HR Employee Attrition Analysis

1. Project Overview

This project analyzes **employee attrition** using HR data containing demographic details, job satisfaction, compensation, and performance metrics.
 The objective is to uncover **why employees leave**, identify at-risk groups, and provide insights to help organizations design effective retention strategies.

2. Dataset Summary

- **Rows:** 1,470

- **Columns:** 35+

- **Key Features:**

    - *Demographics:* Age, Gender, Marital Status, Distance From Home

    - *Job & Role:* Department, Job Role, Total Working Years, Years at Company, Years in Current Role

    - *Engagement:* OverTime, Business Travel, NumCompaniesWorked

    - *Satisfaction:* Job Satisfaction, Environment Satisfaction

    - *Performance:* Performance Rating, Years Since Last Promotion

    - *Compensation:* Monthly Income, Monthly Rate, Hourly Rate, Percent Salary Hike

    - *Target Column:* **Attrition (Yes/No)**

## 3. Analysis Performed

Data Preparation

- Checked structure, categories, and numeric fields

- Created Job Satisfaction grouping: **BAD (1–2)**, **GOOD (3–4)**

- Developed DAX measures for gender % splits, overtime count, attrition count, and average hourly rate
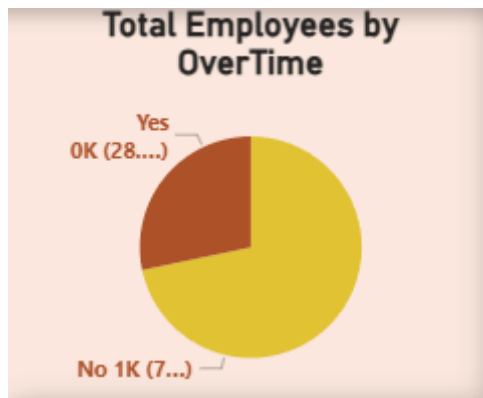
4. Key HR Insights

1. Employees by Department & Gender

Visualized total employees in Sales, R&D, and HR departments with gender segmentation.
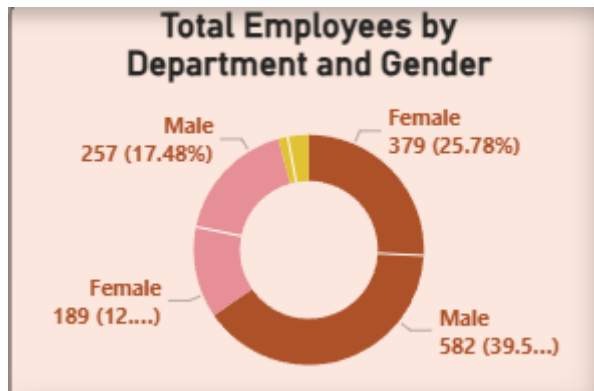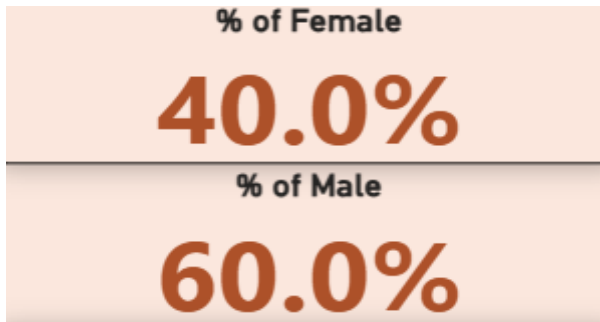

2. Total Overtime Employees

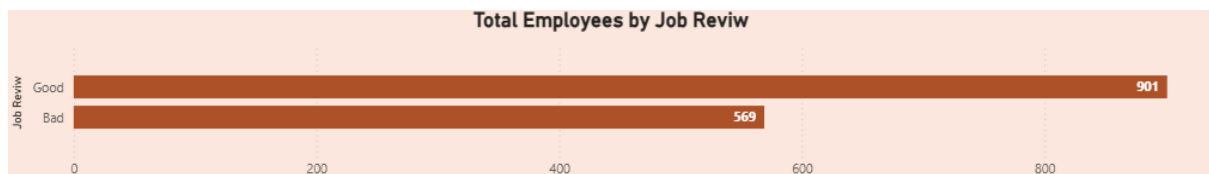Identified employees working overtime (Yes/No) — strong connection to burnout and attrition.

3. Male vs Female % Distribution

Calculated male and female proportions using measures.

% of Female

40.0%

% of Male

60.0%

4. Job Review (Good vs Bad Satisfaction)

Grouped ratings (1–2 = Bad, 3–4 = Good) to assess overall sentiment.

Total Employees by Job Reviw

Job Reviw	
Good	901
Bad	569

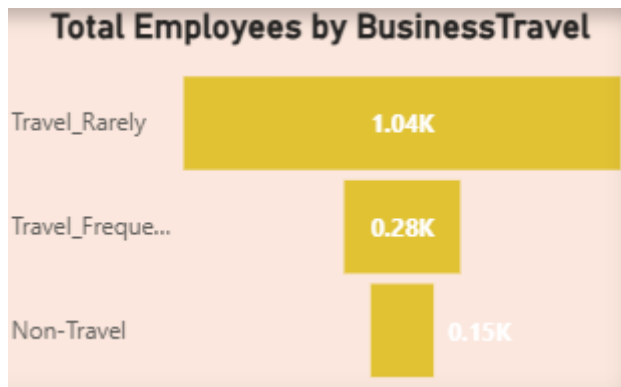## 5. Best & Bottom Performers

Performance ratings 3–4 analyzed to identify top contributors and low performers.

Best Performer
226

Bottom Performer
1244

6. Employees by Business Travel

Compared Frequent Travelers, Rare Travelers, and Non-Travel categories.

7. Marital Status Count

Count of Single, Married, and Divorced employees.

8. Number of Employees Who Left

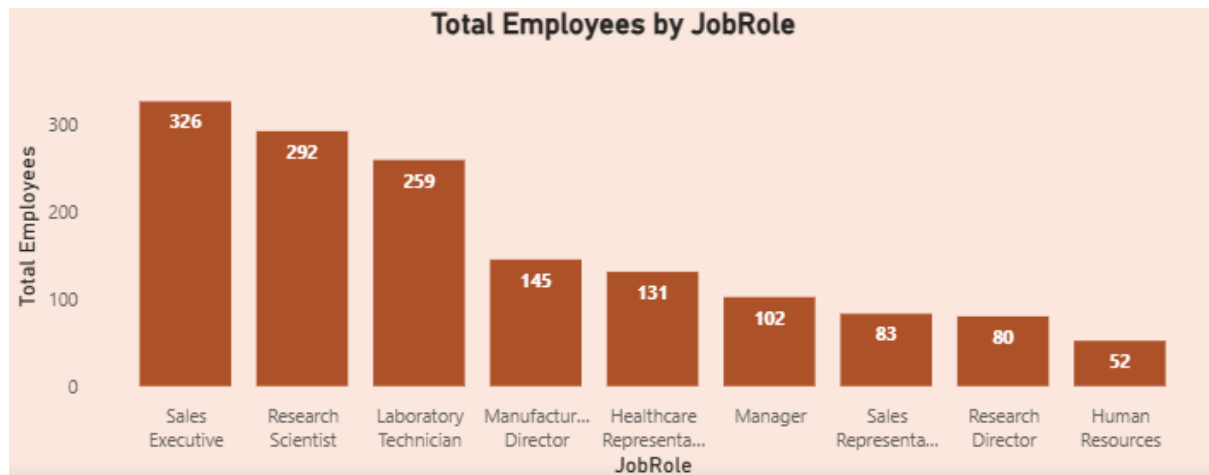Attrition count shows workforce reduction trends.

9. Average Hourly Rate

Calculated to understand compensation distribution.

10. Employees by Job Roles

Identified concentration of roles such as Sales Executive, Research Scientist, Manager, HR, etc.

11. Employees With >5 Years Under Current Manager

Indicates leadership impact and relationship stability.

5. Dashboard in Power BI

An interactive Power BI report was created containing:

- **KPI Cards:** Attrition, Overtime Count, Avg Hourly Rate, Gender %

- **Pie/Donut Charts:** Job Satisfaction, Marital Status

- **Bar Charts:** Department, Job Role, Business Travel

- **Column Charts:** Performance Ratings, Attrition by Category

- **Funnel Chart:** Attrition visualization

- **Filters:** Age, Gender, Department, Job Role, OverTime

HR ANALYTICS DASHBOARD

Total Employees
1470

Total Female
588

Total Male
882

% of Female
40.0%

% of Male
60.0%

Average hourly rate
65.89

Employees with current managers
516

Total Employees by Department and Gender
- Male 257 (17.48%)
- Female 379 (25.78%)
- Female 189 (12....)
- Male 582 (39.59%)

Total Employees by OverTime
- Yes 0K (28....)
- No 1K (71.7%)

Total Employees by BusinessTravel
- Travel_Rarely 1.04K
- Travel_Freque... 0.28K
- Non-Travel 0.15K

Best Performer
226

Bottom Performer
1244

Total Employees by Attrition
- No 1233
- Yes 237

Total Employees by JobRole
- Sales Executive 326
- Research Scientist 292
- Laboratory Technician 259
- Manufactur... Director 145
- Healthcare Representa... 131
- Manager 102
- Sales Representa... 83
- Research Director 80
- Human Resources 52

Total Employees by Job Reviw
- Good 901
- Bad 569

6. Business Recommendations

- **Reduce Overtime:** High OT strongly correlates with attrition.

- **Improve Satisfaction:** Low job satisfaction drives exits.

- **Support Young Workforce:** Employees under 30 show higher churn.

- **Reevaluate Travel Requirements:** Frequent travelers leave more often.

- **Strengthen Manager Relationships:** Short manager tenure (<2 years) increases attrition risk.

- **Role-Specific Retention Plans:** R&D and Sales show highest attrition.

- **Career Development Programs:** Helps retain early-career employees.