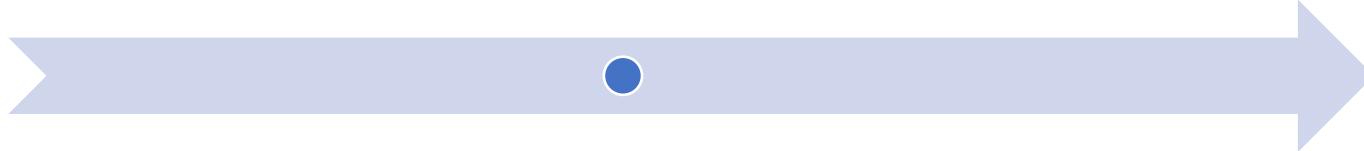


Data Analysis 2 Portfolio By Akinbowale Micheal



I am a person that study and get things easily, I have critical thinking and I am good at learning new things.
I am happy to work as a team and I can also function well as an independent player.

Professional Background

I have B.Tech in Biochemistry from Olusegun Agagu University of science and technology okitipupa ondo state Nigeria.

I am also a Graphic designer and I have work in the ict unit for 8 months. I have a technical skill in Excel Proficiency where I possess a strong command on Excel, utilizing its versatile features for data analysis and reporting. My expertise includes Creating Pivot Tables and employing advanced formulas to uncover insights hidden within datasets.

I am also well-versed in Pythons, leveraging libraries such as Pandas and Numpy to perform in-depth analysis.

This skill allows me to seamlessly clean, preprocess, manipulate data and ensuring it is ready for comprehensive examination.

I also excel in translating complex datasets into visually appealing and informative charts, graphs, and dashboards using Tableau.

My foundation in statistical analysis empowers me to apply various methodologies to datasets, uncovering correlations, trends, Patterns. I am adept at conducting hypothesis testing, regression analysis, and other statistical techniques to provide evidence Backed insights that drives strategic decision-making.

With a solid grasp of SQL, I am adept at querying datasets to extract valuable information. I am skilled in crafting complex Queries that receive specific data points, enabling me to uncover trend and patterns for informed business strategies.

I am hard-working employee and reliable team member, who always ready to learn and to be in progress with company.

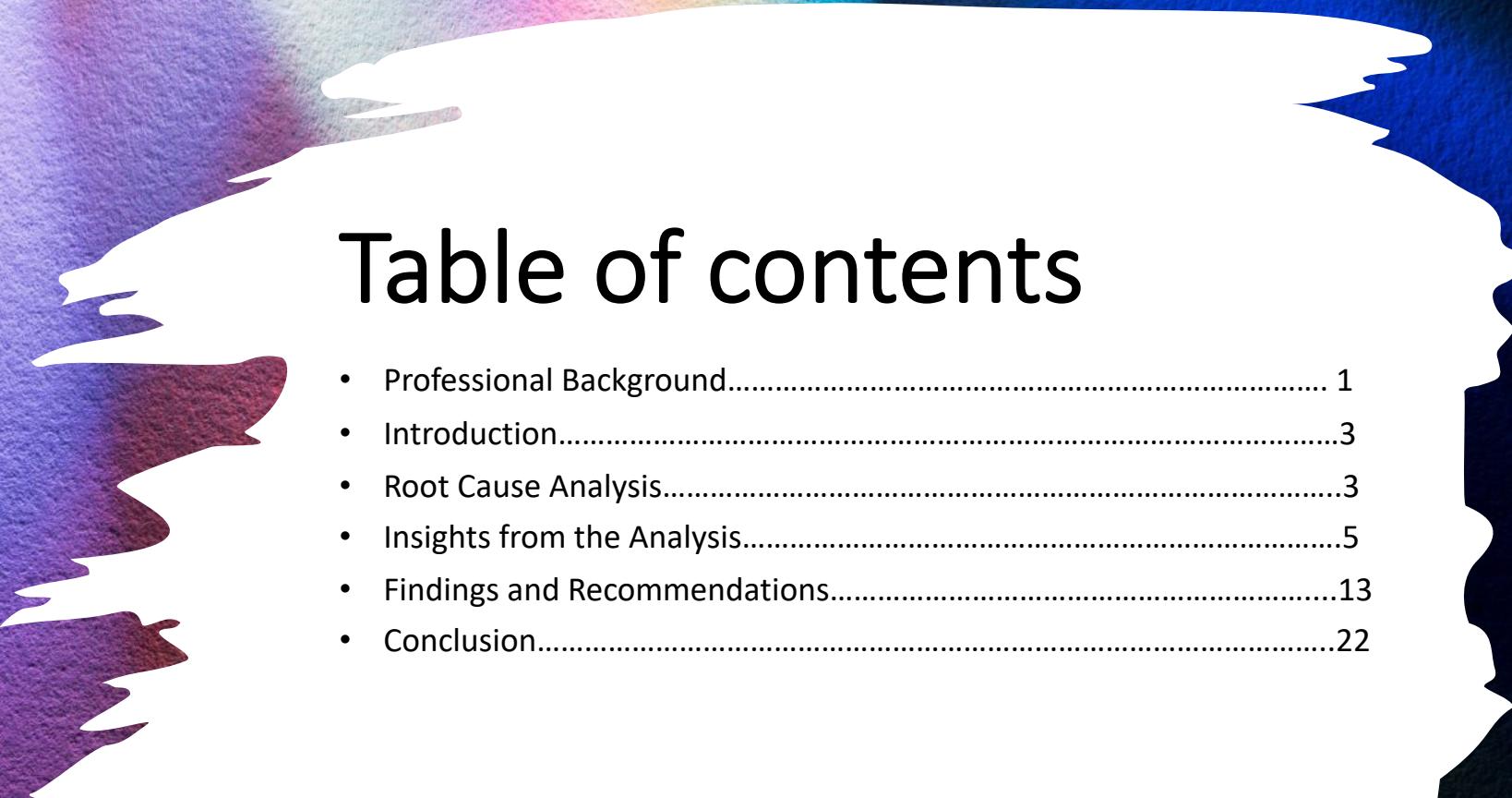


Table of contents

- Professional Background..... 1
- Introduction..... 3
- Root Cause Analysis..... 3
- Insights from the Analysis..... 5
- Findings and Recommendations..... 13
- Conclusion..... 22

Introduction

I was given a hypothetical situation that I am a Data Analyst working for the charity,

Education for ALL I have been asked by the Head of Fundraising to present the data on donor insights and donation rates

Within the Fundraising team, my objectives are to

Increase the number of donors in our database

Increase the donation frequency of our database

Increase the value of donation in our database

In two weeks, I needed to present insights from the donation data to my team and inform my fundraising strategy to increase

Donations for the following year.

I applied SQL commands to analyse data: JOIN, ORDER BY, WHERE, BETWEEN, AND, OR, SUM(), COUNT(), AVG(), GROUP BY,

HAVING.

Also, I used Root Cause Analysis to understand the problem and right questions.

As a result, I have found out crucial insights of provided data sets, prepared visualisations and report for my team



Root Cause Analysis Process



donation over time.



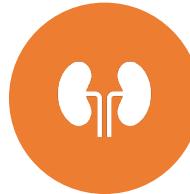
The business problem is that for charity organisation is very hard to growth funding,



I had to present my report in two weeks



Therefore, they should look for more donors who can donate regularly and also make more publicity among the donor that are educated and will increase their



To understand the problem, I needed to analyse existing database of Donors and Donation.

Also, I should present crucial numbers and visualisations of our data sets.

I decided to ask some questions to dig the problem deeper:



1. How many donors we have in existing database?

2. What is the amount of their donations?

3. What is the frequency of the donations?

4. Who are the top 10 donors?

5. Is the amount of donations depends on gender, job field, university degree, car?

Also, I realised that I should get to know what's going on and reason some people donate regularly and some do not. I had to know in details main symptoms and trends of the dataset
Moreover, I applied Root Cause Analysis to ask

1. Why do we not have as many donors as we need?
2. Why donors' willingness and capability to donate is vary?
3. Why in our database we can not see when people joined our organisation and how long they stayed with us
4. Why do we not collect information on how actually donors learned about Education for ALL to be able to promote our organisation through these channels?

Insights from the Analysis

- I have been provided with 2 relational databases such as FO_Donation_Data and EFO_Donor_Data to answer the
 - Business problem.
 - SQLite Database Management System was used to find out main insights
- Donation Dataset includes such data
 - __ Id
 - __ First name
 - __ Last name
 - __ Email
 - __ Gender
 - __ Job field
 - __ Donation
 - __ State
 - __ Shirt Size
- Donor Dataset include such data
 - Id
 - Donation frequency
 - University
 - Car
 - Second language
 - Favourite colour
 - Movie genre

Both data sets were imported into SOLite

SELECT statement was used to fetch data from a database.

```
1 SELECT * FROM Donation_Data;  
2 SELECT * FROM Donor_Data2;
```

To find the total number of donors with the COUNT() Function, I used a command like this:

```
1 SELECT COUNT (donation)  
2 FROM Donation_Data;
```

To find the total sum of donation I used SUM()

```
1 SELECT SUM (donation)  
2 FROM Donation_Data;
```

MAX() I applied to find the largest amount of donations:

```
1 SELECT MAX (donation)  
2 FROM Donation_Data;
```

MIN() to return the smallest value of donation:

```
1 SELECT MIN (donation)  
2 FROM Donation_Data;
```

Top 10 donors

The INNER JOIN clause allow us to join different columns from multiple tables together.

WHERE was used too filter the result of a ste to include only rows where a specified condition is true. ORDER BY function with

DESC order was used to order the donor data by th higest to lowest donations

```
1 SELECT Donation_Data.gender, Donation_Data.donation, Donation_Data.state, Donor_Data2.don
2 FROM Donation_Data
3 JOIN Donor_Data2
4 ON Donation_Data.id = Donor_Data2.id
5 WHERE donation_frequency = "Weekly"
6 AND donation BETWEEN 400 AND 500
7 ORDER BY donation DESC
8 LIMIT 10;
```

Top 10 donor with negative ratio

```
1 SELECT Donation_Data.gender, Donation_Data.donation, Donation_Data.state, Donor_Data2.don
2 FROM Donation_Data
3 JOIN Donor_Data2
4 ON Donation_Data.id = Donor_Data2.id
5 WHERE donation_frequency = 'Weekly'
6 AND donation BETWEEN 5 AND 20
7 ORDER BY donation DESC
8 LIMIT 10;
```

Also I used INNER JOIN to figure out the amount of donations Once, Weekly, Monthly, Yearly.

```
1 SELECT Donation_Data.donation, Donor_Data2.donation_frequency, SUM(donation)
2 FROM Donation_Data
3 JOIN Donor_Data2
4 ON Donation_Data.id = Donor_Data2.id;
5 WHERE donation_frequency = 'Once';
```

```
1 SELECT Donation_Data.donation, Donor_Data2.donation_frequency, SUM(donation)
2 FROM Donation_Data
3 JOIN Donor_Data2
4 ON Donation_Data.id = Donor_Data2.id;
5 WHERE donation_frequency = "Weekly";
```

```
1 SELECT Donation_Data.donation, Donor_Data2.donation_frequency, SUM(donation)
2 FROM Donation_Data
3 JOIN Donor_Data2
4 ON Donation_Data.id = Donor_Data2.id;
5 WHERE donation_frequency = "Monthly";
```

```
1 SELECT Donation_Data.donation, Donor_Data2.donation_frequency, SUM(donation)
2 FROM Donation_Data
3 JOIN Donor_Data2
4 ON Donation_Data.id = Donor_Data2.id;
5 WHERE donation_frequency = "Yearly";
```

Here, we want to see how many donor have States have over 50 donors. The HAVING clause restricts the query to states with 50 or more donors.

```
1 SELECT state, COUNT (*)
2 FROM Donation_Data
3 GROUP BY state
4 HAVING COUNT (*) > 50;
```

I used LEFT JOIN comand on Donor_data and Donation_Data to undertsand how many females and males with university Education donated more than \$400.

```
1 SELECT *
2 FROM Donation_Data
3 LEFT JOIN Donor_Data2
4 ON Donation_Data.id = Donor_Data2.id
5 WHERE gender = 'Female'
6 AND university != 'NULL'
7 AND donation > 400
8 ORDER BY donation DESC;
```

```
1 SELECT *
2 FROM Donation_Data
3 LEFT JOIN Donor_Data2
4 ON Donation_Data.id = Donor_Data2.id
5 WHERE gender = 'Male'
6 AND university != 'NULL'
7 AND donation > 400
8 ORDER BY donation DESC;
```

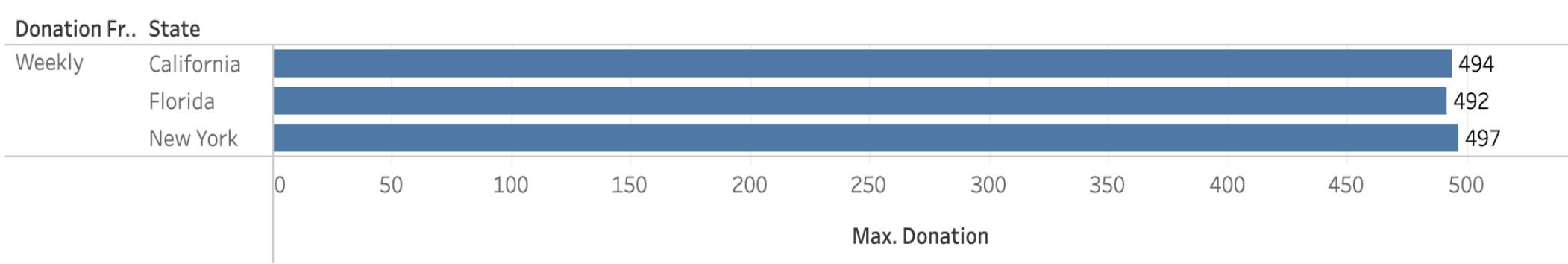
Also I found out how many males and females without university education donated more than \$400

```
1 SELECT Donation_Data.gender, Donation_Data.donation, Donor_Data2.university
2 FROM Donor_Data2
3 JOIN Donation_Data
4 ON Donor_Data2.id = Donation_Data.id
5 WHERE university IS NULL
6 AND gender = 'Female'
7 AND donation > 400
8 ORDER BY donation DESC;
```

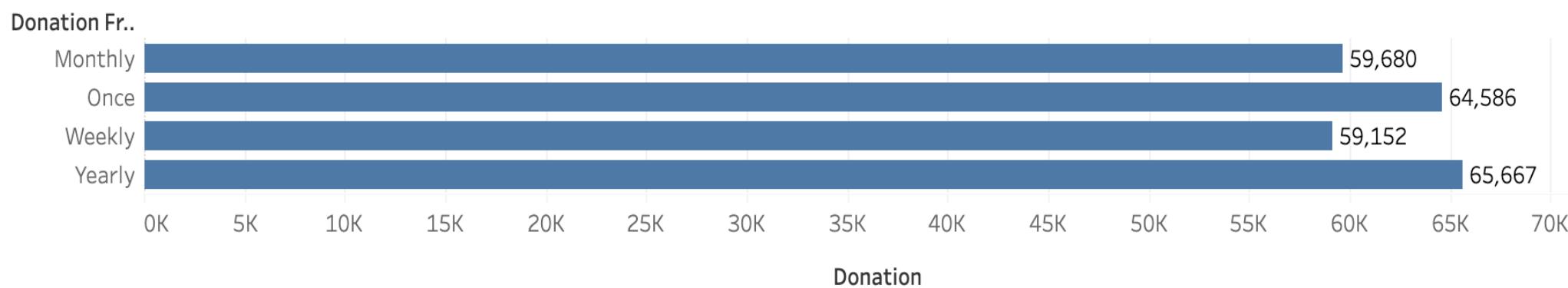
```
1 SELECT Donation_Data.gender, Donation_Data.donation, Donor_Data2.university
2 FROM Donor_Data2
3 JOIN Donation_Data
4 ON Donor_Data2.id = Donation_Data.id
5 WHERE university IS NULL
6 AND gender = 'Male'
7 AND donation > 400
8 ORDER BY donation DESC;
```

Tableau was used as a very powerful tool for data analysis and visualisation.

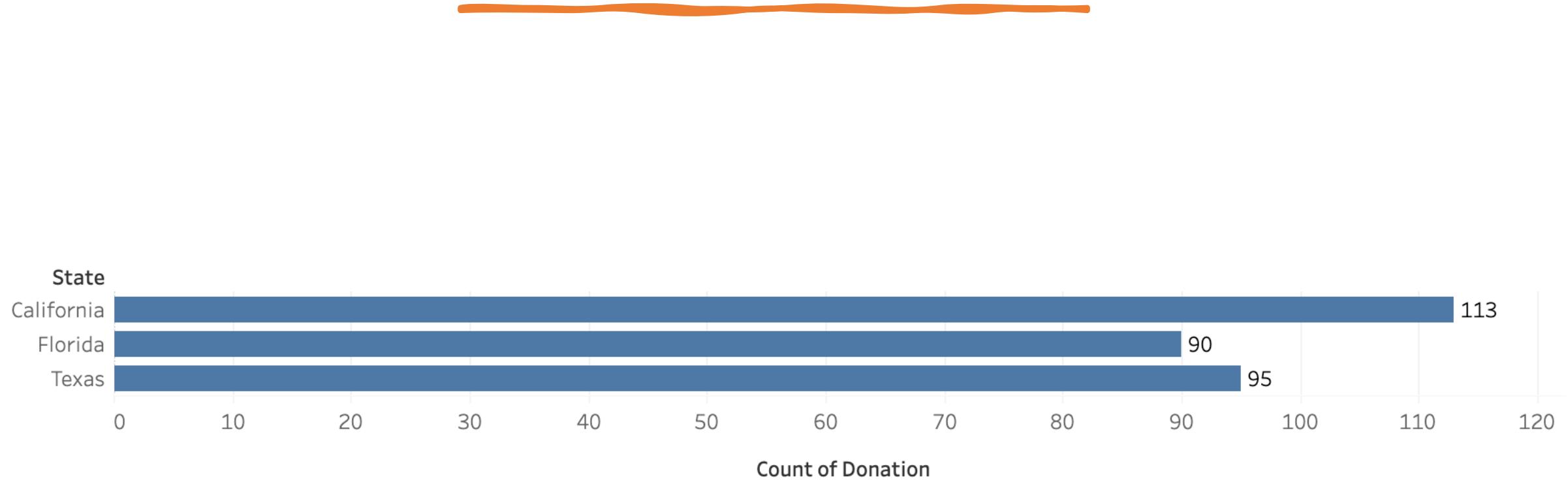
Thus, the highest amounts of donations weekly coming from California, New York and Florida.



Next visualisation clearly demonstrate that we receive majority of donations with frequency Yearly and Once.



Majority of our donors live in California, Texas and Florida.



- Findings and Recommendations
- As a result of data set analysis, I have found out:
 - The total number of donors we have in the database is 1000
 - The sum of donation we collected is \$249085
 - The largest amount of donation is \$500
 - The smallest amount of donation is \$5

Top 10 donors, who donate weekly between \$400 and \$500

donation	gender	state	donation_frequency	car	university
497	Male	New York	Weekly	Maserati	Rockcliffe
494	Male	California	Weekly	Kia	Cominetti
492	Female	Florida	Weekly	Ford	null
489	Female	Florida	Weekly	BMW	Fraser
488	Female	California	Weekly	Chevrolet	Turford
487	Female	Texas	Weekly	Lexus	Forrington
484	Male	Arkansas	Weekly	Ford	null
482	Male	Texas	Weekly	Infiniti	Guerrier
476	Female	Minnesota	Weekly	Kia	Royan
476	Female	Tennessee	Weekly	Rolls-Royce	null

Top 10 donors with negative ratio, who donate weekly between \$5 and \$20:

- Thus, we can see that amount of donations are not really depends on how expensive is donors' car, they are from different states where income is vary.
- For instance, income in California is higher than in Texas, however some donors from Texas
- donate bigger amount. They are different gender.
- Also, we can notice that majority of donors have university education, no matter what amounts they donate.

donation	gender	state	donation_frequency	car	university
19	Male	Michigan	Weekly	Land Rover	Kincla
19	Female	California	Weekly	Ford	Layne
18	Female	California	Weekly	Toyota	Capini
17	Male	Minnesota	Weekly	Buick	Rochewell
16	Male	Kansas	Weekly	Kia	Havers
15	Male	Washington	Weekly	Chevrolet	Isaksen
13	Male	Arkansas	Weekly	Lincoln	null
13	Female	North Carolina	Weekly	Mercedes-Benz	Tapenden
11	Male	Washington	Weekly	Chevrolet	Schuster
10	Female	Florida	Weekly	null	null

donation	donation_frequency	SUM(donation)
292	Once	64586
28	Weekly	59152
178	Monthly	59680
255	Yearly	65667

Amount of donation and frequency:

state	COUNT(*)
California	113
Florida	90
New York	58
Texas	95

-
- We can understand that among 1000 donors we have in our data base, only 753 are active
 - donors, who donate with different frequency. $1000 - 753 = 247$ are not active donors, they do
 - not provide donations at all.
 - Also, we can notice that majority of donors donate Once or Yearly. Thus, we should increase
 - the frequency.
 - States with more than 50 donors:

66 Females with university education donated more than \$400:

Number	gender	donation	university
1	Female	499	Sparhawk
2	Female	499	Antoszewski
3	Female	494	Coates
4	Female	492	Minthorpe
5	Female	491	Blackborn
6	Female	490	Heinert
7	Female	489	Fraser
8	Female	488	Turford
9	Female	487	Forrington
10	Female	487	Deeks
11	Female	487	Wichard
12	Female	487	Drewet

13	Female	486	Sackes
14	Female	483	Gorch
15	Female	482	Mellonby
16	Female	481	Khristoforov
17	Female	476	Royan
18	Female	474	Damant
19	Female	473	Mundy
20	Female	465	Tayloe
21	Female	465	Rubert
22	Female	462	Ledrane
23	Female	462	Smethurst
24	Female	460	Gratten
25	Female	458	Maric
26	Female	456	Cadamy
27	Female	455	Mylchreest
28	Female	452	Enevoldsen
29	Female	451	Olive
30	Female	451	Murrigans
31	Female	451	Chrippes
32	Female	450	Bertram
33	Female	449	Markus
34	Female	447	Meeny
35	Female	444	McAlindon
36	Female	444	Petticrow
37	Female	442	Laughrey
38	Female	442	Josuweit
39	Female	440	Rudolf
40	Female	440	Gronaller
41	Female	439	Ipsly
42	Female	439	Turmel
43	Female	436	Hazelgreave
44	Female	436	Clowney
45	Female	435	Minci
46	Female	434	Thurgood
47	Female	433	Inger
48	Female	431	Scullard
49	Female	431	Darton
50	Female	428	Angliss
51	Female	428	Carrivick
52	Female	427	Renne
53	Female	423	Littlejohn
54	Female	423	Trehearn

55	Female	422	Barham
56	Female	422	Pullar
57	Female	421	Effnert
58	Female	421	Finby
59	Female	420	Chillingsworth
60	Female	420	Grasha
61	Female	420	Powling
62	Female	420	Brettell
63	Female	418	Cluatt
64	Female	417	Hardacre
65	Female	417	Izatson
66	Female	409	Flanner

88 Males with university education donated more than \$400:

Number	gender	donation	donation_frequency	university
1	Male	500	Yearly	Walasik
2	Male	500	Monthly	Leithgoe
3	Male	498	Monthly	Trotton
4	Male	497	Weekly	Rockcliffe
5	Male	494	Weekly	Cominetti
6	Male	494	Monthly	Baumber
7	Male	493	Monthly	Armatidge
8	Male	491	Once	McIlmorow
9	Male	489	Monthly	Menci
10	Male	489	Yearly	Blythin
11	Male	487	Yearly	Naerup
12	Male	486	Once	Brooke
13	Male	484	Yearly	Grimoldby
14	Male	484	Yearly	Laugharne
15	Male	482	Once	Ellerey
16	Male	482	Once	Gunby
17	Male	482	Yearly	Tew
18	Male	482	Yearly	Sodeau
19	Male	482	Weekly	Guerrier
20	Male	482	Monthly	Baford
21	Male	479	Yearly	Shallcross
22	Male	478	Monthly	Pardoe
23	Male	477	Yearly	Lowis
24	Male	474	Monthly	Finlayson
25	Male	472	Yearly	Jakubovicz
26	Male	472	Yearly	Scraney

27	Male	470	Once	Thams
28	Male	468	Once	Gorler
29	Male	468	Once	Parkman
30	Male	466	Once	Losty
31	Male	466	Monthly	Hunting
32	Male	465	Yearly	Burehill
33	Male	465	Monthly	Morhall
34	Male	461	Yearly	Foffano
35	Male	461	Yearly	Dartnall
36	Male	460	Once	Owtram
37	Male	460	Monthly	Bushill
38	Male	460	Weekly	Daughtery
39	Male	459	Yearly	Cropton
40	Male	458	Monthly	Mallall
41	Male	457	Yearly	McKall
42	Male	455	Monthly	Trays
43	Male	452	Once	McGlashan
44	Male	451	Once	Blount
45	Male	451	Once	Dinneen
46	Male	450	Yearly	Ambrosch
47	Male	447	Yearly	Devlin
48	Male	447	Once	Zecchetti
49	Male	444	Yearly	Edgeler
50	Male	444	Once	Douglass
51	Male	442	Yearly	Layfield
52	Male	441	Monthly	Barnes
54	Male	437	Monthly	Blackford
55	Male	436	Weekly	Cobbold
56	Male	436	Once	Finey
57	Male	435	Once	Brabon
58	Male	434	Weekly	Mines
59	Male	433	Once	Oxherd
60	Male	430	Once	Pear
61	Male	428	Monthly	Ellacott
62	Male	427	Once	Georgi
63	Male	427	Monthly	Statton
64	Male	423	Weekly	Nolot
65	Male	421	Weekly	Greenlees
66	Male	419	Weekly	Tranmer
67	Male	417	Yearly	O'Flannery
68	Male	417	Once	Bensusan

69	Male	416	Weekly	Messent
70	Male	415	Monthly	Lennon
71	Male	414	Monthly	Micklem
72	Male	411	Monthly	Domenichelli
73	Male	411	Monthly	Ackeroyd
74	Male	409	Yearly	Alyokhin
75	Male	409	Once	Andreolli
76	Male	409	Monthly	Luppitt
77	Male	409	Weekly	Dulanty
78	Male	408	Yearly	Gubbin
79	Male	408	Weekly	O'Lehane
80	Male	401	Once	Casella

26 Males without university education donated more than \$400:

number	gender	donation	university
1	Male	493	null
2	Male	488	null
3	Male	484	null
4	Male	480	null
5	Male	469	null
6	Male	467	null
7	Male	463	null
8	Male	462	null
9	Male	458	null
10	Male	452	null
11	Male	449	null
12	Male	446	null
13	Male	446	null
14	Male	442	null
15	Male	441	null
16	Male	426	null
17	Male	419	null
18	Male	418	null
19	Male	414	null
20	Male	411	null
21	Male	411	null
22	Male	411	null
23	Male	410	null
24	Male	408	null
25	Male	406	null
26	Male	402	null

28 Females without university education donated more than \$400:

Number	gender	donation	university
1	Female	492	null
2	Female	483	null
3	Female	482	null
4	Female	480	null
5	Female	476	null
6	Female	473	null
7	Female	468	null
8	Female	468	null
9	Female	467	null
10	Female	462	null
11	Female	461	null
12	Female	455	null
13	Female	453	null
14	Female	450	null
15	Female	442	null
16	Female	436	null
17	Female	426	null
18	Female	424	null
19	Female	423	null
20	Female	423	null
21	Female	422	null
22	Female	422	null
23	Female	420	null
24	Female	413	null
25	Female	408	null
26	Female	407	null
27	Female	405	null
28	Female	405	null

-
- Thus, educated donors, especially males donate big amounts. Among people with NULL
 - university education the number of males and females, who donate more than \$400 is
 - almost the same.
 - Therefore, we can see that our target audience is males and females with university
 - Education and that's because they are exposed to what charity for education is and they are more enlightened than those without
 - Education.

Conclusion

I have examined 2 data sets FO_Donation_Data and EFO_Donor_Data to help Education for ALL to understand business problem of involving new donors intensely and find a way to raise more donations with orderly frequency

Therefore, our donors are very different people. They live in various states, work in absolutely different job fields,

some of them have university education and some of them did not. Amount of donation are also vary between \$5 and \$500 dollars.

However, there are some crucial points that we need to count and try to use for increasing charity activeness of our donors and their donations.

I have discovered that frequency of Yearly and Once donations is much higher than Monthly. Weekly frequency is very low

So, we need to work on development of donation frequency, especially Weekly donations. Also, we have some people in our base who do not donate at all.

Also, we need to attract more donors from other states, since now majority of them are from Florida, California and Texas.

Another crucial point is that majority of our top donors, who donate between \$400 and \$500 have university education. Gender is not a key thing.

Thus, we can notice that people, who are educated themselves are happy to support others to get education. Some people with NULL education also provide big amounts, but not a big number of them.

Lastly, we must focus to improve our databases, add more useful information about our donors.

There is deficit of valuable data. Car or movie genre are not useful to solve our business problems

We must find useful channels for promoting our charity organisation. Since we have good support among educated people we could try to spread the word in university graduates' societies about us.



• THANK YOU