
Employee Attrition Analysis – HR Analytics Project

Introduction

Employee attrition is a critical concern for organizations as it impacts productivity, morale and overall operational efficiency. The primary objective of this project was to analyze employee attrition patterns using historical HR data, identify key factors influencing attrition, and provide actionable insights to help HR teams make data-driven decisions to improve employee retention.

Abstract

This project explores employee attrition trends across departments, job roles and performance metrics. Using data visualization and statistical analysis, key drivers of attrition such as work hours, training, peer ratings and manager feedback were identified. The project demonstrates the application of Excel, Python and Tableau in HR analytics to create an interactive dashboard for monitoring and mitigating employee attrition.

Tools Used

- **Excel** – Data cleaning, pre-processing and initial analysis
 - **Python** – Data manipulation, statistical analysis and generating insights
 - **Tableau** – Creating interactive visualizations and building the employee attrition dashboard
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Steps Involved in Building the Project

1. **Data Collection & Cleaning** – Gathered HR data and removed inconsistencies and missing values using Excel and Python.
2. **Exploratory Data Analysis** – Analyzed employee count, attrition count and attrition rate; studied patterns across departments and job roles.
3. **Visualization in Tableau** – Created multiple worksheets including KPIs, department-wise attrition, job role attrition, and various boxplots for attendance, work hours, training hours, peer ratings and manager feedback.

4. **Dashboard Creation** – Integrated all worksheets into an interactive Tableau dashboard with filters for department, gender and age group.
 5. **Insights & Analysis** – Derived insights regarding high-risk departments, correlation between performance metrics and attrition and identified areas requiring HR intervention.
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Conclusion

The project successfully developed an interactive employee attrition dashboard that provides HR managers with a clear view of attrition trends and underlying factors. It enables proactive decision-making to reduce attrition, improve employee engagement and optimize workforce management. The combination of Excel, Python and Tableau proves effective in performing comprehensive HR analytics and translating data into actionable business insights.
