**HR Analytics Dashboard Documentation**

**1. Introduction**

This HR Analytics Dashboard offers an in-depth view of employee attrition across various demographics and roles within the organization, assisting HR managers identify turnover patterns and critical factors influencing employee departures. By providing data-driven insights, the dashboard supports strategic retention efforts to improve employee performance and reduce attrition. Visualizations and KPIs enable the organization to make informed decisions on retention strategies, fostering a more stable and engaged workforce.

**2. Data Overview**

* **Dataset Summary**: The HR analytics dataset includes 1,480 rows and 38 columns representing individual employee records. These records encompass various attributes related to demographics, job satisfaction, income, and employment status.
* **Key Columns**:
  + **EmpID**: Unique identifier for each employee.
  + **Age and AgeGroup**: Information on employee’s age and age category.
  + **Attrition**: Indicates whether the employee has left the company (Yes/No).
  + **Department and JobRole**: Specifies each employee's department and specific role.
  + **MonthlyIncome and SalarySlab**: Financial data relevant to understanding salary-based attrition trends.
  + **JobSatisfaction and EnvironmentSatisfaction**: Ratings reflecting job satisfaction and work environment perceptions.
  + **WorkLifeBalance**: Rates employees' work-life balance satisfaction.
  + **YearsAtCompany and YearsInCurrentRole**: Reflects employee tenure and role-specific experience.

**3. Dashboard Overview**

The HR Analytics Dashboard includes six key performance indicators (KPIs) and seven charts, each providing valuable insights into employee attrition and related factors.

**Key Performance Indicators (KPIs)**:

1. **Count of Employees**: Displays the total number of employees within the organization, providing a baseline for understanding attrition rates.
2. **Number of Attritions**: Indicates the total number of employees who have left the organization, essential for measuring turnover.
3. **Attrition Rate**: Shows the percentage of employees who have left, calculated as (Number of Attritions / Total Employees) \* 100.
4. **Average Age**: Displays the average age of employees, offering demographic insight into the workforce.
5. **Average Salary**: Shows the average monthly income, allowing comparisons with salary-based attrition trends.
6. **Average Years at Company**: Provides the average tenure, useful for analyzing retention and turnover relative to employee experience.

**Charts**:

1. **Attrition by Education**: Visualizes attrition rates across various educational backgrounds, highlighting fields such as Medical, Marketing, and Technical with notable turnover.
2. **Attrition by Age**: Displays attrition rates across different age groups (e.g., 26-35, 36-45), identifying demographics with higher turnover.
3. **Job Satisfaction of Employees Who Left**: Provides job satisfaction ratings (on a 1-4 scale) for employees who left, helping identify roles or departments with lower satisfaction among those who exited.
4. **Attrition by Salary**: Shows attrition distribution across salary brackets, with the highest turnover in the "Up to 5K" range, indicating financial factors as a potential contributor.
5. **Attrition by Years at Company**: Breaks down attrition by employee tenure, showing higher turnover in the early years, which may suggest the need for targeted retention efforts for newer employees.
6. **Attrition by Job Role**: Highlights job roles with the highest attrition, such as Laboratory Technicians and Sales Executives, helping HR identify where to focus retention strategies.
7. **Attrition by Gender**: A pie chart showing the distribution of attrition by gender, allowing comparison between male and female turnover rates.

**4. Insights and Analysis**

* **High Attrition in Specific Job Roles**: Key roles such as Laboratory Technician, Sales Executive, and Research Scientist exhibit higher turnover rates, suggesting targeted retention efforts could be beneficial.
* **Salary Impact**: Most attrition occurs in lower salary brackets (Up to 5K), indicating financial factors as a potential driver.
* **Age and Tenure Trends**: Higher attrition in younger age groups (26-35) and among employees in their early tenure indicates potential challenges in retaining early-career employees.
* **Job Satisfaction Variability**: Differences in satisfaction levels across roles highlight areas where improving work conditions may help reduce turnover.

**5. Interactivity and Usability**

* **Filters**: Users can apply filters by department, job role, gender, and age, allowing for a detailed breakdown across different segments.
* **Navigation**: The dashboard is organized for easy navigation, with each visualization offering insights into a specific factor related to attrition.

**6. Technical Details**

In developing the dashboard, several calculated fields and measures were created to enhance the analysis of employee attrition:

* **Count Attrition Column**: A new column, *Count Attrition*, was created to convert the categorical values in the original Attrition column (Yes/No) into numerical values. Using a conditional feature, employees with "Yes" in the Attrition column were assigned a value of 1, and those with "No" were assigned 0. This numeric transformation enabled accurate calculations and aggregations of attrition data.
* **Attrition Ratio Measure**: A new measure, *Attrition Ratio*, was developed to calculate the percentage of employees who have left the company. This ratio provides a straightforward metric for analysing attrition trends across different workforce segments.

These transformations support accurate and dynamic insights in the dashboard, facilitating more precise tracking and visualization of attrition patterns.

**7. Project Learnings**

Through the development and analysis of this HR analytics dashboard, several key learnings emerged:

* **Identification of Key Attrition Factors**: Analysing patterns across departments, age groups, job roles, and tenure allowed the identification of significant attrition drivers. This knowledge enables the organization to proactively address these factors, especially in historically higher turnover roles.
* **Improved Hiring Process**: Insights from the dashboard have informed the hiring strategy to align better with roles and attributes associated with lower turnover, helping to attract candidates more likely to stay and succeed in the organization.
* **Enhanced Workforce Productivity**: The organization has fostered a more engaged and productive workforce by addressing factors linked to attrition. Targeted HR interventions based on these insights reduce turnover and improve the overall work environment, boosting morale and productivity.