

Human Resource Analytics



MEET OUR TEAM



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OBJECTIVES & PROJECT TIMELINE



1. ANALYSING ATTRITION TRENDS

- Conduct an in-depth analysis of employee turnover data over time to identify patterns and trends.
- Segment the data by relevant factors such as department, job role, demographics, and tenure to gain a granular understanding of attrition across the organization.


2. IDENTIFY ROOT CAUSES OF ATTRITION

- Investigate the underlying drivers of employee turnover through data collected from engagement surveys, exit interviews, and other relevant sources.
- Analyse potential factors including compensation, work-life balance, career growth opportunities, management quality, and workplace culture.

3. DEVELOP INTERACTIVE ATTRITION REPORTING DASHBOARD

- Design and implement a user-friendly dashboard to visualize key attrition metrics and enable interactive exploration of the data.
- The dashboard should display critical insights such as attrition rate by department, job role, work-life balance, and average tenure by department.

4. FORMULATE TARGETED EMPLOYEE RETENTION STRATEGIES

- Based on the findings from the attrition analysis, develop and execute tailored strategies to improve employee retention.
 - Strategies may include competitive compensation packages, robust professional development programs, enhanced work-life balance initiatives, and improved management training.
- 

PROJECT TIMELINE



2

DATA CLEANING PROCESS



1

DATA HARMONIZATION

We identified columns containing common data points across both tables. These columns serve as the join keys, enabling the creation of a unified dataset through a merge operation.

2

TARGETED COLUMN SELECTION

We performed a critical analysis to identify the specific columns containing data essential for calculating the Key Performance Indicators (KPIs) required for the analysis. Only these relevant columns were chosen for inclusion in the final dataset, ensuring focus and efficiency.

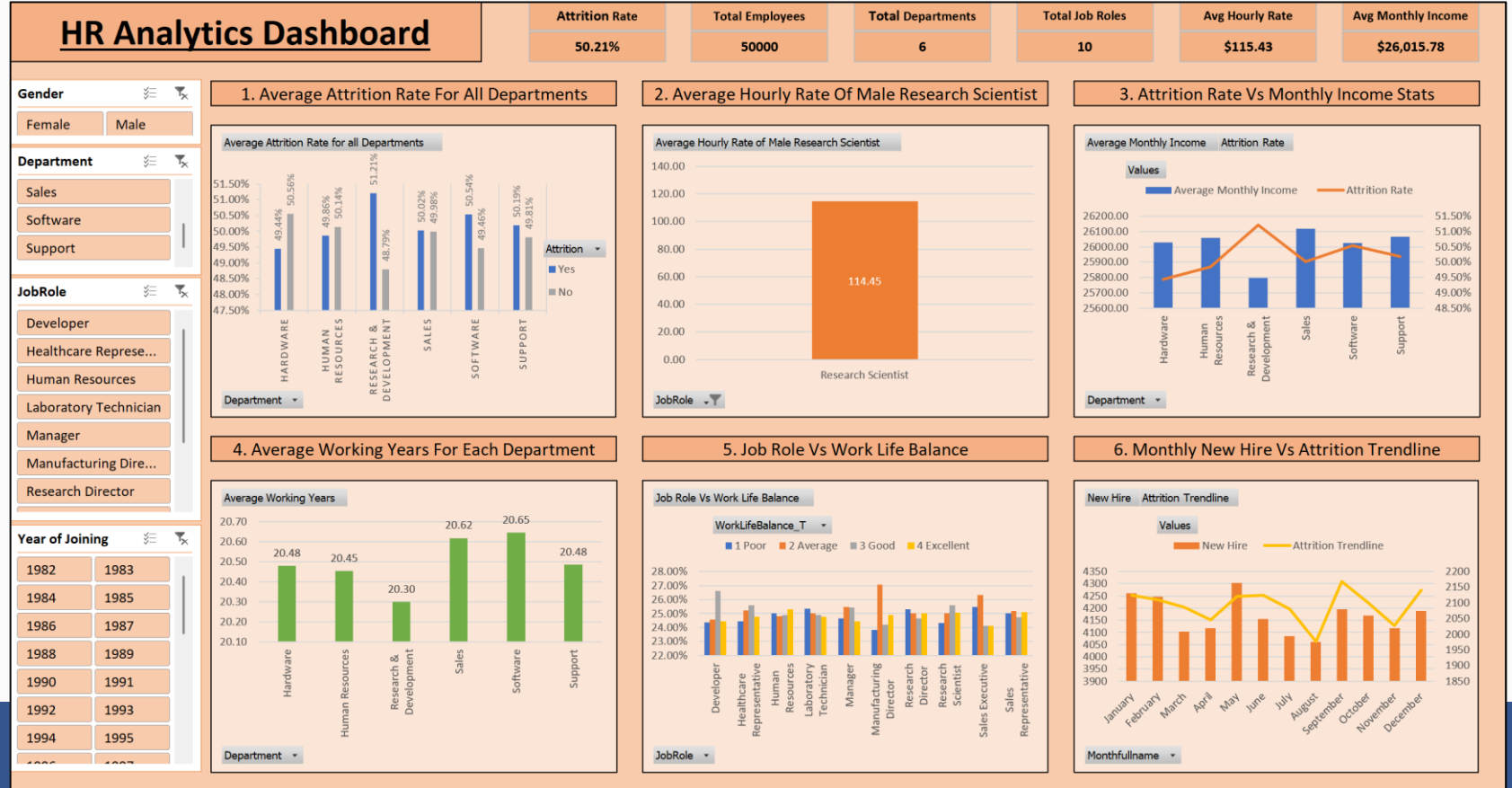
HR_1		HR_2
Age	1	Employee ID
Attrition	2	Year of Joining
BusinessTravel	3	Month of Joining
DailyRate	4	Day of Joining
Department	5	MonthlyIncome
DistanceFromHome	6	MonthlyRate
Education	7	NumCompaniesWorked
EducationField	8	Over18
EmployeeCount	9	OverTime
EmployeeNumber	10	PercentSalaryHike
EnvironmentSatisfaction	11	PerformanceRating
Gender	12	RelationshipSatisfaction
HourlyRate	13	StandardHours
JobInvolvement	14	StockOptionLevel
JobLevel	15	TotalWorkingYears
JobRole	16	TrainingTimesLastYear
JobSatisfaction	17	WorkLifeBalance
MaritalStatus	18	YearsAtCompany
	19	YearsInCurrentRole
	20	YearsSinceLastPromotion
	21	YearsWithCurrManager

3

DASHBOARDS



EXCEL DASHBOARD



POWER BI DASHBOARD

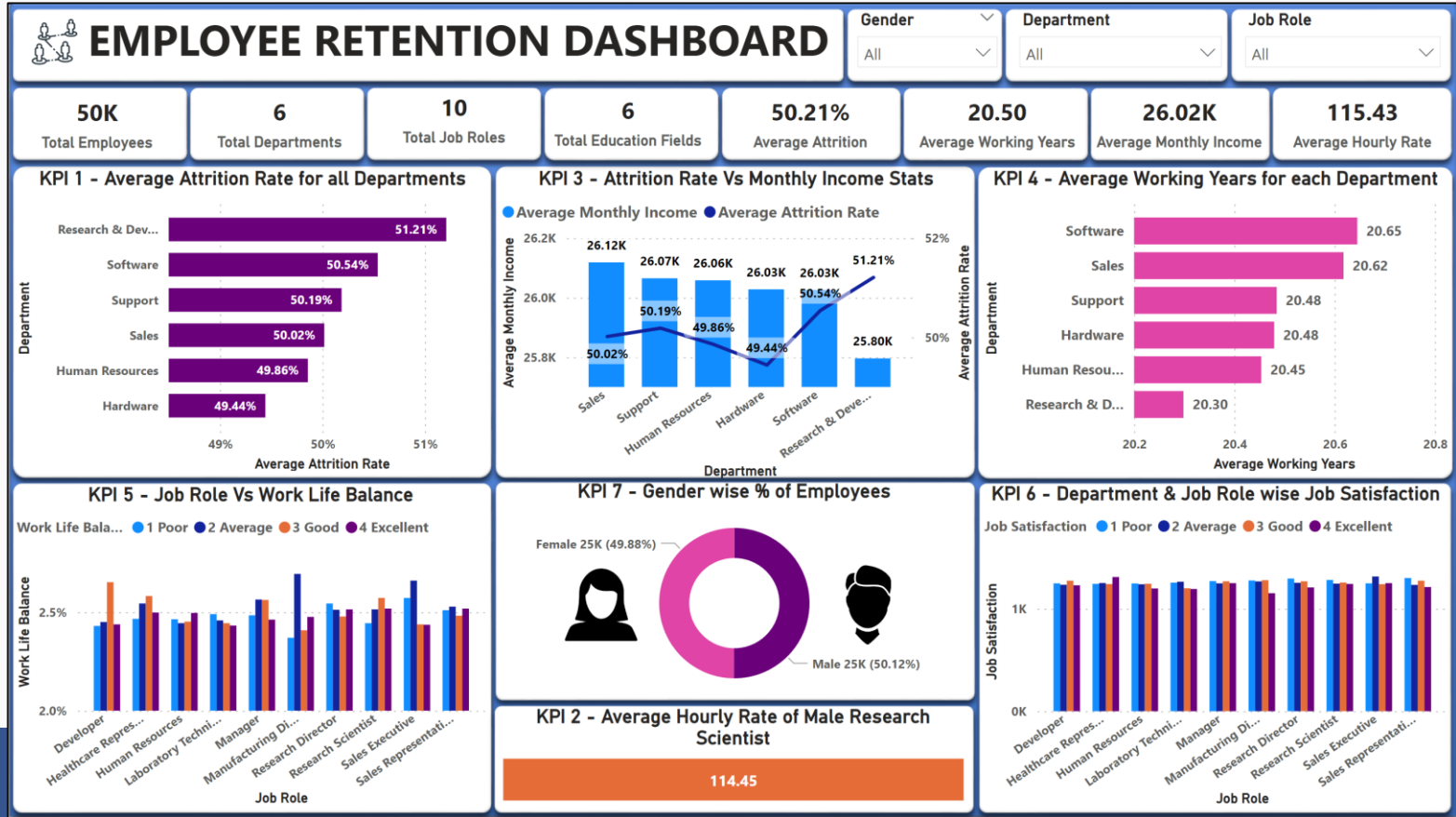
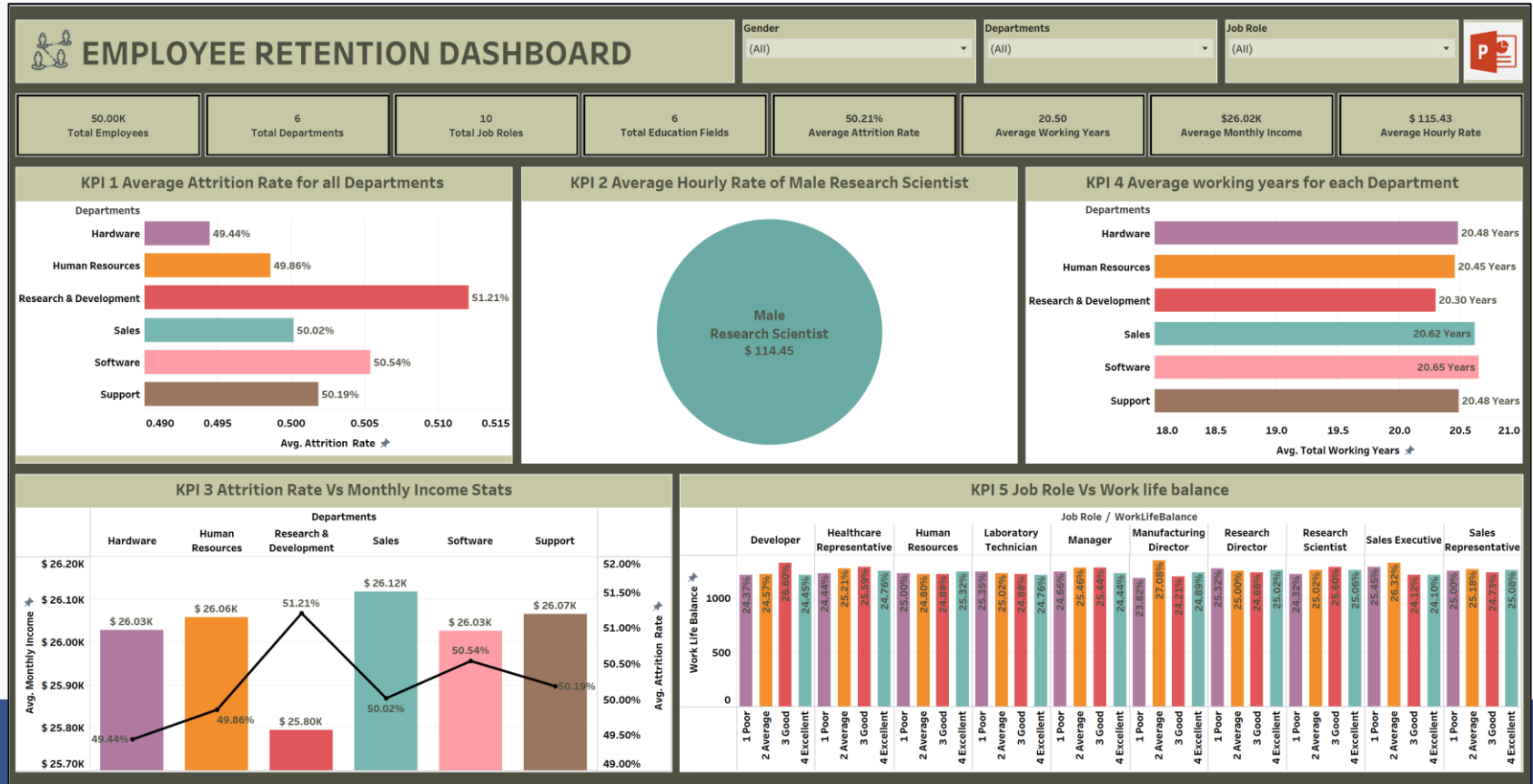


TABLEAU DASHBOARD



4

MYSQL QUERIES



```
-- 1 Average Attrition rate for all Departments
select Department, concat(round(avg(attrition_y)*100,2),'%')
as 'Average Attrition Rate' from hr_data group by Department;
```

	Department	Average Attrition Rate
▶	Software	50.54%
	Human Resources	49.86%
	Sales	50.02%
	Support	50.19%
	Hardware	49.44%
	Research & Development	51.21%

KPI 1

```
-- 2 Average Hourly rate of Male Research Scientist
select Gender, JobRole, avg(hourlyrate) as 'Avg Hourly Rate' from hr_data
where gender='Male' and jobrole='Research Scientist';
```

	Gender	JobRole	Avg Hourly Rate
▶	Male	Research Scientist	114.4469

KPI 2

```
-- 3 Attrition Rate vs Monthly Income stats
select Department, concat(round(avg(attrition_y*100),2),'%') as 'Attrition Rate',
concat('$ ',round(avg(monthlyincome),2)) as 'Monthly Income'
from hr_data group by department;
```

	Department	Attrition Rate	Monthly Income
▶	Software	50.54%	\$ 26026.25
	Human Resources	49.86%	\$ 26058.45
	Sales	50.02%	\$ 26118.75
	Support	50.19%	\$ 26065.20
	Hardware	49.44%	\$ 26028.07
	Research & Development	51.21%	\$ 25796.08

KPI 3

```
-- 4 Average Working Years for each Department
select Department, concat(round(avg(totalworkingyears),2),' Years')
as 'Average Working Years' from hr_data group by department;
```

	Department	Average Working Years
▶	Software	20.65 Years
	Human Resources	20.45 Years
	Sales	20.62 Years
	Support	20.48 Years
	Hardware	20.48 Years
	Research & Development	20.30 Years

KPI 4

```
-- 5 Job Role vs Work Life Balance
select jobrole as 'Job Role',
round(avg(worklifebalance),2) as 'Work Life Balance'
from hr_data group by jobrole;
```

	Job Role	Work Life Balance
▶	Developer	2.51
	Healthcare Representative	2.51
	Manufacturing Director	2.50
	Human Resources	2.51
	Manager	2.50
	Research Director	2.49
	Sales Executive	2.47
	Sales Representative	2.50
	Research Scientist	2.51
	Laboratory Technician	2.49

KPI 5

5

CHALLENGES & RESOLUTIONS



- **Challenge:** We received two datasheets, HR1 and HR2, and using joins in Power BI, Tableau, and MySQL would have complicated the process and queries.
Resolution: We cleaned the datasets and created a combined file with only the necessary columns for the KPIs using the VLOOKUP function. This streamlined the import process and saved significant time and effort.
- **Challenge:** After data cleaning, while working on KPI 1 in Excel, we were unable to find the average attrition rate.
Resolution: We added an extra column where "Yes" was considered 1 and "No" was considered 0, enabling us to calculate the average attrition rate.
- **Challenge:** Excel Slicers were not working properly as some KPI sheets were not visible under the Report Connection option.
Resolution: We made copies of the sheets that were visible under the Report Connection option, which allowed the slicers to function correctly for those particular KPIs.
- **Challenge:** Visual alignment in all dashboards was difficult to achieve.
Resolution: We adjusted the sizes of the KPIs that required less space to improve visual alignment.
- **Challenge:** Data labels were not clearly visible in the dashboard.
Resolution: We adjusted the visualization size and font size according to the number of labels in each visual to improve clarity.

6

CONCLUSION & RECOMMENDATIONS



The analysis of employee departures reveals a confluence of factors contributing to the high **attrition rate of 50%**. These factors include **compensation (monetary), opportunities for growth, work-life balance, and overall job satisfaction**. A concerning trend is the disproportionate number of **highly experienced employees (over 20 years) leaving the company**.


To address these issues and retain talent, the company should consider a multi-pronged approach:

1. Competitive Compensation and Benefits:

Review and adjust salaries and benefits packages to ensure they are competitive within the industry. This may involve targeted adjustments for senior employees with specialized skills and experience.

2. Professional Development:

Implement clear career pathing programs and provide opportunities for ongoing learning and development. This can include mentorship programs, skills training, and tuition reimbursement.



3. Work-Life Balance Initiatives:

Prioritize work-life balance by offering flexible work arrangements, remote work options, and promoting healthy boundaries between work and personal life.


4. Employee Recognition:

Develop a culture of appreciation by recognizing and rewarding employee achievements. This can be through public recognition, bonus structures, or tailored incentives.

5. Addressing Senior Employee Needs:

Specifically address the concerns of senior employees. This may involve creating opportunities for knowledge transfer, mentoring younger colleagues, or phased retirement plans.

By implementing these recommendations, the company can foster a more engaging and rewarding work environment, leading to increased employee retention, particularly among its most experienced and valuable talent pool.



THANK YOU!

ANY QUESTIONS?

