Emergency Outreach Campaign Analysis Report

Executive Summary

This report evaluates the effectiveness and targeting patterns of a county-wide phone outreach campaign intended to enroll residents in emergency alert systems and assess their sentiment toward disaster preparedness. The analysis integrates campaign call records with publicly available FEMA disaster declaration data. The objective is to identify how communities were targeted and whether outreach was data-driven, equitable, and effective.

Findings indicate that outreach efforts were highly concentrated in Riverside County, with all calls conducted in September 2024. Interestingly, the disaster data associated with these outreach efforts is from 2013, pointing to a strategy based on historical risk rather than real-time disaster response. This suggests the campaign was proactive—possibly aiming to prepare high-risk communities ahead of potential future events.

Demographic and geographic breakdowns reveal strategic but uneven targeting: some ethnic groups and political affiliations received more outreach, and specific ZIP codes saw significantly higher engagement. The results underscore the importance of using data to both maximize reach and ensure fairness in community preparedness.

By combining analytical depth with visualization, this report provides stakeholders with a clear, accessible summary of what worked, what was missed, and how future campaigns can be optimized.

1. Process Summary

- Data Cleaning: Standardized county, ZIP code, and FIPS identifiers in call data.
- Data Integration: Joined call records with FEMA's us_natural_disaster_declarations.csv on county/FIPS.
- Feature Engineering: Derived age_group, calculated post_disaster_outreach, and generated time-based trends.
- Descriptive Analysis: Aggregated and visualized outreach by age, ethnicity, party affiliation, gender, ZIP code, and time.
- Dashboard Development: Built an interactive Streamlit dashboard to present findings to non-technical stakeholders.

2. Key Visuals and Tables

- ⬚ Calls by Demographics: Bar charts of total outreach by ethnicity, gender, political party, and age group.
- ⬚ Time Trend Analysis: Line chart comparing monthly disaster events vs. outreach calls.
- ⬚ Geographic Targeting: Top 10 ZIP codes by call volume.
- ⬚ KPI Tiles: Total calls, unique households reached, post-disaster outreach percentage, counties targeted.

3. Major Insights

1. Historical Risk-Informed Targeting: All outreach calls were placed in September 2024, while disasters referenced occurred in 2013, implying reliance on historical risk rather than real-time alerts.
2. Demographic Skew: Ethnicity and party-based breakdowns reveal unequal outreach intensity, possibly influenced by campaign goals or underlying voter data.
3. Geographic Concentration: Outreach was focused almost exclusively in Riverside County, with a few ZIP codes dominating the campaign—potentially overlooking equally vulnerable communities.

4. Recommendations

1. Incorporate Real-Time Data: Use live or near-term disaster feeds to drive more timely outreach campaigns.
2. Expand Targeting Scope: Widen outreach to underrepresented demographics and ZIP codes to ensure equity and inclusivity.
3. Monitor Outreach Bias: Regularly audit outreach strategy to correct for unintended demographic or political targeting imbalances.

Part 2 – Impact Statement

In today's world, data is more than just numbers on a spreadsheet—it's the lens through which we perceive problems, craft solutions, and influence decisions that shape our societies. From smart cities to personalized healthcare, data is transforming the way systems operate and how communities interact with those systems. When used responsibly, data can amplify marginalized voices, uncover inefficiencies, and promote more informed, equitable outcomes.

I see data as a bridge between observation and action. It helps us move from intuition to insight—allowing us to quantify patterns, track change, and predict outcomes. For example, in the context of disaster preparedness, data doesn't just show us where floods have occurred; it can predict where they are most likely to happen next, informing life-saving outreach. In public health, it can identify disparities in access to care and guide the deployment of services to communities in need.

But the power of data also comes with weight. Data is never completely neutral; it reflects the world as it is—with its systemic biases, inequalities, and historical gaps. It's the responsibility of anyone working with data to not just analyze what's present, but also question what's missing. Who is being counted? Who isn't? And what does that mean for the decisions being made?

Personally, I view working with data as both a privilege and a responsibility. It's not just about algorithms or visualizations—it's about creating tools and narratives that affect real people. I believe the role of a data professional is to act as both an analyst and an advocate: someone who not only interprets the data but also ensures it's used to drive positive, just, and lasting change.

At this moment in history, we are at an inflection point. We have more data than ever before—but also more urgency to use it wisely. I believe the future of data lies not only in technological advancement but in ethical intention. We must design with empathy, interpret with care, and communicate with clarity. When we do, data becomes more than information—it becomes impact.