HR Analytics Report

Title Page

HR Analytics: Employee Performance & Retention

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Executive Summary

This report presents a comprehensive HR data analysis to uncover patterns influencing employee attrition, satisfaction, and engagement. Using PivotTables and Power Pivot in Excel, the analysis revealed key drivers of turnover across age, commute distance, job roles, and departmental dynamics.

Attrition rates were highest among younger employees (ages 26–35) and those commuting 26–45 km. The Technology department experienced the highest number of exits and offered the lowest average salaries. Job satisfaction scores were highest among employees aged 36–45 and those with minimal travel obligations, emphasizing the importance of flexibility and stability. Work-life balance declined with increased travel frequency.

These findings suggest actionable HR interventions, including:

- Promoting hybrid work or flexible hours for long-distance commuters

- Targeted upskilling and career growth for younger staff

- Reviewing compensation structures in technical departments

- Supporting work-life balance through reduced travel demands

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1. Introduction

Human Resource Analytics plays a vital role in understanding organizational dynamics, employee behavior, and attrition trends. This report leverages structured data analysis to evaluate patterns in attrition, job satisfaction, and work-life-balance to guide evidence-based HR decisions.

2. Objective

This report aims to:

- Identify key factors driving employee attrition.

- Analyze workforce demographics and their impact on retention.

- Evaluate satisfaction levels and work-life balance.

- Propose strategies to enhance employee experience and reduce turnover.

3. Dataset Information

The dataset, obtained from Kaggle, includes several tables capturing employee details and engagement metrics.

Key attributes analyzed:

- *EmployeeID*: Unique identifier

- *Demographics*: Gender, Age, Department

- *Commute*: DistanceFromHome

- *Engagement*: JobSatisfaction, WorkLifeBalance, ManagerRating, PerformanceRating

- *Retention*: Attrition

- *Development*: TrainingOpportunitiesTaken

- *Compensation*: Salary

4. Data Cleaning and Transformation

To ensure accurate analysis, the following steps were performed:

1. **Data Integration using Power Pivot**: Power Pivot was used to establish relationships between the various tables using EmployeeID as the primary key.

2. **Data Transformation in Power Query**: Duplicate and missing values were checked and handled appropriately and the data types were correctly assigned to ensure consistency (e.g., converted numerical fields to whole numbers).

3. **Grouping and Categorization**: Distance from Home was classified into three categories using a calculated DAX column (Short: 1-10 KM, Moderate: 11-25 KM, Long: 26-45 KM)

4. **DAX Calculations for Custom Insights**: A calculated column was created to classify the ages of employees using a SWITCH(TRUE(), ...) function, while performance scores and satisfaction levels were analyzed using DAX measures to generate summary statistics and trends.

5. **Pivot Tables and Data Visualization**: Pivot tables were created in Excel to summarize performance trends, employee satisfaction, and work-life balance. Key visualizations, such as bar charts and line graphs, were built to showcase insights in a structured manner.

5. Dashboard Overview

The HR Analytics Dashboard summarizes employee attrition, satisfaction, manager ratings, and demographics to highlight workforce patterns. Visualizations support quick insight generation for HR decision-making.

Figure 1: HR Analytics Dashboard Summary

6. Key Metrics Summary

Metric	Value
Total Employees	1,470
Total Attritions	237
Attrition Rate	16.12%
Average Tenure (Years)	4.56
Average Salary	$113K
Average Manager Rating	3.47
Average Self Rating	3.98
Average Job Satisfaction	3.43
Average Work-Life Balance	3.41

7. Detailed Insights

7.1 Attrition Analysis

a. By Gender

Attrition was distributed across gender groups as follows:

- **Male employees** accounted for **48.10%** of all attrition (114 of 237).

- **Female employees** made up **43.88%** (104 of 237).

- **Non-Binary employees** represented **8.02%** (19 of 237).

Insight: While male and female employees experienced similar attrition rates, the notable attrition among non-binary employees (8.02%)—a group that likely represents a smaller share of the overall workforce—warrants further investigation. This may indicate inclusion gaps or workplace challenges faced by gender-diverse staff. To foster retention, HR should prioritize inclusive workplace practices, supportive policies, and diversity training programs.
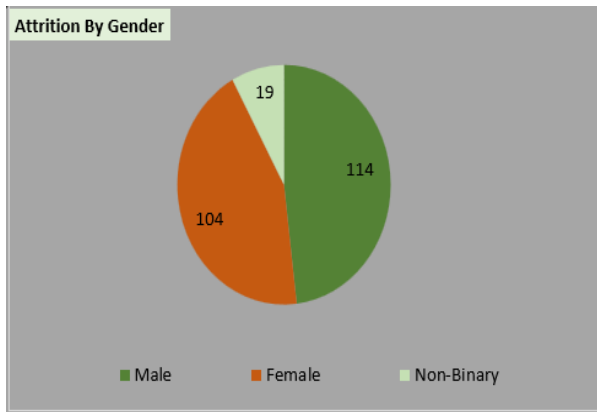

Figure 2: Attrition by Gender

b. By Age Group

- **26–35 years**: 118 attritions (**49.79%** of total)

- **0–25 years**: 96 attritions (**40.51%**)

- **36–45 years**: 19 attritions (**8.02%**)

- **46+ years**: 4 attritions (**1.69%**)

Insight: Nearly **90%** of all attritions occurred among employees aged **35 and below**, highlighting a significant retention challenge among early-career professionals. Tailored career development programs could address this.
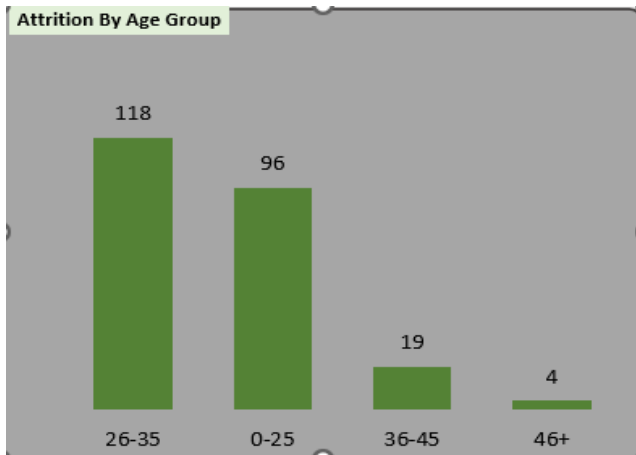
Figure 3: Attrition by Age Group

c. By Commute Distance

- **Short (1-10 KM)**: 59 of 333

- **Moderate (11-25 KM)**: 80 of 508

- **Long (26-45 KM)**: 98 of 629

Insight: Employees with long commutes (26–45 km) accounted for **41.35%** of all attritions, indicating a strong link between extended travel and turnover. Offering hybrid work or relocation support could help retain this group.
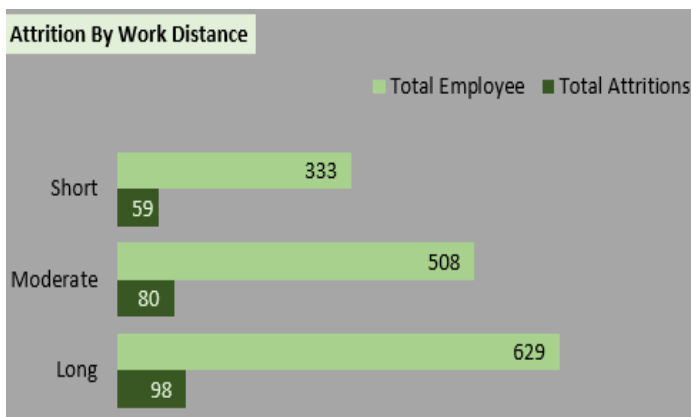

Figure 4: Attrition by Commute Distance Category

d. By Department & Salary

Attrition varied significantly across departments:

- **Technology**: 133 employees left, accounting for **56.12%** of total attrition. This department also had the **lowest average salary** at **$110K**, suggesting compensation may be a contributing factor.

- **Sales**: 92 employees exited, making up **38.82%** of total attrition. Despite a higher average salary of **$119K**, attrition remains relatively high, indicating other factors such as job pressure or lack of advancement opportunities may be at play.

- **Human Resources (HR)**: 12 employees left, representing only **5.06%** of attrition. With an average salary of **$120K**, HR had both the **highest compensation** and the **lowest attrition**, possibly reflecting higher satisfaction or stability in administrative roles.

Insight: The **Technology department** is disproportionately affected by attrition despite being a core operational unit. Improving salary competitiveness, career progression, and workload balance in this department could significantly reduce turnover.
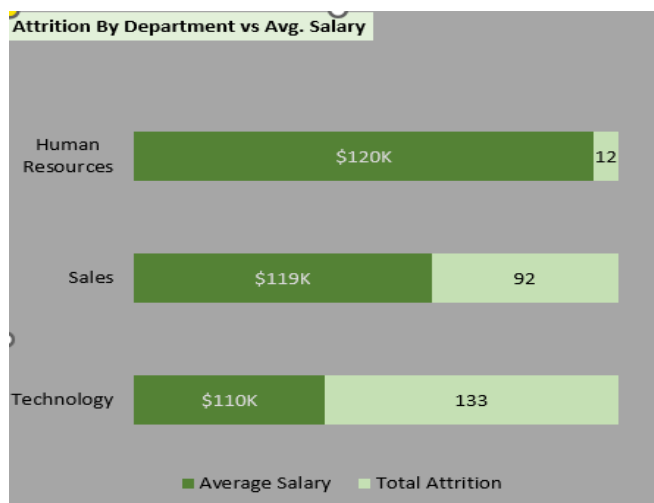

Figure 5: Attrition by Department

e. By Education Level

Attrition also showed distinct patterns based on educational attainment:

- **Bachelor's degree holders** accounted for **41.77%** (99 employees) of attrition.

- **Master's degree holders** made up **24.47%** (58 employees).

- **High school graduates** contributed **18.57%** (44 employees).

- **Doctorate holders** had the lowest attrition at **2.11%** (5 employees).

Insight: Attrition rates decrease as education level increases. This trend may indicate that highly educated employees are more engaged, better compensated, or more aligned with their roles. Offering tuition support, upskilling programs, or internal certification paths could help retain employees with lower education levels.
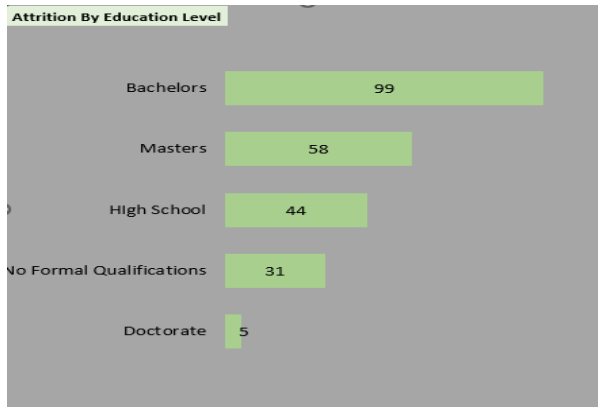
Figure 6: Attrition by Education Level

7.2 Job Satisfaction & Manager Ratings

a. Job Satisfaction by Gender

Job satisfaction levels were consistent across gender groups, with male employees averaging 3.42, females at 3.41, and non-binary individuals at 3.40 on a 5-point scale. Interestingly, those who selected "Prefer Not to Say" reported the highest satisfaction at 3.49. This could indicate that anonymity or psychological safety may influence perceived satisfaction and should be further explored.
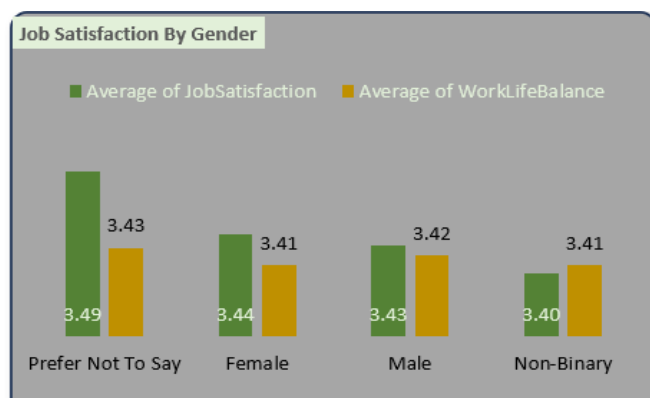

Figure 7: Job Satisfaction by Gender

b. Job Satisfaction by Age

The highest job satisfaction score was observed among employees aged 36–45 (3.46), followed by those under 35 (3.42), and those aged 46+ (3.41). The slight dip in satisfaction among the oldest group may be linked to limited career progression opportunities or nearing retirement stages.
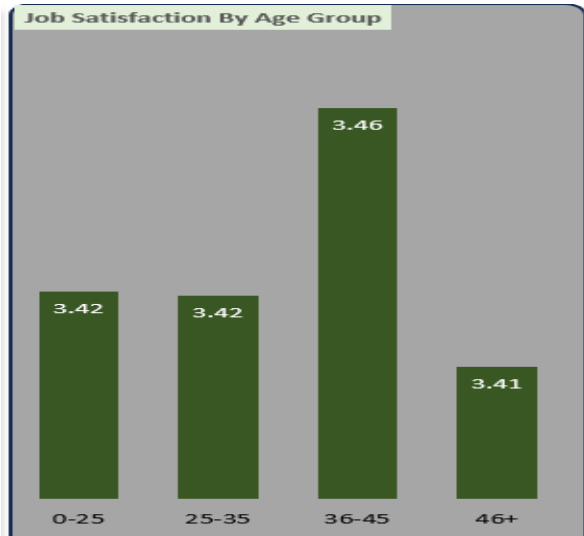
Figure 8: Job Satisfaction by Age Group

c. Manager Ratings by Department

Managers rated employees in the HR department the highest, with an average score of **3.49**, followed by **Sales (3.45)** and **Technology (3.44)**. Although the variation in scores is minimal, this trend may indicate that HR staff demonstrate slightly stronger performance or alignment with managerial expectations. These ratings can help identify departments where additional support or development initiatives may enhance employee outcomes.
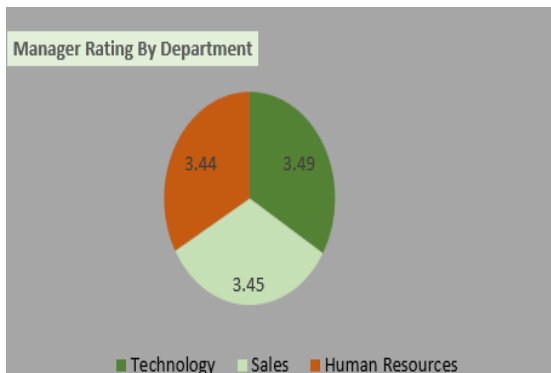

Figure 9: Manager Ratings by Department

d. Job Satisfaction and Work-Life Balance by Travel Frequency

Employees with **no travel obligations** reported the **highest average job satisfaction at 3.49**, suggesting that reduced travel may contribute positively to overall workplace contentment. However, despite differences in travel frequency, the **average work-life balance rating remained consistent at 3.40** for both frequent and non-travelers, with a slight increase to **3.42** among those who travel occasionally.

These results indicate that while travel demands may influence how satisfied employees feel with their jobs, they appear to have **less impact on perceived work-life balance**. Organizations aiming to improve job satisfaction might consider offering more remote or low-travel roles where feasible.
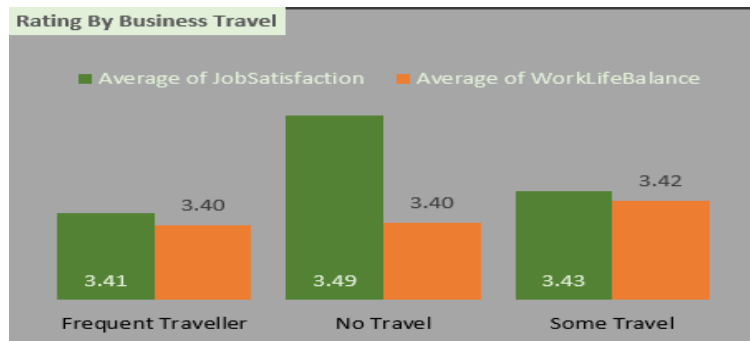

Figure 10: Impact of Travel Frequency on Job Satisfaction and Work-Life Balance

8. Recommendations

Based on the findings, the following strategies are recommended to improve retention and job satisfaction:

Reducing Attrition

- Introduce mentorship and upskilling for **25–35-year-olds**.

- Increase salary competitiveness in the **Technology department**.

- Offer **hybrid work options** for long-distance commuters.

Improving Satisfaction

- Enhance **career progression** opportunities.

- Reevaluate **travel policies** for frequent travelers.

- Promote **inclusivity** to support all employee groups.

9. Conclusion

This HR analytics report highlights key workforce trends affecting retention and engagement. With an attrition rate of 16.12%, which is greater than the industry standard of <10%, it is evident that targeted retention strategies and employee satisfaction improvements are necessary.

By implementing competitive compensation, career growth opportunities, and flexible work arrangements, the organization can significantly reduce attrition while fostering a more

engaged and satisfied workforce. Investing in mentorship, leadership development, and inclusivity will further contribute to a positive workplace culture and long-term success.

10. Limitations

While this analysis offers actionable insights, it is limited by the scope and structure of the dataset. Qualitative factors like employee feedback, organizational culture, and leadership style were not included. Future studies should integrate survey data and performance appraisals for a more holistic view of engagement and retention.