TalentView: HR Attrition & Workforce Analytics Dashboard

1. Introduction

In today's competitive business environment, human capital is one of the most critical assets for any organization. High employee attrition can lead to increased recruitment costs, loss of organizational knowledge, reduced productivity, and negative impacts on employee morale. To effectively manage and reduce attrition, organizations need data-driven insights rather than assumptions.

The **TalentView: HR Attrition & Workforce Analytics Dashboard** project was developed to address this challenge. The primary objective of this project is to provide HR leaders and senior management with a comprehensive, interactive, and visually intuitive dashboard that helps them understand workforce trends, monitor attrition, analyze hiring effectiveness, and identify key factors influencing employee turnover.

This project leverages Power BI to transform raw HR data into meaningful insights through well-designed KPIs, charts, filters, and advanced visuals such as Key Influencers. The dashboard enables decision-makers to quickly identify problem areas, compare departments, and take proactive actions to improve employee retention and workforce planning.

2. Project Objectives

The main objectives of the TalentView project are as follows:

- To analyze overall employee headcount and workforce composition.
- To measure and monitor employee attrition and separation trends.
- To distinguish between voluntary and involuntary exits.
- To evaluate hiring performance and recruitment funnel efficiency.
- To identify departments, roles, managers, and demographics with higher attrition risk.
- To provide actionable insights for HR strategy, retention planning, and talent management.

3. Data Model and Data Preparation

3.1 Data Sources

The dashboard is built using a structured HR dataset that includes employee master data, demographics, employment status, hiring details, and separation records. Key data elements include:

- Employee ID and Name
- Department and Job Role
- Manager
- Gender, Age Group, and Ethnicity
- Hire Date and Tenure
- Separation Status and Reason
- Monthly Headcount Snapshots
- Recruitment Funnel Stages (Applied, Screened, Interviewed, Hired)

3.2 Data Modeling Approach

A star schema data model was implemented to ensure optimal performance and accurate analysis. The model consists of:

- **Dimension tables**: Employee, Department, Demographics, Date
- **Fact tables**: Headcount, Separations, Hiring Funnel

Relationships were created using Employee ID, Department ID, and Date fields to enable slicing and filtering across all visuals.

3.3 Data Cleaning and Transformation

Data preparation was performed using Power Query, including:

- Removing duplicates and invalid records
- Standardizing department and role names
- Creating calculated columns for tenure and age groups
- Handling missing values and ensuring data consistency

4. Dashboard Overview with Visuals

4.1 Executive Summary & Workforce KPIs Dashboard
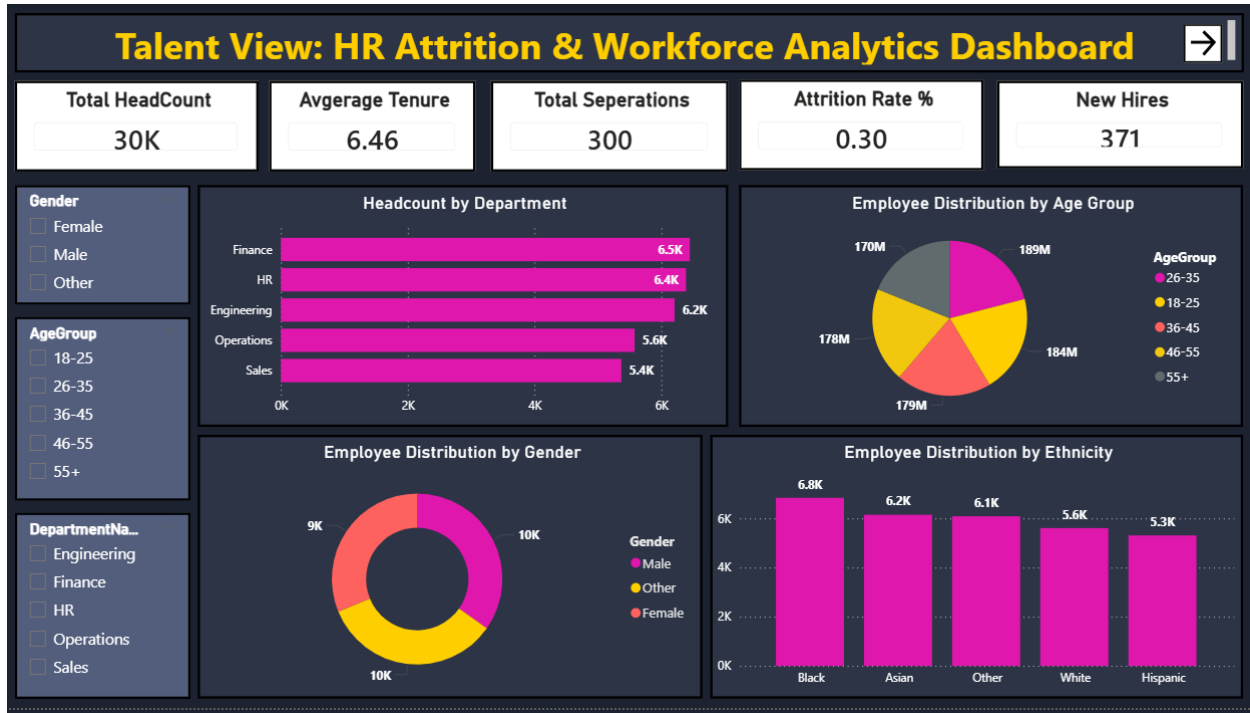
**Figure 1: Executive Summary – HR Attrition & Workforce KPIs Dashboard**

Description:

This dashboard provides a high-level overview of the organization's workforce health. It displays key performance indicators such as Total Headcount, Average Tenure, Total Separations, Attrition Rate, and New Hires. Additional visuals such as net workforce change and employee movement (hired, resigned, terminated) help HR leaders quickly assess workforce stability.

Key Insights:

- Overall headcount stands at 30,000 employees.

- Attrition rate is maintained at approximately 30%.

- Net workforce change indicates overall growth.

- Engineering and Finance show higher exit volumes compared to other departments.

4.2 Attrition Trends & Hiring Performance Dashboard
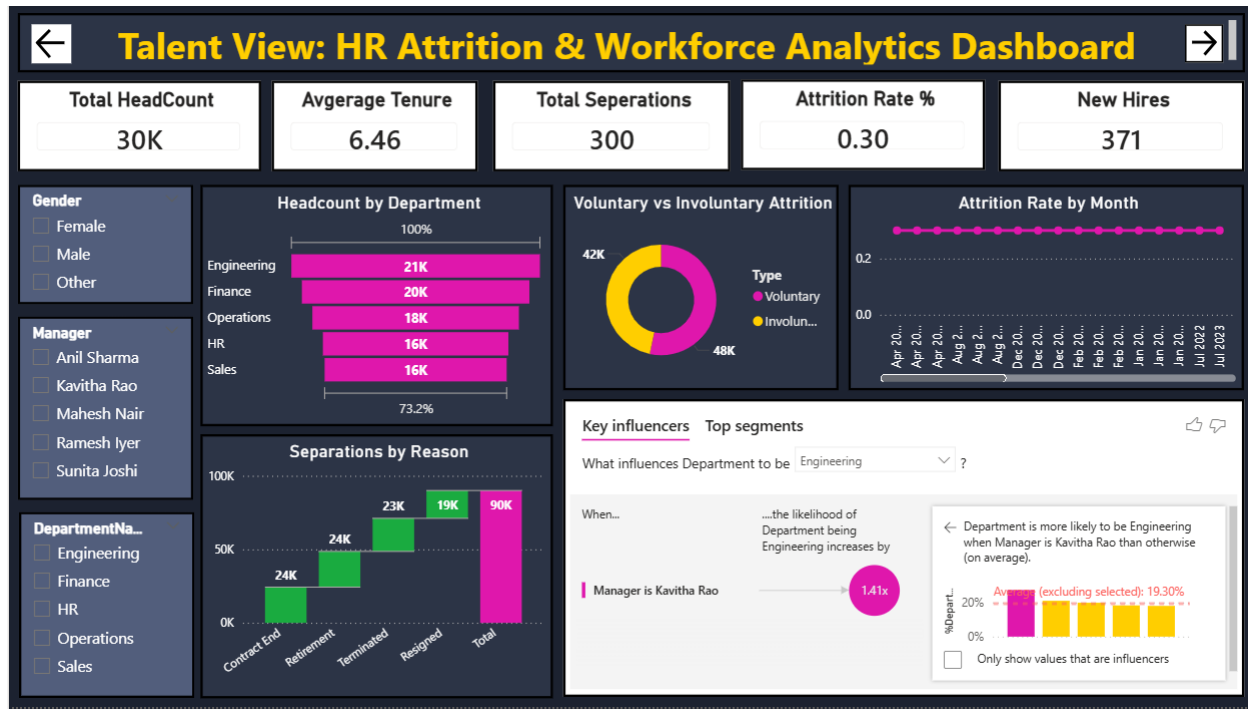
**Figure 2: Attrition Trends and Hiring Performance Dashboard**

Description:

This dashboard focuses on analyzing attrition patterns and recruitment efficiency. It compares voluntary and involuntary attrition across job roles, tracks time-to-hire by department, and visualizes monthly hiring trends.

Key Insights:

- Voluntary attrition is higher than involuntary attrition across most roles.

- HR and Finance departments have longer time-to-hire cycles.

- Hiring activity shows steady growth throughout the year.

4.3 Attrition Drivers & Key Influencers Dashboard
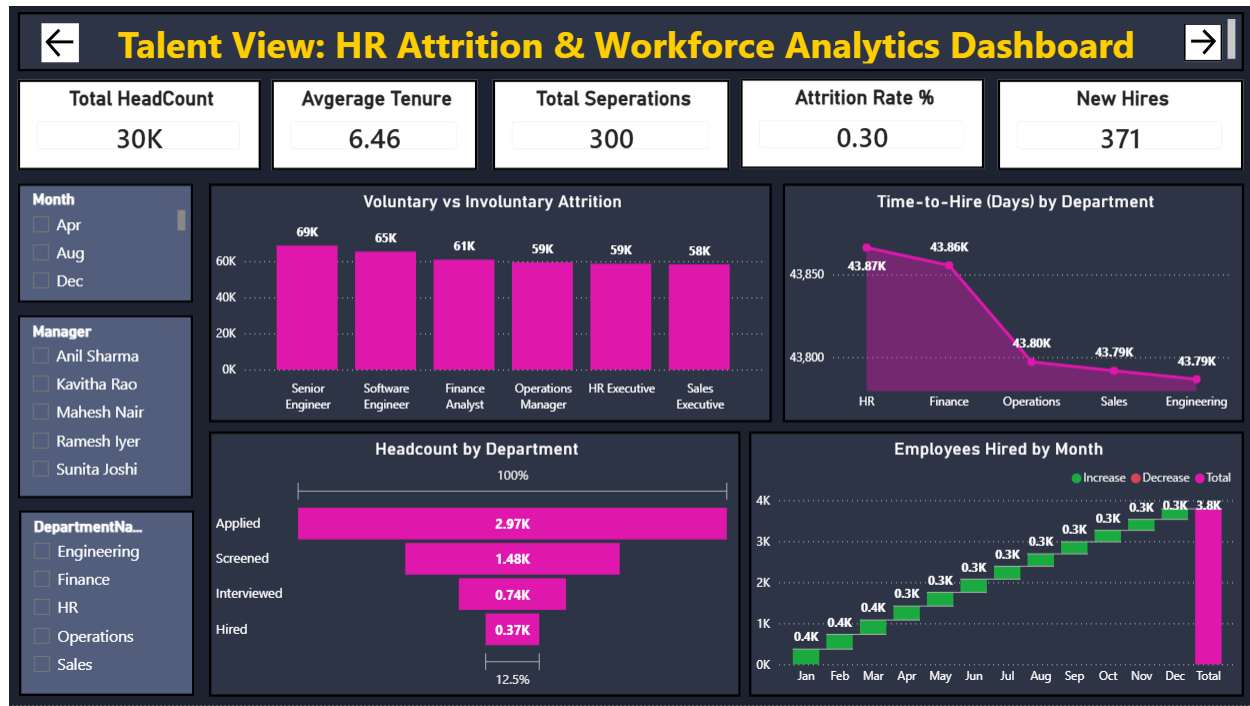
**Figure 3: Attrition Drivers and Key Influencers Dashboard**

Description:

This dashboard is designed to identify the key drivers behind employee attrition. It analyzes separations by reason, department-wise headcount distribution, and leverages Power BI's Key Influencers visual to uncover factors that significantly impact attrition.

Key Insights:

- Resignations form the largest share of employee separations.

- Certain managers and departments have a higher likelihood of attrition.

- The Key Influencers visual highlights managerial and departmental impact on employee exits.

4.4 Workforce Demographics & My Analysis Dashboard
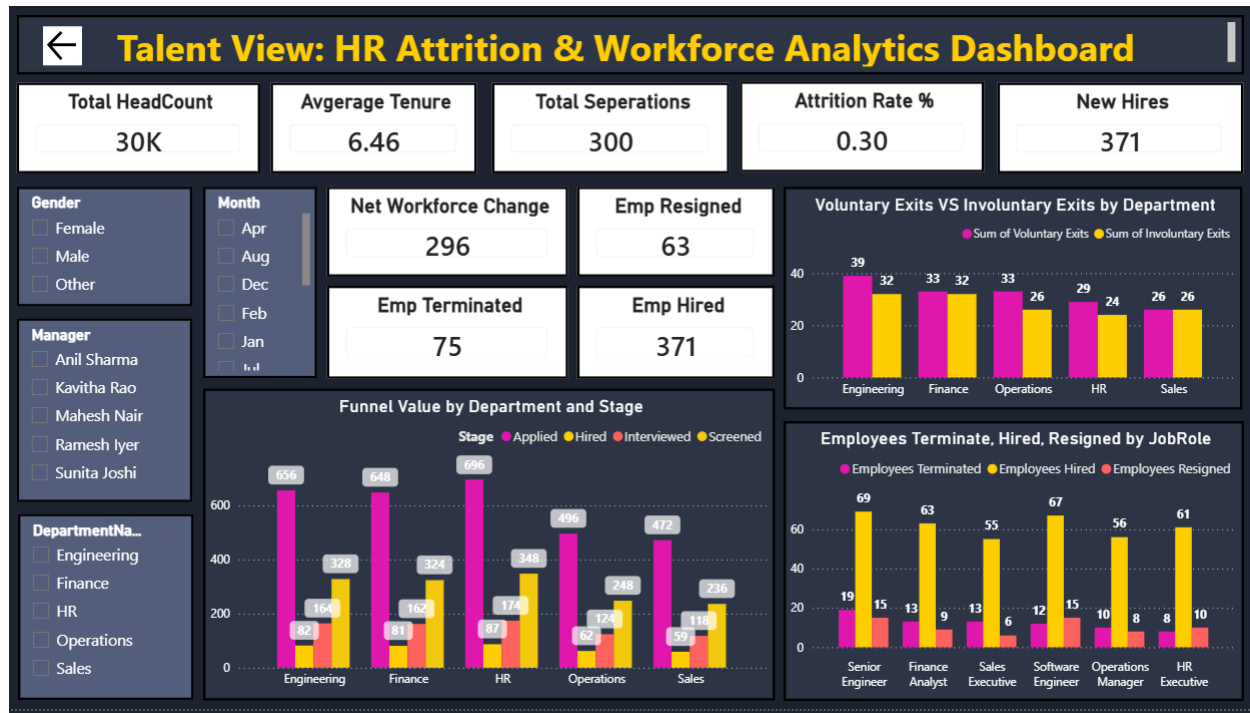
Figure 4: Workforce Demographics – Custom Analysis by the Author

Description: This dashboard represents my own analysis and provides insights into workforce composition and diversity. It examines employee distribution across departments, age groups, gender, and ethnicity to support informed workforce planning and Diversity, Equity, and Inclusion (DEI) initiatives.

This dashboard provides insights into workforce composition and diversity. It analyzes employee distribution across departments, age groups, gender, and ethnicity to support diversity, equity, and inclusion (DEI) initiatives.

Key Insights:

- Majority of employees fall within the 26–45 age group, indicating a strong mid-career workforce.

- Gender distribution is relatively balanced, reflecting inclusive hiring practices.

- Ethnic diversity is well represented across departments, supporting organizational diversity goals.

- Engineering and Finance departments employ the largest workforce segments, highlighting their strategic importance.

5. Key Metrics and KPIs

The dashboard prominently displays critical HR KPIs at the top for quick executive-level insights:

- **Total Headcount (30K)**: Represents the current number of employees in the organization.
- **Average Tenure (6.46 years)**: Indicates employee experience and workforce stability.
- **Total Separations (300)**: Total number of employees who left the organization.
- **Attrition Rate (0.30 / 30%)**: Measures the percentage of employees leaving relative to the total workforce.
- **New Hires (371)**: Total employees hired during the selected period.
- **Net Workforce Change (296)**: Difference between hires and separations.
- **Employees Resigned (63)**: Voluntary exits.
- **Employees Terminated (75)**: Involuntary exits.

These KPIs allow stakeholders to instantly assess the overall health of the workforce.

Dashboard Analysis and Visual Insights

5.1 Headcount and Workforce Distribution

The **Headcount by Department** visuals show how employees are distributed across departments such as Engineering, Finance, HR, Operations, and Sales. Engineering and Finance have the highest headcounts, indicating their strategic importance to the organization.

Additional demographic visuals provide insights into:

- **Gender Distribution**: Balanced representation across Male, Female, and other categories.
- **Age Group Distribution**: Majority of employees fall within the 26–35 and 36–45 age groups, indicating a predominantly mid-career workforce.
- **Ethnicity Distribution**: Helps HR track diversity and inclusion across the organization.

5.2 Attrition Analysis

The dashboard clearly distinguishes between:

- **Voluntary Attrition**: Employees who resigned by choice.
- **Involuntary Attrition**: Employees terminated due to performance or organizational decisions.

Visuals such as bar charts and donut charts highlight attrition by:

- Department
- Job Role
- Month

This analysis reveals which departments and roles experience higher attrition and whether exits are driven more by resignations or terminations.

5.3 Attrition Rate Trends

The **Attrition Rate by Month** line chart allows HR teams to track trends over time. Consistent or rising attrition trends signal potential issues such as workload, compensation, management practices, or employee satisfaction.

Seasonal patterns can also be identified, helping HR anticipate peak attrition periods.

5.4 Recruitment and Hiring Analysis

The dashboard includes a detailed **Recruitment Funnel** analysis showing:

- Applied
- Screened
- Interviewed
- Hired

This funnel highlights conversion rates at each stage and identifies bottlenecks in the hiring process. Departments with lower conversion rates may need process improvements or better candidate sourcing strategies.

The **Employees Hired by Month** waterfall chart shows monthly hiring trends and cumulative growth, helping HR assess hiring momentum.

5.5 Time-to-Hire Analysis

The **Time-to-Hire (Days) by Department** visual compares recruitment efficiency across departments. Departments with longer hiring cycles may face talent shortages or process inefficiencies, impacting business operations.

5.6 Key Influencers Analysis

The **Key Influencers** visual is one of the most advanced features of the dashboard. It identifies factors that significantly influence attrition, such as:

- Manager
- Department
- Gender
- Age Group

For example, the analysis shows that employees under certain managers or in specific departments are more likely to leave, enabling targeted managerial interventions.

6. Business Impact and Use Cases

The TalentView dashboard delivers strong business value by:

- Enabling proactive attrition management
- Supporting data-driven HR decisions
- Identifying high-risk departments and roles
- Improving workforce planning and budgeting
- Enhancing recruitment efficiency
- Supporting diversity and inclusion initiatives

HR leaders can use this dashboard during leadership meetings, workforce reviews, and strategic planning sessions.

7. Limitations and Future Enhancements

7.1 Current Limitations

- Analysis is limited to available historical data

- Employee engagement and performance scores are not included
- External market factors are not considered

7.2 Future Enhancements

- Integration with employee engagement surveys
- Predictive attrition modeling using machine learning
- Cost of attrition analysis
- Role-based security for different HR stakeholders
- Real-time data refresh and automation

8. Deployment, Security, and Sharing Strategy (My Implementation)

Description: After completing the dashboard development, the TalentView project was fully deployed using Power BI Service following real-world enterprise practices. This phase focused on securely publishing the dashboard, implementing role-based access using Row-Level Security (RLS), automating data refresh, and sharing the solution with stakeholders through a Power BI App. These steps ensure data confidentiality, scalability, and ease of access for different HR users.

Key Implementation Highlights: The dashboard was successfully published from Power BI Desktop to Power BI Service under a dedicated HR Workspace, enabling centralized management and collaboration.

● Row-Level Security (RLS) was implemented to control data visibility:

Managers can view only their respective team data.

HR Business Partners (HRBPs) can view only their assigned departments.

The HR Director has full access to all organizational data.

● A daily scheduled data refresh was configured to ensure the dashboard always reflects the most up-to-date HR information without manual intervention.

● The dashboard was packaged and shared as a Power BI App (TalentView App), allowing secure and consistent access for the HR team through a single interface.

● This deployment approach ensures data security, automated reporting, and high user adoption, making the solution suitable for real organizational use.

9. Conclusion

The TalentView: HR Attrition & Workforce Analytics Dashboard project successfully demonstrates the use of data-driven analytics to address one of the most critical organizational challenges— employee attrition and workforce management. By transforming raw HR data into meaningful insights through Power BI, this project enables HR leaders and management to make informed, timely, and strategic decisions.

The dashboard provides a comprehensive view of workforce health by integrating key metrics such as headcount, attrition rate, tenure, hiring trends, and separation analysis. Through interactive visuals and filters, users can analyze attrition patterns across departments, job roles, managers, and demographic groups. The distinction between voluntary and involuntary attrition further helps in identifying root causes and designing targeted retention strategies.

In addition to core requirements, the project includes custom analysis, such as workforce demographics and diversity insights, which adds significant value beyond standard attrition reporting. Advanced features like the Key Influencers visual highlight the factors most strongly associated with employee exits, supporting proactive HR interventions rather than reactive responses.

The project also emphasizes end-to-end implementation by covering deployment in Power BI Service, role-based security using Row-Level Security (RLS), automated daily data refresh, and controlled sharing through a Power BI App. These steps ensure data security, reliability, and accessibility, making the solution suitable for real-world enterprise use.

Overall, the TalentView project showcases strong skills in data modeling, visualization, business analysis, and Power BI deployment. It reflects industry best practices and demonstrates how analytics can directly contribute to improved employee retention, optimized workforce planning, and long-term organizational success.