

Employee Attrition Analysis Report

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1 Introduction

Employee attrition is a critical issue that can affect the operational efficiency and financial stability of any organization. High attrition rates lead to increased costs in recruiting and training new employees, loss of experienced talent, and a potential decrease in overall employee morale. This report aims to explore the various contributing factors to employee attrition in the company by analyzing key metrics like work-life balance, overtime, job role, and years of service. The insights gained from this analysis will provide actionable recommendations to reduce attrition and improve employee retention.

2 Methodology

The dataset used in this analysis consists of employee data from various departments and roles within the organization. Key variables include work-life balance scores, job roles, years at the company, total working years, and overtime status. We employed both exploratory data analysis and visualizations to understand the trends and patterns of attrition. The findings were visualized using Tableau to highlight areas where intervention is needed.

2.1 Data Cleaning

The raw dataset was cleaned to remove irrelevant columns such as *EmployeeNumber*, *Over18*, and *EmployeeCount*. Several new features were engineered, including *Job Stability*, *Income Per Year Worked*, and one-hot encoding of categorical variables like *Job Role*, *BusinessTravel*, and *Marital Status*. These transformations ensured that the data was suitable for deeper analysis and machine learning applications.

2.2 Key Metrics Analyzed

- Attrition Rate by Work-Life Balance
- Attrition by Job Role (with and without overtime)
- Attrition by Years at Company
- Attrition by Total Working Years

3 Findings

Based on the analysis, several key findings have been identified:

3.1 Overall Attrition Rate

The overall attrition rate in the company is **16.12%**, indicating that a notable portion of the workforce has left. While 83.88% of employees remain, the attrition rate exceeds the industry benchmark of 10%, warranting immediate attention.

3.2 Work-Life Balance and Attrition

Attrition is highest among employees with a **work-life balance score of 3**. Employees with a score of 4 exhibit lower attrition rates, suggesting that improving work-life balance can lead to better retention. The lowest scores (1 and 2) are associated with lower total numbers but higher attrition rates, highlighting the need for intervention in work-life policies for dissatisfied employees.

3.3 Attrition by Job Role

Managers and Research Scientists are the most affected by attrition, particularly when working overtime. The attrition rate for Managers working overtime is as high as 80%, while Research Scientists face a 70.21% attrition rate. This suggests that the demands of these roles, coupled with excessive overtime, contribute significantly to employee turnover.

Employees in roles like **Laboratory Technician** and **Sales Representatives** also show moderate attrition rates, both with and without overtime. In contrast, non-overtime employees in these roles have substantially lower attrition rates.

3.4 Attrition by Years at Company

The analysis shows that employees who have been with the company for **fewer than 5 years** are much more likely to leave. Attrition drastically decreases after the first 5 years, indicating that newer employees are more at risk of leaving. Retention efforts should focus on this group.

3.5 Attrition by Total Working Years

Employees with fewer than **10 total working years** show the highest levels of attrition. More experienced employees (those with over 15 years) tend to remain with the company, likely due to greater job stability and satisfaction.

4 Recommendations

Based on the findings, the following strategies are recommended to reduce attrition:

4.1 Improving Work-Life Balance

- Implement flexible work hours and remote work options to help employees manage their work-life balance better.
- Encourage the use of vacation days and promote a culture that values time off.
- Redistribute workloads for roles such as **Managers** and **Research Scientists** to prevent burnout and excessive overtime.

4.2 Support for Early-Career Employees

- Strengthen the onboarding process to provide clearer expectations and better integration for new hires.
- Introduce mentorship programs for employees within their first 5 years to help them navigate the challenges of early career stages.
- Offer growth opportunities and career development programs that provide clear pathways for advancement.

4.3 Overtime Management

- Limit overtime where possible, especially for high-attrition roles like **Managers** and **Research Scientists**.
- Introduce compensatory time off or additional bonuses for employees working significant overtime to maintain morale.

4.4 Compensation and Recognition

- Regularly review and adjust compensation to ensure it remains competitive and fair.
- Recognize high performers through public acknowledgments, promotions, or bonuses to enhance engagement and retention.

4.5 Retention of High-Risk Job Roles

- Conduct targeted surveys and feedback mechanisms for employees in high-risk roles like **Managers**, **Research Scientists**, and **Sales Representatives** to understand specific pain points.
- Offer role-specific training and leadership development to help employees manage the demands of their positions.

5 Key Performance Indicators (KPIs)

To monitor the success of the interventions, the following KPIs are suggested:

- **Overall Attrition Rate:** Target to reduce below 10%.
- **Attrition by Job Role:** Focus on reducing attrition in high-risk roles like **Managers** and **Research Scientists**.
- **Attrition by Overtime Status:** Track overtime-related attrition and aim to reduce the overtime vs non-overtime attrition gap to below 10%.
- **Retention of Employees with Less Than 5 Years:** Increase the retention rate of early-career employees by 10%.
- **Work-Life Balance Score Impact:** Improve employee satisfaction by ensuring at least 80% of employees report a work-life balance score of 4 or higher.

6 Conclusion

Employee attrition is a complex issue that requires a comprehensive approach to resolve. This analysis has provided valuable insights into the factors contributing to high attrition rates, particularly among employees with poor work-life balance, those in high-overtime roles, and those early in their careers. By implementing the recommended strategies, the company can reduce attrition, improve employee satisfaction, and ultimately enhance long-term retention.