

# HR Analytics - Predict Employee Attrition

## Objective:

Use analytics to understand the main causes of employee resignation and predict future attrition.

## Tools:

Python (Pandas, Seaborn), Power BI, Sklearn

## Mini Guide:

- Perform EDA on HR data (department-wise attrition, salary bands, promotions)
- Build a classification model (Logistic Regression or Decision Tree)
- Visualize attrition factors using Power BI
- Perform SHAP value analysis to explain model predictions

## Deliverables:

- Power BI dashboard
- Model accuracy report + confusion matrix
- PDF of attrition prevention suggestions

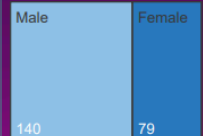
# HR ANALYTICS DASHBOARD

Human Resources

Research & Development

Sales

Attrition by Age



Count of Employee  
1470

Attrition  
237

Attrition Rate  
16.1%

Avg Age  
36.92

Avg Salary  
6.50K

Avg Years  
7.01

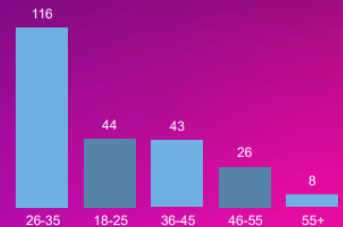
Attrition by Salary Slab



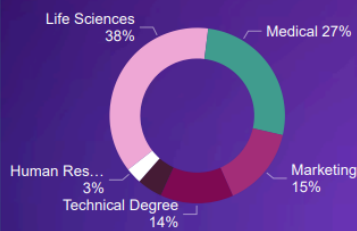
Attrition by Years at Company



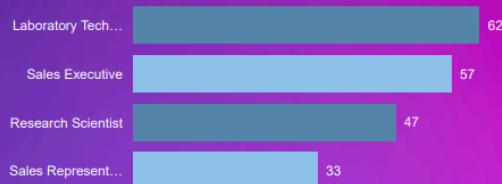
Attrition by Age



Attrition by Education



Attrition by Job Role



| JobRole                   | 1  | 2  | 3  | 4  | Total |
|---------------------------|----|----|----|----|-------|
| Healthcare Representative | 2  | 2  | 1  | 4  | 9     |
| Human Resources           | 5  | 2  | 3  | 2  | 12    |
| Laboratory Technician     | 20 | 8  | 21 | 13 | 62    |
| Manager                   | 1  | 2  | 1  | 1  | 5     |
| Manufacturing Director    | 2  | 2  | 4  | 2  | 10    |
| Research Director         | 0  | 1  | 1  | 0  | 2     |
| Research Scientist        | 13 | 10 | 15 | 9  | 47    |
| Sales Executive           | 16 | 9  | 18 | 14 | 57    |
| Sales Representative      | 7  | 10 | 9  | 7  | 33    |
| Total                     | 66 | 46 | 73 | 52 | 237   |

# HR ANALYTICS

Human  
Resources

Research &  
Development

Sales

## Attrition by Age

Male

140

Female

79

Count of  
Employee

1470

Attrition

237

## **Attrition Prevention Suggestions**

- Improve employee engagement through regular feedback and development opportunities.
- Increase salary transparency and competitiveness especially in lower bands (< 5k).
- Focus on retention strategies for younger employees (18-35) and early tenure (0-3 years).
- Offer flexible work options to enhance work-life balance.
- Strengthen internal mobility and career progression paths.
- Improve diversity and inclusion efforts, especially for female employees.