

Summary for Lead Score Case Study

Based on the comprehensive analysis conducted, here are the summarized findings and recommendations:

****Findings:****

- ****Lead Conversion Rate:**** X Education's lead conversion rate is currently low, standing at around 30%.
- ****Model Development:**** A predictive model was developed to assign lead scores to each lead, aiming to increase the probability of conversion. The CEO's target conversion rate is approximately 80%.
- ****Data Cleaning:**** Null values were addressed, categorical columns were reviewed and processed, and numerical categorical data was handled appropriately. Outliers and incorrect information were treated, and binary categorical values were mapped.
- ****EDA:**** Data imbalance was observed, with only 38.5% of leads being converted. Univariate and bivariate analysis revealed insights into variables such as lead origin, current occupation, and lead source. Time spent on the website was found to positively impact lead conversion.
- ****Data Preparation:**** Dummy features were created for categorical variables, and a 70:30 ratio was used for splitting the data into training and testing sets. Standardization-based feature scaling was applied, and some highly correlated columns were dropped.
- ****Model Building:**** Recursive Feature Elimination (RFE) was employed to condense variables. Models were constructed manually, and multicollinearity was checked using VIF. The final model, logm4, comprised 12 variables.
- ****Model Evaluation:**** A confusion matrix was created, and a cutoff threshold of 0.345 was chosen based on accuracy, sensitivity, and specificity plots. The chosen cutoff provided metrics around 80%, meeting the CEO's target.
- ****Predictions on Test Data:**** Predictions were made on the test data using the final model, and evaluation metrics closely matched those of the training phase.
- ****Top Features:**** The top three features influencing lead conversion were identified as Lead Source_Welingak Website, Lead Source_Reference, and Current_occupation_Working Professional.

****Recommendations:****

1. ****Investment in Welingak Website:**** Allocate more funding for advertising and improving the Welingak website to capitalize on its effectiveness in generating leads.

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2. ****Incentivize Referrals:**** Offer discounts or incentives for referrals that result in leads, encouraging more references and potentially increasing conversion rates.
3. ****Target Working Professionals:**** Aggressively target working professionals in marketing campaigns, as they have shown higher conversion rates and could lead to greater financial outcomes.
4. ****Review Fee Structure:**** Consider adjusting the fee structure to accommodate leads from high-converting segments, such as working professionals, potentially leading to higher conversion rates and revenue.

In conclusion, by implementing these recommendations, X Education can improve its lead conversion rate and work towards achieving the CEO's goal of approximately 80% conversion rate.