**Introduction to Data Analytics**

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The case study is about the current campaign with 1200 individuals members and the variables given are Age, Own Home, Num Children, Income, Sex, Total Wealth, Other Gifts, Number of Gifts, Smallest Gift, Largest Gift, Previous Gift, Time Between Gifts, Average Gift, Current Gift, and Current Donor. Which will give the information regarding the donation of gifts for the trust,

**Question 1** :- **How would you describe a typical donor? What are the attributes of the donors in the sample?**

# Statistics

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **N** | **N**  **\*** | **Mean** | **SE Mean** | **St Dev** | **Minimum** | **Q1** | **Median** | **Q3** |
| Age | 120 | 0 | 61.730 | 0.428 | 14.824 | 20.000 | 50.00 | 62.000 | 73.00 |
|  | 0 |  |  |  |  |  | 0 |  | 0 |
| Num Children | 120 | 0 | 0.1667 | 0.0157 | 0.5423 | 0.0000 | 0.000 | 0.0000 | 0.000 |
|  | 0 |  |  |  |  |  | 0 |  | 0 |
| Income | 120 | 0 | 3.2592 | 0.0588 | 2.0385 | 1.0000 | 1.000 | 3.0000 | 5.000 |
|  | 0 |  |  |  |  |  | 0 |  | 0 |
| Total Wealth | 120 | 0 | 5.4700 | 0.0779 | 2.6969 | 0.0000 | 3.000 | 6.0000 | 8.000 |
|  | 0 |  |  |  |  |  | 0 |  | 0 |
| Other Gifts | 120 | 0 | 3.239 | 0.187 | 6.488 | 0.000 | 0.000 | 0.000 | 3.750 |
|  | 0 |  |  |  |  |  |  |  |  |
| Number of Gifts | 120 | 0 | 10.279 | 0.261 | 9.038 | 1.000 | 4.000 | 8.000 | 14.00 |
|  | 0 |  |  |  |  |  |  |  | 0 |
| Smallest Gift | 120 | 0 | 7.218 | 0.186 | 6.445 | 0.000 | 3.000 | 5.000 | 10.00 |
|  | 0 |  |  |  |  |  |  |  | 0 |
| Largest Gift | 120 | 0 | 19.31 | 0.919 | 31.82 | 5.00 | 12.00 | 15.00 | 20.00 |
|  | 0 |  |  |  |  |  |  |  |  |
| Previous Gift | 120 | 0 | 16.270 | 0.410 | 14.198 | 0.000 | 10.00 | 15.000 | 20.00 |
|  | 0 |  |  |  |  |  | 0 |  | 0 |
| Time Between | 120 | 0 | 7.610 | 0.170 | 5.874 | 0.000 | 4.000 | 6.000 | 10.00 |
| Gifts | 0 |  |  |  |  |  |  |  | 0 |
| Average Gift | 120 | 0 | 12.390 | 0.263 | 9.098 | 2.450 | 7.775 | 10.715 | 15.00 |
|  | 0 |  |  |  |  |  |  |  | 0 |
| Current Gift | 120 | 0 | 9.734 | 0.410 | 14.219 | 0.000 | 0.000 | 7.000 | 15.00 |
|  | 0 |  |  |  |  |  |  |  | 0 |

|  |  |  |
| --- | --- | --- |
| **Variable** | **Maximum** | **Skewness** |
| Age | 96.000 | -0.06 |
| Num Children | 4.0000 | 3.93 |
| Income | 7.0000 | 0.36 |
| Total Wealth | 9.0000 | -0.36 |
| Other Gifts | 53.000 | 3.13 |

|  |  |  |
| --- | --- | --- |
| Number of Gifts | 91.000 | 2.31 |
| Smallest Gift | 50.000 | 2.42 |
| Largest Gift | 1000.00 | 25.24 |
| Previous Gift | 250.000 | 9.10 |
| Time Between Gifts | 62.000 | 2.17 |
| Average Gift | 200.000 | 8.93 |
| Current Gift | 200.000 | 5.91 |

**REPORT 1**:- Donor can be varied depends on the gifts they donated as Number of Gifts, Smallest Gift, Largest Gift, Previous Gift, Time Between Gifts, Average Gift, Current Gift, as the 1200 individual members donated according to their wealth and income

The attributes will give detailed data about the donor which will be the highest income is nine, we have to consider that the minimum age is 20 who is very young that the person made good decision towards the contribution to the trust The donor contribution can be varied according to the size and form of donation and time between the donations of 1200 individual donors.

**QUESTION 2:- What percentage of donors in the sample are female?**

# Tally

|  |  |  |
| --- | --- | --- |
| **Sex** | **Count** | **Percent** |
| F | 671 | 55.92 |
| M | 529 | 44.08 |
| N= | 1200 |  |

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Description automatically generated

**REPORT 2**:- From the 1200 individuals the percentage of females is 55.92 % which is 671 females who are contributed to the trust which is major part of donation in trust ,we can say that the percentage of females is more when compared to males from the above statistics data.

# QUESTION 3:- Out of all donors, what was the average donation to the current campaign? Out of those who made a donation to the current campaign, what was the average donation?

**Statistics**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Percent** | **Mean** |
| Smallest Gift | 100 | 7.218 |
| Largest Gift | 100 | 19.31 |
| Previous Gift | 100 | 16.270 |
| Current Gift | 100 | 9.734 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **Current Donor** | **N** | **N\*** | **Mean** | | **SE Mean** | | **StDev** | **Minimum** | **Q1** | **Median** |
| Smallest Gift | N | 477 | 0 | 7.952 | | 0.327 | | 7.133 | 0.060 | 3.260 | 5.000 |
|  | Y | 723 | 0 | 6.735 | | 0.220 | | 5.903 | 0.000 | 3.000 | 5.000 |
|  |  |  |  |  | |  | |  |  |  |  |
| Largest Gift | N | 477 | 0 | 19.317 | | 0.640 | | 13.971 | 5.000 | 15.000 | 17.000 |
|  | Y | 723 | 0 | 19.31 | | 1.47 | | 39.41 | 5.00 | 10.00 | 15.00 |
|  |  |  |  |  | |  | |  |  |  |  |
| Previous Gift | N | 477 | 0 | 17.440 | | 0.635 | | 13.864 | 3.000 | 10.000 | 15.000 |
|  | Y | 723 | 0 | 15.497 | | 0.534 | | 14.372 | 0.000 | 10.000 | 15.000 |
|  |  |  |  |  | |  | |  |  |  |  |
| Current Gift | N | 477 | 0 | 0.000000 | | 0.000000 | | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
|  | Y | 723 | 0 | 16.155 | | 0.566 | | 15.227 | 1.000 | 10.000 | 14.000 |
| **Variable** | **Current Donor** | **Q3** | | | **Maximum** | |
| Smallest Gift | N | 10.000 | | | 50.000 | |
|  | Y | 10.000 | | | 50.000 | |
|  |  |  | | |  | |
| Largest Gift | N | 20.000 | | | 250.000 | |
|  | Y | 20.00 | | | 1000.00 | |
|  |  |  | | |  | |
| Previous Gift | N | 20.000 | | | 250.000 | |
|  | Y | 20.000 | | | 250.000 | |
|  |  |  | | |  | |
| Current Gift | N | 0.000000 | | | 0.000000 | |
|  | Y | 20.000 | | | 200.000 | |

**REPORT 3:**- We can determine the average donation of current campaign as follows

1. The average donation of smallest gift is 7.28.
2. The average donation of largest gift is 19.31.
3. The average donation of previous gift is 16.27.
4. The average donation of current gift is 9.73.

The average of current campaign who made a donation varied according to the size of gifts

1. The average donation of smallest gift is 6.73.
2. The average donation of largest gift is 19.31.
3. The average donation of previous gift is 15.49.
4. The average donation of current gift is 16.15.

As comparing to above donation there is slight difference for both average donation as some one did not donated in the current campaign

**QUESTION 4:- People in the sample who give more often tend to make smaller gifts on average?**

A graph of a number of blue dots

Description automatically generated

|  |  |
| --- | --- |
|  | **Time Between Gifts** |
| Smallest Gift | 0.013 |

**Method**

|  |  |
| --- | --- |
| Correlation type | Pearson |
| Number of rows used | 1200 |

**Correlations**

**REPORT 4:-** The average of smaller gifts and time between gifts CI is 95% and the correlation is 0.013 ,we cannot predict that the small is not a matter frequency donation is high.

**QUESTION 5**:-**Are there any variables that are associated with how much money an individual donated during the current campaign? Which variable has the strongest association with how much money an individual donated during the current campaign? How would you predict the amount of money donated during the current campaign using this variable? How reliable is this prediction?**

**Correlations**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Smallest Gift** | **Largest Gift** | **Previous Gift** |
| Largest Gift | 0.157 |  |  |
| Previous Gift | 0.422 | 0.405 |  |
| Current Gift | 0.162 | 0.184 | 0.423 |

A graph of blue dots

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# REPORT 5:- Smallest gift , Largest gift , current gift and previous gift is strongly associated with money in the current donation

# According to above graph Current gift and previous gift as the strongest association with the money in the current campaign as the relation can be in the correlation of 0.423.

# As comparing with all 1200 individuals report we can predict that the previous gift and current gift as strongest association with money in current campaign by considering above graph and statistical data.

**QUESTION 6**:- **What advice do you have for the organization? Share any insights you gleaned from your investigation of the data.**

# According to 1200 individual samples data what I was concluded is, The organization has to focus on the average donation and who are donating in large scale ask them to donate the products which generates income from the products which are donated by the donors , which will help to generate income which will passively help to the charity people.

**REFLECTION OF THE CASE STUDY**

The current campaign with a sample size of 1200 people, this case study gives a brief information about the gifts and actions of donors.

Conclusion describes as below,

Typical donor can be varied according to the small gift, large gift, based on income and time between gifts, as comparing to the gender the female donors are very high as compared to male donors.

The average donation of the campaign is varied according to the size of the gift and time between gifts and wealth of the inidividuals, the tend to small gifts and time between gifts wont describe the there donation strategy

The donation of the current campaign is strongest association with current gift and previous gift