HR Analytics Dashboard Documentation

Project Title:

HR Analytics Dashboard Using Power BI

About the Project:

➢ This project highlights how to use data visualization and analytics tools to identify key insights and provide actionable recommendations.

➢ HR analytics aim to provide insight into how best to manage employees and reach business goals. The objective is to monitor key HR metrics on employees and identify what factors impact attrition.

➢ Created several reports with information on following factors which will help the organization determine what action they will need to take to retain more employees.

➢ With this dashboard, HR professionals gain crucial insights into key areas such as Employee Count, Attrition Trends, Demographics, Job satisfaction levels, and more.

Technologies Used:

1. **Excel:**

   ➢ Excel integrates with Power BI to import data,enabling dynamic visualizations and real - time analysis.

   ➢ It also allows publishing reports to Power BI for easy sharing and access.

2. **Power BI:**

   ➢ Power BI is a business analytics service by Microsoft that provides interactive visualizations and business intelligence capabilities.

   ➢ It enables users to create reports and dashboards from various data sources, offering deep insights and data-driven decision-making.

Steps Overview:

➢ **Data Collection:** The dataset includes multiple employee-related attributes, such as age, gender, education, monthly income, job satisfaction, and attrition rates.

➢ **Understanding the Data:** The data was analysed to identify key metrics for visual representation.

➢ **Data Cleaning and Finding Missing Values:** Data cleaning ensures accurate datasets by correcting errors and identifying missing values, which in Excel can be done using filters, conditional formatting, or formulas

➢ **Data Visualization:** Power BI was used to create an interactive dashboard that includes charts, graphs, and key performance indicators (KPIs).

Dashboard Overview:

The HR Analytics Dashboard, built on Power BI, provides real-time insights into key HR metrics through interactive charts like Attrition Pie Charts, Age Group Columns, and Job Satisfaction Heat Maps. It empowers HR professionals to analyze workforce trends, optimize processes, and enhance employee engagement for data-driven decision-making.
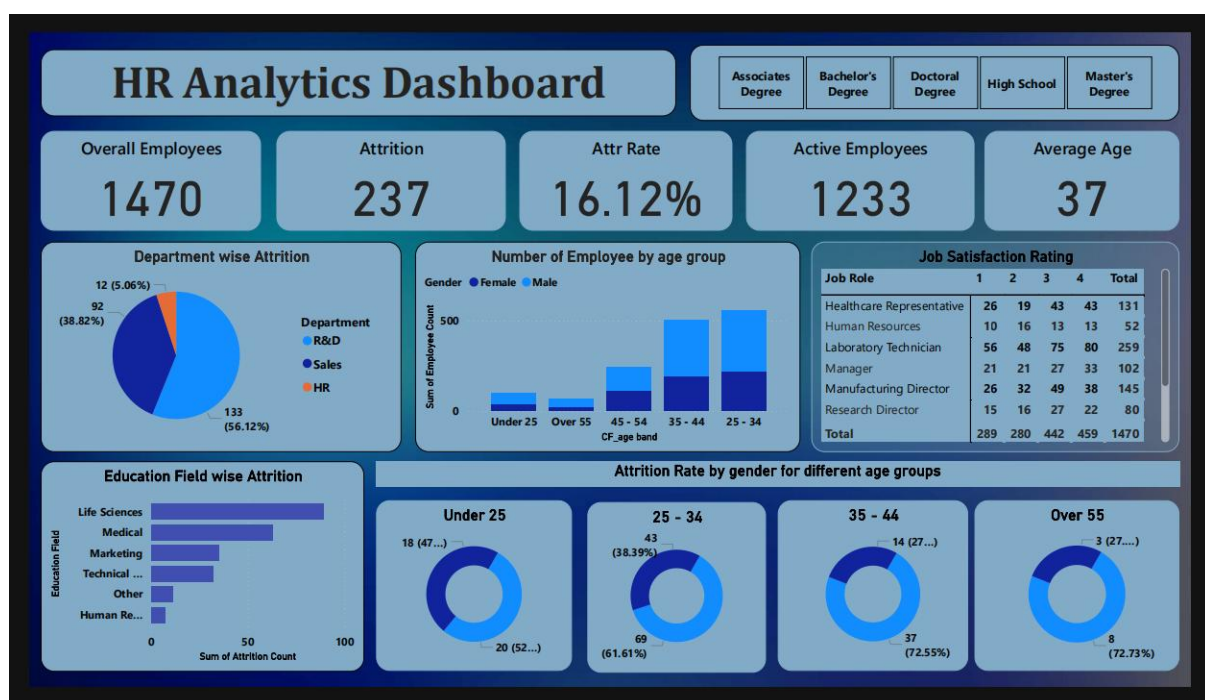
- The dataset contains 41 columns covering demographic, financial, and performance metrics.
- Contains both categorical and numerical data.
- Useful for HR analytics, particularly for understanding attrition patterns, employee satisfaction, and performance.
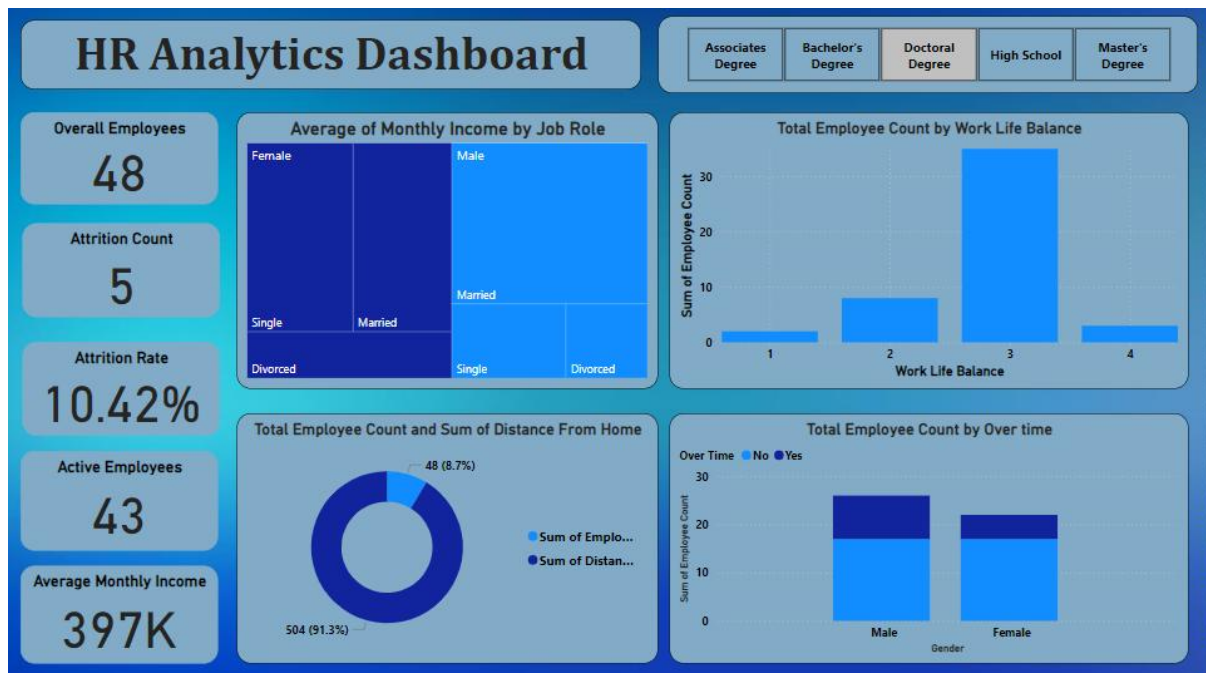
Page 1 - Key Performance Indicators (KPIs):

Insights and Demographics from the HR Analytics Dashboard: This dashboard provides key insights into attrition, demographics, job satisfaction, and educational background, aiding HR in workforce management and engagement strategies.

- **Overall Employees**:

  1. Total number of employees: **1,470**.

- **Attrition Overview**:

  1. Total employees who left (Attrition): **237**.
  2. Attrition rate: **16.12%**.

- ➢ **Active Employees**:

    1. Employees currently working: **1,233**.

- ➢ **Average Age**:

    1. Average age of employees: **37 years**.

- ➢ **Department-wise Attrition**:

    1. **R&D**: 12 employees (5.06%).

    2. **Sales**: 92 employees (38.82%).

    3. **HR**: 133 employees (56.12%).

- ➢ **Number of Employees by Age Group**:

    1. **Under 25**: Smallest group.

    2. **25-34**: Largest group, with significant male representation.

    3. **35-44** and **45-54**: Moderate distribution across genders.

    4. **Over 55**: Fewest employees.

- ➢ **Job Satisfaction Ratings** (Scale of 1 to 4):

    1. High satisfaction levels (ratings of 3 and 4) are prevalent.

    2. **Laboratory Technicians**: Largest group (259 total).

    3. **Managers** and **Research Directors** have smaller counts.

- ➢ **Education Field-wise Attrition**:

    1. **Life Sciences** has the highest attrition.

    2. **Medical** and **Marketing** also have notable attrition.

    3. **Human Resources** shows minimal attrition.

- ➢ **Attrition Rate by Gender for Different Age Groups**:

    1. **Under 25**: Attrition split is balanced (Male: 18, Female: 20).

    2. **25-34**: Higher attrition among males (61.61%).

    3. **35-44** and **Over 55**: Males have a higher attrition percentage.

- ➢ **Overall Employees:** 48
- ➢ **Attrition Count:** 5
- ➢ **Attrition Rate:** 10.42%
- ➢ **Active Employees:** 43
- ➢ **Average Monthly Income:** 397K

Visualizations and Insights:

➢ **Average Monthly Income by Job Role**

This section shows the average monthly income for employees in different job roles. It's broken down by gender (Female and Male) and marital status (Single, Married, Divorced).

➢ **Total Employee Count by Work-Life Balance**

This bar chart shows the number of employees at different work-life balance levels (1-4).

➢ **Total Employee Count by Overtime**

This stacked bar chart shows the number of employees who do or don't do overtime, broken down by gender.

➢ **Total Employee Count and Sum of Distance From Home**

This pie chart shows the distribution of employees based on the sum of their distance from home.

➢ **Total Employee Count by Highest Qualification**

This bar chart shows the number of employees with different highest qualifications (Associates Degree, Bachelor's Degree, Doctoral Degree, High School, Master's Degree).

Key Insights:

- ➢ The attrition rate is relatively high at 10.42%.
- ➢ The average monthly income seems to vary significantly across job roles and gender.
- ➢ A majority of employees seem to have a good work-life balance (level 3 or 4).
- ➢ Overtime is more common among male employees.

➢ Most employees have a Bachelor's degree as their highest qualification.

➢ **Employee Overview**:

The organization has **1,470 employees** in total, with **1,233 active employees** (those still working), indicating an attrition of **237 employees** (16.12% attrition rate).

➢ **Attrition Trends**:

1. **Sales** and **HR** departments show the highest attrition, with **56.12%** of attrition coming from HR and **38.82%** from Sales.

2. The **R&D** department shows the least attrition at **5.06%**.

➢ **Age Demographics**:

1. The **25-34 age group** has the highest number of employees, with notable male representation.

2. Employees under **25** and over **55** have smaller representations in the workforce.

➢ **Education and Attrition**:

1. **Life Sciences** graduates show the highest attrition, followed by those with a **Medical** and **Marketing** background.

2. **Human Resources** employees show the least attrition.

➢ **Job Satisfaction**:

1. The organization generally has **high job satisfaction** across roles, especially among **Healthcare Representatives** and **Managers**.

2. Most employees rate their satisfaction as **3 or 4** (on a scale of 1 to 4), indicating good overall morale.

➢ **Gender and Attrition**:

1. **Males** have higher attrition rates across age groups, especially in the **25-34** and **35-44** age bands.

2. The attrition rate is fairly balanced for the **Under 25** age group but skews higher for males in older groups.

These insights suggest areas where HR might focus on reducing attrition, improving employee satisfaction, and addressing the workforce distribution across age, gender, and departments.

Summary

The HR Analytics Dashboard provides a comprehensive overview of the workforce, focusing on key metrics like attrition, demographics, and job satisfaction.

With a total of **1,470 employees**, the organization has an **attrition rate of 16.12%**, with **237 employees** having left. The **HR** and **Sales** departments experience the highest attrition, while **R&D** has the lowest.

The largest age group is **25-34**, with fewer employees in the **Under 25** and **Over 55** ranges. Employees with a **Life Sciences** background show the highest attrition.

Job satisfaction is generally high, with most employees rating their satisfaction as **3 or 4**. Males exhibit higher attrition rates across most age groups, particularly **25-34** and **35-44**.

This dashboard enables HR professionals to identify trends, optimize workforce management, and improve employee engagement.

Conclusion:

➢ It features interactive visualizations, including a Department-wise Attrition Pie Chart, Age Group Column Chart, Job Satisfaction Heat Map, Education Field-wise Attrition Bar Graph, and Gender-Age Attrition Donut Chart.

➢ Designed for data-driven decision-making, it helps HR professionals track trends, optimize processes, and enhance employee engagement, fostering a positive work environment through a user-friendly interface.