DATA ANALYST: SQL PORTFOLIO

PREPARED BY

[OKIKE AMARACHI]

Professional Background

I am DATA ANALYST with a biochemistry educational background. I hold a first degree in biochemistry from federal university of technology Owerri. Over the past year, I have taken courses and projects to improve my skills in data cleaning, data visualization, insights creation and using these insights to solve organizational problems.

My expertise is in analyzing large and complex data set and using them to create useful insights that help properly visualize the problem and in turn proffer useful solution to the problem. I am skilled in using data analytic tools such as excel, power BI, SQL, and tableau

.

In my learning course, I have been opportune to work on various projects including sourcing for large data sets from web and other sources, to provide insights, design and create data management systems that support evidence-based decision making. The above experience has helped me better understand data analytics and its application in various sectors.

I am a goal-oriented individual that seeks out new ways to constantly improve myself and contribute my own quota to society. I have great communication and interpersonal skill with a proven track record of being a team player and working with short deadlines to produce results.

I am seeking for new opportunities and challenges in the field of data analytics to further improve my skills and contribute to organizations.

Portfolio Outline

Introduction

Education for all is a charity organization with the goal of providing education for people in need. The head of fundraiser has tasked the data analysts to provide insights on donor data and donation rates.

This task is aimed at increasing the number of donors, increasing the donation frequency of existing donors and increasing the donation value.
To achieve this objectives , I would recommend the following actions be taken

- *Analysing the donor data to get better information on the existing donors*
- *Arranging the donors into segments based on geographical location, occupation, donation frequencies and other information provided in the available data*
- *creating visualization to get better insights on the problem and profer solution*
- *creating ad campaigns targeted at specific group of donors based on the insights gotten from the visuals created*
- *monitor the success of this campaigns, based on the increase in donors and donation frequencies in areas that experienced low donations prior to the analyses carried out.*
- *Device means to retain new and existing donor and also track the progress made during this process using visualization tools and dashboards.*

Root Cause Analysis

Root cause analysis as the name implies is a method of finding the main source of a problem and dealing with it as opposed to just dealing with the symptoms of the problem.

The current problem at hand is that there is a limited number of new donors, existing donors donate sparingly and the value of donation hasn't had any significant increase over the years.

The problems listed above can be caused by a variety of factors such as

- *lack of proper awareness on the importance of the cause that the organization is embarking on.*
- *ineffective donor retention strategies*
- *lack of targeted campaigns and ads tailored for specific groups of people.*

The root cause analysis can be carried out by asking the 5 'whys' question of the business problem

- *Why is donation frequency and value of donation not increasing exponentially?*
- *Why is the current number of donors low?*
- *Why are potential donors not turning into actual donors?*
- *Why are the current fundraising efforts not translating to increased donors and donation value?*
- *Why is the current donor retention strategy not effective?*

Insights

Below are some SQL queries and tableau data visualization that could help identify the root cause of the problem

```
SELECT *
FROM Donation_Data
order by donation DESC
limit 5;

SELECT *
FROM Donation_Data
order by job_field DESC
limit 5;

SELECT *
FROM Donation_Data
order by state DESC
limit 5;

SELECT sum(donation), gender
FROM Donation_Data
where gender = 'Female';

SELECT sum(donation), gender
FROM Donation_Data
where gender = 'Male';

SELECT sum(donation), state
from Donation_Data
group by state
order by sum(donation) desc;

SELECT sum(donation), job_field
from Donation_Data
group by job_field
order by sum(donation) desc;

select state, count(*)
from Donation_Data
group by state
order by count(*) desc;

select job_field, count(*)
from Donation_Data
group by job_field
order by count(*) desc;

select avg(donation)
from donation

select donation_frequency, count(*)
from Donor_Data2
group by donation_frequency
order by count(*) desc;
```

tableau visualisation of the insights .

tableau is a great data visualisation tool that is used to create a clearer picture of the insights gotten from a dataset, for easy understanding of all individuals.
here are some visuals created using tableau.

FIG 1.1 Geographical location of donors.

FIG 1.2 **Total number of donors by job field.**

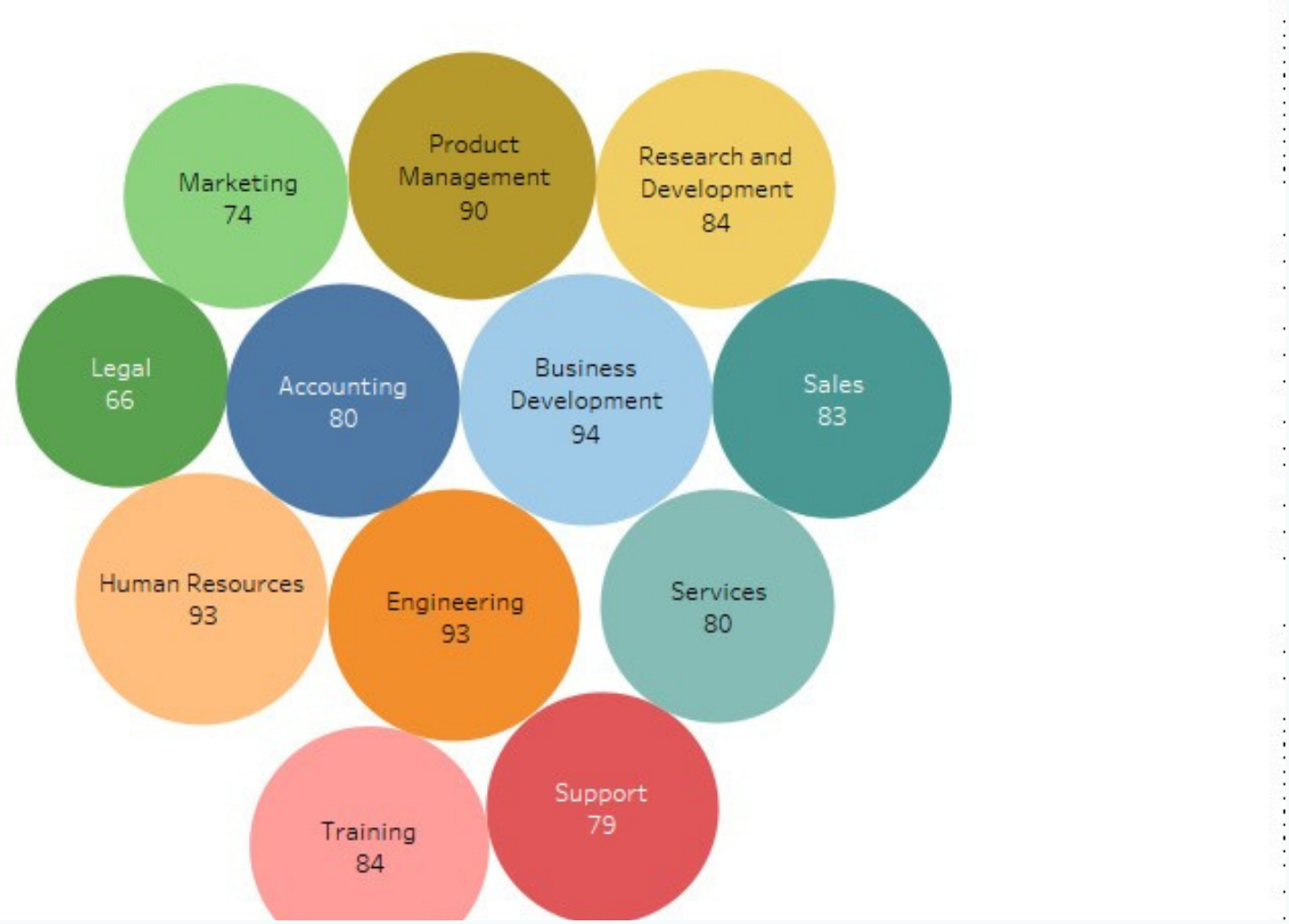


FIG 1.3 **Donation frequency of donors.**

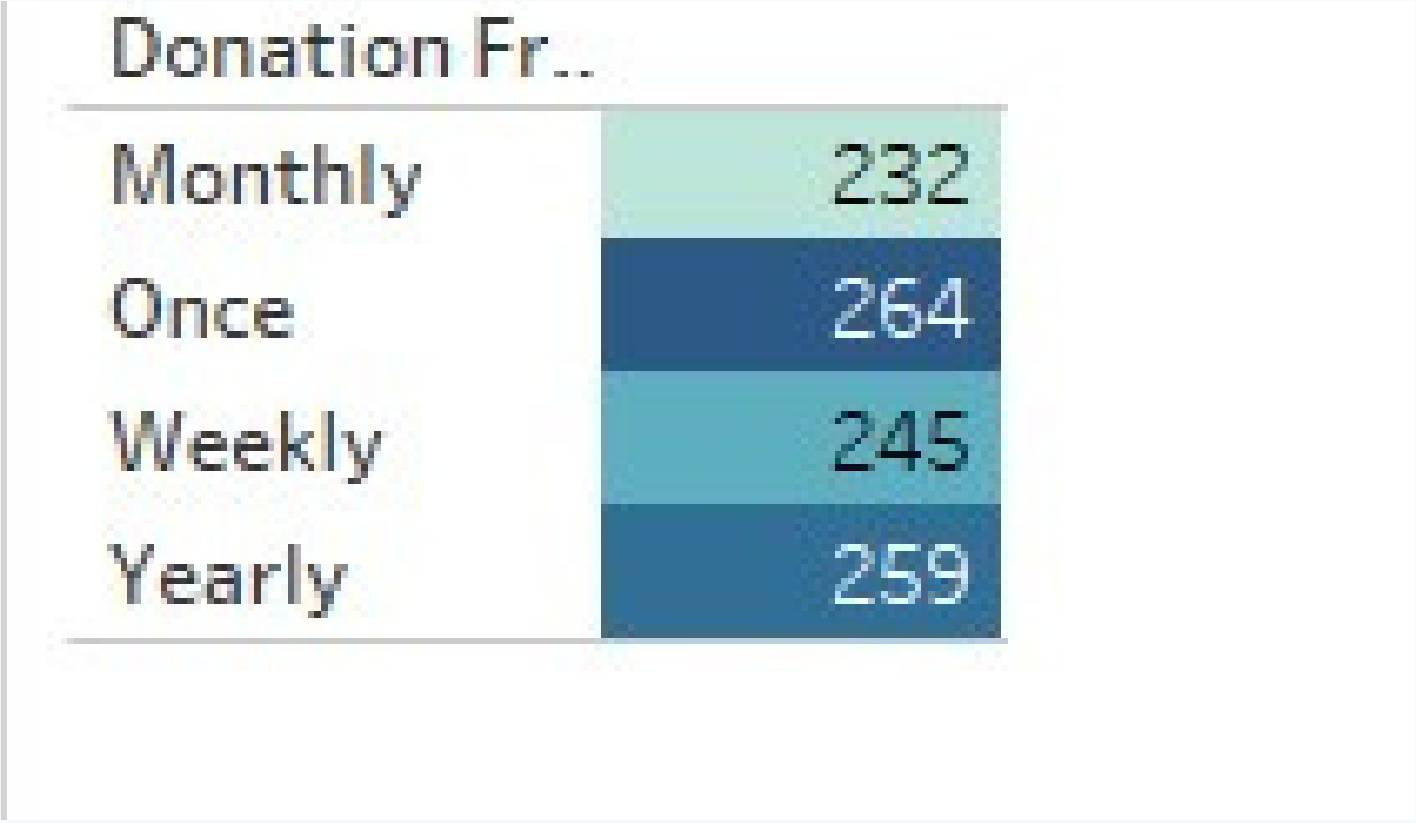


Fig 1.4. Donation value based on job field.

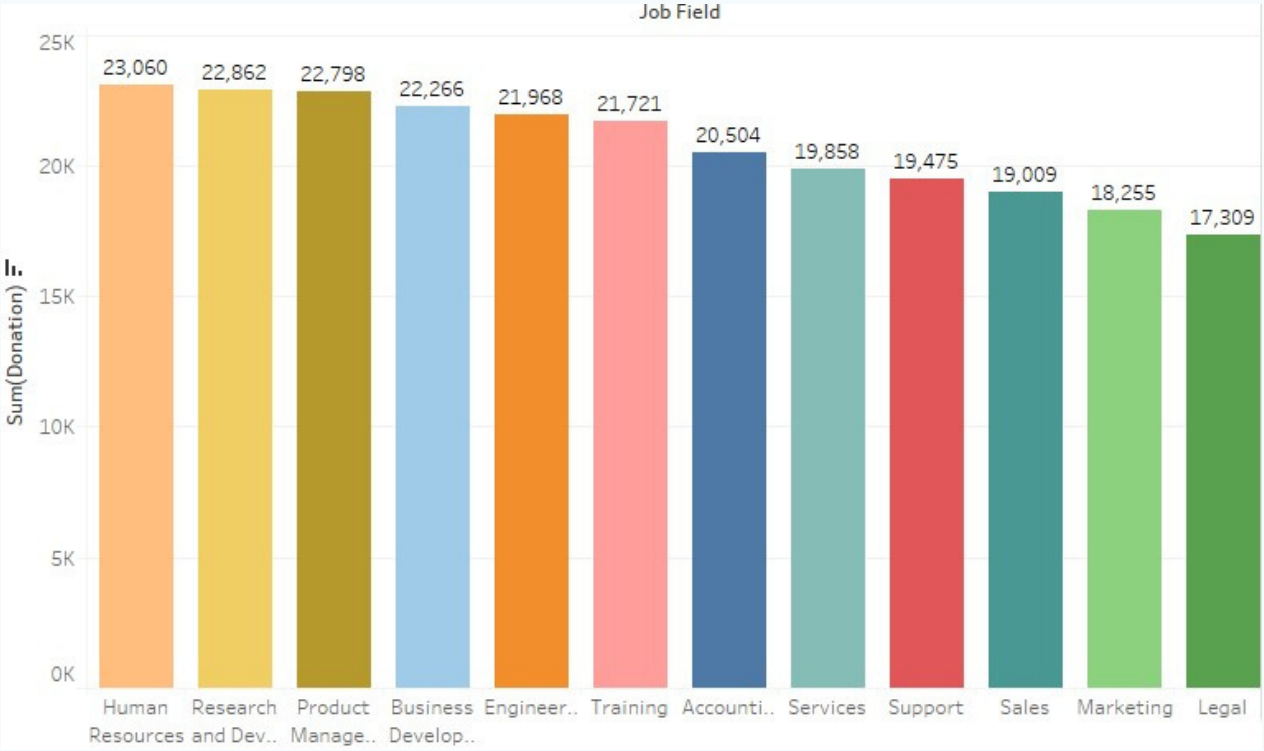
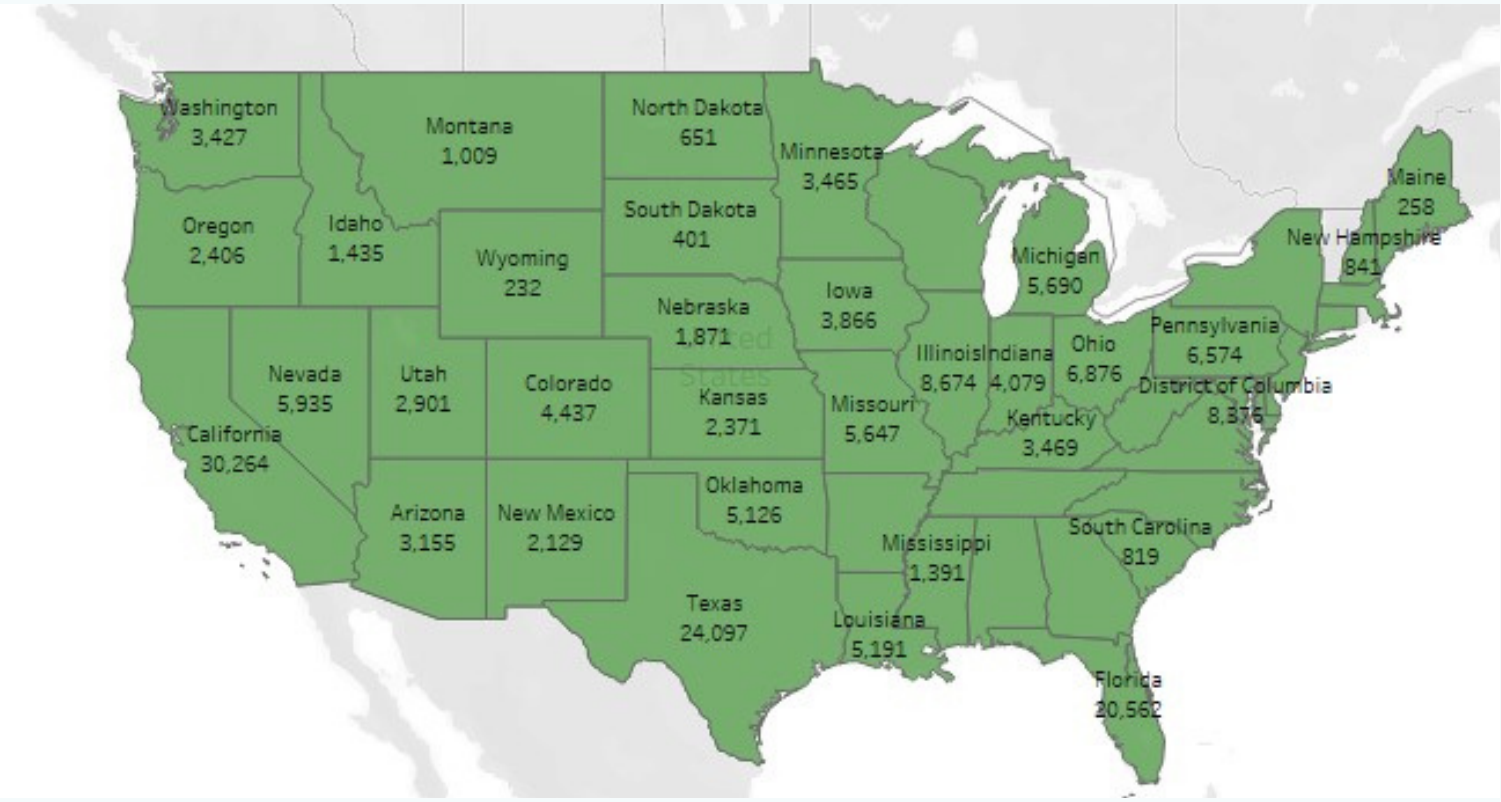


Fig 1.5 value of donations based on geographical location.



Findings and Recommendations

Based on the analysis carried out on the donor_data and donation_data datasets provided, the following findings were made, and here are some recommendations to help achieve the desired aim.

Frequency of donation: *judging from fig 1.2, it can be deduced that the majority of the donors only donated once and didn't donate anymore. Recommendation for this issue should be that ads tailored towards driving home the importance of the organization's cause and how it will impact lives.*

Donation by job field*: looking at the visuals in fig 1.4, it is clear that legal and marketing donated the lowest and also have the lowest number of donors. My recommendation would be for specific ads tailored to people in this field to be made as well as to let them know the benefits and gratification that they would feel when they donate to this cause.*

Donations and donors by geographical location: *the maps in fig 1.1 and 1.5 show that states such as Montana, north and south Dakota, Maine, and Wyoming has between 1-4 donors and lesser donations. Such areas are areas with untapped potential that can be harnessed if given proper attention and ads. Areas such as this should be target areas for ad campaigns, social media awareness etc. findings can be carried out in form of online questionnaires to ascertain why lots of persons in this location are not donating to this cause and also convince them of its importance.*

Data-driven projects: *after achieving the desired result, data should constantly be collected to monitor the progress made by virtue of changes made to the donor retention methods. Monthly or quarterly reports should also be given with proper visualization to help monitor progress and also face challenges head-on before they fester into bigger problems.*

Conclusion

The insights gained from the data provided can be used to solve the current problem at hand and achieve the desired aim for education for all charity.

By understanding the areas where there are lesser or higher donors and donations, the charity organization can create tailored ads to help enlighten people more on the importance of their programs and initiatives.