For employers who want to ensure pay equity, this section provides some concepts and tools to **measure** pay equity.[1]   Measuring pay equity is helpful for employers seeking to identify and address pay disparities.

There is no universally applicable, one-size-fits-all method for measuring pay equity. The tools provided here are not meant to be an exhaustive treatment of all methods. Instead, they provide an overview of some commonly-used methods for analysis and introduce concepts and vocabulary that may be helpful in understanding the components of a pay equity analysis. Appropriate and accurate statistical analysis of pay equity requires analytical expertise and experience which cannot be captured here. Employers and HR professionals interested in conducting a pay equity analysis are strongly encouraged to seek expert consultation and/or services.

No two analyses of compensation are identical and each analysis must be appropriately tailored to the specific employer. For example, the appropriate pay analysis may depend on the number of employees you have. The value of a pay analysis also depends on factors such as data quality, which is not covered here. However, a good place to start to prepare for an audit is to evaluate the type, specificity, and quality of data collected about compensation in your workplace. For additional guidance on collecting and ensuring quality of your data, please see [LINK Data Tool/Step By Step].

The information provided here is meant to give a general framework of questions and concepts for employers interested in conducting a pay audit, hiring a qualified statistician to conduct a pay audit for them, or hiring internal staff to do this work. The purpose of this tool is three-fold:

1) Provide a framework to assist employers and analysts to design and structure an analysis plan.
2) Identify some widely accepted analytical approaches to measure pay equity.
3) Identify questions employers can ask when hiring someone to do a pay equity analysis for them.

Given the complexities of performing statistical analysis, it is a best practice to work with an expert in pay equity analysis.

<u>**Overview**</u>

Pay Equity Analysis Framework--At a high level, pay equity analysis is guided by two factors.

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[1] The tools contained here also do not cover what to do after you get the results of your pay equity analysis. Interpreting the results and deciding upon next steps, including pay adjustments, can be a complicated and nuanced undertaking that is best addressed through consultation with an experienced professional.

1) **The Level of Analysis**: group or individual; and
2) **Sample Size:** large or small, depending on the number of employees involved the analysis

This framework is represented in the following chart and described in detail below:

Sample Size

	Large (>30/5)	Small (<30/5)
Group	Regression	Median Split
Individual	Residual Analysis Cohort Analysis	Modified Residual Analysis Cohort Analysis

Level of Analysis (left vertical axis label)

Level of Analysis
An initial 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, as identified by demographic characteristics, e.g., gender or race/ethnicity;
2) between **INDIVIDUAL** employees who perform substantially similar work.

Group-level analyses aim to test for pay differences between groups of workers by gender and race. Companies interested in proactively measuring pay equity should consider group-level analyses first, as they can more efficiently identify pay differences. By comparing pay between groups of individuals, each analysis will measure pay equity among a larger group of employees. Group-level analyses generally are statistical in nature. When group-level pay differences are identified, the next step is to identify the negatively impacted individuals.

Individual-level analyses investigate for pay differences at the individual employee level. This may include delving into individual employee files to investigate potential explanations for perceived pay differences, e.g., starting pay, education and training differences, promotion differential, etc. An individual-level analysis is more precise because it evaluates pay equity with more data among individual employees. For this reason, individual-level analyses are recommended as a follow-up when pay disparity is identified in group-level analyses.

Sample Size
The methods available to measure pay equity can be divided into two groups:
1) **large sample size:** methods require large number of employees
2) **small sample size:** methods can analyze small number of employees.

While not applicable in every situation, some experts use the "30/5" rule which applies two count thresholds to distinguish large samples[2]:

1) the total sample must have a minimum of 30 cases, and

2) the smaller of the two groups being compared must have a minimum of 5 cases.

Example 1: Job-A contains a total of 30 employees. The 30 employees include 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 thresholds may be analyzed with regression-based methods:

1) Group-level pay inequities may be investigated with multiple linear regression methods.

2) Individual-level pay inequities may be investigated with residual analyses based on multiple regression models.

Small samples that do not meet the 30/5-rule thresholds may be analyzed with other methods tailored to fewer cases. By way of example:

1) Group-level pay inequities can be investigated with median-split methods (e.g. Fisher's exact test).

2) Individual-level pay inequities can be investigated with residual analysis methods 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 detailed 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.]

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[2] It is generally thought that, at a minimum, there should be at least 10 employees for each variable in the regression.