Data Analysis Report: Human Resources (HR) Analytics

1. Introduction

This report provides an in-depth analysis of key Human Resources (HR) metrics such as employee headcount, turnover (attrition), diversity, compensation, employee satisfaction and workforce trends. The insights generated will assist HR in decision making, ensuring employee's engagement and ensuring compliance with organizational and regulatory policies.

1.1 Objective

The primary objective of this report is to:

- Analyze critical HR metrics such as headcount, attrition, diversity, compensation and employee satisfaction.
- Provide a data-driven foundation for decision-making regarding employee retention, equity, compensation management and workforce development.
- Highlight specific areas of concern and propose strategic HR interventions.

2. Data Overview

The dataset used for analysis comprises of employee-related information which includes;

• Employee demographics (Gender, Age, Marital Status, Education Field)

• Employment details (Department, Job Role, Job Level, Job Involvement)

• Compensation data (Monthly Income, Salary Hike, Overtime)

• Satisfaction scores (Job Satisfaction, Jon Involvement, Work-Life Balance)

• Attrition records (Attrition status, Attrition Count)

• Performance ratings and tenure information (Years at Company, Years in Current Role)

3. Analysis and Findings

3.1 Headcount Distribution *(Refer to Annex 1 for detailed visualization of this distribution)*

a. By Department

Department	Total No of Employees
Research and Development	961
Sales	446
Human Resources	63

b. By Job role

Job Role	Total No of Employees
Sales Executives	326
Research Scientist	292
Laboratory Technician	259
Manufacturing Director	145
Healthcare Representative	131
Manager	102
Sales Representative	83
Research Director	80
Human Resources	52

c. By Gender

Gender	Total No of Employees
Male	882
Female	588

d. By Age Group

Age Group	Total No of Employees
18-25	123
26-35	606
36-45	468
46-55	226
55+	47

3.2 Attrition Analysis *(Refer to Annex2 for detailed visualization of this distribution)*

This the percentage of the Number of employees that has left the organization over a period of time in relation to the total employees in the organization. This helps organization to measure how often they lose employees. It is expressed as;

$$\text{Attrition Rate} = \frac{AttritionCount}{Total\ Employee\ Count} \times 100$$

Attrition Count = 237

Attrition Rate = 16.1%

a. Attrition by Department

Department	Attrition Count
Research and Development	133
Sales	92
Human Resources	12

b. By Gender

Gender	Attrition Count
Male	150
Female	87

c. By Age Group

Age Group	Attrition Count
18-25	44
26-35	116
36-45	43
46-55	26
55+	8

d. Attrition by Job Satisfaction

Job Satisfaction	Attrition Count
1	66
2	46
3	73
4	52

e. Attrition by Job Involvement

Job Involvement	Attrition Count
1	28
2	71
3	125
4	13

3.3 Diversity Metrics *(Refer to Annex 3 for detailed visualization of this distribution)*

These are quantitative measurements used by an organization to track how diverse they are in various categories such as gender, age groups, Ethnicity/race, education background etc.

Educational Field Distribution

Educational Field	Total No of Employees
Life Sciences	606
Medical	464
Marketing	159
Technical Degree	132
Human Resources	27
Others	82

Marital Status Distribution

Marital Status	Total No of Employees
Married	673
Single	470
Divorced	327

Gender Distribution

Gender	Total No of Employees
Male	882
Female	588

3.4 Compensation Insights *(Refer to Annex 4 for detailed visualization of this distribution)*

Compensation insights is the analysis of employee salary, benefits, bonuses and other financial rewards within an organization. This analysis helps the HR department understand how compensations should be structured and distributed based on Job role, qualifications and market standards.

Salary Slab Distribution

Salary Slab ($)	Total No of Employees
Up to 5k	749
5k – 10k	440
10k – 15k	148
15k +	133

Average Salary by Department

Department	Average Salary ($) Approx.
Sales	7,000
Human Resources	6,700
Research and Development	6,300

Overtime Impact on Earnings

Overtime Status	Average Monthly Income ($) Approx.
Yes	6,550
No	6,480

3.5 Performance and Satisfaction Insights *(Refer to Annex 5 for detailed visualization of this distribution)*

This analyzes the performance and satisfaction of employees in an organization with 1 being the lowest and 4 being the highest.

Job Satisfaction Distribution

Job Satisfaction	Total Numbers of Employees
1 (Very Dissatisfied)	289
2 (Dissatisfied)	280
3 (Satisfied)	442

4 (Very Satisfied)	459

Work-life Balance Score Distribution

Work-life Balance	Total Numbers of Employees
1 (Very Dissatisfied)	80
2 (Dissatisfied)	344
3 (Satisfied)	893
4 (Very Satisfied)	153

3.6 Career and Tenure Analysis *(Refer to Annex 6 for detailed visualization of this distribution)*

This analyzes evaluate how long employees have been with an organization, how they have progressed in their roles and their tenure relates to performance, satisfaction and retention.

Promotion Overdue Status	Total No of Employees
Yes	373
No	1097

4.0 Conclusions

The analyses provide several key insights;

1. **High Concentration in Research and Development Department:** The Research and Development department holds majority of the workforce (961 employees), followed by Sales department.
2. **Attrition Concentrated in Young & Mid-Level Employees:** The 26–35 age group represents nearly half of the total attrition (116 out of 237) which shows retention challenges in early to mid-career employees.
3. **Gender Diversity Gap:** Males constitute 60% of the workforce.
4. **Job Satisfaction Concern:** Approximately 39% of employees rated their job satisfaction as 'Very Dissatisfied' or 'Dissatisfied'.
5. **Overtime has Minimal Impact on Earnings**: The average difference in salary between employees who do overtime and those who don't is marginal ($70).

6. **Salary Distribution Skewed towards Lower Bands:** More than 50% of employees earn $5k or below, highlighting a possible compensation compression at entry levels.

5.0 Recommendations

Based on the results above, organizations are hereby recommended to;

1. **Monitor Overtime Utilization:** Since overtime does not significantly boost earnings, reassess overtime policies to ensure employee well-being.
2. **Enhance Work-Life Balance Initiatives:** With a significant number of employees dissatisfied with work-life balance, flexible work arrangements or wellness programs could be introduced.
3. **Implement Retention Programs for Young Employees:** Implement targeted engagement and career progression plans for employees aged 26–35 to reduce attrition.
4. **Review Compensation Structures:** Evaluate the competitiveness of salary bands especially for employees earning below $5k to ensure market alignment.
5. **Develop Gender Diversity Initiatives:** Develop policies and recruitment strategies to bridge the gender gap especially in technical and leadership roles.
6. **Revamp Job Satisfaction Strategies:** Conduct surveys to identify dissatisfaction causes and introduce improvement plans focusing on work environment, recognition and career development.
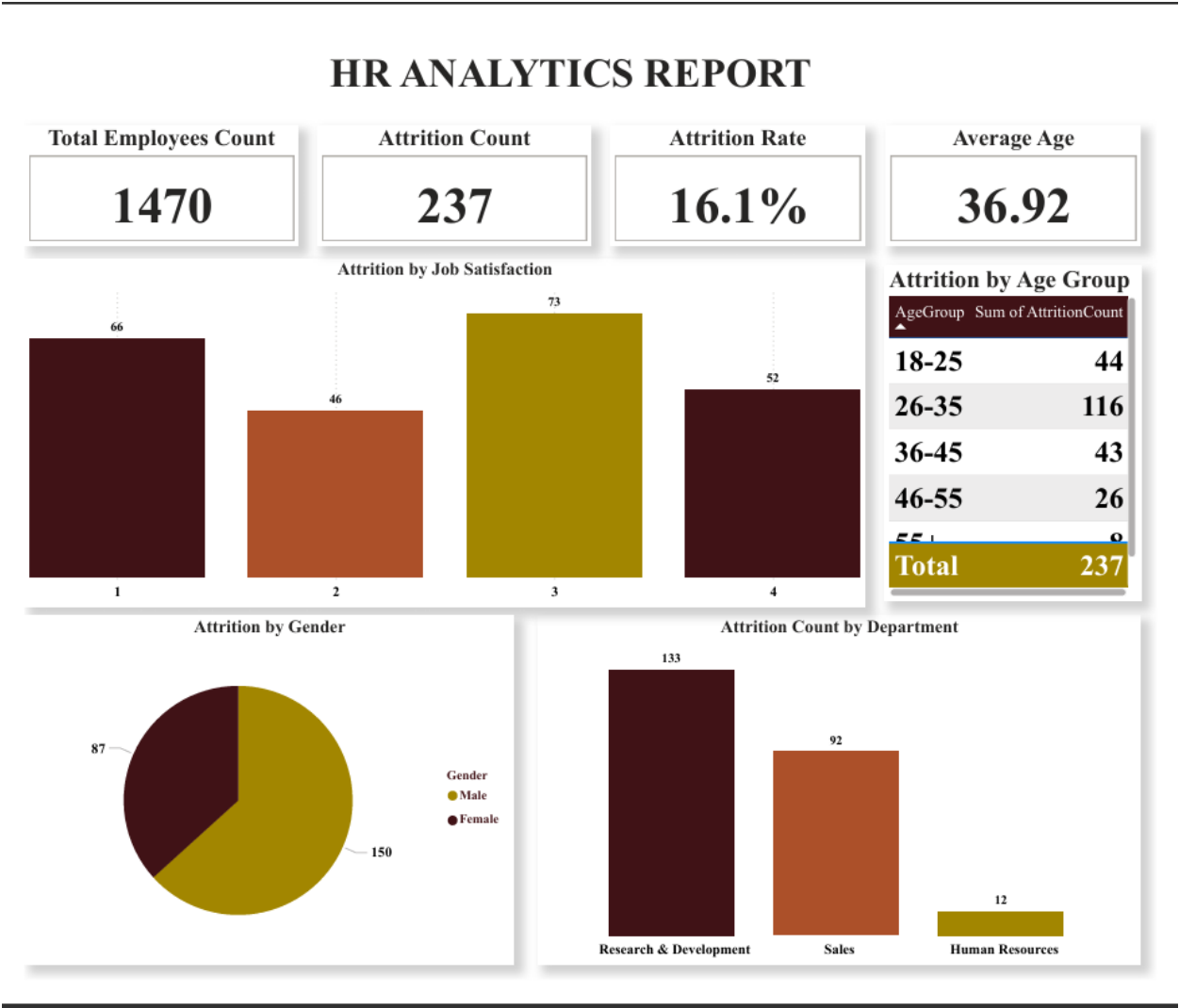
6.0 Appendix

Annex 1: Headcount Distribution Dashboard

This dashboard visualizes employee distributions by Department, Gender, Age group and Job role.
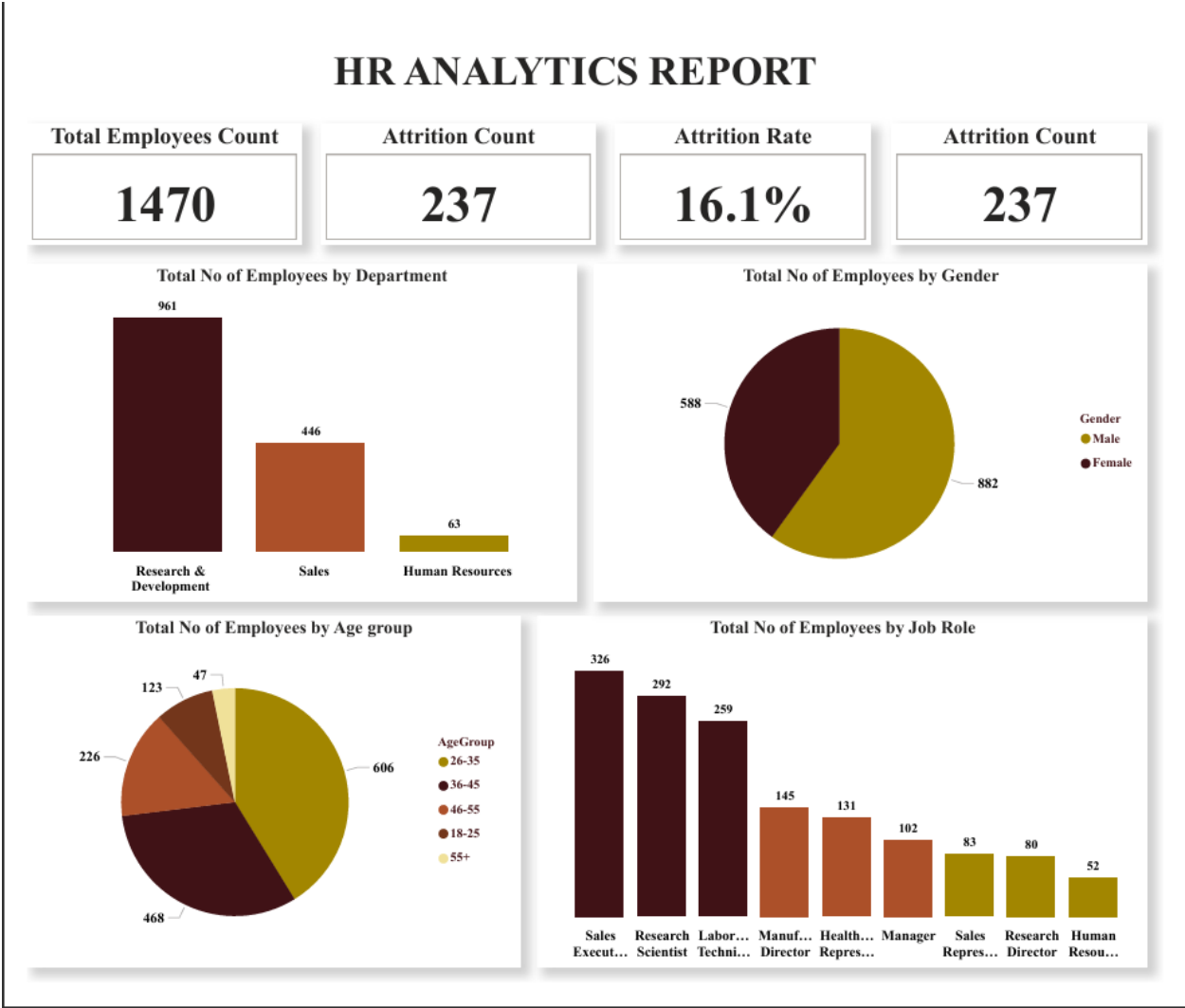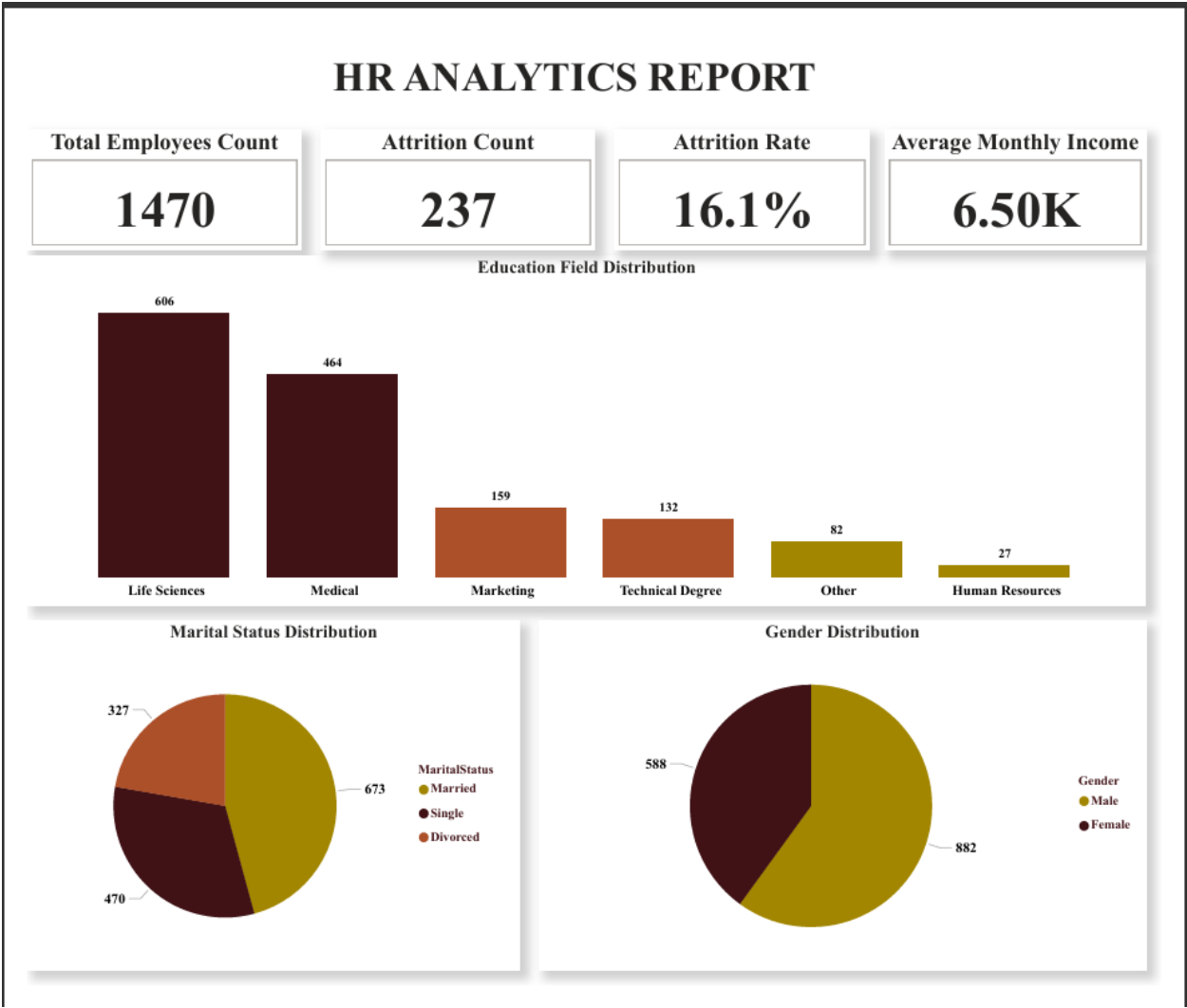
Annex 2: Attrition Analysis Dashboard

This dashboard visualizes attrition by Job satisfaction, Age group, Gender and Department.

HR ANALYTICS REPORT

Total Employees Count	Attrition Count	Attrition Rate	Average Age
1470	237	16.1%	36.92

Attrition by Job Satisfaction

Attrition by Age Group

AgeGroup	Sum of AttritionCount
18-25	44
26-35	116
36-45	43
46-55	26
55+	8
Total	**237**

Attrition by Gender

Gender
● Male
● Female

Attrition Count by Department

Annex 3: Diversity Analysis Dashboard

This dashboard visualizes Education field distribution, Marital status distribution and Gender distribution.
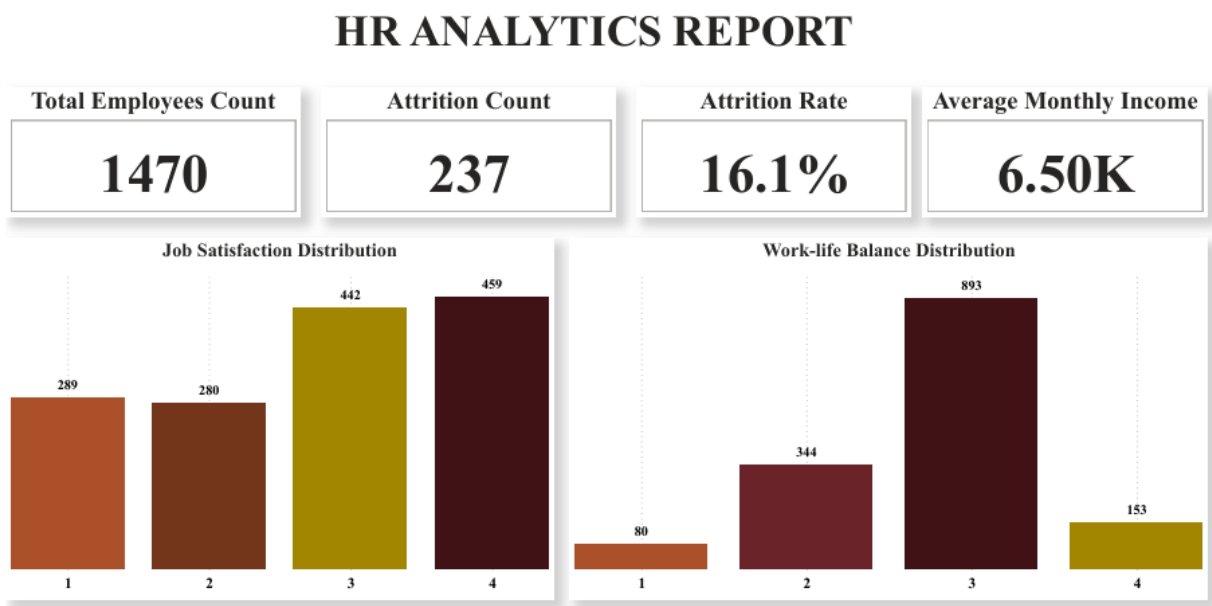
Annex 4: Compensation Insights Dashboard

This dashboard visualizes Average salary by department, Overtime impact on average monthly income and Salary slab distribution.
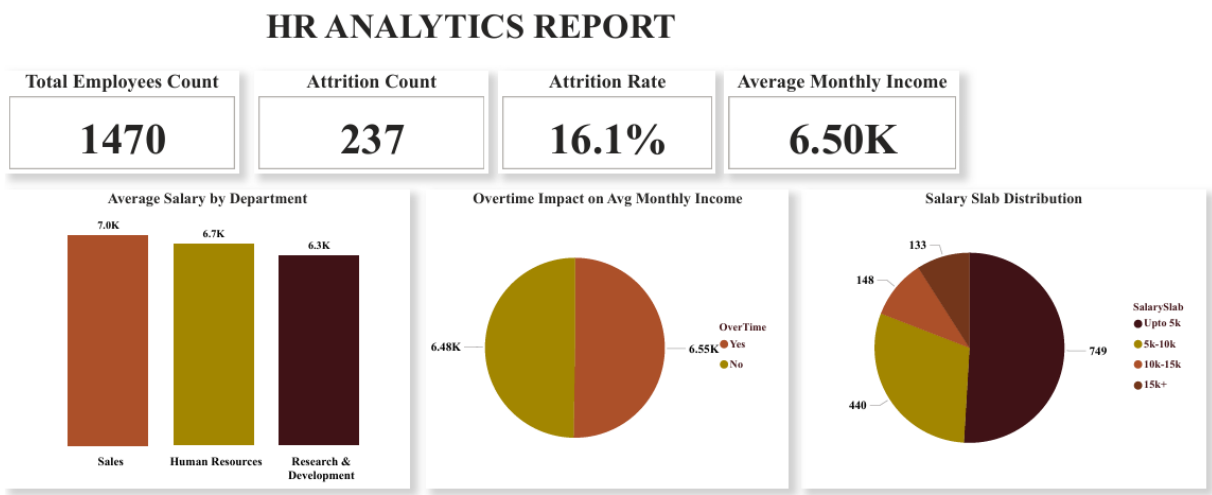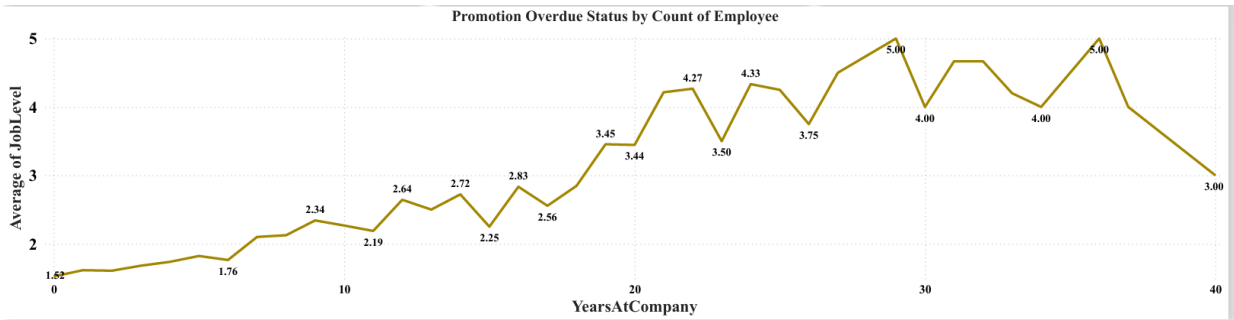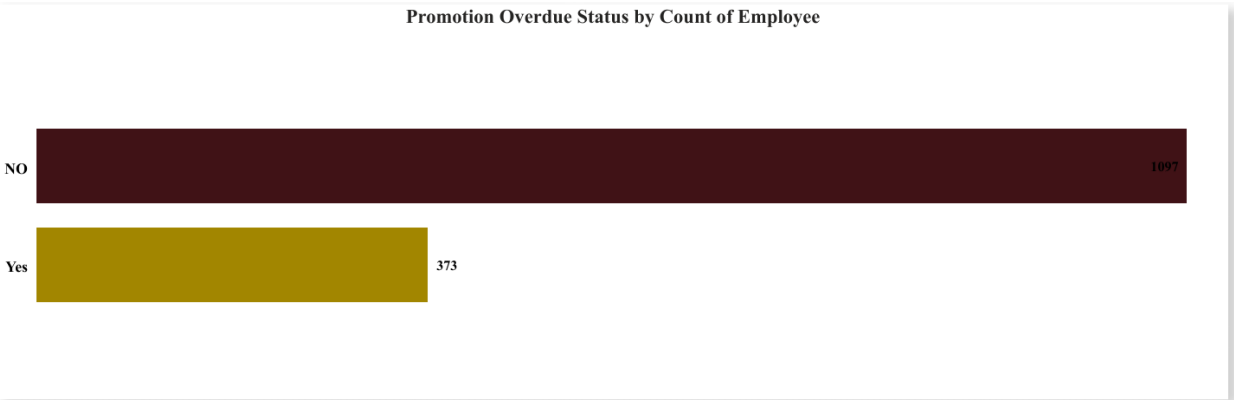

Annex 5: Performance and Satisfaction Insights Dashboard

This dashboard visualizes Job satisfaction distribution and Work-life balance distribution.

Annex 6: Career and Tenure Insights Dashboard

This dashboard visualizes promotion overdue status, career growth map and Career length vs performance.

Promotion Overdue Status by Count of Employee

NO — 1097

Yes — 373

Promotion Overdue Status by Count of Employee

Average of JobLevel vs YearsAtCompany

1.52, 1.76, 2.34, 2.19, 2.64, 2.72, 2.25, 2.83, 2.56, 3.45, 3.44, 4.27, 3.50, 4.33, 3.75, 3.50, 5.00, 4.00, 4.00, 5.00, 3.00

HR ANALYTICS REPORT

Total Employees Count	Attrition Count	Attrition Rate	Average Monthly Income
1470	**237**	**16.1%**	**6.50K**

YearsAtCompany	Count of EmpID	PerformanceRating
40	1	3
37	1	3
36	1	3
36	1	4
34	1	3
33	5	3
32	3	3
31	3	3
30	1	3
29	1	3
29	1	4
27	2	3
26	3	3
26	1	4
25	4	3
24	5	3
24	1	4
23	1	3
23	1	4
Total	**1470**	