Employee Attrition Analysis and Prediction

1. Reasons for Employee Attrition

To understand why employees are leaving the company, we can analyze the following key factors:

- **Job Satisfaction (JobSatisfaction)**: This column indicates how satisfied employees are with their job. Employees with low job satisfaction may be more likely to leave. You can create a report showing the attrition rate grouped by job satisfaction levels.

- **Work-Life Balance (WorkLifeBalance)**: Employees with a poor work-life balance may have a higher chance of leaving. A report that compares the attrition rate based on work-life balance can provide insights into this factor.

- **Years with Current Manager (YearsWithCurrManager)**: Employees who have been with the same manager for a long time or for a very short period may experience challenges in their roles. This can be visualized by grouping the attrition rate by years with the current manager.

- **Distance from Home (DistanceFromHome)**: Employees with a long commute may be more likely to leave. This factor can be analyzed by showing attrition by the distance employees live from work.

- **Business Travel Frequency (BusinessTravel)**: Employees who travel frequently for business may experience burnout, leading to higher attrition rates. A comparison between employees who travel rarely, frequently, or never can highlight if this is a factor in turnover.

Key Reports to Build:

- **Attrition by Job Satisfaction**: A bar chart showing the percentage of employees leaving based on job satisfaction levels (1-4 scale).

- **Attrition by Work-Life Balance**: Another bar chart or stacked chart showing the attrition rate broken down by work-life balance ratings.

- **Attrition by Years with Current Manager**: Use a line or column chart to visualize how attrition varies with the number of years an employee has worked with their current manager.

- **Attrition by Distance from Home**: A histogram or scatter plot to show how employees' distance from home correlates with their likelihood to leave.

- **Attrition by Business Travel**: A pie chart or bar chart showing how the frequency of business travel relates to attrition.

2. Employee Demographics

For the employee demographic reports, you can create breakdowns by gender, education level, department, and marital status. This will help identify if there are specific groups that have higher attrition rates and can highlight diversity in the workforce.

Key columns:

- **Gender**
- **Education**
- **Department**
- **Marital Status**

Key Reports to Build:

- **Attrition by Gender**: A simple bar chart comparing the attrition rate between male and female employees.
- **Attrition by Education Level**: Create a bar chart showing attrition rates based on different education levels (1-5 scale).
- **Attrition by Department**: A grouped bar chart that compares the attrition rate across departments such as Sales, Research & Development, and Human Resources.
- **Attrition by Marital Status**: A bar chart that shows how marital status (Single, Married, Divorced) correlates with the likelihood of leaving the company.

Suggested Power BI Visualizations:

- **Slicers** for filtering by departments, gender, and education levels, enabling interactive analysis.
- **Heatmaps** for visualizing attrition correlations between multiple factors like job satisfaction and department.
- **Scatter plots** to show relationships between numeric variables like age, monthly income, and years at the company.