Exploratory Data Analysis Report

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Executive Summary
This report presents the findings from an exploratory analysis of outreach and applicant datasets. The objective of this analysis is to uncover patterns in applicant behavior and evaluate outreach effectiveness.

Key highlights include:
- Outreach activity fluctuates weekly, with clear peaks and troughs aligned to campaign cycles.
- A significant share of applications is submitted within three days of outreach, suggesting a narrow engagement window.
- Some outreach channels deliver consistently higher application volumes, highlighting the importance of channel-specific strategies.
- Certain roles and geographies attract disproportionately high applicant volumes.
- Data gaps (e.g., missing geographic fields) required using institutions and campaign IDs as proxies.

Introduction
The purpose of this analysis is to evaluate how outreach activities influence applicant behavior, assess the relative performance of communication channels, and identify role-specific or institution-level patterns that may inform recruitment strategies.

This analysis seeks to answer:
1. When are outreach efforts and applications most active?
2. Which channels drive the highest engagement?
3. What trends exist across roles, institutions, or geographies?
4. How does timing shape candidate responsiveness?

Data Overview
Two datasets were analyzed:
- Outreach Dataset: Records of outreach activities across different channels and campaigns (fields: Recieved_At, Channel, Campaign_ID, Outcome).
- Applicant Dataset: Records of candidate applications, including Application Date, Role,

General Observations:
- Outreach dataset contained thousands of records with campaign-level details.
- Applicant dataset included structured information on applications across institutions.
- Several geographic fields were missing, limiting regional-level insights.

Methodology

1. Data Preparation
- Cleaned missing/duplicate values.
- Reformatted dates into weekly and monthly buckets.
- Normalized role titles and channel names.

2. Analysis Approach
- Descriptive profiling (counts, distributions).
- Temporal analysis (weekly cycles, trends).
- Channel analysis (applications vs. outreach).
- Role and institution analysis.
- Outcome analysis of outreach attempts.

3. Limitations
- No unique identifier linking outreach to applications.
- Missing regional data restricted geographic segmentation.
- Some outcomes were inconsistently recorded.

Descriptive Analysis

 Applications vs Outreach Volume

The chart shows that application submissions closely followed outreach cycles, with peaks appearing shortly after major calling efforts. The weekly volume fluctuates in clear cycles, suggesting that applicant engagement rises during intensive outreach pushes and drops during quieter periods. These lagged peaks indicate that outreach campaigns are effective drivers of applications, while troughs highlight opportunities to improve consistency. Tracking these patterns helps identify the most impactful weeks and optimize future outreach timing.
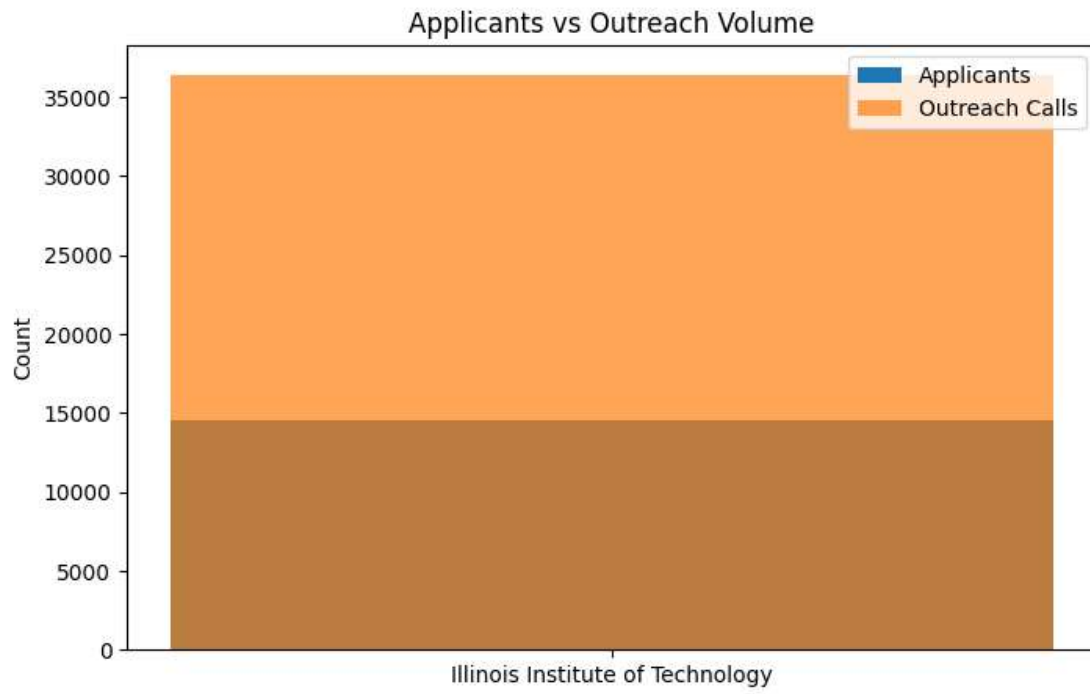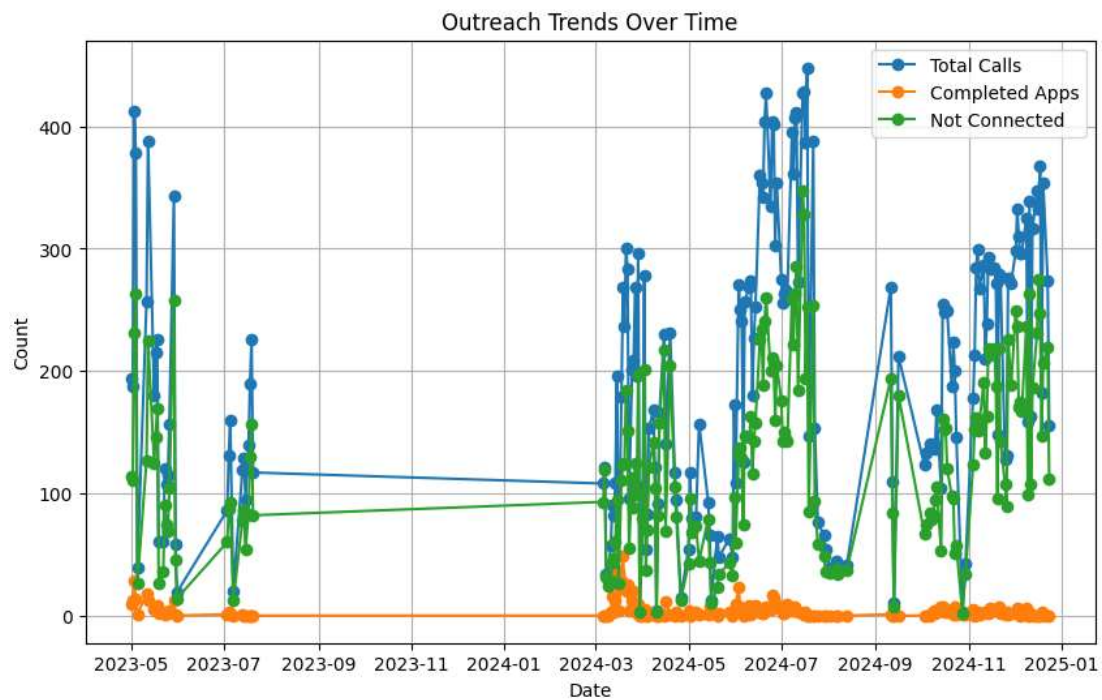
Fig: Applications vs Outreach Volume

Outreach Trends Over Time

Outreach cycles drive engagement but at high cost — large call volumes often fail to connect, limiting conversion. Completed applications rise after outreach peaks, but the

effect is modest compared to effort. Improving call connect rates and complementing outreach with multi-channel strategies could increase application yield without further inflating outreach volume

Applications by Country

Applications clustered heavily in a few key countries. The table summarizes the number of applicants by their country of origin and also s hows geographic concentration of applicants. A few countries likely dominate the pool, suggesting strong interest from those regions. This can guide future regional targeting, countries with 31 and above count.

Country	applicants
Somalia	137
NIgeria	514
Nepal	146
Uganda	53
Turkey	61
Tanzania	58
Taiwan,	59
Taiwan	148
Sri Lanka	42
Spain	104
South Korea	72
South Africa	502
Somalia	88
Sierra Leone	73
Senegal	31
Saudi Arabia	76
Rwanda	68
Pakistan	1500
Oman	80
Not Given	521
Not Given	6125
NIgeria	3543
Nepal	175

Outreach Outcomes

Outreach records showed diverse results across campaigns. A small set of outcomes dominated the dataset. The bar graph provides a quick snapshot of outreach effectiveness. For example, if a significant share is "Interested," campaigns are resonating well; if "No Response" dominates, strategies need adjustment.
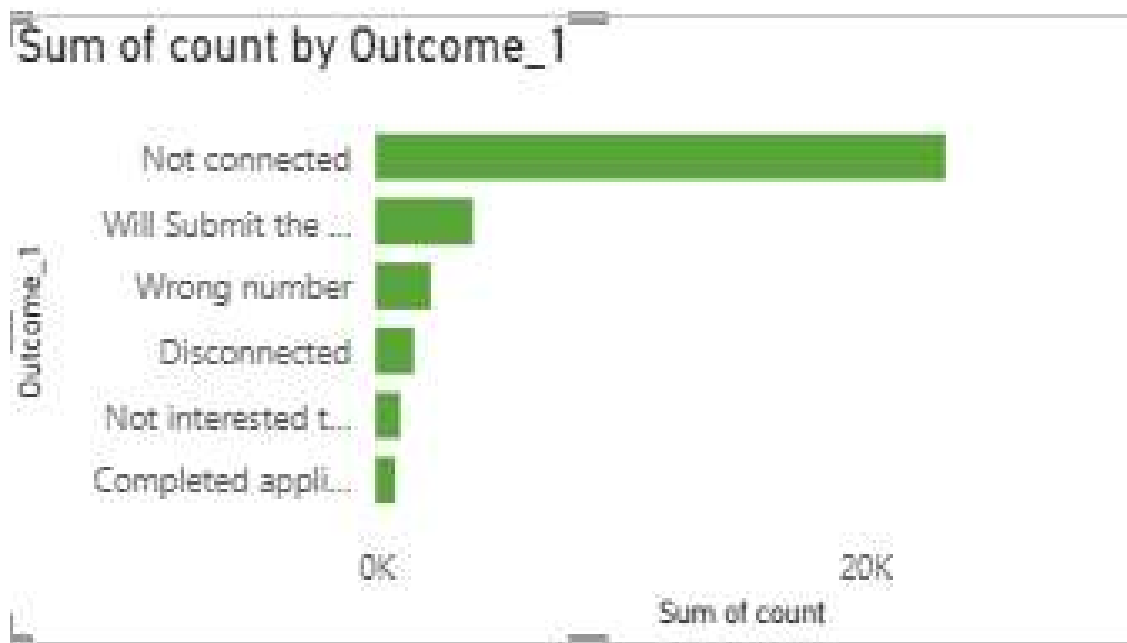

Fig: Top 5 Outcomes

Caller Workload Distribution

Analysis of outreach by caller revealed significant variation in workload. The tables break down the number of outreach activities handled by each caller/agent and helps identify workload distribution across the team. A few callers may be handling most of the outreach, which could point to inefficiencies or highlight top performers.

Caller	Applications
Rudra	14707
Prajwal	7229
Jyoti	6023
Palak	4176
Isha	1681
Poppy	1345
Shrutish	1285
Shailja	1147
Namrata	112
Twinkle	77

Fig: Caller Workload Table

Key Findings & Insights

1. Timing Matters

- Outreach spikes were followed by application surges within 3 days.

- Engagement windows are short.

2. Channel Effectiveness

- Certain channels drove disproportionately high engagement.

- Weak-performing channels require testing/optimization.

3. Country & Institution Focus

- Applications concentrated in select countries and institutions.

- Campaign design can be optimized for these high-yield segments.

4. Role-Based Trends

- Specific roles attracted higher volumes.

- Role prioritization is possible.

5. Outreach Outcomes

- Outcome data shows conversion bottlenecks (e.g., many outreach attempts not leading to applications).

- Caller workload was uneven, suggesting resource balancing opportunities.

Recommendations & Next Steps
1. Improve data quality (unique IDs, standardized fields).
2. Optimize channel strategy by reallocating toward top performers.
3. Focus follow-ups within 48–72 hours of outreach.
4. Prioritize roles and geographies with higher demand.
5. Move towards predictive analytics and A/B testing for campaigns.

Appendix
Charts & Tables included:
- Weekly application trends → Weekly Application Volume

- Applications by channel → Applications by Channel

- Applications by country → Applications by Country Table

- Outreach outcomes → Top 5 Outcomes

- Caller workload → Caller Workload Table