Employee HR Data Analysis for Effective Workforce Management

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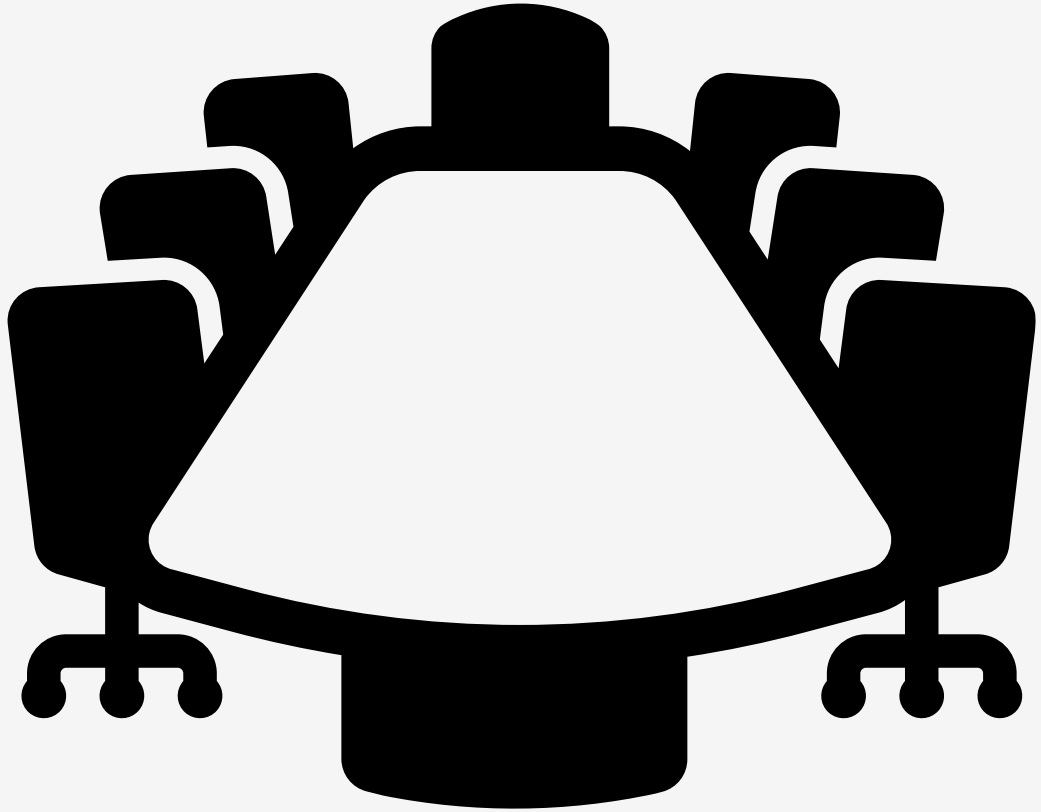
EXECUTIVE SUMMARY

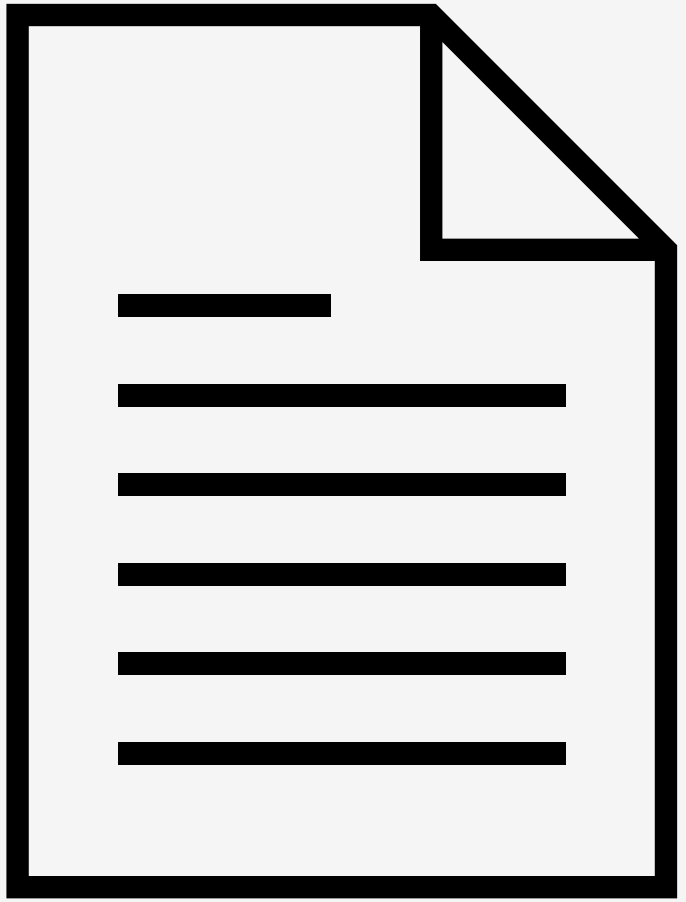
- Analyzed a dataset of 6,820 employee entries detailing demographics, salaries, performance ratings, and job roles.
- Key observations include:
  - Performance rating shows a weak correlation with salary.
  - Notable differences in average salaries among departments.
  - Significant gender and educational disparities in salary distribution.



INTRODUCTION

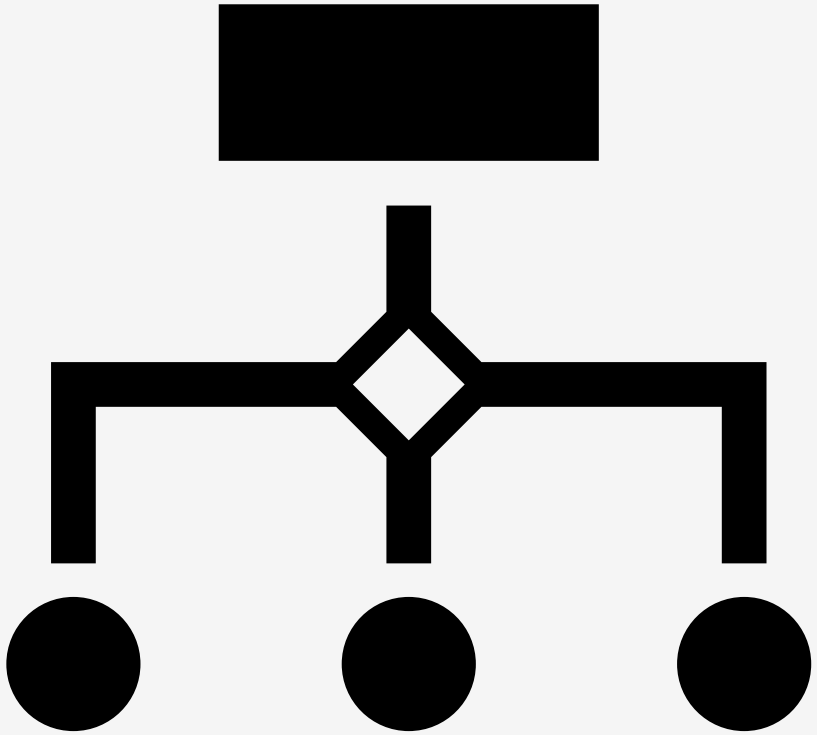
- Purpose: To evaluate the employee dataset to understand workforce demographics, performance ratings, and salary distributions.

- Importance: Insights from this analysis can inform HR policy, recruitment, and retention strategies.



METHODOLOGY

- Simulated real-world HR dataset cleaned and standardized to ensure accuracy.
- Statistical analysis including correlation studies and salary comparisons by department and role.
- Visualization of hiring trends, employee demographics, and performance ratings.
- Comparative analysis of performance ratings across departments and educational levels.

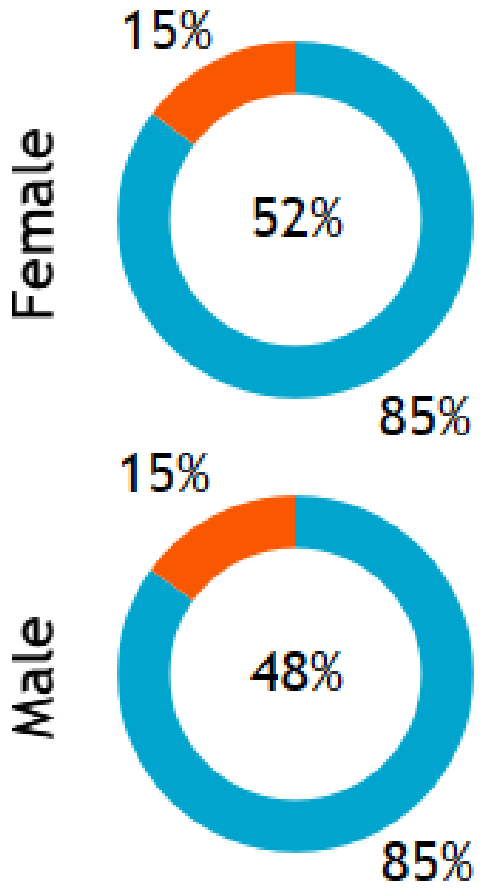


RESULTS

Employee Composition:

- Active Employees: 5,801 (85.06%), Terminated Employees: 1,019 (14.94%)

- Gender Distribution: Slightly higher female representation (3,049) than male (2,752)



Salary Insights:

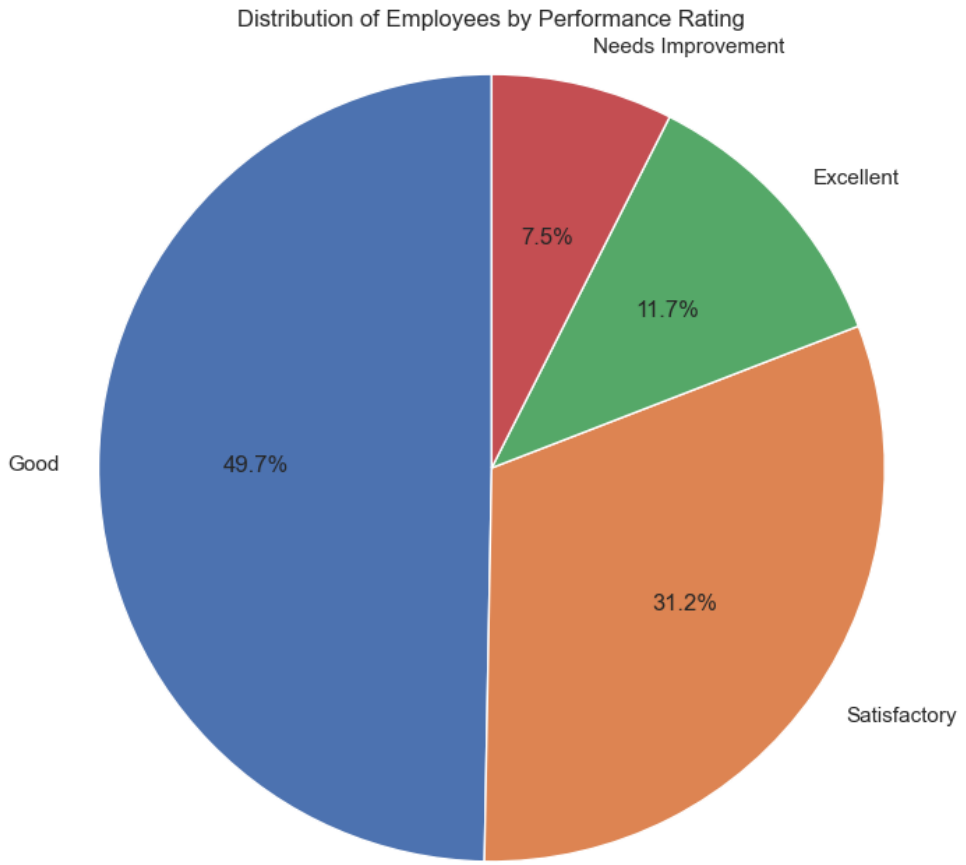
- Average Salaries by Department:
  - IT: $82,129
  - Finance: $77,424
  - Sales: $75,730
  - Marketing: $67288
  - Customer Service: $65,667
  - HR: $65,492
  - Operations: $64,538
- Significant variances observed in salaries based on education level and gender.

Job Title	Salary
Finance Manager	$126,316
IT Manager	$121,784
Sales Manager	$112,187
Marketing Manager	$102,353
Operations Manager	$94,942
Software Developer	$92,848
HR Manager	$89,146
Customer Service Manager	$87,468
Sales Consultant	$85,564
Financial Analyst	$85,430
System Administrator	$85,320
Sales Specialist	$76,047
Accountant	$74,203
Operations Analyst	$73,324
SEO Specialist	$72,369
Help Desk Technician	$72,369
Sales Representative	$67,787
Recruiter	$67,728
Marketing Coordinator	$67,283
HR Assistant	$62,190
HR Coordinator	$62,130
Logistics Coordinator	$62,122
Accounts Payable Specialist	$61,736
Content Creator	$61,518
Customer Service Representative	$61,447
Support Specialist	$61,340
IT Support Specialist	$61,251
Inventory Specialist	$61,164

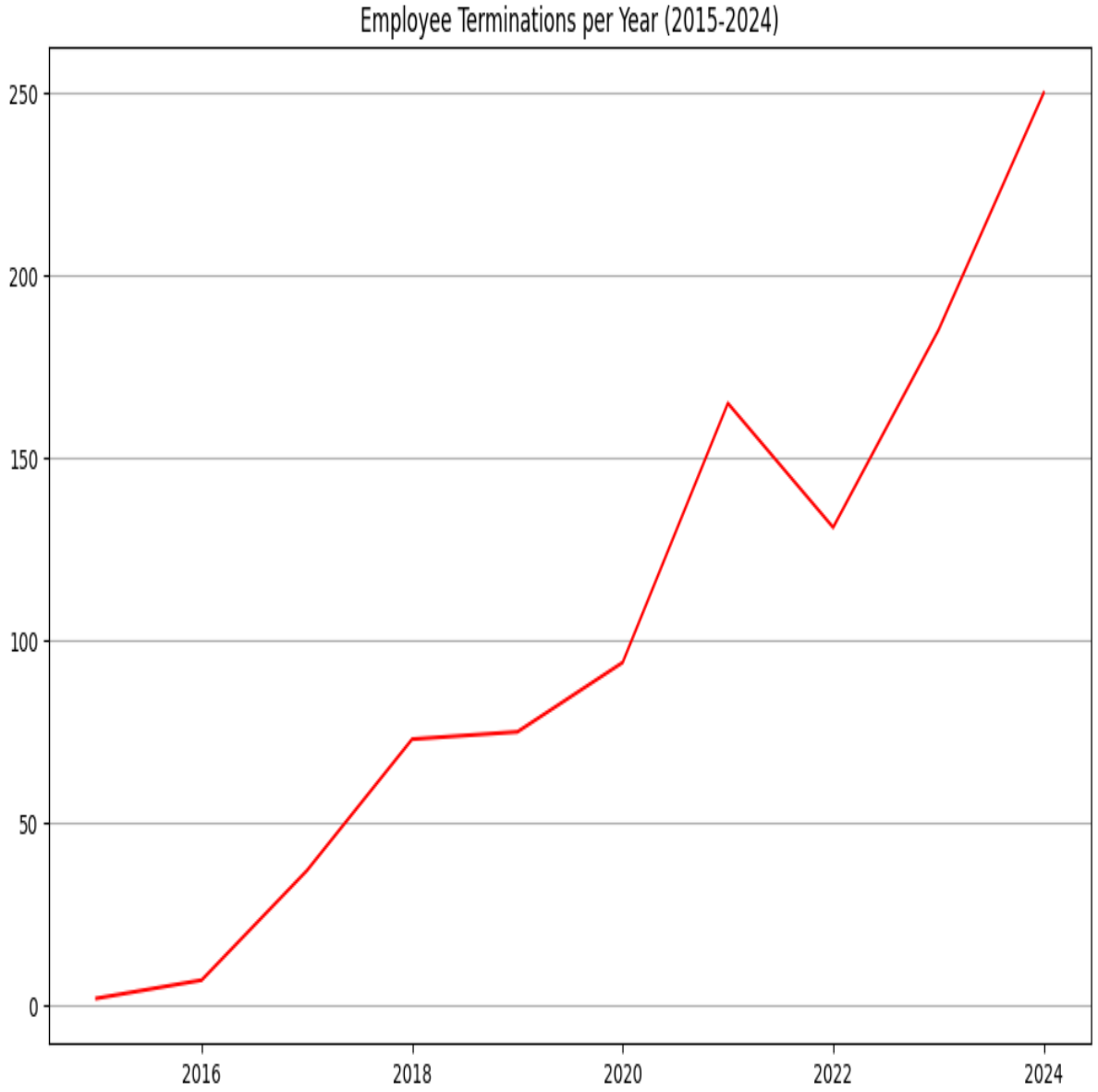
Performance Ratings:

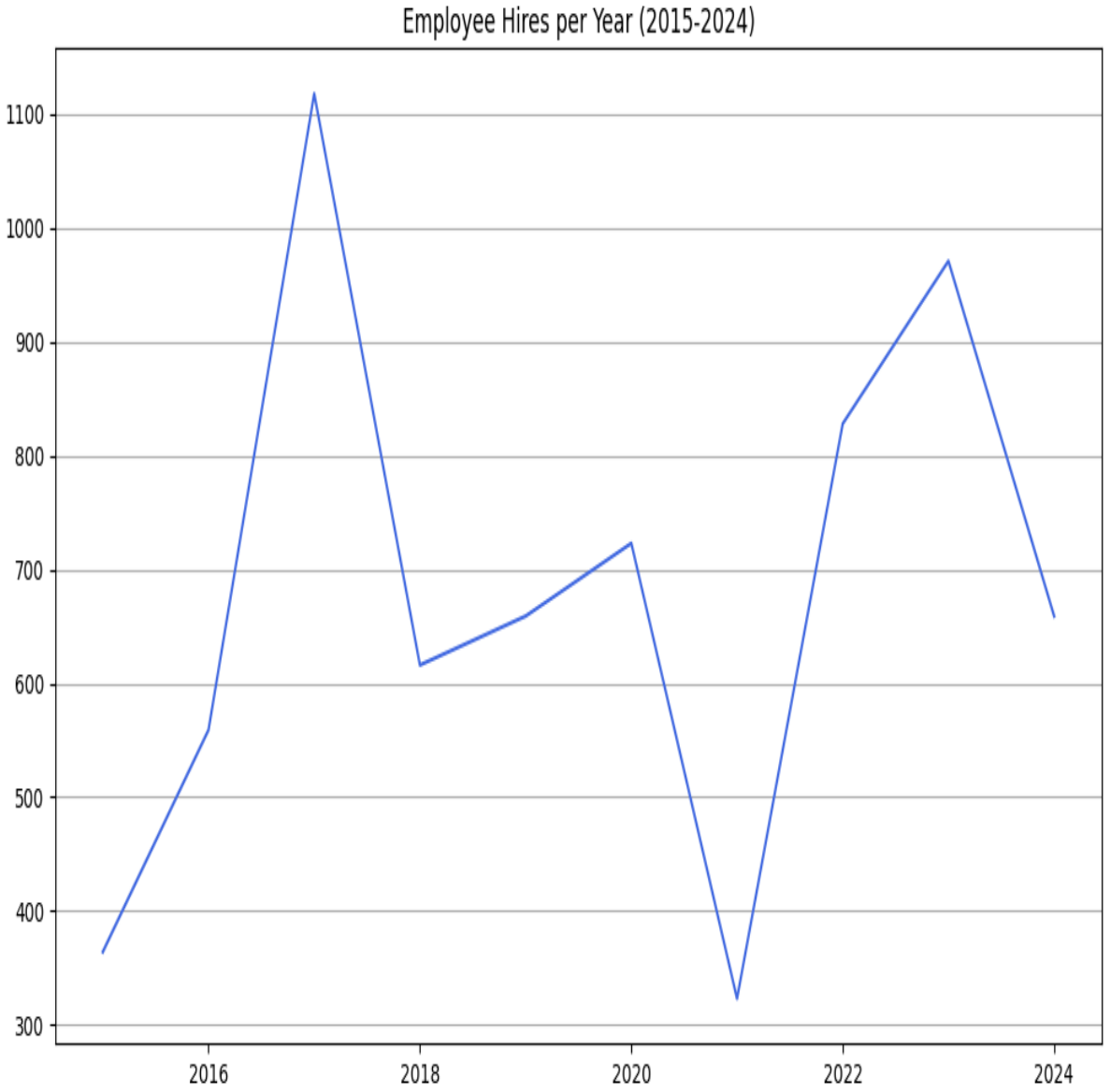
- Majority (approximately 50%) rated 'Good'; 7.5% 'Needs Improvement.'

- Performance ratings bridge no significant salary gaps across departments or gender.



Terminations and Hires

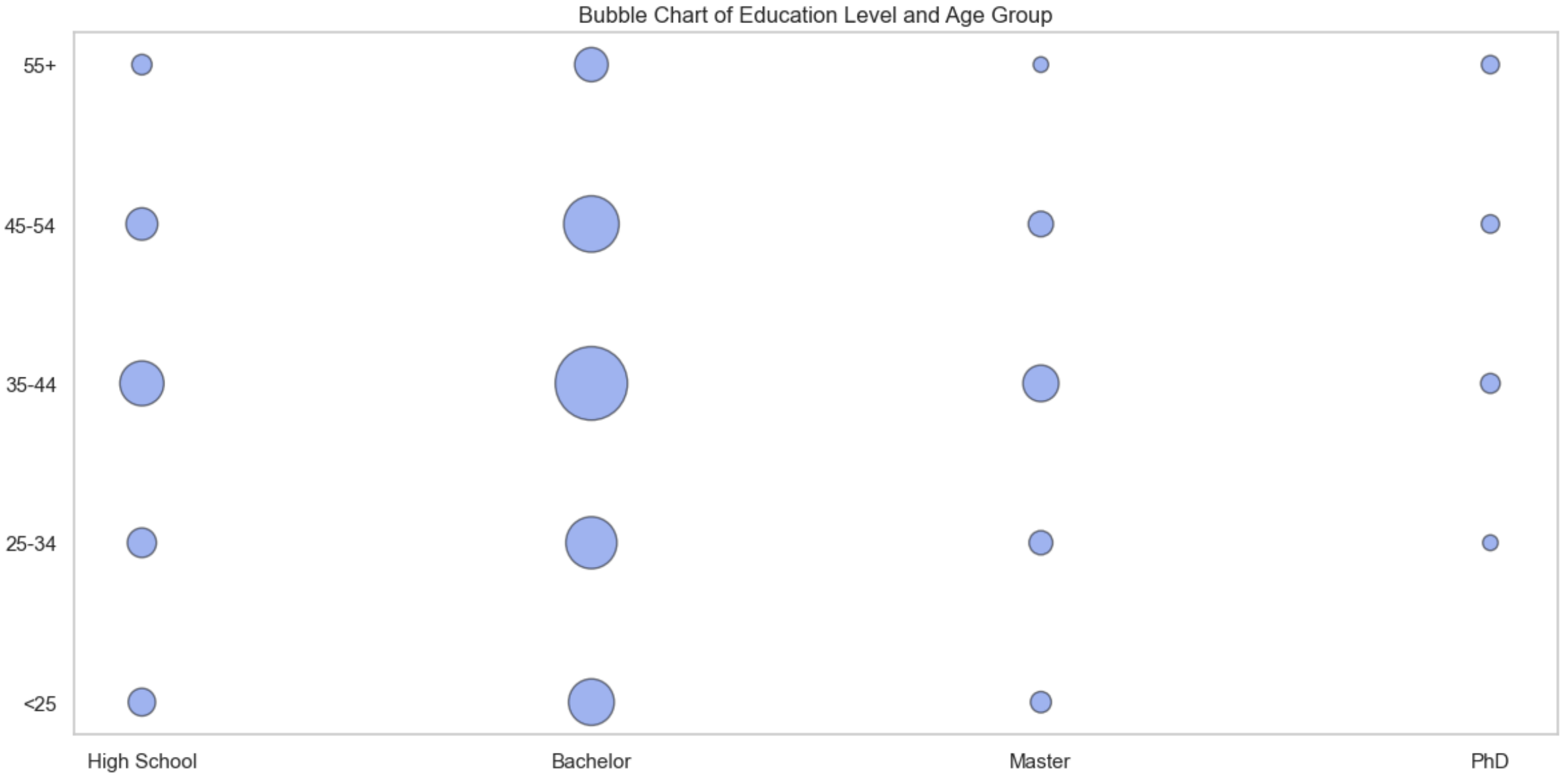




Terminations and Hires – Findings and Implications

- While termination rates are consistent with departmental sizes, an upward trend continues.
- A reassessment of retention strategies is crucial to mitigate risks associated with employee shrinkage.
- Peak hiring year: 2017; Low in 2021; Sideways trend in hiring.
- Management and allocation of resources must be reassessed to ensure future employment growth.

Educational Impact



Educational Impact – Findings and Implications

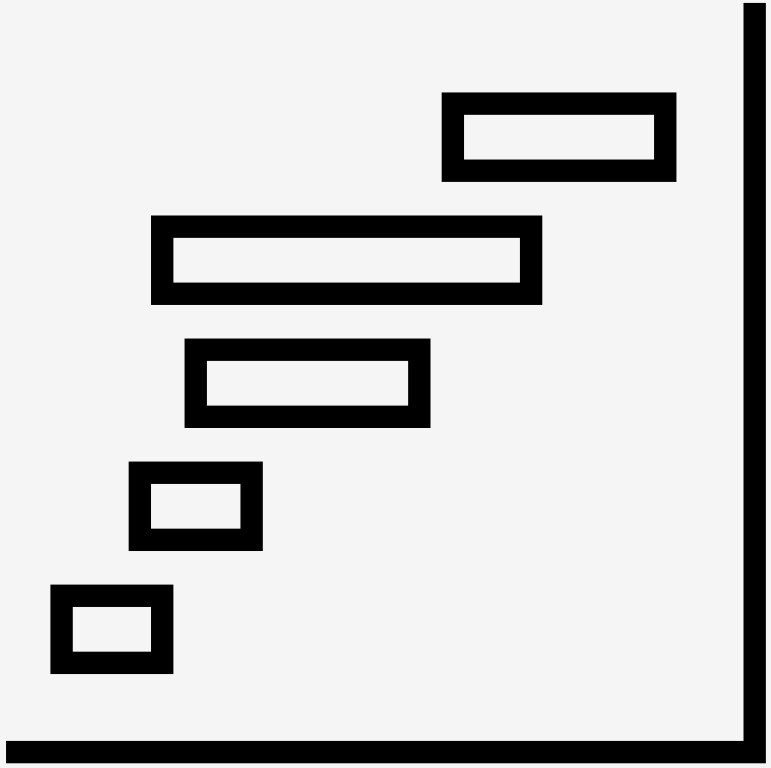
- Bachelor's holders dominate across age groups (especially 35-44, accounting for 23%)
- Men tend to earn more with a high school diploma or bachelor's degree, while women earn more in the master's and doctoral levels.
- There is a need to filled skilled roles necessitating potential improvements in recruitment tactics
- A significant salary difference based on gender highlights an underlying issue of pay equity

DASHBOARD

Human Resources Interactive

Tableau Dashboard

https://public.tableau.com/app/profile/alexander.porter3156/viz/HR_Dash_17305853475990/HRSummary



DASHBOARD | SUMMARY

Human Resources Dashboard | Summary

Filter

Dash

Info

Export

Follow

Overview | Click item to filter

Terminated
Hired

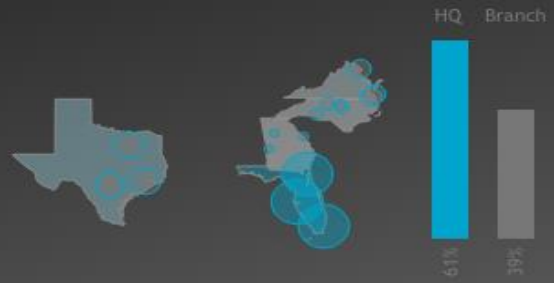
Active Employees

5,801

Terminated	Hired
1,019	6,820

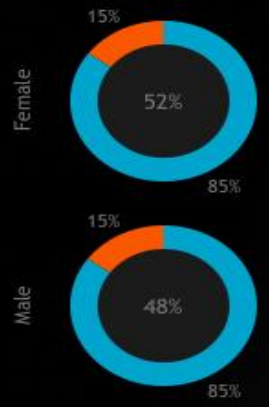
Departments

Location



Demographics | Click item to filter

Gender



Education & Age

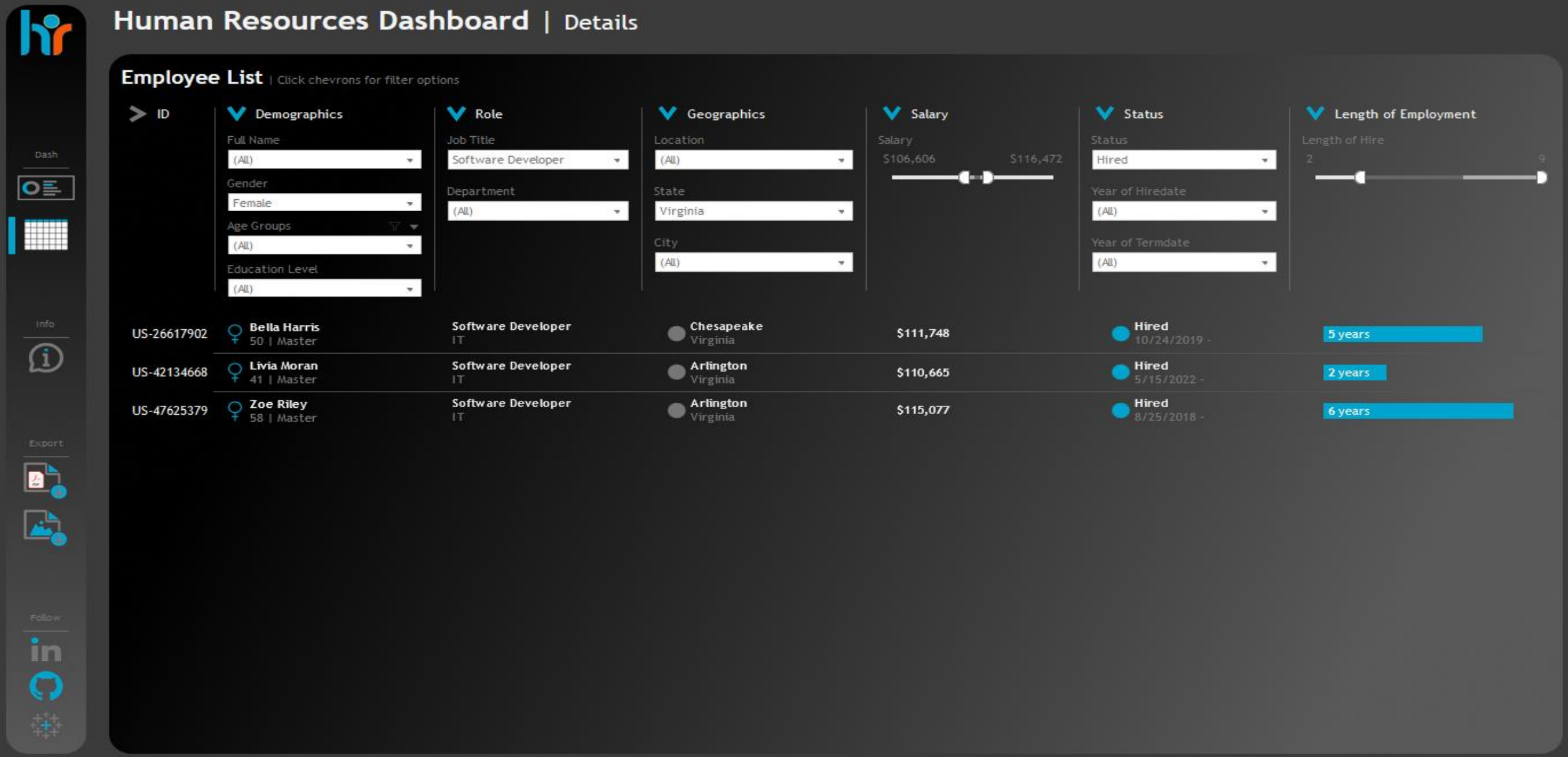
Education & Performance

Income | Click item to filter

Education & Gender

Age & Salary

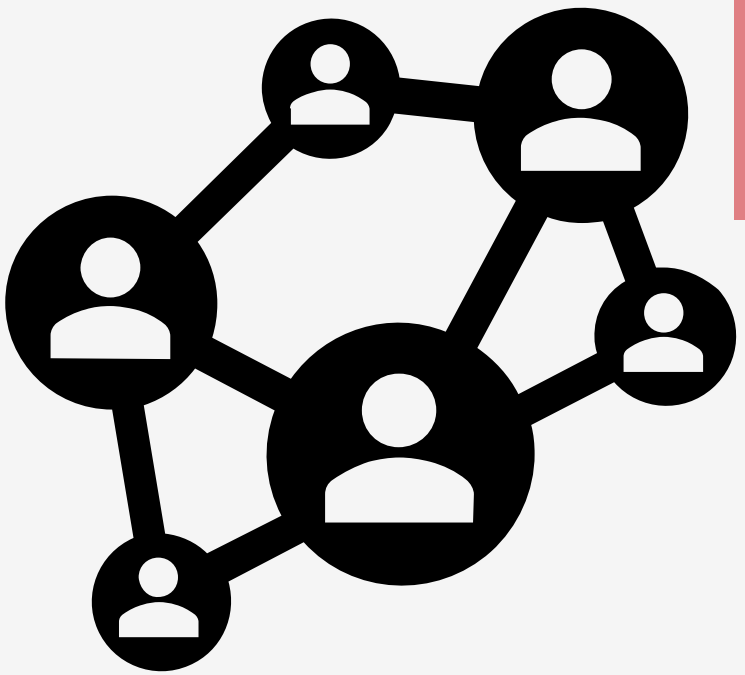
DASHBOARD | DETAILS



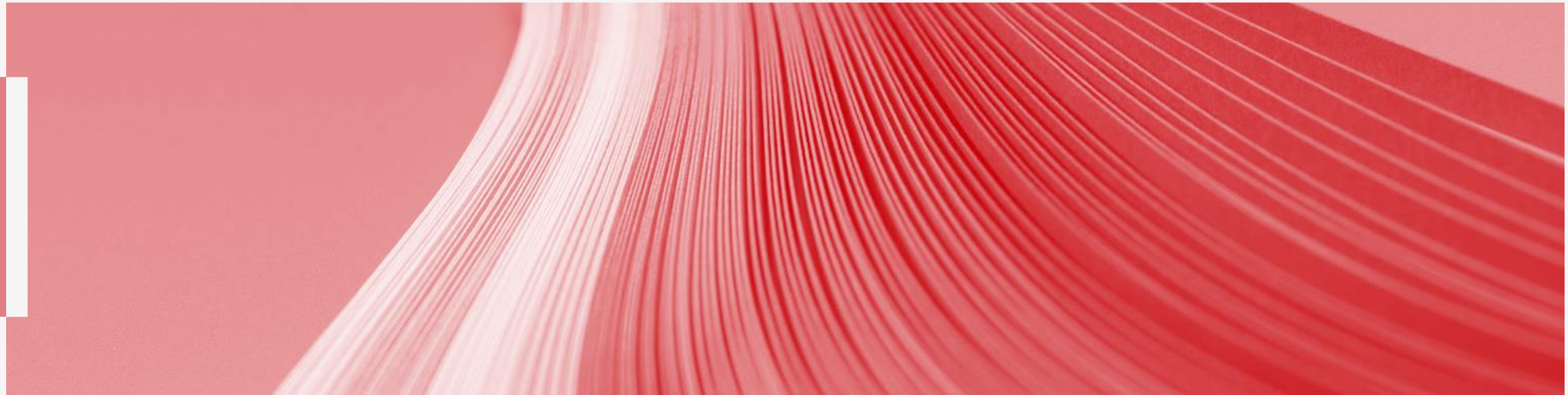
Conclusion

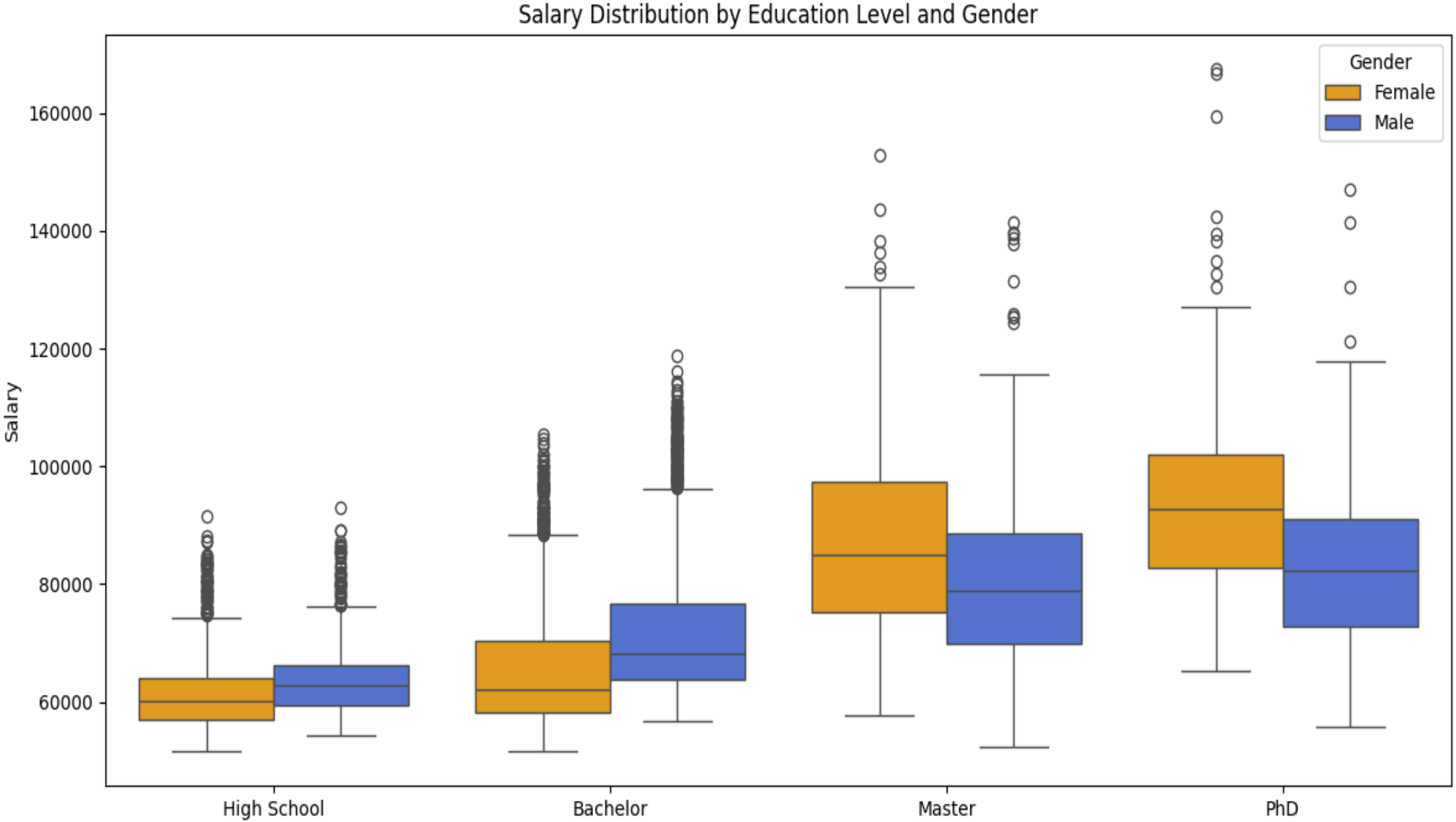
ACTIONALBLE INSIGHTS

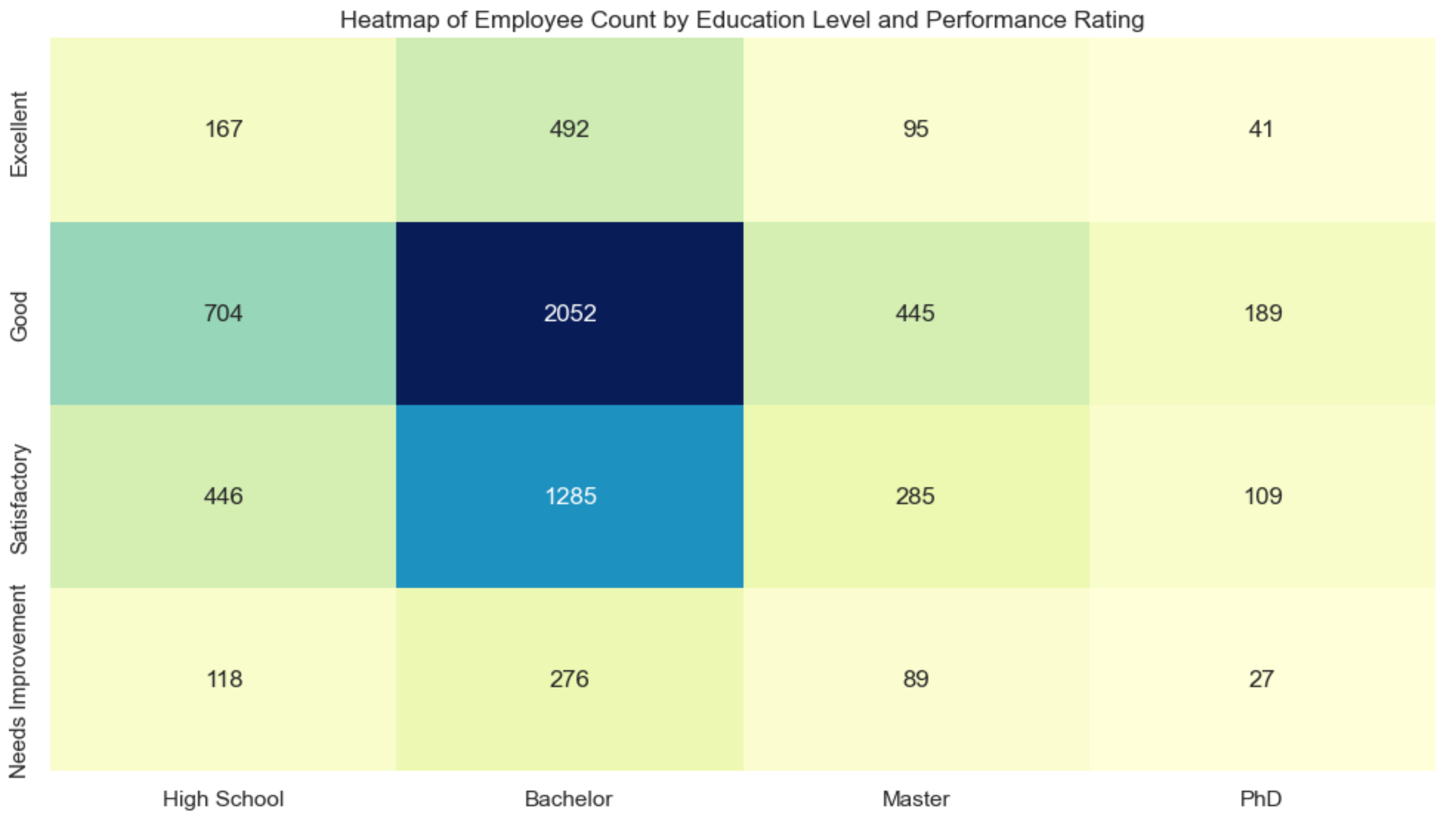
- Companies seeking to attract top talent should immediately bridge gender pay disparities which will boost morale, retention, and corporate reputations
- Companies should create salary-based incentives tied to performance across departments, thereby enhancing overall employee performance ratings and workforce quality
- Organizations should emphasize developmental programs to foster higher qualifications among employees as educational attainment plays a crucial role in salary scales
- Organizations facing multiyear growth in termination rates need to conduct further investigation into workplace satisfaction and retention strategies



APPENDIX




Salary Distribution by Education Level and Gender
Gender
Female
Male
Salary
160000
140000
120000
100000
80000
60000
High School
Bachelor
Master
PhD


Heatmap of Employee Count by Education Level and Performance Rating
Excellent
Good
Satisfactory
Needs Improvement
167
492
95
41
704
2052
445
189
446
1285
285
109
118
276
89
27
High School
Bachelor
Master
PhD