

HR Dashboard Analysis Report

1. Introduction

The HR Dashboard project aims to provide a comprehensive analysis of employee data for strategic HR decision-making. Built using Power BI, this dashboard covers key areas such as employee demographics, attrition analysis, performance metrics, and career growth insights. By presenting interactive visualizations across three dashboard pages, the project helps HR stakeholders gain actionable insights into workforce trends and challenges.

2. Data Source and Description

- **Dataset Overview:**
 - Total Employees Analyzed: 1,470
 - Key Attributes: Department, Job Role, Age, Gender, Education Field, Business Travel, Work-Life Balance, Job Satisfaction, Attrition Status, Performance, Salary.
 - Dataset : IBM-HR-Analytics-Employee-Attrition-and-Performance on Kaggle

3. Dashboard Structure

Link to visualize HR Dashboard Live:

<https://app.powerbi.com/groups/me/reports/89bb8c84-3c2a-47e8-b36a-ecb744b04b75/0e27014ea91b993cafa8?experience=power-bi>

The dashboard consists of three main pages:

1. Overview:

- Summarizes workforce composition, attrition rate, and high-level distributions (department, age, gender, education, job role).

2. Attrition Analysis:

- Deep-dive into attrition patterns across demographics, departments, tenure, job roles, and overtime status.

3. Performance and Career Growth:

- Details on employee satisfaction, salary distribution, years with company, training frequency, and correlation between pay, satisfaction, and retention.

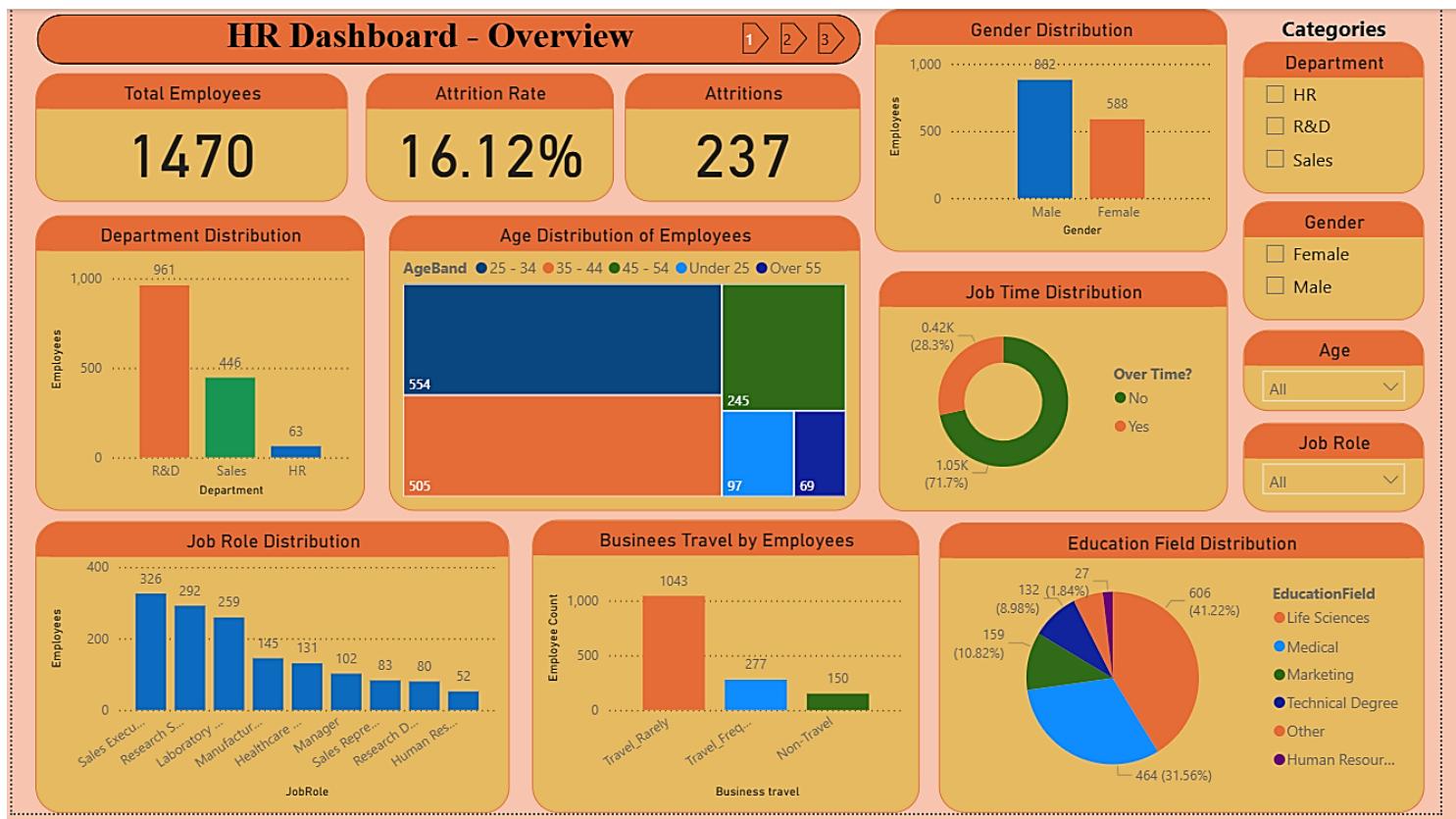
Made By Vaibhav Singh

Dashboard Data Analysis

1. Workforce Profile

Overview

- **Headcount:** 1,470 employees
- **Departments:**
 - **R&D:** 961 employees (majority)
 - **Sales:** 446
 - **HR:** 63
- **Gender Distribution:**
 - **Male:** 862 (58.7%)
 - **Female:** 588 (41.3%)
- **Education Fields:**
 - **Life Sciences:** 606 (41.2%)
 - **Medical:** 464 (31.6%)
 - **Others:** Marketing, Technical Degree, Other, HR.
- **Age Distribution:**
 - **Under 25:** 245
 - **25–34:** 554 employees (largest segment)
 - **35–44:** 505
 - **45–54:** 97
 - **Over 55:** 69



Visuals & Metrics

- **KPI Cards:** Total Employees, Attrition, Attrition Rate
- **Bar/Column Charts:**
 - Gender Distribution of Employees.
 - Departmental Distribution of Employees
 - Distribution of Employees based on Job Role.
 - Business Travel distribution by employees.
- **TreeMap:** Age distribution of employees into area format.
- **Pie/Stacked Charts:**
 - **Donut chart** shows the attrition status of employees.
 - **Pie Chart** shows the education fields to which employees belongs along with percentages.

Filters Used:

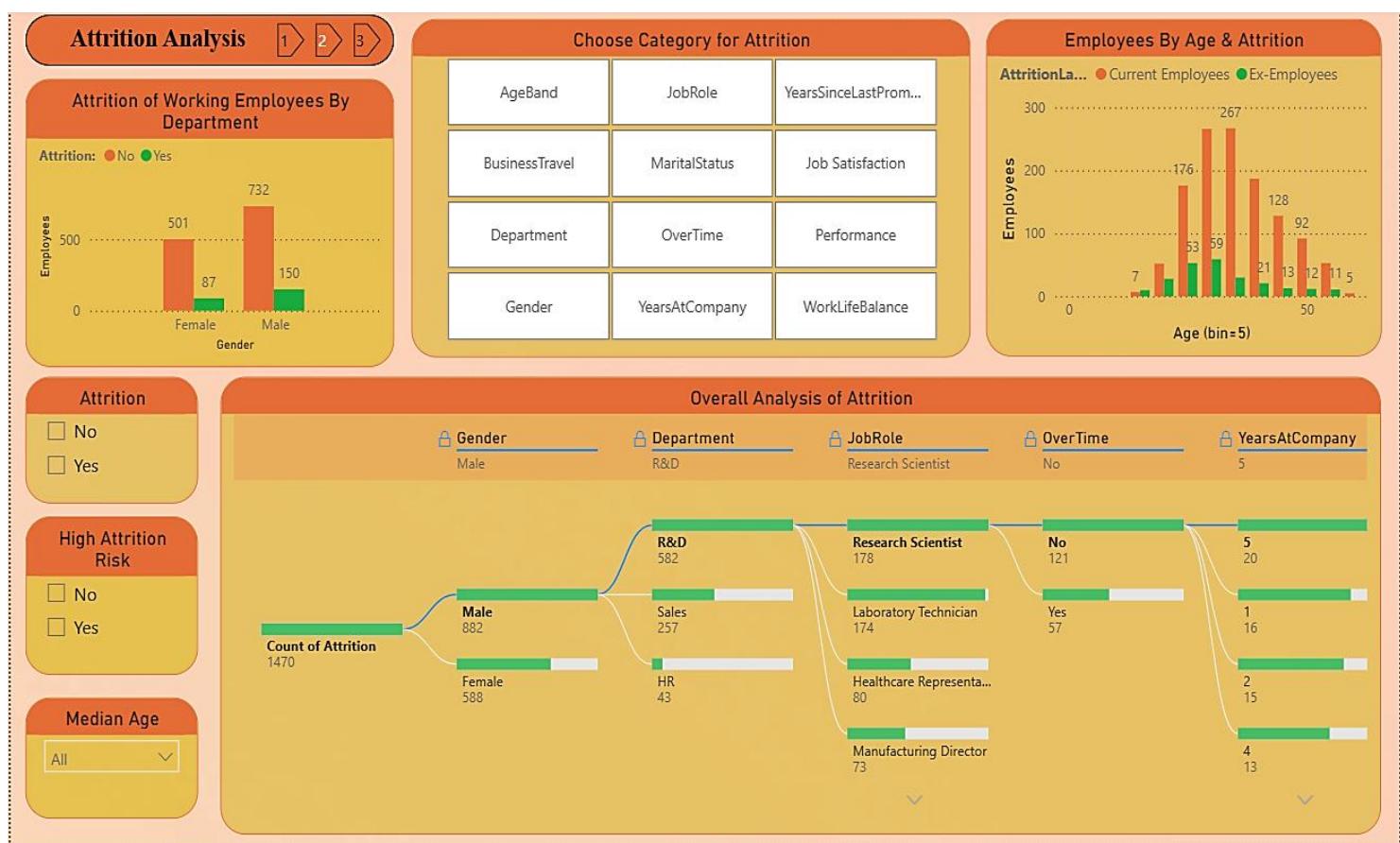
There are 4 slicers used to filter the data analysis to HR: Department, Gender, Age and Job Roles.

Key Insights

- The majority of employees fall within the 25–34 and 35–44 age bands.
- A noticeable gender gap exists in technical departments.
- Employees with frequent business travel or high overtime are concentrated in Sales and R&D.
- Most employees have backgrounds in Life Sciences and Human Resources, suggesting talent pipelines from specific education sectors.

2. Attrition Insights

- **Attrition Rate:** 16.12% (237 employees left)
- **By Gender:**
 - **Males:** 150
 - **Females:** 87
- **By Department:**
 - R&D has the largest attrition count (likely due to its size)
- **Key Risk Factors:**
 - Higher attrition observed among Research Scientists and certain job roles.
 - OverTime workers show elevated attrition.
- **Age & Tenure:** Attrition is more frequent among mid-career employees.



Visuals & Metrics

- **Attrition Rate Breakdown:**
 - By Department, Job Role, Gender, Marital Status
 - By Business Travel and Overtime status
- **Clustered Column Charts:**
 - Attrition of working employees by department and attrition status
 - Attrition distribution of working and ex-employees by age.
- **Decomposition Tree Charts:** It shows the overall attrition based on Gender, Department, Job Role, Overtime & working years at the company.
- **Comparative Analysis:**
 - Current Employees vs. Ex-Employees
 - Attrition vs. Job Satisfaction
 - Attrition vs. Performance Rating
 - Attrition vs. Work-Life Balance
 - Attrition by Years at Company
 - Attrition by Years Since Last Promotion

Filters Available

- Attrition Status (Yes/No)
- Age
- Various Categories – gender, role, time period, etc.

Key Insights

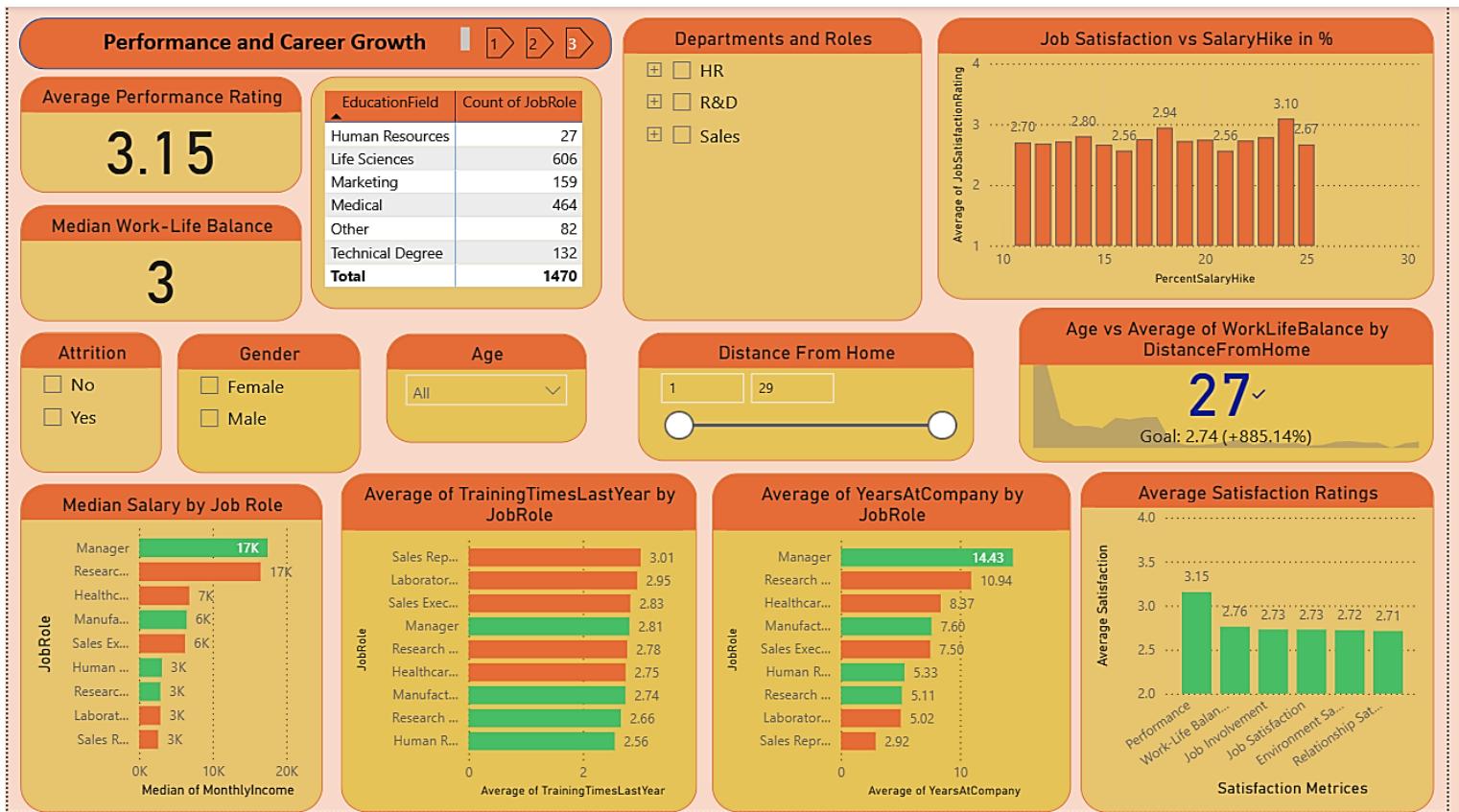
- Attrition is highest in the Sales and R&D departments.
- Overtime workers and frequent travellers show increased attrition.
- Employees with low Job Satisfaction or Performance Ratings are significantly more likely to leave.
- Most exits occur between 2–5 years at the company or shortly after a prolonged period without promotion.

- Female attrition rates are higher in middle management roles, indicating potential cultural or progression-related issues.

3. Performance & Career Growth

- **Most Common Job Roles:**
 - Sales Executive, Research Scientist, Laboratory Technician.
- **Salary Distribution:**
 - **Median Monthly Salary by Role:**
 - Manager: ₹17K
 - Research: ₹7K
 - Healthcare Rep: ₹6K
 - Several roles at or below ₹3K–₹6K
- **Years At Company:**
 - Managers have the highest average tenure (14+ years).
 - Sales roles average less than 3 years.
- **Employee Satisfaction and Training**
 - Average Performance Rating: 3.15

- Median Work-Life Balance: 3 out of 5



Visuals & Metrics

- **KPI Cards:**
 - Average scores for Performance Rating, Job Involvement, Relationship Satisfaction, Work-Life Balance
 - KPI: Age vs Average of WorkLifeBalance by DistanceFromHome.
- **Clustered Bar/Column charts:**
 - Average Monthly Income by Role and Job Level.
 - Average of TrainingTimesLastYear by JobRole.
 - Average of YearsAtCompany by JobRole.
 - Percent Salary Hike vs Job Satisfaction.
 - Average Satisfaction Ratings.
- **Career Progression Indicators:**
 - Average Years in Current Role
 - Years with Current Manager

- Total Working Years
- Time Since Last Promotion

Filters/Slicers Used:

Attrition status, Gender, Age, Distance from home, Department & Roles

Key Insights

- Employees in Support and HR roles receive lower salary hikes despite high satisfaction scores.
- Sales and Technical roles receive more training but still show high attrition, suggesting non-training-related issues.
- Longer tenure with current manager correlates with higher satisfaction.
- Job Satisfaction: Generally improves slightly with higher salary hikes.
- Training:
 - Sales Reps and Laboratory Technicians report the most annual training.
 - Lower training averages for roles with higher attrition in some cases.

2. Visualizations and Interactivity

- **Charts Used:** Bar charts, pie/donut charts, treemaps, and scatter plots.
- **Controls:** Slicers for filtering by Department, Gender, Age, Job Role, and Attrition status enable interactive exploration.
- **Design:** Each dashboard page focuses on a unique analytical theme, leading users through key HR questions logically and visually.
- **Navigation:** Added button on near page heading helps to navigate through different pages and get more insights simultaneously.

3. Recommendations

3.1 Focus on High-Risk Areas

- **Targeted Retention for R&D and Research Scientists:**
Implement retention plans where attrition is high—especially for early/mid-career employees and overtime workers.
- **Female Attrition:**
Value diversity by studying underlying causes for attrition among women.
- **Entry-Level and Tenure:**
Support employees under 3 years with onboarding and career development paths.

3.2 Employee Engagement

- **Work-Life Balance:**
Monitor departments with high overtime; consider flexible or remote work options.
- **Satisfaction and Pay Equity:**
Conduct a pay equity audit, particularly at the intersection of gender and job level.
Consider aligning salary hikes more closely with employee satisfaction and engagement metrics.

3.3 Learning & Development

- **Increase Training:**
Expand training efforts in roles with above-average attrition and lower satisfaction.
- Introduce mentoring and fast-track promotion programs in Sales and R&D.

- Introduce regular pulse surveys to monitor satisfaction dimensions across demographics.
- Set up an early warning system using the attrition model insights for intervention.

4. Learning Experience

From this project, the following skills and tools were strengthened:

1. Power BI Expertise:

- Data import, cleaning, and transformation.
- Advanced dashboard and visualization building.

2. Analytical Thinking:

- Interpreting workforce data to produce actionable insights.
- Understanding key HR metrics and drivers.

3. Presentation:

- Structuring a clear, visually appealing report for decision-makers.

5. Conclusion

The HR Dashboard developed in Power BI provides a comprehensive and interactive way to visualize and analyze major HR metrics. It surfaces areas for action (notably on attrition, satisfaction, and tenure) and demonstrates effective data-driven decision-making for HR management.