Trainity

HIRING PROCESS ANALYTICS

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WHAT WE WILL TALK ABOUT

- Project Description
- Tech-Stack Used
- Approach
- Results
- Insights
- Conclusion

PROJECT DESCRIPTION

- The primary objective of this project is to analyze a dataset detailing the hiring process at a multinational company in order to generate insights and actionable recommendations that could improve the hiring strategy and efficiency of the company.

- The project aims to deliver comprehensive insights into the company's hiring process and workforce structure, with specific focus on gender distribution, salary averages and ranges, department distribution, and position tiers. The results of the analysis are expected to guide decision-making in the HR department and potentially improve the company's hiring process in the future.

TECH-STACK USED

EXCEL

Excel, a key component of our tech stack, is leveraged for data cleaning, analysis, and visualization to gain actionable insights from our hiring process data.

CANVA

Canva is a versatile tool in our presentation process, used for creating compelling visual content and data-driven infographics that enhance our communication and presentation of analytical findings.

APPROACH

Handling Missing Values:

- The 'Event_name' and 'Post Name' columns in our dataset had instances of missing data, with 15 and 1 instances respectively. The 'Event_name' column was subsequently renamed to 'Gender', as this label better represented its content, which included 'Male', 'Female', and 'Don't wish to say' values.

- To address the missing values in the 'Gender' column, we first assessed the proportionate distribution of the known values. Given that we had 15 missing data points in total, we assigned these values in a way that was representative of the existing distribution. Accordingly, 5% (1 value) was allocated to 'Undefined', 37% (6 values) to 'Female', and 57% (8 values) to 'Male'.

- In the case of the 'Post Name' column, the single missing value was dealt with by excluding the associated application entirely. Given that only one application (application number 289907) was affected, this decision is unlikely to have significant impact on our analysis or its findings. Upon inspection, no additional missing values were identified in our dataset.

APPROACH

Outlier Identification and Treatment:

- Outlier detection identified three applications (795330, 874368, and 649039) as potential outliers. These applications had associated salaries of 400,000, 300,000, and 200,000 respectively, figures significantly higher than the range of other salaries in the dataset.
- In order to maintain the consistency and reliability of our analysis, we decided to exclude these applications from our dataset. By doing so, we prevented the skewing of our results and insights due to these extreme salary values.

Data Summary:

- After cleaning and preparing your data we summarized our findings. Some examples of graphs and various insights are given in the forthcoming slides

APPROACH

Data Summary:

- Following our data pre-processing stage, we have a dataset consisting of 7163 applicants. A significant 66% of these applicants, amounting to 4693 individuals, were successfully employed by the company.

- When we dive deeper into the department-specific data, we observe an interesting pattern. The Finance department had the lowest acceptance rate, with only 61% of applicants securing a position. On the other hand, the Human Resources department displayed the highest acceptance rate, with 72% of its applicants being hired.

- However, the volume of applicants varied greatly among the departments. Human Resources, despite its high acceptance rate, attracted the fewest applicants with only 97 individuals applying - a figure notably lower than the average of 796 applicants per department. In stark contrast, the Operations department drew the largest number of hopefuls, receiving applications from 2771 individuals.

APPROACH

Department	Hired	Rejected	Grand Total	Acceptance %
Finance Department	176	112	288	61%
General Management	113	59	172	66%
Human Resource Department	70	27	97	72%
Marketing Department	202	123	325	62%
Operations Department	1843	928	2771	67%
Production Department	246	134	380	65%
Purchase Department	230	103	333	69%
Sales Department	484	262	746	65%
Service Department	1332	723	2055	65%

Department	Count
Finance Department	288
General Management	172
Human Resource Department	97
Marketing Department	325
Operations Department	2771
Production Department	380
Purchase Department	333
Sales Department	746
Service Department	2055

Bar Graph →

Department Wise Employee Distribution
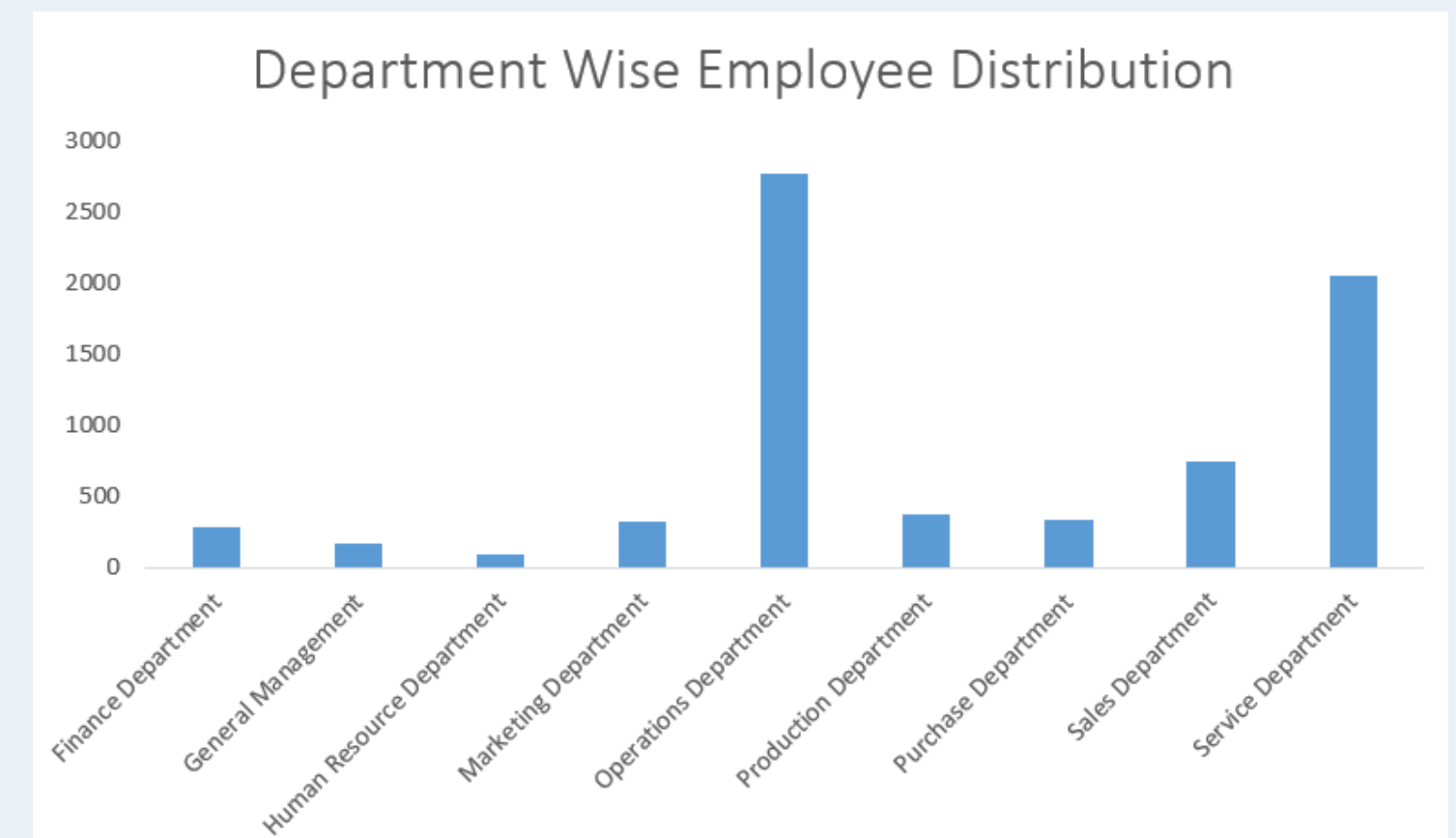
RESULTS AND INSIGHTS

HIRING ANALYSIS:

Determine the gender distribution of hires. How many males and females have been hired by the company?

In our dataset, it is evident that the company has a robust hiring rate among both male and female applicants. Of the total male applicants, 63% or 2566 individuals have been successfully incorporated into the company. When examining the female applicant pool, the hiring rate is slightly higher at 69%, equating to 1868 new hires. Additionally, there were 269 successful applicants who preferred not to disclose their gender.

Gender	Hired	Rejected	Grand Total	Hired %
Don't want to say	269	125	394	68%
Female	1858	821	2679	69%
Male	2566	1524	4090	63%

RESULTS AND INSIGHTS

SALARY ANALYSIS:

What is the average salary offered by this company?
Use Excel functions to calculate this.

Upon the exclusion of outliers, the average compensation offered by the company amounts to ₹49873. When examining salaries department-wise, General Management (GM) positions command the highest average salary at ₹55295.29. Conversely, the Marketing department registers the lowest average salary at ₹48489.94.

Department	Average of Offered Salary
Finance Department	₹ 49,628.01
General Management	₹ 55,295.29
Human Resource Department	₹ 49,002.28
Marketing Department	₹ 48,489.94
Operations Department	₹ 49,151.35
Production Department	₹ 49,448.48
Purchase Department	₹ 52,564.77
Sales Department	₹ 49,261.25
Service Department	₹ 50,557.16

RESULTS AND INSIGHTS

SALARY DISTRIBUTION:

Create class intervals for the salaries in the company.
This will help you understand the salary distribution.

The table below presents the distribution of salaries. Most employees fall within the ₹40,000-₹50,000 salary range. It is important to note that three outliers, with salaries exceeding ₹1,00,000, have been excluded for this analysis.

| Salary Buckets	Count
1-10000	678
10001-20000	732
20001-30000	711
30001-40000	710
40001-50000	781
50001-60000	750
60001-70000	698
70001-80000	734
80001-90000	710
90001-100000	659

RESULTS AND INSIGHTS

DEPARTMENTAL ANALYSIS:

Use a pie chart, bar graph, or any other suitable visualization to show the proportion of people working in different departments.

The Operations department, with 2771 applicants, leads in terms of application volume, closely followed by the Service department with 2054 applications. In stark contrast, the Human Resources department received a notably smaller number of applications, with only 97 individuals seeking positions there.

Department	Count of Department
Operations Department	2771
Service Department	2054
Sales Department	745
Production Department	380
Purchase Department	333
Marketing Department	325
Finance Department	288
General Management	170
Human Resource Department	97

Departmental Analysis

- Operations Department
- Service Department
- Sales Department
- Production Department
- Purchase Department
- Marketing Department
- Finance Department
- General Management
- Human Resource Department

39%, 29%, 10%, 5%, 5%, 5%, 4%, 2%, 1%
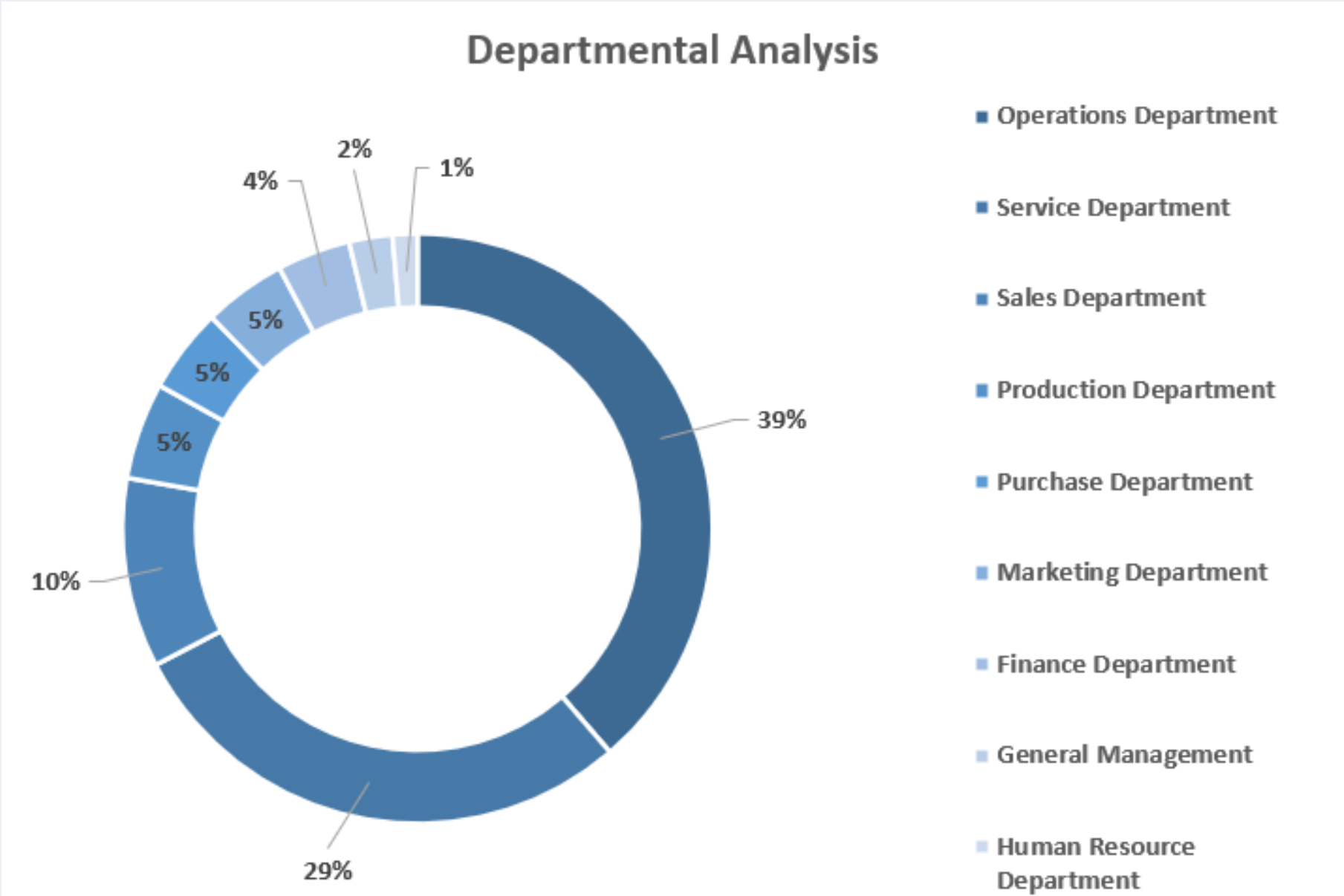
RESULTS AND INSIGHTS

POSITION TIER ANALYSIS:

Use a chart or graph to represent the different position
tiers within the company.

The table and chart below detail the distribution of positions among applicants. It's apparent that C9
and C5 are the most commonly held positions. Conversely, M7, N10, N6, and N9 are the least
common, each being held by a single applicant.

Position	Count
c9	1792
c5	1747
i7	980
i5	787
i6	527
b9	462
c8	320
c-10	232
i1	222
i4	87
m6	3
m7	1
n10	1
n6	1
n9	1
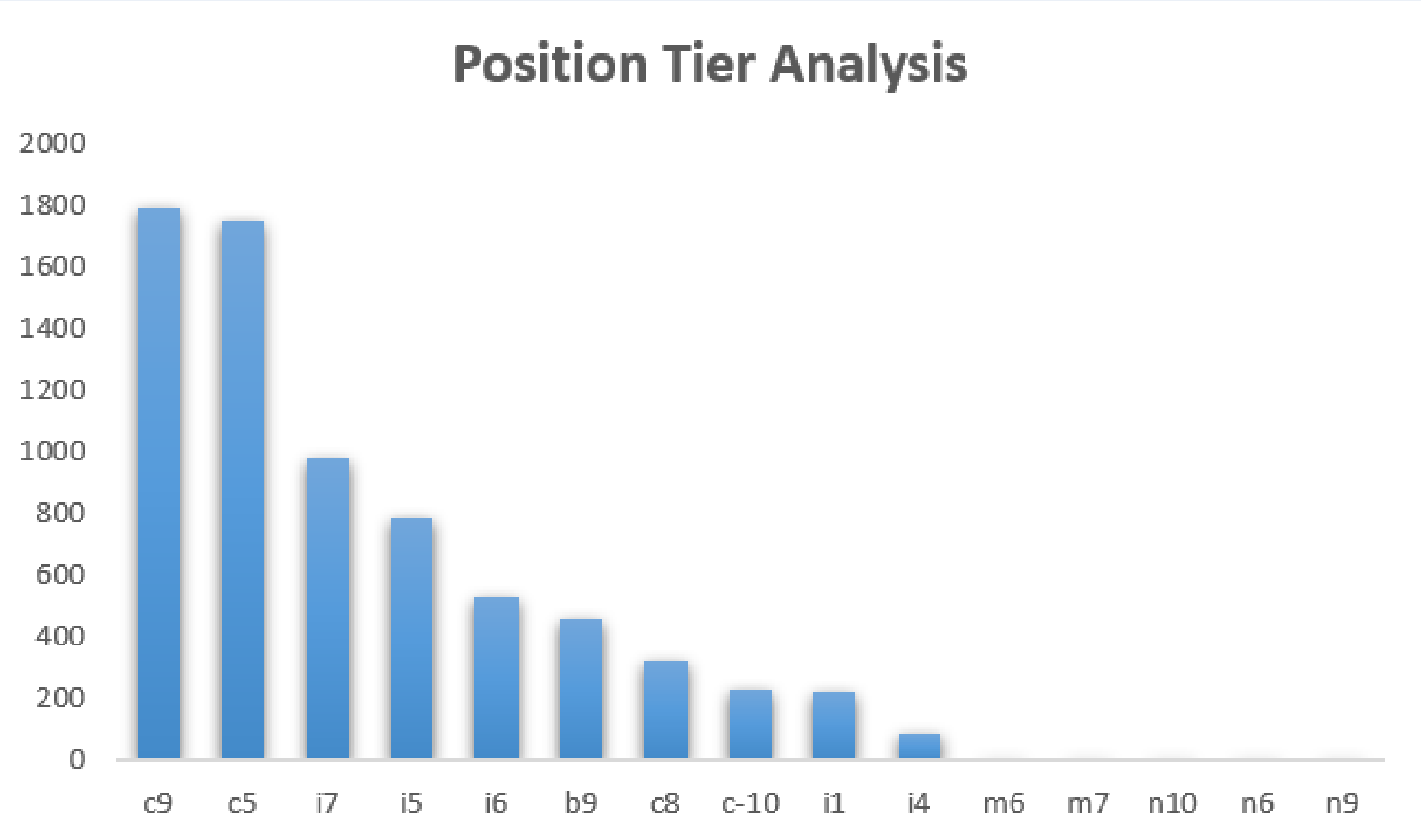
CONCLUSION

In conclusion, the analysis of the company's hiring process has unveiled noteworthy findings. Of the total 7163 applicants, the company successfully hired 66%, indicating a strong and productive recruitment system. A slight gender-based discrepancy in hiring rates was also observed, with female applicants experiencing a higher hiring rate (69%) as opposed to their male counterparts (63%). The majority of hired individuals fell within the ₹40,000-₹50,000 salary range, the mean salary across the firm standing at ₹49873 post the removal of outliers.

Further insights were derived from the departmental and position-based analysis. The Operations department saw the highest influx of applicants (2771), while the Human Resources department attracted the least (97). This differential might be indicative of the perceived opportunities or challenges associated with each department. In terms of positions, C9 and C5 were most commonly held, while M7, N10, N6, and N9 were only occupied by a single applicant each. These discrepancies may reflect the company's hierarchical structure or the distribution of opportunities across various levels.