

# HR Analytics – Employee Attrition Analysis (Excel)

## Project Overview

Employee attrition is a major challenge for organizations, impacting productivity, employee morale, and operational costs. This project analyses HR data to identify key factors influencing employee attrition and provides data-driven insights and business recommendations.

The entire analysis is performed using **Microsoft Excel**, demonstrating core data analyst skills such as data cleaning, analysis, visualization, and dashboard creation.

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## Objective

- Analyze employee data to identify attrition patterns
  - Understand key factors contributing to employee turnover
  - Create an interactive Excel dashboard for decision-making
  - Provide actionable recommendations to improve employee retention
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## Dataset

- **Source:** IBM HR Analytics Employee Attrition Dataset (Kaggle)
- **Records:** 1,470 employees
- **Features:** 35 columns

## Key Variables

- Demographics: Age, Gender, Marital Status
  - Job Details: Department, Job Role, Years at Company
  - Compensation: Monthly Income
  - Satisfaction Metrics: Job Satisfaction, Work-Life Balance
  - Target Variable: Attrition (Yes/No)
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## Tools & Skills Used

- **Microsoft Excel**
  - Data cleaning and preparation
  - Pivot tables and pivot charts

- Excel formulas (IF, COUNTIF, AVERAGEIFS)
  - Conditional formatting
  - Dashboard creation
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## Project Workflow

### 1. Data Cleaning

- Verified data types and formats
- Checked for missing values and duplicates
- Created derived columns for analysis

### 2. Exploratory Data Analysis (EDA)

- Attrition analysis by department and job role
- Relationship between job satisfaction and attrition
- Attrition trends by age group and job roles at company
- Attrition by gender

### 3. Visualization & Dashboard

- KPI cards (Total Employees, Attrition Rate, Active employees, Average monthly income)
- Charts showing attrition by department, role, age group, gender and job satisfaction
- Summary dashboard for quick insights

### 4. Insights & Recommendations

- Identified high-risk departments and job roles
  - Highlighted importance of job satisfaction and early tenure
  - Suggested targeted retention strategies
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## Key Insights

- Sales and R&D departments show higher attrition rates
- Employees with low job satisfaction are more likely to leave
- Attrition is highest among employees with 0–3 years of tenure

- Certain job roles such as sales executive and research assistant consistently experience higher attrition
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### **Business Recommendations**

- Implement targeted engagement and mentorship programs
  - Improve onboarding processes for new hires
  - Conduct regular employee satisfaction surveys
  - Review compensation and growth opportunities for high-risk roles
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### **Outcome**

This project demonstrates the ability to perform end-to-end HR analytics using Excel, from raw data to actionable insights. It serves as a strong portfolio project for **entry-level Data Analyst roles**, especially where Excel-based analysis is a key requirement.

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