EDGE Certified Foundation

EDGE UNEXPLAINED GENDER PAY GAP (UGPG) ANALYSIS

CONTENTS

1. PURPOSE

The purpose of this document is to describe in detail the method prescribed by the EDGE Certified Foundation to determine whether there are unexplained pay gaps between women and men in small and micro-sized organizations "(hereinafter small-micro organizations)", defined as organizations with between 30 and 49 employees.
This method is generally applied as part of the preparation for EDGE Certification.
Throughout this document, the method prescribed by the EDGE Certified Foundation is referred to as an EDGE-compliant analysis. The Unexplained Gender Pay Gap (UGPG) is referred to as UGPG. For further information concerning the method, please contact:
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1.1. Scope of Methodology

The method prescribed by the EDGE Certified Foundation has been developed for the purposes of achieving EDGE Certification. An organization is encouraged to also apply the methodology independently, to determine whether there are any unexplained pay gaps between women and men and to demonstrate compliance with the relevant country-level legislation on pay equity.

The general method for the EDGE UGPG analysis is based on linear regression, where the statistical significance of results and the statistical power of the model to explain variations in salary and pay depend on the sample size, meaning the number of employees included in the analysis. The minimum data requirement of conducting the EDGE UGPG analysis is 100 employees. The methodology for organizations with between 30 and 49 employees is set out in this document.

The EDGE UGPG small-micro organizations methodology also uses a linear regression model, but with fewer explanatory variables.

With the number of observations (i.e., employees considered in the analysis) between 30 and 49, it is important that the explanatory power and statistical significance of the calculated results are acceptable to analyze the impact of gender on salary/pay. In such a linear regression model, the number of explanatory variables is reduced to ensure a statistically rigorous model appropriate to the number of observations.

The type of explanatory variables is also fixed for statistical rigour reasons. This also differs from the existing EDGE UGPG analysis because in larger organizations the ability to include higher numbers of employees in the analysis ensures greater statistical explanatory power, thus enabling such organizations to customize their analysis by adding or varying the explanatory variables after they have run a standardized analysis. For small-micro organizations only a standard analysis is possible.

Aside from the number and type of explanatory variables to be used in the analysis, the other criteria to conduct the UGPG analysis in small-micro organizations are the same as those required for conducting the existing EDGE UGPG analysis:

- the selection of a reference period as the most recent 12-month reference period against which the analysis will be conducted (reference section 2.1 in the EDGE Unexplained Gender Pay Gap (UGPG) Analysis Methodology v1.3);

- eligible employees to be included in the analysis (reference section 2.2 in the EDGE Unexplained Gender Pay Gap (UGPG) Analysis Methodology v1.3); and
- the inclusion/exclusion criteria for and categorization of the dependent variables – base salary and pay (salary plus bonuses/cash benefits) (reference section 2.3 in the EDGE Unexplained Gender Pay Gap (UGPG) Analysis Methodology v1.3).

2. DATA REQUIREMENTS

The EDGE UGPG analysis methodology for small-micro organizations shall be applied to an organization with between 30 and 49 employees. For an organization with 100 or more employees the EDGE UGPG analysis methodology shall be used (reference EDGE Unexplained Gender Pay Gap (UGPG) Analysis Methodology v1.3). For an organization with between 50 and 99 employees the EDGE UGPG analysis methodology for small-medium organizations shall be used (reference EDGE Unexplained Gender Pay Gap (UGPG) Analysis Methodology for small-medium organizations v1)

In line with the EDGE UGPG analysis methodology, the regression analysis shall be run as a set of two regression analyses for "Salary" and "Pay" as the dependent variable, with the same criteria for the inclusion and exclusion of employees, and calculation of remuneration for periods of less than a year and less than full-time work (reference section 2.3 in the EDGE Unexplained Gender Pay Gap (UGPG) Analysis Methodology v1.3).

From the original list of explanatory variables or predictors in the EDGE UGPG analysis methodology, a fixed smaller set of standard variables is selected for the EDGE UGPG analysis for small-micro organizations. As noted in the section on Scope of Methodology, it is not possible to increase or vary the number of variables to run a customized regression.

Standard Variables

1. *Gender* – the explanatory variable, coded as binary (0 for Male, 1 for Female), which counts as one predictor.

2. *Age or Tenure* – a numerical variable which counts as one predictor.

    i. An organization must select either Age or Tenure for the analysis. To ensure statistically robust results, only one may be used in the small-micro organization analysis. The organization may choose whichever one they believe will offer the best explanation for differences in Salary / Pay.

3. *Level of responsibility* – a categorical variable with three levels, which counts as two predictors. Note that for a categorical variable with n employees, the total number of binary variables for modelling purposes is equal to n-1.

    i. Top management – reporting formally and directly to the CEO.

    ii. Other management – the sum of upper management, middle management, and junior management in the EDGE UGPG analysis methodology

    iii. Operational level – all other employees.

    For organizations whose structures differ from the default five-level structure in the EDGE assessment (namely top, upper, middle, junior management, and operational level), and are instead more simplified, the levels shall be consolidated into three suitable levels for

this categorical variable. For example: upper management, other management (comprising the sum of middle and junior management), and operational level.

The regression analysis has 4 predictors, including the explanatory predictor of gender.

3. EDGE-COMPLIANT ANALYSIS METHODOLOGY

The EDGE UGPG analysis methodology for small-micro organizations shall be performed using Ordinary Least Squares (OLS) linear regression. Here we make the same statistical assumption as in the existing EDGE UGPG analysis methodology that the distribution of the error terms ε_i is normal with zero mean and fixed variance. P-values are used to indicate the level of uncertainty associated with the coefficient estimates but are removed from determining the compliance with the EDGE threshold.

The form of the regression equation is similar to the existing EDGE UGPG analysis methodology (reference section 3.1 in the EDGE Unexplained Gender Pay Gap (UGPG) Analysis Methodology v1.3). The form of the regression equation for salary shall be:

$$\ln(Salary_i) = \beta_0 + \beta_1 Gender_i + \beta_2 Tenure_i \text{ or } \beta_2 Age_i + \beta_3 Level\ of\ Responsibility_i + \varepsilon_i$$

where:

- $\ln(Salary_i)$ is the log-transformed salary of a given employee i.

- $Gender_i$, $Tenure_i$, Age_i etc. are the values of the predictors described in section 2 for a given employee i.

Similarly, the form of the regression equation for pay is:

$$\ln(Pay_i) = \beta_0 + \beta_1 Gender_i + \beta_2 Tenure_i \text{ or } \beta_2 Age_i + \beta_3 Level\ of\ Responsibility_i + \varepsilon_i$$

where $\ln(Pay_i)$ is the log-transformed pay of a given employee i.

4. RESULTS

Similar to the EDGE UGPG analysis methodology, there are metrics and statistics to be used in order to interpret the regression results:

- *Coefficient of gender*: to calculate the ***Effect of gender or UGPG***.

  - Since the regression equation is semi-log (there is a log function on the left-hand side of the equation), to estimate the UGPG, the estimated coefficient β_1 for the gender predictors should be transformed using the following equation:

    $$(\exp(\beta_1) - 1) * 100$$

  - This formula expresses the effect of gender on salary or pay as a percentage. Its value can be interpreted as the average percent increase (or decrease) in salary or pay for men vs. women, where:

a) A positive (+) value denotes a pay gap in favour of women.

b) A negative (-) value denotes a pay gap in favour of men.

- *R-Squared*: as a measure of model fit. Since we only use one standard model and the user cannot choose to vary or add to the standard set of variables, we don't need to consider adjusted R-Squared.

- *Threshold*: A threshold of ±5% is assumed to determine whether the effect of gender on salary or pay is significant. This means that for the results to pass the EDGE Standard, the percentage results for both regression analyses ('Salary' and 'Pay') must fall within this range. This is consistent with the EDGE UGPG regression analysis.

  The EDGE Standard does not require any statistical test for the significance of the unexplained gender pay gap. An organization may, however, find statistical tests of significance helpful in understanding to what extent the UGPG represents a meaningful gap.

- *Number of observations*: The number of observations included in the Regression Analysis shall be reported. This is the number of employees whose data were input for analysis and should correspond to the total number of employees in the organization.

- *Number of predictors*: The number of predictors in the Regression Analysis shall be reported. This value refers to the number of predictors used in the analysis, which corresponds to the number of variables that were included in the regression model.