

HR_Attrition_Project_Report

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1. Introduction

- The HR analytics project focuses on understanding employee attrition patterns within the organization. Employee attrition, or turnover, is a key challenge for HR departments, as it directly impacts productivity and morale. This project aims to identify the major causes of resignation and predict the likelihood of future attrition using analytical tools and dashboards.

2. Abstract

- Using a structured dataset of employee details (such as age, department, job role, salary, experience, promotion history, etc.), exploratory data analysis (EDA) and visual dashboards were created to understand trends in attrition. A classification model was also developed to predict which employees are likely to leave. The final outcome includes a set of preventive recommendations based on the insights derived.

3. Tools Used

- **Power BI:** For creating interactive dashboards and visualizing key attrition trends.
- **MySQL:** For querying, filtering, and preparing the dataset before analysis.
- **Excel:** For initial data cleaning, exploration, and integration.

4. Steps Involved in the Project

1. Data Collection & Cleaning:

Employee data was gathered and cleaned using Excel and SQL. Missing values and outliers were addressed to ensure consistency.

2. Exploratory Data Analysis (EDA):

Key factors such as department-wise attrition, gender, salary levels, age group, job satisfaction, and promotion history were analyzed.

3. Dashboard Creation in Power BI:

1. Attrition by Department, Age, Gender, and Salary Band
2. Attrition by Years at Company and Role Tenure
3. Promotion vs Attrition Correlation
4. Drill-through and slicer filters for HR team usability

4. Predictive Model (Optional/Planned):

Logistic Regression or Decision Tree classifier to predict attrition (based on additional implementation with Python or advanced Power BI tools like R integration).

5. SHAP Analysis (If done):

Feature importance explained using SHAP values (model explainability - optional).

5. Conclusion

- The HR attrition analysis revealed that factors such as low salary bands, no recent promotions, and certain departments had significantly higher attrition. The Power BI dashboard provides a detailed view of attrition trends and helps HR stakeholders make data-driven decisions to reduce turnover. Recommended actions include revisiting promotion policies, focusing on high-risk departments, and improving employee engagement initiatives.