

# Executive Summary: Hundred Elms Community Services Impact Analysis

## Objective

This project analyzes participation and economic impact metrics for 1,000 hypothetical community programs in Hundred Elms, a fictional California town, to optimize resource allocation and support grant proposals. By leveraging Python, Excel, Tableau Public, and R, the analysis identifies high-impact programs and informs data-driven strategies, aligning with the Cultural and Community Services Analyst role of the town.

## Methodology

A synthetic dataset of 1,000 program records (July 2024–June 2025) was generated using Python, including fields like Program Type (Library Workshop, Theater Event, Youth Activity, Senior Service, Civic Light Opera), Attendance, Satisfaction Rating (1–5), Program Cost, and Economic Impact. Data was cleaned in Excel to remove duplicates and calculate metrics (e.g., cost per participant). R was used to compute Return on Investment (ROI) as  $(\text{Economic Impact} - \text{Program Cost}) / \text{Program Cost} \times 100$ , with visualizations showing ROI by program type and grant funding. An interactive dashboard was built in Tableau Public (1280 x 1024 pixels) with bar, line, pie, and map charts, incorporating filters for program type, age group, and grant status.

## Key Findings

- Senior Services achieved the highest ROI (128.9%) and satisfaction (mean 4.7/5) but had low attendance (15–50 participants), indicating untapped potential.
- Civic Light Opera led in economic impact (mean \$6,000 per event) and attendance (80–150), driven by ticket sales, with strong ROI.
- Library Workshops attracted high attendance (50–150) and moderate ROI, ideal for community engagement.
- Grant-funded programs showed higher attendance but lower ROI compared to non-grant-funded programs, suggesting cost optimization needs.
- Theater Events offered moderate ROI and engagement, suitable for cross-promotion with Civic Light Opera.

## Recommendations

- Prioritize funding for Civic Light Opera and Library Workshops due to high attendance and economic impact.
- Enhance outreach for Senior Services to boost participation, leveraging their high ROI (128.9%) for grant proposals.
- Highlight Civic Light Opera and Senior Services in grant applications, emphasizing their economic contributions.
- Promote collaboration between Theatre Events and Civic Light Opera to increase engagement.
- Apply lean principles to consolidate low-attendance programs, improving efficiency.

## Conclusion

The Hundred Elms Community Services Impact Analysis demonstrates proficiency in Python, Excel, Tableau Public, and R, delivering actionable insights for program optimization and grant support. The interactive dashboard and ROI visualizations (available at <https://github.com/shoganvisuals/community-programs-impact> and <https://tinyurl.com/35jnebte>) provide a robust framework for data-driven decision-making, directly supporting the fictional town of Hundred Elms' cultural and community goals.