**IBM HR Analytics Dashboard Documentation**

**1. Overview**

The IBM HR Analytics Dashboard provides a comprehensive view of employee statistics, focusing on attrition trends, performance metrics, and demographic analysis. This dashboard aids HR professionals in understanding key factors affecting employee retention and satisfaction.

**2. Objective**

To analyse the IBM HR dataset, understand attrition drivers, and deliver actionable insights. Key metrics include:

* Total Employees
* Attrition Count and Rate
* Average Age and Income
* Demographics by Job Role, Education, Department, and Performance

**3. Dashboard Components**

**3.1 KPIs**

* **Total Employees**: Displays the total workforce (e.g., 1,470 employees).
* **Attrition Count**: Number of employees who left (e.g., 237).
* **Attrition Rate**: Percentage of total attrition (e.g., 16.1%).
* **Active Employees**: Remaining workforce (e.g., 1,233 employees).
* **Average Age**: Mean age of active employees (e.g., 37 years).

**3.2 Visualizations**

1. **Average Monthly Income by Job Role**:
   * Line graph showing income trends across job roles.
   * Insight: Managers have the highest average monthly income.
2. **Attrition by Department**:
   * Bar chart comparing active employees and attrition across departments.
   * Insight: Research & Development shows the highest attrition count.
3. **Education Field Distribution**:
   * Donut chart representing the percentage of employees across education fields.
   * Insight: Life Sciences has the largest representation (41.93%).
4. **Performance Rating by Department**:
   * Pie chart depicting performance ratings segmented by department.
   * Insight: Sales department maintains consistent performance ratings.
5. **Active Employees by Education Level**:
   * Bar chart visualizing employee counts based on education levels.
   * Insight: Bachelor’s degree holders dominate the workforce.
6. **Age Group and Gender Analysis**:
   * Bar chart categorizing active employees by age group and gender.
   * Insight: Most employees fall between the 35–44 age group.
7. **Job Satisfaction Ratings**:
   * Table displaying satisfaction ratings by job roles.
   * Insight: Sales Executives and Laboratory Technicians show notable variances in satisfaction levels.

**4. Power Query Transformations**

**4.1 Data Cleaning**

* Removed duplicate rows and null values.
* Standardized column names (e.g., "MonthlyIncome" → "Monthly Income").

**4.2 Calculated Columns**

1. **Attrition Rate**:

Attrition Rate = DIVIDE(SUM(Hr\_Transformed\_Data[Attrition Count]),SUM(Hr\_Transformed\_Data[Employee Count]),"")

1. **Active Employees**:

Active Employee's = SUM(Hr\_Transformed\_Data[Employee Count])-SUM(Hr\_Transformed\_Data[Attrition Count])

**4.3 Grouping and Summarizing**

* **Education**:

if [Education] = 1 then "Bachelor's"

else if [Education] = 2 then "Master's"

else if [Education] = 3 then "Associate"

else if [Education] = 4 then "High School"

else if [Education] = 5 then "Doctorate"

else null

**4.4 Conditional Columns**

* **Age Grouping**:

AgeGroup = Table.AddColumn(#"Filtered Rows", "Age Group", each

if [Age] < 25 then "Below 25"

else if [Age] <= 35 then "25–35"

else if [Age] <= 45 then "35–45"

else "Above 45", Text.Type)

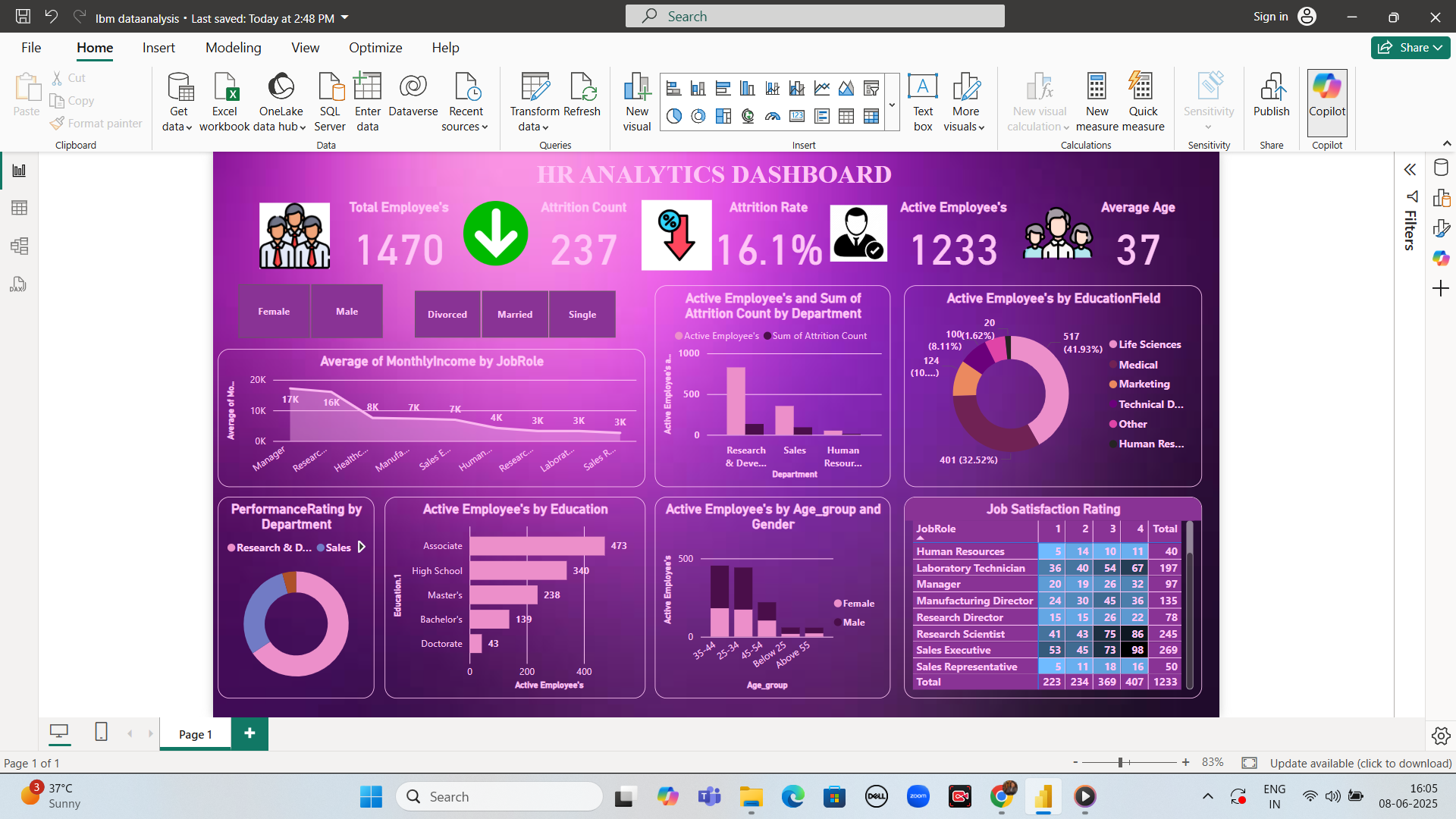
**5. Data Insights**

* **Attrition Trends**: Employees in Research & Development face the highest attrition due to high workloads and limited career advancement.
* **Income Disparity**: Lower-income roles experience higher attrition rates.
* **Education Impact**: Employees with Master’s degrees show better retention rates than those with Bachelor’s degrees.
* **Performance Correlation**: Departments with low performance ratings have higher attrition rates.

**Conclusion**

The IBM HR Analytics Dashboard provides a structured way to explore HR metrics, identify patterns of attrition, and support retention strategies. Whether implemented in Power BI or Cognos, it offers robust interactive visualizations supported by solid data preparation and DAX logic. The insights drive HR actions such as compensation adjustments, workload balancing, and career progression planning.

**DASHBOARD OUTPUT:**

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