

Problem Statement

- High employee attrition disrupts operations and reduces workforce stability.
- It increases costs related to recruitment, onboarding, and training.
- Frequent exits affect team performance, knowledge retention, and morale.
- The organization lacked clear insight into why employees were leaving.

There was a need to analyse patterns using HR data to uncover key drivers.

- Focus areas included job role, department, marital status, work-life balance, salary hikes, and tenure.
 - The objective was to support HR in designing data-backed strategies for retention and satisfaction.
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2. Tools Used

- **Power BI Desktop:** For building interactive and dynamic dashboards.
- **Power Query Editor:** Used for cleaning, shaping, and transforming raw HR data.
- **DAX (Data Analysis Expressions):** Applied to create measures like attrition rate %, job satisfaction, and salary hike trends.
- **Excel:** Source data was imported from structured Excel files.

3. Project Brief

- The project focused on analysing employee attrition across multiple dimensions.
 - Key factors examined:
 - **Job Role**
 - **Department**
 - **Marital Status**
 - **Work-Life Balance**
 - **Salary Hike Percentage**
 - **Years at Company**
 - The aim was to help HR and leadership teams:
 - Detect patterns behind employee exits
 - Understand department-specific attrition
 - Identify employee segments at high attrition risk
 - Make informed, data-driven decisions to retain talent
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Scope of Work

- **Data Cleaning & Preparation:** Handled missing values, normalized department/job role names.
 - **Data Modeling :** Established relationships among employee attributes and metrics.
 - **KPI Creation:** Built DAX measures like attrition rate, job satisfaction, and salary hike
Dashboard Design: Developed interactive visual reports for HR exploration.
 - **Insight Generation:** Provided actionable insights to support retention and HR strategy.
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4. Dashboard Overview

The dashboard includes the following key visualizations:

- **Attrition Rate by Marital Status and Department:** Highlights balanced attrition across different marital statuses and departments.
- **Job Level vs. Years at Company:** Shows career progression and tenure insights.
- **Work-Life Balance by Attrition:**

Compares employees with good balance vs those who left.

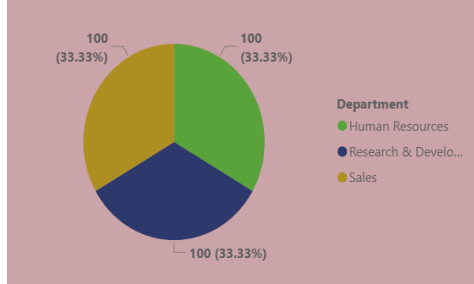
- **Daily Rate by Education Field:** Displays salary distribution by education background.

Job Satisfaction and Salary Hike: Correlates salary hikes and job satisfaction across departments

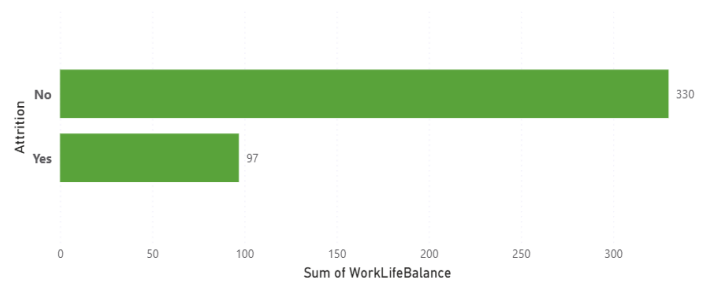
- **Filters:** Gender, Job Role, Business Travel, Over Time, and Education Field allow dynamic data slicing.



Attrition Rate % by Department

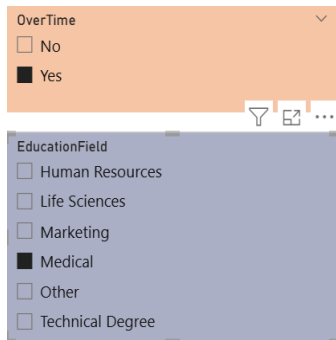
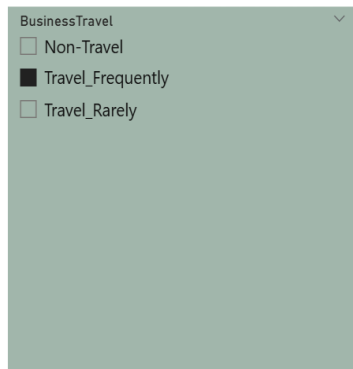
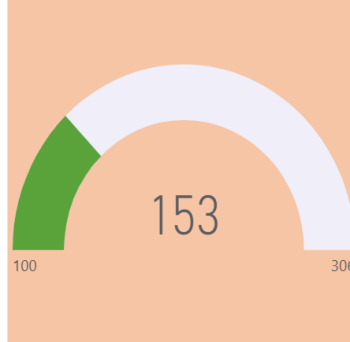


Sum of WorkLifeBalance by Attrition

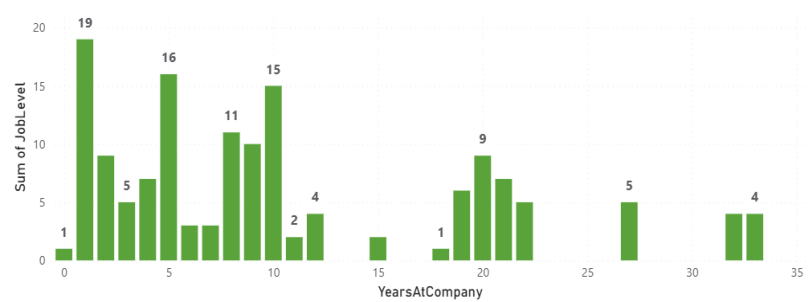


JobRole	First Department
Human Resources	Human Resources
Healthcare Representative	Research & Development
Laboratory Technician	Research & Development
Manager	Research & Development
Manufacturing Director	Research & Development
Research Director	Research & Development
Research Scientist	Research & Development
Sales Executive	Sales
Sales Representative	Sales
Total	Human Resources

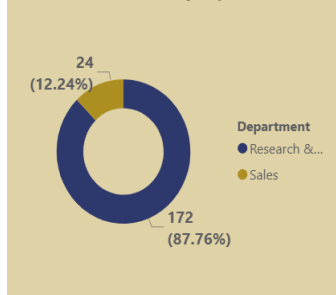
Count of Education and Attrition Rate %



Sum of JobLevel by YearsAtCompany



Sum of JobSatisfaction by Department



Count of EducationField by PercentSalaryHike



5. Problems Faced

Data Quality Issues:

- The raw dataset contained missing values and inconsistent entries, especially in fields like education and department.
- Required extensive cleaning and standardization to ensure accurate analysis.

Relationship Modeling Challenges:

- Linking key attributes such as department, job role, and satisfaction metrics required careful data modeling.
- Improper relationships initially led to incorrect visual outputs and aggregations.

Visual Layout Constraints:

- The dashboard space was limited, making it difficult to present all visuals clearly.
- Needed a well-planned layout to avoid clutter while preserving data clarity and insight.

6. Project Outcome

- **A clean, user-friendly dashboard enabling HR teams to explore:**
 - Key attrition drivers by role, department, and personal factors.

- Employee satisfaction levels across business units.
- Salary hike patterns and their impact on retention.
- Total Employees Analyzed: 64
- Total Stock Option Levels Assigned: 61
- Balanced Attrition rate across marital statuses and departments (33.33% each).
- Majority Job Satisfaction is in Research & Development (76%).
- **Data Quality Issues:** Raw data had missing values and inconsistencies across education and department fields.
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- **Relationship Modeling:** Proper data modeling was needed to link attributes like department and job roles.
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- **Visual Overlap:** Limited space required careful layout to avoid overcrowding while retaining insights.

7. Key Learnings

- **Visual storytelling** is a powerful tool that helps stakeholders quickly understand and act on complex HR issues.
- **Employee attrition is widespread**, not limited to a single department or group—highlighting the need for broader, company-wide retention strategies.
- **Effective data modeling and DAX calculations** are essential in HR analytics to ensure accurate and meaningful insights.
- **Interactive features** like drill-down filters and slicers significantly enhance data exploration, allowing users to analyse attrition at granular levels.
- **Clean, well-structured data** is the foundation for building reliable dashboards and drawing actionable conclusions.

- **Business-focused design** ensures dashboards are not only analytical but also user-friendly for non-technical HR teams.
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