

# Employee Attrition Analysis Report

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## Introduction

This report analyzes employee attrition within the organization based on provided data. The analysis aims to identify trends and factors contributing to attrition rates, enabling the organization to make data-driven decisions to improve employee retention.

## Data Overview

1. The dataset consists of 4410 records (rows) and 29 columns.
  2. Columns include various attributes such as EmployeeID, Age, Attrition, BusinessTravel, Department, DistanceFromHome, Education, EducationField, Gender, JobLevel, JobRole, MaritalStatus, MonthlyIncome, NumCompaniesWorked, Over18, PercentSalaryHike, StandardHours, StockOptionLevel, TotalWorkingYears, TrainingTimesLastYear, YearsAtCompany, YearsSinceLastPromotion, YearsWithCurrManager, EnvironmentSatisfaction, JobSatisfaction, WorkLifeBalance, JobInvolvement, and PerformanceRating.
  3. Most columns have non-null values, indicating that there are no missing values in the majority of the dataset.
  4. However, there are missing values in columns such as NumCompaniesWorked, TotalWorkingYears, EnvironmentSatisfaction, JobSatisfaction, and WorkLifeBalance.
  5. Data types include integers (int64) and floating-point numbers (float64) for numerical features, and objects (strings) for categorical features.
  6. The Attrition column appears to be the target variable, indicating whether an employee has left the company or not.
  7. Other columns contain various employee-related information such as demographics, job details, and satisfaction ratings.
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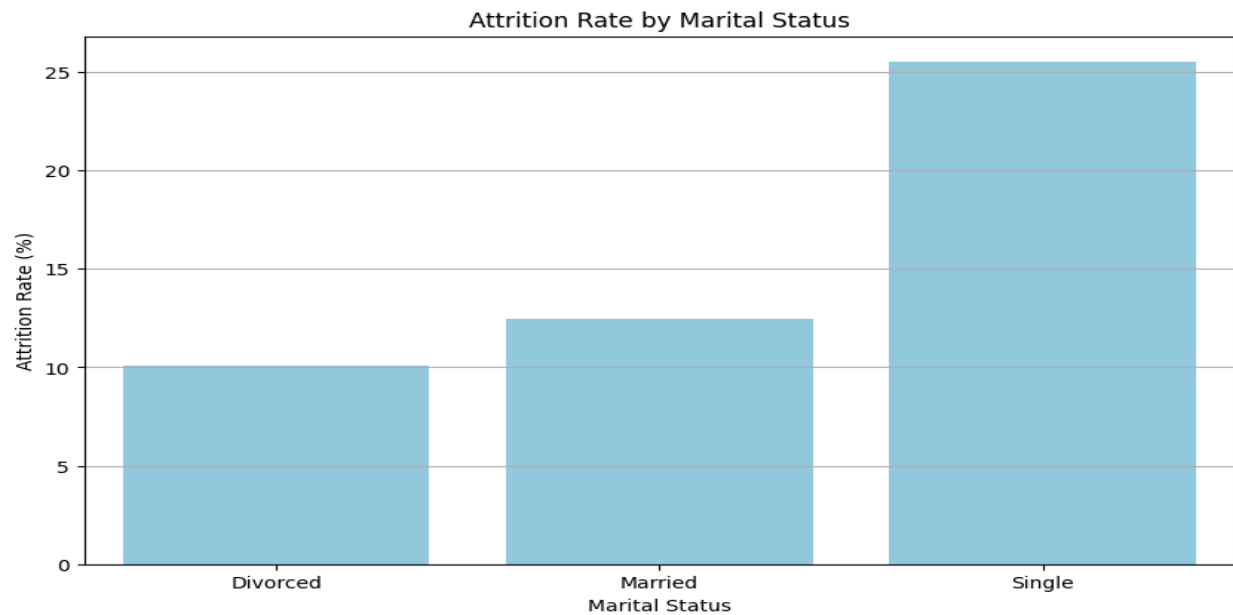
## Demographic Analysis:

### 1. Gender Distribution:

- Male Employees: 2646, Attrition Rate: 16%
- Female Employees: 1764, Attrition Rate: 17%

### 2. Marital Status Distribution:

- Married: 2019
- Single: 1410, Attrition Rate: High
- Divorced: 981



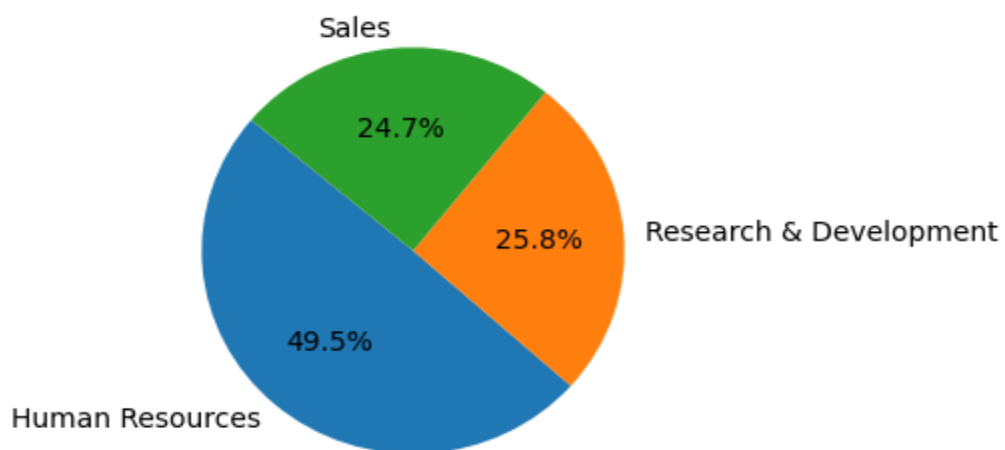
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## Departmental Analysis:

### 1. Attrition Rate by Department

- Sales: 24%
- Research & Development: 25%
- Human Resources: 49.5% – High attrition

Attrition Rate by Department

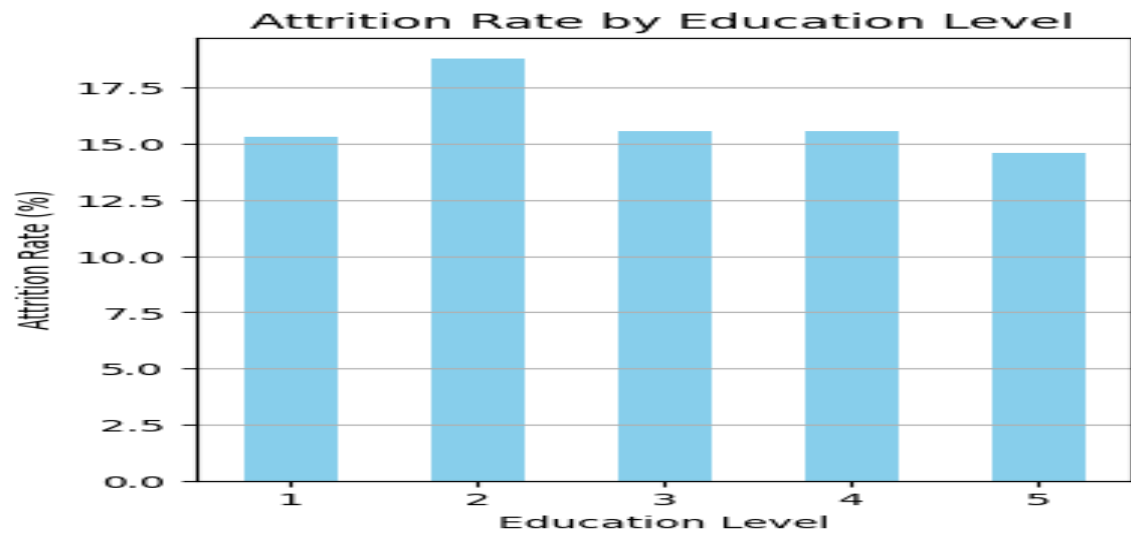


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## Education Level Analysis

### 1. Attrition Rate by Education Level:

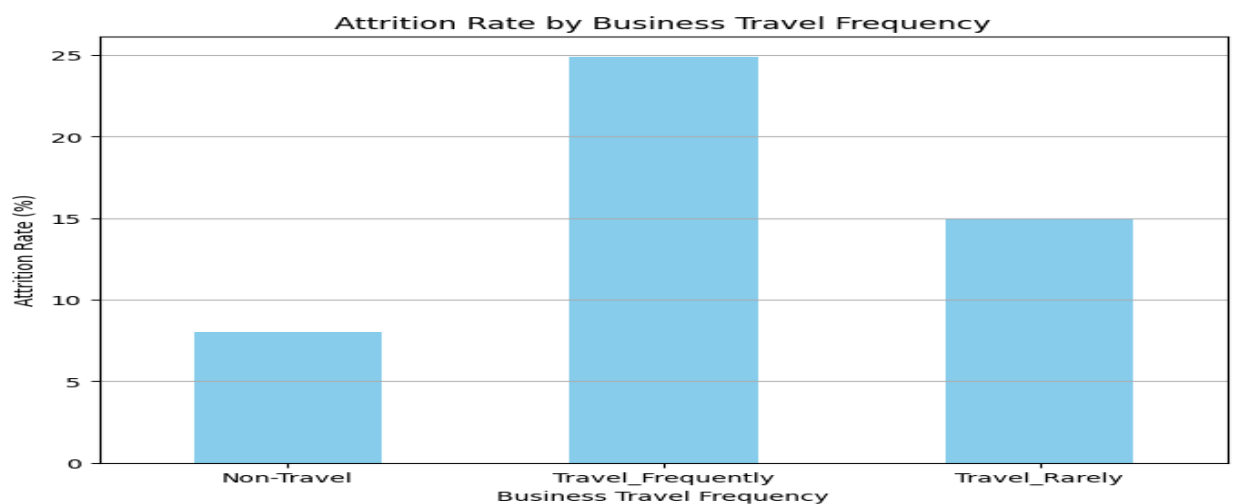
- Education Level 2: Highest attrition rate



## Business Travel Analysis

### 1. Attrition Rate by Business Travel Frequency

- Employees who travel frequently have higher attrition rates.

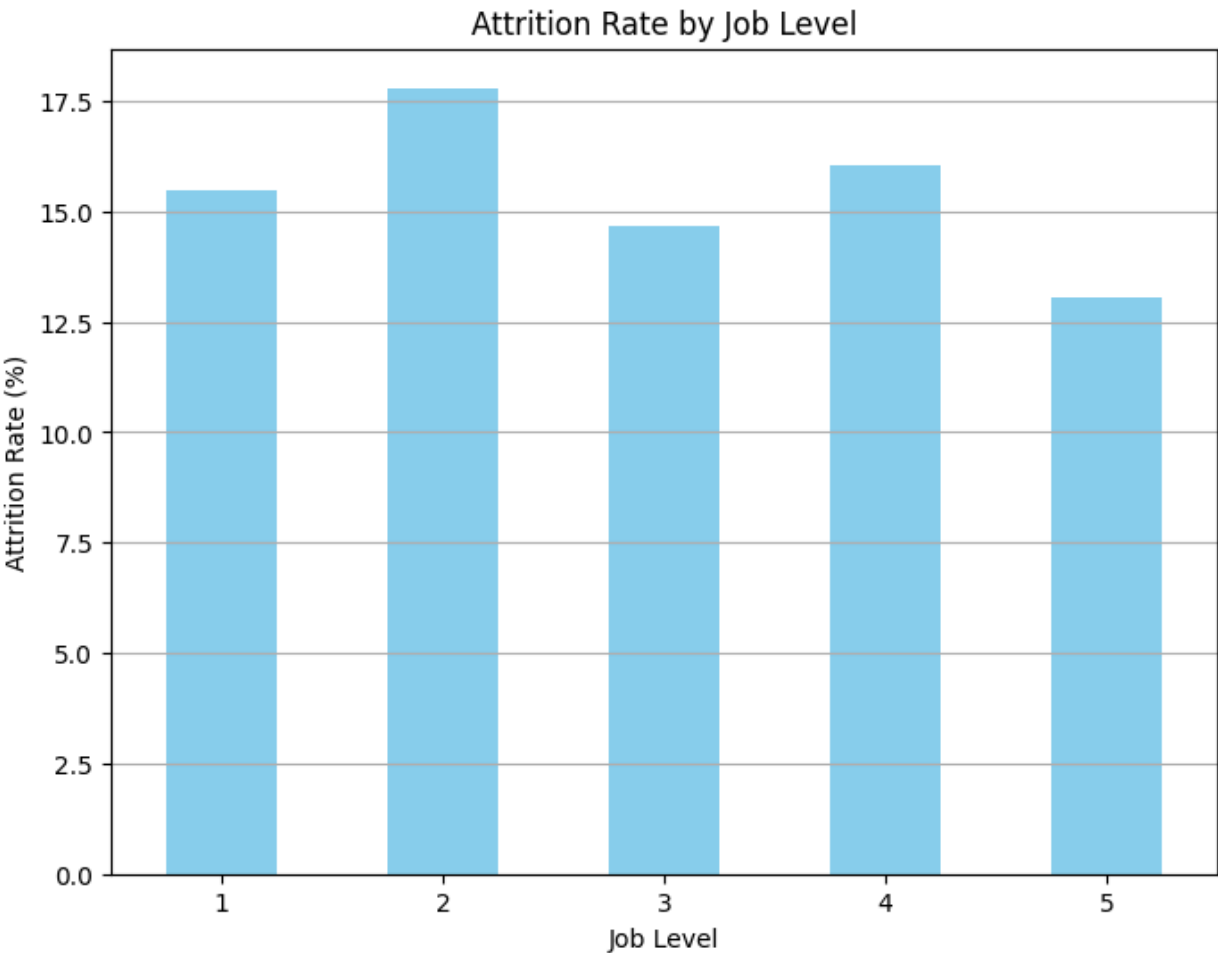


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# Job Level Analysis

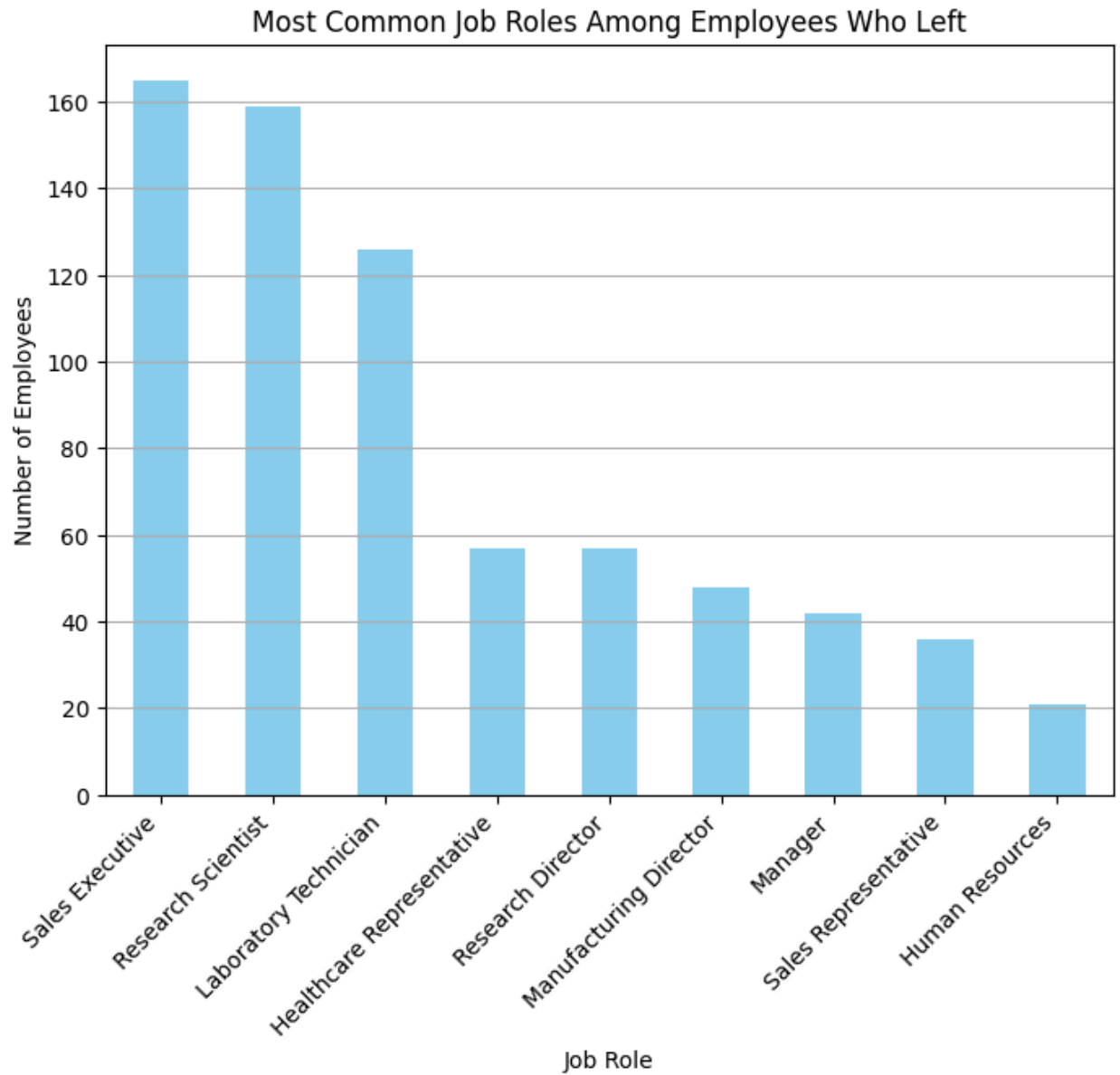
1. Attrition Rate by Job Level:

- Job Level 2: 17.5%
- Job Level 4: 15.5%
- Job Level 1: 15.2%



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## 2. Most common job roles among employees who left

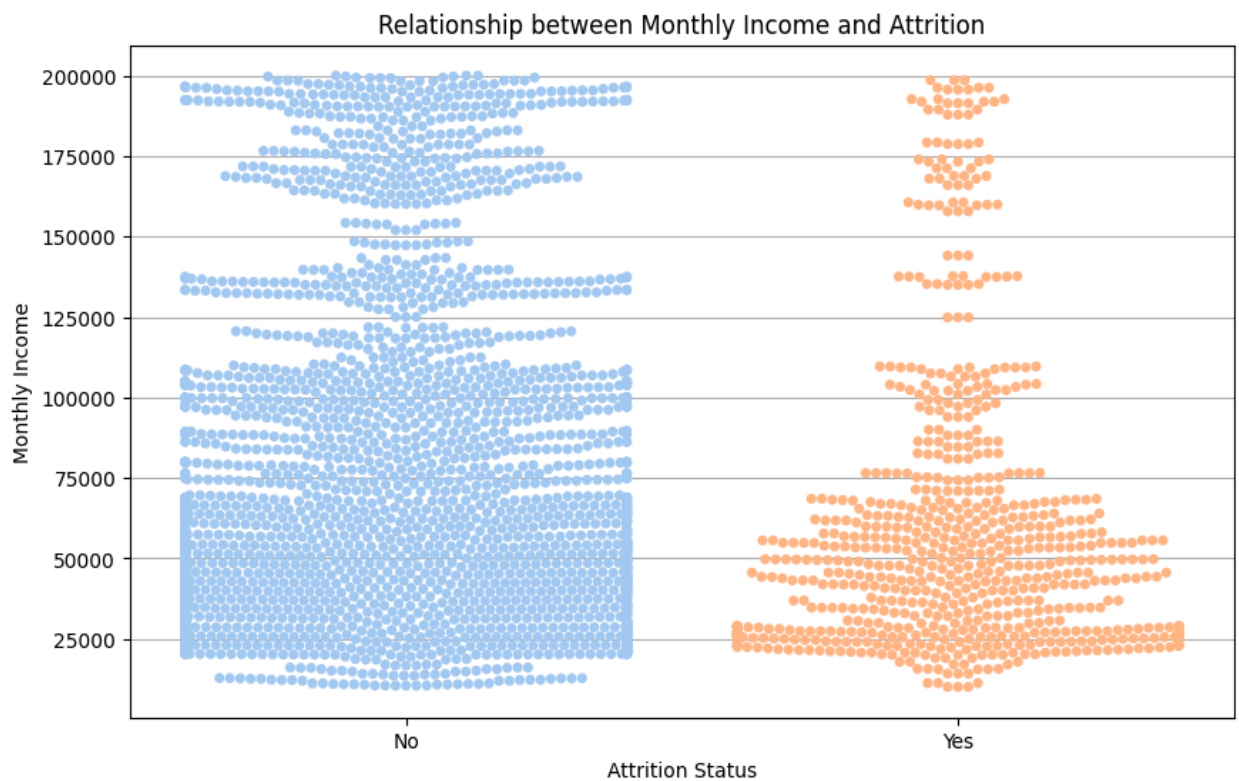


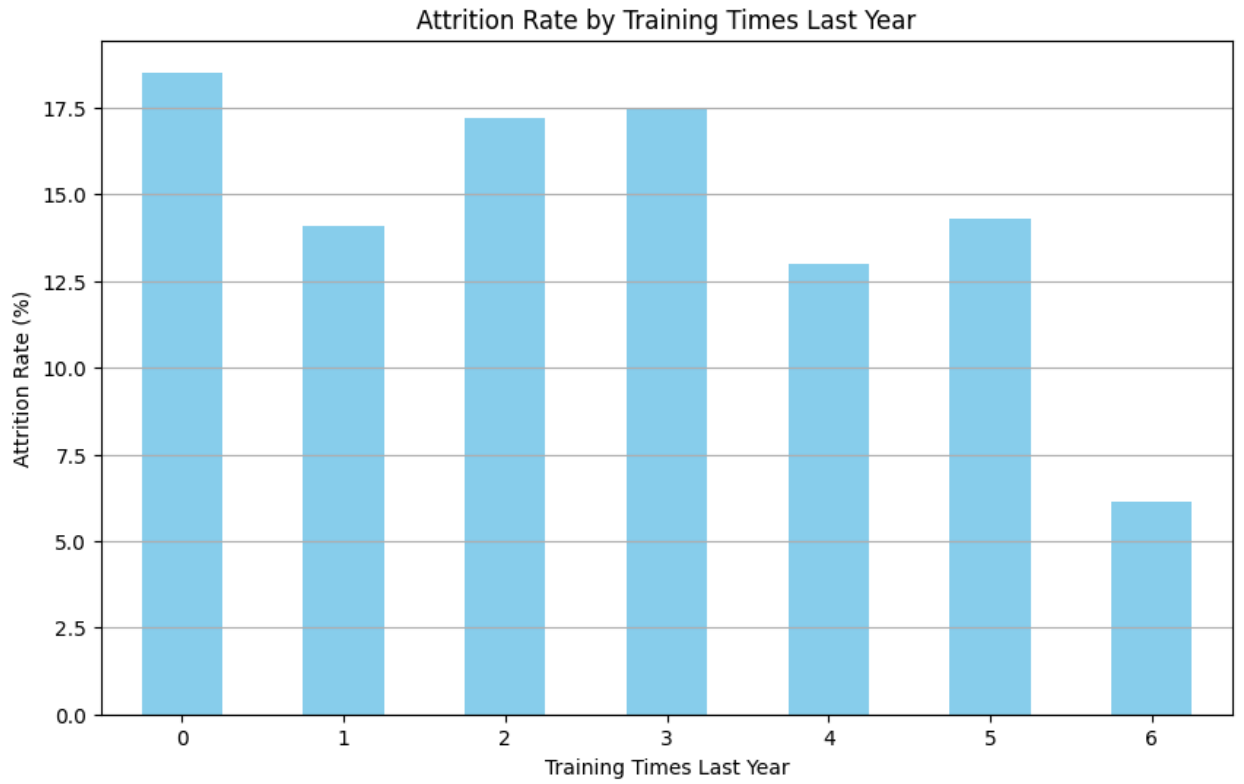
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## Salary and Training Analysis

### 1. Attrition Rate by Salary Range:

- Employees with salaries ranging from 25000 to 75000 have higher attrition rates.
- Attrition Rate by Training Times Last Year. Employees with 0 to 3 years of training have higher attrition rates.





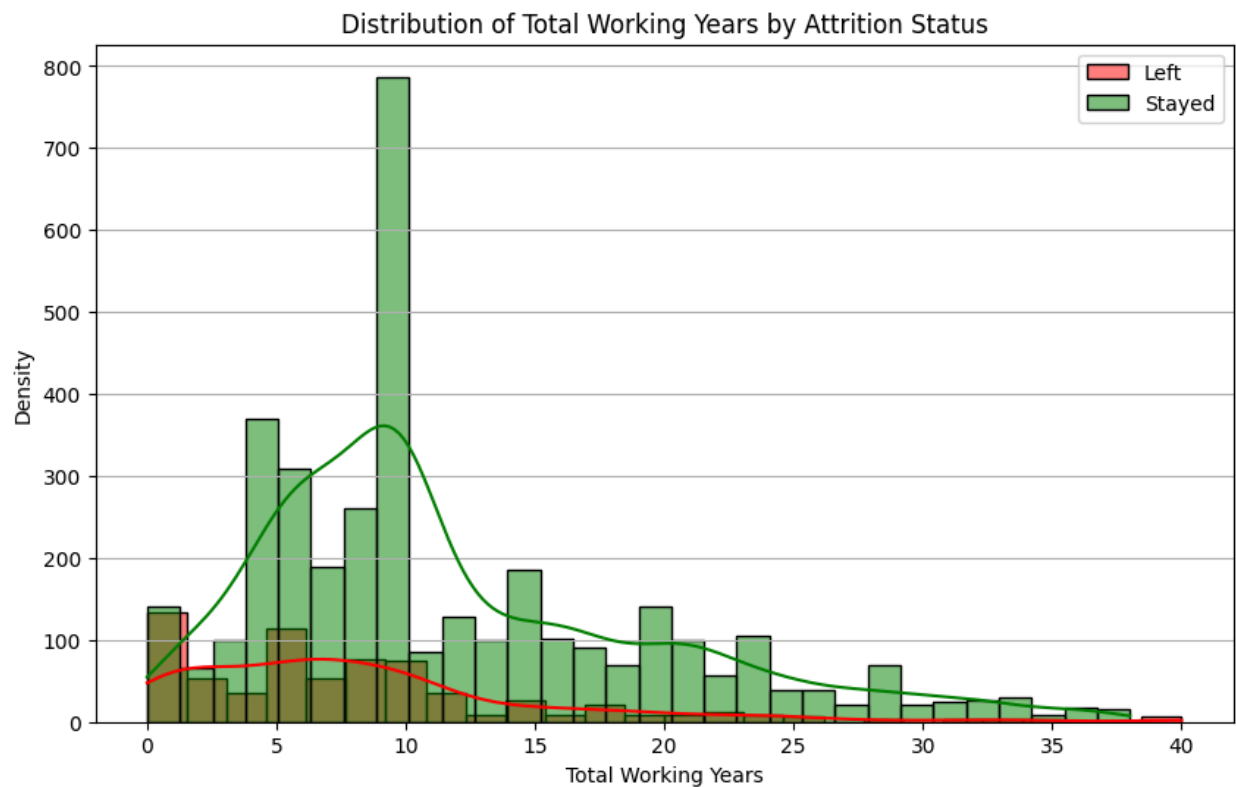


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# Work Experience Analysis

## 1. Attrition Rate by Previous Work Experience:

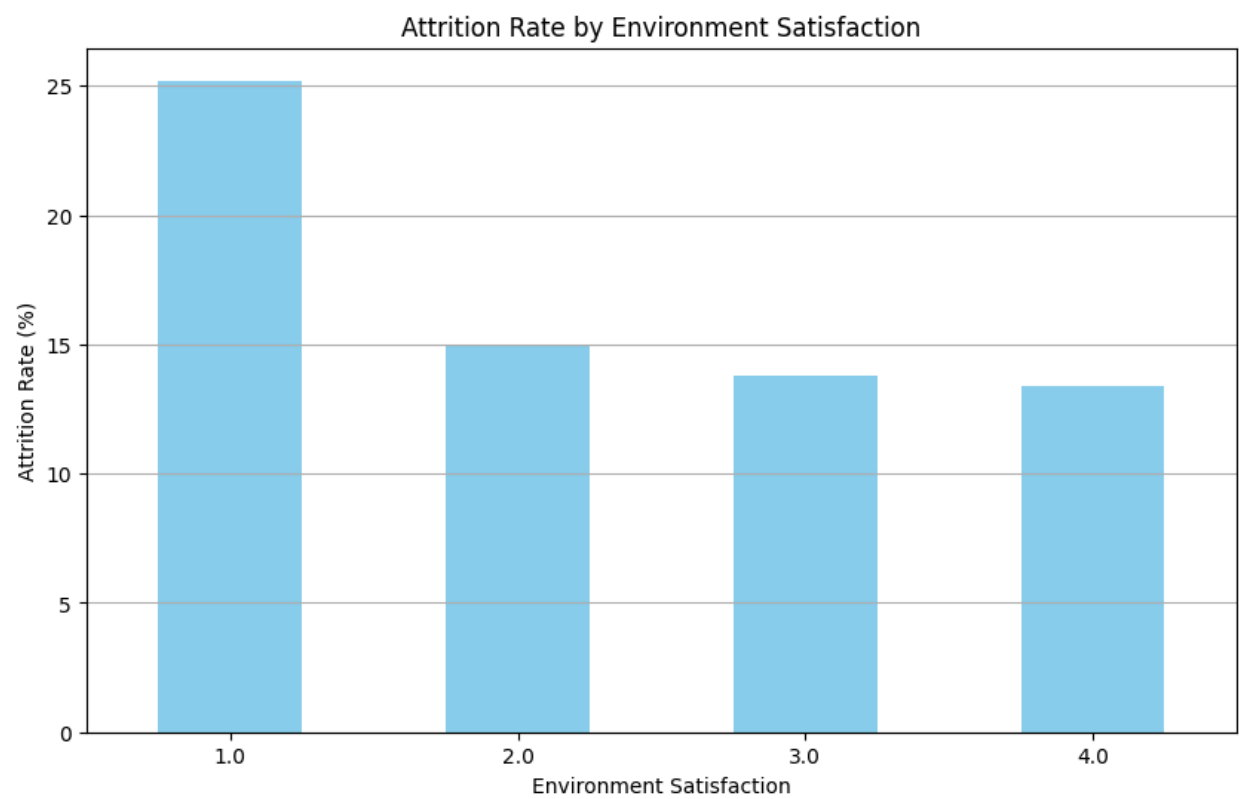
- Employees with 0 to 10 years of working experience, particularly those with prior experience in certain environments, are more likely to leave their current job.



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# Environmental Satisfaction

- 1. Environmental satisfaction is a significant factor influencing attrition rates.  
Dissatisfaction with the work environment can lead to higher attrition rates.



## Conclusion

The analysis reveals several key factors contributing to employee attrition, including marital status, department, education level, business travel, job level, salary range, training, and work experience. Addressing these factors by improving workplace conditions, providing training and development opportunities, and offering competitive compensation packages can help reduce attrition rates and foster a more engaged workforce.

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## Recommendations

- Develop strategies to improve workplace satisfaction, especially for employees in high-attrition categories such as singles, certain departments, and specific job levels.
- Implement retention programs focused on providing career development opportunities, training, and competitive salaries.
- Conduct regular employee satisfaction surveys to monitor environmental satisfaction and identify areas for improvement.
- This report provides valuable insights into employee attrition trends and recommends actionable strategies for the organization to enhance employee retention and maintain a motivated workforce. Further analysis and ongoing monitoring of attrition rates will be essential for ensuring the effectiveness of implemented initiatives.