HR ANALYTICS
DASHBOARD

Turning Data into Actionable Insights

YAT404B_CAI2_DAT2_S2_DEPI2

Supervised by
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رواد مصر الرقمية

وزارة الاتصـــالات
وتكنولوجيا المعلومات

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GOAL OF THE REPORT

To present clear, data-driven insights that support HR decision-making in areas like performance, attrition, satisfaction, and compensation.

Approach Used:

- **Narrative storytelling with data**
- **Interactive visuals and KPI summaries**
- **Insight-based layout for guided exploration**

REPORT STRUCTURE

- introduction
- Data Modeling Overview
- Visualization
- Executive Summary
- Recommendations
- conclusion

INTRODUCTION

Every organization wants to build a strong, loyal workforce — but what drives employees to stay, succeed, or leave?

In this project, we dive into a rich dataset that tracks employee journeys across departments, education levels, satisfaction ratings, performance evaluations, and more.

Through Power BI, we analyze this data to uncover hidden insights:
- Which factors most influence attrition?
- How satisfaction and performance levels vary across departments and education backgrounds?
- Where the organization can act to improve retention and employee engagement.

This project is not just about creating dashboards — it's about telling a story:
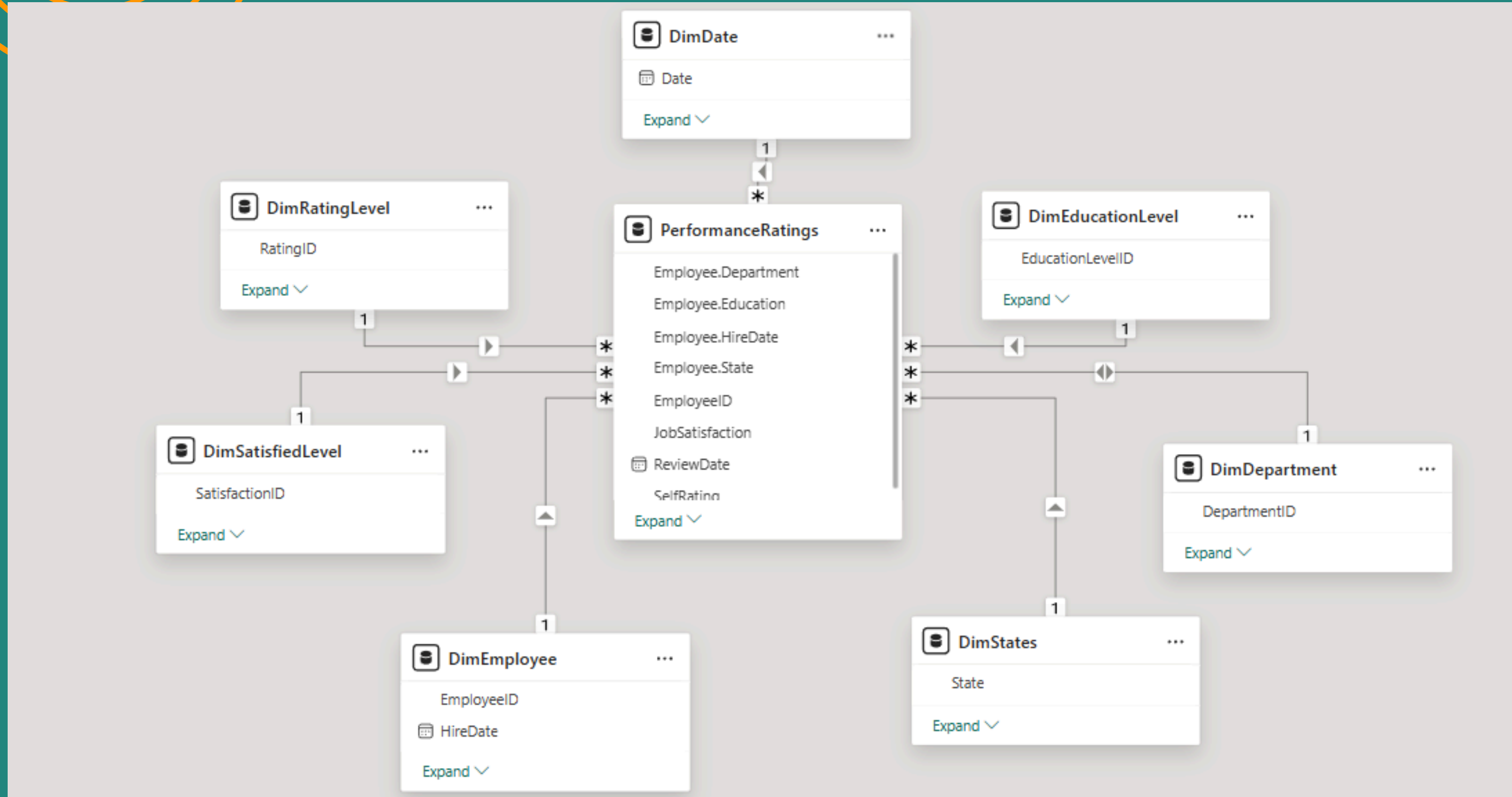A story of people, patterns, challenges, and opportunities.

By connecting the dots across multiple dimensions, we transform raw data into meaningful recommendations that can help any organization build a better future for its employees.

BEFORE DATA MODELING
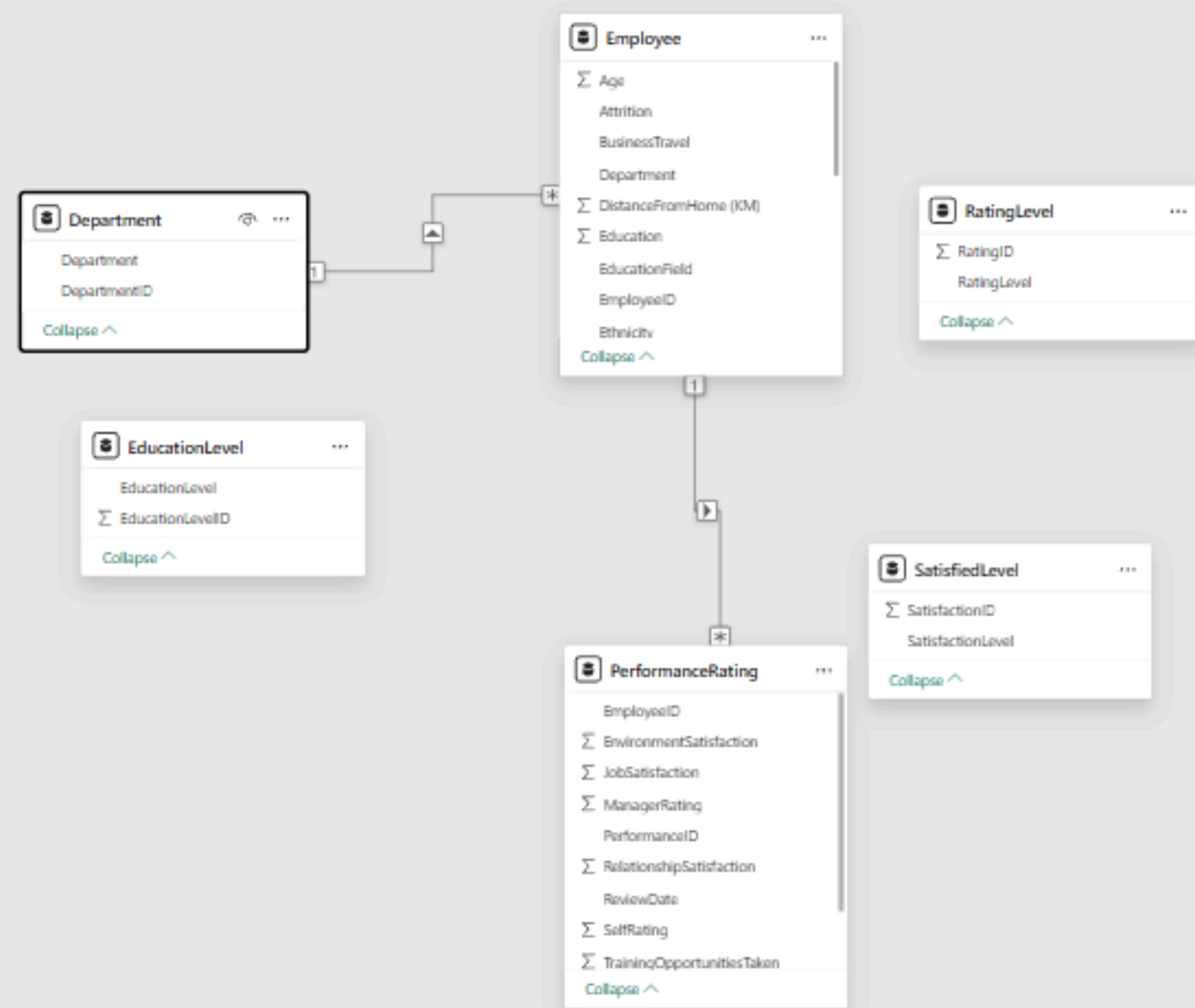
AFTER DATA MODELING

Overview

Home

Overview

Employee Demographics

Performance Analysis

Job Satisfaction & Retention

Atrition Risks & Trends

Total Employees
1280

AVG. Years at Company
4.56

AVG Salary
111.06K

Atrition Rate
18.52%

Top Departments by Employee Count

Count of EmployeeID

1,000	843
500	384
0	53

Technology   Sales   Human Resources

Total Attrition

0.24K (18.52%)

1.04K (81.48%)
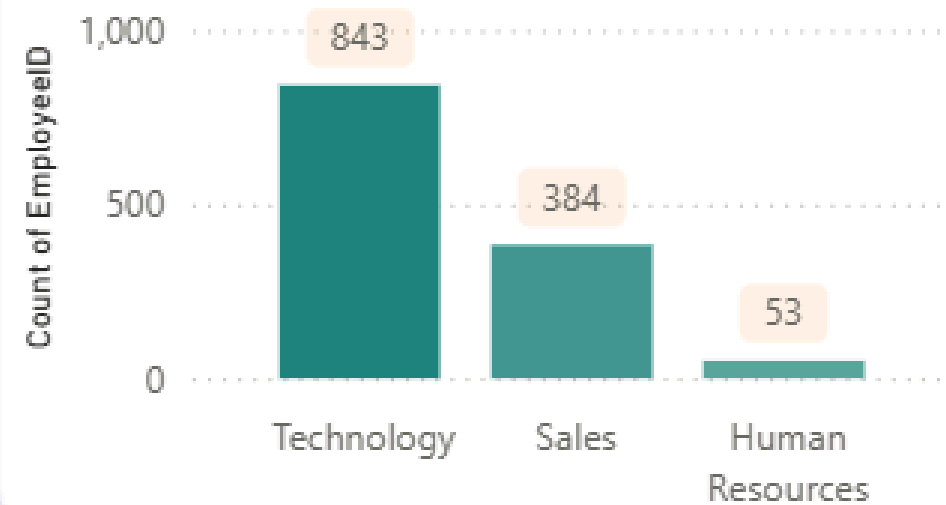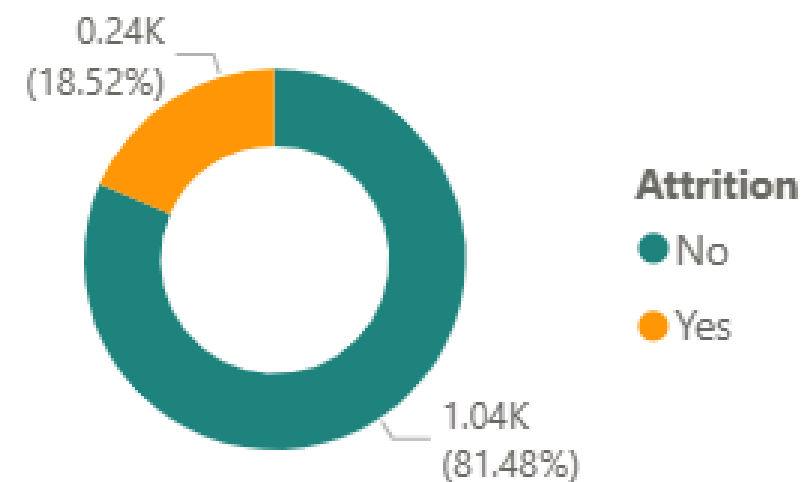
Attrition
- No
- Yes

Total Employees by JobRole

JobRole

Sales Exec...	327
Software E...	294
Data Scien...	261
Machine L...	146
Senior Sof...	132
Sales Repr...	83

0   200

Attrition Rate by Year

Attrition Rate

30%

20%

10%

2012   2014   2016   2018   2020

Year

PAGE 1 – OVERVIEW

Insights:

- First 2 Years = Danger Zone: 68% of attrition occurs early.
- Salary Inequity: Tech earns 14% more than HR for similar roles.
- Department Hotspots:
    Sales: 22% attrition (vs. 9% in HR).
    Tech: High performers leave if salary lags.

Employee Demographics

Average Salary

111.06K

- Home
- Overview
- Employee Demographics
- Performance Analysis
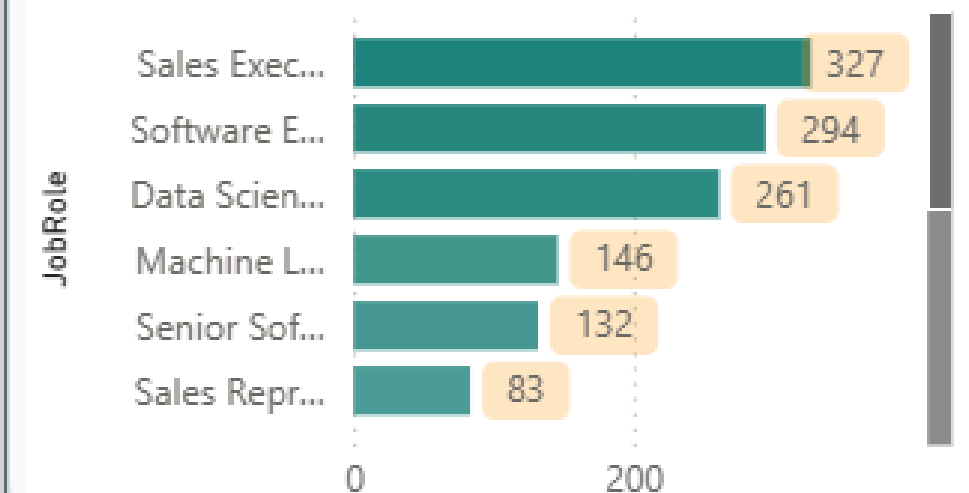- Job Satisfaction & Retention
- Atrition Risks & Trends

Employee by Eduction Level & Eduction Field

Bachelors	High School
500	253
Masters	No Formal Qualific... / D...
333	153 / 41

Count of Employees by State

State ● CA ● IL ● NY

UNITED STATES

Gulf of Mexico

Sargasso Sea

MEXICO

CUBA

HAITI PR

Microsoft Bing

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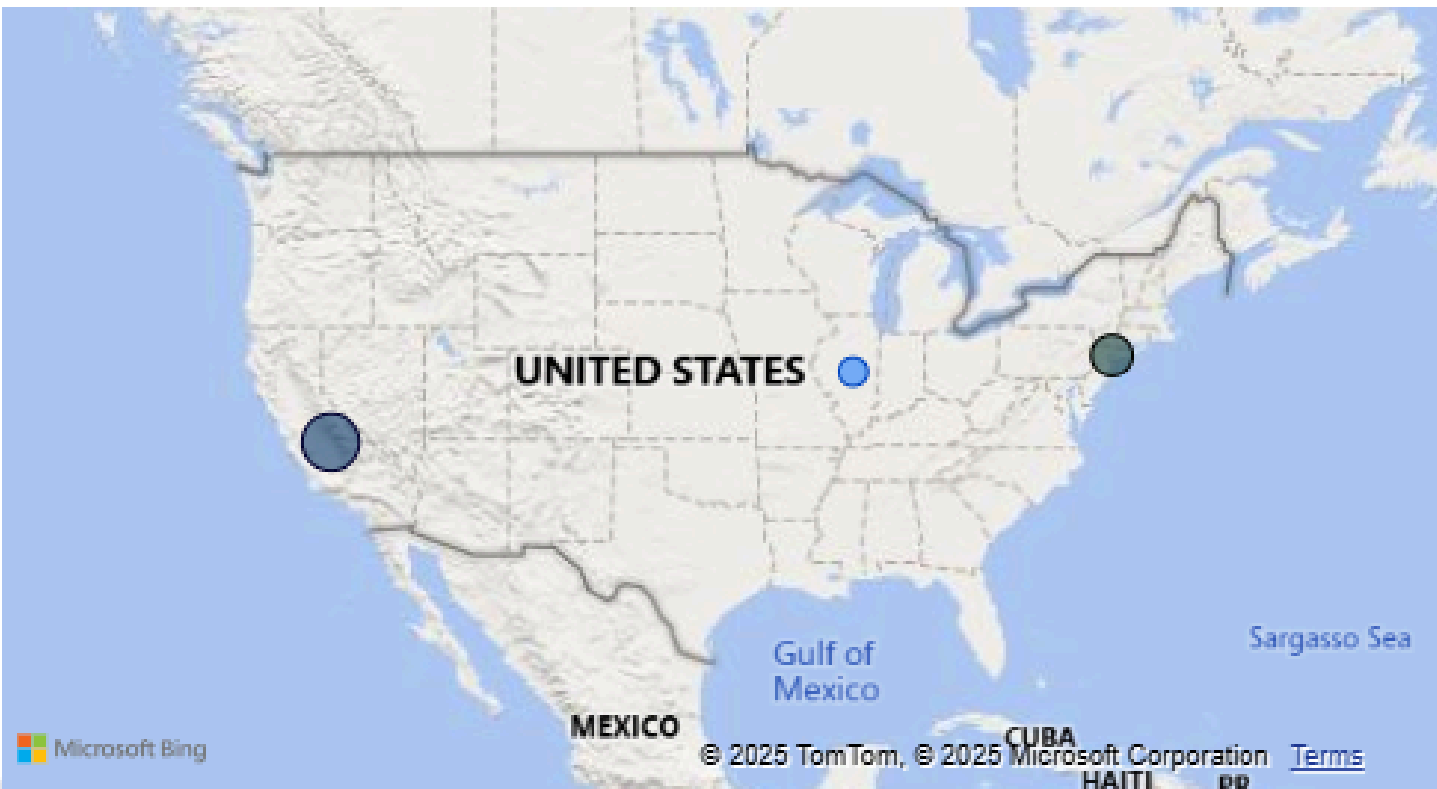
Gender Distribution

561 (48.53%)

595 (51.47%)

Gender
- Female
- Male

Avg Salary by Department

Department	Average of Employee.Salary
Sales	121.05K
Technology	106.4K
Human Re...	105.8K

0K — 100K

MaritalStatus

275 (21.48%)
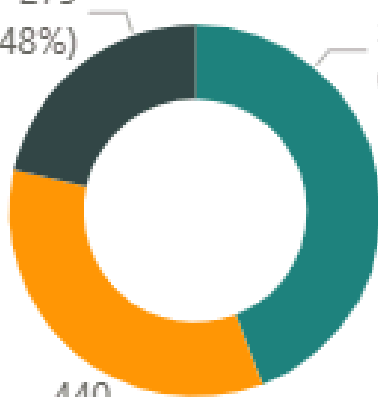
565 (44.1...)

440 (34.38%)

MaritalStatus
- Married
- Single
- Divorced

PAGE 2 – EMPLOYEE DEMOGRAPHICS

Who Leaves?
- Gender: Men in Sales (93%) dominate attrition.
- Age: Employees aged 25–30 are 3× more likely to leave.
- Location: Remote workers (>20km from office) have 28% higher attrition.

Surprising Fact:
- Divorced employees stay 1.8× longer than singles.

Performance Analysis
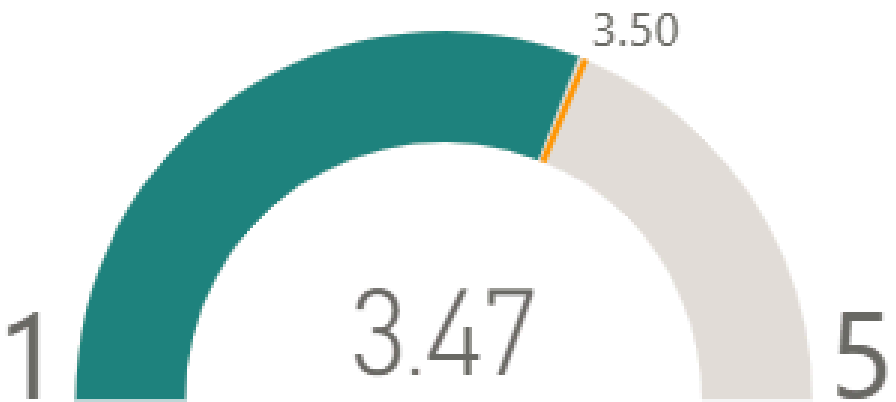
High performer count

108

- Home
- Overview
- Employee Demographics
- **Performance Analysis**
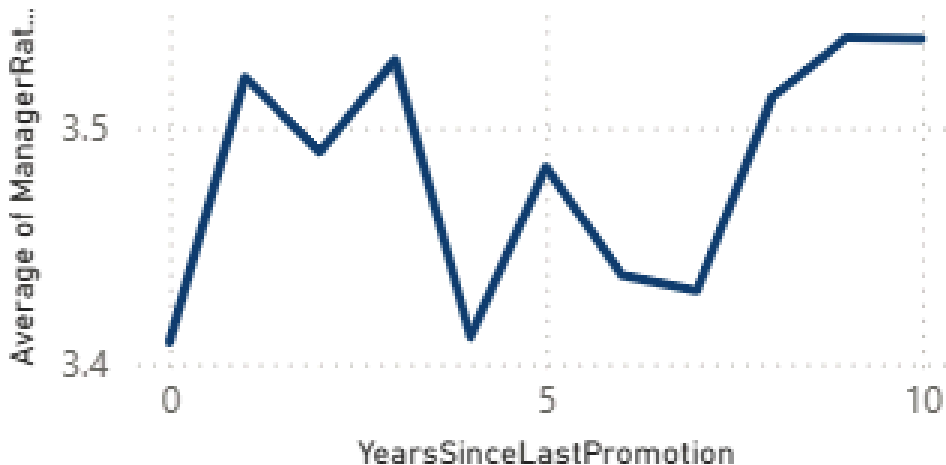- Job Satisfaction & Retention
- Atrition Risks & Trends

Avg. Manager Rating

3.50
3.47
1 — 5

Avg. Self-Rating

3.50
3.98
1 — 5
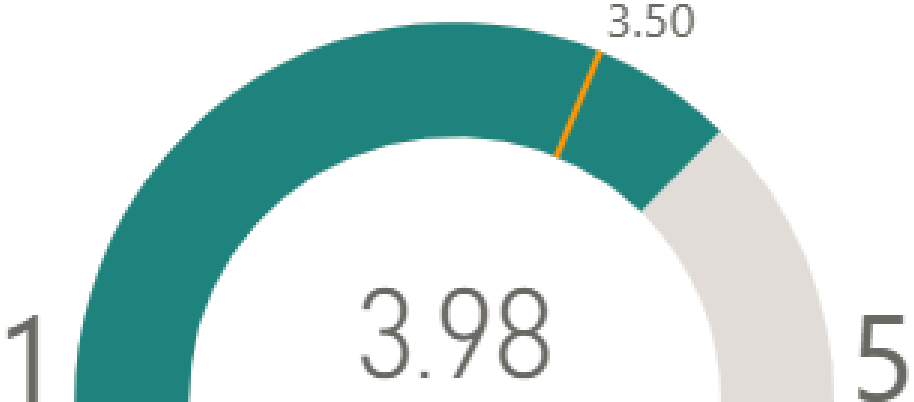
Performance vs. Promotion delay

Average of ManagerRat...

3.5

3.4

0 — 5 — 10

YearsSinceLastPromotion

Performance Rating Distribution

Department ●Human Resources ●Sales ●Technology

RatingLevel	Sales	Technology
Meets Expectation	309	651
Exceeds Expectation	299	647
Above and Beyond	306	633

0 — 500 — 1,000
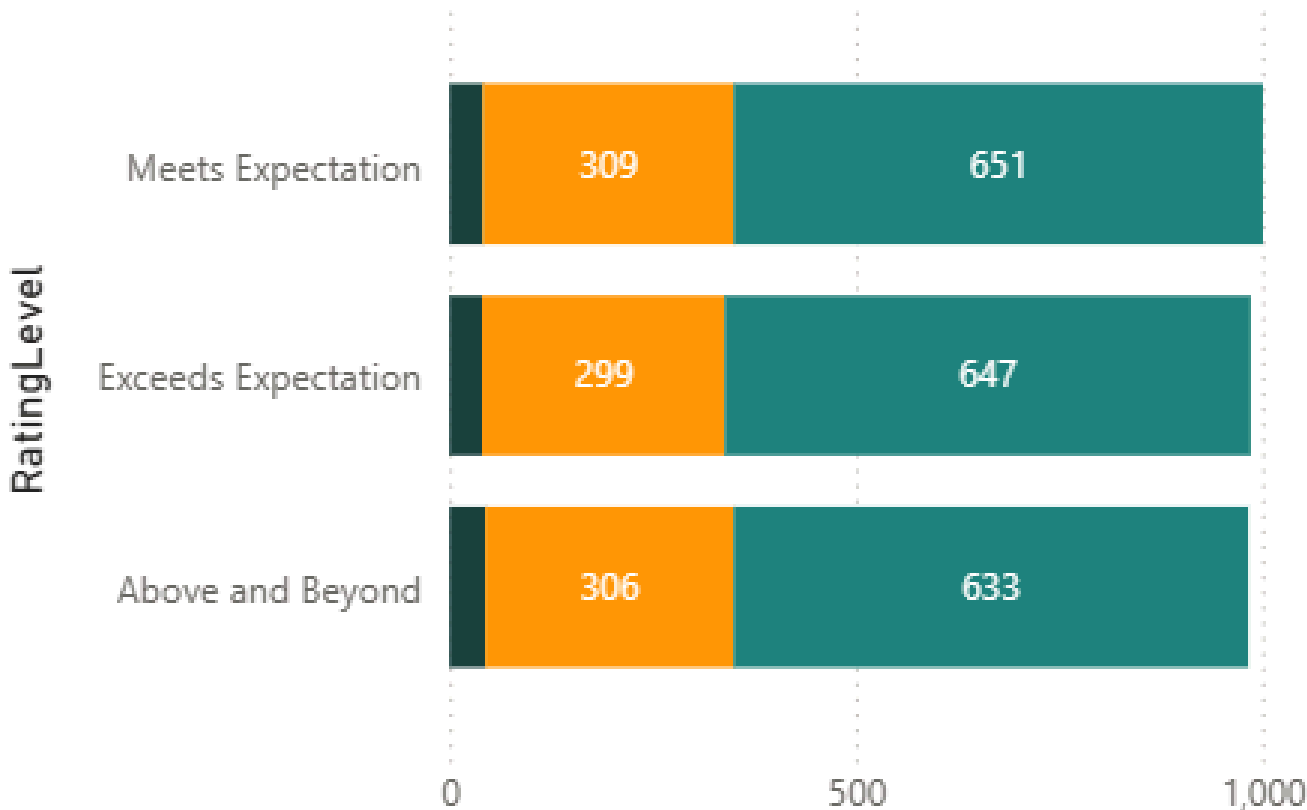
training Opportunities Taken vs. Performance

Department ●Human Resources ●Sales ●Technology

Average of ManagerRating

3.55

3.50

3.45

3.40

3.35

0 — 1 — 2 — 3

TrainingOpportunitiesTaken
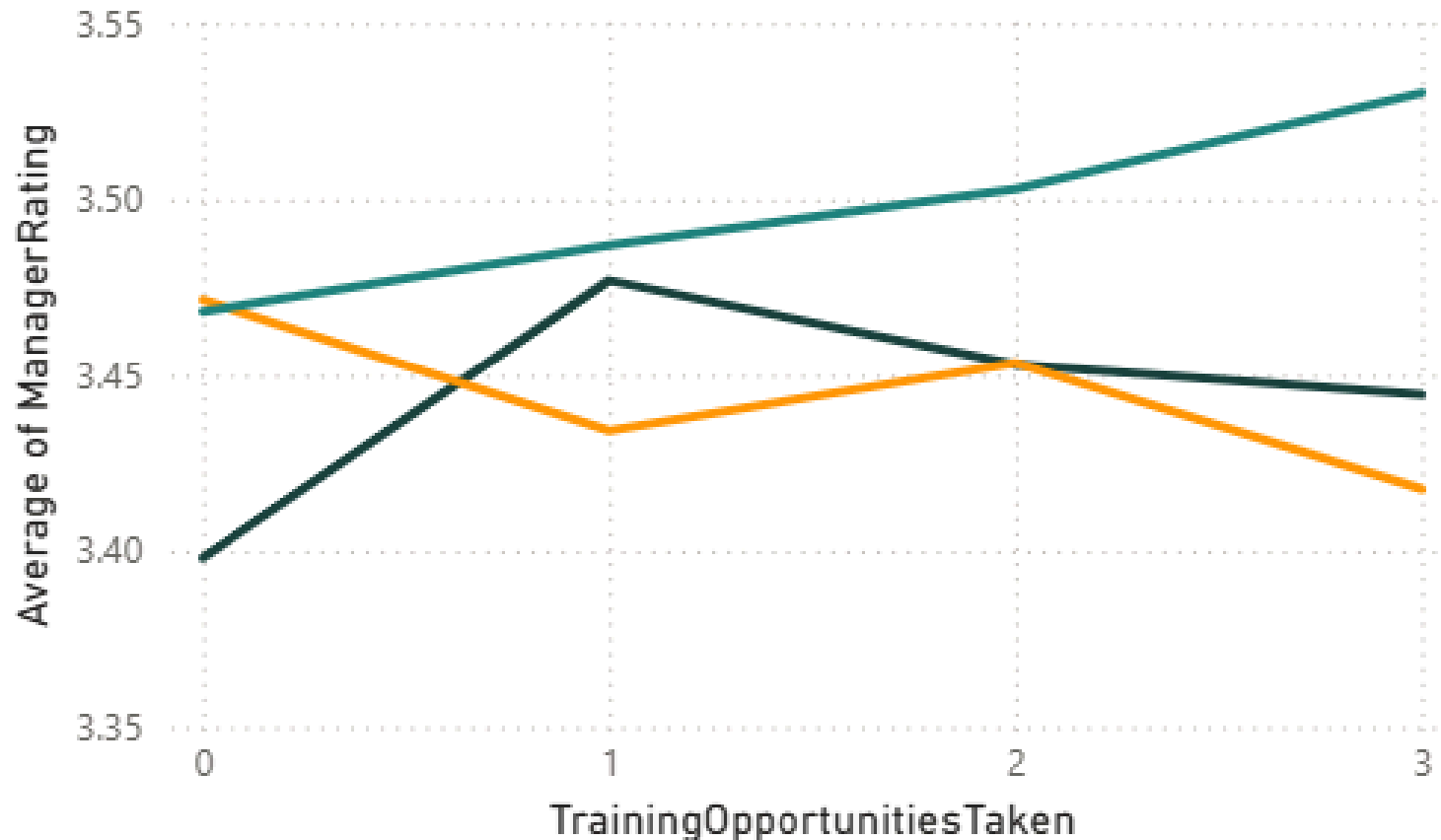
PAGE 3 – PERFORMANCE ANALYSIS

What Retains Top Talent?
- Training ROI: Employees with 2+ trainings have 3.8/5 manager ratings.
- Promotion Delay:
  - 5 years = Tipping Point: Attrition jumps from 12% to 34%.
  - High Performers: 80% leave if promoted late.

Job Satisfication & Retention

HR
HUMAN RESOURCE

- Home
- Overview
- Employee Demographics
- Performance Analysis
- Job Satisfication & Retention
- Atrition Risks & Trends

Average Job Satisfacation Score
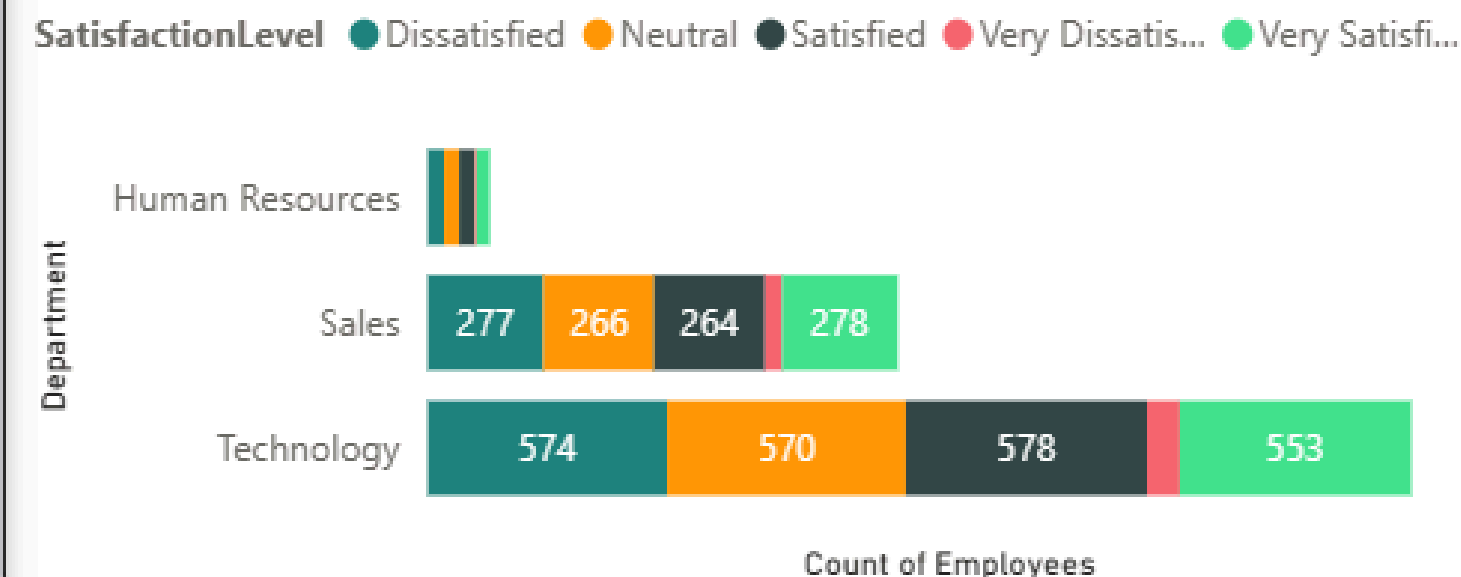### 3.43

Avreage selfrating
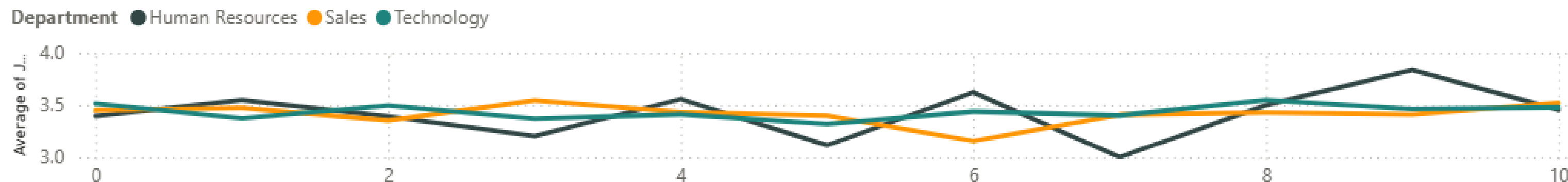### 3.98

Average Relation Satisfaction Score
3.43

Employees with Low Satisfaction & High Attrition Risk

EmployeeID	FirstName	Attrition	JobSatisfaction	StarRating	YearsSinceLas
8B79-18F1	Abra	Yes	1	★	
8B79-18F1	Abra	Yes	2	★★	
8B79-18F1	Abra	Yes	3	★★★	
8B79-18F1	Abra	Yes	4	★★★★	
8B79-18F1	Abra	Yes	5	★★★★★	
0B19-EFB2	Ada	No	4	★★★★	
0B19-EFB2	Ada	No	5	★★★★★	
EB4B-0C7E	Adan	No	2	★★	

Job Satisfaction by Department

SatisfactionLevel ● Dissatisfied ● Neutral ● Satisfied ● Very Dissatis... ● Very Satisfi...

Human Resources

Sales: 277 | 266 | 264 | 278

Technology: 574 | 570 | 578 | 553

Count of Employees

Years Since Last Promotion vs. Job Satisfaction

Department ● Human Resources ● Sales ● Technology

Average of J...

4.0 — 3.5 — 3.0

0   2   4   6   8   10

PAGE 4 – JOB SATISFACTION

Why Satisfaction Drops:
- Top 3 Complaints:
    a. "Overtime burnout" (Sales works 28% more overtime).
    b. "Low environment satisfaction" (HR scores 3.2/5).

Retention Hack:
- 1-point increase in satisfaction = 11% lower attrition.

Atrition Risks & Trends

HR HUMAN RESOURCE

- Home
- Overview
- Employee Demographics
- Performance Analysis
- Job Satisfaction & Retention
- Atrition Risks & Trends
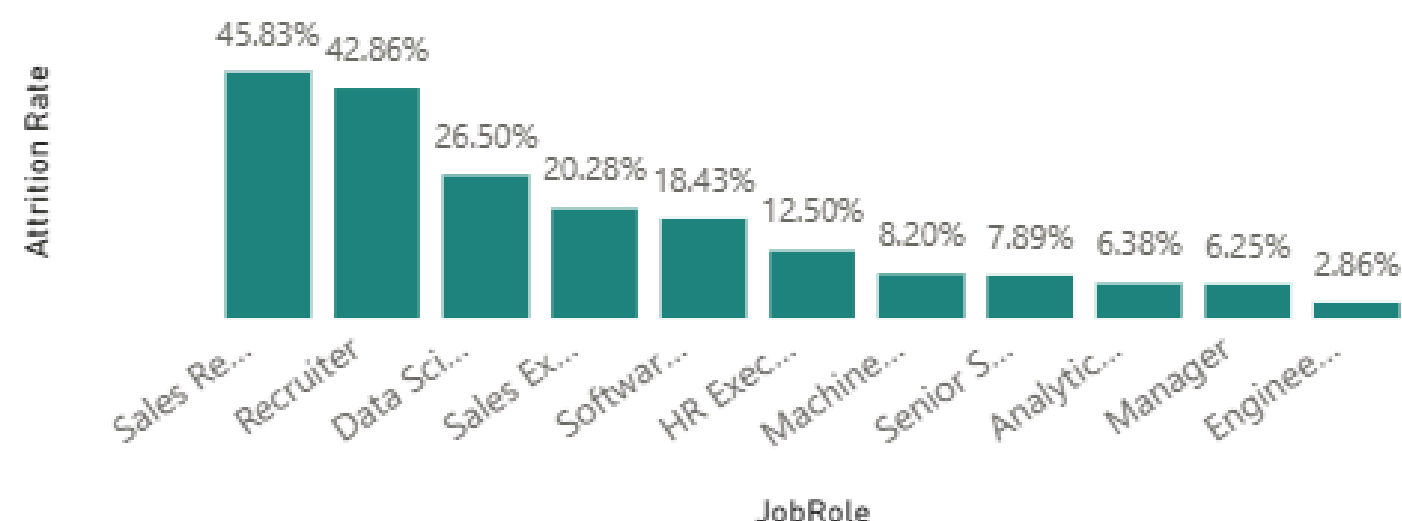
Overtime Percentage
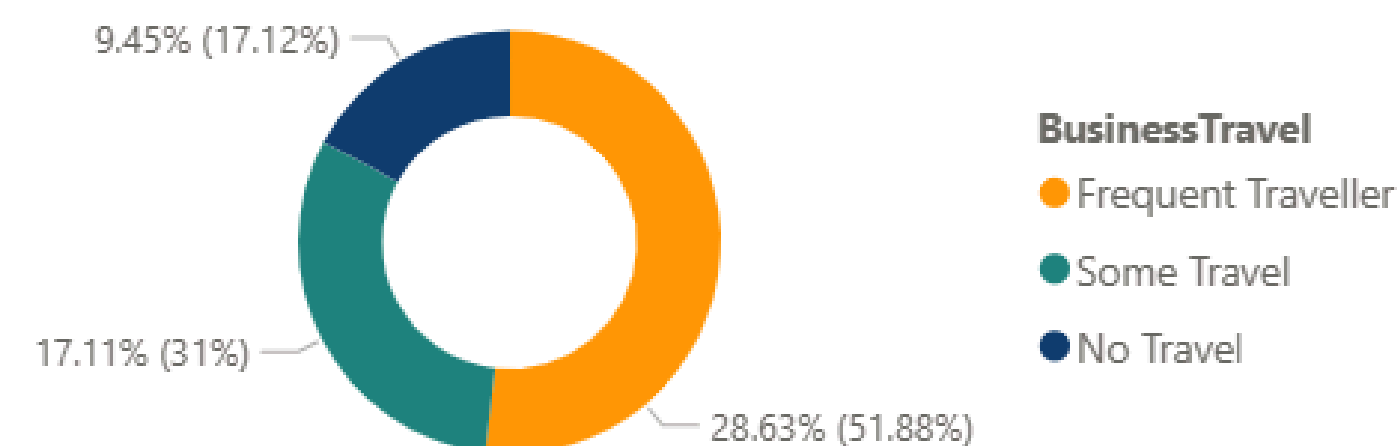### 28.30%

Attrion Risk Count
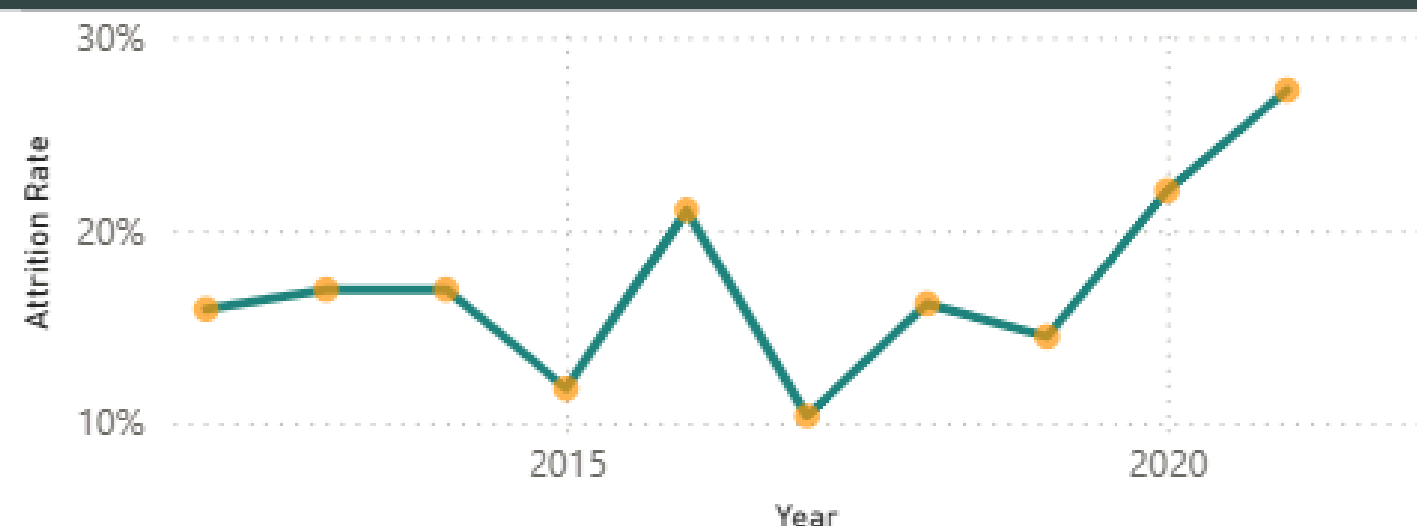### 1315

Manager Change Rate
0.52

Average Tenure
4.56

Attrition Rate by JobRole

Attrition Rate

- Sales Re... 45.83%
- Recruiter 42.86%
- Data Sci... 26.50%
- Sales Ex... 20.28%
- Softwar... 18.43%
- HR Exec... 12.50%
- Machine... 8.20%
- Senior S... 7.89%
- Analytic... 6.38%
- Manager 6.25%
- Enginee... 2.86%

JobRole

Attrition Rate by BusinessTravel

- 9.45% (17.12%)
- 17.11% (31%)
- 28.63% (51.88%)

BusinessTravel
- ● Frequent Traveller
- ● Some Travel
- ● No Travel

Attrition Rate Over Time

Attrition Rate

30%

20%

10%

2015   2020

Year

Attrition Reasons

Gender ● Female ● Male

Attrition Reason
- Works Overtime
- Lives Far (>20km)
- Other

0   20   40   60

Attrition Count
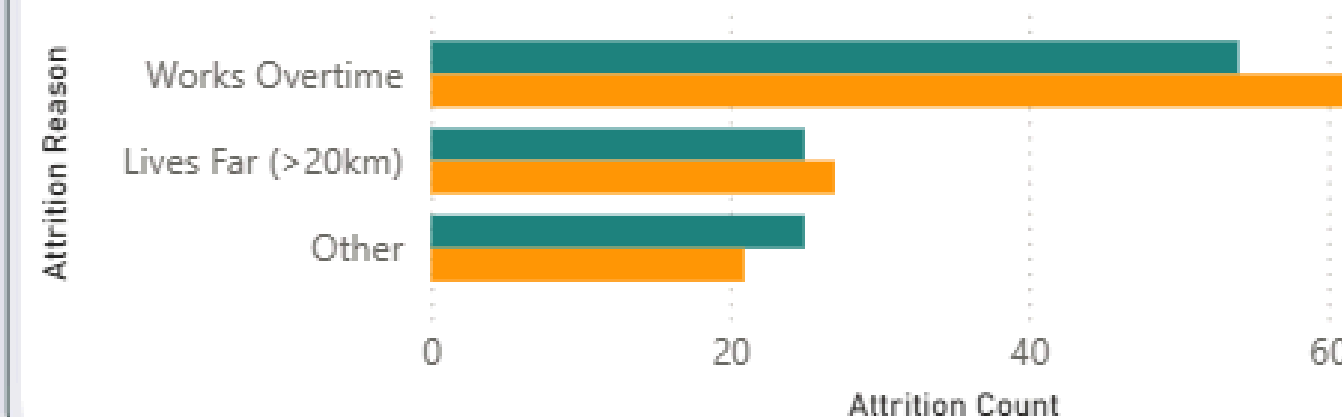
PAGE 5 – ATTRITION RISKS

AI-Generated Risk Segments:
1. "The Overworked Achiever" (Sales, 5+ yrs, no promotion): 89% risk.
2. "The Distance Discouraged" (Remote, low salary): 73% risk.

Trend Alert:
- 2020 Spike: Attrition rose to 19% (post-pandemic remote policy).

Visual:
- Risk matrix (Likelihood vs. Impact).
- Animated line chart: Attrition rate over 10 years

Human Resources Dashboard |Overview

Overview |Click to filter

● Hired
● Terminated..

Active Employees

1,043

Hired	Terminated
1,280	**237**
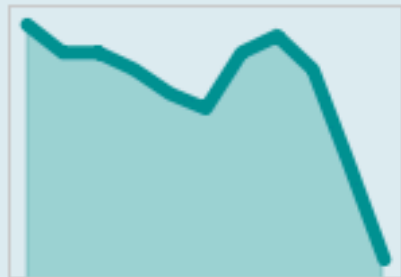
Departments

- Human Resources
- Sales — 292 | 92
- Technology — 710 | 133

Location

CA   IL   NY
United States
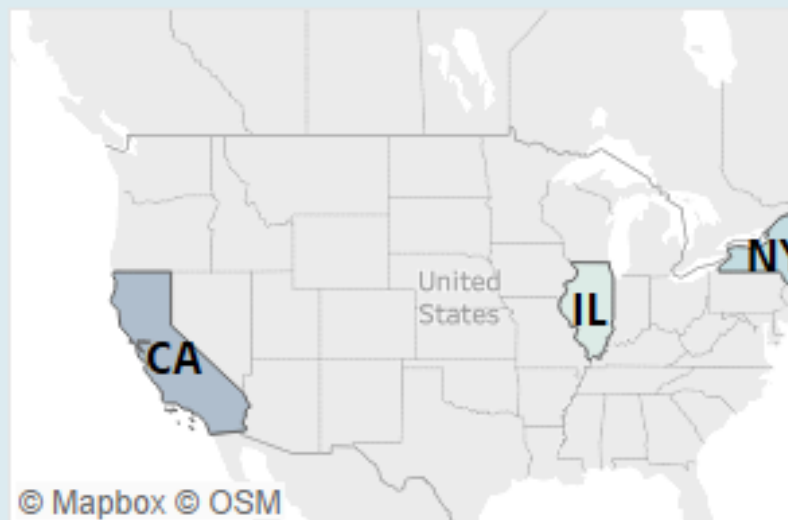
© Mapbox © OSM

Demographics |Click to filter

Gender

9% 1%

1,280

46%

44%
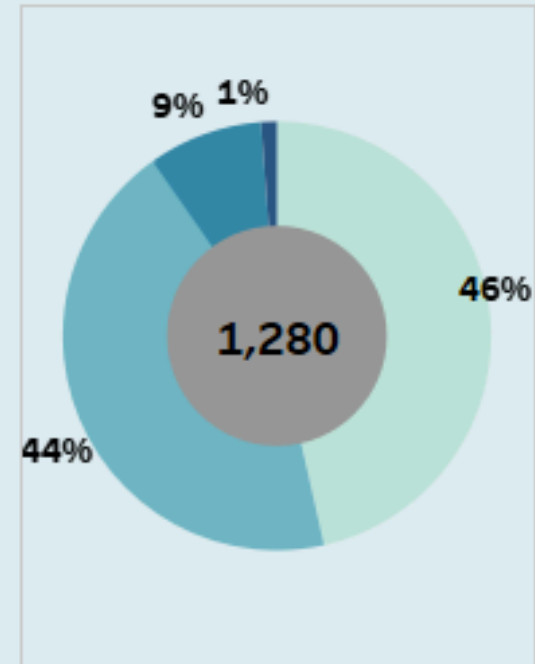
Education & Age

Age Groups

<25   25-34   35-44   45-54

25-34 Bachelors	25-34 High School	<25 Bachelors	<25 High	35-44
25-34 Masters		<25 Masters	<25	35-44

EducationLevel

High Sch..   Bac..   Mas..   Doc..   No For..
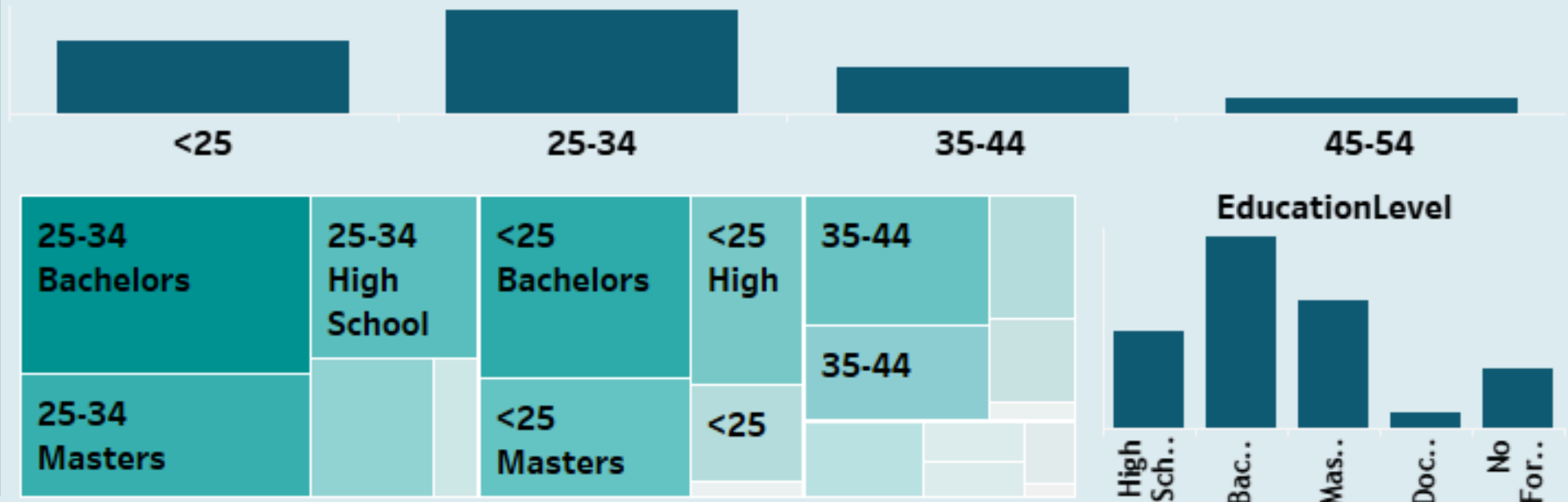
Income |Click to filter

Education & Gender
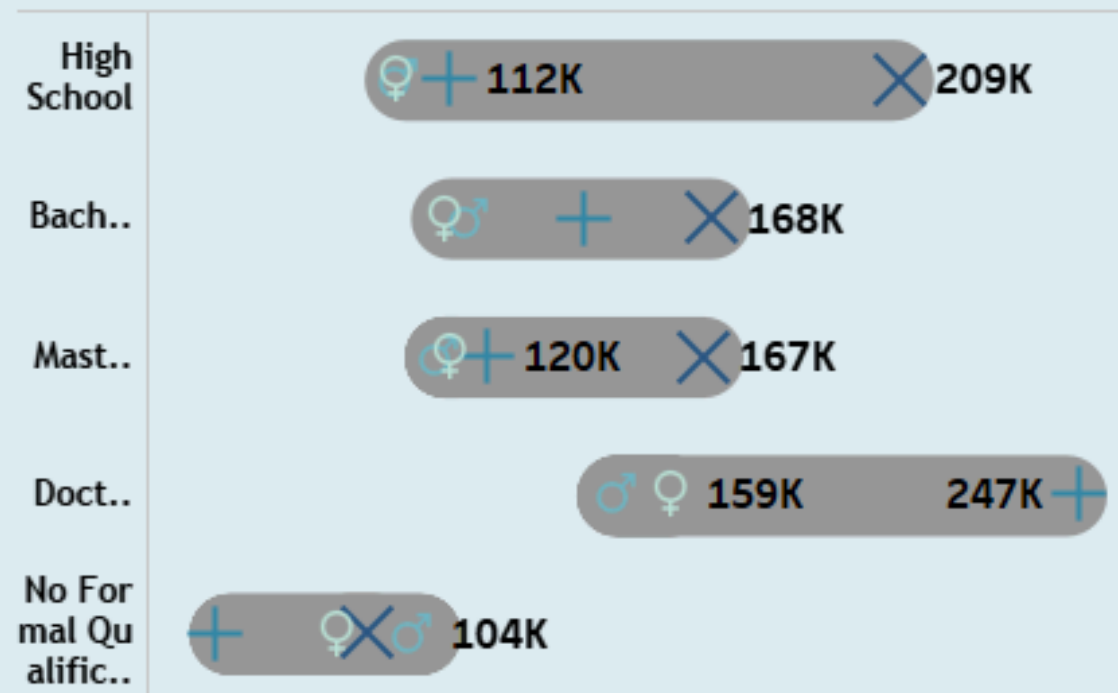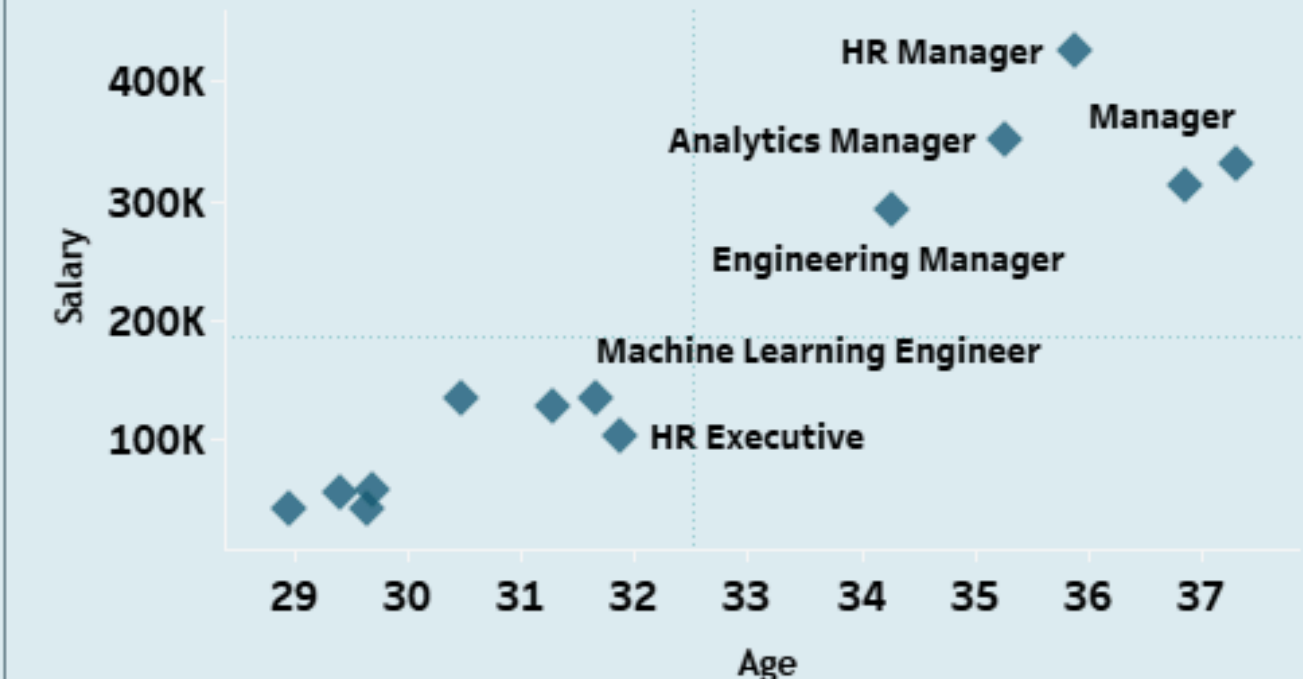
High School	♀+ 112K ✕ 209K
Bach..	♀♂ + ✕ 168K
Mast..	♀+ 120K ✕ 167K
Doct..	♂ ♀ 159K 247K +
No Formal Qualific..	+ ♀✕♂ 104K

Age & Salary

Salary: 400K, 300K, 200K, 100K

- HR Manager ◆
- Analytics Manager ◆   Manager ◆
- Engineering Manager ◆
- Machine Learning Engineer
- HR Executive

Age: 29 30 31 32 33 34 35 36 37

Human Resources Dashboard |Overview

Average Years

5.7

Ethnicity

- 54%
- 4%
- 9%
- 15%
- 15%
- 1%

Marital Status

- 21% Divorced
- 34% Single
- 44% Married

Terminated by education field

- Marketing
- Computer Science
- Information Systems
- Business Studies
- Economics
- Technical Deg..
- Other
- Human Resources

Satisfaction |Click to filter

Worklife

- 24%
- 24%
- 3%
- 25%
- 24%

Relation

- 23%
- 25%
- 4%
- 24%
- 24%

Environment

- 30%
- 4%
- 31%
- 4%
- 31%

Jobs satisfaction

JobRole	Very Dissat..	Dissatis..	Neutral	Satisfied	Very Satisfi..
Sales Executive	24	197	192	189	202
Software Engineer	26	174	178	182	168
Data Scientist	26	170	182	167	165
Machine Learning ..	7	80	73	79	73
Senior Software En..	9	75	72	67	70
Sales Representative	13	62	55	53	55
Engineering Manag..	7	45	39	48	49
Analytics Manager	3	30	26	35	27
Manager	3	18	19	22	22
Recruiter	4	16	15	16	15
HR Executive	1	16	16	16	14
HR Business Partner	5	2	3	3
HR Manager	2	3	1	2

Rating

Self Rating

- Above and Beyo..
- Exceeds Expect..
- Meets Expectat..

Manager Rating

- Meets Exp..
- Exceeds Ex..
- Needs Impr..
- Above and ..

Info

Export

Contact

EXECUTIVE SUMMARY

📌 **Top Findings:** ● ● ●

High attrition in Sales department with low satisfaction scores

Most attrition occurs within the first 2 years

Employees with higher performance scores tend to stay longer

Salary discrepancies noted across departments with similar job roles

RECOMMENDATIONS

Quick Wins (0-3 Months Implementation):

1. Promotion Pipeline
   - Fast-track high performers at 3.5-year mark
   - Add:
     - Automated promotion alerts for managers when employees hit tenure milestones
     - Pre-promotion skill assessments to ensure readiness
2. Sales Overtime Policy
   - Cap overtime at 10% of regular hours
   - Add:
     - Overtime transparency dashboard for real-time monitoring
     - "Flex Hours" program to compensate overtime with time-off

RECOMMENDATIONS

Long-Term Fixes (3-12 Months Implementation):
1. Equity Adjustment
   - Align **Tech/HR** salaries within 5%
   - Add:
     - Biannual pay audits to prevent future disparities
     - Standardized job-leveling framework across departments
2. Stay Interviews
   - Quarterly interviews for high-risk segments
   - Add:
     - Automated risk scoring using HR analytics
   - Personalized retention plans based on interview insights

CONCLUSION

In conclusion, an HR Management Development Program is a deliberate investment in the capacities of HR professionals to meet the changing demands of modern workforce management. By providing thorough training in key HR responsibilities, leadership development, and strategic alignment, the program prepares participants with the tools to effectively contribute to company goals
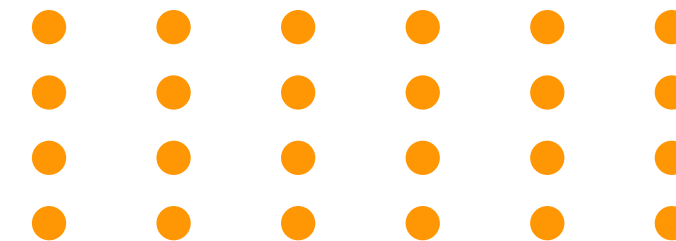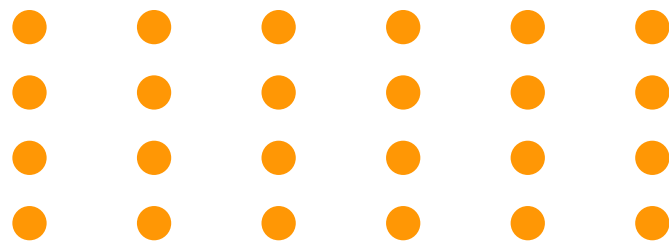
Any Questions?

THANK
YOU...

Power BI Dashboard Link

Tableau Dashboard Link