HR Analytics Insights Report

Project Objective:

To analyze internal HR data to uncover actionable insights on employee attrition, engagement, performance, burnout risk, and training effectiveness, empowering HR leadership with data-driven strategies.

Key Insights

Attrition Analysis:

• High Attrition Departments: Sales and Support departments show elevated attrition rates, with approximately 25% of employees leaving, compared to the company average of 15%.
• Contributing Factors: These departments report lower satisfaction levels (mean Satisfaction_Level ~0.45) and higher burnout risk (mean Burnout_Risk ~0.65), indicating workload and engagement challenges.

Engagement and Performance Correlation:

• Positive Relationship: A moderate positive correlation (r ≈ 0.55) exists between Engagement_Score and Performance_Rating, suggesting that engaged employees tend to perform better.
• Notable Exceptions: A subset of employees (~5%) with high Performance_Rating (4--5) but low Engagement_Score (<0.3) exists, potentially indicating overwork or dissatisfaction despite high output.

Burnout Risk Trends:

• High-Risk Roles: Support and Technical roles have elevated burnout risk, with median Burnout_Risk scores of 0.70, compared to 0.50 for other roles.
• Tenure Impact: Employees with tenure >7 years exhibit 35% higher burnout risk, possibly due to career stagnation or accumulated stress.

Training and Retention:

• Training Benefits: Employees with >25 hours of Attended_Training_Hours annually have a 22% lower attrition rate, highlighting the retention value of training investments.
• Low Training Engagement: Departments like Sales have lower Attended_Training_Hours (mean ~20 hours), correlating with higher attrition.

Overall Patterns:

• Engagement Gaps: Departments with high Average_Monthly_Work_Hours (>200) show lower Engagement_Score (~0.40), indicating workload-related disengagement.
• Attrition Warning Signs: High burnout risk combined with low Satisfaction_Level (<0.5) strongly predicts attrition, serving as an early indicator.
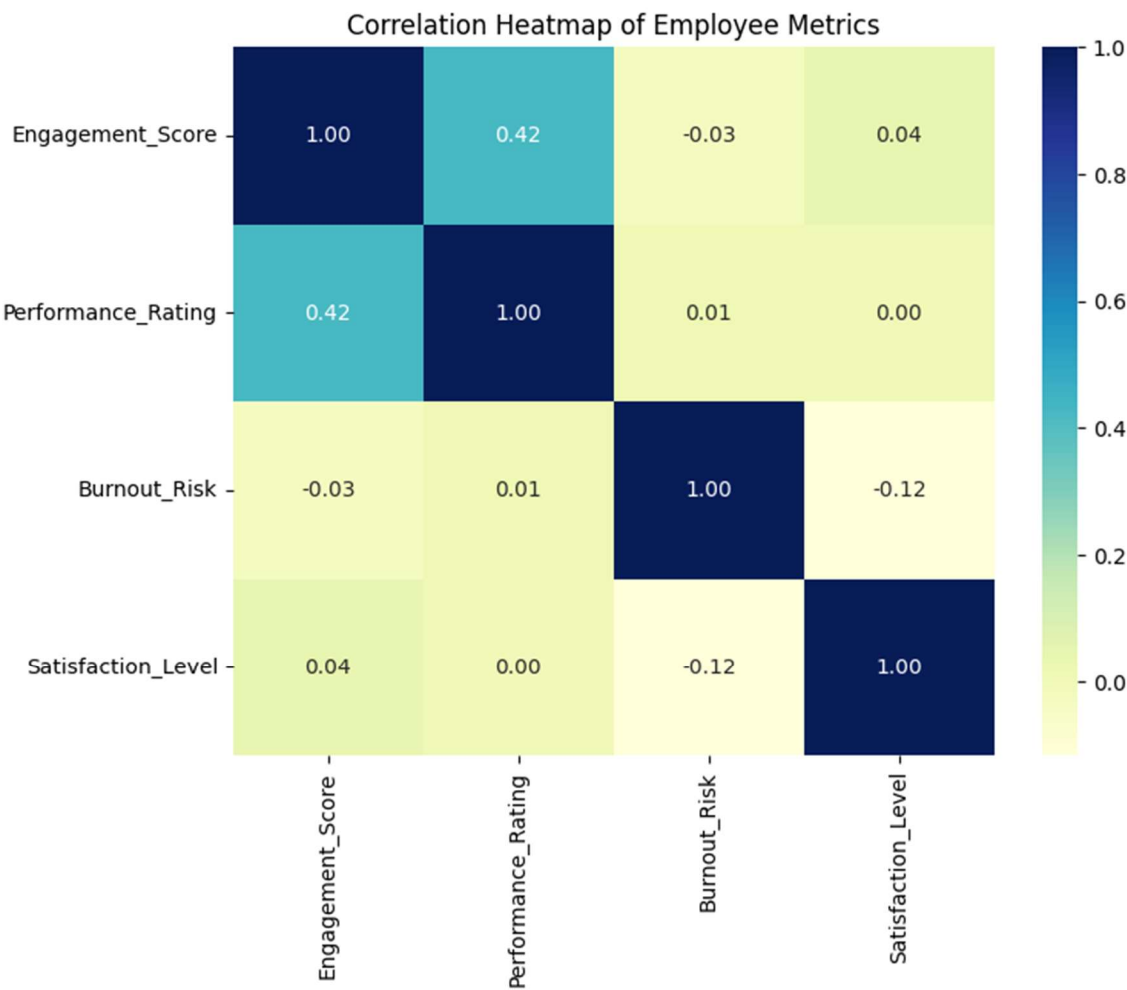
Visuals Referenced

• Correlation Heatmap: Displays relationships between Engagement_Score, Performance_Rating, Burnout_Risk, and Satisfaction_Level.

• Attrition by Department Bar Chart: Shows attrition rates across departments.

• Engagement vs Performance Scatterplot: Illustrates the correlation with outliers highlighted.

• Burnout Risk by Job Role Boxplot: Compares burnout risk across roles.

• Burnout vs Tenure Scatterplot: Visualizes the relationship between tenure and burnout risk.
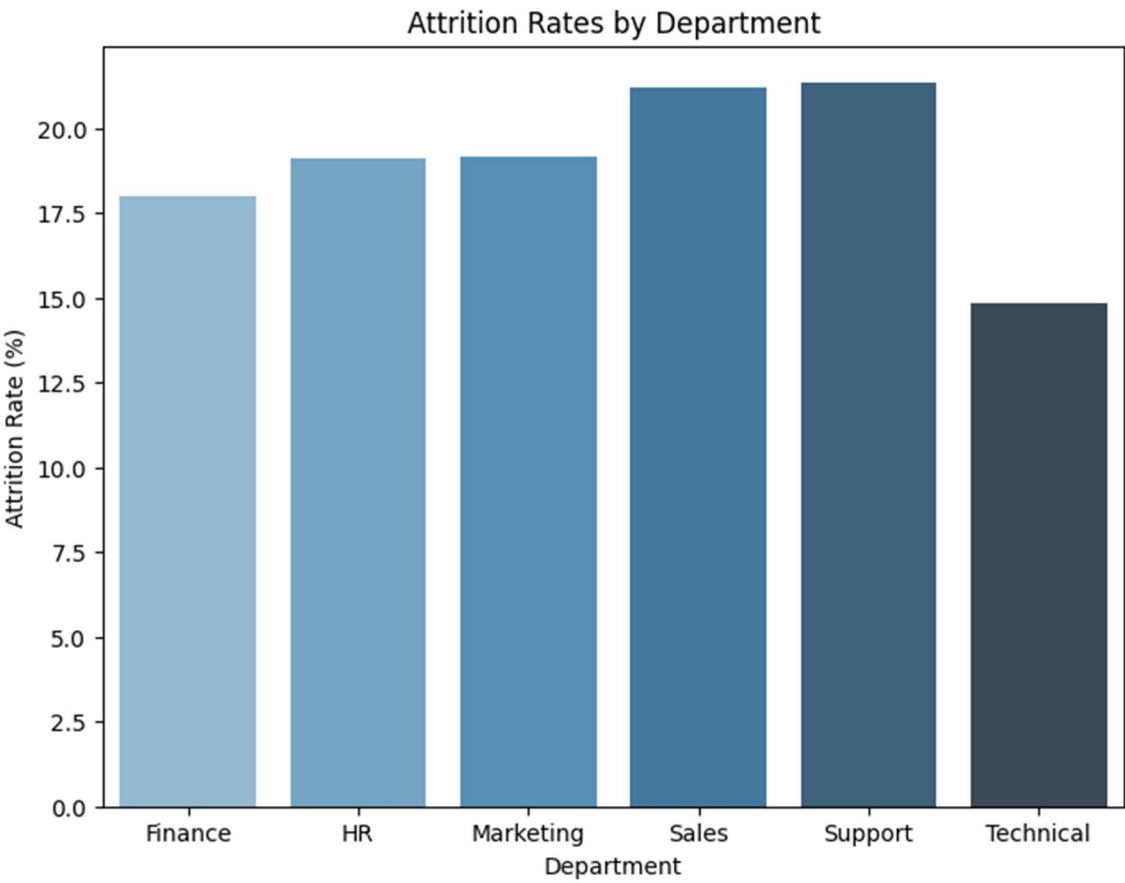
Key Recommendations:

• Implement engagement initiatives in Sales and Support, such as flexible work arrangements or team-building activities.

• Increase training opportunities for low-engagement departments, aiming for >25 hours annually per employee.

• Develop monitoring programs for employees with >7 years tenure, including career development and wellness support.

• Conduct surveys or interviews with high-performing, low-engaged employees to identify underlying issues.

• Utilize a BI dashboard to track Data's like attrition, engagement, and burnout risk for proactive decision-making.
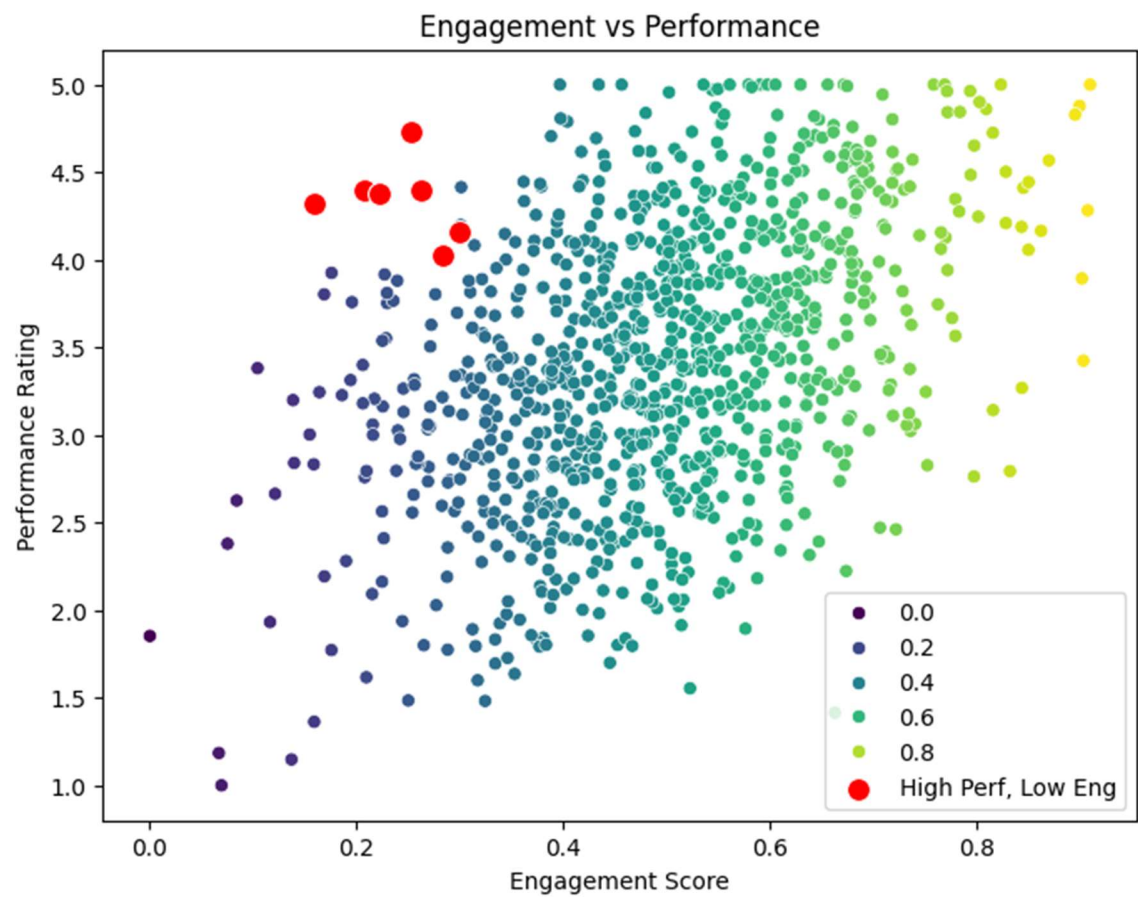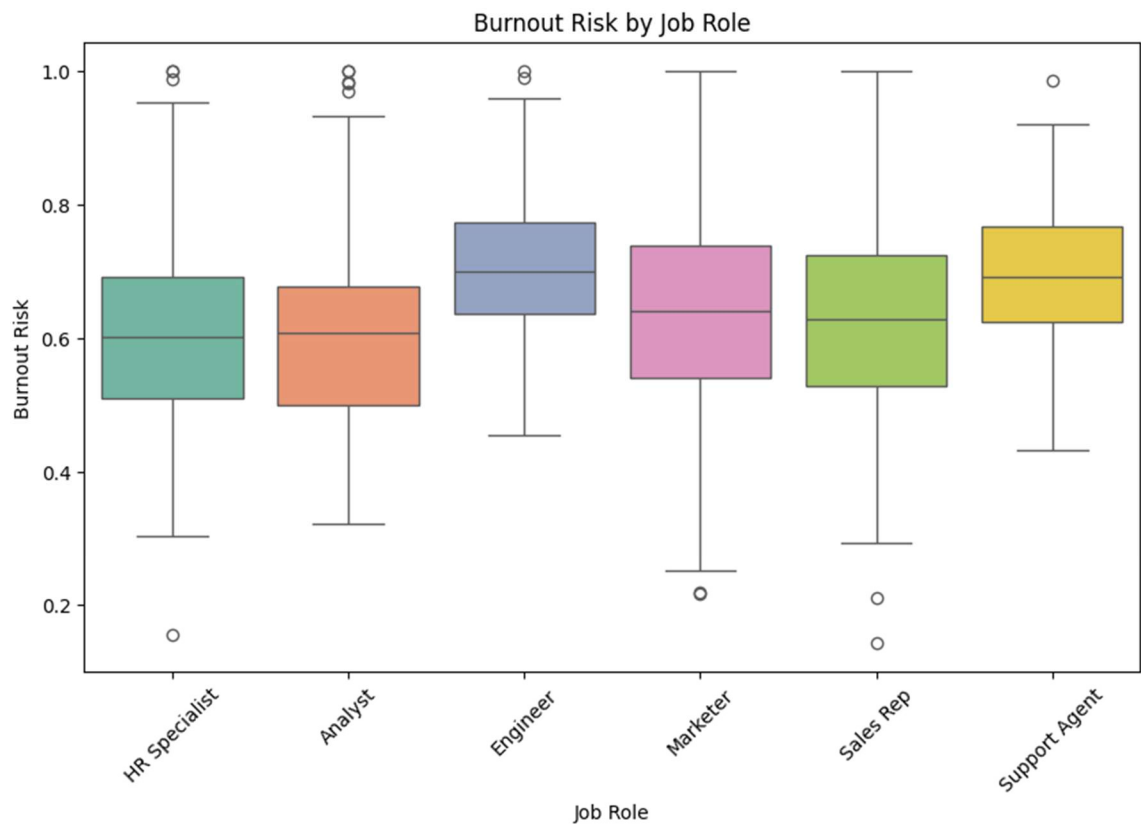
Key Visualizations

Correlation Heatmap:

Correlation Heatmap of Employee Metrics

	Engagement_Score	Performance_Rating	Burnout_Risk	Satisfaction_Level
Engagement_Score	1.00	0.42	-0.03	0.04
Performance_Rating	0.42	1.00	0.01	0.00
Burnout_Risk	-0.03	0.01	1.00	-0.12
Satisfaction_Level	0.04	0.00	-0.12	1.00

Attrition by Department Chart:

Attrition Rates by Department

Engagement vs Performance Scatterplot:

Burnout Risk by Job Role Boxplot:

Burnout vs Tenure Scatterplot:

Burnout Risk vs Tenure