Table of Contents

Introduction

As a dedicated Data Analyst at Education for All, a prominent charity organization, I am entrusted with the responsibility of unravelling meaningful insights from our donor and donation data. In response to the request made by the Head of Fundraising, I have been tasked with presenting a comprehensive analysis of donor insights and donation rates.

Within the dynamic Fundraising team, our primary objectives revolve around enhancing the effectiveness of our outreach efforts. Specifically, we aim to augment the number of donors in our database, increase the frequency of donations from existing supporters, and elevate the value of donations received.

In preparation for our upcoming fundraising strategy meeting, scheduled to take place in two weeks, it is imperative to present data-driven insights that will guide our decision-making and foster greater success in achieving our donation targets. By harnessing the power of our donation data, we can inform and shape our fundraising strategy for the coming year, with the ultimate goal of amplifying donations and making a lasting impact in our mission to promote education for all.

The methodology involved leveraging SQL queries to extract relevant data from the donation and donor data tables, and subsequently utilizing Tableau for data visualization and analysis. I also applied root cause analysis to delve deeper into the root causes of the challenges and subsequently develop targeted solutions to address them effectively.

Root Cause Analysis

Root cause analysis is a systematic problem-solving approach used to identify and understand the underlying causes or factors that contribute to an undesired event, issue, or problem. It aims to go beyond addressing symptoms and surface-level explanations by digging deep into the fundamental reasons that lead to the occurrence of a particular event.

Root Cause Analysis for Education for All

Problem Statement: The number of donors in our database is not increasing as desired

Why?

Lack of targeted marketing campaigns to attract potential donors.

Why?

Limited understanding of our target audience's demographics, interests, and preferences.

Why?

Limited use of surveys, feedback mechanisms, and data analytics tools to capture insights into donor demographics and preferences.

Why?

Lack of awareness about the importance and benefits of utilizing surveys, feedback mechanisms, and data analytics tools in understanding donor demographics and preferences.

Why?

Limited training initiatives to educate the team about the significance and value of leveraging surveys, feedback mechanisms, and data analytics tools.

Root Cause

Insights

Selecting all info from both tables provided (Donation_Data and Donor_Data) to get familiar with the data.

```
SELECT * FROM Donation_Data;
SELECT * FROM Donation_Data;
```

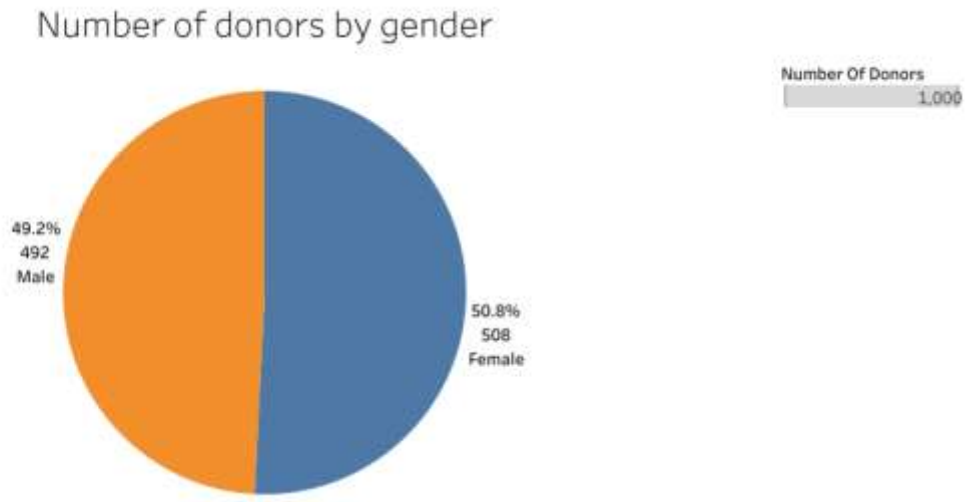
To gain in depth insight into the data, I sought to answer five (5) questions.

Question 1: How many donors exist based on demographic factors such as gender, job field, and state?

Number of donors by gender

```
SELECT gender, COUNT(id) AS number_of_donors
FROM Donation_Data
GROUP BY gender;
```

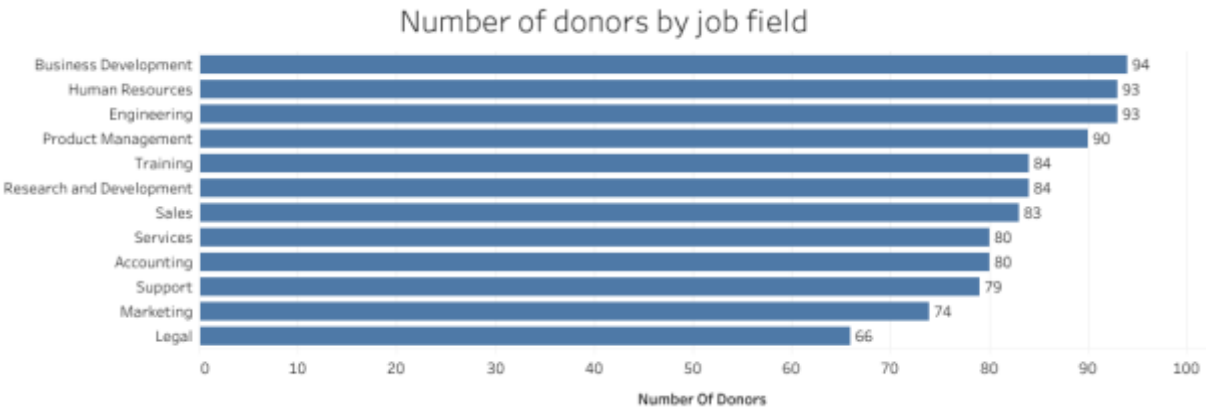
gender	number_of_donors
Female	508
Male	492



Number of donors by job field

```sql
SELECT job_field, COUNT(id) AS number_of_donors
FROM Donation_Data
GROUP BY job_field
ORDER BY number_of_donors DESC;
```

job_field	number_of_donors
Business Development	94
Human Resources	93
Engineering	93
Product Management	90
Training	84
Research and Development	84
Sales	83
Services	80
Accounting	80
Support	79
Marketing	74
Legal	66

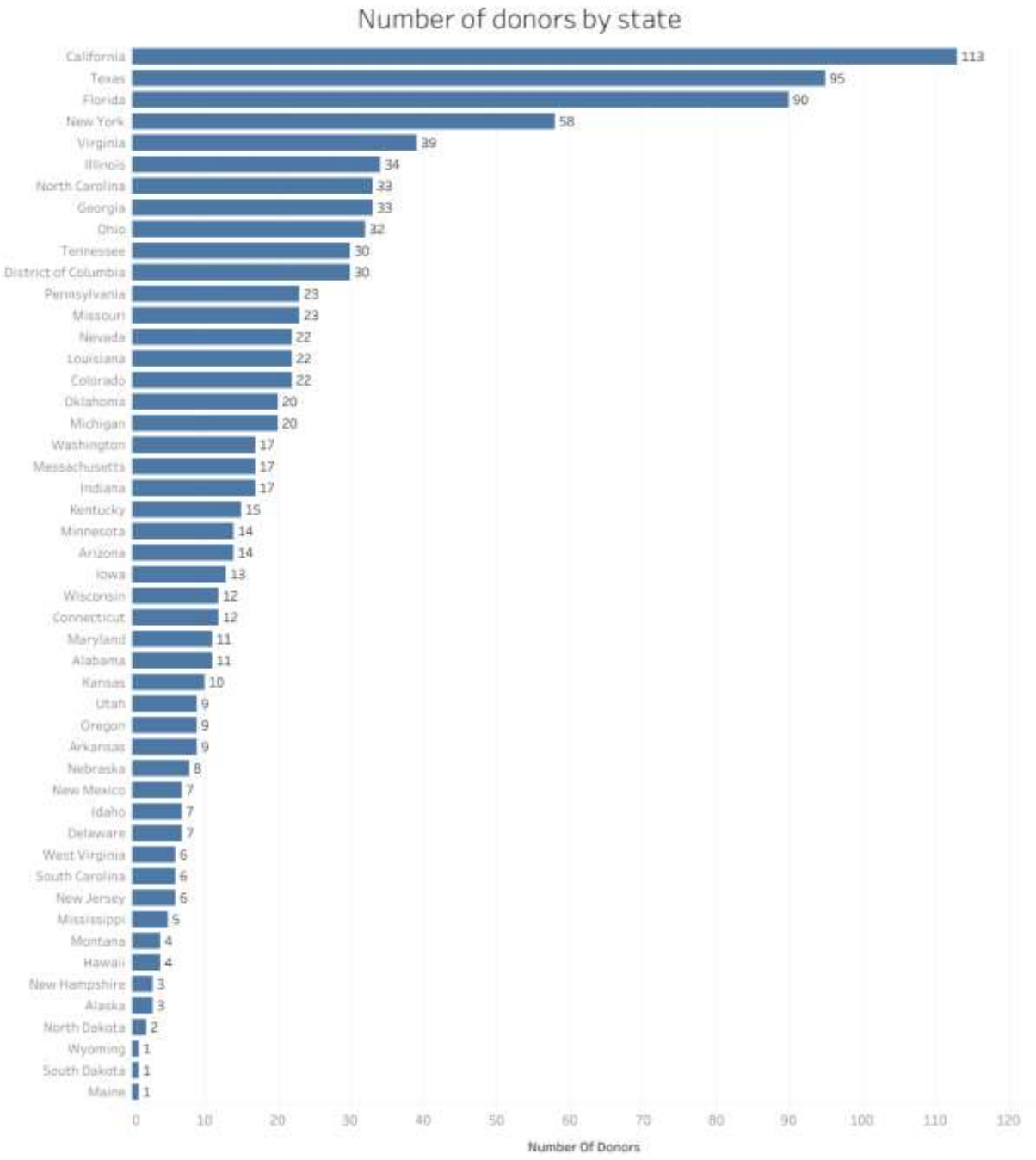


Number of donors by state

```sql
SELECT state, COUNT(id) AS number_of_donors
FROM Donation_Data
GROUP BY state
ORDER BY number_of_donors DESC;
```

state	number_of_donors
California	113
Texas	95
Florida	90
New York	58
Virginia	39
Illinois	34
North Carolina	33
Georgia	33
Ohio	32
Tennessee	30
District of Columbia	30
Pennsylvania	23
Missouri	23
Nevada	22
Louisiana	22
Colorado	22
Oklahoma	20
Michigan	20
Washington	17
Massachusetts	17
Indiana	17
Kentucky	15
Minnesota	14
Arizona	14
Iowa	13
Wisconsin	12
Connecticut	12
Maryland	11
Alabama	11
Kansas	10
Utah	9
Oregon	9
Arkansas	9
Nebraska	8
New Mexico	7
Idaho	7
Delaware	7
West Virginia	6
South Carolina	6
New Jersey	6
Mississippi	5
Montana	4
Hawaii	4

New Hampshire	3
Alaska	3
North Dakota	2
Wyoming	1
South Dakota	1
Maine	1



Question 2: What is the number of donors for each donation frequency?

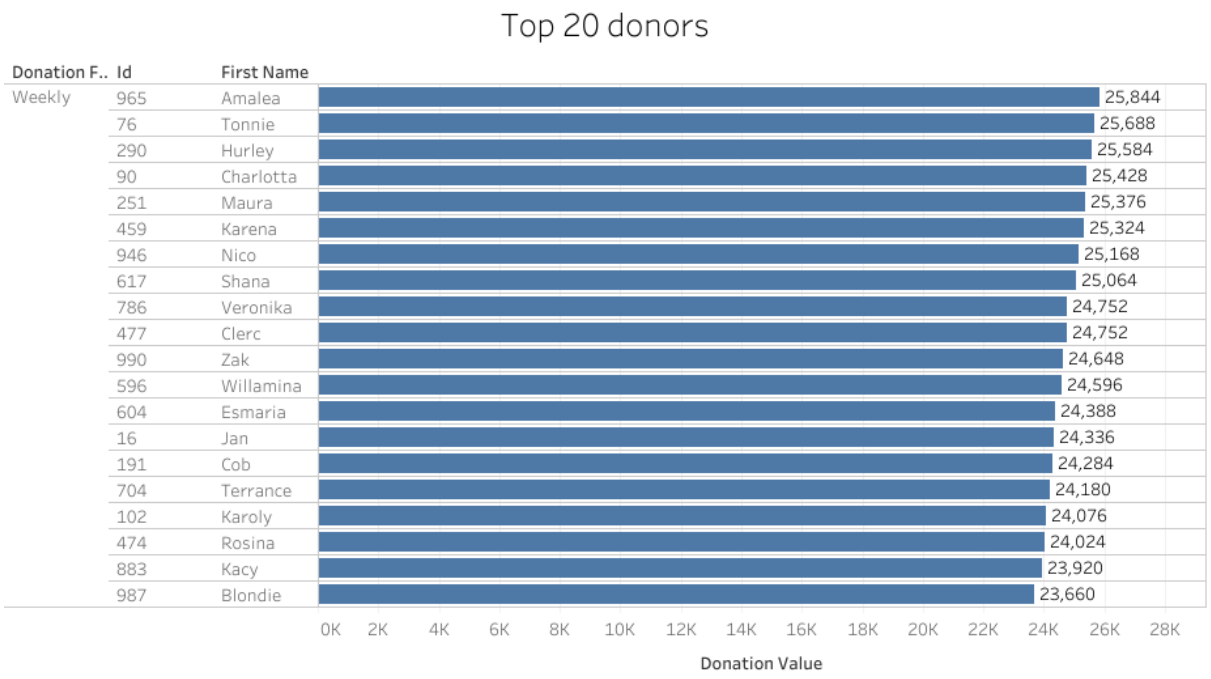
```sql
SELECT donation_frequency, COUNT(id) AS number_of_donors
FROM Donor_Data
GROUP BY donation_frequency
ORDER BY number_of_donors DESC;

```

donation_frequency	number_of_donors
Once	264
Yearly	259
Weekly	245
Monthly	232

Question 3: Who are the top 20 donors by donation value?

```sql
SELECT a.id, a.first_name, a.donation, b.donation_frequency,
    CASE
    WHEN b.donation_frequency = 'Monthly' THEN (a.donation*12)
    WHEN b.donation_frequency = 'Weekly' THEN (a.donation*52)
    ELSE a.donation
    END AS donation_value
FROM Donation_Data a
JOIN Donor_Data b
ON a.id = b.id
ORDER BY donation_value DESC
--to see the high value donors, we will limit the output of the above query to 20
LIMIT 20;
```

id	first_name	donation	donation_frequency	donation_value
965	Amalea	497	Weekly	25844
76	Tonnie	494	Weekly	25688
290	Hurley	492	Weekly	25584
90	Charlotta	489	Weekly	25428
251	Maura	488	Weekly	25376
459	Karena	487	Weekly	25324
946	Nico	484	Weekly	25168
617	Shana	482	Weekly	25064
477	Clerc	476	Weekly	24752
786	Veronika	476	Weekly	24752
990	Zak	474	Weekly	24648
596	Willamina	473	Weekly	24596
604	Esmaria	469	Weekly	24388
16	Jan	468	Weekly	24336
191	Cob	467	Weekly	24284
704	Terrance	465	Weekly	24180
102	Karoly	463	Weekly	24076
474	Rosina	462	Weekly	24024
883	Kacy	460	Weekly	23920
987	Blondie	455	Weekly	23660



Question 4: Are there any common characteristics or behaviors shared by high-value donors, such as movie genre preferences, favourite colour, second language?

```sql
SELECT a.id, a.gender, (a.donation*52) AS donation_value, b.car, b.second_language,
    b.movie_genre, b.favourite_colour
FROM Donation_Data a
JOIN Donor_Data b
ON a.id = b.id
WHERE b.donation_frequency = 'Weekly'
ORDER BY donation_value DESC
LIMIT 20;
```

id	gender	donation_value	car	second_language	movie_genre	favourite_colour
965	Male	25844	Maserati	null	Crime|Drama	Pink
76	Male	25688	Kia	null	Drama	Maroon
290	Female	25584	Ford	null	Drama|Romance	Puce
90	Female	25428	BMW	null	Drama	Yellow
251	Female	25376	Chevrolet	null	Fantasy	Red
459	Female	25324	Lexus	null	Comedy|Drama	Turquoise

946	Male	25168	Ford	null	Drama|Horror	Teal
617	Male	25064	Infiniti	null	Comedy	Orange
477	Female	24752	Kia	null	Drama	Goldenrod
786	Female	24752	Rolls-Royce	null	Comedy|Drama	Turquoise
990	Female	24648	GMC	Tamil	Documentary	Mauv
596	Female	24596	Buick	null	Drama|Romance|War	Purple
604	Male	24388	Dodge	null	Action|Comedy|Crime|Thriller	Purple
16	Female	24336	null	null	Adventure|Comedy|Musical|Romance|Sci-Fi	Fuscia
191	Male	24284	null	null	Documentary	Violet
704	Female	24180	Acura	Marathi	Comedy|Drama	Fuscia
102	Male	24076	Suzuki	Greek	Comedy	Khaki
474	Male	24024	Buick	null	Documentary	Red
883	Male	23920	BMW	null	Drama|Musical|Romance	Teal
987	Female	23660	Suzuki	null	Documentary|Musical	Orange

favourite colour

Fuscia	2
Goldenrod	1
Khaki	1
Maroon	1
Mauv	1
Orange	2
Pink	1
Puce	1
Purple	2
Red	2
Teal	2
Turquoise	2
Violet	1
Yellow	1

Car

Acura	1
BMW	2
Buick	2
Chevrolet	1
Dodge	1
Ford	2
GMC	1
Infiniti	1
Kia	2
Lexus	1
Maserati	1
null	2
Rolls-Royce	1
Suzuki	2

Gender

Female	11
Male	9

Movie genre

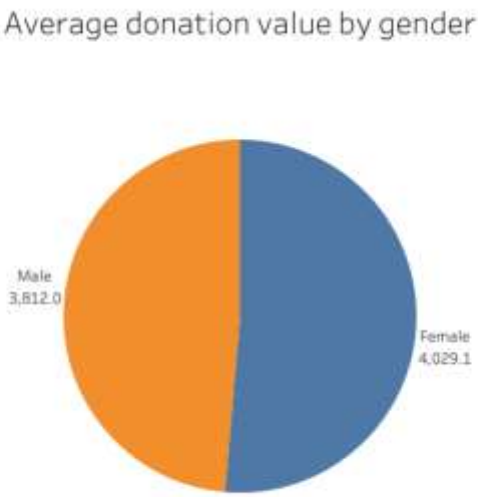
Action|Comedy|Crime|Thriller	1
Adventure|Comedy|Musical|Romance|Sci-Fi	1
Comedy	2
Comedy|Drama	3
Crime|Drama	1
Documentary	3
Documentary|Musical	1
Drama	3
Drama|Horror	1
Drama|Musical|Romance	1
Drama|Romance	1
Drama|Romance|War	1
Fantasy	1

Question 5: What is the average donation value for each donor demographic?

Average donation value by gender

```sql
SELECT a.gender,
    avg(CASE
        WHEN b.donation_frequency = 'Monthly' THEN (a.donation*12)
        WHEN b.donation_frequency = 'Weekly' THEN (a.donation*52)
        ELSE a.donation
    END) AS average_donation_value
FROM Donation_Data a
JOIN Donor_Data b
ON a.id = b.id
GROUP BY a.gender
ORDER BY average_donation_value DESC;
```

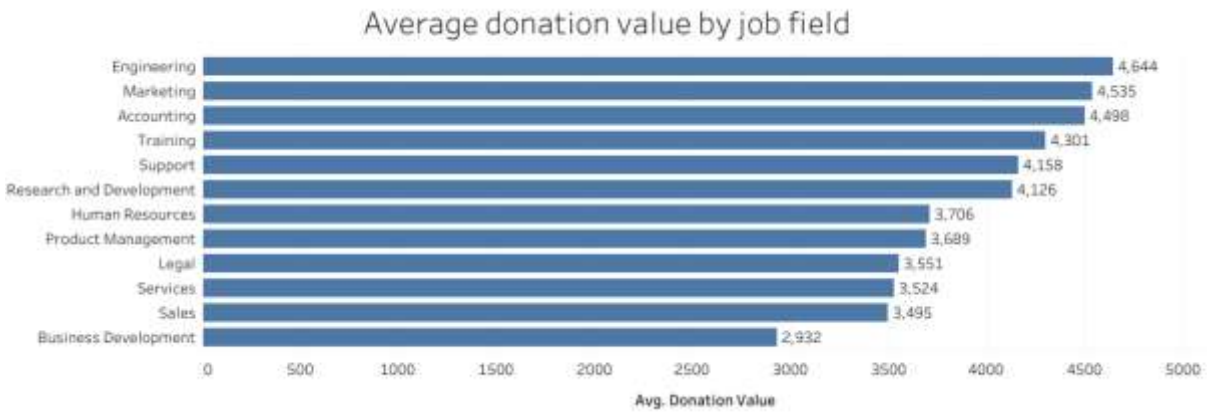
gender	average_donation_value
Female	4029.146
Male	3812.014



Average donation value by job field

```sql
SELECT a.job_field,
    avg(CASE
        WHEN b.donation_frequency = 'Monthly' THEN (a.donation*12)
        WHEN b.donation_frequency = 'Weekly' THEN (a.donation*52)
        ELSE a.donation
    END) AS average_donation_value
FROM Donation_Data a
JOIN Donor_Data b
ON a.id = b.id
GROUP BY a.job_field
ORDER BY average_donation_value DESC;
```

job_field	average_donation_value
Engineering	4643.688
Marketing	4535.257
Accounting	4497.788
Training	4300.869
Support	4157.759
Research and Development	4126.214
Human Resources	3706.376
Product Management	3689.478
Legal	3550.515
Services	3523.938
Sales	3495.349
Business Development	2931.649

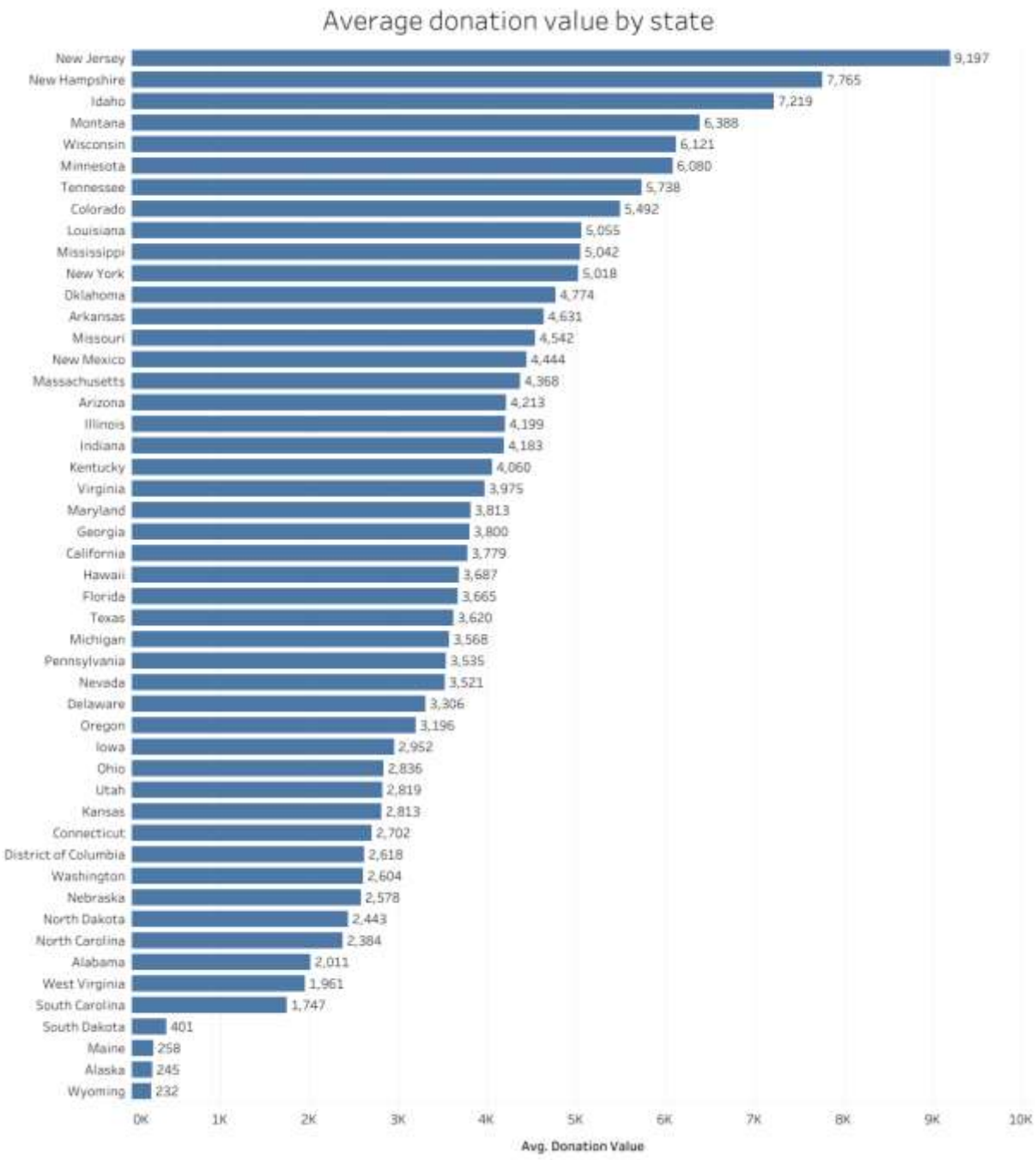


Average donation value by state

```sql
SELECT a.state,
    avg(CASE
        WHEN b.donation_frequency = 'Monthly' THEN (a.donation*12)
        WHEN b.donation_frequency = 'Weekly' THEN (a.donation*52)
        ELSE a.donation
    END) AS average_donation_value
FROM Donation_Data a
JOIN Donor_Data b
ON a.id = b.id
GROUP BY a.state
ORDER BY average_donation_value DESC;
```

state	average_donation_value
New Jersey	9197.167
New Hampshire	7764.667
Idaho	7218.714
Montana	6388
Wisconsin	6120.917
Minnesota	6080.357
Tennessee	5738.2
Colorado	5492.273
Louisiana	5055.409
Mississippi	5041.6
New York	5018.069
Oklahoma	4773.95
Arkansas	4630.556
Missouri	4541.565
New Mexico	4444.286
Massachusetts	4367.647

Arizona	4212.857
Illinois	4199.412
Indiana	4183
Kentucky	4059.6
Virginia	3974.872
Maryland	3813.182
Georgia	3799.576
California	3778.796
Hawaii	3686.75
Florida	3665.389
Texas	3620.326
Michigan	3568.1
Pennsylvania	3535.087
Nevada	3521.136
Delaware	3305.714
Oregon	3195.778
Iowa	2952.077
Ohio	2836.125
Utah	2818.778
Kansas	2812.6
Connecticut	2701.583
District of Columbia	2618.233
Washington	2604.294
Nebraska	2577.875
North Dakota	2443
North Carolina	2383.879
Alabama	2011.455
West Virginia	1960.5
South Carolina	1747.167
South Dakota	401
Maine	258
Alaska	244.6667
Wyoming	232


Average donation value by state
New Jersey 9,197
New Hampshire 7,765
Idaho 7,219
Montana 6,388
Wisconsin 6,121
Minnesota 6,080
Tennessee 5,738
Colorado 5,492
Louisiana 5,055
Mississippi 5,042
New York 5,018
Oklahoma 4,774
Arkansas 4,631
Missouri 4,542
New Mexico 4,444
Massachusetts 4,368
Arizona 4,213
Illinois 4,199
Indiana 4,183
Kentucky 4,060
Virginia 3,975
Maryland 3,813
Georgia 3,800
California 3,779
Hawaii 3,687
Florida 3,665
Texas 3,620
Michigan 3,568
Pennsylvania 3,535
Nevada 3,521
Delaware 3,306
Oregon 3,196
Iowa 2,952
Ohio 2,836
Utah 2,819
Kansas 2,813
Connecticut 2,702
District of Columbia 2,618
Washington 2,604
Nebraska 2,578
North Dakota 2,443
North Carolina 2,384
Alabama 2,011
West Virginia 1,961
South Carolina 1,747
South Dakota 401
Maine 258
Alaska 245
Wyoming 232
0K 1K 2K 3K 4K 5K 6K 7K 8K 9K 10K
Avg. Donation Value

Findings & Recommendations

Findings

Demographic Numbers

There are 1,000 donors currently in the database and female donors are slightly more than the male donors with the latter being 49.2% and the former 50.8%. Female donors have a slightly higher average donation value of $4,029 while the male donors have an average donation value of $3,812.

Business Development, Human Resources and Engineering have the highest number of donors, the Legal job field has the least number of donors. When it comes to average donation value, Engineering takes the top spot while Marketing and Accounting follows closely.

California takes the obvious lead with 113 donors, Texas and Florida follows closely with 95 and 90 donors respectively. Average donation value by state has New Jersey way ahead with a wide margin.

Donor Behaviour

Analysis of the donor data revealed a noteworthy trend in donor behaviour, indicating a distinct preference for donation frequencies concentrated around one-time or yearly contributions.

High Value Donors

In analyzing the donor data, a significant discovery emerged regarding high value donors: a notable concentration of this segment exhibited a consistent pattern of weekly donation frequency. Further analysis of the high value donors' data revealed intriguing patterns that extended beyond their weekly donation frequency. Notably, a remarkable correlation was observed between this segment and shared preferences in favourite colours, movie genres, and car choices.

Recommendations

Targeted Marketing Campaigns: Develop targeted marketing campaigns that cater to the preferences and characteristics of female donors. Highlight the impact of their contributions and create messaging that resonates with their interests and values. Consider leveraging the slightly higher donation value from female donors to inspire and encourage increased participation.

Donor Engagement Strategies: Implement personalized communication and stewardship efforts for high value weekly donors. Recognize and appreciate their commitment through exclusive benefits, tailored content, and regular updates showcasing the impact of their contributions. Consider organizing special events or creating a donor recognition program specifically for this segment.

Geographic Focus: Allocate resources and tailor fundraising strategies to maximize donor engagement and average donation values in states like New Jersey, New Hampshire, and Idaho, where the highest average donation values are observed. Explore targeted campaigns, partnerships, or events that cater to the specific interests and preferences of donors in these regions.

Donation Frequency Target: Encourage more donors to subscribe to the weekly donation frequency being the channel that generates higher donation values by acknowledging and appreciating the commitment of weekly donors publicly and privately. Highlight their contributions in newsletters, social media posts, and donor spotlights. Consider hosting special events or creating donor recognition programs that celebrate their loyalty and dedication. Streamline the donation process by providing convenient and user-friendly platforms for setting up recurring weekly donations. Ensure that the subscription process is straightforward, allowing donors to easily select their preferred donation amount and frequency. Offer flexibility in adjusting or pausing donations if needed, making it hassle-free for donors to manage their contributions.

Conclusion

In conclusion, this data analysis project has provided valuable insights into our donor base, allowing us to make informed recommendations for enhancing our fundraising strategies. Throughout this process, several key learnings have emerged.

Firstly, understanding the demographics and preferences of our donors is crucial for effective donor engagement. The analysis revealed that we have a slightly higher number of female donors, and they exhibit a higher donation value compared to male donors. This information enables us to tailor our communication and marketing efforts to better resonate with the preferences of our female donors.

Secondly, the identification of high value donors who contribute on a weekly basis presents a significant opportunity for donor stewardship. Recognizing the shared characteristics and interests of these donors, such as movie genre, provides us with a foundation for creating personalized experiences and engagement strategies that foster loyalty and inspire continued support.

Furthermore, the analysis highlighted geographic variations in donor behaviour, with states like New Jersey, New Hampshire, and Idaho demonstrating higher average donation values. This knowledge allows us to prioritize these regions for targeted fundraising campaigns and cultivate deeper connections with donors in those areas.

In terms of skills applied, this project has showcased the utilization of SQL queries for data extraction and Tableau for data visualization. The ability to extract and analyze data effectively has allowed me to derive meaningful insights and present them in a visually appealing manner, enabling better decision-making and communication within the organization.