

LEAD SCORE CASE STUDY

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PROBLEM STATEMENT

- X Education, an online education company, experiences low lead conversion rates despite receiving a significant number of leads on a daily basis.
- The company aims to identify the most promising leads, referred to as "Hot Leads," who have a higher probability of converting into paying customers.
- The goal is to build a logistic regression model that assigns a lead score between 0 and 100 to each lead, indicating their conversion likelihood.
- By focusing on the potential leads with higher scores, the company expects to increase its lead conversion rate, ideally targeting an 80% conversion rate.
- The model should consider various factors such as lead interactions, form submissions, and past referrals to accurately predict the conversion probability.
- Additionally, the model should be adaptable to handle future changes and provide solutions to other related problems identified by the company.

BUSINESS OBJECTIVE

1. Increase lead conversion rate: The primary objective is to improve the lead conversion rate by identifying the most potential leads who are likely to convert into paying customers.
2. Optimize sales efforts: By accurately scoring leads, the sales team can focus their efforts on communicating with the most promising leads, increasing efficiency and productivity.
3. Enhance customer targeting: By targeting the most promising leads, the company can allocate resources effectively, ensuring that marketing and sales efforts are directed towards individuals with a higher likelihood of conversion.
4. Improve revenue generation: A higher lead conversion rate translates to an increase in the number of paying customers, leading to improved revenue generation for X Education.
5. Increase marketing ROI: By identifying hot leads, the company can optimize its marketing campaigns and allocate resources more efficiently, resulting in a higher return on investment (ROI) for marketing efforts.

METHODOLOGY

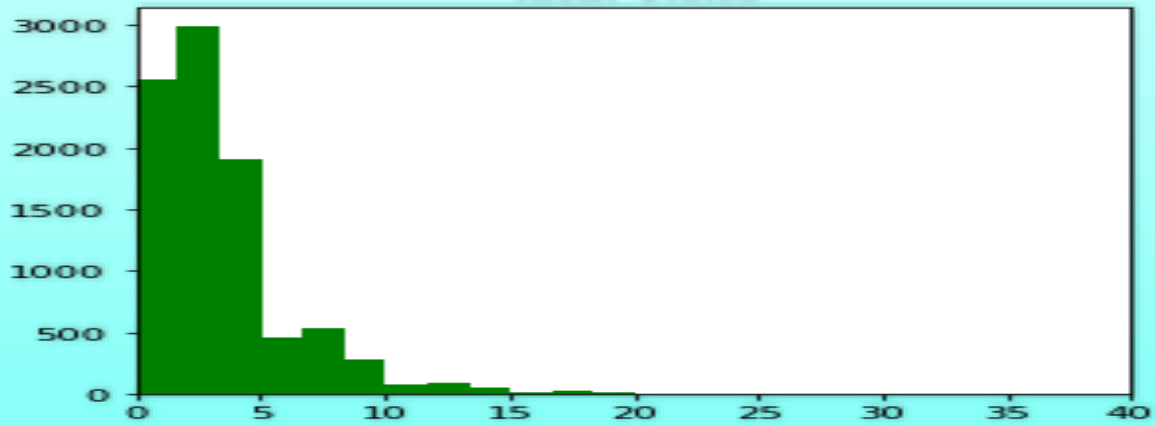
- Data preparation: Preprocess the data, handle missing values, create dummy variables for categorical features, and split the dataset into training and testing sets.
- Exploratory Data Analysis (EDA): Gain insights from the data, analyze feature distributions, correlations, and identify patterns related to lead conversion.
- Feature engineering: Create additional features that contribute to predicting lead conversion.
- Model training and evaluation: Build a logistic regression model, train it on the training dataset, and evaluate its performance using appropriate metrics.
- Interpretation of coefficients: Analyze the coefficients to understand feature impact on lead conversion.
- Lead scoring and conversion prediction: Assign lead scores based on the model's predictions, indicating the likelihood of conversion.
- Adaptation and adjustments: Ensure the model is adaptable to future changes and incorporate solutions to additional problems identified by X Education.

DATA MANIPULATION

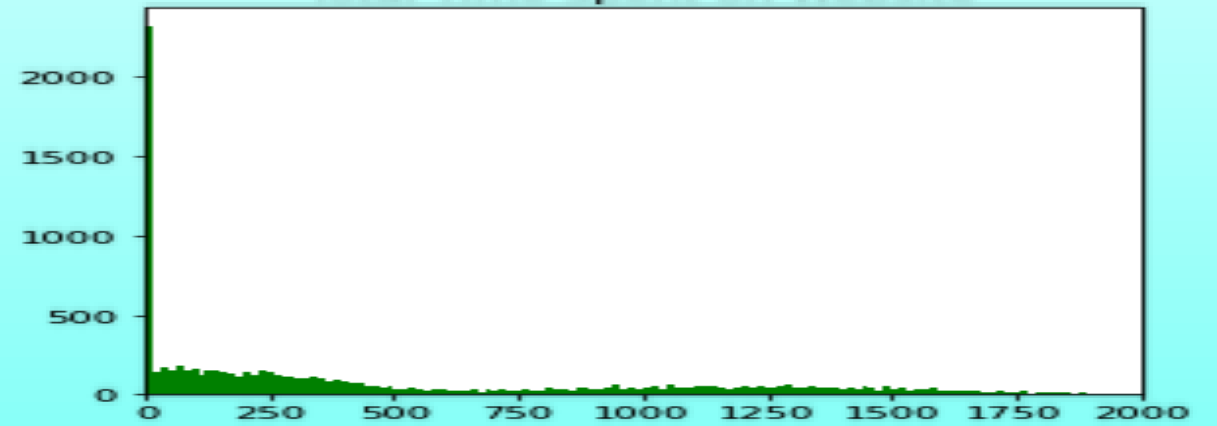
- Total no of rows=9240,Total no of columns=37
- All columns with single unique values were eliminated.
- All columns with more than 40% missing values were removed.
- Rows with null values were removed.
- Dummy variables were created for categorical variables.
- At the end RFE was used to find top 15 relevant columns.
- Finally most suitable model was created and irrelevant columns were removed.

EDA

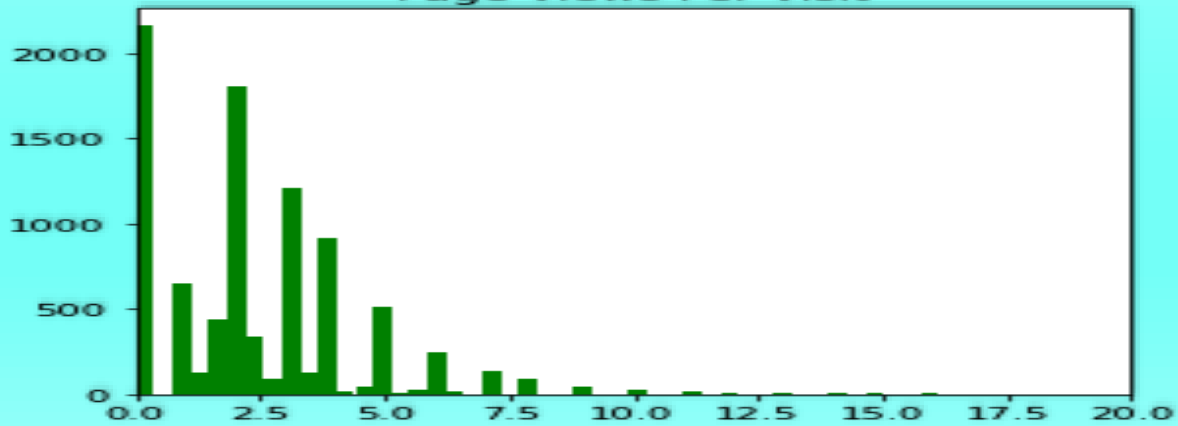
Total Visits



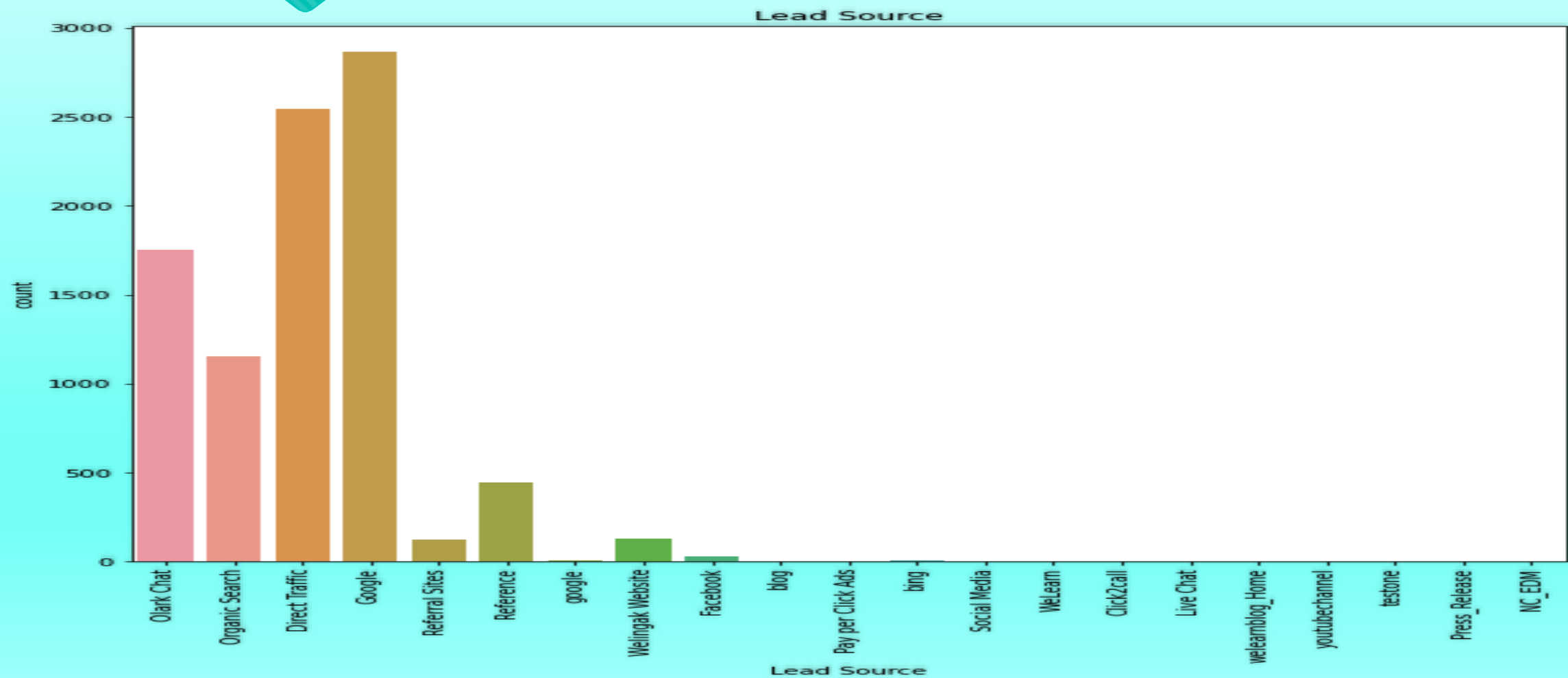
Total Time Spent on Website



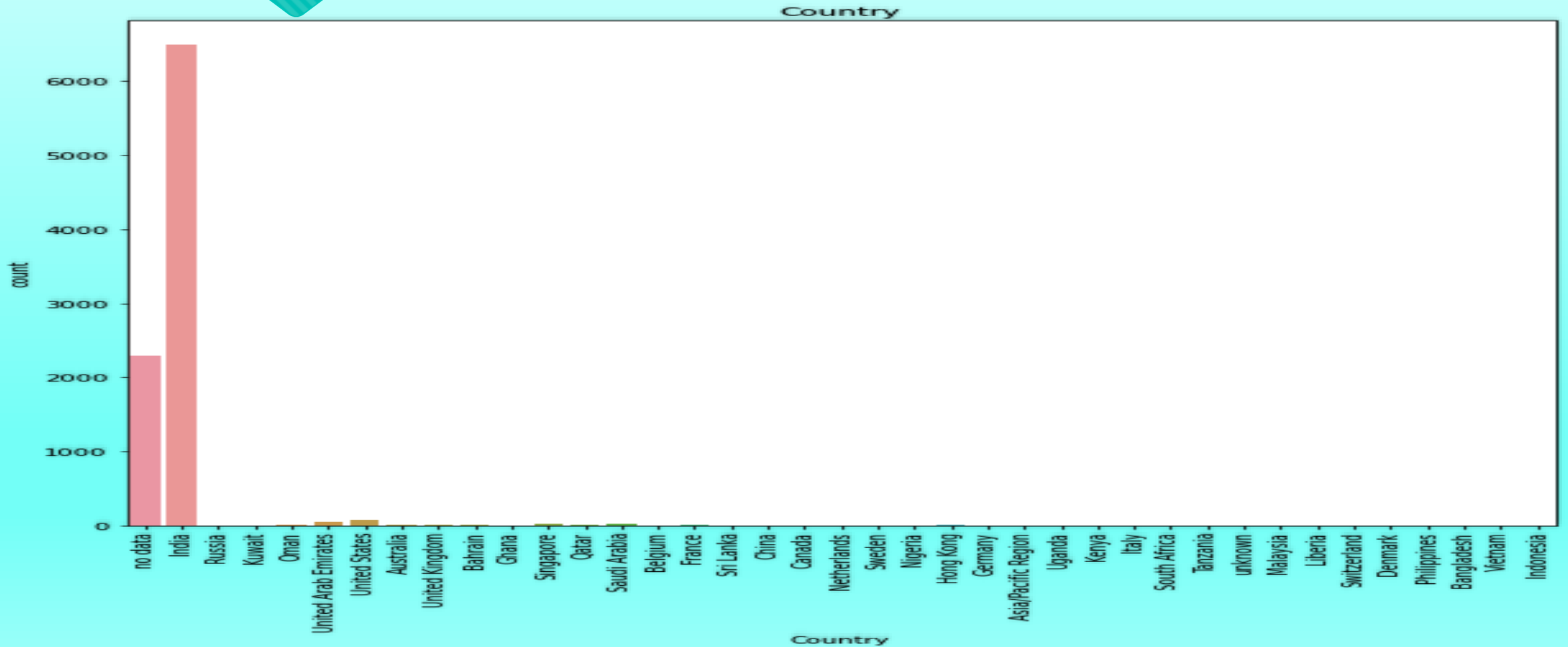
Page Views Per Visit



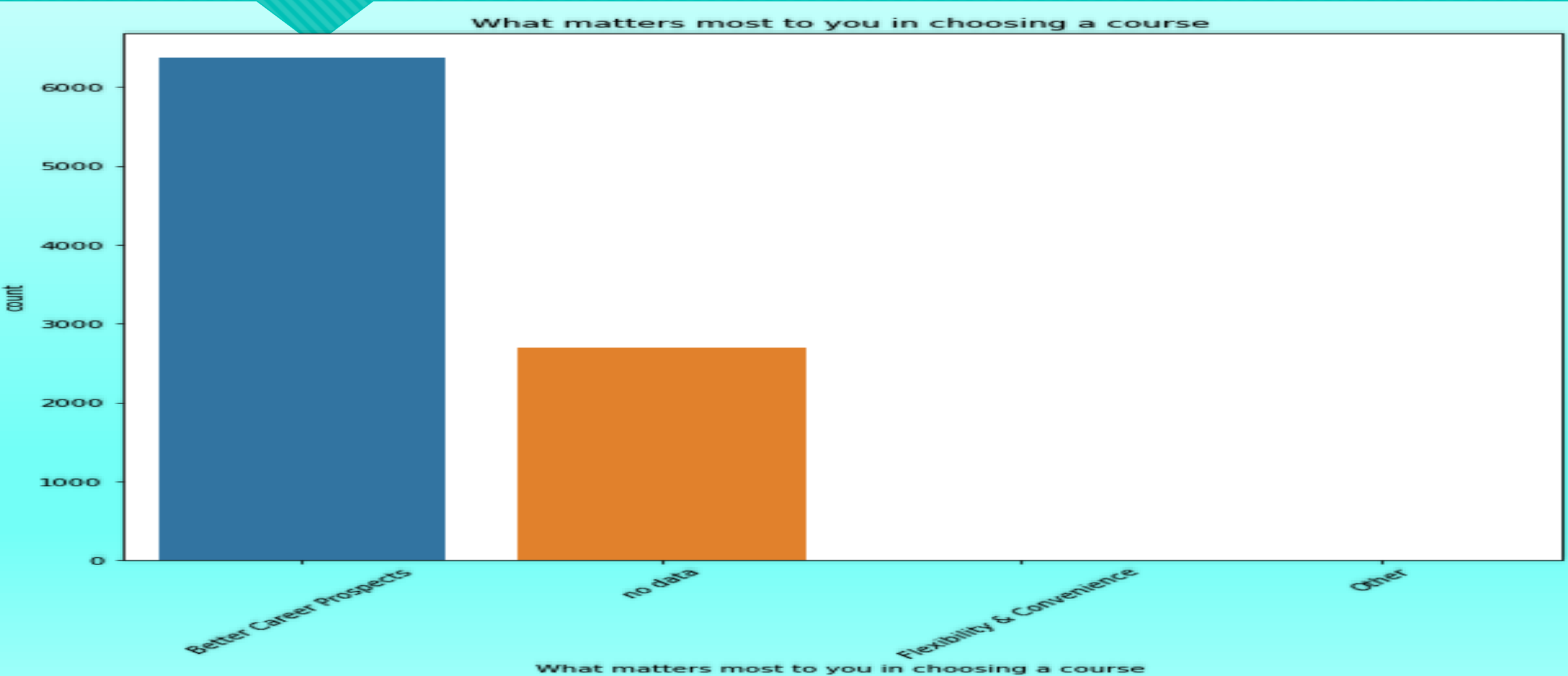
The biggest lead source was 'Google'.



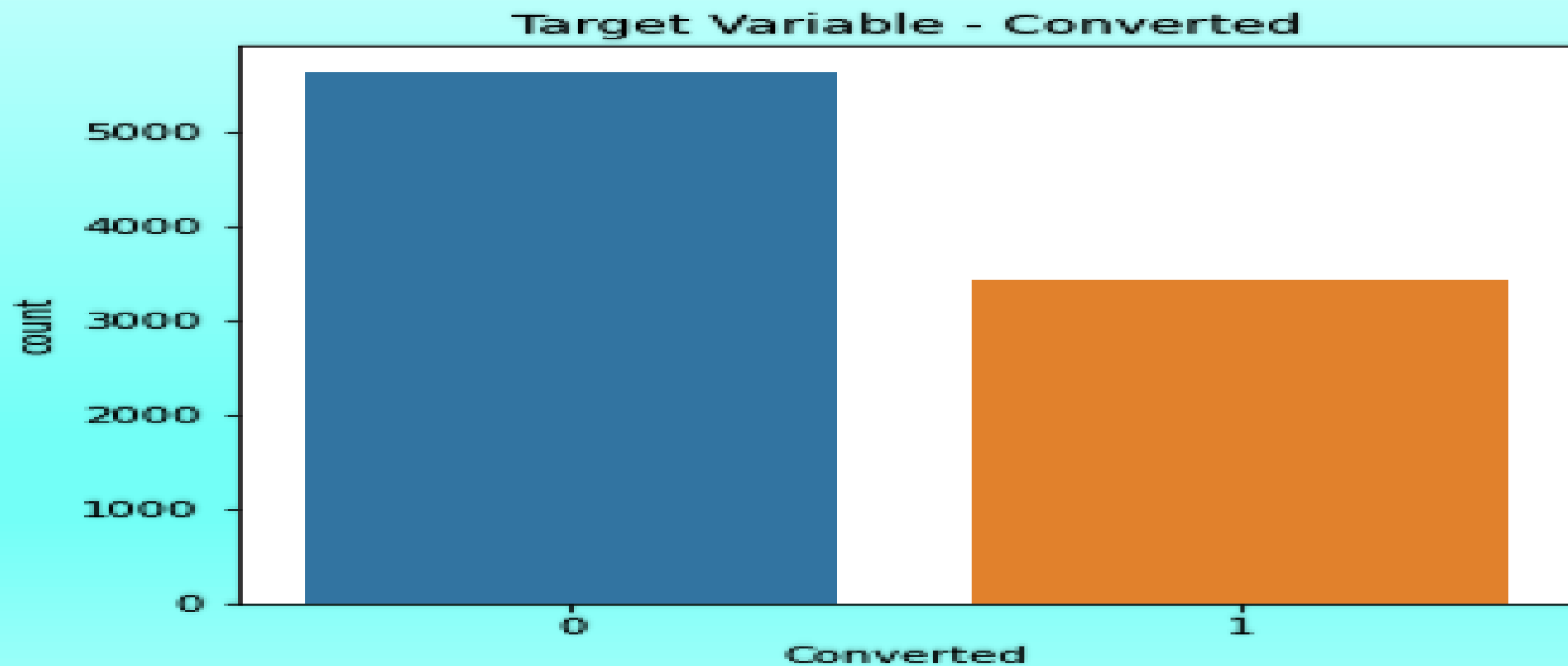
Most of the leads were from India.



Most of the students were considering better carrer prospects while choosing a course.



Most of the leads were not converted.



IMPORTANT FACTORS INFLUENCING LEAD CONVERSION

- Total Time Spent on Website: More time = higher conversion likelihood.
- Lead Origin_Lead Add Form: Higher conversion probability for leads from the "Lead Add Form."
- Do Not Email_Yes: Opting out of emails increases conversion chances, indicating alternative communication channels may be better.
- Last Activity:
 - Olark Chat Conversation: Chat engagement = higher conversion likelihood.
 - SMS Sent: Receiving SMS messages increases conversion probability.
 - Country_no data: Missing country info doesn't hinder conversions; higher chance of conversion.
- Current Occupation_Working Professional: Working professionals show higher conversion probability, an important target segment.
- What matters most to you in choosing a course_no data: Missing course preference data leads to higher conversion likelihood, needs further investigation.
- Last Notable Activity:
 - Had a Phone Conversation: Phone conversations with X Education lead to higher conversion.
 - Unreachable: "Unreachable" leads also have a higher chance of conversion.

RECOMMENDATIONS

- **Prioritize Website Engagement:** Improve website content and interactive features to increase lead engagement.
- **Leverage Lead Add Form:** Focus on nurturing leads from the lead add form with personalized communication and targeted offerings.
- **Explore Alternative Communication Channels:** Diversify communication channels (e.g., chat, SMS) to effectively engage leads who opt out of email communication.
- **Segment and Target Working Professionals:** Develop targeted marketing campaigns highlighting the career benefits of X Education's courses for working professionals.
- **Investigate Missing Data Patterns:** Gather missing data on course preferences through surveys or follow-up interactions.
- **Optimize Phone Conversations:** Train sales representatives on effective communication and addressing lead concerns during phone conversations.
- **Track and Analyze Last Notable Activities:** Monitor and refine lead nurturing strategies based on phone conversations and unreachable leads.

CONCLUSION

- The logistic regression model findings provide actionable insights for X Education to enhance their lead conversion process. By focusing on website engagement, lead add form origin, alternative communication channels, and targeting working professionals, X Education can effectively allocate resources and increase conversion rates. Investigating missing data patterns and optimizing phone conversations will further improve lead nurturing efforts. It is crucial for X Education to track and analyze last notable activities to refine strategies and improve conversion outcomes. Implementing these recommendations will drive higher conversion rates, leading to business growth and success for X Education.