

# Data-Driven Insights: A Comprehensive Analysis of HR Data at Company X

This presentation summarizes the findings of our final project for DEPI, focusing on data analysis of HR data at Company X. The project was completed under the expert guidance of Engineer Osama Adel.

 by Azza Salam



# Project Team

Ahmed Hesham & Nada Mohamed  
Ahmed and Nada brought her expertise in data cleaning and preprocessing, ensuring the data was ready for analysis.

Azza Ali & Hala Gad  
Hala and Azza contributed his analytical skills, uncovering key trends and insights from the data.

Ahmed Abd Elfatah  
Ahmed's visualization expertise helped create clear and compelling data visualizations.

Azza Ali & Hala Gad  
Hala and Azza focused on interpreting the results, providing valuable insights and recommendations for Company X.



Made with Gamma



# Dataset Overview

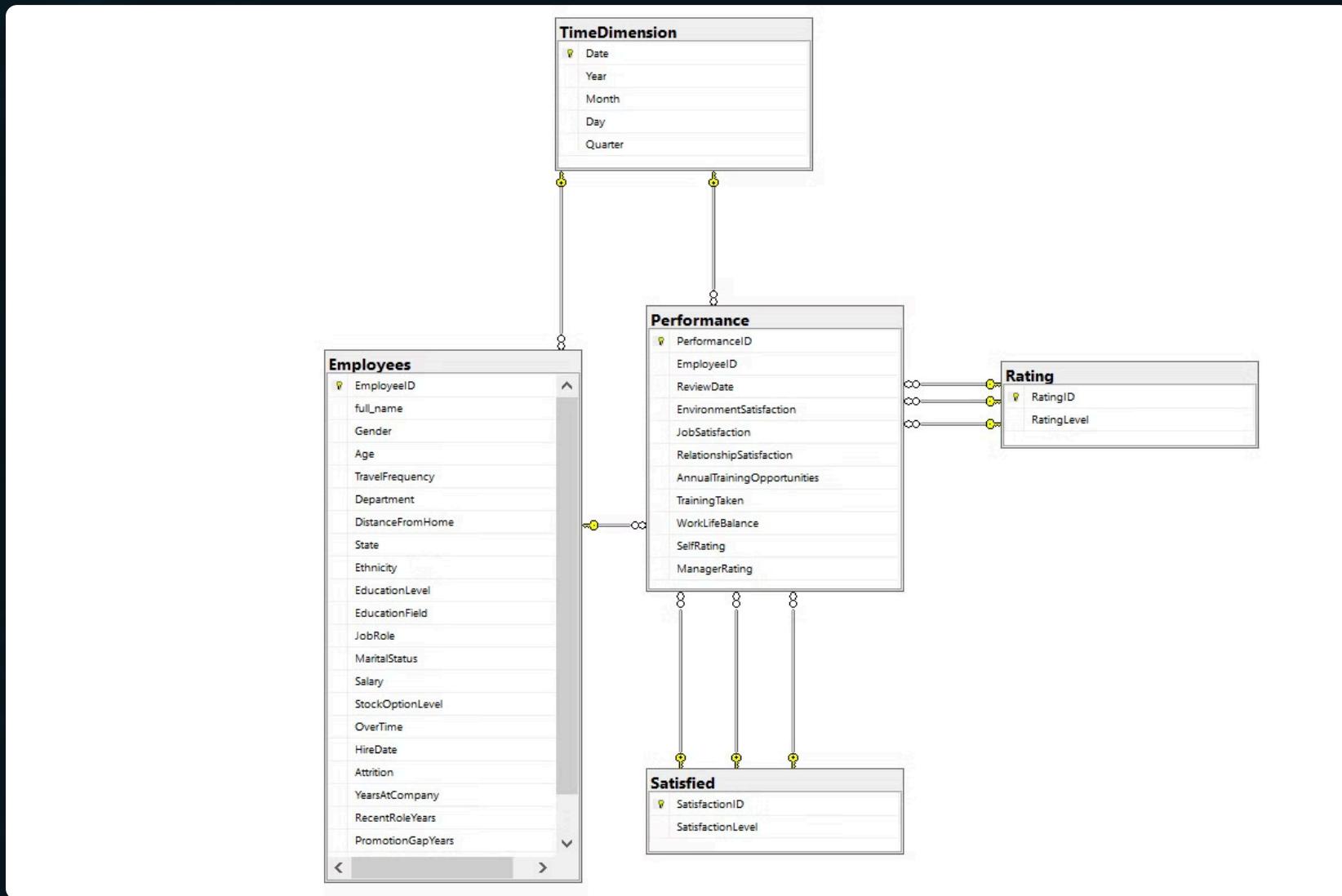
The dataset used in this analysis contains comprehensive HR-related data for employees at Company X. The dataset is structured into five interconnected tables that provide a holistic view of employee information.

# Data Cleaning: A Foundation for Accurate Analysis

Data cleaning is the first and most crucial step in any data analysis project. It ensures the data is accurate, consistent, and ready for analysis. We employed a range of techniques to address missing values, inconsistencies, and outliers in the data.



# Data Cleaning

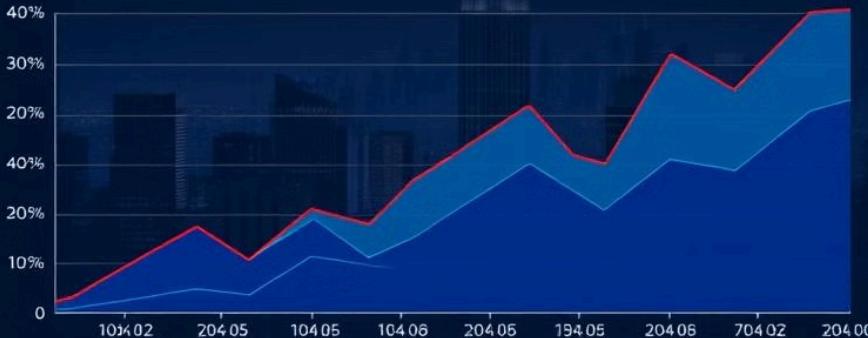


# Employee Attrition

## Employee attriates

This dashboard is designed to analyze employee attrition rates across various departments and regions. It includes a chart showing monthly attrition rates, a table of departmental statistics, and a section for further analysis.

Filter employee attrition rates in daily betteration.



# Data Analysis and Exploration

After cleaning the data, we conducted exploratory data analysis to understand the key trends and relationships within the HR data. This involved applying a variety of statistical techniques and visualization methods to uncover patterns and anomalies.

Department	Total Employees	Attrition Rate (%)	Turnover (%)	Training (%)	Retention (%)
Reliance	104,40	105%	20%	203%	265%
Reportants	632%	102%	102%	202%	202%
Noortance	202%	109%	255%	205%	229%
Delopine	293%	206%	265%	274%	101%

# Data Analysis and Exploration

```
-- Q5 :HR Executive in IL
select State,JobRole,Age,DistanceFromHome,EducationLevel,Salary,StockOptionLevel,Overtime,HireDate,YearsAtCompany from Employees
where state='IL' and JobRole='HR Executive'
order by Attrition
```

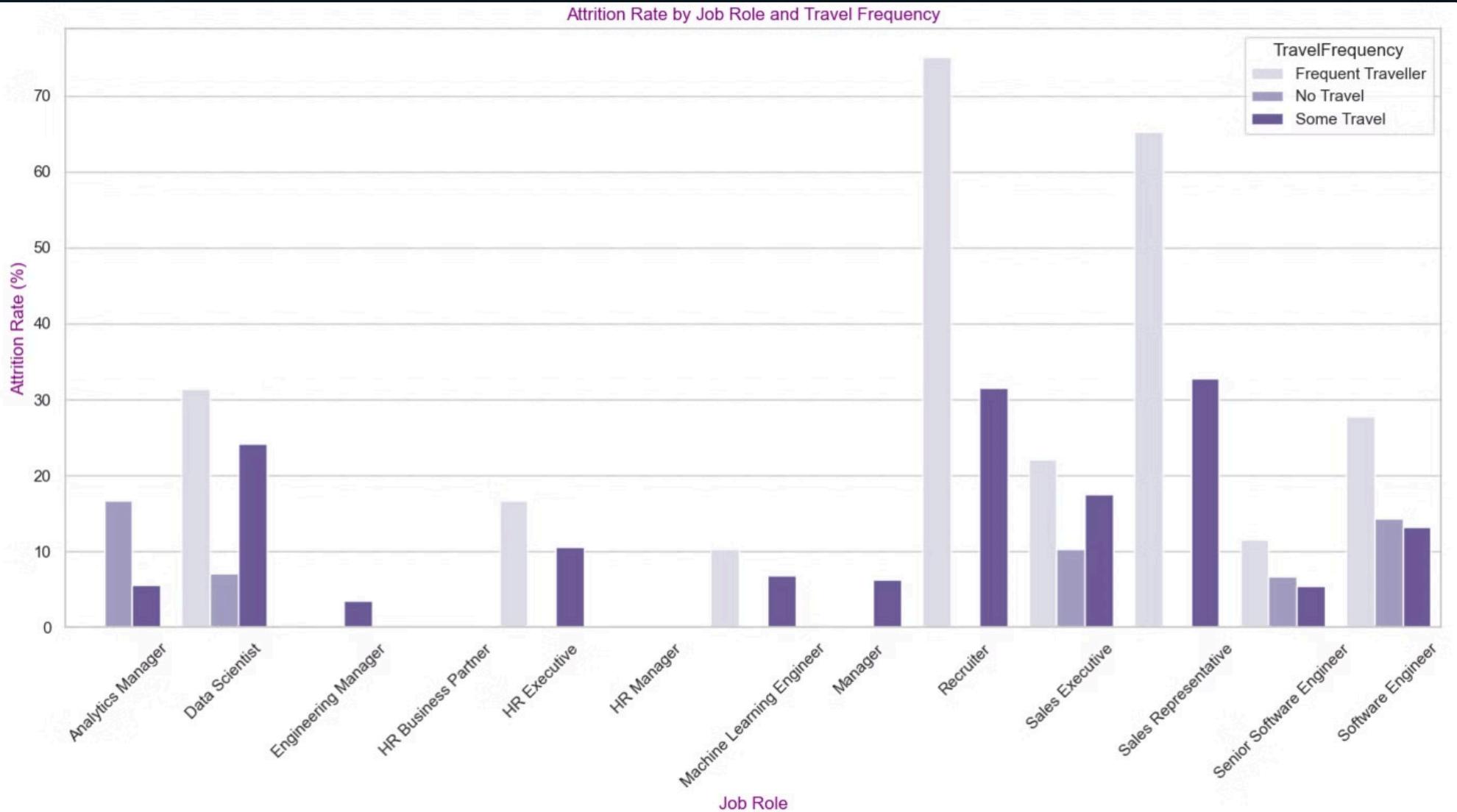
118 %

	State	JobRole	Age	DistanceFromHome	EducationLevel	Salary	StockOptionLevel	Overtime	HireDate	YearsAtCompany
1	IL	HR Executive	28	4	Doctorate	152909	1	No	2019-02-15	3
2	IL	HR Executive	24	1	Doctorate	44634	0	No	2017-04-25	4

	PerformanceID	EmployeeID	ReviewDate	EnvironmentSatisfaction	JobSatisfaction	RelationshipSatisfaction	AnnualTrainingOpportunities	TrainingTaken	WorkLifeBalance	SelfRating	ManagerRating
1	PR5213	4A0E-3728	2021-08-05	4	2	3	3	0	5	3	3
2	PR6318	4A0E-3728	2022-08-05	3	4	2	1	1	5	3	2
3	PR1504	7749-B277	2017-02-28	5	5	3	2	1	3	3	2
4	PR2142	7749-B277	2018-02-28	5	2	2	3	0	4	5	4
5	PR2877	7749-B277	2019-02-28	3	2	2	3	0	4	5	5
6	PR3731	7749-B277	2020-02-28	5	3	3	2	2	3	3	2
7	PR4709	7749-B277	2021-02-27	3	2	2	1	1	3	3	3

# Data Analysis and Exploration

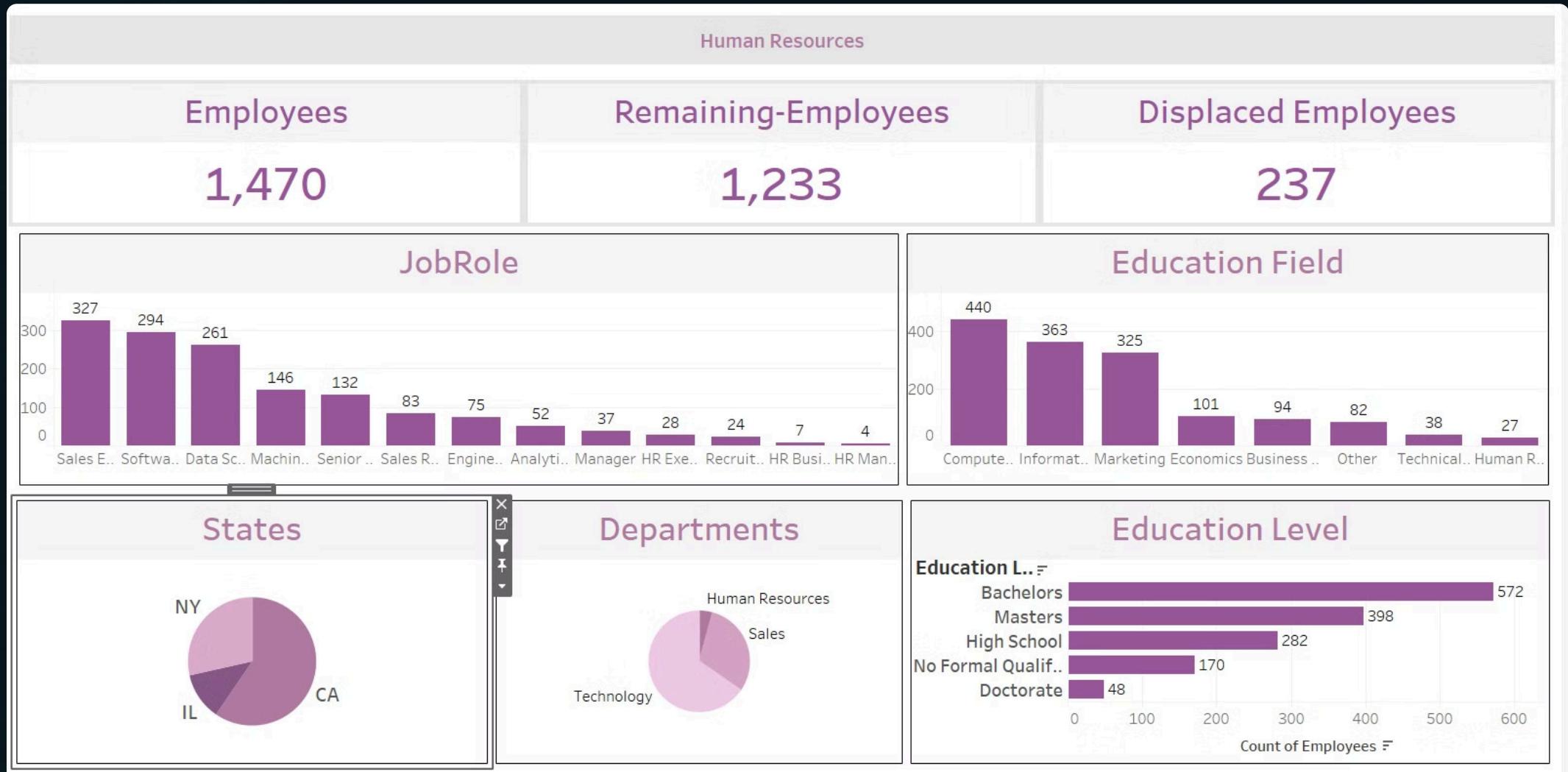




# Data Visualization: Communicating Insights Effectively

Data visualization plays a crucial role in communicating complex insights to a wider audience. We created a variety of data visualizations using charts, graphs, and dashboards to effectively present our findings.

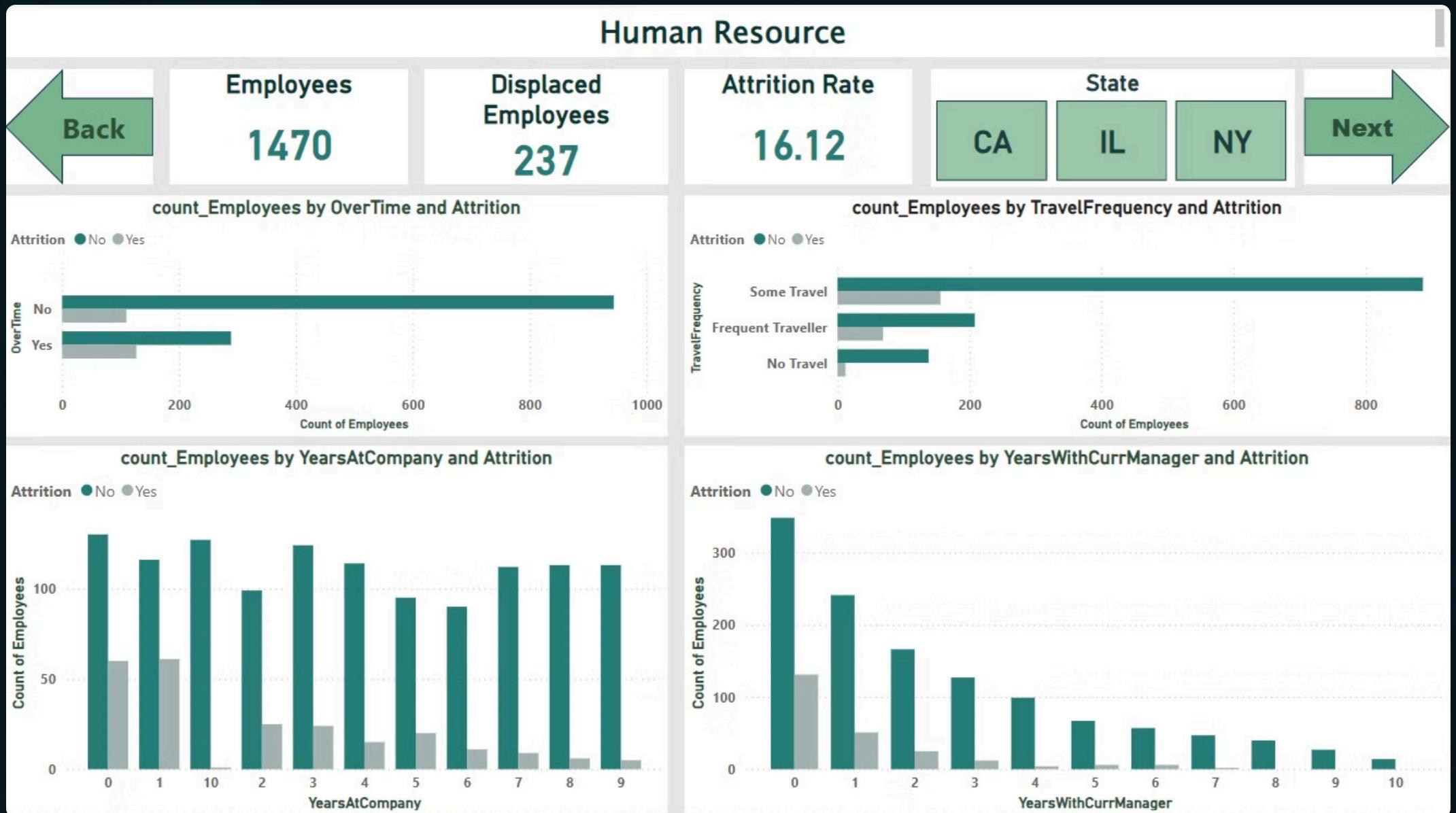
# Using Tableau



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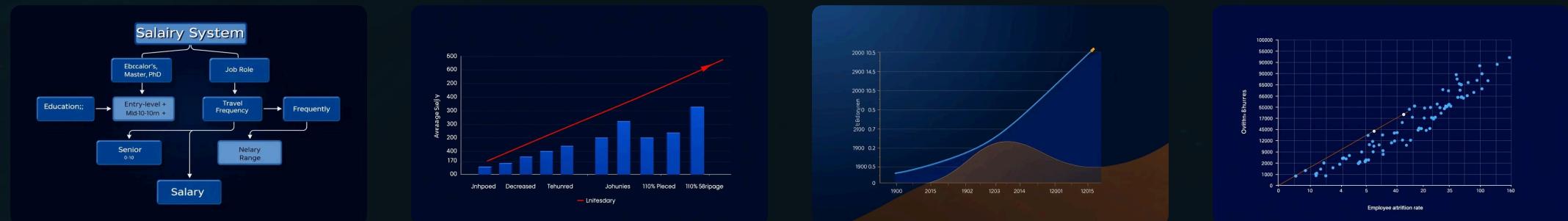




# Recommendations for Company X

Based on our analysis, we developed several actionable recommendations for Company X to improve their HR practices and reduce attrition.

# Recommendations



## Salary System

Create a system to control salary based on qualifications, education, job role, overtime, and travel.

## Increased Hiring

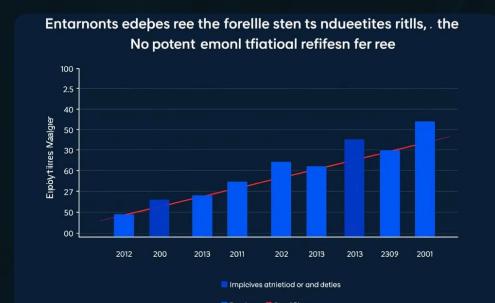
Lower average salaries allow for more hires per department.

## Stock Options

Strong correlation between tenure and stock option likelihood.

## Overtime/Travel & Attrition

Correlation between overtime, travel, and employee attrition.



## Manager Tenure & Attrition

Relationship between years with current manager and attrition.



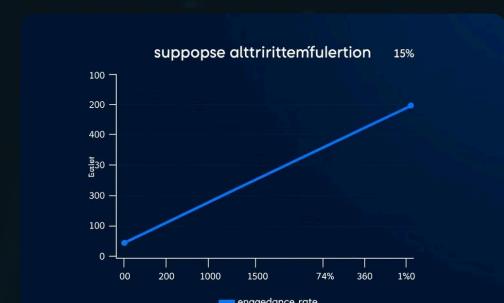
## Manager Rating & Attrition

Relationship between manager rating and attrition.



## Work-Life Balance & Attrition

Relationship between work-life balance and attrition.



## Job Satisfaction & Attrition

Relationship between job satisfaction and attrition.

# Future Directions: Expanding the Analysis

This project provided a valuable foundation for understanding HR data at Company X. Future research could expand the analysis to incorporate external factors, delve deeper into the impact of specific training programs, and explore the use of predictive models to anticipate attrition.



# Thank You

We would like to express our sincere gratitude to Engineer Osama Adel for his guidance and support throughout this project. We are confident that our findings will contribute to a better understanding of HR practices at Company X.

