
- Management Salary Structure

The ranges are typically defined (for the US) by the data points of: minimum wage – 24,000 – 36,000 – 48,000 – 72,000 – 108,000 – above. 36,000 may be used to create a segmented Low Salary Structure if the data requires. The Wage/Salary area structures are the formulae resulting from **ERI's** regression analyses of all available data for the area. The program will automatically assign the correct structures by city on the Two City Comparison table, the Comparison List table, and the Graphs table.

User Defined Averages

Suburbs and geographic areas may be grouped as *User Defined Averages* and reflect defined labor market pools or geographic zones. A labor market area by radius can also be defined.

Canada Average vs. United States Average

ERI profiles costs and salaries for Canadian job incumbents, using Canadian market prices for overall average spending patterns (home size, goods and services spending patterns), and using Canadian effective income tax estimates, which vary significantly from the US. The Canadian Benchmark earning and spending levels are not simply converted US dollars benchmarks. Because consumer inflation rates, currency exchange rates, and local pay rates are not statistically related, all Canadian costs and salaries are stored in **ERI** databases in Canadian dollars. The quarterly effective exchange rate will change each quarter and influence the appearance of international comparisons from quarter to quarter (in addition to the influence of the inclusion of new survey data, trending to a new quarterly effective date, and new United States Average to Canada Average relationships).

Because Canadian provinces and industries value jobs differently than their US counterparts, and because expenditure patterns and costs also vary from US patterns, **ERI** has added numerous Canadian sources for both wage/salary and cost-of-living calculations. The data for Canadian cities are those costs and wage/salary levels that an employee could assume to face either after moving within Canada or after moving from the United States (and becoming a temporary Canadian resident).

Geographic Assessor Pay versus Executive Compensation Assessor Pay

Generally, executive pay (base, bonus, etc.) is best explained by corporation size, revenue, profit, industry, and other variables which are statistically related. Executive pay is also a type of pay where area cost-of-living differentials explain a portion of executive salary differentials (especially in San Francisco, New York, etc.). For the purpose of pricing jobs above the 108,000 level, therefore, "high salary" (base pay) structures in the **Geographic Assessor** will *not* provide an answer to the executive remuneration question. A complete calculation of executive pay is provided by **ERI's Executive Compensation Assessor** software database, which tailors executive pay reports for user input data of organization size, industry, and salary planning date, in addition to geographic area. Subscribers to this software may also access **ERI's** historical database of *Proxy and 10-K* data in order to review "comparables" for executive jobs, matched by organization size, industry, and area.

Populations - BLS Area (MSA)

A metropolitan Statistical Area (MSA) may cross state lines. It is typically made up of a collection of counties (except for MA and CT). **ERI** has taken this construct and applied it to other countries (Canada's counties, UK's unitary aggregates, etc.).

BOS Area

A state defined, non MSA "Balance of State" area with some states having multiple BOS areas. In August of 2006, the US OES surveys were redefined in terms of areas (only the State of Delaware was unaffected). These reorganizations were reported in the 2007 **Assessor Series** releases.

Census Sectors

In 2000, the US Census did not utilize the BOS Area approach, although it did use the MSA. Rather for the former, the Census "clumped together" various counties much like a political redistricting (both having an effect on the demographics reported). These definitions were incorporated in 2006 releases. In early 2004 **ERI** received the Census 2000 data release for EEO analyses, and in a separate release population data from the annual OES survey that **ERI** incorporates in all **Assessor Series** and **eDOT** products. The 1990 census data also resides in the **Geographic Assessor & Pay Survey** and on **ERI's Platform Library**.

The Census 1990 data used unique job family codes (1990 Census codes were replaced by OES 5 digit codes in the early 1990s, which were replaced by the 6 digit SOC codes in 1998 and the 2000 Census uses still another, different, 3 digit 477 job family coding system). Most Census 2000 areas conform to the OES areas utilized for job family populations, except for rural areas where counties are aggregated differently. Although there is a standard US data collection coding system in place now, such was not the case during Census 2000 data collection. The result is a group of areas (comprised of mostly smaller counties) which differ from officially posted OES BOS areas.

Cell

Population and wage data provided by the US Government are defined by cells (Nationwide, Statewide, BLS area or BOS Area). BLS surveys 75 occupations in 515 (plus state) areas, for a total of 396,550 detail level cells. They then attempt to estimate various statistics for each cell. For the normal or official OES estimates found on the national Internet site, BLS looks only at data collected from the relevant area when calculating the cell estimates. In order to release the data, the value must meet statistical and confidentiality criteria. In the official results, if the statistical or confidentiality criteria are not met, the cell is left null. For example, an official BLS-OES report for the state of Iowa may include only 200-300 occupations in the rural area because the other cells are suppressed. It may include 500-600 for the MSA's and all 770 for the statewide estimates. Census data follows a similar grouping of cell path with 477 occupations and 1,430 census sectors.

Alien Labor Certification (ALC) Data

Data is generated to meet the specific, statutory needs of the Foreign Labor Certification program each year within the United States. The estimates are calculated from the same base date (OES Statistical Survey), using very different statistical methodologies from that reported to the general public. The main difference with the ALC data is that (with a few exceptions) no cell can be "blank" or suppressed. So if in the Greenville area, a certain occupation would be suppressed in the official data, the geographic area is expanded to include contiguous areas (Geography Level 2). If, at that level, the occupational data meet the confidentiality and statistical criteria, then the data from the larger area is used to fill the cell. If the criteria are not met, then the area is expanded again to include the entire state's data (Geography Level 3). If the criteria cannot be met using statewide data, then the nationwide data is used (Level 4). So, in the ALC data, the geography level for each occupation will always be the smallest area in which the data meets confidentiality and statistical reliability estimates.

ERI's use of relative errors and populations listed on the BLS site may vary from the error rates for/from those listed on the ALJ site for two reasons: 1) The data is split into subsets to attain level 1 and 2 estimates, leading to a higher relative error, and 2) the data may come from a larger geographical area, and generalization of the relative error from the official data to an expanded area will produce slightly inconsistent results.

Reliability Statistics - A Note for Expert Witnesses

In 1975, the US Congress passed Federal Rule of Evidence 702 so that a threshold standard for the admission of expert witness testimony might exist in Federal Courts. Based on the concept that experts should use methodologies that are "generally accepted" by a discipline's practitioners, the rule states: "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." Following this, the Supreme Court issued an opinion in *Daubert v. Merrill-Dow Pharmaceuticals*, 509 U.S. 579, 113 S. Ct. 2786, 125 L.Ed.2d 469 (1993) that has become the standard for the admission of "general acceptance." In this Case (which standard is now adopted by Federal and most State Courts), the admittance of expert witness testimony and evidence required a two-step analysis: a) Evidence must be relevant, and b) Evidence must be reliable. The "relevance" is a subjective judgment but simple logic may be applied (salary survey data for use in lost wage analyses, proxy compensation data for use in maximum reasonable compensation cases, etc.). For the latter, "reliability", the Supreme Court established four separate, non-exclusive tests: 1) it can be illustrated that the theory or technique can be tested, 2) the data has been subjected to peer review and publication, 3) there is a known or potential rate of error, and (4) there is a level of general acceptance in that particular discipline's community.

In March of 1999 the United States Supreme Court issued a ruling in the *Carmichael vs. Kumho Tire Co.* case that further defined when a Daubert reliability challenge applies. In *Carmichael vs. Kumho*, the Supreme Court ruled that reliability must be established in all types of expert testimony, both scientific and non-scientific/technical. The Court held that the role of a trial judge was that of "gatekeeper" regarding both the relevance and reliability of all expert testimony. The Court stated that the Daubert case was not intended to be limited to scientific cases only. Instead, it would/should apply to all fields of expert testimony. Providers of expert witness testimony must be prepared to describe why an analysis was utilized and why the analysis and data can be considered reliably sufficient.

To assist subscribers in attesting to the "reliability" of data, **ERI** is at a disadvantage because its **Assessor Series** software database projections are most often the combinations of many surveys and sources, many of which are copyrighted and licensed for confidentiality. Oftentimes **ERI** finds that over a hundred surveys contribute to an analysis, making our data very robust. As the sample size increases, the reliability of the data predicted becomes greater. However, to complicate matters, in the majority of cases, salary surveys do not report a standard error. In many cases, different surveys report means derived from jobs surveyed a multiple of times (i.e., three surveys may each survey the same firm and report "n's" that contain the same job counted three times). Standard errors require the population count in their calculation.

Presentation of Standard Errors

Beginning in 2000, the United States OES survey began to report Relative Standard Error so that a Daubert Challenge could be met. The Standard Errors and populations can be presented for these data. It is **ERI's** observation that by adding 2, 10, 100 (and in some cases 1,000) additional survey sources, one should only increase the reliability reported by this one survey. Thus, the Standard Errors shown in the Reliability Statistics may be considered to be the maximum that exist for the **Salary Assessor & Survey** software and databases. That is, the Standard Error shown for any one job as found in the **Salary Assessor & Survey**, is that taken directly from OES published data. For international data, it is the Standard Error reported directly by a cooperating private third-party salary survey. For the **Geographic Assessor & Pay Survey**, the "dots" from this OES survey are shown (in that it is non-copyrighted, the presentation of these graphic points will not violate copy protections), and each represents a single job family surveyed within an area. In these presentations, **ERI** also calculates the standard error of the regression lines from the "dots" shown (rather than report the OES Relative Standard Error). Similarly, Canada Census observations create the standard error for Canadian comparisons. European Standard Errors are estimates and presented as such. In summary, US Standard Errors may be calculated or those of the OES, Canadian Standard Errors are calculated, and European Estimated Standard Errors, are as stated, estimates.

Reliability Statistics Definitions

Data

Total compensation values include incentives.

City

Populations of employees in a job group are defined across a wide geographic area. Reported populations are for areas from which workers may commute and, according to the OES, are typically much larger than a city metropolitan area. While a city name is shown, the population, salaries, and other statistics represent values for the Survey Area.

Area

These are as defined by OES; **ERI** divides Canada geographically using the same methodology by which the BLS and Employment & Training (ETA) define US areas.

Survey

At the time of writing this Methodology, 12 complete years of OES datasets (1998-2009), five complete Canadian Census datasets (1986, 1991, 1996, 2001, and 2006), and ten years of UK data (1999-2009) have been analyzed.

Observations

As described, observations represent the population for this OES job group among all the jobs found in this survey. The OES is the prorated percentages: 1) among all jobs within any OES job group, and 2) for the population for the area as compared to the state population.

Standard Error

Early in the Year 2000, the OES began to report "Relative Standard Error" (RSE). To quote the OES Technical Notes:

Estimates derived from different samples would differ from each other. The variance of a survey estimate is a measure of the variation among the estimates from all possible samples. The standard error of a survey estimate is the square root of its variance; the relative standard error is the ratio of the standard error to the estimate itself. The sample estimate and its standard error allowed OES to construct an interval estimate with a prescribed level of confidence that the interval will include the mean value of the estimates from all possible samples.

To illustrate, if all possible samples were selected, and if each of these were surveyed under essentially the same conditions, and an estimate and its estimated sampling error were calculated from each sample, then approximately 90 percent of the intervals from 1.6 standard errors below to 1.6 standard errors above the derived estimate would include the average value of the estimates from all possible samples. This interval is called a 90-percent confidence interval.

Approximately 95 percent of the intervals from two standard errors below to two standard errors above the derived estimate would include the average value of the estimates from all possible samples. This interval is called a 95-percent confidence interval. For example, suppose that an estimated occupational employment total is 5,000 with an associated relative standard error of two percent. Based on this data, the standard error of the estimate is 100 ($= 5,000 \times 0.02$) and the 95-percent confidence interval for the estimate is (5,000 +/- 200X2) or (4,600 to 5,400). This confidence interval is one of many that could be constructed based on the same sample design. Approximately 95 percent of these confidence intervals would encompass the average value of the estimates from all possible samples.

The Relative Standard Errors shown are those reported by the OES for the job groups in each state or territory. Standard Errors shown are **ERI** estimates of the highest possible errors for the **Salary Assessor & Survey** software database, as we would expect the Standard Error to decrease as sample sizes increase. "Default values" illustrating that these calculations have not yet been finalized are indicated as 00.00, 15.00, and/or 22.00. Users should disregard these preliminary numbers when found.

Sources

Over 2,000 salary surveys have been used to create range and average data. Only the OES data has been used to create the Standard Errors reported.

ERI Statement as to the Relevance and Reliability of Data

Relevance is totally determinable by the circumstances and situation presented. **ERI** enables subscribers to conduct analyses and create presentations of salary, executive compensation, benefit, and cost of living survey data. Reliability is described in a four part, non-exclusive summary to match the Daubert challenge:

Theory/Technique Demonstrations

Methodologies accompany each **Assessor Series** application. These methodologies include definitions of terms, examples of calculations, and identifications of sources and data updates.

Subject to Publication and Peer Review

ERI's "peers" are its competitors, those firms that also provide data analyses to their clients. Unlike **ERI**, which solicits an annual subscription, most compensation and benefit consulting firms charge an hourly rate for their research services. Suffice it to say, all the major consulting firms have purchased subscriptions so that their consultants could utilize **ERI** analyses: Mercer Consulting, Hewitt Associates, Towers Perrin, Watson Wyatt, the Hay Group, KPMG, PricewaterhouseCoopers, Ernst & Young, Deloitte, and many others are subscribers. **ERI** data are used by these firms in their consulting with their clients; numerous cited Federal Tax cases report on the use of these analyses. **ERI** data and analyzes are under constant review and critique by its competitors. **ERI**, unlike these firms, provides no fee-for-service/time consulting.

Known or Potential Rate of Error

Each **Assessor Series** software database illustrates via a "Reliability Statistics" link (see View | Reliability Statistics on each **Assessor Series** application), the beginning of a statistical overview of **ERI** data. Statistics are reported as derived from just one survey source for all salary and compensation presentations (so that copyright restrictions are not violated). **ERI** accumulates many survey sources to compile its analyses. Hence the data illustrated may be, in **ERI's** estimate, considered to be the highest possible standard error that might exist with each analysis. **Assessor Series** software database results are, by logic, more robust than the standard error displayed and reported.

General Level of Acceptance within the Discipline's Community

Ten thousand subscribers send money each year to purchase their subscriptions to **ERI** analyses. Each year over 90% renew their subscriptions, with many major corporations now in their third decade of subscribing. Special extracts of **ERI** databases are purchased annually by large organizations. US Internal Revenue District Offices subscribe, as does the IRS National Appraisal Services Office (with a subscription now renewed into its third Decade). **ERI** exhibits at major tradeshow (WaW, AILA, SHRM, ERC, AICPA, ASA, IARP, NOSSCR and others). **ERI** data is used as source data by the WSJ (CareerJournal.com), major publications and job boards. The two largest US human resource organizations, WorldatWork and SHRM, accept **ERI** Distance Learning Courses for professional maintenance and recertification continuing education credit. Major US employers rely upon **ERI** data as cited in corporate proxy filings (see <http://www.erieri.com/ExecutiveCompensationProxyData>).

Data Plots

Data plots are now available under the **Salaries by Experience/Size** tab of the **Salary Assessor & Survey** software database. The plot of "dots" found in the **Salary Assessor & Survey** software database combines an estimated distribution and actual plots of publicly disclosed employer salaries. The estimated distributions use a random number generator to create a distribution representing the reported population and standard error from public sources. **ERI** expects that the displayed, estimated measures do not precisely match reality, but rather represent a model of what most likely exists. (It is created and shown because of subscriber requests for a visual presentation.) Actual data points with interactive, pop-up content details, adjusted for the location and industry, may be supplied as well, as available, showing the effective date and publication location of pay information voluntarily disclosed by the survey source.

As of the October 2007 release, **Salary Assessor** subscribers may now select **View | Survey Participants** for a partial list of organizations that have data represented in this Assessor Series' survey database. Survey participants are also displayed on the Base Salary Graph as light green dots over the data plots described above. If you put your cursor over a survey participant dot, then the source data will display. Participation may have been via **ERI's** patented on-line survey, **ERI** Salary Surveys (industry and job function surveys), PAQ field job analyses, PAQ eDOT Skills Project, Occupational Assessor's cybernetic selected characteristics of occupations contribution to the latter, digitized optical character recognition reading of 850,000 US organizations' IRS public documents, digitized reading of US SEC proxies, 10-Ks, and 8-Ks, manual digitization of public UK/Euro countries' companies' annual reports, Canadian SEDAR data (under license), and/or extractions from other data licensed for use in the Assessor Series from the public record or from organizations such as GuideStar, Statistics Canada, National Statistics Office, and others. All of these sources comply with US DOJ/FTC Antitrust Safety Zone Statements by meeting the following conditions: 1) provider participation in surveys is managed by a third-party; 2) the information provided by survey participants is data more than three months old; and 3) there are at least five providers reporting data upon which each disseminated statistic is based, no individual provider's data represents more than 25 percent on a weighted basis of that statistic, and any information disseminated is sufficiently aggregated such that it would not allow recipients to identify the prices charged or compensation paid by any particular provider (unless part of the public record).

The "plot of dots" found in the **Geographic Assessor & Pay Survey** software database are actual reported OES survey results with that area's job's compensation compared to the US National compensation. The plot of "dots" found in the **Executive Compensation Assessor & Survey** software database are, like the **Geographic Assessor & Pay Survey** software database, actual data plots as derived from proxy compensation extracts. Running a PC's mouse's pointer over a dot identifies the values, double clicking pulls up the Summary Compensation table. Retrieval of the Full Proxy, Appraisal Norms, and 10-Ks will allow peers to reproduce that part of the **ERI** analyses. Similar data plots and retrievals of source documents are found in ERI's Nonprofit Comparables Assessor & Tax-Exempt Survey. There exist over 20 million dots found on **Assessors** that can be keyed (and retrieve) source documents from which they were derived. The plots shown illustrate a statistically derived distribution. The scatter diagram is based on derivations from data points ("n"), Standard Error, and probable random distribution of values. Data plots and retrieval of source documents are what make ERI's **Assessor Series** truly unique.

Industry Codes

ERI utilizes an **enhanced Standard Industrial Classification (eSIC)** code based on the replaced 1987 US SIC versus the now used NAICS. Several reasons for ERI's use of its own industry code **eSIC** exist: 1) The North American Classification System (NAICS), was under dispute between Canada and the United States until agreements were settled in 2007. Statistics Canada, the Economic Classification Policy Committee (ECPC) of the United States, and Mexico's Instituto Nacional de Estadística, Geografía e Informática (INEGI) agreed upon the limited industry revisions for NAICS 2007. The revision went into effect for the reference year 2007 in Canada and the United States and for 2009 in Mexico. 2) Agreements took place in 2007 for the International Standard Industrial Classification of all Economic Activities (ISIC) of the United Nations and the Statistical Classification of Economic Activities in the European Community (NACE, Nomenclature statistique des activités économiques dans la communauté européenne). The revised ISIC (Rev. 4) was adopted by the UN Statistical Commission in March 2006 for world-wide statistical classification of activities and products. NACE is the European-level statistical classification of economic activities, with the first reference year for NACE Rev. 2 being 2008. **ERI** maintains a crosswalk for these files, with Mexico, Canada, and the US having their own unique NAICS. 3) Many countries copyright their postal codes and unique industrial code variations; and whereas **ERI** leases these rights from Statistics Canada and the UK National Statistics Office, it is uneconomical to do so with 25 different country variations to the above systems. 4) Disputes exist within the EU, as the UK SIC is now an extended/evolved version of NACE. 5) "On April 9, 1997, the Office of Management and Budget (OMB) announced its decision to adopt the North American Industry Classification System (NAICS pronounced Nakes) as the industry classification system used by the statistical agencies of the United States and in doing so NAICS replaced the 1987 Standard Industrial Classification." (See www.bls.gov). Note the term, "statistical agency," as disagreements are not necessarily limited to between countries. 6) "Statistical agency" does not include the US Securities and Exchange Commission that utilizes its own unique 445 industry set of SIC-like codes. **ERI** utilizes the SEC 10-Ks, 8-Ks, and proxies as a key data source in the creation of the **Executive Compensation Assessor & Survey**. 7) The US IRS, although asking for an NAICS code on personal and corporate tax returns, uses an "Activity Code" for nonprofit organizations formed before 1998 or the National Tax Exempt Entities code (NTEE) code for those formed thereafter. (Form 990s report neither; this code is taken from the IRS Masterfile of nonprofits, and yes, there is a gap in years when two other code types were used.) **ERI** collects and analyzes all Form 990s (nonprofits include most health care services, such as hospitals). 8) The US Social Security Administration, which historically has been the biggest user of the US DOT is not a statistical agency. The present DOT industries are more than 50 years old (e.g., "buttons & notions" is still used). 9) ERI leases certain financial data from private providers under Distributor [License] Agreements. Other financial information within the Licensed Products, used with permission, may be proprietary to other entities. These sources have their own unique SIC-like codes that require concordance. 10) For historical purposes and cross-industry and country comparisons, **ERI's** research requires a common industrial classification code -- including use with ERI archive data where Principal Business Activity codes (PBAs), although discontinued, are the norm. Over 30 major and minor industry code series exist in ERI's datasets.

ERI Economic Research Institute primarily serves private industry (the public sector, the IRS, and libraries comprise approximately 20% of our subscribers). Our salary structure analyses have been in use since 1974, the software to extract competitive wage and salary rates since 1987, and our COL analyses since 1989. ERI does not provide consulting services. EIN 33-0356443, Duns # 60977744, CAGE code OXP39, FedLink ER.

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