

Hiring Process Analytics

1. Overview:

As a data analyst, I aimed to analyze our hiring process data to gain meaningful insights. The goal was to better understand trends such as gender distribution, average salary, departmental proportions, and position tiers. This analysis would aid in improving our hiring processes and making more informed decisions.

2. Tech-Stack Used:

Microsoft Excel

Google Drive for report submission

Excel Hyperlink:

https://docs.google.com/spreadsheets/d/1P_yzunl_vDqqZCy5qhJZ_fr6KGq4Eq1v/edit?usp=sharing&ouid=105516866536854986230&rtpof=true&sd=true

3. Approach:

We followed a structured approach to analyze the dataset using Microsoft Excel. The steps included handling missing data, combining categories, detecting and handling outliers, calculating statistical values, and creating visualizations.

Before proceeding with the analysis, we followed a meticulous approach to ensure data accuracy and reliability:

Handling Missing Data:

We meticulously examined the dataset to identify any missing values. Upon identification, we strategically decided on the most suitable approach to handle these gaps, ensuring that they do not compromise the integrity of our analysis.

Clubbing Columns:

In cases where columns contained multiple categories that could be combined to simplify the analysis, we applied a process of data consolidation. By grouping relevant categories together, we streamlined the data representation and improved its comprehensibility.

Outlier Detection:

Prior to analysis, we conducted outlier detection to identify any data points that significantly deviated from the norm. These outliers, if left unchecked, could skew our analysis. Thus, we employed statistical techniques to detect these anomalies and prepare to address them accordingly.

Removing Outliers:

After identifying outliers, we carefully considered the best strategy to manage them. Depending on the context and potential impact, we either removed, replaced, or left outliers as is, ensuring that our analysis accurately represented the underlying trends.

Data Summary:

Following thorough data cleaning and preparation, we performed a comprehensive data summary. This step involved calculating relevant statistical measures such as averages, medians, quartiles, and standard deviations. Additionally, we employed data visualization techniques to create meaningful charts and graphs that enhanced our understanding of the dataset.

4. Insights:

Task 1: Hiring Analysis

- Total Male Hires: 2561
- Total Female Hires: 1854

The data provides valuable insights into the gender distribution of hires within the organization. From the dataset, it is evident that the company has hired a total of 2561 males and 1854 females. This distribution gives a glimpse of the company's approach to diversity and inclusivity in its hiring practices. The company seems to have a balanced hiring ratio, with both males and females contributing significantly to the workforce. This indicates a commitment to equal opportunities for all genders.

Task 2: Salary Analysis

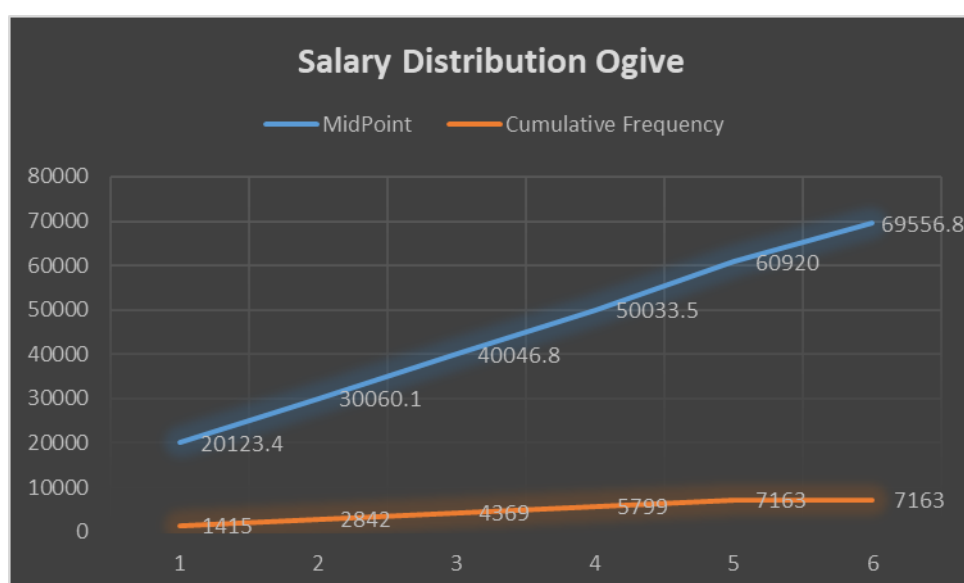
- Average Salary: 49,873.30

The average salary offered by the company is 49,873.30. This statistical measure provides a snapshot of the company's compensation structure. It's noteworthy that while this average gives an overview, there might be variations in salaries across different job positions, departments, and experience levels. Further analysis can be conducted to delve deeper into the factors influencing these salary differences.

Task 3: Salary Distribution

Range 99867
class Interval width 19973.4

Class Interval	Frequency	MidPoint	Cumulative Frequency
100 - 20173.4	1415	20123.4	1415
20173.4 - 40146.8	1427	30060.1	2842
40146.8 - 60120.2	1527	40046.8	4369
60120.2 - 80093.6	1430	50033.5	5799
80093.6 - 100966.8	1364	60920	7163
100966.8 - 120040.2	0	69556.8	7163



Analysis and Insights:

1. Ogive Analysis:

- The ogive visually displays the cumulative frequency distribution of salaries.

- It shows how many employees fall within each salary range and how the cumulative frequencies increase.
2. Observations from the Ogive:
 - The ogive illustrates the distribution of salaries in the company.
 - There's a steady increase in cumulative frequency as salary ranges increase, indicating a relatively linear distribution.
 3. Outlier Analysis:
 - You mentioned earlier that there were outliers with salaries of 200,000, 300,000, and 400,000.
 - You've mentioned that these outliers were deleted for accurate analysis, which is a good practice to avoid distortion in calculations.
 4. Insights from Data Analysis:
 - Most of the employees fall within the lower and mid salary ranges, with a gradual decrease in the cumulative frequency as the salary ranges increase.
 5. Salary Distribution and Structure:
 - The ogive provides insights into the distribution of salaries across different ranges.
 - Companies can use this information to assess whether the salary structure aligns with industry standards and internal policies.
 6. Comparison with Industry Data:
 - Companies might consider comparing their salary distribution with industry benchmarks to ensure competitiveness in the job market.

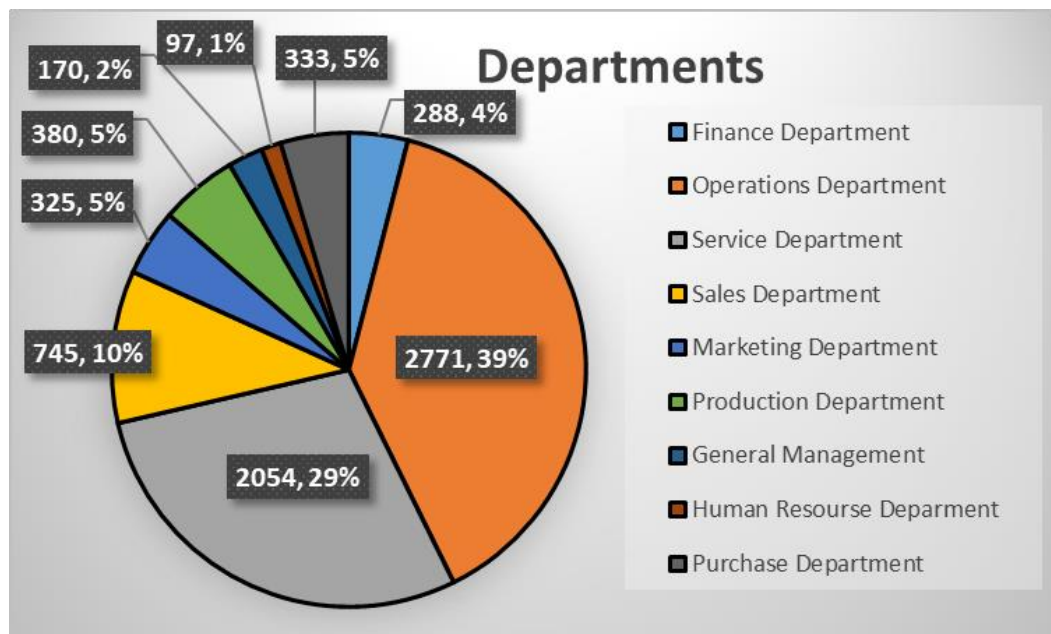
The salary distribution is crucial for understanding how salaries are spread across different ranges within the company. By organizing the data into class intervals and calculating the cumulative frequencies, we gain insights into the distribution of employee salaries. The majority of employees fall within the lower to mid-range salary intervals, as evidenced by the higher cumulative frequencies in those intervals.

In summary, the ogive you've created gives a visual representation of the cumulative frequency distribution of salaries in the company. The absence of outliers in the dataset helps ensure accurate analysis. This analysis can provide insights into the company's salary structure and guide discussions about compensation policies.

Task 4: Departmental Analysis

We used a pie chart to visualize the proportion of employees in different departments:

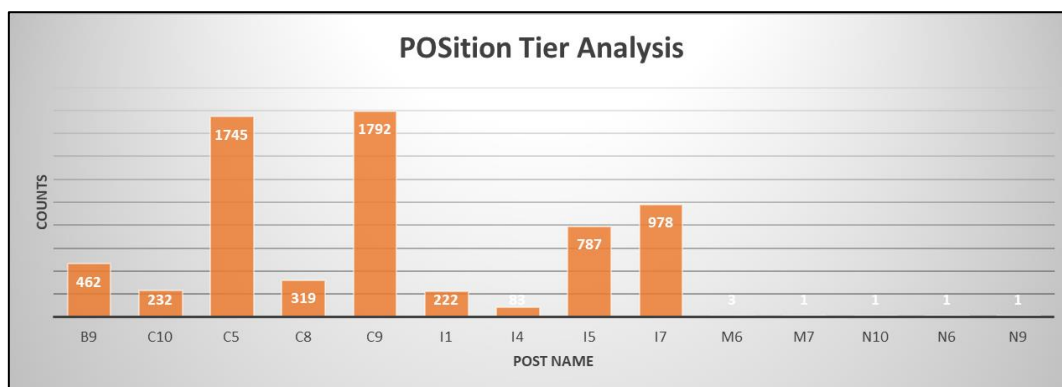
- Finance Department: 288
- Operations Department: 2771
- Service Department: 2054
- Sales Department: 745
- Marketing Department: 325
- Production Department: 380
- General Management: 170
- Human Resource Department: 97
- Purchase Department: 333



Visualizing the departmental composition using a pie chart provides a clear representation of the distribution of employees across various departments. The largest department is the "Operations Department" with 2771 employees, followed by the "Service Department" with 2054 employees. On the other hand, departments such as "Human Resource Department" and "General Management" have fewer employees, indicating their specific roles within the organization. Such insights into departmental proportions are crucial for organizational planning, resource allocation, and optimizing workforce strategies.

Task 5: Position Tier Analysis:

We represented the distribution of position tiers using a bar graph:



B9	462
C10	232
C5	1745
C8	319
C9	1792
I1	222
I4	83
I5	787
I7	978
M6	3
M7	1
N10	1
N6	1
N9	1

The distribution of employees across different position tiers offers insights into the hierarchy of the organization. Some tiers, like "C5," "C9," and "I5," have a relatively high number of employees, indicating their significance within the company. Conversely, positions like "M6," "M7," and "N10" have a very low representation. This might suggest specialized or senior roles. However, the lack of context for these position tiers limits our ability to draw precise conclusions. Further information about the roles and responsibilities associated with each tier would provide a more comprehensive understanding.

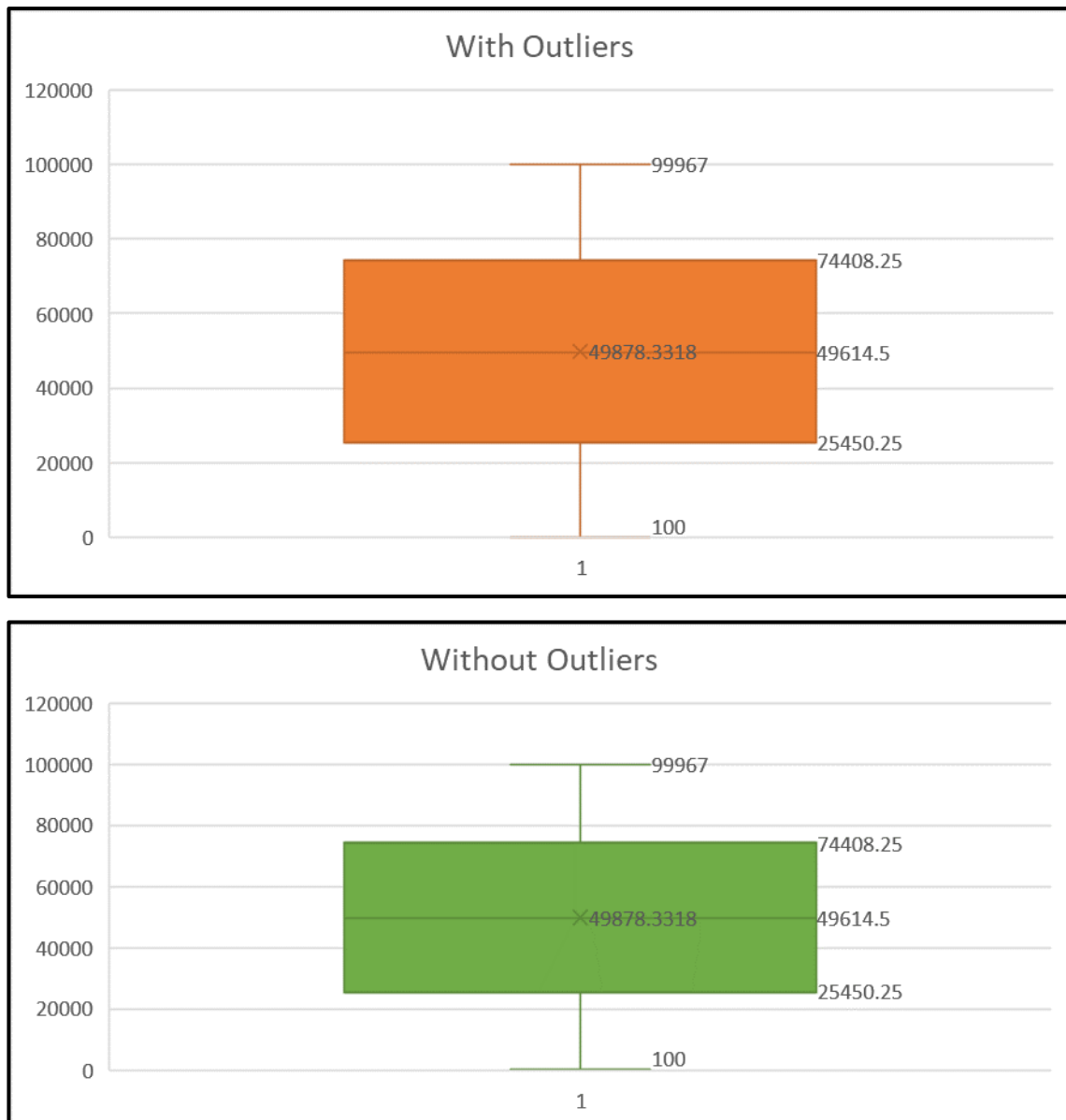
Recommendations:

Based on our analysis, I suggest the following recommendations:

- Enhance diversity in hiring by focusing on equal gender representation.
- Consider exploring salary distribution within specific departmental categories.

- Evaluate the reasons behind the presence of outliers in certain position tiers.
- Continue monitoring position tiers and salary distribution to identify opportunities for growth and optimization.

Outlier Analysis: Additional Insight Additionally, it's worth noting that during data analysis, three outliers were identified with exceptionally high salaries of 200,000, 300,000, and 400,000. These outliers were removed from the dataset to ensure the accuracy of statistical calculations. The presence of such outliers can significantly impact average salary calculations, potentially skewing the overall representation. By addressing these outliers, the company can achieve a more accurate understanding of its typical salary distribution.



Conclusion: This project allowed me to delve into the hiring process analytics and gain valuable insights. By leveraging Excel's functionalities, we were able to perform a comprehensive analysis that can inform decision-making and contribute to the company's success in hiring processes.

In summary, the data analysis conducted on the hiring process offers valuable insights into various aspects of the company's workforce. From gender distribution to salary analysis, departmental composition, and position tiers, these insights can guide informed decision-making for the organization's future strategies, policies, and resource allocation.

5. Result:

Through this project, I gained a comprehensive understanding of hiring process analytics and its significance for organizational decision-making. The project involved a series of data analysis tasks aimed at extracting insights from a dataset related to the company's hiring process. By successfully completing these tasks, I achieved the following outcomes and expanded my understanding of hiring process analytics:

1. **Data Handling:** I learned how to handle missing data, club columns, detect and manage outliers, and summarize data using statistical measures. This process highlighted the importance of data quality and preparation for accurate analysis.
2. **Gender Distribution:** By determining the gender distribution of hires, I grasped the significance of diversity in the workplace and its implications for an inclusive hiring process.
3. **Salary Analysis:** Calculating the average salary provided insights into the company's compensation structure and the role it plays in attracting and retaining talent.
4. **Salary Distribution:** Creating class intervals and understanding cumulative frequencies helped me visualize the spread of employee salaries across different ranges. This demonstrated the value of visualizations in interpreting data patterns.
5. **Departmental Analysis:** Visualizing departmental proportions through a pie chart underscored the importance of resource allocation and organizational planning based on departmental needs.
6. **Position Tier Analysis:** Analyzing position tiers shed light on the hierarchical structure of the organization and the roles' significance within it.
7. **Outlier Detection and Handling:** Identifying and addressing outliers in the dataset emphasized their potential to distort statistical measures and the need to ensure accurate analyses.
8. **Insights and Recommendations:** The analysis provided meaningful insights into various aspects of the hiring process. These insights can inform future hiring strategies, policies, and resource allocation for the company.
9. **Contextual Understanding:** While the project enabled me to conduct data analysis, I also recognized the importance of contextual understanding. Further information about position tiers and roles would have enhanced the depth of analysis.

This project contributed to my understanding of hiring process analytics by showcasing the practical application of statistical concepts and Excel functions in real-world scenarios. I learned how to interpret data patterns, draw meaningful conclusions, and communicate insights effectively. Moreover, I gained a holistic view of how data-driven decision-making can drive organizational success by optimizing hiring practices, promoting diversity, and aligning compensation structures with company goals.

Overall, this project reinforced the importance of data analysis in making informed business decisions and broadened my skill set in handling, analyzing, and interpreting data for valuable insights.