Lead Scoring Case Study

Optimizing Lead Conversion Using Logistic Regression

Objective & Problem Statement

- **Objective:**
  Identify key factors influencing lead conversion to prioritize high-potential leads and improve marketing ROI.

- **Problem Statement:**

- 38.5% overall lead conversion rate.

- Need to reduce resource waste on low-potential leads.

- Improve targeting strategies for higher conversion.

Data Overview & Cleaning

Dataset:

- 9,240 leads, 37 features (demographics, behavioral, engagement).
- Target variable: **Converted** (1 = Yes, 0 = No).

Data Cleaning Steps:

1) Dropped columns with >40% missing values (e.g., **Lead Quality** , **Asymmetrique Profile Score**).

2) Filled missing values:
   - Categorical: "Unknown" for **Lead Profile**, **Country**, etc.
   - Numerical: Median for **TotalVisits**, **Page Views Per Visit**.
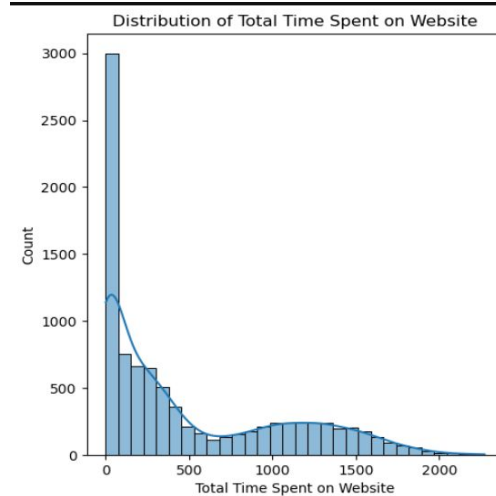
3) Removed duplicates (0 duplicates found).

Exploratory Data Analysis (Key Visuals)

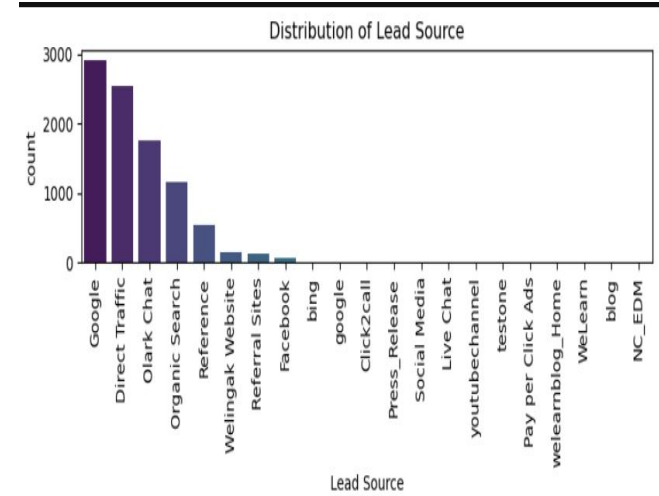**Visual 1: Lead Conversion Distribution**
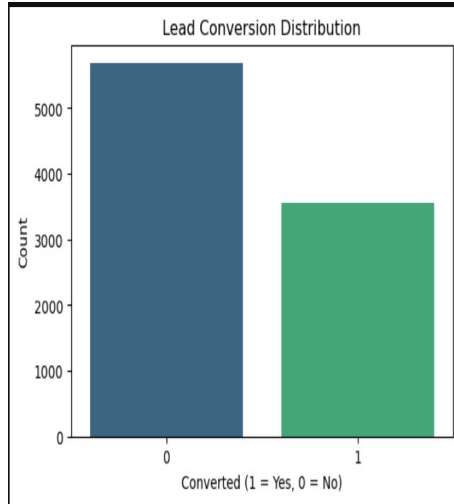
- **38.5%** of leads convert.
- Class imbalance present; consider stratification in future models.

Visual 2: Total Time Spent on Website

- **Converted leads spend 3x more time** on the website (1,485 vs. 487 mins).
- Strong indicator of conversion intent.

Visual 3: Lead Sources

- Top converters: **Google** (40%), **Direct Traffic** (30%).
- Low performers: **Olark Chat**, **Organic Search**

Key Insights

1) Behavioral Factors:

- **Total Time Spent on Website** is the **#1 predictor** of conversion.
- **Page Views Per Visit** has moderate correlation.

2) Demographic Factors:

- **Lead Origin : Landing Page Submission** converts **2x higher** than others.
- **City : Mumbai** leads convert 25% more than others.

3) Engagement Factors:

- **Last Notable Activity: Email Opened** has a 60% conversion rate.
- **Tags: Will revert after reading the email** indicates high intent.

Actionable Recommendations

1. Prioritize High-Intent Channels:
- Allocate budget to **Google Ads** and **Direct Traffic**.
- Optimize landing pages for these channels.

2.Improve Lead Qualification:
- Focus on leads spending >10 mins on the website.
- Automate alerts for high **Page Views Per Visit** (>3).

3.Enforce Follow-Up Strategies:
- Target leads with **Last Activity: Email Opened** within 24 hours.
- Retarget leads from **Mumbai** and **Landing Page Submission**.

4.Reduce Reliance on Low-Performers:
- Phase out **Olark Chat** and **Organic Search** campaigns.

Assumptions & Limitations

Assumptions:

- Missing values in **Lead Profile** and **City** filled with "Unknown."
- **TotalVisits** and **Page Views Per Visit** imputed with median.

Limitations:

- Class imbalance may affect model accuracy.
- No data on lead acquisition cost for ROI analysis.

Business Strategy: Aggressive Lead Conversion (Internship Phase)

- **Lower probability cutoff (0.3 - 0.35)** to maximize recall and reach more leads.
- **Prioritize leads** with high engagement and assign them for follow-up calls.
- **Implement a structured SMS & call workflow**:
  - Immediate SMS after lead generation.
  - Call within 24 hours if no response.
  - Follow-up email with testimonials and limited-time offers.
- **Daily performance tracking** to refine strategy dynamically.

Business Strategy: Minimizing Unnecessary Calls (Post-Target Achievement)

- **Increase probability cutoff (0.7 - 0.75)** to filter out low-quality leads.
- **Prioritize calls only for:**
  - Leads requesting callbacks.
  - High engagement users (multiple site visits, email openers).
- **Shift focus to automation:**
  - Use email & SMS instead of direct calls.
  - Only call leads who respond positively.
- **Reallocate interns** to campaign analysis and strategy optimization.

Recommendations & Next Steps

- Fine-tune cutoff thresholds based on **real-time conversion tracking**.
- Implement **automated lead scoring and ranking** for sales efficiency.
- Optimize outreach based on **lead behavior analytics**.
- Conduct **A/B testing** on engagement strategies (email, SMS, call frequency).

Conclusion

- **Data-driven decision-making** significantly improves lead conversion rates.
- **Dynamic strategy adjustment** based on sales goals ensures resource efficiency.
- **Future Scope**: Integration of AI-driven chatbot and predictive analytics for better lead nurturing.