



Human Resources Performance Data Analysis

(Employees Attrition Rate Report)

Presented by:
Team C - Seoul

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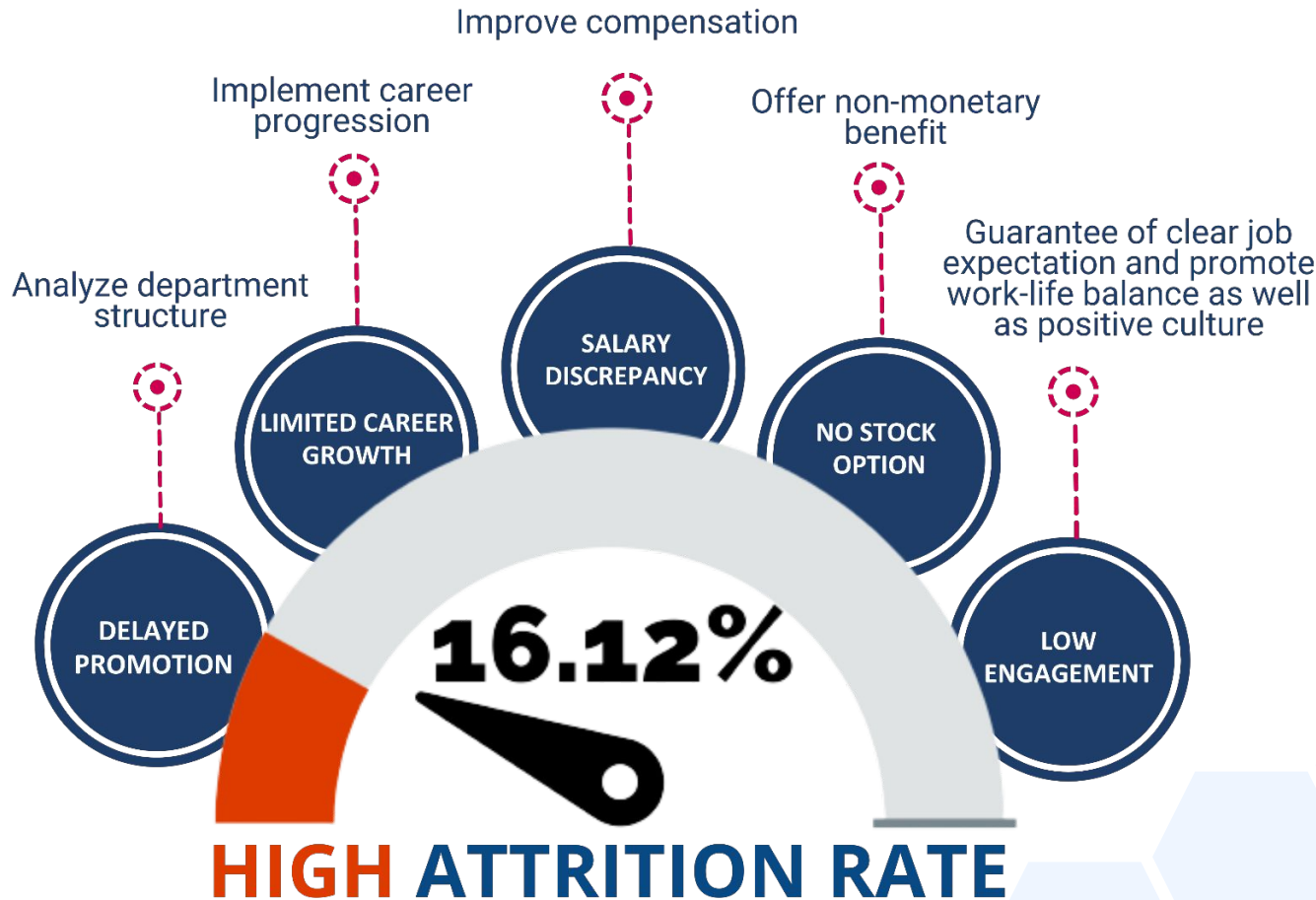
01 Executive Summary

02 Project Background (Business Overview, Problem Statement, Root Causes Analysis, Methodology & Data Collection Process, Objectives & Research Questions)

03 Data Analysis (Data Overview, Data Analysis and Insights)

04 Recommendations

– Executive Summary –



– Business Overview –



American Medical Technology Company

AI

Artificial
Intelligence



Data analytic



Cloud computing

“The company has been facing a high employee attrition rate, which raises concerns about its ability to retain top talents and maintain operational stability.”



3 Departments

HR, R&D, Sales



1470

Employees (237 have resigned)



53%

age 32-45 years old



89%

University graduates primarily majoring in medical and life sciences

– Problem Statement –

“How to **reduce the attrition rate** of the company from the current figure to about **5-10% lower** within a year by analyzing the most contributing factors and following by the suggested actions?”

– Root Causes Analysis –



Why the attrition rate is high?

VOLUNTARY

Job satisfaction level

No work life balance

Limited career growth opportunities

Low compensation and benefit

Working environment

Poor employee engagement

Poor managerial relationship

INVOLUNTARY

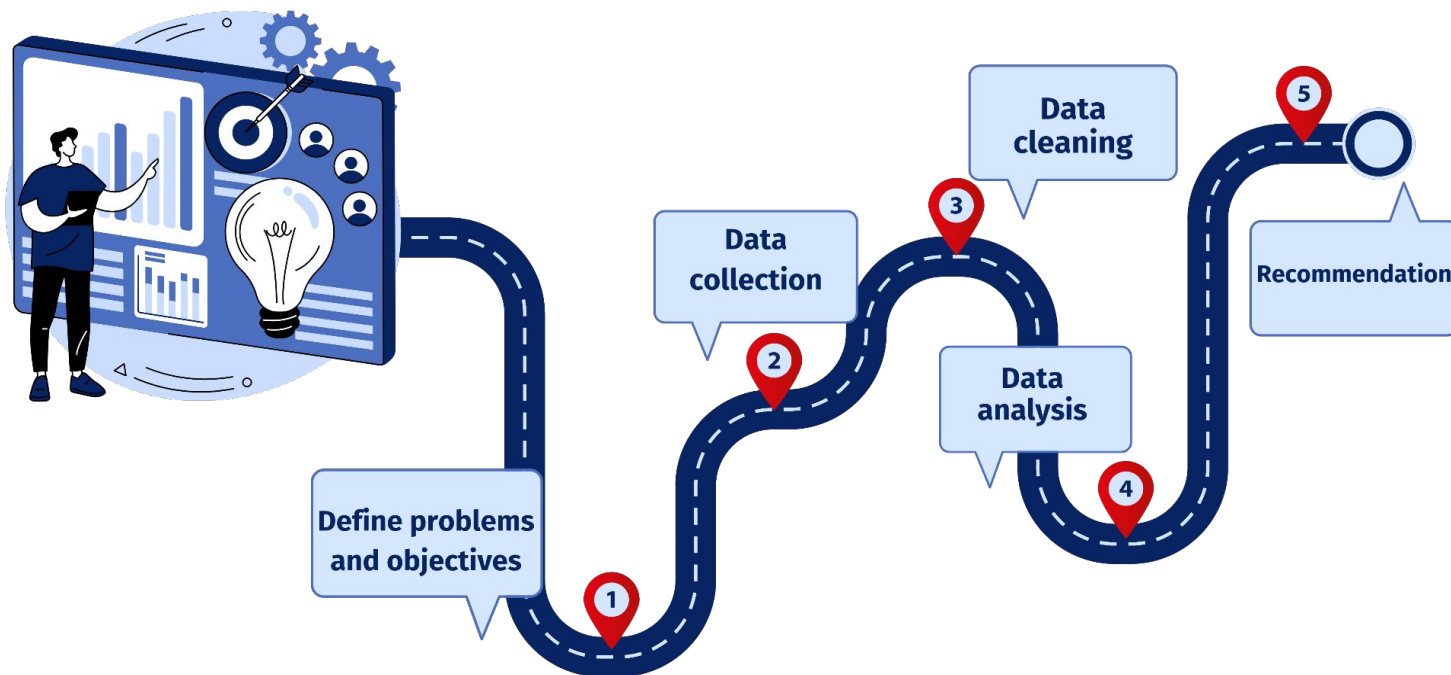
Dismissal/
Suspension

Poor work performance

Retirement

Physically weak/not productive

– Methodology –



– Project Objective & Research Questions –

“To reduce the attrition rate from the current figure to about 5-10% lower within a year.”

01

What is the current attrition rate of the company?

02

What are the key factors contributing to employees attrition?

03

What strategies to implement to lower the attrition rate of the company?

– Exploratory Data Analysis –

01 “What is the current attrition rate ?”

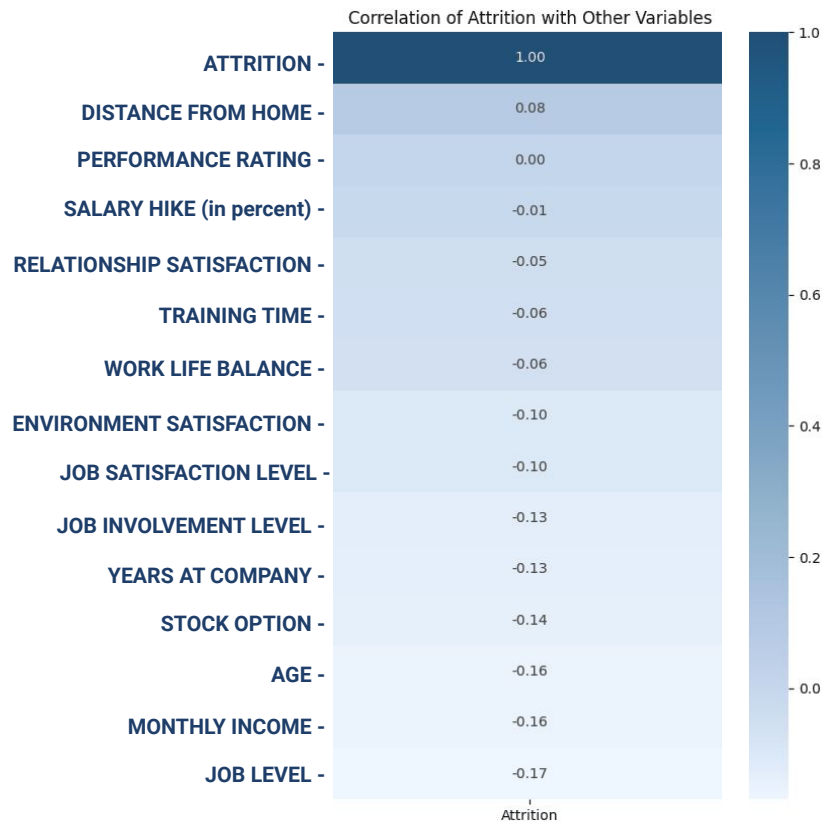
– ATTRITION DISTRIBUTION OVERVIEW –



– Exploratory Data Analysis –

02 “What are the factors contributing to the elevated attrition rate of 16.12%?”

Finding correlations between the attrition and employee's profile

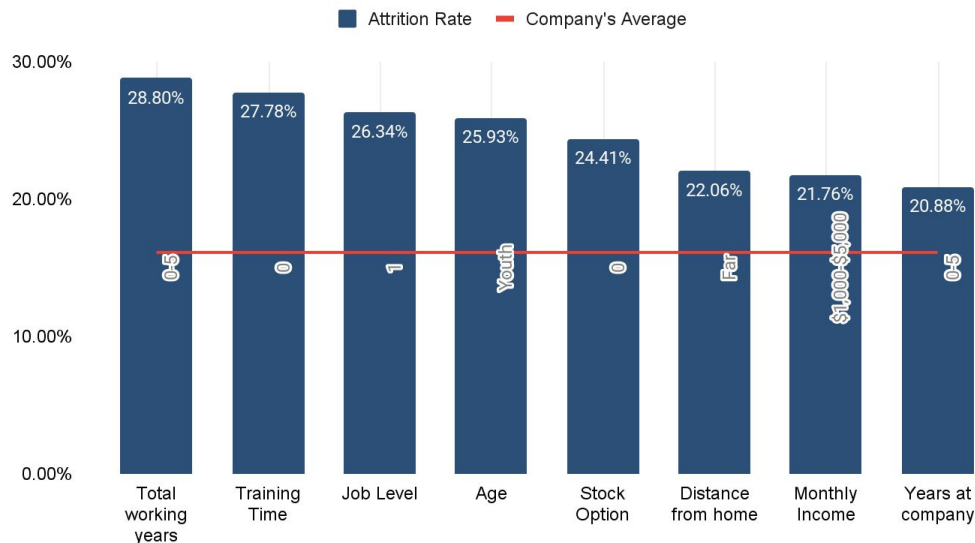


The employees' **job level**, **monthly income**, and **age** emerge as the top 3 prominent factors that influence the employee's decision **to resign from the company**.



High attrition rates are most prevalent among new and entry-level employees

Employee Groups with Highest Attrition Rate



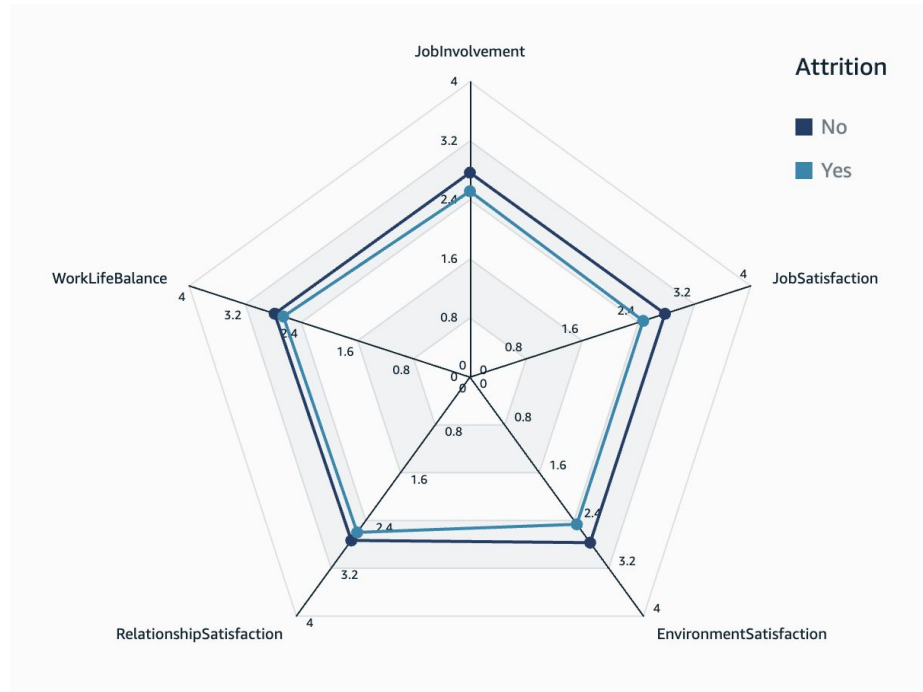
The groups with the highest attrition rates are:

- Employees with working experience between 0-5 years, suggesting they are likely early in their careers or **fresh graduates**.
- Employees who have been at the company for 0-5 years, indicating they are relatively **new to the company**
- Employees at job level 1 with 0 training time and no stock options, which is typically **entry-level positions**

Resigned employees exhibited **lower engagement levels**



Employee Engagement Level



Employees who resigned were generally **less satisfied** with their jobs, felt **less involved** in their work, were **unhappy** with their work environment and relationships, and had a **poorer work-life balance** compared to those who stay.



We're facing the risk of **high turnover rates**, particularly among **new and entry-level employees**

Current Employee Age Distribution



At present, **young employees constitute only 27% of the company's staff**, while the majority is comprised of middle-aged and older employee

If the current attrition trend continues, the company could face a **significant demographic shift**

Long term effects:

- Lack of fresh ideas and innovation
- Less adaptability to new technologies or market trends
- Challenges in succession planning



Company's **long-term sustainability** and **competitiveness** is at risk.



What we've learned so far:

01

The company's attrition rate is **relatively high** at **16.12%**.

02

This rate is particularly pronounced among **new, entry-level**, and **fresh graduate employees**, who make up **27%** of the workforce.

03

These employees often have **less than 5 years** of experience, have received **no training**, and **do not have stock options**.

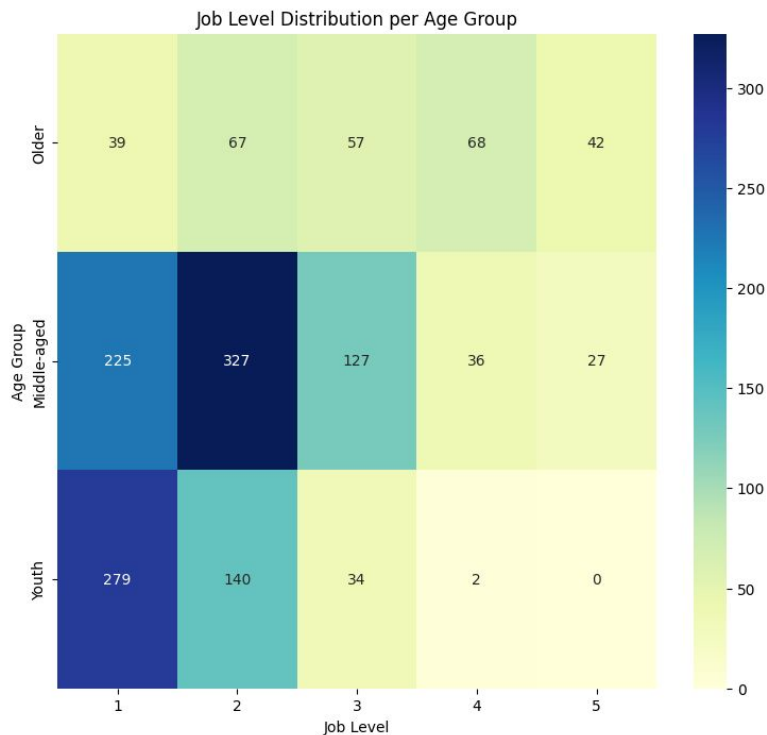
04

The resigned employees tend to report **lower engagement levels**, including lower job satisfaction, job involvement, work environment satisfaction, relationship satisfaction, and work-life balance.

– Exploratory Data Analysis –

03 “What strategies can we implement to reduce the attrition rate?”

Could issues related to **job levels** be contributing to decreased levels of **job satisfaction**?

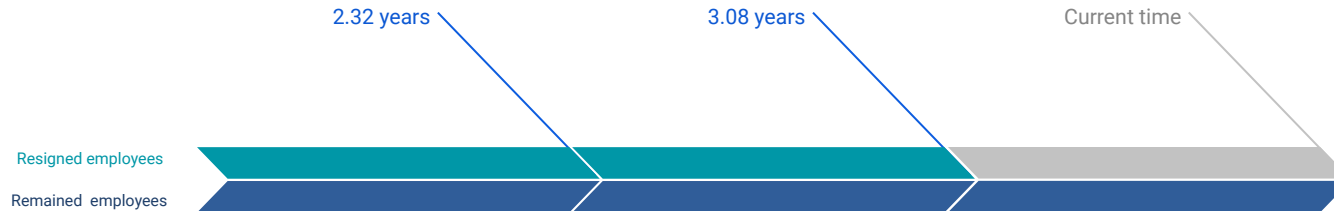


The distribution of employee job levels appears to be clustered in low-level jobs, with a majority of **younger and middle aged employees** occupying **job levels 1 and 2**.



Could issues related to **job levels** be contributing to decreased levels of **job satisfaction**?

A notable difference emerges when comparing the **time to promotion** between employees who resigned and those who remained with the company.



Potential issue of **late promotion timing** or even **lack of career growth opportunities**.

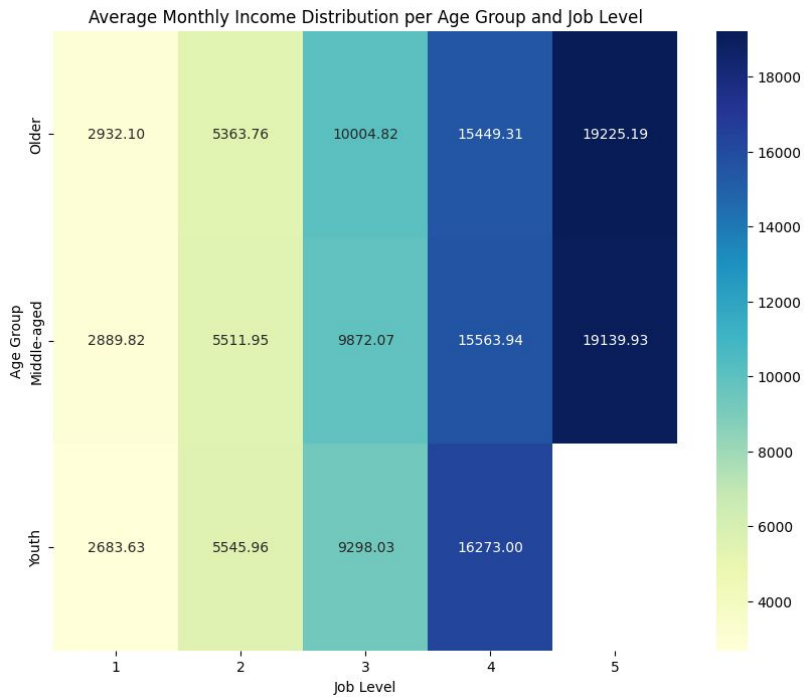
Promotion Time

Employees who stayed with the company were promoted from job level 1 after a tenure of 2.32 years

Resign Time

Employees at job level 1 who did not receive a promotion tended to resign after a working period of 3.08 years

Could the **level of income** also be a factor influencing the **job satisfaction level**?

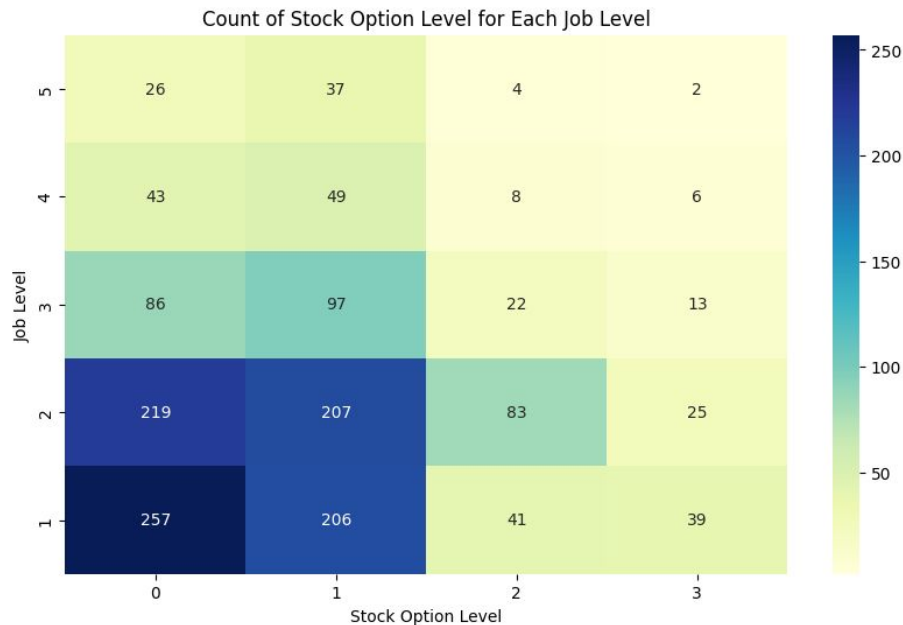


Within the organization, the distribution of salary structures is equitable across different job levels.

There could be a **potential discrepancy with the market rate**, suggesting **our compensation may be below the industry standard**.



The absence of stock options could potentially contribute to diminish job satisfactions.



47.33% employees at job level 1 **do not possess stock options.**

On the other hand, our additional analysis indicates that employees with a **stock option level of 1** are **less prone to resignation**, with an attrition rate of **9.40%** compared to **24.41%** for those without stock options

– Recommendations –

Problems

- Late promotion timing
- Lack of career growth opportunities



Proposed Strategy

- Department Structure Analysis
- Structured Career Progression Plan

Plan Details

- **Structure Analysis:** Evaluate current department structure for insights.
- **Roles and Filling:** Assess roles across levels and their occupancy.
- **Promotion Opportunities:** Examine higher-level roles' availability.
- **Action Plan:** Address limited growth with new roles, restructuring, or lateral moves.
- **Career Progression:** Develop transparent path from job level 1 to beyond.

– Recommendations –

Problems

- Potential salary discrepancy with market rates
- Absence of Stock Option benefits for employees at lower levels



Proposed Strategy

- Increase compensation for lower-level Jobs
- Providing non-monetary benefits

Plan Details

- **Market Analysis:** Evaluate company salary competitiveness against market rates.
- **Base Salary Boost:** Prioritize raising base salary for new and level 1 employees.
- **Stock Options:** Provide stock options, particularly for level 1 employees.
- **Allocation and Vesting:** Define share allocation, vesting terms, and plan specifics.

– Recommendations –

Problems

- Low Working Environment Satisfaction
- Work Life Balance level



Proposed Strategy

- Promote Work-Life Balance
- Positive Company Culture

Plan Details

- **Flexible Work Solutions:** Introduce flex hours, remote options, and childcare aid.
- **Wellness Focus:** Advocate for breaks, vacation use, and employee self-care.
- **Communication and Recognition:** Foster open dialogue, celebrate accomplishments, and teamwork.
- **Team Cohesion:** Organize frequent team-building for a positive, collaborative atmosphere.

– Recommendations –

Problems

- Low Job Involvement level



Proposed Strategy

- Provide Clear Job Descriptions and Expectations

Plan Details

- **Role Clarity:** Define roles, responsibilities, and their impact on company goals.
- **Inclusive Decision-Making:** Engage employees in decisions through team meetings and feedback.
- **Continuous Learning:** Offer regular training to enhance professional skills.

Dashboard

by Looker



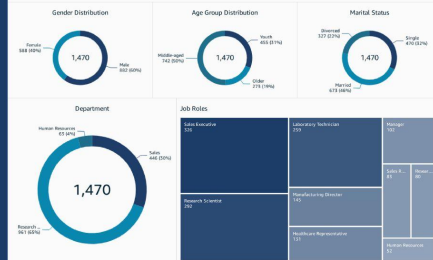
– Dashboard –

by Amazon
Quicksight

Employee Monitoring Dashboard

General Overview and Employee Engagement Level

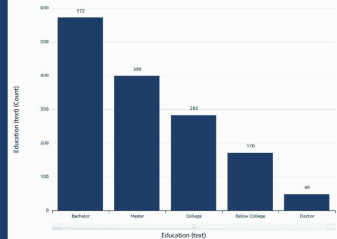
Demographical Overview



Employee Engagement



Employee Education Level



Average of Age

36.92

Average Working Experience

11.28

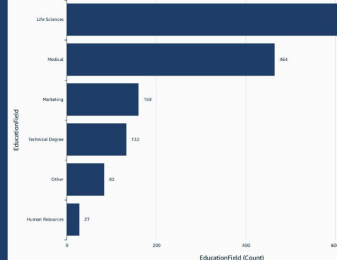
Average Working Years at IBM

7.01

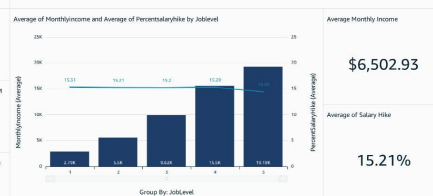
Average Distance from Home

9.19

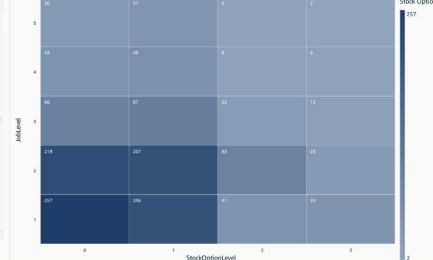
Employee Education Background



Compensation and Benefits



Stock Options Distribution by Job Level



Showing
Attrition
Retention
Age Group
Job Level
Stock Option Level



THANK YOU

– Additional Links –

Python: [Correlation Matrix](#) , [EDA](#)

Looker: [Dashboard Employees & Attrition Performance](#)

Amazon Quicksight: [Employee Monitoring Dashboard](#)

Aspects	Proposed Strategies	Priority	Cost	Expected Cost Details	Outcome
Job Level	Department Structure Analysis	High	Low	This would require time to gather and analyze the data, but it's a low-cost strategy	Increase in job satisfaction, lower attrition rate
Job Level	Structured Career Progression Plan	Medium	Low	This would require time and resources to develop the plan and communicate it to employees, but it's a one-time cost.	Increase in job satisfaction, lower attrition rate
Income Level	Increase Compensation for Lower-Level Jobs	High	High	The costs will be associated with conducting the market rate analysis and potentially increasing salaries	Increase in job satisfaction, lower attrition rate
Income Level & Stock Option	Provide Stock Options to Employees	High	High	This would require a significant financial commitment from the company. The company will need to set aside a portion of its equity for the stock options plan, which could dilute the ownership of existing shareholders. There will also be administrative costs associated with managing the plan and providing ongoing support to employees.	Increase in job satisfaction, lower attrition rate
Working environment satisfaction, work life balance	Promote Work-Life Balance and Positive Company Culture	Medium	Low	Some costs may be involved in setting up remote work infrastructure, providing childcare support, team-building activities or recognition programs	Increase in working environment and work-life balance level, lower attrition rate
Job Involvement	Provide Clear Job Descriptions and Expectations	Medium	Low	This primarily involves time and open communication	Increase in job involvement level, lower attrition rate

– Appendices –

	p-value	Significant
Job Level	6.795385e-11	True
Monthly Income	7.147364e-10	True
Age	8.356308e-10	True
Stock Option	1.301015e-07	True
Years at company	2.318872e-07	True
Job Involvement Level	5.677065e-07	True
Job Satisfaction Level	7.043067e-05	True
Environment Satisfaction	7.172339e-05	True
Distance from home	2.793060e-03	True
Work Life Balance	1.421105e-02	True
Training Time	2.257850e-02	True
RelationshipSatisfaction	7.871363e-02	False
Salary Hike (in percent)	6.056128e-01	False
Performance Rating	9.118840e-01	False