

Objective

- To obtain and compare the prediction accuracy Lead Generations by Sriya's Auto-AI and Sriya's SXI (Precision AI²).
- Precision AI² using Target SXI based Random Forest trees. Minimum 20% target increase in Lead Generation Conversion rate from current levels.

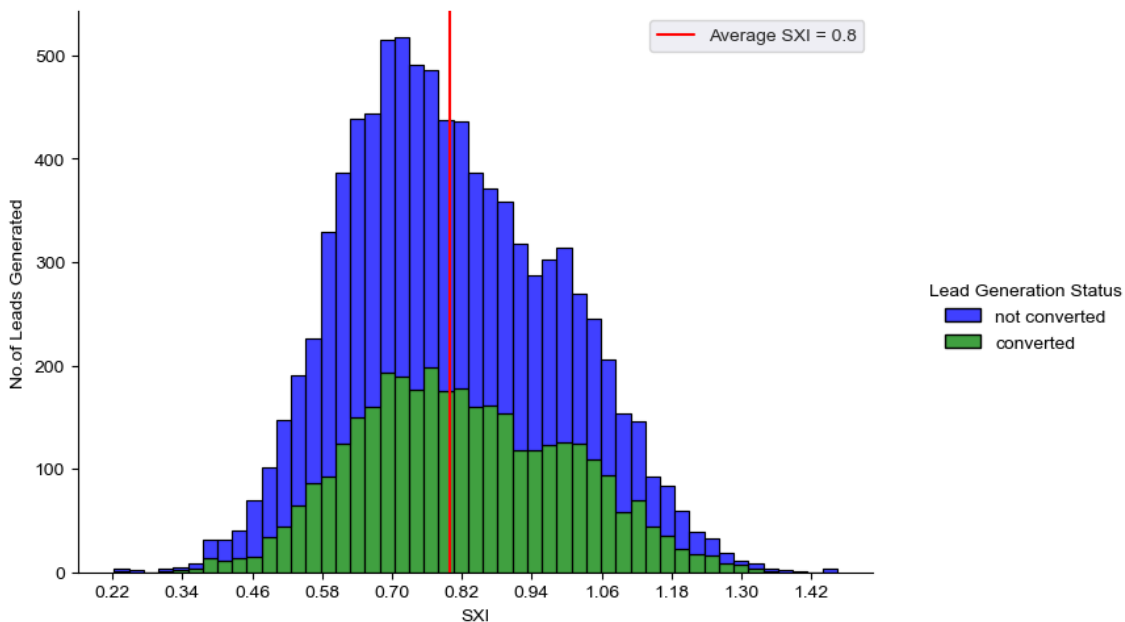
SXI Hypothesis

- SXI is a proxy/surrogate for all features responsible for ensuring increase in Lead Generation Conversion rate. The higher the SXI, the better is the likelihood of Lead Generation Conversions and hence increasing SXI score should lead to higher Lead Generation Conversion rate.

SXI Definition

- **Sriya Expert Index (SXI):** Dynamic score/index obtained from a proprietary formula consisting of weights from 10 ML algorithms. SXI is a super feature and is a true weighted representative of all important features. Converts a multi-dimensional hard to solve problem into a simpler 2-dimensional solution (problem solved).
- **SCORE + CORRELATE = IMPROVE**

Discussion & Results



1. Exploratory Data Analysis

9055 leads were distributed to **3495** good and **5560** bad. Good are leads that were converted and Bad are leads that were not converted. So, **38.6%** is the lead generation conversion rate and **61.4%** leads that are not converted.

2. SXI - Exploratory Data Analysis

Current Average SXI is **0.8**. No. of leads generated above 0.8 is **4208** and of these **1772** leads converted and **2436** leads not converted. So, leads that are converted (%) is **42.11%** and leads that are not converted is **57.89%**.

Correspondingly, No. of leads generated below 0.8 is **4847** and of these **1723** leads converted and **3124** are not converted. So, leads that are converted (%) is **35.55%** and leads that are not converted is **64.45%**.

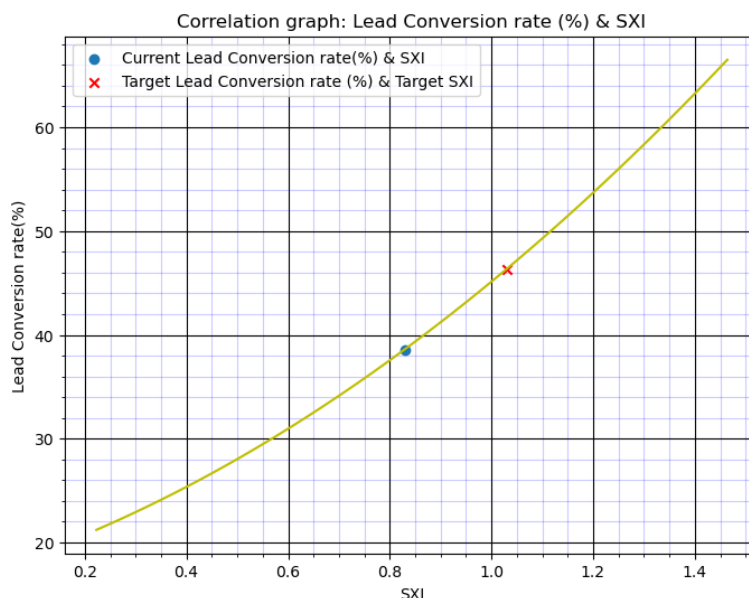
3. Predictive AI

- Sriya’s Auto-AI Prediction accuracy is **91.9%** and the best performing algorithm is **XGBoost. Auto-AI is a standard AI-ML process and uses AI to learn from past data and predict future outcomes.**
- SXI AI² Prediction accuracy of number of leads that are converted is **98.4%**. **SXI uses AI 2 times instead of 1 and hence uses AI to improve AI’s predictions accuracy with precision too.**
- Ratio of SXI/Auto-AI prediction accuracy is **1.07**. **SXI is 7% more accurate than standard AI.**

4. Precision AI

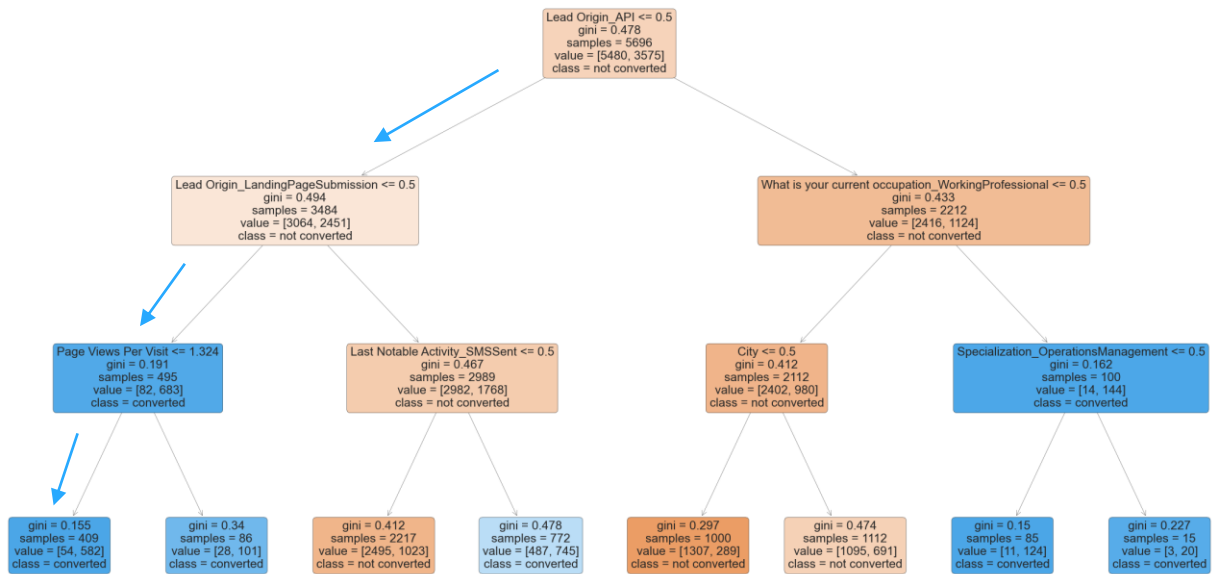
The desired increase in target variable which is lead generation conversion rate is 20%. The original lead generation conversion rate is **38.6 %** so a **20%** increase should lead to a **46.32%** overall lead generation conversion rate, which means **4194** of the generated leads from 9055 would become the number of leads converted than the current **3495**.

The correlation between SXI and Lead Generation Conversion rate is **1**. This implies that SXI and Lead Generation Conversion rate is highly positively correlated to each other. Hence, an increase in SXI will result in an increase in Lead Generation Conversion rate.



Current SXI and Target SXI Decision Trees

a. Current SXI Decision Tree



Interpretation: -

Node 1: Lead Origin 50% less likely from AP1 (No. of converted leads in parent node: 3575)

Left split: 2451- majority positive class in the node; gini:0.49, **Right Split:** 1124; gini:0.43

(Total value for the next split: 2451)

Node 2: Lead Origin 50% less likely from Landing Page Submission.

Left split: 683 - majority positive class in the node; gini:0.19, **Right Split:** 1768; gini:0.47

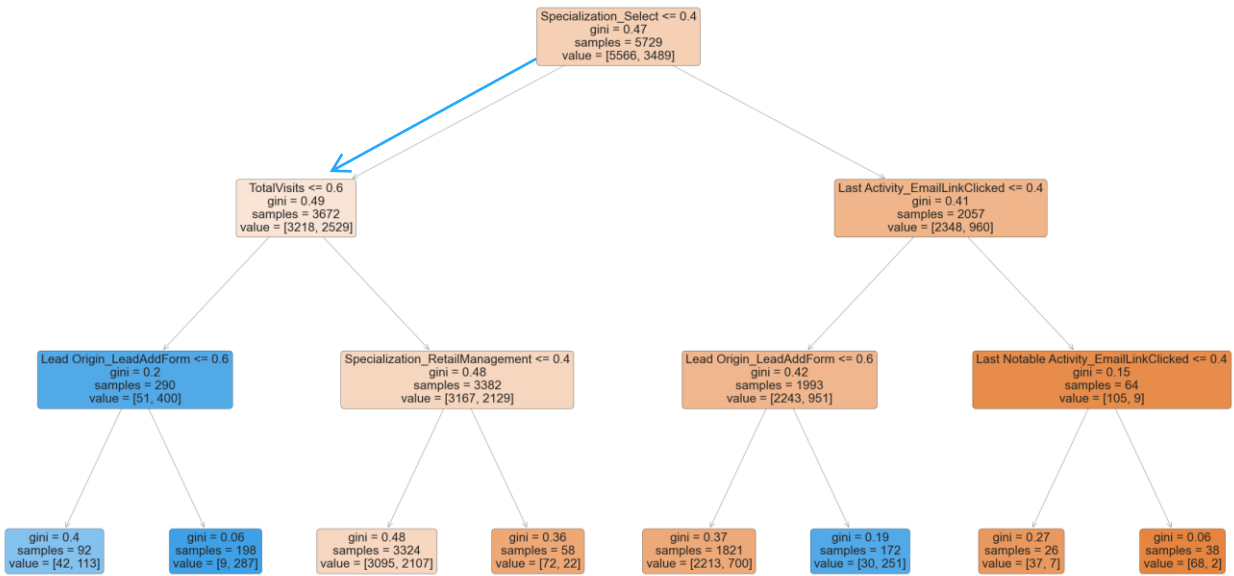
(Total value for the next split: 683)

Node 3: Page Views per Visit < 2.

Left split: 582- majority positive class; gini:0.16, **Right Split:** 101; gini:0.34– Final Leaf Node.

✓ Leads Converted / Leads not Converted ratio is **10.78**

b. Target SXI Decision Tree



Target SXI from correlation curve for 20% increase in target outcome of Lead Generation Conversion rate is **1.03**.

Interpretation: -

Node 1: Specialization: Select is 40% less likely (No. of converted leads in parent node: 3489)

Left split: 2529- majority positive class; **gini:0.49**, **Right Split: 960**; gini:0.41

(Total value for the next split: 2529)

Node 2: Total Visits < 1.

Left split: 400- majority positive class in the node; **gini:0.2**, **Right Split: 2129**; gini:0.41

(Total value for the next split: 400)

Node 3: Lead Origin 60% more likely from Lead Add Form.

Left split: 113; gini:0.4, **Right Split: 287-** majority positive class; **gini:0.06** – Final Leaf Node.

✓ Leads Converted / Leads not Converted ratio is **31.9**

Conclusion

- SXI Prediction accuracy is **1.07x** Auto AI prediction accuracy and hence is **7%** superior in accuracy over Auto-AI
- Target **20%** increase in leads that were converted is achievable by increasing target SXI to **1.03** from current **0.8** levels. This would result in **4194** leads that were converted up from current **3495** levels.

Initial Increase from
current levels:
20% or 699

**SXI Impact
Potential**

- Leads Converted / Leads not Converted ratio is **31.9** while the current ratio is **10.78**. This represents a **potential 95.92% compounded increase** if all recommendations in target SXI are completely implemented.

Compounding Increase
from current levels:
95.92% or 3352

**SXI Impact
Potential**