GOOGLE DATA ANALYTICS PROFESSIONAL CERTIFICATE
CASE STUDY

INTRODUCTION

Hello, I'm **Kehinde Olorunsola**, a Human Resource Practitioner, and recently certified as an Entry-level Data Analyst. As part of my final project for the Google Data Analytics Professional Certificate course, I had the opportunity to work on a case study for my portfolio. Given my passion for Human Resource Management, I decided to focus my project on this area of interest.

SCENARIO

I am a junior data analyst working for a business intelligence consultant. I have been at your job for six months, and my boss feels you are ready for more responsibility. He has asked me to lead a project for a brand new client — this will involve everything from defining the business task all the way through presenting my data-driven recommendations. *Instruction:* I will choose the topic, ask the right questions, identify a fresh dataset and ensure its integrity, conduct analysis, create compelling data visualizations, and prepare a presentation.

ABOUT THE COMPANY

The dataset used for this project is obtained from Kaggle and was designed by Drs. Rich Huebner and Carla Patalano who are the original authors of this dataset to accompany a case study designed for graduate HR students studying HR metrics, measurement, and analytics.. The data provided revolves around a fictitious company which I named Systers Limited.

THE ANALYSIS PROCESS

PHASE 1: ASK

Deliverable: A clear statement of the business task

KEY TASK (1): Identify the business task

Business Task: Analyzing Performance, Diversity, Recruitment, Termination, and Pay Equity

Objective: To gain insights into various aspects of the organization's performance, diversity profile, recruitment sources, salary distribution, and employee satisfaction.

Scope: Utilize Excel and SQL for conducting analyses and Tableau/Power BI for creating visualizations on the available dataset to gain insights into the following areas:

- Relationship between the person's manager and their performance score:
- The overall diversity profile of the organization
- Best recruiting sources for ensuring a diverse organization
- Best recruiting sources for ensuring a diverse organization
- Distribution of salaries or compensation packages across departments
- Relationship between departments and Employees' Satisfaction scores

Problem: The organization lacks a comprehensive understanding of the relationships between managers and employees' performance scores, the diversity profile, the effectiveness of recruiting sources in promoting diversity, salary disparities across departments, and the factors influencing employee satisfaction. This lack of insights hinders informed decision-making and may contribute to potential issues such as poor performance, lack of diversity, inequitable compensation, and low employee morale.

Solution: To address this problem, we will conduct thorough analyses to explore the relationship between managers and performance scores, assess the diversity profile of the organization, evaluate the effectiveness of recruiting sources in ensuring diversity, examine the distribution of salaries across departments, and investigate the relationship between departments and employees' satisfaction scores.

Recommendation: Provide Insights and recommendations based on the findings from the analyses and a comprehensive report summarizing the results, highlighting key findings, and suggesting actionable steps for improvement.

KEY TASK (2): Determine the Key stakeholders

Sarah Thompson - CEO: As the CEO, Sarah Thompson holds the overall responsibility for the organization's performance and strategic direction. She is interested in gaining insights from the analysis to inform decision-making and improve the organization's performance management processes.

Michael Reynolds - Human Resources Director: Michael Reynolds is responsible for overseeing human resources policies and practices within the organization. He is keen on understanding the diversity profile, pay equity, and recruiting sources to support efforts in fostering an inclusive and diverse workforce.

Emily Davis - Performance Management Manager: Emily Davis oversees the performance management processes within the organization. She is invested in exploring the relationship between employers and performance scores to identify any patterns or trends that can guide performance improvement initiatives.

Jessica Ramirez - Diversity and Inclusion Coordinator: Jessica Ramirez is dedicated to promoting diversity and inclusion initiatives within the organization. She is particularly interested in analyzing the diversity profile and identifying any areas of improvement to ensure equitable representation across various demographics.

Mark Thompson - CFO: Mark Thompson is responsible for financial management and budgeting within the organization. He wants to assess the impact of the analysis on the organization's financial performance, such as the potential for cost savings or increased revenue through improved performance and recruitment strategies.

Alex Peterson - Employee Relations Representative: As an employee relations representative, Alex Peterson focuses on maintaining a positive employee experience and addressing any concerns related to pay equity or termination. He is interested in understanding the analysis outcomes to support employee engagement and satisfaction initiatives.

Laura Hernandez - Recruitment Manager: Laura Hernandez oversees the recruitment process and is interested in determining the best recruiting sources for ensuring a diverse organization. She wants to optimize recruitment strategies to attract top talent and enhance diversity in the workforce.

KEY TASK (3): **Choose a dataset**
The dataset used for this project is obtained from Kaggle and was designed by Drs. Rich Huebner and Carla Patalano who are the original authors of this dataset to accompany a case study designed for graduate HR students studying HR metrics, measurement, and analytics.. The data provided revolves around a fictitious company which I named **Systers Limited.**

PHASE 2: PREPARE
Deliverable: A description of all data sources used

KEY TASK (1): **Data Credibility**
The data is open data from Kaggle and it's been made available by Drs. Rich Huebner and Carla Patalano licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. The data was downloaded directly from the Kaggle website.

It was organized by month and assumed to be credible since it was compiled and published by the organization. Please note that there were some anomalies in the data therefore it had to be cleaned before analysis.

KEY TASK (2): **Tools and Resources used**

- Data set: Human Resource dataset gotten from Kaggle (last updated 30 January 2023)
- Google Sheets — For data cleaning
- SQL — For data manipulation and analysis
- Tableau — For data visualization
- Github - For sharing my project information

PHASE 3: PROCESS
Deliverable: Documentation of any cleaning or manipulation of data

I processed this data in Google Sheets and it was effective in helping me keep track of the entire cleaning process since the dataset was not really large. The dataset also did not need much cleaning as it was not really dirty

The process:
- Deleted rows with null data.
- Remove duplicates from the dataset
- Trimed over 300 cells in the data
- Renamed columns for consistency
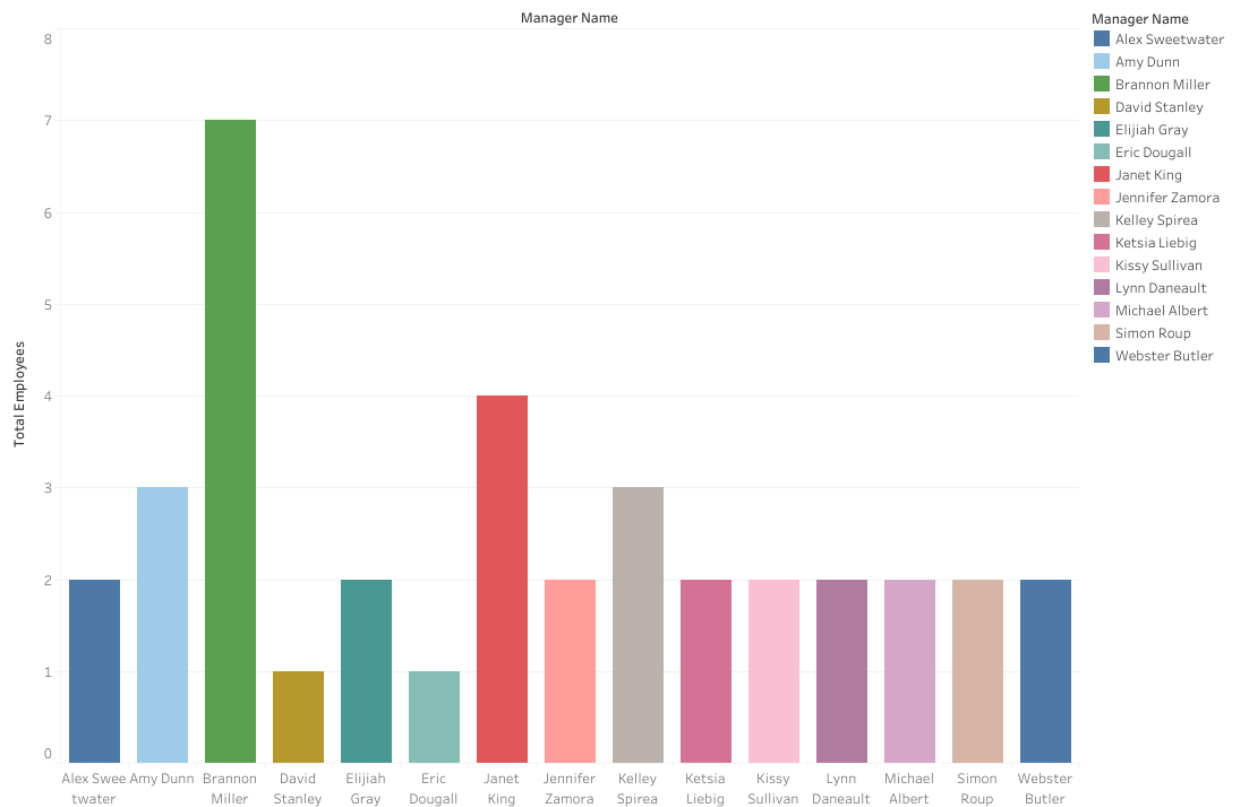- Checked for data inconsistencies and fixed them

PHASE 4: ANALYSIS
Deliverable: A summary of your analysis

Question 1:
Relationship between the person's manager and their performance score:

Managers vs Employees' Performance

Fig.1: Q1 Viz

From the chart above: We can see that managers like Brannon Miller, Janet King, and Amy Dunn have a significant number of employees who exceed performance expectations while in Fig.2, we can see that managers like Michael Albert and Webster Butler have a higher proportion of employees who are not meeting performance expectations or are on Performance Improvement Plans (PIP).

Recommendation: Recognize and reward the high-performing managers for their effective leadership and ability to foster high-performance among their teams and investigate the reasons behind the underperformance and provide support and guidance to the low-performing managers to improve their leadership and management skills.
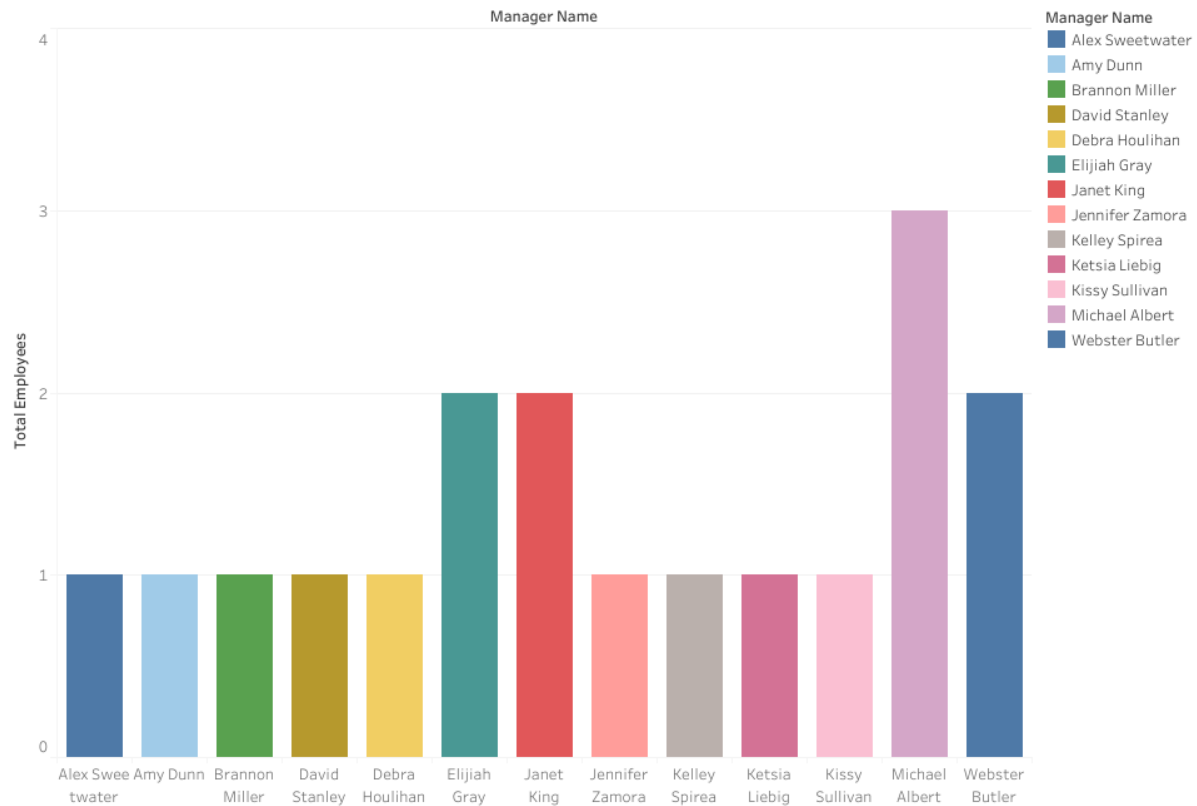
Managers vs Employees' Performance

Fig.2:

Question 2:
The overall diversity profile of the organization
The diversity profile of Systers Limited is categorized by a few factors such as Gender, Marital Status, Racial status and Citizenship status

- Gender: The organization has a mix of male and female employees. The number of females (59) is slightly higher than males (51).
- Marital Status: The majority of employees are either married or single. There are also a few employees who are divorced, separated, or widowed.
- Citizenship: Most employees are US citizens, with a few eligible non-citizens and non-citizens. It is worth noting that there are a small number of employees who are eligible non-citizens or non-citizens.
- Race/Ethnicity: The majority of employees identify as White, followed by Black or African American. There are also employees from Asian, Two or more races, American Indian or Alaska Native, and Hispanic backgrounds.
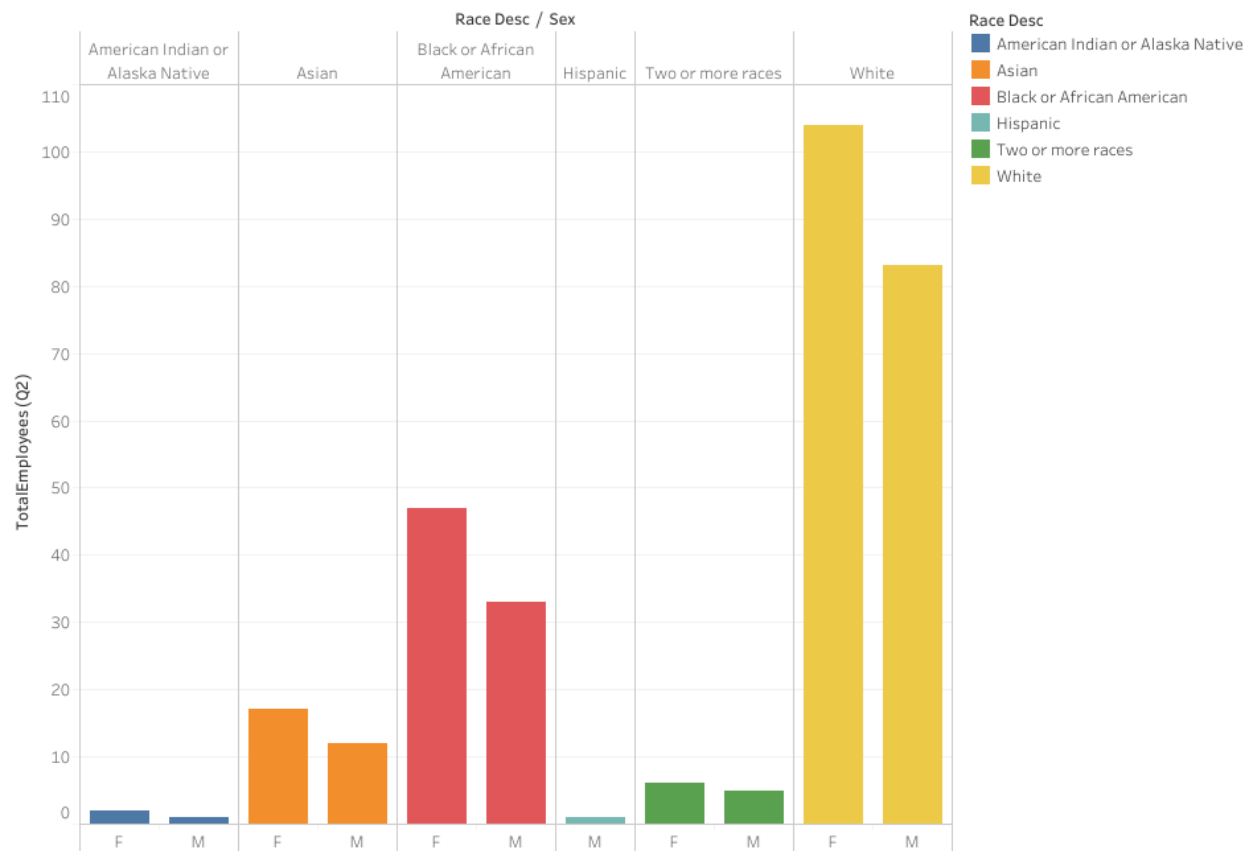
Fig.3: Q2 Viz

Recommendation: Based on the provided data and analysis, the organization can incorporate some diversity and inclusion strategies to promote and foster diversity some of which includes but are not limited to:

- Diversify Hiring Practices: Implement strategies to attract a more diverse pool of candidates during the recruitment process.
- Leadership Representation: Aim for diverse representation at all levels of leadership within the organization and finally
- Regular Diversity Metrics Review: Continuously monitor and assess diversity metrics within the organization to track progress and identify areas for improvement.

Question 3:

Best recruiting sources for ensuring a diverse organization

After conducting the analysis, it was observed that CareerBuilder and Diversity Job Fair emerged as promising recruiting sources for ensuring a diverse organization. CareerBuilder exhibited a higher percentage of female candidates, while Diversity Job Fair demonstrated a relatively balanced gender distribution.
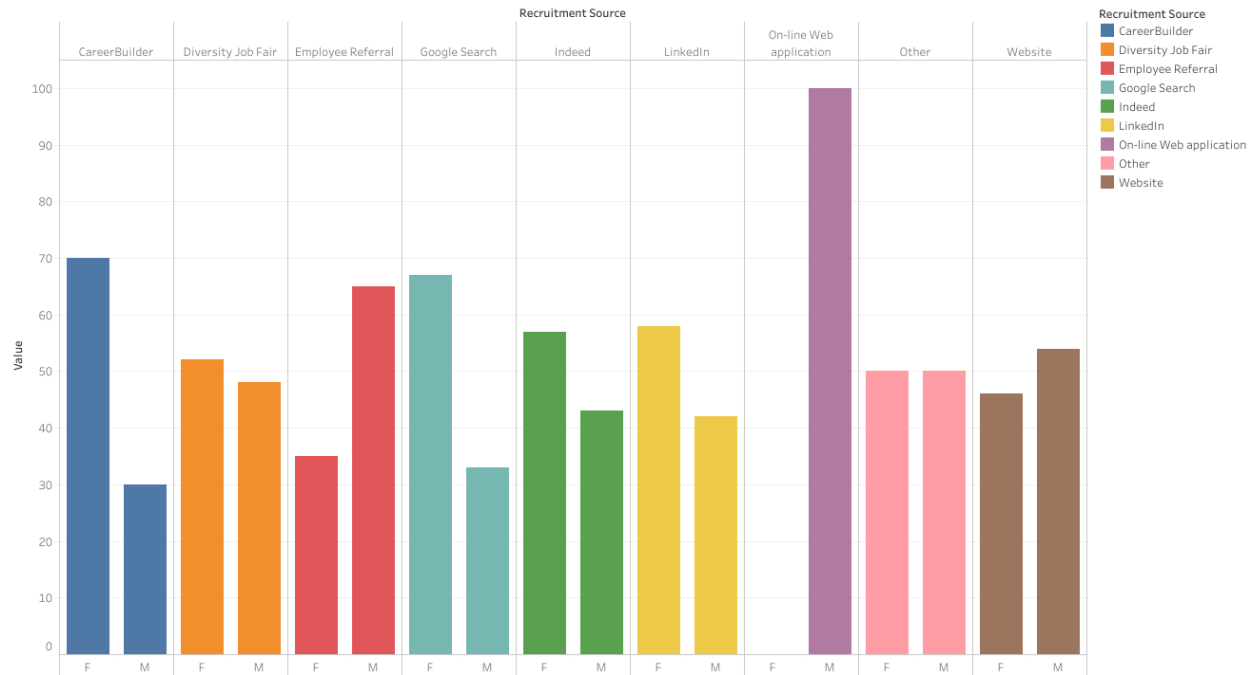
Q3a

Fig.3: [Q3a Viz](#)

Recommendation: To foster diversity and inclusion within Syster's Limited, it is recommended that hiring managers place greater emphasis on recruiting from CareerBuilder and participating in Diversity Job Fairs. These sources have shown effectiveness in attracting diverse talent and can contribute to building a more inclusive workforce.

Question 4:
Best recruiting sources for ensuring a diverse organization

4a: Which recruitment sources have resulted in the highest number of successful hires?
The data indicates that "Indeed" has yielded the highest number of successful hires, accounting for 31.99% of the total. Following closely behind is "LinkedIn" with a total of 27.94% successful hires.
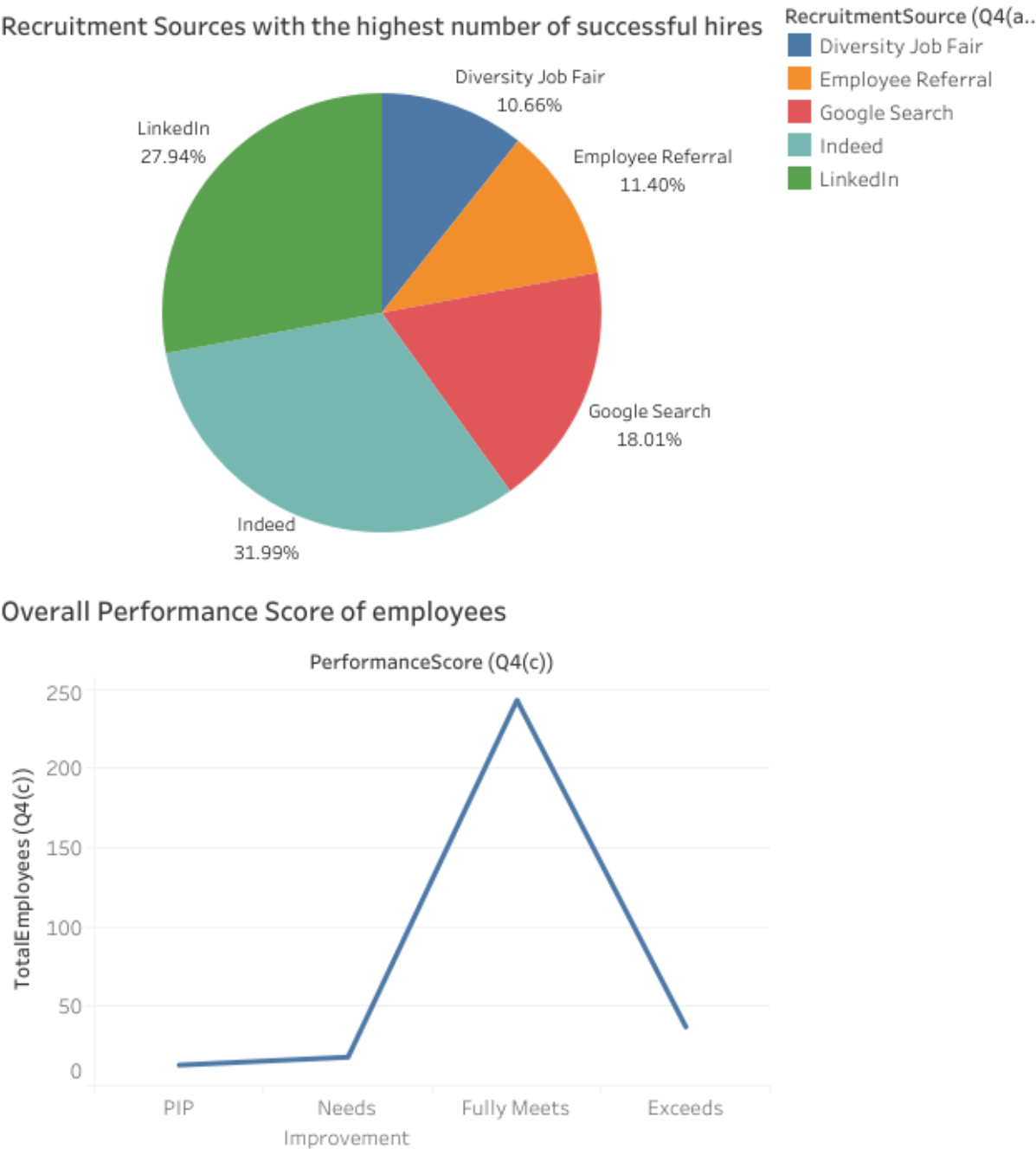
Recommendation: Based on these findings, it is recommended to prioritize and further utilize the recruitment source "Indeed" due to its track record of successful hires. The data suggests that employees recruited through Indeed have demonstrated high performance levels, which aligns with the organization's goals. By focusing on this effective recruitment source, the organization can increase the likelihood of hiring candidates who are likely to excel in their roles and contribute positively to the company's success.

4b: Overall performance scores of employees
Based on the data provided, the majority of employees have met or satisfied the performance criteria, while a smaller percentage of employees have exceeded the criteria. It is worth noting that there are 13 employees currently on Performance Improvement Plans (PIP) and a few employees who require improvement.

Recommendation: It is recommended that the Human Capital department rewards those who met their performance criteria and also focus on the 13 employees on PIP, providing them with the necessary support to enhance their performance. This may involve implementing targeted training programs to improve their skills and knowledge related to their job responsibilities. By investing in their development, the organization can help these employees become more effective in their roles.

Fig.3: Q4 Viz

Recruitment Sources with the highest number of successful hires

RecruitmentSource (Q4(a..
- Diversity Job Fair
- Employee Referral
- Google Search
- Indeed
- LinkedIn

Diversity Job Fair 10.66%
Employee Referral 11.40%
Google Search 18.01%
Indeed 31.99%
LinkedIn 27.94%

Overall Performance Score of employees

PerformanceScore (Q4(c))

Question 5:

Distribution of salaries or compensation packages across departments

Analysis of the salary or compensation packages across departments indicates variations in their distribution. The Executive Office department exhibits a more equitable distribution of salaries compared to other departments. Conversely, departments such as Admin Offices, IT/IS, Production, Sales, and Software Engineering display a higher degree of disparity in salary distribution.

Recommendation: In light of these findings, it is recommended that efforts be made to address and rectify the discrepancies in salary levels across departments. Ensuring that individuals with similar roles and responsibilities are not earning significantly lower salaries than their counterparts in other departments is crucial. This may involve reviewing and adjusting compensation structures to promote fairness and equity throughout the organization.
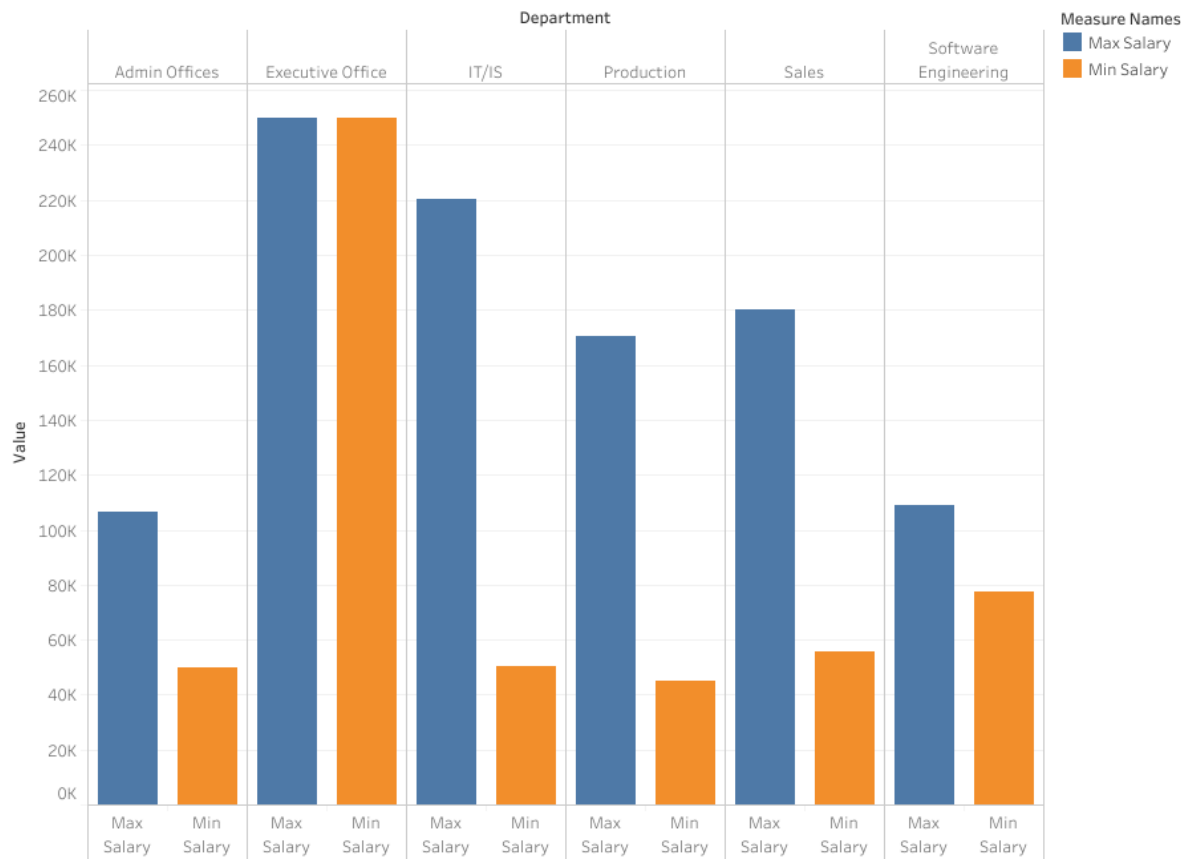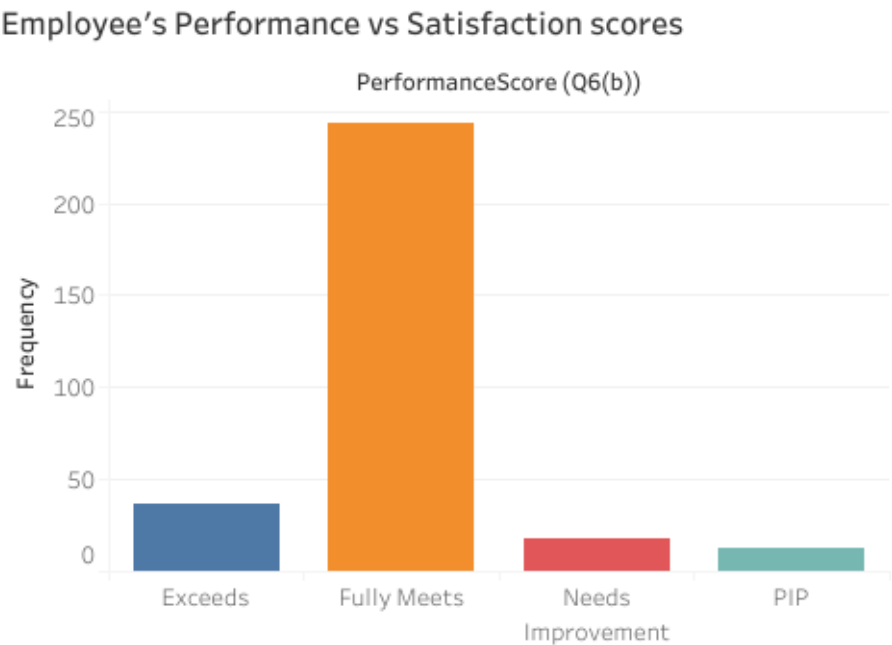
Q5a

Fig.5: Q5 Viz

Question 6:

Relationship between departments and Employees' Satisfaction scores

Analysis of the data reveals a correlation between departments and employees' satisfaction scores. Specifically, the 'Production' department has the highest level of employee satisfaction.

Recommendation: Based on this finding, it is recommended that the Human Capital department conduct a thorough examination to determine the underlying reasons for the lower satisfaction scores in other departments. By identifying and addressing the concerns specific to those departments, the organization can work towards improving overall employee satisfaction across all departments.

Fig.6: Q6 Viz

THANK YOU!