Data Analysis Portfolio

My name is Onipede Opemioniye and I am experienced in data analytics and data science. From my Job experience, I have developed skills in building dashboards with Tableau & Power BI, querying databases using SQL, Data Manipulation using Microsoft Excel.
I am passionate about data; I enjoy diving into data to discover trends and uncover valuable insights to help in making business decisions.

Professional Background

I have worked in the consulting industry, and food industry. I have outstanding problem-solving skills with a track record of goal-surpassing delivery of large-scale projects on time.
I possess excellent interpersonal relationship, analytical and management skills which have contributed to business growth and improved efficiencies.
I am a fast learner with proven success in a fast-paced and challenging professional environment.
I hold a BSC in Geology and Mineral Sciences .

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Introduction.

Education for All is a charity organization with donors distributed across the various states of the United States. Having experienced a decline in donations for a few consecutive years, The CEO of charity has identified the following objectives for the coming year.

1. Increase the number of donors in their database.
2. Increase the donation frequency of their donors.
3. Increase the value of donations in their database.

In preparation for their forthcoming strategy meeting coming up in two weeks time, I have been asked, as a Data Analyst working for the charity, by the head of fundraising to present the data on donor insights and donation rates to be able to better strategize in achieving these objectives

Data Collection.

In order to understand the business problem of the foundation, I collect data from the server using the SQL query (structured query language) which provides me with the details of the different donors and their peculiarities. Insights from the data collected would be presented by visualization using tableau.

To better analyze the dataset, I seek to answer the following questions

1. How many donors do we have in the database? What is their distribution by state and by gender?
2. What is the Average donation per state?
3. What is the different frequency of donation that exists and their monetary value?
4. Who are the Top 20 donors who give weekly or monthly
5. The total donations per job fields

Result.

It was discovered that the charity has a total of 1,000 donors with a total donation of $ 249,085 distributed across 49 states of the United States.

Higher donations are from donors working in the human resources and research and development industry.

In conclusion the organization does not have enough donors which translated to the low-income generation w hich does not commensurate with the community needs identified.

Root Cause Analysis Process.

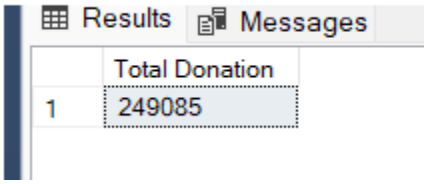
Using the 5 whys method of root cause analysis, I tried to derive some insights from the data to be able to trace the root cause of the low-income generation of Education for all.

So, I tried to find solution to the following 5 whys:

1. Why did Education for all experience decline donations seeing that they have 1,000 donors in the database?

I did a check on the datasets to see the total donation receive by the charity from the 1 000 donors, this should give us an idea of the financial status of the charity.

```
select sum(donation) as 'Total Donation' from Donation_Data;
```



So, we can see that the Total donations is $ 249,085 which is considerably low compared to the projects the organization has in the pipelines.

Therefore, we conclude that the charity has declined finances because the total contribution from the donors is low.

2. Why is the total contribution from the donors low?

So, I went deeper into the data to see how this donation varies from state to state to see where in particular the low donations are coming from.

I did this by grouping the donations by state to see the total donations from each of the 49 states in the Database.

```
select state, sum(donation) as 'Total Donation' from Donation_Data group by state order by SUM (donation) desc;
```

So, from the result I can see that the top five donations are coming from the 5 states shown below.

	state	Total Donation
1	California	30264
2	Texas	24097
3	Florida	20562
4	New York	14759
5	Virginia	10750

So, we can see that the Total donations is $ 249,085 which is considerably low compared to the projects the organization has in the pipelines.

Therefore, we conclude that the charity has declined finances because the total contribution from the donors is low.

And the least 5 donations are coming from these 5 states

44	West Virginia	793
45	Alaska	734
46	North Dakota	651
47	South Dakota	401
48	Maine	258
49	Wyoming	232

Therefore, we can state that the total contribution from the donors is low because the donations vary from states to

state. We have some states with high contributions and some states with low contributions.

This leads to the next question

3. Why did the contribution vary from state to state?

Does the number of donors differ in the states?

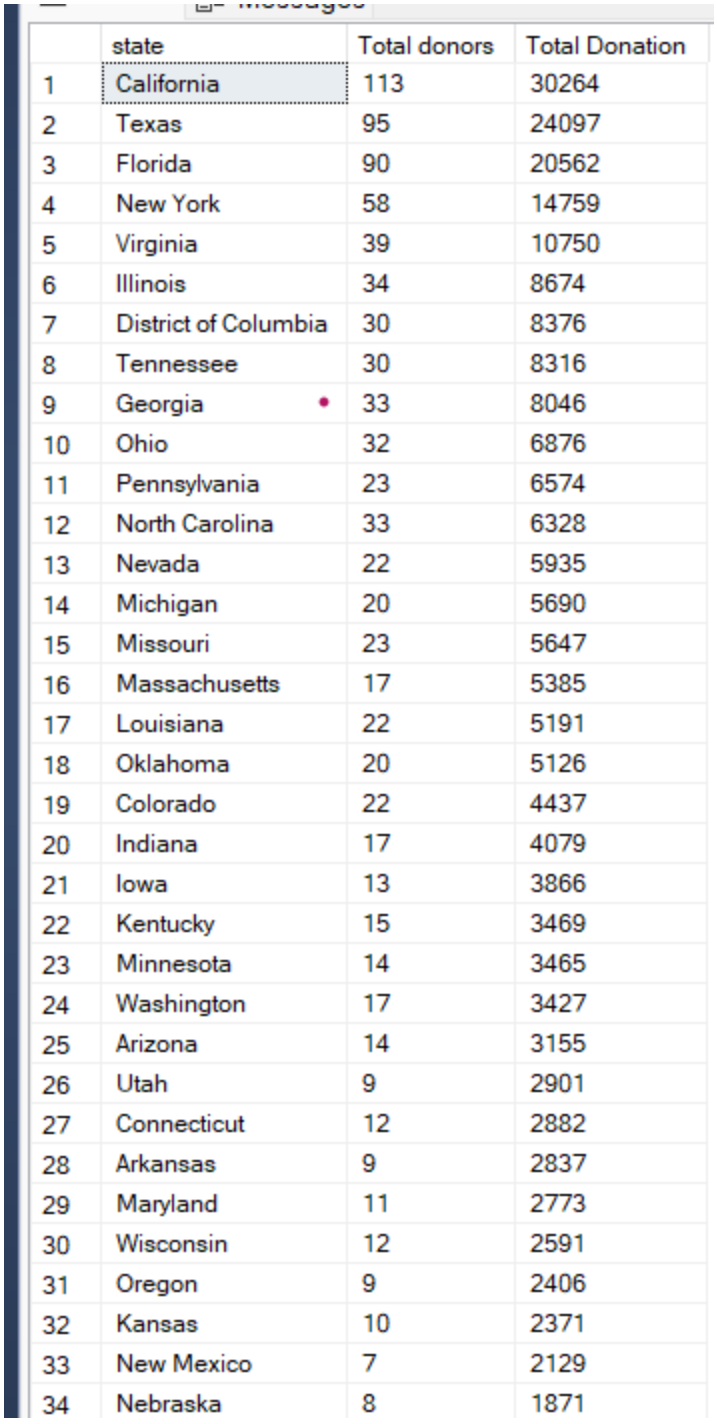
The total Contributions realized from each state is a function of the number of donors, could it be that we have more donors from certain states and few donors from the states with the low donation?

So, I went ahead to see the number of donors that made up the contribution from each of the states

SQL Query

```
select state, COUNT (id) as 'Total donors', sum(donation) as 'Total Donation' from Donation_Data group
by state order by SUM (donation) desc;
```

From the result below, we can see that the top 5 states have the highest number of donors, and the bottom 5 has the lowest number of donors, so we can state that the contribution varies from state to state because the number of contributors varies from state to state. In states that we have higher donors we have higher donations.



	state	Total donors	Total Donation
1	California	113	30264
2	Texas	95	24097
3	Florida	90	20562
4	New York	58	14759
5	Virginia	39	10750
6	Illinois	34	8674
7	District of Columbia	30	8376
8	Tennessee	30	8316
9	Georgia	33	8046
10	Ohio	32	6876
11	Pennsylvania	23	6574
12	North Carolina	33	6328
13	Nevada	22	5935
14	Michigan	20	5690
15	Missouri	23	5647
16	Massachusetts	17	5385
17	Louisiana	22	5191
18	Oklahoma	20	5126
19	Colorado	22	4437
20	Indiana	17	4079
21	Iowa	13	3866
22	Kentucky	15	3469
23	Minnesota	14	3465
24	Washington	17	3427
25	Arizona	14	3155
26	Utah	9	2901
27	Connecticut	12	2882
28	Arkansas	9	2837
29	Maryland	11	2773
30	Wisconsin	12	2591
31	Oregon	9	2406
32	Kansas	10	2371
33	New Mexico	7	2129
34	Nebraska	8	1871

35	Delaware	7	1569
36	Alabama	11	1446
37	Idaho	7	1435
38	Mississippi	5	1391
39	New Jersey	6	1376
40	Montana	4	1009
41	Hawaii	4	875
42	New Hampshire	3	841
43	South Carolina	6	819
44	West Virginia	6	793
45	Alaska	3	734
46	North Dakota	2	651
47	South Dakota	1	401
48	Maine	1	258
49	Wyoming	1	232

4. Why did the states with higher numbers of people have higher donations?

Could it be that the people in those states are earning well due to the nature of the industry they are working in?

So, we decide to see the various industries where the donors from these top donating states are working in.

```
select state, COUNT (id) as 'Total donors', job_field as 'industry', sum(donation) as 'Total Donation'
from Donation_Data where  state in ('California','Texas', 'Florida','New York', 'Virginia','Illinois')
group by state, job_field order by Sum(donation) desc;
```

Results Messages

	state	Total donors	industry	Total Donation
1	California	19	Human Resources	4608
2	California	10	Research and Development	3553
3	Texas	13	Services	3494
4	Florida	13	Business Development	3238
5	Texas	10	Training	2870
6	California	11	Engineering	2862
7	California	10	Services	2818

We can see that the highest donation comes from people working in the Human resources industry, followed by the people in research and development industry in California

5. Why did the highest donation come from people in human resources and research?

To further understand why highest donation is coming from donors in these 2 industries, we take the average donation

coming from these job field to be able to narrow match high performing industries in each of these top 5 states.

	state	Total donors	industry	Total Donation	Avg(Donation)
1	Virginia	3	Training	1246	415
2	California	10	Research and Development	3553	355
3	Virginia	4	Accounting	1414	353
4	Virginia	2	Product Management	704	352
5	California	4	Legal	1358	339
6	Florida	5	Legal	1633	326
7	New York	4	Marketing	1295	323
8	New York	3	Human Resources	966	322
9	New York	5	Training	1613	322
10	Virginia	1	Support	322	322
11	California	9	Product Management	2745	305
12	Virginia	7	Research and Development	2123	303
13	New York	8	Product Management	2308	288
14	Texas	10	Training	2870	287
15	Texas	6	Human Resources	1710	285
16	Virginia	4	Legal	1137	284
17	New York	9	Research and Development	2555	283
18	California	9	Business Development	2543	282
19	California	10	Services	2818	281
20	Texas	10	Business Development	2784	278
21	California	4	Accounting	1108	277
22	California	6	Training	1667	277
23	Virginia	2	Marketing	550	275
24	Texas	7	Marketing	1922	274
25	New York	4	Support	1097	274
26	Florida	8	Training	2144	268
27	Texas	13	Services	3494	268
28	Virginia	4	Sales	1062	265
29	Virginia	2	Business Development	528	264
30	Florida	6	Marketing	1582	263
31	New York	4	Services	1045	261

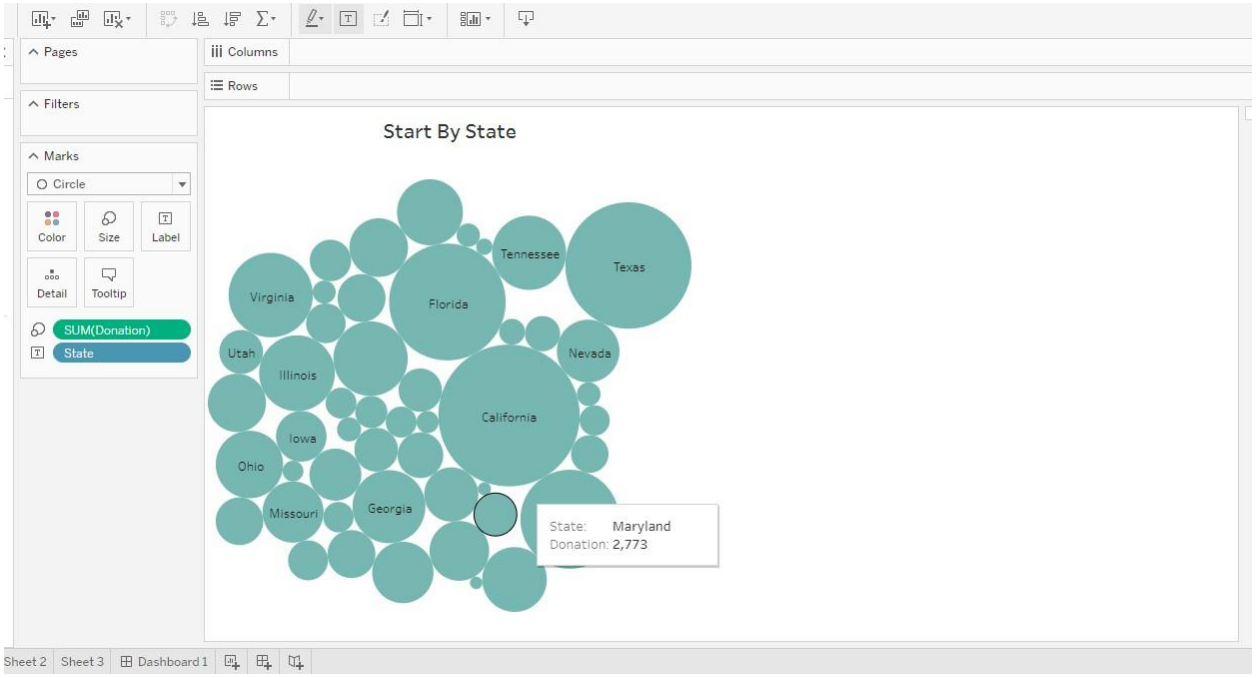
32	California	11	Engineering	2862	260
33	California	7	Marketing	1819	259
34	Florida	13	Business Development	3238	249
35	Texas	11	Accounting	2732	248
36	Texas	6	Sales	1476	246
37	Florida	6	Human Resources	1469	244
38	California	19	Human Resources	4608	242
39	Florida	5	Accounting	1197	239
40	Texas	7	Support	1644	234
41	New York	6	Sales	1354	225
42	California	11	Support	2476	225
43	Florida	8	Support	1802	225
44	Texas	7	Engineering	1568	224
45	Texas	6	Research and Development	1338	223
46	Florida	10	Sales	2161	216
47	Texas	6	Product Management	1291	215
48	Texas	6	Legal	1268	211
49	California	13	Sales	2707	208
50	New York	1	Legal	205	205
51	Florida	12	Product Management	2436	203
52	Virginia	2	Services	389	194
53	New York	3	Business Development	568	189
54	Virginia	5	Engineering	926	185
55	Florida	10	Engineering	1809	180
56	New York	6	Accounting	1029	171
57	Florida	6	Services	1001	166
58	New York	5	Engineering	724	144
59	Virginia	3	Human Resources	349	116
60	Florida	1	Research and Development	90	90

From above, we can see that

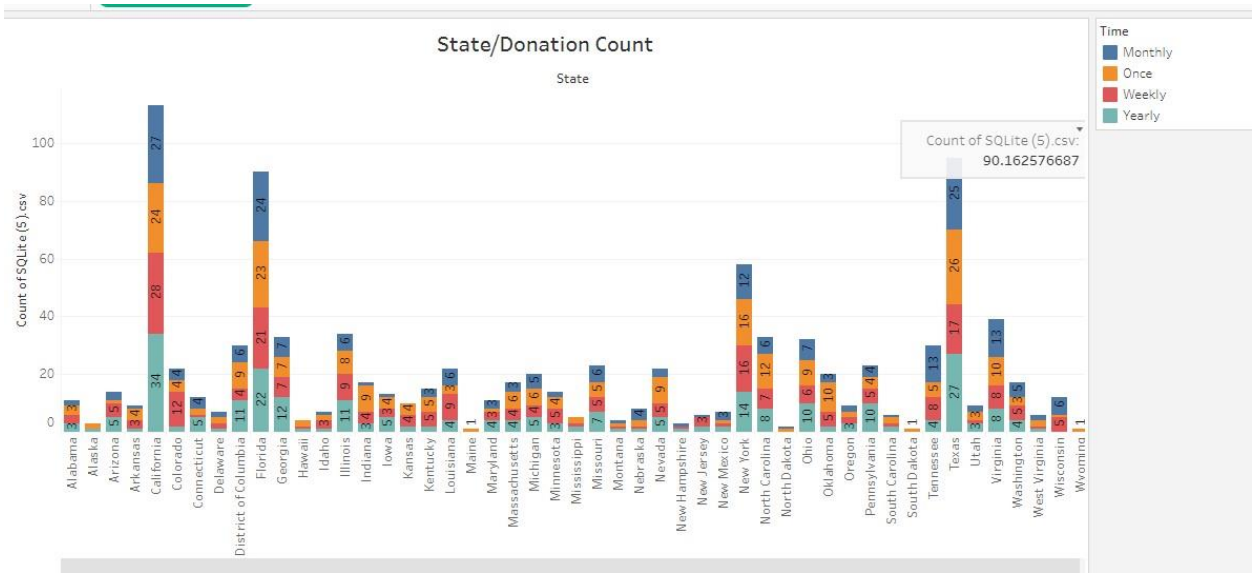
In California, the industry with the highest Average donation is still the Research and Development (415) industry
followed by Legal (339), Product Management (339), Business development (282) and then services (281)
In Virginia, the high performing industries are legal (415), Accounting (353), Product Management (352), Support (322),
research and Development (303)
In Florida the high performing industries are legal (326), Training (268), Marketing (263), Business Development (249),
Human resources (244)
In New York the high performing industries are Marketing (323), Human resources (322), Training (322), Product
Management (288), research and Development (283)

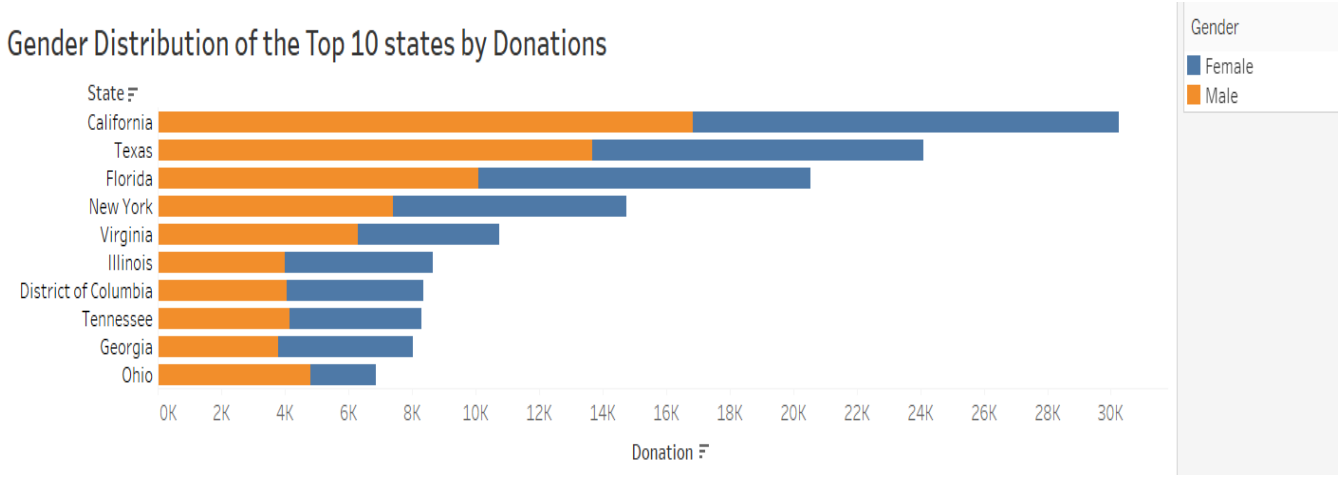
Tableau Visualizations.

The below diagram shows a chart containing each states donation and from clear illustrations California made the most donation.

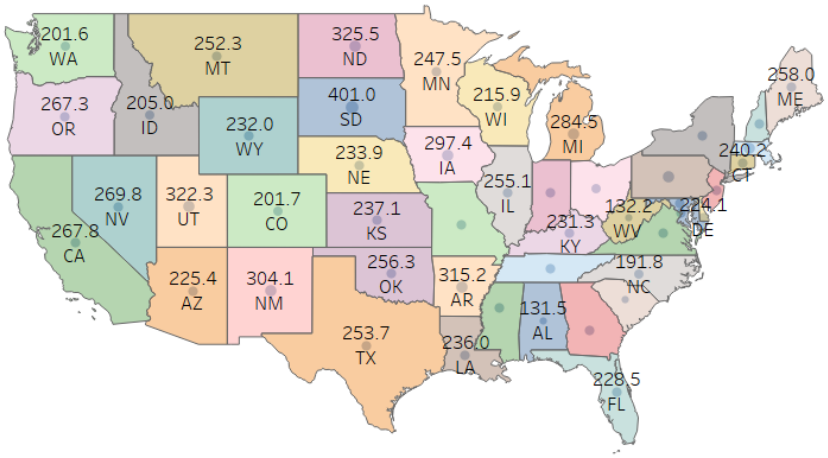


This diagram shows the time when donations were made in each state.





Avg Donation by states



AVG(Donation)

- 131.5
- 200.0
- 250.0
- 300.0
- 350.0
- 401.0

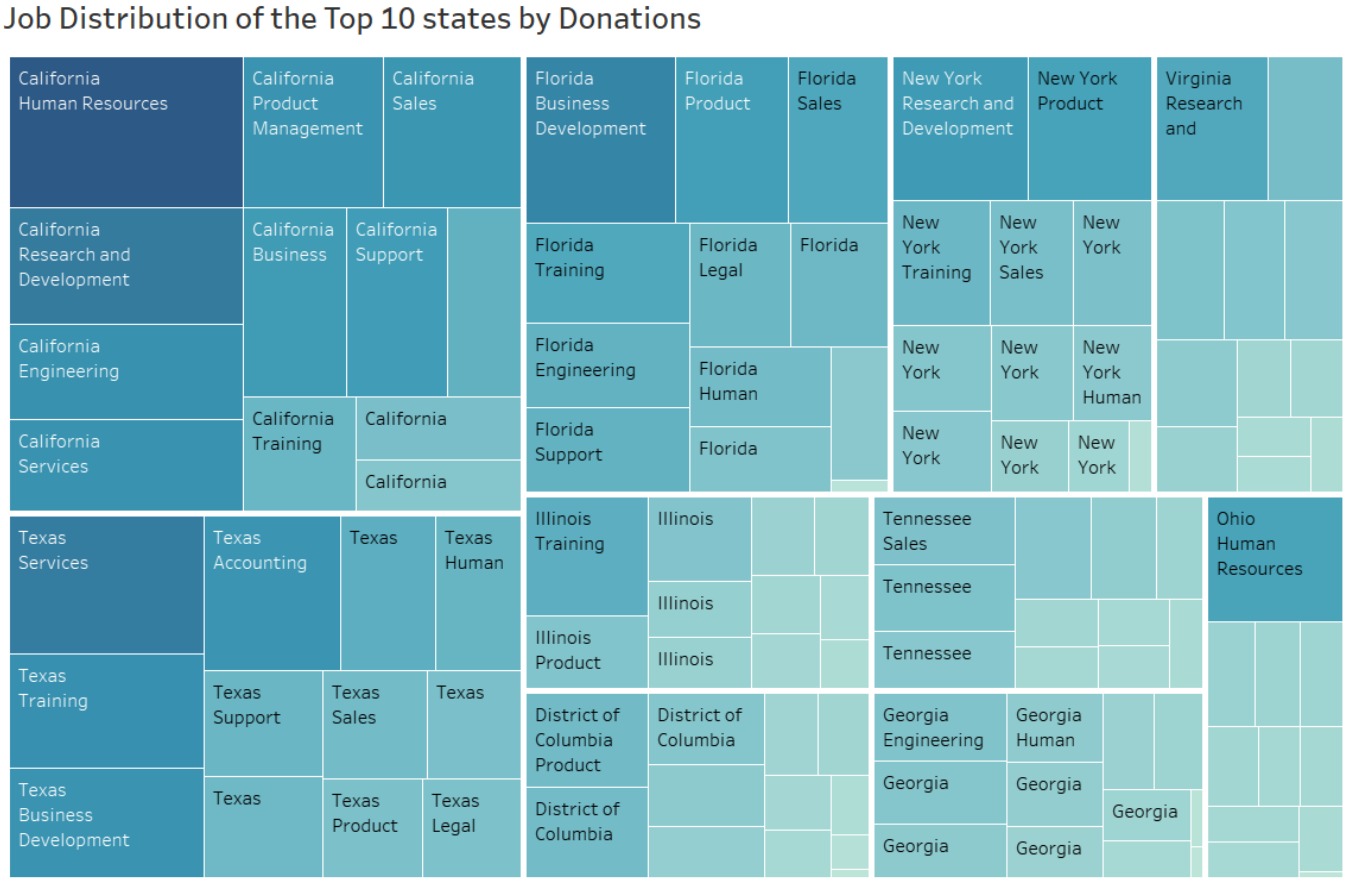
	donation_frequency	Total donors	Total Donations
1	Yearly	259	65667
2	Once	264	64586
3	Monthly	232	59680
4	Weekly	245	59152

Insights:

We currently have 259 donors on yearly frequency, and they contribute the highest donation of (65,667) followed by those who contributed once a total of 264 donors amounting to 64,586.
And the least contribution of 59,152 comes from 245 donors who donates weekly.

The Top 20 donors who give weekly or monthly

A further inquiry shows that the highest avg donor is in the research and development industry in the state of SouthDakota. Closely followed by the support and human resources field in North Dakota and Utah.
It is interesting to know that the highest average donation is not from California, the highest avg donation is from SouthDakota by just one donor. We wonder what industry this person is working.



Findings and Recommendations

From this analysis, here is the summary of the findings:

1. Education for All charity has a total of 1,000 donors with a total donation of $249,085 distributed across 49 states of the United States.
2. High donations are from donors working in the following industries: research and development, Legal, Business Development, human resources and Product Management.
3. The top 5 donations are from highly populated states of California, Texas, Florida, Virginia, New York.

It is recommended that the organization should be more strategic in their recruitment of donors. Based on insights from the datasets. The charity will do well by focusing on getting more donors from the states where they currently have high donors and targeted to the identified high performing industries.

For example, the organization can come up with a program of referrals where current members get incentives for referring other people or recruiting of marketers who earn additional commissions based on the number of donors they recruit from the identified industries in the states.
The fact that the organization is targeting the high performing states does not mean that the averagely performing states like Illinois, District of Columbia, Tennessee, Georgia and Ohio, should totally abandoned, rather a Further study of the demographics of these states and their high performing industries should be done and some efforts should be geared towards recruiting from those industries.

Conclusion.

In conclusion, Education for all can achieve the objectives for the coming year

1. Increase the number of donors in their database
2. Increase the donation frequency of their donors
3. Increase the value of donations in their database

By engaging in strategic marketing as recommended above.