California Pay Equity Task Force

Agenda

July 16 2018

10:00 a.m. – 12:00 p.m.

Orrick, Herrington & Sutcliffe, LLP, 400 Capitol Mall Suite 800

Sacramento, California 95814

One or more of the Task Force members will participate in this meeting at the teleconference sites listed below. Each teleconference location is accessible to the public, and the public will be given an opportunity to address the Task Force at each teleconference location.

The public teleconference site(s) for this meeting are as follows:

Orrick, Herrington & Sutcliffe, LLP – 777 South Figueroa Street, Suite 3200 Los Angeles, CA 90017

Orrick, Herrington & Sutcliffe, LLP – 405 Howard Street San Francisco, CA 94105

Further teleconference sites may be added. Public comments will be taken on agenda items at the time the specific item is raised, unless it is a closed session item. Agenda items may be taken out of order to accommodate speakers and to maintain a quorum. Please check the California Commission on the Status of Women and Girls (CCSWG) website for updates, as the meeting may be rescheduled. For verification of the meeting, access the Commission's website at www.women.ca.gov. Time limitations for discussion and comment will be determined by the Co-Chairs.

I. Welcome and Call to Order – Co-Chairs
II. Roll Call
III. Establish Quorum
IV. Approve Minutes from March 7, 2018 Meeting
V. Review and Approval of Drafted Documents
    a. Employer Audit Documents
VI. Other Items
    a. Jury Instructions – Update
VII. Questions/Comments/Feedback
VIII. Next Meeting
IX. Public comment
X. Adjourn

*In addition to public comment regarding each agenda item, the Commission affords an opportunity to members of the public to address the Task Force on items of interest that are within the Commission's jurisdiction but are not on the noticed agenda. The Commission is not permitted to take action on items that are not on the noticed agenda, but may refer items for future consideration.

Disability Access

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Contact Information

Please contact stephanie.tseu@women.ca.gov or 916-651-5405 to submit written material regarding an agenda item or to request special accommodations for persons with disabilities, or non-English language translations and for requests for information prior to the meeting. To view this agenda online please visit our website at www.women.ca.gov.

MINUTES

California Pay Equity Task Force

Meeting Minutes

March 7, 2018

10:00 a.m. – 4:00 p.m.

Orrick, Herrington & Sutcliffe, LLP, 400 Capitol Mall #3000

Sacramento, California 95814

One or more of the Task Force members will participate in this meeting at the teleconference sites listed below. Each teleconference location is accessible to the public, and the public will be given an opportunity to address the Task Force at each teleconference location.

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I. Welcome and Call to Order – Co-Chairs

Meeting was called to order at 10:06am by Co-Chair Julie Su. Co-Chair Su welcomed Bethany Renfree to her first meeting as co-chair. Co-Chair Su gave an update on the Commission on the Status of Women and Girls, including the vacant Executive Director position and Communications position. Stephanie Tseu and Emily Van Atta continue in their expanded roles. Hiring of an Executive Director is a priority for the Commission.

II. Roll Call

Stephanie Tseu called roll. Task Force Members in attendance: Co-Chair Julie Su, Co-Chair Bethany Renfree, Jessica James, Kevin Kish, Jennifer Barrera, Kelly Jenkins-Pultz, Daniel Kuang, Tamara McDonald, Doris Ng, Victoria Pynchon, Tamekia Robinson, Kimberlee Shauman, Leslie Simon, Jeanna Steele, Rhoma Young. Jennifer Reisch joined the meeting at 10:42am. Commission staff in attendance: Stephanie Tseu and Marian Johnston.

Task Force members unable to attend: Senator Hannah-Beth Jackson, Assemblymember Cristina Garcia, Assemblymember Marie Waldron, and Peter Pawlick.

III. Establish Quorum

A quorum is established.

IV. Approve Minutes from January 8, 2018 Meeting

Co-Chair Bethany Renfree asked members to review the previous meeting's minutes and then asked for edits. There were no edits or comments shared by Task Force members. Leslie Simon made the motion to approve the minutes and Victoria Pynchon seconded the motion. All in attendance voted AYE: Co-Chair Julie Su, Co-Chair Bethany Renfree, Jessica James, Kevin Kish, Jennifer Barrera, Daniel Kuang, Victoria Pynchon, Tamekia Robinson, Kimberlee Shauman, Leslie Simon, Jeanna Steele, and Rhoma Young. There were no "no" votes.

Co-Chair Bethany Renfree directed Task Force members to review public comment that was submitted for review. The Task Force discussed the comment as well as the intent of AB 168. Jennifer Barrera advised the Task Force that there is pending legislation, AB 2282 (Eggman) that seeks to clarify salary expectations. After discussion, the decision by the Task Force was that AB 2282 should address the commenter's concern.

V. Review and Approval of Drafted Documents

Co-Chair Bethany Renfree explained that, based on previous meetings, materials were "bundled" by subject areas such as Employee, Employer, Union, etc. Because the Union documents were previously approved, today's meeting would focus on the Employee and Employer documents. As a way to save time and be more efficient, the Task Force would go through each document individually, but some documents would be grouped together when it came time to vote on them.

Motion to approve, with edits, "I Want to Know my Rights" section. Edits include – changing the order of the documents, changing titles of some of the resources, move "But I want to make sure I make enough money, what do I do?" to the job search category, reordering the bullets on page 21, and other technical changes. The motion also allows for changes to the documents for website content. All Task Force members in attendance voted AYE: Co-Chair Julie Su, Co-Chair Bethany Renfree, Kevin Kish, Jennifer Barrera, Daniel Kuang, Victoria Pynchon, Jennifer Reisch, Tamekia Robinson, Kimberlee Shauman, Leslie Simon, Jeanna Steele, Rhoma Young. Jessica James stepped out of the room and was unable to vote. There were no "no" votes.

For the "Job Search" section, the Task Force motioned to approve, with the following edits: reorganize the documents based on Task Force member recommendations recorded during the meeting, edits were made to page 27 and the Task Force authorized Commission staff and the Task Force Co-Chairs to make necessary edits for the website. Tamekia Robinson made the motion and Jennifer Barrera seconded. All Task Force members in attendance voted AYE: Co-Chair Julie

Su, Co-Chair Bethany Renfree, Kevin Kish, Jennifer Barrera, Daniel Kuang, Victoria Pynchon, Jennifer Reisch, Tamekia Robinson, Kimberlee Shauman, Leslie Simon, Rhoma Young. Jessica James and Jeanna Steele stepped out of the room and were unable to vote. There were no "no" votes.

There was handout titled "Pay Equity and Collective Bargaining" provided to Task Force members at the meeting that replaces pages 29-32 of the meeting materials. The Task Force only voted on pages 1-6 of the handout as the last three pages were previous approved. Tamekia Robinson made the motion to approve pages 1-6 of the handout, replacing pages 29-32 of the meeting materials. Jennifer Barrera seconded the motion. All Task Force members in attendance voted AYE: Co-Chair Julie Su, Co-Chair Bethany Renfree, Jessica James, Jennifer Barrera, Daniel Kuang, Jennifer Reisch, Tamekia Robinson, Leslie Simon, Rhoma Young. Kevin Kish and Jeanna Steele stepped out of the room and were unable to vote. Victoria Pynchon and Kimberlee Shauman were no longer able to attend the meeting. There were no "no" votes.

Under the Employer section, "What Can I do to Comply with the CA Fair Pay Act?" was changed to "Tips for Compliance with the California Equal Pay Act." Additional edits included adding links and only keeping the California portion of the chart. Jessica James made the motion and Rhoma Young seconded. All Task Force members in attendance voted AYE: Co-Chair Julie Su, Co-Chair Bethany Renfree, Jessica James, Jennifer Barrera, Daniel Kuang, Jennifer Reisch, Leslie Simon, Jeanna Steele, Rhoma Young. Kevin Kish stepped out of the room and was unable to vote. Tamekia Robinson had to leave the meeting and was unable to vote. There were no "no" votes.

The motion to approve "What Can I do to Promote a Culture of Pay Equity?" with small edits to page 36 was made by Rhoma Young and seconded by Daniel Kuang. All Task Force members in attendance voted AYE: Co-Chair Julie Su, Co-Chair Bethany Renfree, Jessica James, Jennifer Barrera, Daniel Kuang, Jennifer Reisch, Leslie Simon, Jeanna Steele, Rhoma Young. Kevin Kish stepped out of the room and was unable to vote. There were no "no" votes.

"Online Information – Market Data Information EDD", page 50, was edited to include links to other resources as well as other edits. Jeanna Steele made the motion and Jessica James seconded. All Task Force members in attendance voted AYE: Co-Chair Julie Su, Co-Chair Bethany Renfree, Jessica James, Kevin Kish, Jennifer Barrera, Daniel Kuang, Jennifer Reisch, Leslie Simon, Jeanna Steele, Rhoma Young. There were no "no" votes.

Task Force members decided to remove page 51, "What is the gender pay gap, and why should I care?" Task Force members felt this was duplicative to the "Why?" memo. No vote was taken.

Documents discussed, but not voted on were Federal and State Laws Concerning Equal Pay, Measuring the Pay Gap, and the Glossary. These document will be reviewed the next meeting.

Documents discussed –

a. Employee
    i. Am I being paid fairly under the California Fair Pay Act of 2015?
    ii. But I need to make sure I make enough money, what do I do?
    iii. How can I find out if I am being paid inequitably?
    iv. I want to file a claim for wages
    v. What do I do if I am being paid inequitably?
    vi. Checklist for beginning a job search
    vii. How do I connect with a prospective employer?
    viii. How do I create a resume and cover letter once I am ready to apply?
    ix. Informational interviewing
    x. Once I have an idea of what job/career I want, where do I find open jobs?
    xi. Where can I find out information about jobs/careers in which I may be interested?
    xii. Pay equity and collective bargaining
b. Employer
    i. What can I do to comply with the California Equal Pay Act and the federal Equal Pay Act?
    ii. What can I do to promote a culture of pay equity?

VI. Lunch

VII. Continue Review and Approval of Drafted Documents

a. Other
    i. Federal and state laws concerning pay equity
    Task Force members discussed this and decided to review at next meeting.
    ii. Online information – market data information EDD
    This item was voted on and is included above in the notes.
    iii. Orrick Federal and CA Reporting Requirements
    This item was not included in the meeting materials and was not discussed.
    iv. What is the gender pay gap and why should I care?
    This time was discussed and included in the notes above.

VIII. Outreach Discussion

Unfortunately, the Task Force was unable to have this discussion due to time constraints. This will be discussed at future meetings.

IX. Other Items

a. Jury Instructions – Update

Due to time constraints, the Task Force was unable to discuss this item.

b. Glossary

This document was discussed thoroughly but was not voted on due to the length of the discussion. This document will be voted on during the next Pay Equity Task Force meeting.

c. Scaffolding document

This document has not been completed and therefore, was not discussed.

d. Other items if necessary

X. Website Update

Due to time constraints, the Task Force was unable to discuss this item.

XI. Questions/Comments/Feedback

XII. Public comment

Other than the public comment discussed at the beginning of the meeting, there was no other public comment.

XIII. Adjourn

Meeting was adjourned at 4:06pm.

Employer Audit Documents

Measuring Pay Equity--Intro

To ensure pay equity, employers must evaluate and monitor their compensation decisions for potential pay differences. Measuring pay equity is critical to ensuring compliance with the California Fair Pay Act (FPA). There are many methods to measuring pay equity and this document is not exhaustive. This report provides an overview of a general framework and some approaches to measuring pay equity.

To begin, it is important to recognize that there is no universal one-size-fits-all method to measuring pay equity. Having said that, it is possible to provide a general framework to determine the most appropriate family of analysis. Roughly, your analytical strategy can be guided by Sample Size (Large or Small) and Level of Analysis (Group and Individual). This is best represented by a 2 x 2 chart:

		Sample Size	
		Large (>30/5)	Small (<30/5)
Level of Analysis	Group	Regression	Median Split
	Individual	Residual Analysis Cohort Analysis	Residual Analysis[1] Cohort Analysis

[1] Modified for small sample situation.

Level of Analysis

The first step in developing a pay equity analysis plan is to decide on the level of analysis, where the focus of the investigation is to determine if there is pay difference:

1) between **groups** of employees.
2) between **individual** employees.

Group-level analyses are generally the first step in pay equity investigations. Companies interested in proactively measuring pay equity should consider group-level analyses first. By comparing pay between groups of individuals, each analysis will measure pay equity among a larger group of employees. As such, group level analyses can more efficiently identify pay differences. In general, group-level analyses are statistical in nature. When group-level pay differences are identified, the next step is to identify the negatively impacted individuals.

Individual-level analyses are more precise but require significantly more effort. This effort may include (among others) file pulling and historical research to determine how the pay difference came about, e.g., starting pay, education and training differences, promotion differential, etc. In general, individual-level analyses involve a combination of data modeling and cohort analysis methods.

Sample Size

Multiple Linear Regression based methods require sufficient sample size to draw reliable conclusions. As a rule of thumb, many experts have adopted a "30/5" rule, where the group count must meet two thresholds:

1) The total sample needs to be a minimum of 30.
2) The smaller of the two group being compared needs to be a minimum of 5.

Example 1: Job-A contains a total of 30 employees. The 30 employees are comprised of 6-women and 24-men. Job-A meets the 30/5-rule for regression analysis because it meets both thresholds:

1) The total (30) meets the minimum threshold of 30.
2) The smaller of the two groups (women) is 6 and meets the minimum threshold of 5.

Example 2: Job-B contains a total of 35 employees. The 35 employees are comprised of 3-women and 32-men. Job-B does not meet the 30/5-rule for regression analysis because it meets only one of the two thresholds:

1) The total (35) meets the minimum threshold of 30.
2) The smaller of the two groups (women) is 3 and that **does not** meet the minimum threshold of 5.

Large samples that meet the 30/5-rule requirements can be analyzed with regression-based methods. With large samples:

1) Group-level analyses can be statistically analyzed with regression.
2) Individual-level analyses can rely on a residual analysis based on the regression model.

Small samples that fail to meet the 30/5-rule requirements cannot be analyzed with regression-based methods. With small samples:

1) Group-level analyses can be statistically analyzed with median-split methods.
2) Individual-level analyses can rely on residual analysis based on the regression model (modified for small sample situations).

Cohort Analysis is the final and most precise step in a pay equity investigation. These are custom exploratory analyses and cannot be packaged in a one-size-fits-all approach. An outline of the methodology is detail in (XXX please reference cohort analysis method paper).

[Notes: Separate papers are written for the 4-items in the 2 x 2 table. I'm not sure how this will be setup on the web page so I will not work on the transition, reference, or possibly hyperlink of the documents.]

Measuring Pay Equity--Large Sample Size Group Analysis

When sample size is sufficient (N>30/5, see XXX reference intro), equal pay investigations are fairly straightforward. Multiple linear regression (MLR) is the analytical method of choice among professional analysts. With MLR, it is possible to evaluate whether pay differences are statistically significant *after* controlling for bona-fide job related factors (e.g., seniority, performance, education). Although conducting a proper MLR analysis requires special training and expertise, it is possible for any HR professional to understand the general MLR process in an equal pay investigation. Please note that the following is a high-level outline to provide readers with a general idea of the steps in a compensation analysis.

Step 1: Identify Substantially Similar Employees for Analysis
The California Fair Pay Act was enacted to ensure that individuals performing substantially similar work are compensated equally. It is important to compare pay among individuals who are performing ***substantially similar*** (XXX add links to definitions?) work.

Step 2: Specify a Compensation Model
One of the most important step of a pay equity investigation is to invest the time to understand the factors and forces that impact pay decisions. This is particularly important, because the California Fair Pay Act is focused on pay differences *after* bona-fide job related factors are accounted for. There are some commonly shared factors, such as tenure (time in company, and time in job) and performance. However, these are not universal and your company may differ. In fact, pay decisions may differ among jobs even if they are in the *same* company. Therefore, it is critical to understand the factors that impact pay decisions and to properly model them in the MLR analysis.

Step 3: Assemble the Data for Analysis
Once a compensation model has been specified, the next step is to assemble the necessary data for MLR analysis. For example, if Time in Job and Performance were identified in Step 2 as critical to the compensation model, then it is important to include Time in Job and Performance Data in the analysis data file. Specifications and requirements are discussed at (XXX reference the infrastructure material?).

Step 3: Prepare the Data for Analysis
Data preparation is fairly straightforward. There are two major types of data: 1) Numeric and 2) Categorical.

1) NUMERIC: Information that can take on numeric value or meaning can be directly entered into a regression analysis with no special modification. For example, tenure is measured in year performance is measured in levels (e.g., high=3, med=2, low=1).
2) CATEGORICAL: Information that are unique and distinct categories (e.g., gender, race, work location) require special treatment before they can be entered into a regression analysis. One of the more common methods of "transforming" categorical data into analyzable form is to *dummy code* them into a family of 0 and 1 dummy codes. For example, to dummy code gender, simply recode Female records into 0's and Male records into 1's. When there are more than two categories, it is tempting to simply assign a numeric value for each category (e.g., 1, 2, 3), but that would be wrong.

Analysts interested in analyzing categorical data with more than two categories are advised to familiarize themselves with dummy coding methods and/or consult a statistical expert.

Step 4: Model Evaluation

Once data is collected and prepared, it is very tempting to simply analyze it and interpret the results for potential pay disparity concerns. Before jumping to the regression outputs, it is important to determine if the explanatory factors are valid--is each explanatory factor in the model related to pay? For example, if performance is modeled to explain pay differences, then it is appropriate to expected that higher performance is related to higher pay. An easy test for this relationship is the simple correlation analysis. As a rule of thumb, if the correlation between an explanatory factor and pay is not significant, then the explanatory factor is unlikely a bona-fide explanatory factor. In some instances, an explanatory factor may have no meaningful correlation with pay but exhibit important impact in pay in an MLR analysis. These are significantly more complex relationships and an expert analyst is needed to ensure that the regression analysis is valid.

Step 5: MLR Analysis

Once the data is prepared, the next step is to enter the data into an MLR analysis. There are many statistical programs that can accomplish this but the general specifications include the following:

1) Compensation/Salary data is entered as the *Dependent Variable*
2) Gender (coded) is entered as *Independent Variable*
3) Numeric explanatory factors are entered as *Independent Variables*
4) Categorical explanatory factors' dummy codes are entered as *Independent Variables*

Step 6: MLR Results Interpretation

Interpreting MLR results is pretty straightforward.

1) First, as an extension of Step 4 (Model Evaluation)--determine if each explanatory factor in the model are meaningfully related to pay. Analysts can evaluate the MLR beta-coefficient for each explanatory factor. At this point, if the explanatory factor has no significant impact on the model, then it is generally discarded. In rare instances, a non-significant explanatory factor may have a "hidden" effect on pay and only experienced analysts can determine that effect.
2) Second, determine if the Gender/Race factor is significant. If the beta is significant for Gender/Race, then there is significant pay difference between groups.
3) Third, if there is significant pay difference between groups, it is important to determine the group that is being negatively impacted and how much they are being underpaid. For example, in a gender analysis, if the data is coded (female=0, male=1) then the directionality of impact is simple: positive beta=men are paid more than women, while negative beta=women are paid more than men. The beta-value is an estimate of the pay gap after account for all explanatory factor in the MLR analysis.

Measuring Pay Equity--Large Sample Size Group Analysis

This document provides a rough outline of a generally accepted method for pay equity investigations when sample size is large enough--Multiple Linear Regression (MLR). Experience and expertise is required to properly conduct a statistical equal pay investigation, and this report is not meant to replace that. The purpose of this report is to provide an outline of the general analytical process involved in a statistical pay equity investigations.

Measuring Pay Equity: Small Sample Size Group Analysis

When sample size is small (below 30/5-rule threshold, see XXX reference intro), group-level statistical pay equity investigations may still be possible, but can be limited. A common statistical method in small sample size situations is the "Test of Median-Split Proportions," which the EEOC refers to as the "Threshold Statistical Test" (see https://www.eeoc.gov/policy/docs/compensation.html). Conceptually, the test of median-split proportions compares the proportion of men and women who are above and below median pay. All else being equal, when the proportions of men and women above the median are equivalent, we can conclude that there is pay equity.

Conducting a test of median-split proportions is fairly straightforward. Here are the steps:

Step 1: Identify Substantially Similar Employees for Analysis
The California Fair Pay Act was enacted to ensure that individuals performing substantially similar work are compensated equally. It is important to compare pay among individuals who are performing ***substantially similar*** (XXX add links to definitions?) work.

Step 2: Compute Median Pay
Median pay is the value of the middle number from a set of wages when they are ordered from lowest to highest. Here are the steps to obtain the median pay:

1) Order the salary data from lowest to highest
2) Find the mid-point from this range of wages. Classically, if there is an odd number of records, then median is the value at the mid-point. If there is an even number of records, then median is an average of the two values around the mid-point.

Step 3: Count
Count the number of men and women above and below the median. If there is an odd number of records, then the individual at the median is included in the "median and below" group. Arrange the counts into a 2x2 table.

Figure 1: 2x2 Table of counts of Gender by Median

	Median and Below	**Above-Median**
Women	*Women Below-Median*	*Women Above-Median*
Men	*Men Below-Median*	*Men Above-Median*

Step 4: Statistically Analyze the Proportions
There are many statistical tests for differences in proportions. When the sample size is small, the Fisher's Exact Test is generally accepted as the most appropriate method. When the sample size is sufficient, the Chi-Square is generally preferred. When the *p*-value is less than or equal to 0.05 or when standard deviation (*SD*) is greater than or equal to 1.96, we can conclude that the difference in proportions are statistically significant.

Example:

Step 1: We identified 15-people doing substantially similar work and are interested in measuring pay equity among them. The sample size does not meet the 30/5-rule for regression analysis so we will perform a test of split-median proportions.

EMPID	Salary	Gender
1	$35,900	F
2	$36,100	F
3	$36,100	F
4	$36,100	M
5	$37,900	F
6	$38,800	F
7	$39,300	F
8	$39,600	F
9	$39,800	M
10	$41,000	M
11	$42,300	M
12	$43,800	M
13	$44,100	M
14	$44,300	F
15	$44,500	F

Step 2: To compute the median, we first order salary data from lowest to highest and find the mid-point. Since there are odd number of records, we define median as the salary at the 8th position--$39,600.

Step 3: We count the number of men and women who are above and below the median ($39,600).

	Median and Below	Above-Median
Women	*7*	*2*
Men	*1*	*5*

Step 4: In this analysis, we see that only 22% of females are above the median, while 83% of males are above the median. Due to the fact that the counts are so small, we analyzed this with the Fisher's Exact Test and obtain p=0.04, SD=2.05. The compute p-value is less than or equal to 0.05 and the SD is greater than or equal to 1.96, so we can conclude that the difference in proportions women (22%) and men (83%) are statistically significant.

Measuring Pay Equity: Large Sample Size Individual Analysis

Individual-level analyses are important in pay equity investigations and serve two purposes: 1) identify individuals who are negatively impacted and 2) estimate the amount by which they are negatively impacted. When sample size is large and the 30/5-rule criteria are met for regression analysis, individual-level analysis is fairly straightforward. Here are the general steps:

Step 1: Estimate Predicted Pay

Once group-level regression analysis for pay equity is complete, it is possible to apply the regression model to estimate what each individual *should* be earning. This is referred to as the "predicted". To properly estimate predicted pay, it is important for the analyst to specify the same regression model (i.e., include all explanatory factors) but exclude the group (e.g., gender, race) factor in the analysis.

For example:

1) Regression Model for Pay Equity: ***Pay = Tenure + Performance + Gender***
2) Regression Model for Pay Prediction: ***Pay = Tenure + Performance***

After conditioning a pay prediction regression model, it is possible to apply the estimated regression parameters to compute predicted pay for each individual.

Step 2: Compute Individual Pay Gap

Estimating individual pay gap is simply a matter of calculating the difference between *actual-pay* and the regression-based *predicted-pay* (Step 1). This pay gap is technically referred to as the "residual." The raw individual pay gap is usually in dollars. Individuals whose actual-pay is below their predicted pay are considered ***underpaid***--their actual earnings are below what they should be earning. Equally, there will be individuals whose actual-pay are *higher* than their predicted pay--interpretation-wise, they can be considered ***overpaid***.

While raw individual pay gap information may be helpful, its interpretive value can be limited. For example, a pay gap of $5,000 may seem like a lot of money, but this is all relative. When the average salary is $30,000 per year, a $5,000 (17%) difference is a lot. However, if the annual salary was $150,000, a $5,000 (3%) difference may not necessarily be a lot. Rather than interpreting individual pay gap in raw dollar-value, experts convert them into statistical metrics (standard deviation (SD) units) through a procedure referred to as standardization[1]. Since an SD≥1.96 is considered statistically significant, it is possible to use this criterion to identify individuals who can be considered statistically significantly below their predicted (expected) pay. Individuals with larger SD's indicate greater severity in their pay gap.

By computing individual pay gap, it is possible to identify and estimate the amount an individual is underpaid, as defined the by the regression model. To assist in evaluating the relative severity of this impact, standardizing the individual pay gap into standard deviation (SD) unit is recommended.

[1] Standardizing data into standard deviation (a.k.a, z-score units) is fairly simple. Analysts who are unfamiliar with this can easily search for this on the internet using keyword "standardizing data."

Measuring Pay Equity: Small Sample Size Individual Analysis

Individual-level analyses are important in pay equity investigations and serve two purposes: 1) identify individuals who are negatively impacted and 2) estimate the amount by which they are negatively impacted. When sample size is small and the 30/5-rule criteria cannot be met for regression analysis, individual-level analysis is still possible with data modeling approaches, but the results must be interpreted with caution and additional care.

There are many different data modeling methods available, and interested analysts are encouraged to research this topic in depth. To assist employers interested in small sample individual analysis, here is a simple analytical framework that can be applied to measure pay equity between individuals.

Overall, the method described in this report includes two general steps:

1) Step 1--Estimate Predicted Pay
2) Step 2--Compute Individual Pay Gap

Step 1: Estimate Predicted Pay

When sample size is large, it is fairly easy to condition a regression model on the data and estimate what each individual *should* be earning. This is referred to as the "predicted". However, when sample size is small, it is not possible to apply traditional methods and condition a regression model on the limited number of data records. However, there is a strategy to overcome this limitation and obtain regression-based estimates of individual predicted pay.

First, we increase the sample size by folding in employees from other groups that perform similar work and share similar compensation systems (e.g., job function, job family). This part is more art than science, but keep in mind that the more internally similar the sample is, the more confident one is with the conditioned regression model. This larger sample can be referred to as the regression sample.

Second, once the 30/5-rule sample size is obtained, it is possible to condition a regression model for pay prediction on the regression sample. Please note that the regression model must not include group factors (e.g., race, gender).

Third, after conditioning a pay prediction regression model, we shift our focus *away* from the regression sample. The remainder of the analysis is refocused on the individuals in the original small sample sized substantially similar group. We apply the estimated regression parameters to compute predicted pay for each individual in the small sample of substantially similar group members.

Step 2: Compute Individual Pay Gap

Estimating individual pay gap is simply a matter of calculating the difference between *actual-pay* and the regression-based *predicted-pay* (Step 1). This pay gap is technically referred to as the "residual." The raw individual pay gap is usually in dollars. In small sample size situations, the

raw individual pay gap (residual) must be ignored and left uninterpreted. The individual pay gap must be "standardized"[1] into standard deviation units before they can be interpreted.

Once individual pay gap is standardized, it is possible to identify underpaid individuals in the small sample substantially similar group. In statistics, SD greater than 1.96 are considered statistically significant and can take on one of two interpretations with the standardized individual pay gap:

1) SD ≤ -1.96 are statistically significantly underpaid
2) SD ≥ 1.96 are statistically significantly overpaid

Next Step

Once the individual pay gaps are computed and the underpaid individuals are identified, the next step is to investigate the cause of that gap. This is often referred to as a "cohort analysis." See XXX (insert reference for cohort analysis) for details on cohort analysis methods

[1] Standardizing data into standard deviation (a.k.a, z-score units) is fairly simple. Analysts who are unfamiliar with this can easily search for this on the internet using keyword "standardizing data."

Next Step

Once the individual pay gaps are computed and the underpaid individuals are identified, the next step is to investigate the cause of that gap. This is often referred to as a "cohort analysis." See XXX (insert reference for cohort analysis) for details on cohort analysis methods.

Measuring Pay Equity--Cohort Analysis

Once the individual pay gaps are computed and the underpaid individuals are identified, the next step is to investigate the cause of that gap. This is often referred to as a "cohort analysis." There is no scripted methodology for a cohort analysis. It is largely an exploratory and qualitative investigation. From my experience here are several tips to assist you in your cohort analysis.

1) Start with the individual pay gap analysis: Prioritize your investigation. Focus on the most severely underpaid individuals first.
2) Create comparable cohorts: For each underpaid individual, identify others who share similar regression model attributes (e.g., similar tenure, performance, etc.). Arguably, individuals who share similar attributes may be considered a cohort and all else being equal should be paid the same.
3) Examine employee files of comparable cohorts identified in Step 2: A manual review of employee files of comparable cohorts generally provide satisfying answers. My focus is usually on job entry pay, regardless of whether it is a new hire, competitive promotion, or promotion. In general, it is observed that women enter into a job with lower job entry pay than men. If this is identified to be the problem, it is important to drill down to understand and justify this job entry pay gap. Analysts should reference the (XXX available defenses for pay differences) to better understand if the source of pay disparity is in violation of California Fair Pay Act.