

# **HR Analytics Dashboard Project Report**

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**Tools used :** Microsoft Excel, Power BI, Statistics

## **Abstract**

This report summarises the HR dataset and documents the Power BI dashboard visuals focused on attrition analysis. The aim is to present findings and recommendations to reduce employee turnover.

## **Dataset Description**

Source file: HR\_Analytics.csv

Rows: 1480; Columns: 38

Columns Names:

- EmpID
- Age
- AgeGroup
- Attrition
- BusinessTravel
- DailyRate
- Department
- DistanceFromHome
- Education
- EducationField
- EmployeeCount
- EmployeeNumber
- EnvironmentSatisfaction
- Gender
- HourlyRate

- JobInvolvement
- JobLevel
- JobRole
- JobSatisfaction
- MaritalStatus
- MonthlyIncome
- SalarySlab
- MonthlyRate
- NumCompaniesWorked
- Over18
- OverTime
- PercentSalaryHike
- PerformanceRating
- RelationshipSatisfaction
- StandardHours
- StockOptionLevel
- TotalWorkingYears
- TrainingTimesLastYear
- WorkLifeBalance
- YearsAtCompany
- YearsInCurrentRole
- YearsSinceLastPromotion
- YearsWithCurrManager

## **Key Metrics**

Count of Employees: 1

Attrition Count: 238

Attrition Rate: 16.1%

Average Age: 37 years

Average Years at Company: 11.3

## Data Cleaning

- Standardize Attrition values to Yes/No.
- Convert numeric columns to proper numeric types and handle outliers.
- Map and label categorical codes (education, job roles).
- Handle missing values appropriately and remove duplicates.

## Methodology

Data was profiled in Excel and Power BI. Measures for core KPIs were created and visuals built: KPI cards, donut charts, bar charts, line charts, and tables.

## Power BI Dashboard – Visual Explanations

Screenshot inserted below:

The screenshot shows the Power BI Desktop application with the following details:

- Dashboard Title:** HR ANALYTICS DASHBOARD
- Key Metrics (KPI Cards):**
  - Count of Employee: 961
  - Attrition: 133
  - Attrition Rate: 13.8%
  - Avg Age: 37
  - Avg Salary: 6.3K
  - Avg Years: 6.9
- Visualizations:**
  - Attrition by Education: Donut chart showing Medical (35%), Technical Degree (15%), and Life Sciences (44%).
  - Attrition by Age: Bar chart showing attrition rates for age groups: 26-35 (67), 36-45 (29), 18-25 (24), 46-55 (9), and 55+ (8).
  - Attrition by Job Role: Bar chart showing attrition rates for job roles: Laboratory Technician (62), Research Scientist (47), Manufacturing Director (10), and Healthcare Representative (9).
  - Attrition by Salary: Bar chart showing attrition rates for salary levels: Up to \$k (110), \$5k-\$10k (12), \$10k-\$15k (8), and 15k+ (1).
  - Attrition by Year: Line chart showing attrition rates over time, with values fluctuating between 0 and 14 across different years.
- Power BI Interface:**
  - Ribbon:** File, Home, Insert, Modeling, View, Optimize, Help.
  - Home Tab:** Includes icons for Paste, Cut, Copy, Format painter, Clipboard, Get data, OneLake, SQL Server Data, Transform data, New visual, Text box, More visuals, Calculations, Sensitivity, Publish, Prep data for Copilot, AI, and Copilot.
  - Visualizations Pane:** Shows a list of available visual types: Build visual, Gauge, Map, Card, Bar, Line, Area, Scatter, Box plot, Radar, Timeline, Pyramid, Button slice, and more.
  - Data Pane:** Shows the current data source: HR\_Analytics.
  - Filters Pane:** Allows adding filters to the dashboard.
  - Page Navigation:** Shows Page 1 of 1.

## **Visual Explanations**

KPI tiles: total headcount, attrition count, attrition rate, average age, average salary, average years.

Attrition by Education (donut): percentage distribution by education categories.

Attrition by Age (bar): attrition counts by age buckets.

Attrition by Job Role (bar/table): shows roles with the highest attrition counts.

Attrition by Salary (bar): attrition counts across salary bands.

## **Top Job Roles by Attrition**

1. Laboratory Technician : 62
2. Sales Executive : 58
3. Research Scientist : 47
4. Sales Representative : 33
5. Human Resources : 12
6. Manufacturing Director : 10
7. Healthcare Representative : 9
8. Manager : 5
9. Research Director : 2

## **Key Insights & Recommendations**

- Attrition rate is approximately 16.1%. Benchmark against industry norms and track changes over time.
- Highest attrition observed in role: Laboratory Technician (62 events). Consider targeted retention strategies.
- Investigate correlation between salary bands and attrition. Consider retention incentives for high-risk cohorts.

## **Conclusion & Future Work**

Enhance the dataset with hire/exit dates, performance and engagement metrics, and build predictive models for attrition.