



4WARD THINKERS

DATA ANALYSIS FOR BUSINESS

IN TODAY'S HIGHLY COMPETITIVE BUSINESS ENVIRONMENT, INFORMED DECISION-MAKING IS ESSENTIAL FOR LONG-TERM SUCCESS.



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ABC CORPORATION

SCOPE OF WORK

Client: ABC Corporation

Founded in 1980 in California, ABC Corporation is a tech consultancy specializing in AI and machine learning solutions. Their multidisciplinary team delivers customized, cutting-edge tools to optimize business processes.

Recent Projects:

- Built an intelligent recruitment platform to automate CV analysis, rank candidates, and recommend top talent.
- Currently collaborating on a data analysis project to identify key factors impacting job satisfaction and employee retention.

Amanda Hernandez



H.R.
Scrum Master 1
Digital Acc Mngr.

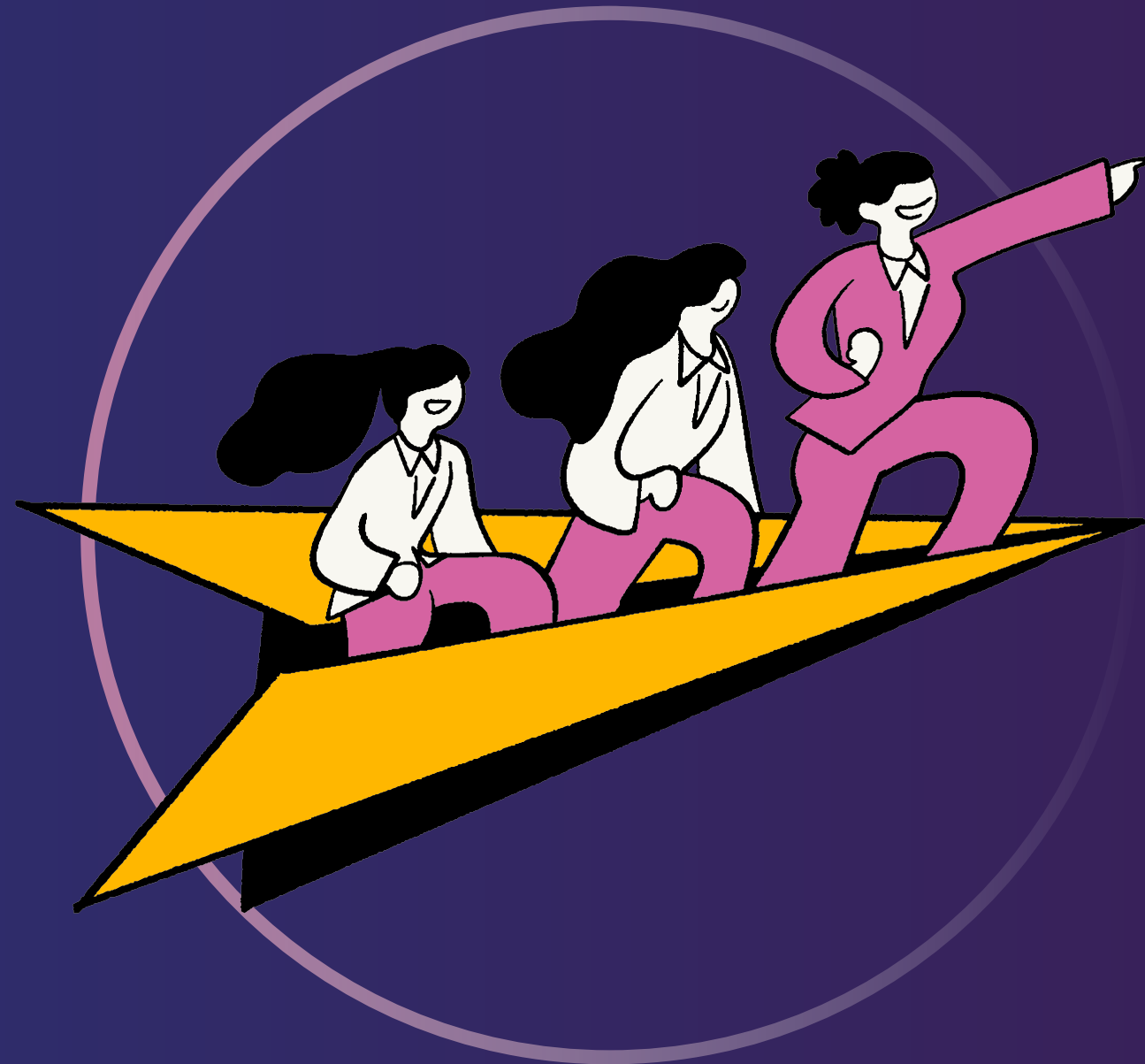


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REAL-WORLD DATA ANALYSTS



Cristina Martín
Veterinary Nurse
Data Analyst



Marianela Gómez
Research Scientist
Data Analyst



Nuria Salas
Scrum Master N.2
Foodie Entrepreneur
Data Analyst



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DATA ANALYSIS PROCESS



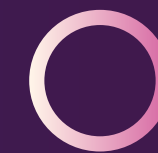
Phase 1: Exploratory Data Analysis (EDA)

Before diving into the project, it is essential to understand the dataset and its characteristics. This involves a detailed exploratory analysis to get familiar with the data and identify what kind of information is available.



Phase 2: Data Transformation

In this phase, we prepared the dataset for analysis through a series of transformations using Python. This included data cleaning, normalization, type conversion, and aligning the data with specific business rules.



Phase 3: Data Visualization

The goal of this phase is to deliver a detailed report using Python visualizations that provide a clear overview of the company's current situation. This report will include descriptive analysis and visual insights to highlight trends, areas of improvement, and strengths within the organization. The final report with visualizations and insights will be presented during the demo session.





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COLLECTED DATA



ABC Corporation Internal Database

Provided by the client, includes key employee-related variables such as: EmployeeNumber, DateBirth, RemoteWork, Education, Gender, StockOptionLevel, PercentSalaryHike, Salary, MonthlyIncome, Attrition, JobLevel, JobRole, YearsAtCompany, RelationshipSatisfaction, EnvironmentSatisfaction, JobSatisfaction, YearsSinceLastPromotion, YearsWithCurrManager.



California Open Data

Publicly available datasets used for benchmarking and contextual comparison with ABC Corporation's internal data. This allows us to contrast trends and identify potential outliers in employee satisfaction and retention metrics.



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MEASURING SATISFACTION LEVELS

Age Groups

By segmenting employees according to their age, we aimed to identify generational patterns and how satisfaction levels may vary depending on career path, salary, or workplace satisfaction.

To better understand these age groups, we categorized them by generations: Baby Boomers, Gen X, Millennials, and Gen Z.

Gender

This allowed us to analyze potential differences in satisfaction between male and female employees, and to detect whether gender may influence the perception of work environment, compensation, or career development opportunities.

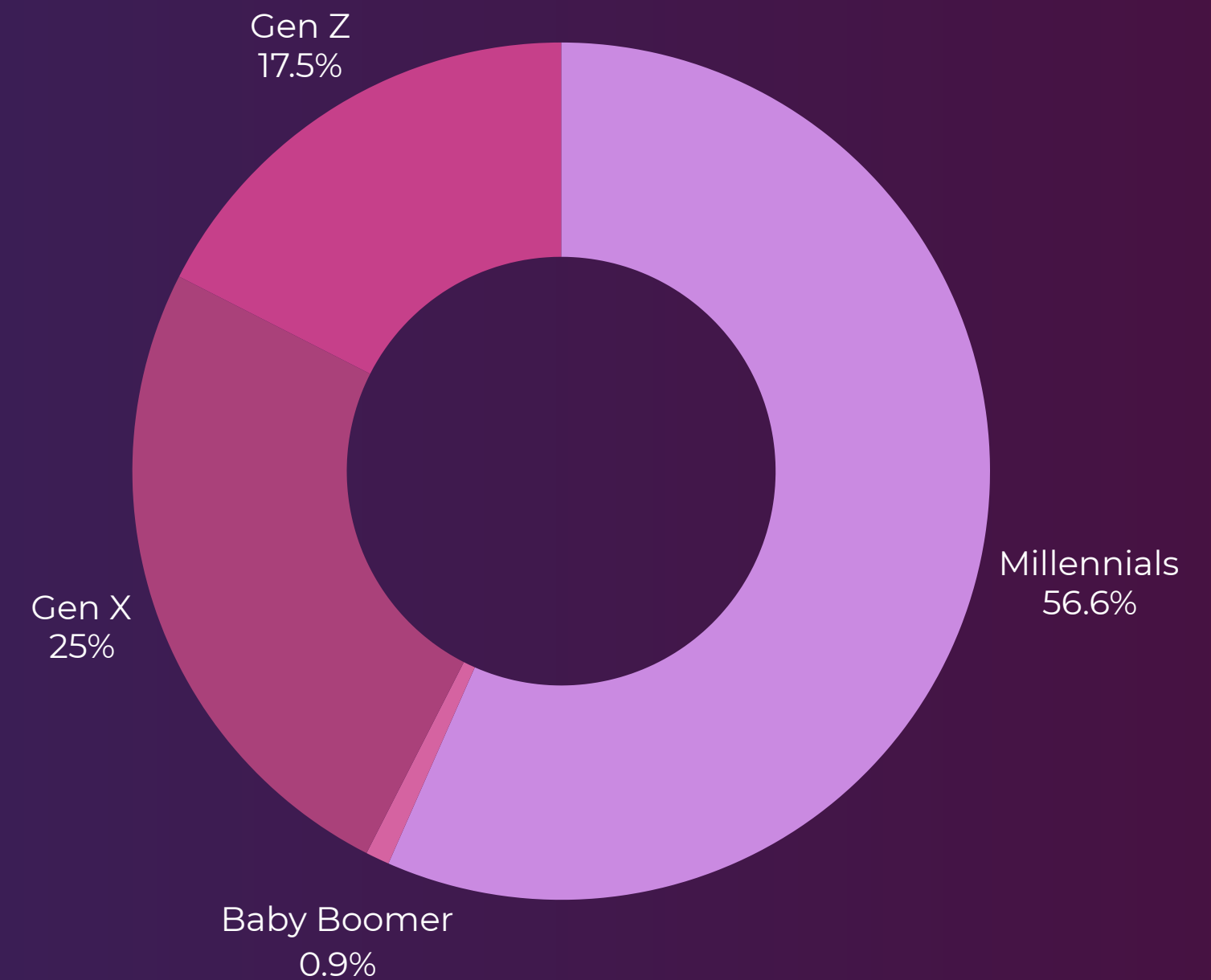


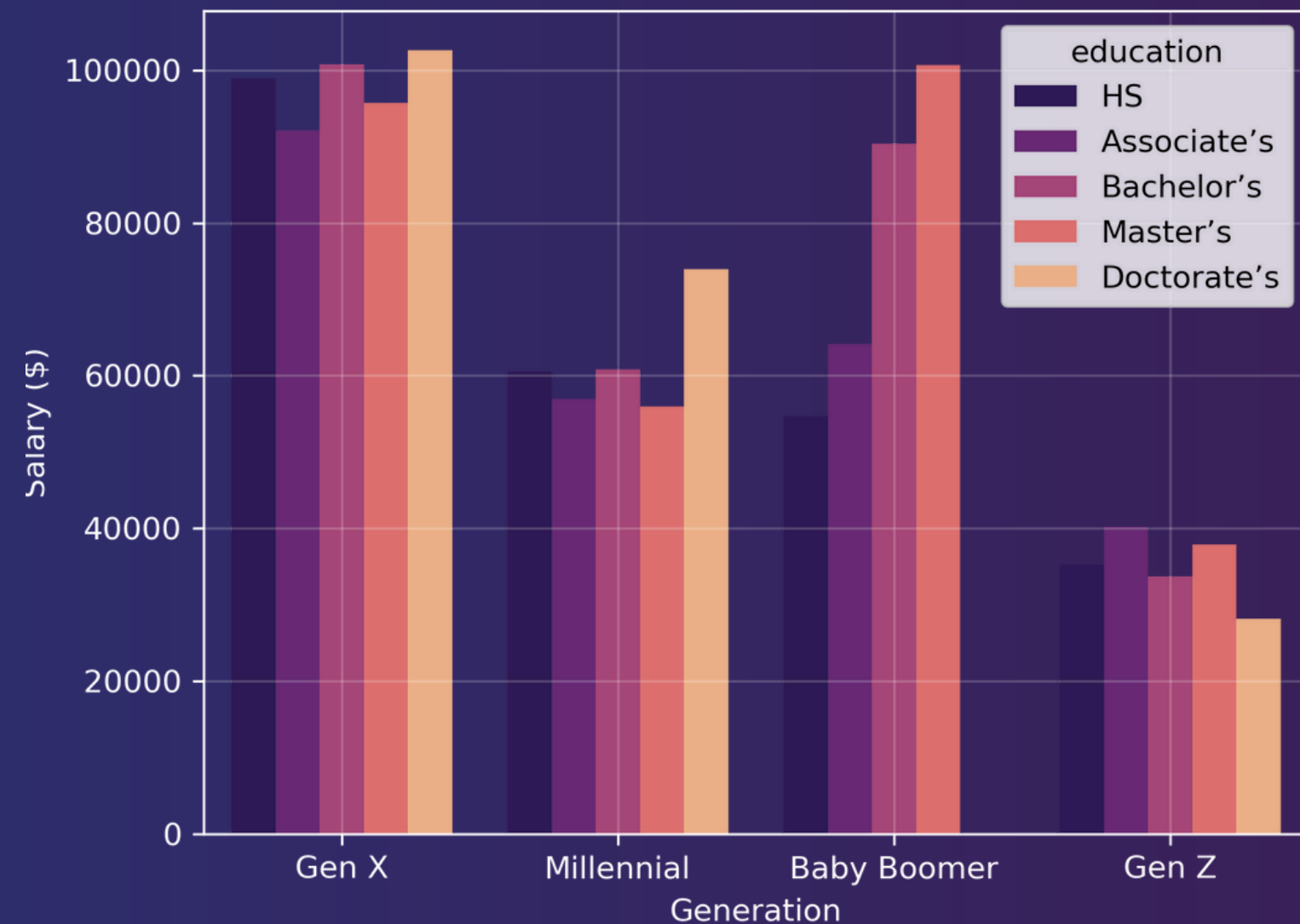


GENERATIONAL DISTRIBUTION

Millennials represent the majority of ABC Corporation's population, followed by Gen X. While Baby Boomers represent the lowest rate.

This outcome is aligned with the government operations agency public data as per the active working population in California by 2024 according to the California Open Data portal.





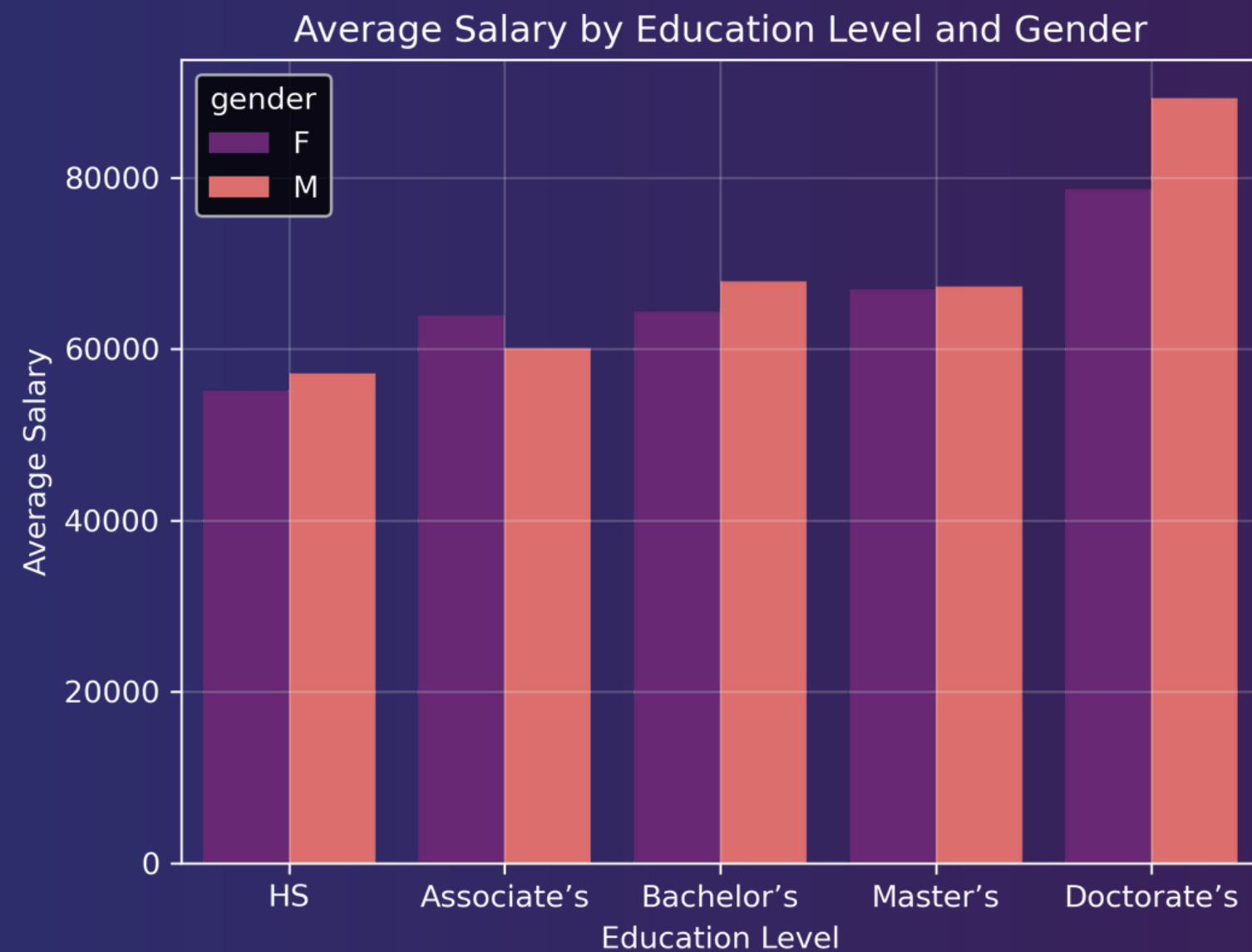
AVG SALARY BY GENERATION & EDUCATION

The generational distribution shows that there is a majority of Millennials, while Baby Boomers are concentrated in leadership positions, and Gen Z has not yet reached those levels, reflecting a hierarchy based on seniority.

Although employees with doctoral degrees tend to have higher salaries (especially Gen X and Millennials), no direct relationship was found between salary and job satisfaction.

Although some Gen Z's also hold PhD's, their salaries are not as high as Gen X's holding the same education level.





AVG SALARY BY GENDER & EDUCATION

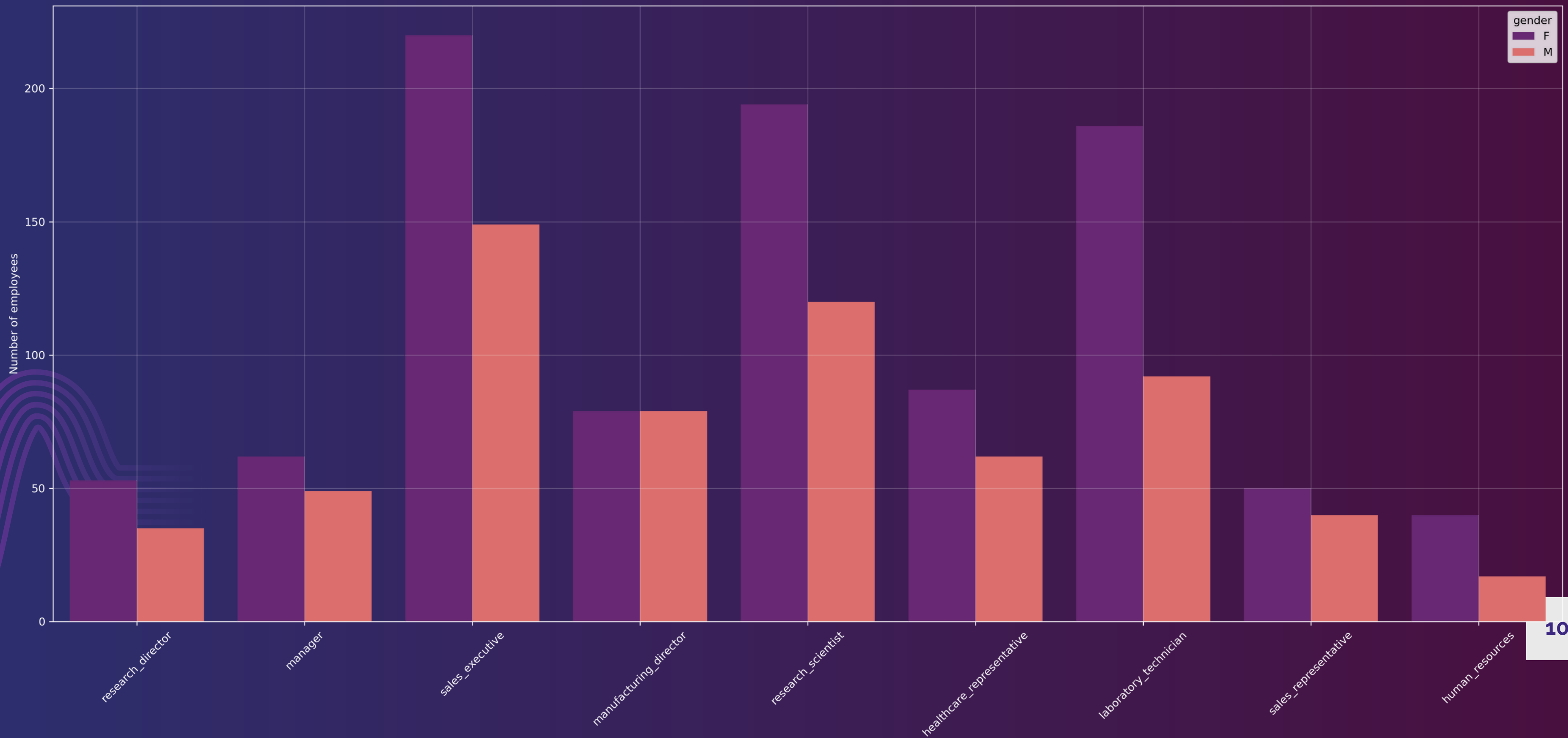
We observed that in almost all cases, higher education levels are associated with higher average salaries. Additionally, we can see salary differences between men and women within each education level. In Associate's, women earn more. In HS, Bachelor's, and Doctorate's, men earn more.





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GENDER VS. ROLE

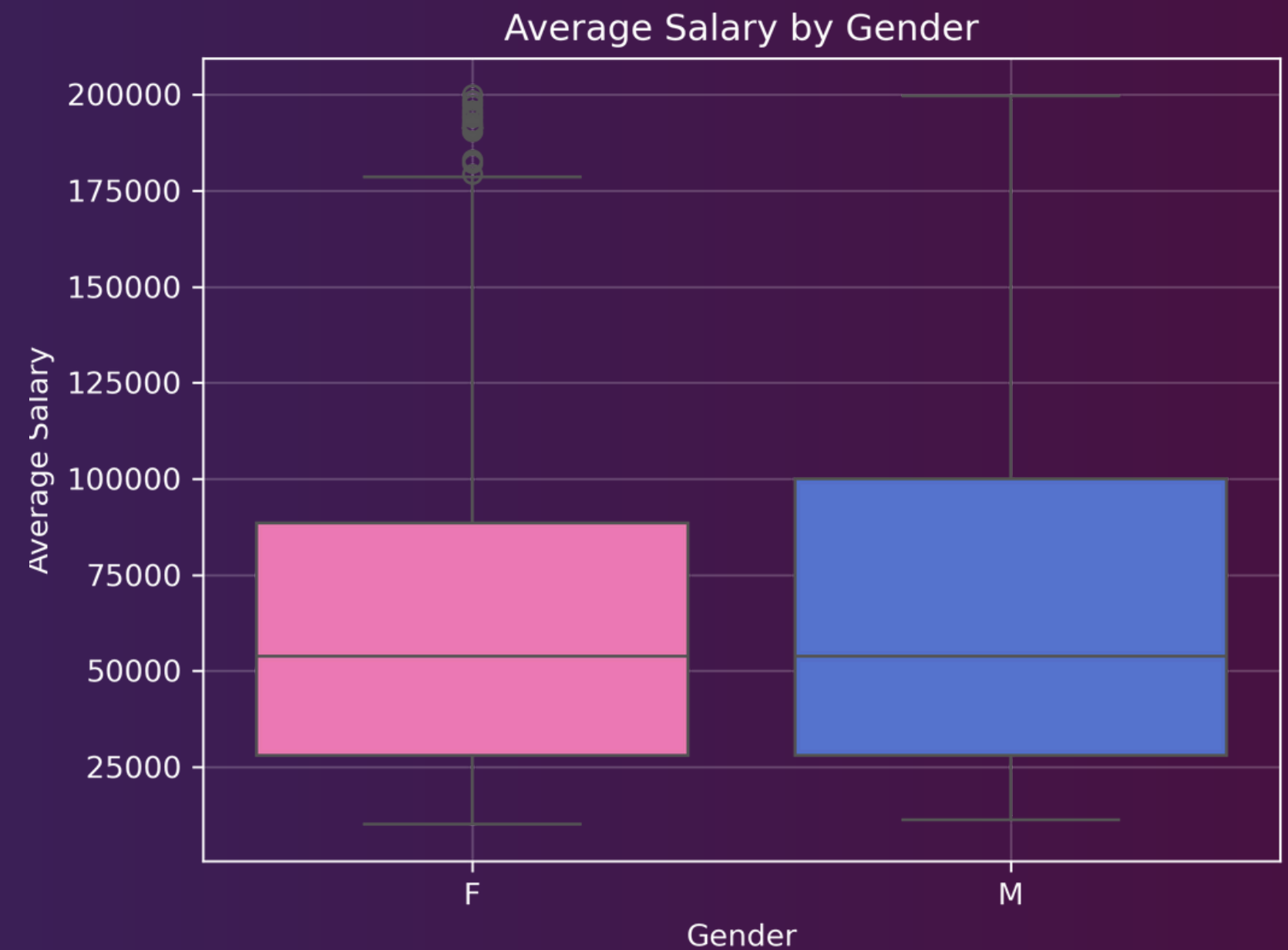




SALARY DISTRIBUTION BY GENDER

Although the median salary is similar between genders, men have greater variability and more extreme high salaries, as seen in the higher box and longer upper whisker. On the other hand, women have more outliers, which could indicate that a few earn significantly more, but this is not the norm. More outliers at the top, but less overall dispersion.

In summary, while the average salaries are fairly equal, there is more internal inequality among men, and fewer women reach those extreme high salaries.





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ANALYSIS INSIGHTS BY GENDER

Key Findings

- Women are the majority in the company and are present in all hierarchical levels, even the highest ones.
- Despite this, men tend to have slightly higher average salaries, particularly in higher education levels (Master's and PhD).
- This suggests that gender may influence work experience, satisfaction, and retention.



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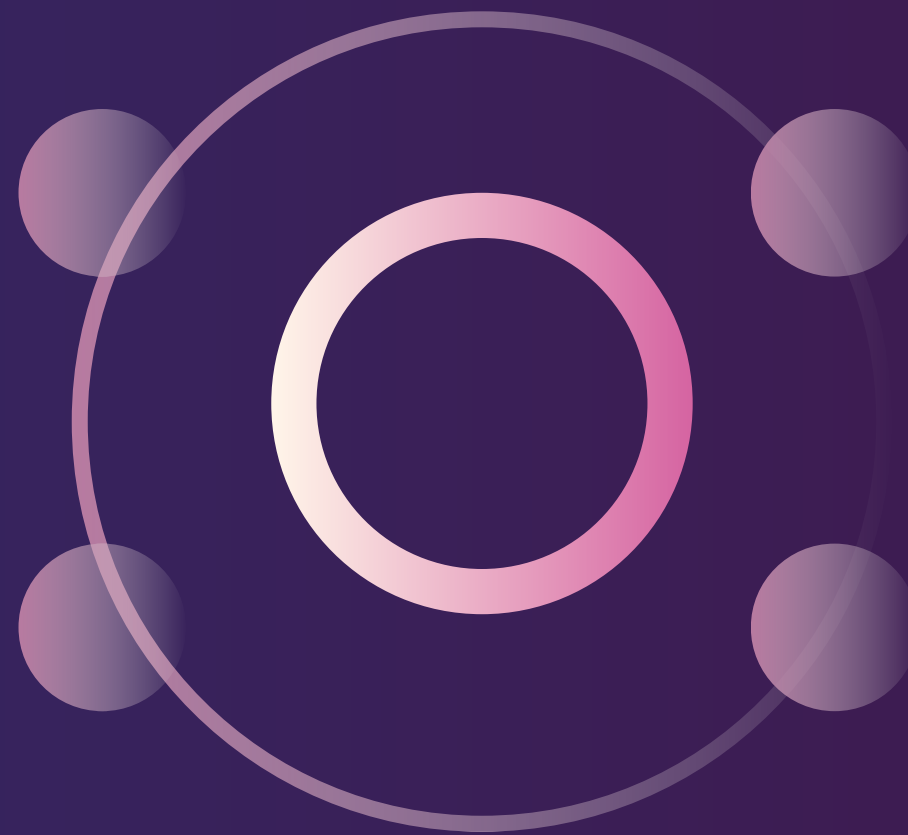




CONCLUSION & NEXT STEPS

Generational composition reflects a hierarchy based on seniority: Baby Boomers hold leadership roles, while Gen Z has limited access to them.

Despite salary gaps across education levels and generations, no direct link was found between salary and job satisfaction.



Potential promotion barriers exist for Millennials and Gen Z, highlighting the need to enhance internal growth and development programs.

Gender analysis revealed pay gaps slightly favour men, suggesting a review of equity policies to support satisfaction and retention—especially for women.





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THANK YOU!

DATA ANALYSIS IS KEY TO BUSINESS
GROWTH AND SUCCESS!



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