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**Overview**

This project seeks to conduct a comprehensive data analysis of the HR data of Palmoria Group. Palmoria Group (fictional) is a manufacturing embroiled in issues bordering on gender inequality in its 3 regions, Lagos, Abuja and Kaduna. The analysis focuses on the gender distribution of employees across the regions, employee ratings and remuneration.

**Data source**

There are two CSV files, both primary data from Palmoria Group Human Resources database. One contains employee details, rating and salary. The second datasets contains the bonus rules for employees based on ratings and department.

**Tools**

Microsoft Excel

PowerBI

**Data wrangling:**

Some data wrangling processes include:

Handling missing values

Removing irrelevant data

Using Excel functions (XLOOKUP, SUM, SUMIFS) to merge data from different sheets, and to create columns needed for analysis.

**Exploratory Data Analysis**

1. Conducted comprehensive EDA using PowerBI to distill gender distribution in the organization into regions and departments
2. Examined employees ratings based on gender across the three different region of Palmoria Group operations.
3. Scrutinized the company’s salary structure to identify gender pay gap across regions and departments.
4. Invested the company’s salary structure to ascertain compliance with regulation which requires manufacturing companies to pay employees a minimum of $90,000.
5. Categorized pay distribution of employees grouped by a band of $10,000.
6. Computed using functions and formulas in Excel, total amount to be paid to individual employees (salary inclusive of bonus)
7. Maximized power of DAX in PowerBI to compute the total amount to be paid out per region and company-wide.

**Data Analysis**

PowerBI DAX:

Employees above $90k = CALCULATE(COUNT(Data[Salary]), Data[Net Salary] >=90000)

Employees Below $90k = CALCULATE(COUNT(Data[Salary]), Data[Net Salary] <90000)

Overall net Salary = SUM(Data[Net Salary])

Total Abuja Amount = CALCULATE(SUM(Data[Net Salary]),Data[Location]="Abuja")

Total Lagos Amount = CALCULATE(SUM(Data[Net Salary]),Data[Location]="Lagos")

Total Kaduna Amount = CALCULATE(SUM(Data[Net Salary]),Data[Location]="Kaduna")

Total Females = CALCULATE(COUNT(Data[Name]),Data[Gender]="Female")

Total Males = CALCULATE(COUNT(Data[Name]),Data[Gender]="Male")

MS Excel Formulas:

Formula to calculate bonus for each employee based on rating and department:

=XLOOKUP(C2,'Bonus Rules'!$B$3:$B$14,XLOOKUP(F2,'Bonus Rules'!$C$2:$G$2,'Bonus Rules'!$C$3:$G$14," "))

Formula to calculate bonus:

=[@[Bonus %]]\*[@Salary]

Formula to calculate total salary:

=[@Bonus]+[@Salary]

Formula to calculate salary band:

=ROUNDDOWN([@Salary]/10000,0)\*10000&" - "&ROUNDDOWN([@Salary]/10000,0)\*10000+10000

Formula to count employees by salary band:

=COUNTIFS(Table1[Salary],"=>10000",Table1[Salary],"<=19999")

=COUNTIFS(Table1[Salary],">20000",Table1[Salary],"<=30000")

=COUNTIFS(Table1[Salary],">30000",Table1[Salary],"<=40000")

=COUNTIFS(Table1[Salary],">40000",Table1[Salary],"<=50000")

=COUNTIFS(Table1[Salary],">50000",Table1[Salary],"<=60000")

=COUNTIFS(Table1[Salary],">60000",Table1[Salary],"<=70000")

=COUNTIFS(Table1[Salary],">70000",Table1[Salary],"<=80000")

=COUNTIFS(Table1[Salary],">80000",Table1[Salary],"<=90000")

=COUNTIFS(Table1[Salary],">90000",Table1[Salary],"<=100000")

=COUNTIFS(Table1[Salary],">39999",Table1[Salary],"<49999")

=COUNTIFS(Table1[Salary],">110000",Table1[Salary],"<=120000")

=COUNTIFS(Table1[Salary],">119999",Table1[Salary],"<=1300000")

**Results**

\* A total 327( 34.79%) employees are paid above $90,000

\* A total of 613 (65.21%) employees are paid below $90,000

\* In Abuja region, despite having equal number of male and female employees (158 each gender), the male employees receive higher net salary by 0.04%, the female employees having the most upper ratings Good and Very Good notwithstanding. The lower rating - Poor and very poor in this region have higher number of male employees.

\* Kaduna Region has the highest number of employees (357) with 38% of the total annual salary.

\* In Kaduna, Services department has equal number of male and female employees (15 each) but males were paid higher. The female employees have higher ratings compared to the male employees. This is repeated in Research and Development Department, and Business Development department. This establishes a consistent bias against female employees in some specific departments in this region.

\* The Accounting department in Kaduna region is bias against the male employees.The female employee’s total salary higher by 0.04%, the ratings not withstanding.

\* Lagos region is bias against female employees in services department. There are equal number of female and male employees, with the females having higher rates. The bias would mean that the cumulative salary of male employees is greater by 8.7%

\* Palmoria group pays a total salary of $71.45M annually. The salary by region is as: Lagos $19.5M (27%), Abuja $24.8M (35%), Kaduna $27.1M ( 38%).

\* Company-wide, Palmoria Group company has most male employees rated Average, Poor and Very Poor. On the contrary, female employees are rated most Very Good and Good.

**Recommendation**

\* Gender equality is a an healthy organizational culture that will help foster team spirit in employees and promote productivity. Palmoria Group management should create a sustainable payment structure that promotes gender quality.

\* Employee rating should never be based on gender and departments but on certification, years of experience, level of degree, years of study, dedication to work, and productivity.

\* Compliance to with labour law will give the company a good image and prevent legal altercations. $90,000 minimum wage should be implement across all the regions. This will help the company reduce turn-over rate and boost employee contribution to organizational growth company-wide.

**Limitation**

Generally, there are two genders in the organization. However, some employees

refused to disclose their gender. “Others” was assigned to represent this category. This however, does affect the accuracy and reliability of the insights uncovered in this analysis in any sense.