

HR Analytics Project - Executive Summary

Context & Dataset

This project analyzes HR data using Excel. The dataset contains 50,000 records and approximately 37 fields. The entire process, including data preparation, cleaning, transformation, analysis, and visualization, was conducted in Excel. The focus is on understanding employee attrition and workforce metrics.

Methods

- Cleaned and standardized the dataset in Excel.
- Created pivot tables and binned continuous variables (monthly income, years since last promotion, etc.).
- Calculated attrition rates and group-level aggregates.
- Produced pivot charts and visualizations (see sheets Q1–Q6).

Key Findings

- Overall attrition: 25,105 of 50,000 employees → 50.21%
- By department (attrition rate):
 - Research & Development: 51.21% (highest)
 - Software: 50.54%
 - Support: 50.19%
 - Sales: 50.02%
 - Human Resources: 49.86%
 - Hardware: 49.44% (lowest)
- Average total working years: ~20.5 years overall, with departments averaging between 20.3–20.7 years.
- Attrition by monthly income (bins): ranges between 49.9%–50.9%, with the 41,001–51,000 range being highest.
- Attrition by years since last promotion: attrition rises slightly after 21+ years since last promotion.
- Performance distribution: Research Scientist, HR, and Sales Executives have higher shares of high ratings, while Sales Representatives and Healthcare Representatives are lower.
- Overtime: Slightly higher attrition when overtime is reported.
- Marital status: Divorced and Married show marginally higher attrition than Single employees.

Charts & Visuals

- Q1: Department-wise attrition
- Q2: Hourly rate summary
- Q3: Attrition across monthly-income bins
- Q4: Average total working years by department
- Q5: Performance-rating distribution by job role
- Q6: Attrition by years-since-last-promotion bins