HR Analytics Dashboard Report

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GitHub: https://github.com/RahuReddy/HR_Analytics

Project Summary

This project involved the creation of an interactive Human Resources (HR) Analytics dashboard using Power BI. The primary objective was to transform raw HR data into a visual and intuitive format, enabling HR managers and business leaders to gain a clear understanding of key workforce metrics. The dashboard focuses on providing insights into employee attrition, demographics, and job satisfaction to inform talent management and retention strategies.

Problem Statement

Why are our employees leaving the company, and how can we reduce employee attrition?

Key Business Questions

- What are the main factors influencing employee attrition?
- Which departments have the highest attrition rates?
- What is the demographic breakdown of employees (age, gender, job role)?
- How does tenure (years at company) affect retention?
- What role does salary play in attrition?

Methodology

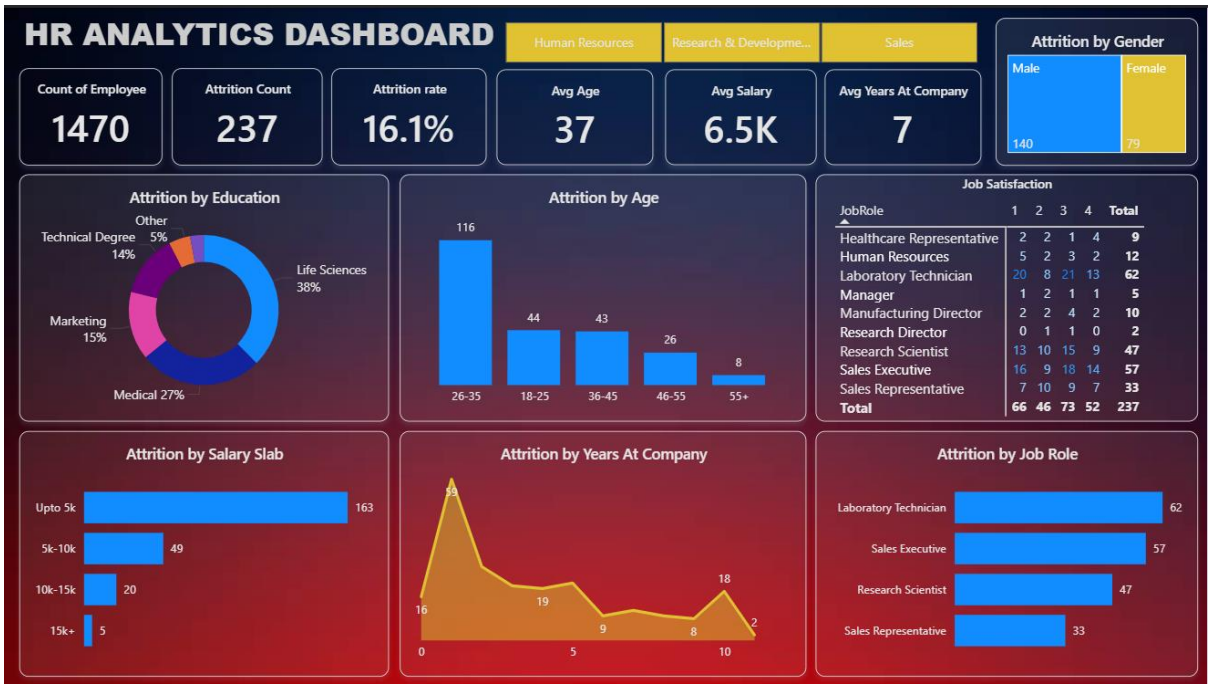
The creation of this dashboard followed a standard business intelligence workflow:

1. **Data Ingestion and Cleaning:** The raw HR data was imported into Power BI, and performed data cleaning, data normalization, removed duplicates, removed irrelevant columns, and added conditional columns.
2. **Key Metric Calculation:** Essential metrics such as Attrition Rate, Average Salary, Average Age and Attrition Count were calculated using Power BI's DAX (Data Analysis Expressions) language.

3. **Visualization and Design:** Various charts and graphs were designed to present complex data in an easy-to-understand manner. The dashboard's layout was structured to highlight critical information and allow for easy navigation.
4. **Insight Generation:** The final dashboard was analyzed to identify key trends, patterns, and areas of concern, which were then translated into actionable business recommendations.

Dashboard Insights

The HR Analytics Dashboard provides a snapshot of the company's workforce, with a particular focus on attrition.



Key Performance Indicators (KPIs)

The dashboard's top section presents key metrics at a glance:

- **Total Employees:** 1470
- **Attrition Count:** 237
- **Attrition Rate:** 16.1%
- **Average Age:** 37 years
- **Average Salary:** $6.5K
- **Average Years at Company:** 7 years

Attrition Breakdown

The visualizations offer deeper insights into the employee attrition problem:

- **Attrition by Gender:** The data indicates that attrition is higher among male employees than female employees, with 140 male attritions compared to 79 female attritions.
- **Attrition by Education Field:** Employees with a background in **Life Sciences** have the highest attrition rate (38%), followed by Medical (27%) and Marketing (15%). This suggests that specific education fields are more prone to leaving the company.
- **Attrition by Salary Slab:** Attrition is most prevalent in the start to mid-range salary band of up to **$5,000** and **$5,000 - $10,000** with 212 employees leaving from these two groups.
- **Attrition by Age Group:** The dashboard reveals that the **26-35 age group** has the highest attrition, with 116 employees leaving. This is a critical age bracket for career progression and experience.
- **Attrition by Years at Company:** The highest number of attritions, **59**, occurred among employees with **1 year** of experience. Attrition rates are also high among employees with **5-10 years** of experience.
- **Attrition by Job Role:** The job roles with the highest number of attritions are **Laboratory Technician** (62), **Sales Executive** (57), and **Research Scientist** (47).

Job Satisfaction by Role

A table-based analysis of job satisfaction by job role highlights specific areas for HR to address:

- The dashboard shows the distribution of job satisfaction scores (1 to 4) for various roles, such as Healthcare Representative, Laboratory Technician, and Sales Executive. This can be used to identify roles with low satisfaction scores.

Business Recommendations

Based on the key trends and patterns observed in the dashboard, here are the recommendations to address employee attrition:

1. Address Attrition for New and Mid-Career Employees

The data shows that attrition is highest among employees with only **1 year** of experience (76 employees left) and those in the **26-35 age group** (116 employees left). This suggests a potential issue with either the onboarding process for new hires or career development for mid-career employees.

- **Suggestion:** Start by conducting exit interviews or surveys with employees who have recently left to understand their specific reasons. Use this feedback to improve the first-year experience and to identify any lack of career pathing for employees in the 26-35 age group.

2. Review Compensation for High-Attrition Roles

The dashboard highlights a significant number of attritions in specific job roles, particularly **Laboratory Technicians** (62) and **Sales Executives** (57). At the same time, the highest attrition is concentrated in the up to **$5,000** salary range. This suggests these roles might be underpaid compared to market rates, leading to employees seeking better opportunities.

- **Suggestion:** Conduct a targeted compensation review for the Laboratory Technician and Sales Executive roles. A slight salary adjustment or bonus structure could significantly improve retention in these key positions.

3. Improve Job Satisfaction and Development

Job satisfaction is a key indicator of employee happiness. The dashboard reveals that specific roles like Laboratory Technician, Sales Executive, and Research Scientist have high attrition counts. It is likely that job satisfaction is a major contributing factor in these roles.

- **Suggestion:** Focus on improving job satisfaction within these high-attrition roles. This could involve direct conversations with team leaders and employees to identify and resolve specific pain points, such as workload, lack of recognition, or limited growth opportunities.

4.Strategic Recruitment

The insights on attrition by education field can inform a more strategic recruitment process. Focus on recruiting from diverse educational backgrounds to create a more stable and balanced workforce.

Conclusion

This HR Analytics dashboard serves as a powerful tool for data-driven decision-making. It transforms raw data into a narrative that highlights key trends and potential problem areas within the workforce. The insights gained from this dashboard can directly support HR in developing more effective retention strategies, optimizing compensation, and fostering a positive work environment, ultimately leading to a healthier and more productive organization.

Future Work

Further Data Collection: Add more data to the analysis, such as employee performance review scores or employee survey results. This will help us get a deeper understanding of what influences job satisfaction and attrition.

Predict Future Attrition: We can use the current data as a starting point to try and predict how many employees might leave next year. This would help the company prepare for any potential staffing shortages.

Create More Detailed Dashboards: Build new dashboards that focus on a single area, like a "Recruitment Dashboard" to track hiring metrics, or a "Training & Development Dashboard" to monitor employee growth.