

Behind Every Dollar: A Pattern, A Person, A Possibility

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Datasets targeted: Donor dataset for key patterns in donor behavior. Hospital dataset for exploration of actionable, high-impact recommendations.

Focus:

1. Time Series Analysis - Trend and seasonality decomposition (STL) and forecast (SARIMA)
2. RFM Segmentation - Cluster donors by Recency, Frequency, Monetary value (K-Means)
3. Survival Analysis - Model donor retention over time (Kaplan-Meier, Weibull AFT)
4. OLS Regression - Identify drivers of unmet needs in therapy programs

Key findings:

- Seasonal donation grows strong over the years but regular donor engagement in 2024 underperformed compared to the growing trend of the previous years.
- Sam's Fans is predicted to earn ~\$300,000 in donation revenue in this upcoming peak donation month (October 2025)
- Donors of Sam's Fans can be split into five groups by decreasing value and frequency of engagement: Star Donors, Committed Contributors, Emerging Partners, At-Risk Donors, and Inactive Donors
 - 80% of donation revenue came from the 20% Star Donors
 - Committed Contributors and Emerging Partners have very similar donating patterns, so a low-hanging fruit would be to convert the latter to the former
- Annual engagement is a key component of donor retention for Committed Contributors and Emerging Partners.
- There are 12 statistical significant predictors ($p < 0.05$) for unmet needs in providing therapy programs across 8 hospitals.

Actionable Recommendations:

- Star Donors: Executive-level, ongoing, personalized rapport to maintain engagement at a deep level with Sam's Fans
- Committed Contributors & Emerging Partners: Focus on community-building and a personalized approach within 9–10 months after donation. Allow donors to see the impact of their contributions!
- At-Risk Donors: Low-stake outreach within a short time span of within 3 months post-donation to transform At-Risk Donors into new Emerging Partners.
- Program Investments: Allocate FY2025 budget to expand art/music therapy, scale group sessions, diversify inpatient services, and launch gender-inclusive outreach to address high-impact unmet needs.