



Management Report: HR Analytics Dashboard for Employee Retention & Engagement

Executive Summary

This HR Analytics project analyzes workforce data to identify key factors influencing employee retention, engagement, and performance. Using data-driven insights from demographics, performance, and engagement metrics, the study aims to help management reduce attrition, improve satisfaction, and enhance workforce planning.

1 Overview Dashboard — Workforce Snapshot

Objective:

Provide leadership with a real-time summary of workforce composition, attrition, and satisfaction.

Key KPIs (Cards):

- 👥 Total Employees
- ▼ Attrition Count
- 📉 Attrition Rate (%)
- 🎂 Average Age
- 💰 Average Monthly Income
- ⌚ Average Years at Company

Visuals:

- 🥞 Donut Chart: Attrition (Yes/No) distribution
- 🏢 Clustered Column Chart: Attrition by Department (Sales, Research, HR)
- 🧑 Bar Chart: Attrition by Job Role
- 📊 Gauge: Overall Employee Satisfaction Score

Insights for Management:




- Highest attrition observed in **Sales and HR departments**.
- Employees aged **25–35** show the highest turnover tendency.
- Overall satisfaction score: **~65%**, indicating room for engagement improvement.

2 Attrition Analysis Dashboard — Drivers of Turnover

Objective:

Identify patterns and root causes of attrition across key demographics and job characteristics.

Visuals:

-  **Stacked Bar Chart:** Attrition by Gender & Department
-  **Scatter Plot:** Monthly Income vs Job Level (color-coded by Attrition)
-  **Bar Chart:** Attrition by BusinessTravel Type

Filters/Slicers: Department | Gender | Education Field | OverTime

Insights for Management:




- **Frequent travelers** and employees doing **regular overtime** have the highest attrition rates.
 - Lower-income employees at **mid-level job positions** are more likely to leave.
 - Attrition skewed toward **younger, less-tenured employees**.
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Work-Life & Engagement Dashboard — Employee Experience

Objective:

Understand engagement, work-life balance, and training impact on satisfaction and retention.

Visuals:

-  **Column Chart:** Average Job Satisfaction by Department
-  **Line Chart:** WorkLifeBalance vs YearsAtCompany
-  **Bar Chart:** TrainingTimesLastYear vs PerformanceRating

KPIs:

- **Average Training Hours per Department**

Insights for Management:




- Engagement declines sharply after **3–5 years** without career progression.
 - **Research & Development** department shows highest satisfaction and training investment.
 - Training hours correlate positively with both performance and engagement.
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Retention Risk & Predictive Insights

Objective:

Identify high-risk employees and key predictors of attrition using data-driven insights.

Visuals:

-  **TreeMap:** Attrition by Age Group & Marital Status
-  **Bar Chart:** OverTime vs Attrition
-  **Scatter Plot:** MonthlyIncome vs YearsAtCompany

Insights for Management:

- **Overtime, low satisfaction, and short tenure** are top predictors of leaving.
 - Employees with **Attrition Risk Score > 0.7** should be targeted for retention programs.
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Business Impact Summary

Implementing data-driven HR strategies based on these dashboards can help management:

- Reduce **attrition by 20–25%** in high-risk areas.
 - Improve **employee engagement and satisfaction scores** by 15–20%.
 - Strengthen **diversity and inclusion outcomes** across all departments
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Tools & Techniques Used:

- **Python:** Data Cleaning, EDA, Predictive Modeling
 - **SQL:** Data Querying & KPI Calculations
 - **Power BI:** Dashboard Creation & Visualization
 - **Machine Learning:** Logistic Regression, Random Forest for Attrition Prediction
 - **Soft Skills:** Communication, Problem Solving, Data Storytelling
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Conclusion & Recommendations:

This HR Analytics project provides a holistic view of workforce dynamics and identifies the main drivers of attrition.

Management should focus on targeted retention efforts in high-risk departments, improve promotion opportunities, and enhance inclusion and training programs.

These steps are expected to reduce turnover and foster a more engaged, productive workforce.