

HR Analytics

Employee Retention

Project : P1034
5th group



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MEET OUR TEAM



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weekly Review



Domain : HR Analytics

Modules :

- MS Excel
- Power BI
- Tableau
- MySQL



Agenda



1 Introduction

2 Problem Statement

3 Business Objective

4 KPIs

5 DashBoard

6 Conclusion

Introduction



- HR analytics focuses on gathering and analyzing data related to human resources, such as employee information, performance indicators, and other key metrics.
- By applying advanced analytical methods and tools, HR analytics delivers meaningful insights into HR activities and patterns, helping organizations make better decisions about their workforce and enhance overall effectiveness.

Problem Statement

- Average Attrition rate for all Departments
- Average Hourly rate of Male Research Scientist
- Attrition rate Vs Monthly income stats
- Average working years for each Department
- Job Role Vs Work life balance
- Attrition rate Vs Year since last promotion relation



Business Objective

The aim of this project is to analyze employee retention and attrition rates with the organization and provide insights to the HR team for developing effective retention strategies. Through data analysis and visualizations, we will identify factors that contribute to :

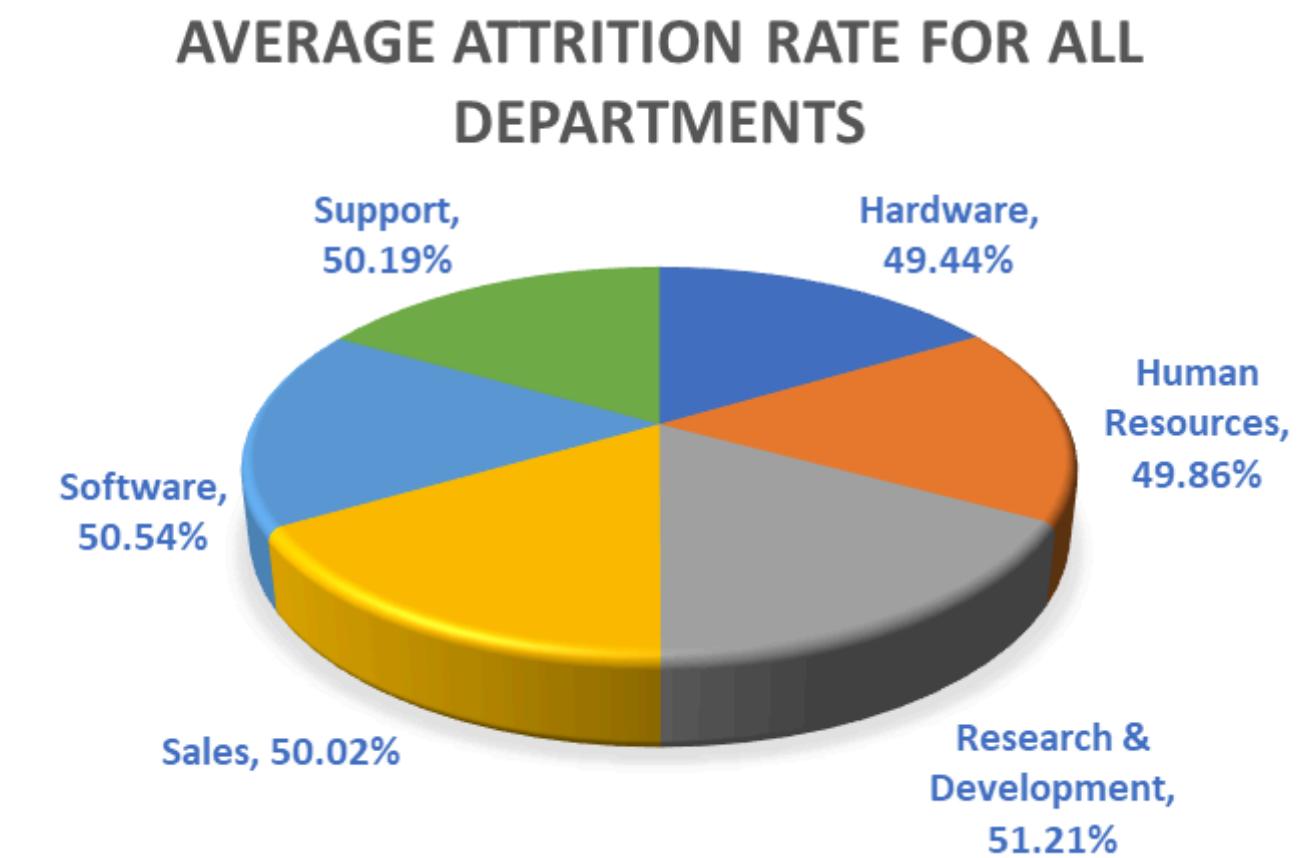
- Employee turnover and attrition.
- Evaluate the effectiveness of existing retention strategies.
- To verify the satisfaction level of employee in the organization.
- Provide recommendations to improve employee retention



KPI -1

Average Attrition rate for all Departments

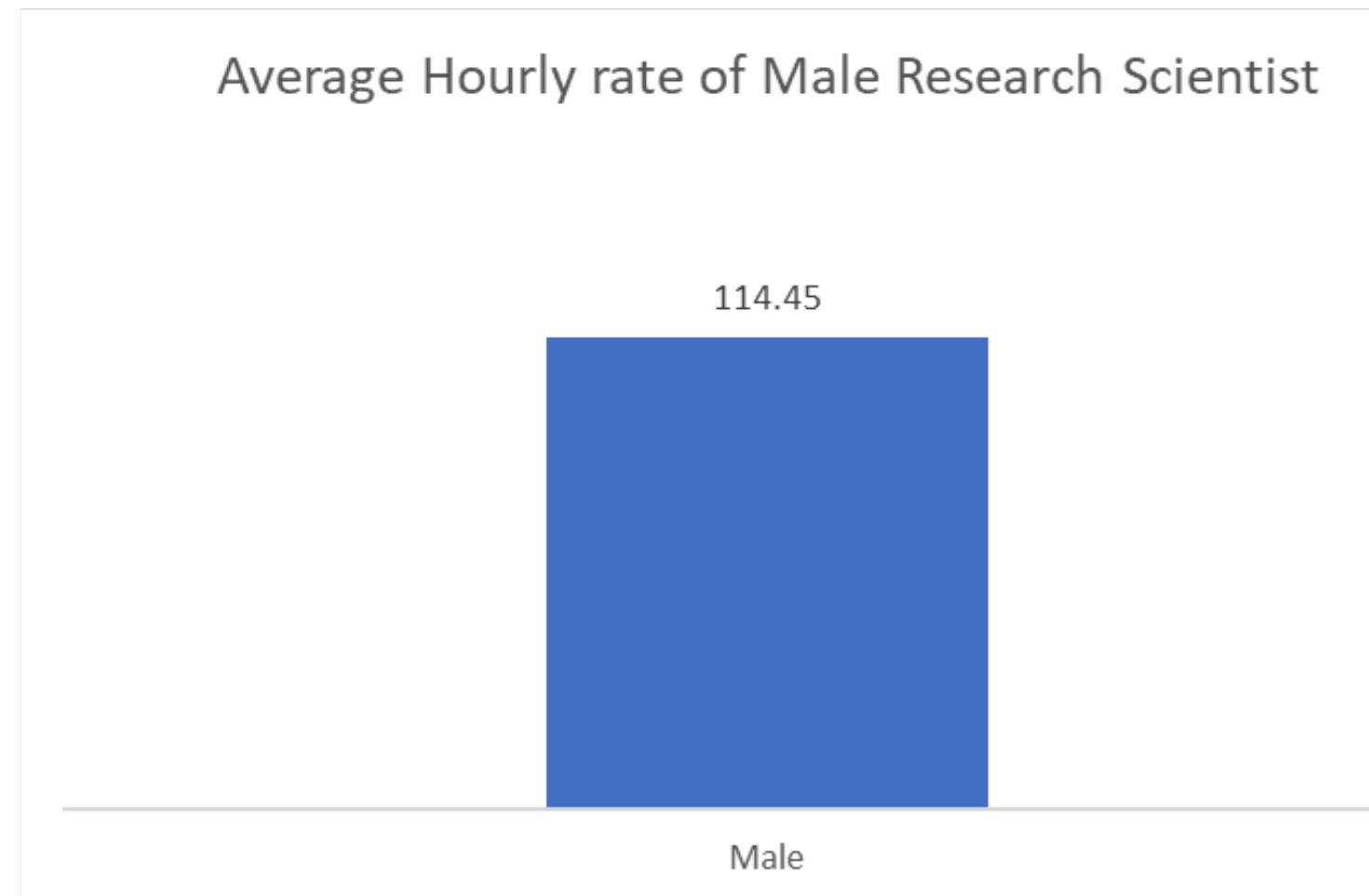
- We can clearly say that attrition rate of employees for every department is almost 50% which indicates that attrition rate of employees does not depend on department. So, irrespective of the department almost 50% of employees are leaving the company.
- From this calculation and visualization we concluded that we must make strong strategies to minimize attrition rate and improve our company's Employee retention so that we can balance the company's growth and right talent



KPI -2

Average Hourly rate of Male Research Scientist

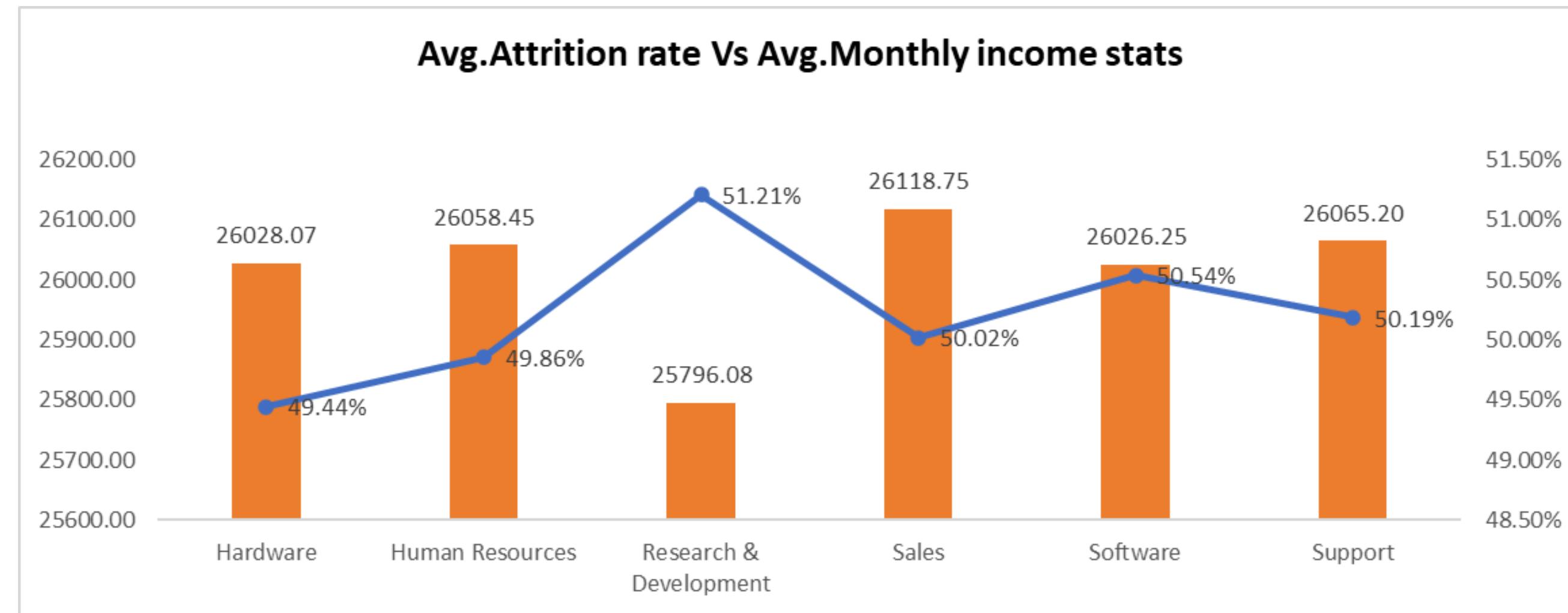
This KPI is to find out the average hourly rate of male research scientists which is 114.45



KPI -3

Attrition rate Vs Monthly income stats

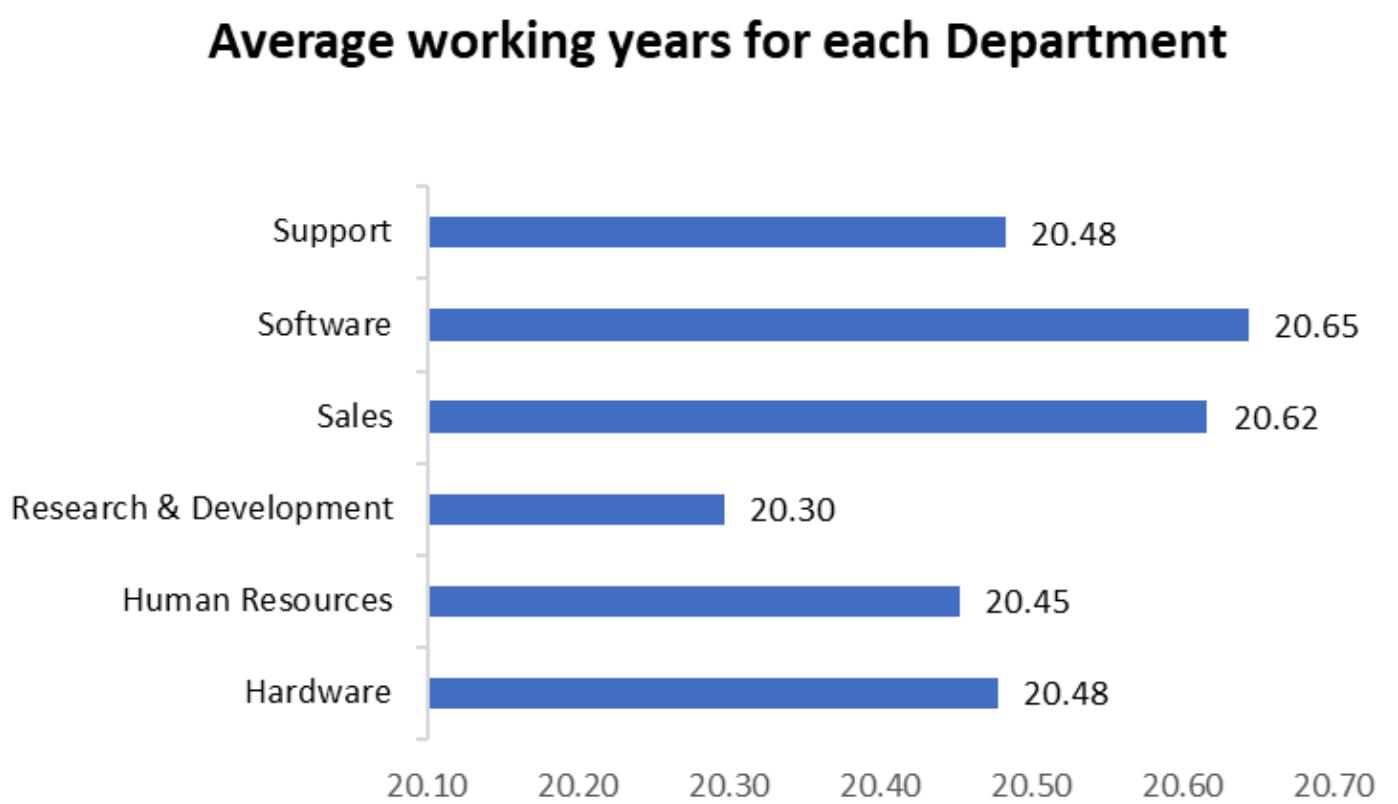
- Based on our analysis and visualization, it is evident that the Hardware Department has the lowest attrition rate of 49.44%, with an average monthly income of Rs. 26,028.07
- On the other hand, the Research and Development Department has the highest attrition rate of 51.21%, with an average monthly income of Rs. 25796.08



KPI -4

Average working years for each Department

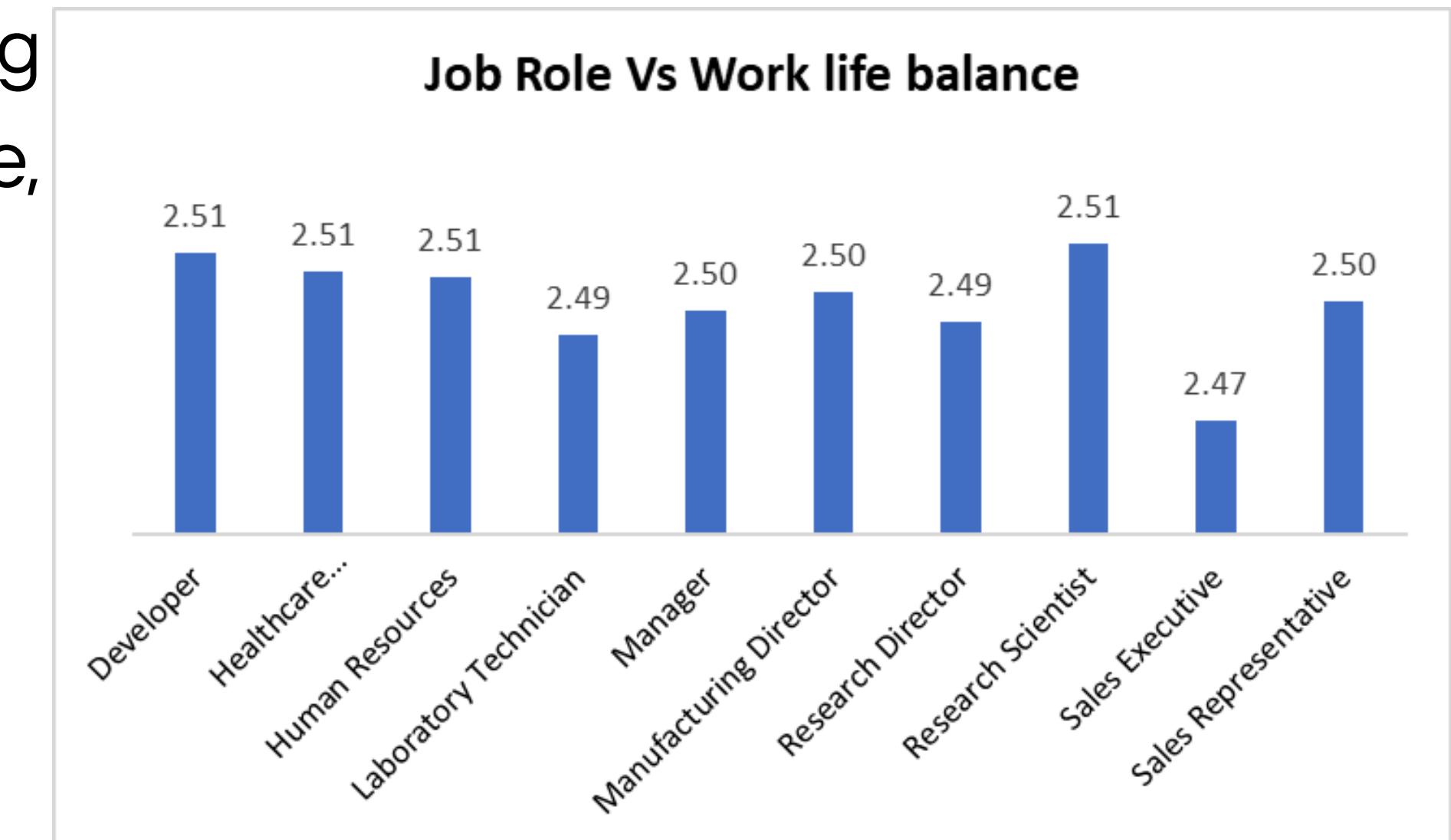
- From this we can see the average working years in software department is high as compared to the rest of the departments and lowest is for Research & Development Department.
- From the analysis we can conclude that average working years is approximately 20 for all the departments



KPI -5

Job Role Vs Work life balance

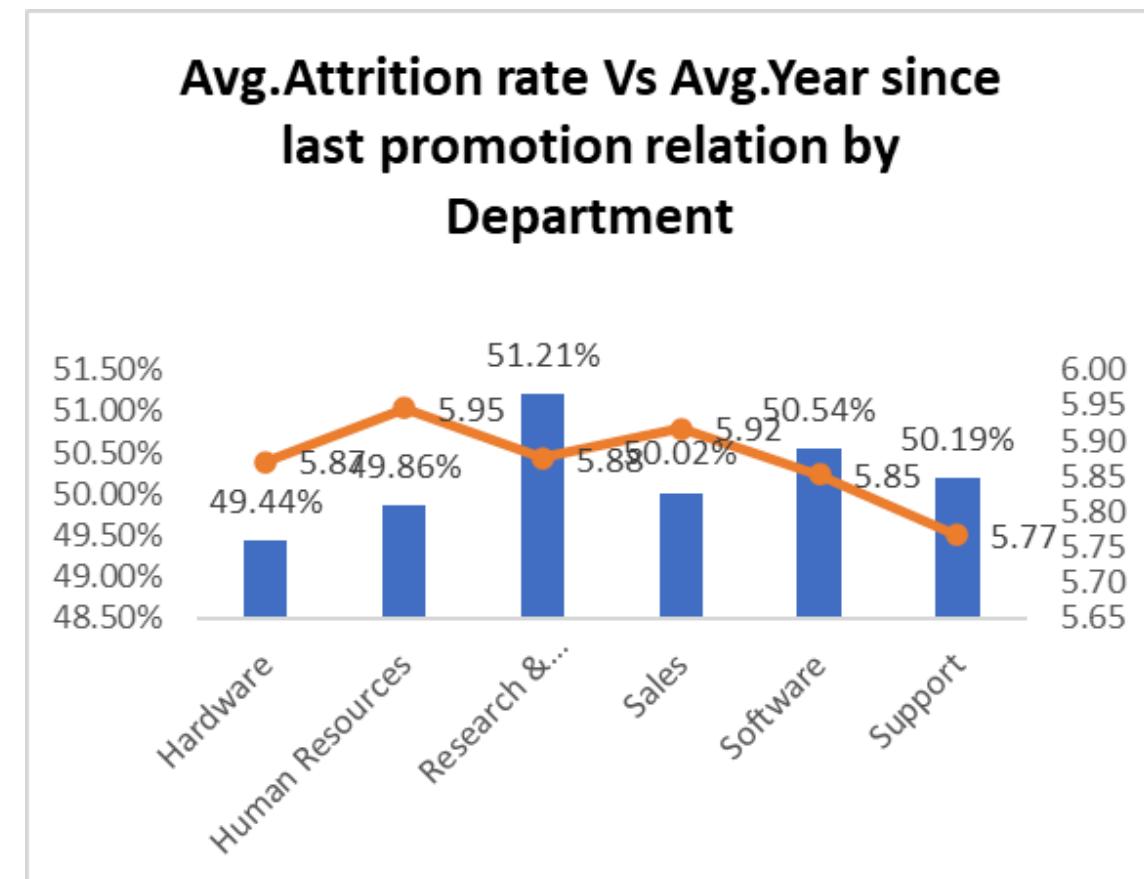
- Overall, work-life balance scores are almost equal across all job roles, ranging from 2.47 to 2.51. Developer, Healthcare, and Research Scientist roles have the best balance, while Sales Executive shows the lowest.
- The small differences indicate a generally consistent work-life environment across the organization.

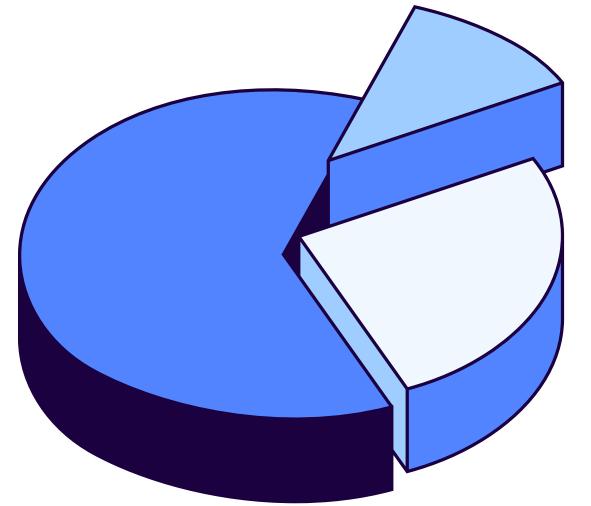


KPI -6

Attrition rate Vs Year since last promotion relation

- For 0–5 years since the last promotion, the Research & Development department has the highest, and the Hardware department has the lowest attrition rate.
- For 6–10 years, the Human Resources department shows the highest, and the Software department shows the lowest attrition rate.
- For 11–15 years, the Support department records the highest, and the Sales department the lowest attrition rate.
- For 16–20 years, the Software department has the highest, and the Hardware department the lowest attrition rate.
- For 21–25 years, the Software department again records the highest, and the Support department the lowest attrition rate.
- For 26–30 years, the Support department has the highest, and the Human Resources department the lowest attrition rate.
- For above 30 years, the Software department has the highest, and the Human Resources department the lowest attrition rate.

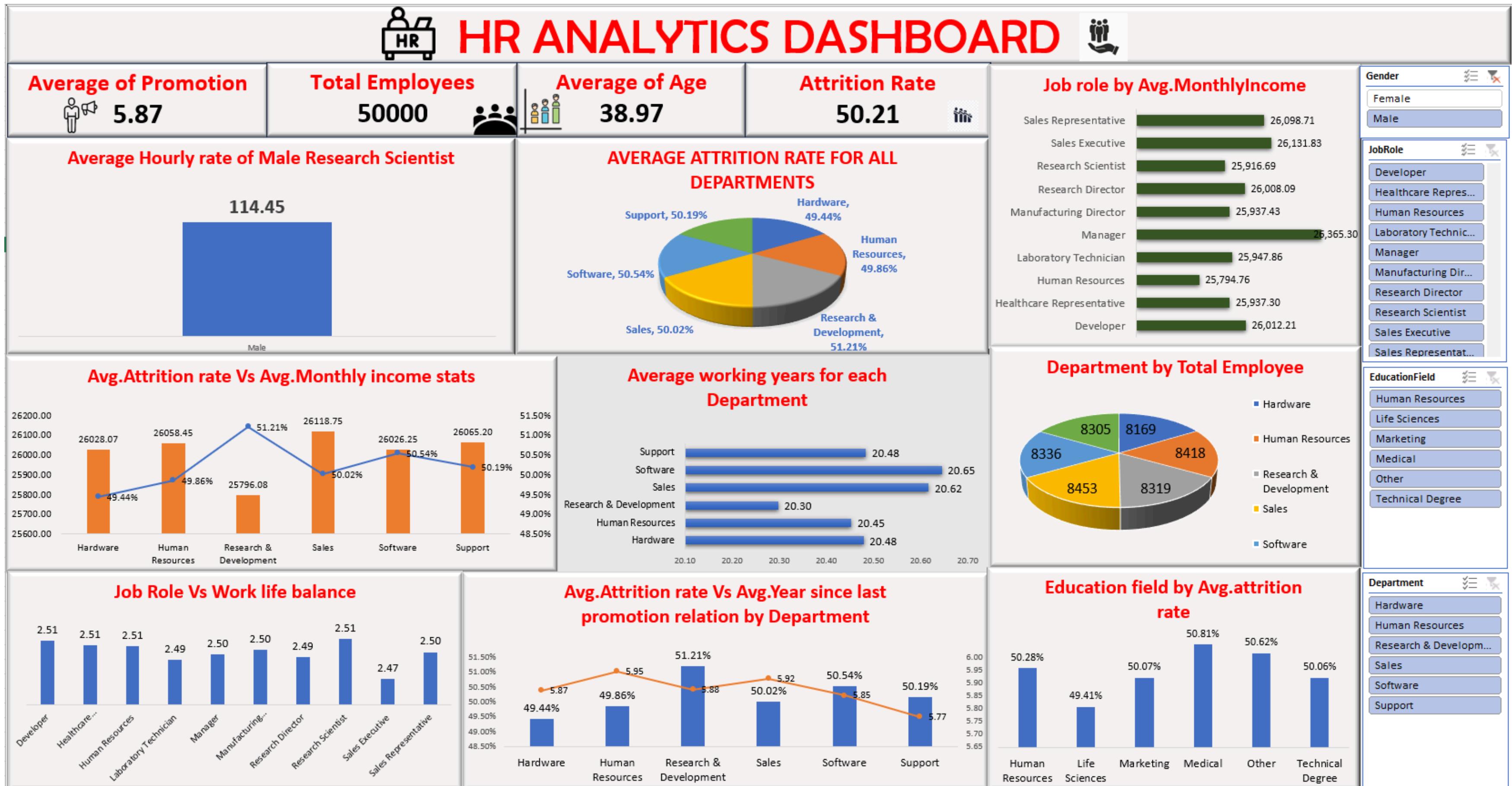




Dashboard Design



Excel Dashboard



Power BI Dashboard - 1

HR ANALYTICS

Department

- Hardware
- Human Resources
- Research & Development
- Sales
- Software
- Support

Gender

- Female
- Male

Age

(18-60)

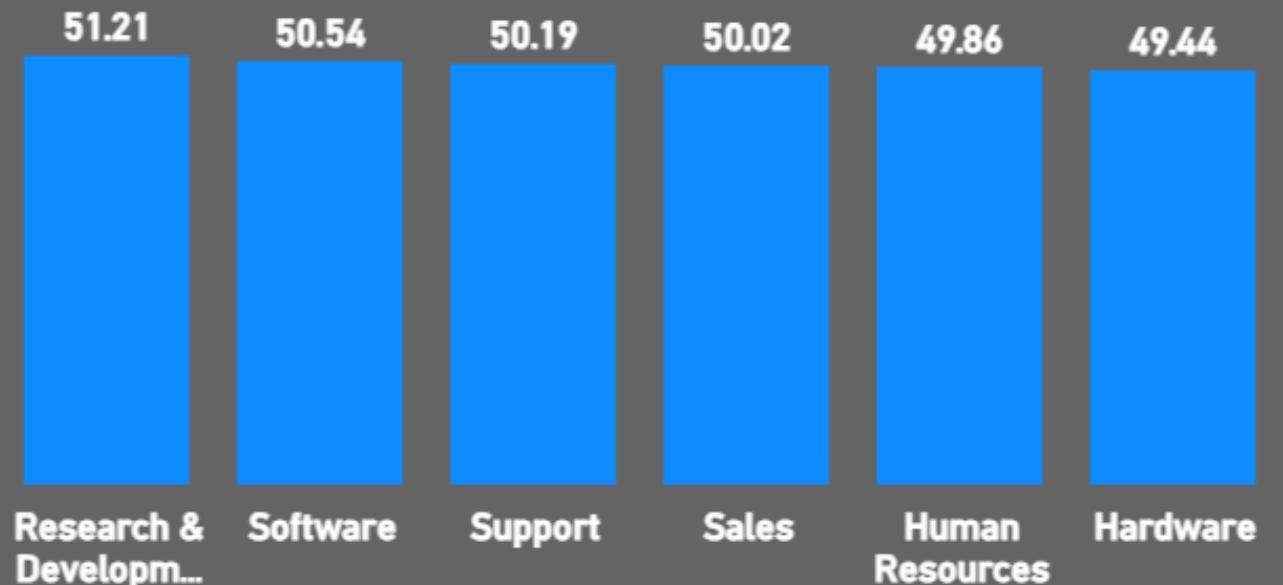
50K
Total_Employees

114.45
Avg_HourlyRate_Male_RS

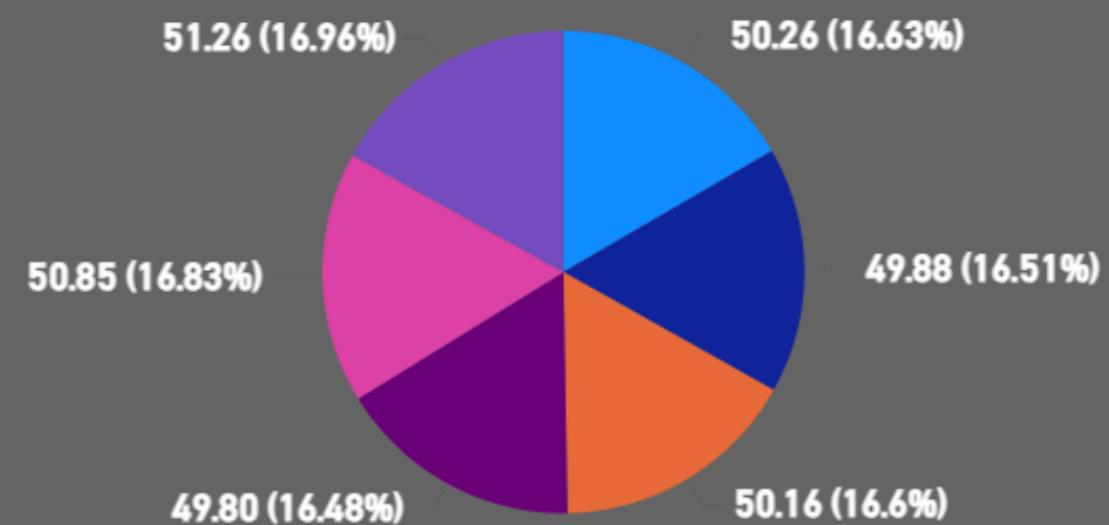
25.11K
Attrition_employee

38.97
Average of Average_Age

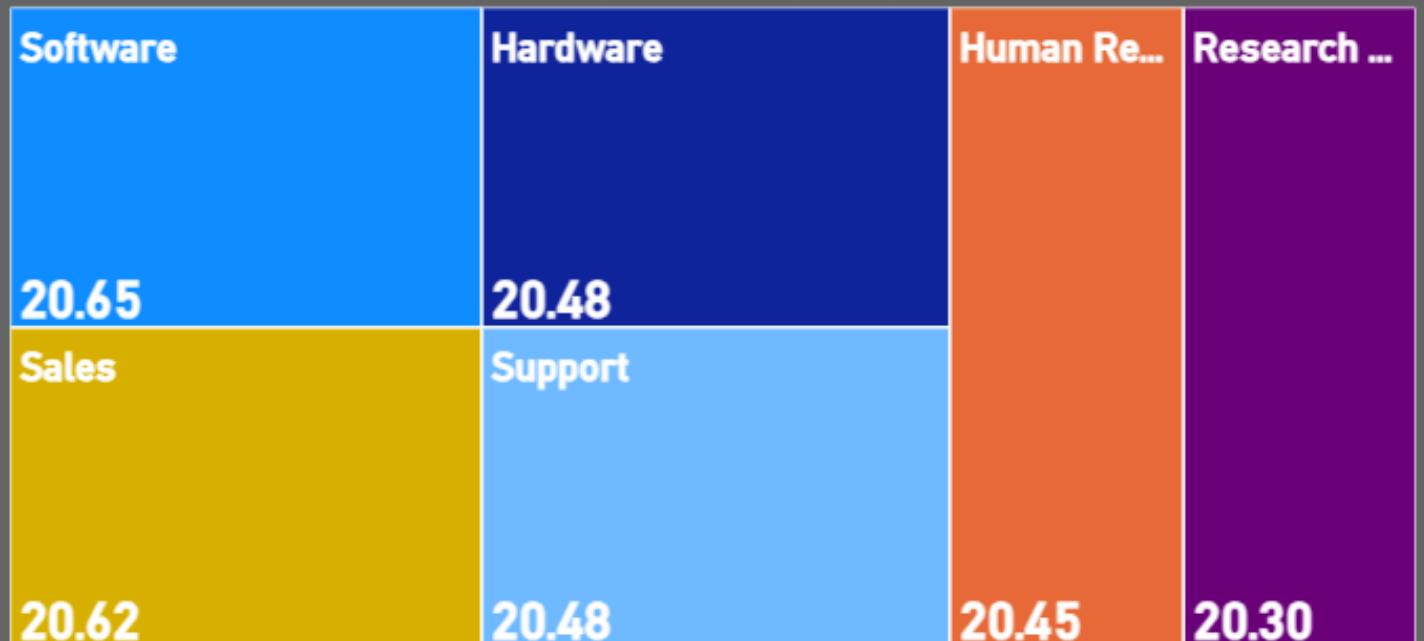
Average of Attrition_Rate_Percentage by Department



Average of attrition_rate by income_stats



Avg_WorkingYears by Department

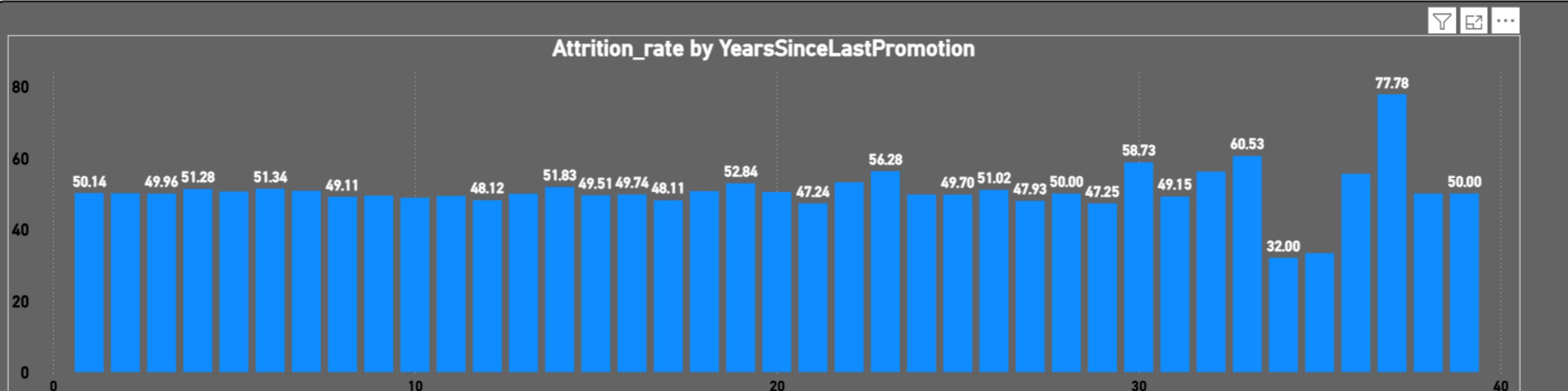


Avg_WorkLife_Balance by JobRole



Power BI Dashboard - 2

HR ANALYTICS



Sum of Total_Employees by Department



Avg_Attrition_Rate_Percentage by EducationField

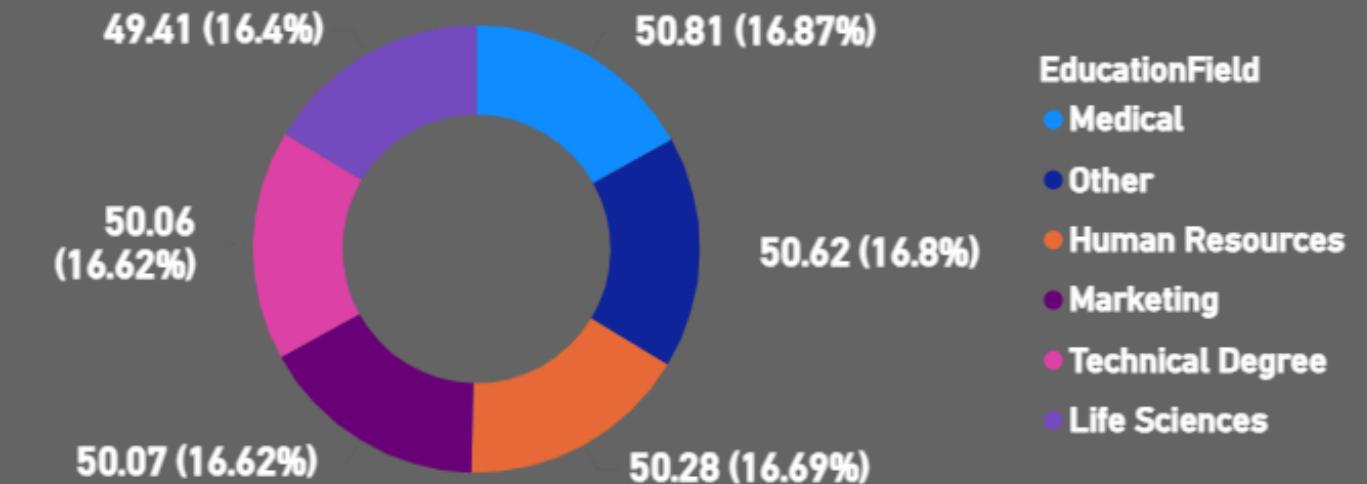


Tableau Dashboard - 1

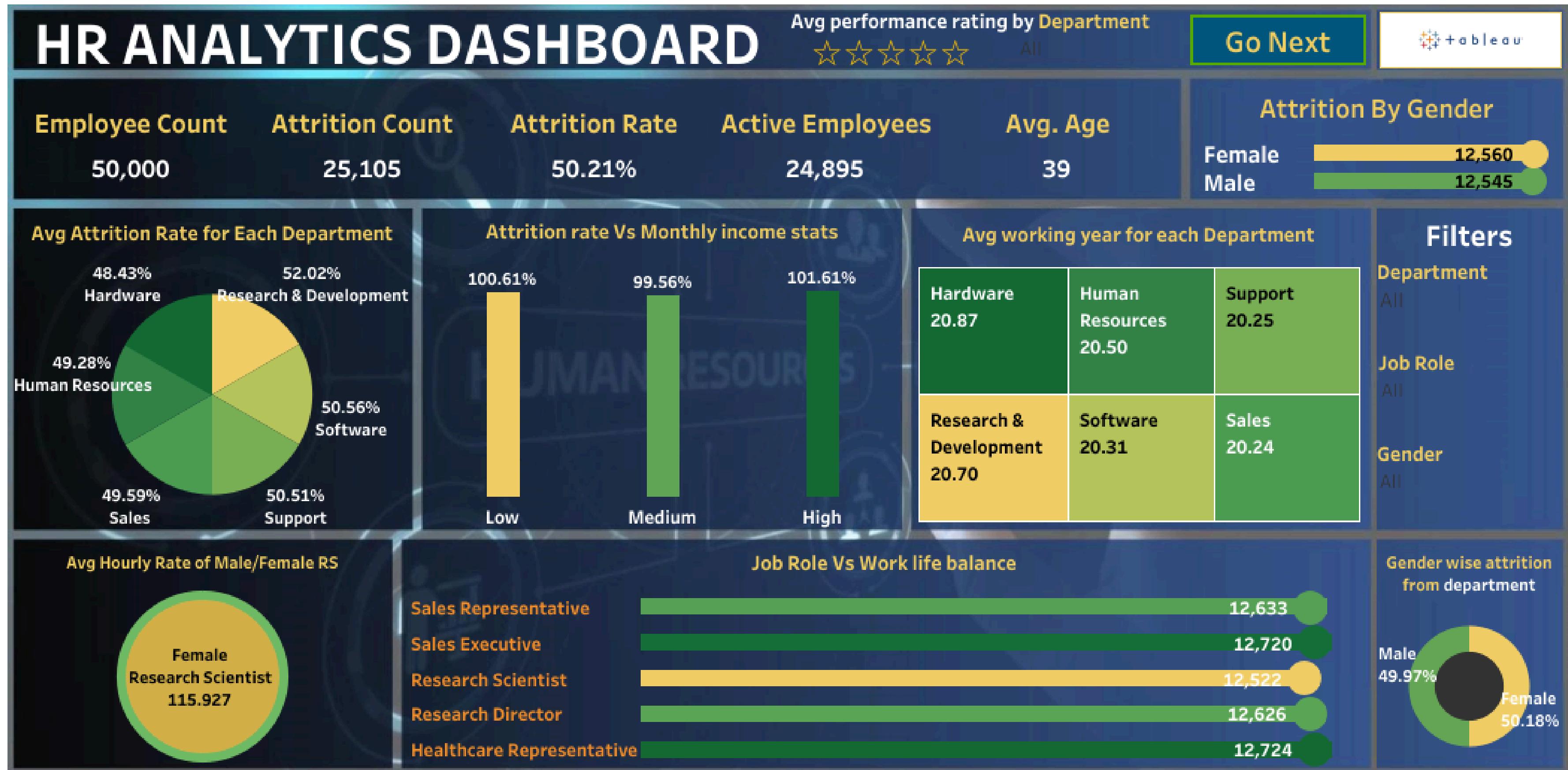
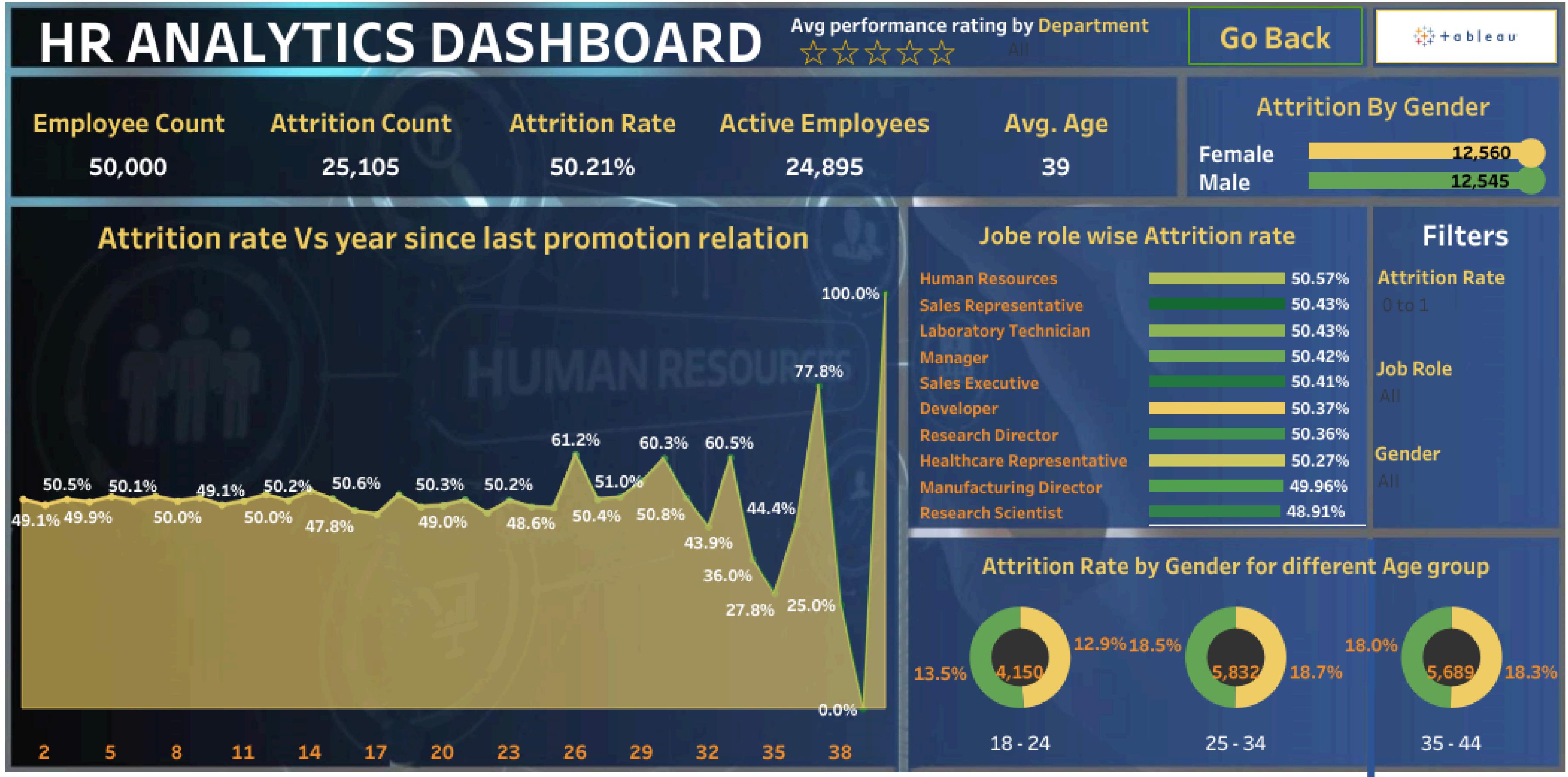


Tableau Dashboard - 2



MySQL Queries

-- KPI 1 — Average Attrition Rate for All Departments

SELECT

```
Department,  
ROUND(AVG(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) * 100, 2) AS  
Attrition_Rate_Percentage
```

FROM hr_alldata

GROUP BY Department

order by Attrition_Rate_Percentage desc;

-- KPI 2 — Average Hourly Rate of Male Research Scientists

SELECT

ROUND(AVG(HourlyRate),2) AS Avg_HourlyRate

FROM hr_alldata

WHERE Gender='Male' AND JobRole='Research Scientist';

-- KPI 3 — Attrition Rate vs Monthly Income

SELECT

CASE

```
WHEN MonthlyIncome < 3000 THEN 'Low Income (<3000)'  
WHEN MonthlyIncome BETWEEN 3000 AND 6000 THEN 'Medium Income (3000-6000)'  
WHEN MonthlyIncome BETWEEN 6001 AND 10000 THEN 'High Income (6001-10000)'  
ELSE 'Very High Income (>10000)'
```

END AS IncomeRange,

COUNT(*) AS TotalEmployees,

SUM(CASE WHEN Attrition='Yes' THEN 1 ELSE 0 END) AS EmployeesLeft,

```
ROUND(SUM(CASE WHEN Attrition='Yes' THEN 1 ELSE 0 END) * 100.0 / COUNT(*), 2) AS  
AttritionRate
```

FROM hr_alldata

GROUP BY IncomeRange

MySQL Queries

-- KPI 4 — Average Working Years for Each Department -- KPI 6 — Attrition Rate vs Years Since Last Promotion

SELECT

Department,

ROUND(AVG(TotalWorkingYears),2) AS Avg_WorkingYears

FROM hr_alldata

GROUP BY Department;

-- KPI 5 — Job Role vs Work Life Balance

SELECT

JobRole,

ROUND(AVG(WorkLifeBalance),2) AS Avg_WorkLifeBalance

FROM hr_alldata

GROUP BY JobRole

ORDER BY Avg_WorkLifeBalance DESC;

SELECT

ROUND(AVG(CASE WHEN Attrition = 'Yes' THEN 1 ELSE 0 END) * 100, 2) AS Attrition_Rate_Percentage,

ROUND(AVG(YearsSinceLastPromotion), 2) AS Avg_Years_Since_Last_Promotion

FROM hr_alldata;

-- KPI 7 Top 5 Departments with Highest Average Income

SELECT

Department,

ROUND(AVG(MonthlyIncome), 2) AS Avg_MonthlyIncome

FROM hr_alldata

GROUP BY Department

ORDER BY Avg_MonthlyIncome DESC

LIMIT 5;

MYSQL Queries

-- KPI 8 Average Age and Experience of Employees Who Left vs Stayed

```
SELECT
```

```
Attrition,
```

```
ROUND(AVG(TotalWorkingYears), 2) AS Avg_Experience
```

```
FROM hr_alldata
```

```
-- Total Employees
```

```
GROUP BY Attrition;
```

```
SELECT
```

```
COUNT(*) AS Total_Employees
```

```
FROM hr_alldata;
```

```
-- Overall Attrition Rate
```

```
SELECT
```

```
ROUND(SUM(CASE WHEN Attrition='Yes' THEN 1 ELSE 0 END)*100.0 / COUNT(*), 2) AS Attrition_Rate
```

```
FROM hr_alldata;
```

Conclusion

- Conduct Stay Interviews: Organize stay interviews to collect employee feedback and understand their job satisfaction levels.
- Enhance Employee Engagement: Implement initiatives like regular feedback, recognition and rewards programs, and career growth opportunities.
- Manage Workload Effectively: Monitor and adjust workloads to ensure they are manageable, preventing employee stress and burnout.
- Foster a Positive Work Environment: Promote a culture of respect, inclusivity, and teamwork while encouraging open communication and collaboration.
- Ensure Fair Compensation: Provide competitive pay and benefits while identifying key motivators that influence employees to remain with the organization.



Thank You