



2023 DATA SCIENCE CHALLENGE

Walker Emmert | Texas A&M Foundation | College Station, TX

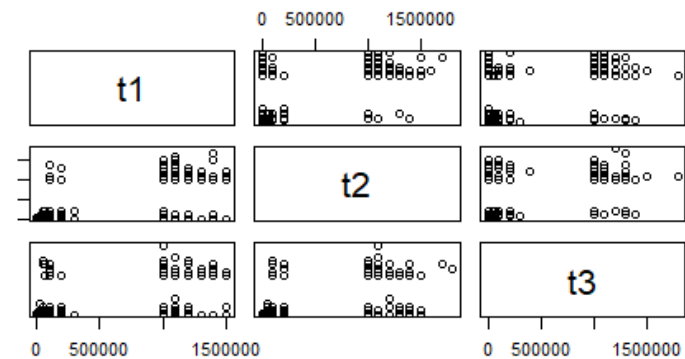
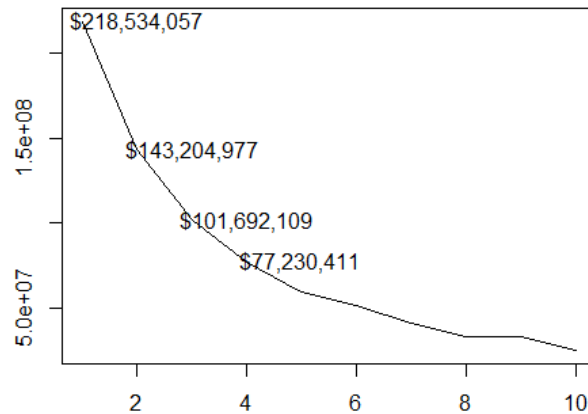
LEAD BY
EXAMPLE

Data Cleaning

- Used R to fill in missing values for t2, t2_renewal, state, city, latitude, longitude, and zipcode based on information in other fields
 - *Ex: If t2 = 0, t2_renewal = Lapsed*
 - *Used zipcodeR package for matching zipcodes*
- Demographic data remained unchanged
- Reduced null values between 50%-97%

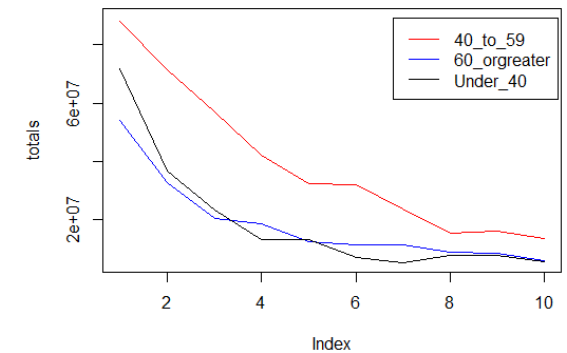
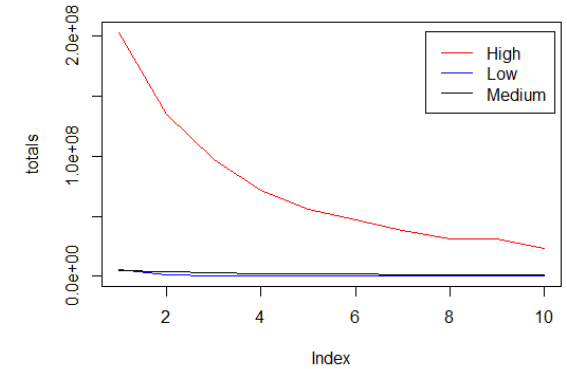
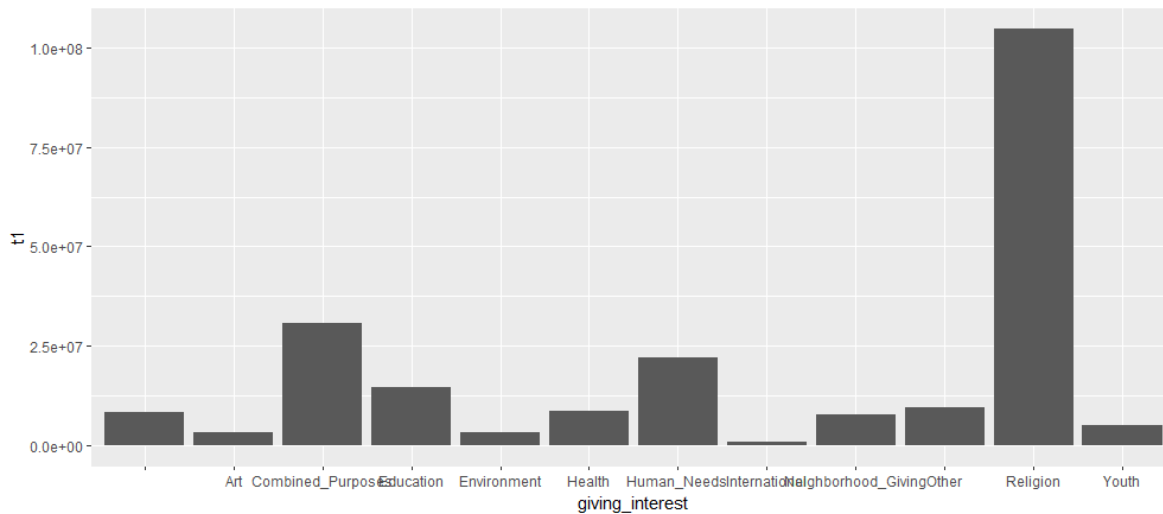
Exploratory Analysis

- Biggest donors are largely 40- to 59-year-old married homeowners living in metropolitan areas
- Demographic breakdown follows same pattern across all 10 years
- Consistent drop-off in giving in years after initial gift
- Gift values across years have no apparent correlation



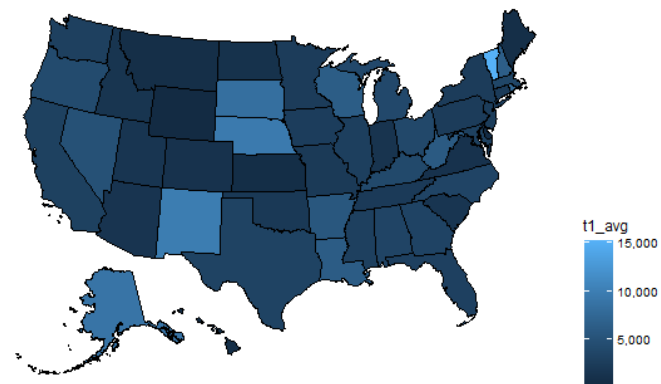
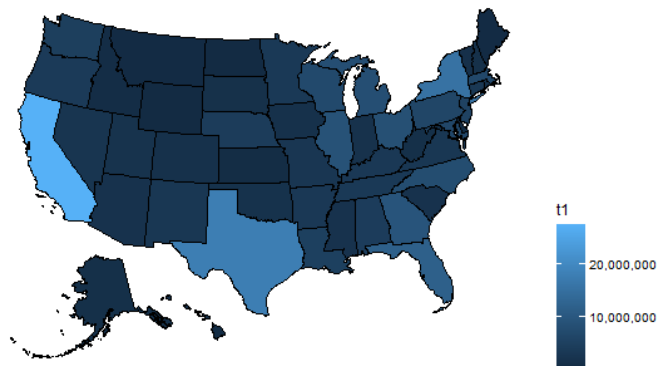
Exploratory Analysis

- Giving interest heavily focused on Religion
- Across all demographic categories, large donors dominate giving in early years but even out in later years
- Same patterns noticed when interest further broken down by demographic and when demographic broken down by interest



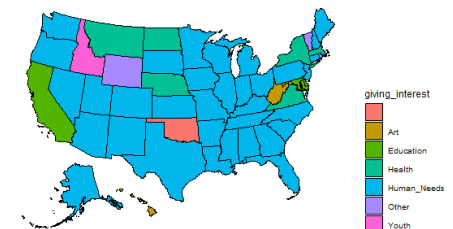
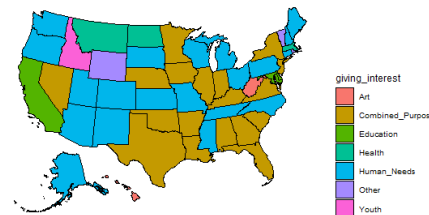
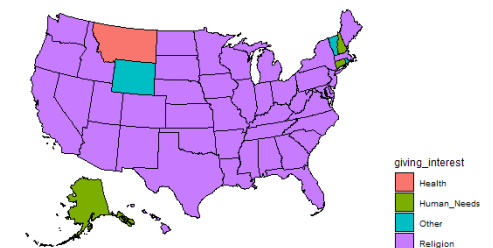
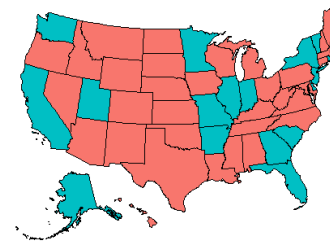
Exploratory Analysis

- Sensibly, highest initial gift totals come from states with higher populations
- Highest initial gift averages do not follow the same pattern and instead come from less predictable states



Exploratory Analysis

- The majority of donors in most states:
 - *did not renew gifts*
 - *had primary interest in religion*
- When removing interest in religion:
 - *states had more widespread giving interest*
 - *Included several “Combined Purposes”*
- When removing Combined Purposes:
 - *Human Needs became more prominent*



Campaign Building

- Re-engage lapsed donors and keep recent donors engaged:
 - *The largest gift for 56% of donors was their initial gift*
 - *The last gift for 29% of donors was their initial gift*
 - *The last gift for 22% of donors was their most recent gift*
- Utilize a “sprint campaign” to counteract giving drop-off in years since initial gift
 - *~\$5M-\$10M in 1-3 years*
 - *~\$1M for medium-sized depts (Education, Human Needs, etc.)*
 - *~250k-\$500k for smaller depts (Neighborhood Giving, etc.)*
- Target donors from states with interest in Combined Purposes and pair opportunities for smaller departments with opportunities for medium-sized departments and Religion, maximizing impact across the board

