Lead Score Case Study

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Problem Statement

- X Education sells online courses to industry professionals.
- X Education get a lot of leads but the conversion rate is very poor. Its only 30%
- To make this better, We need to identify ‘hot leads’ i.e. the most potential leads
- If we successfully identify this then the conversion rate will go up since the sales team will focus on communication with potential leads than making calls to every one

Business Goals

- X education wants to know most promising leads
- They need a model that identify hot leads
- The model needs to be deployed for future use

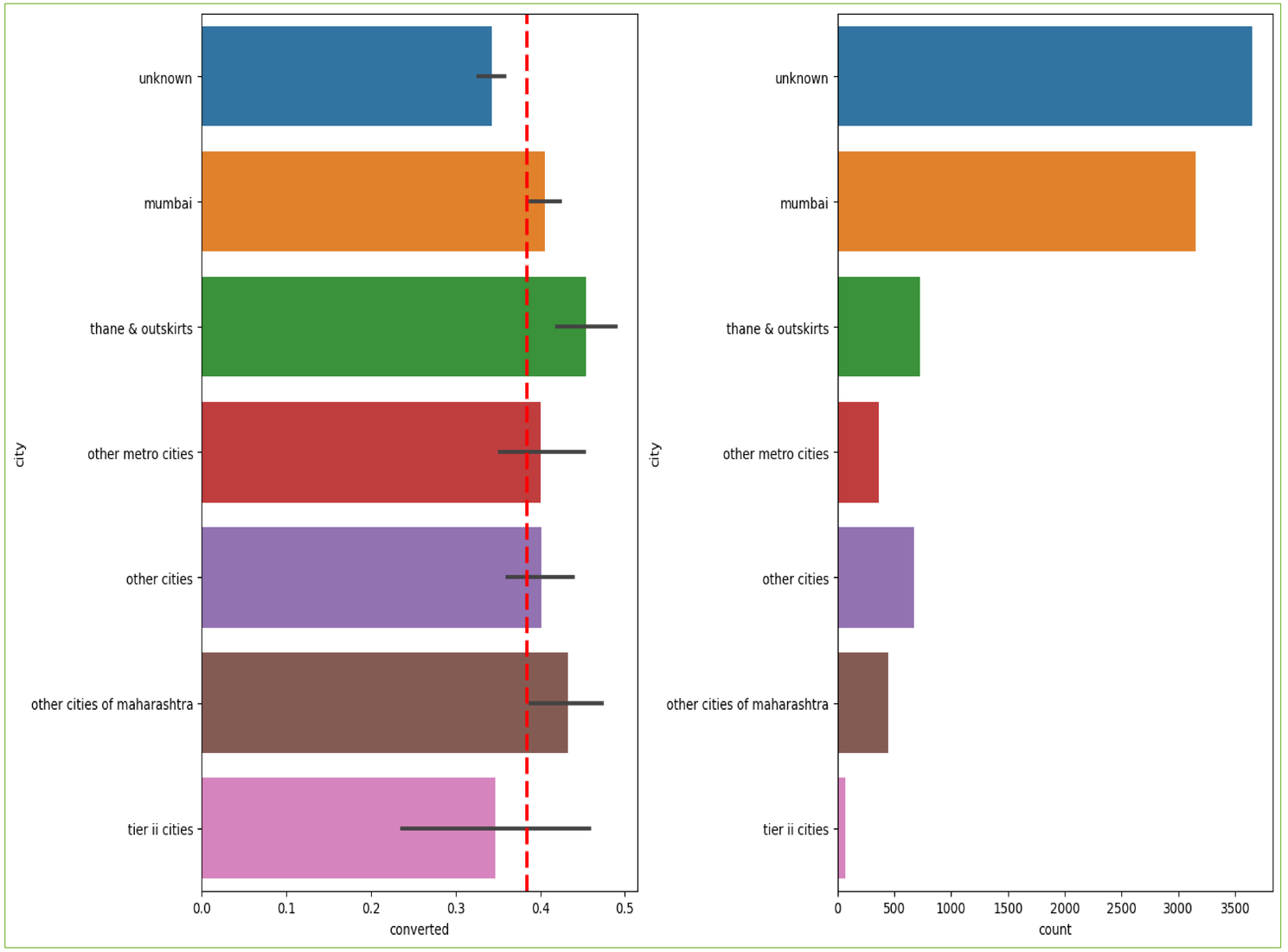
Solution Design

- Data Cleanup and Manipulation
  - Check whole dataset and handle duplicate data
  - NA and missing values will be handled
  - Drop columns containing nulls mostly
  - Handle Outliers in the data
- EDA
  - Univariate analysis
  - Bivariate analysis
- Encoding the data and dummy variables
- Classification: Using logistic regression model
- Build model and validation
- Conclusion and Recommendation.

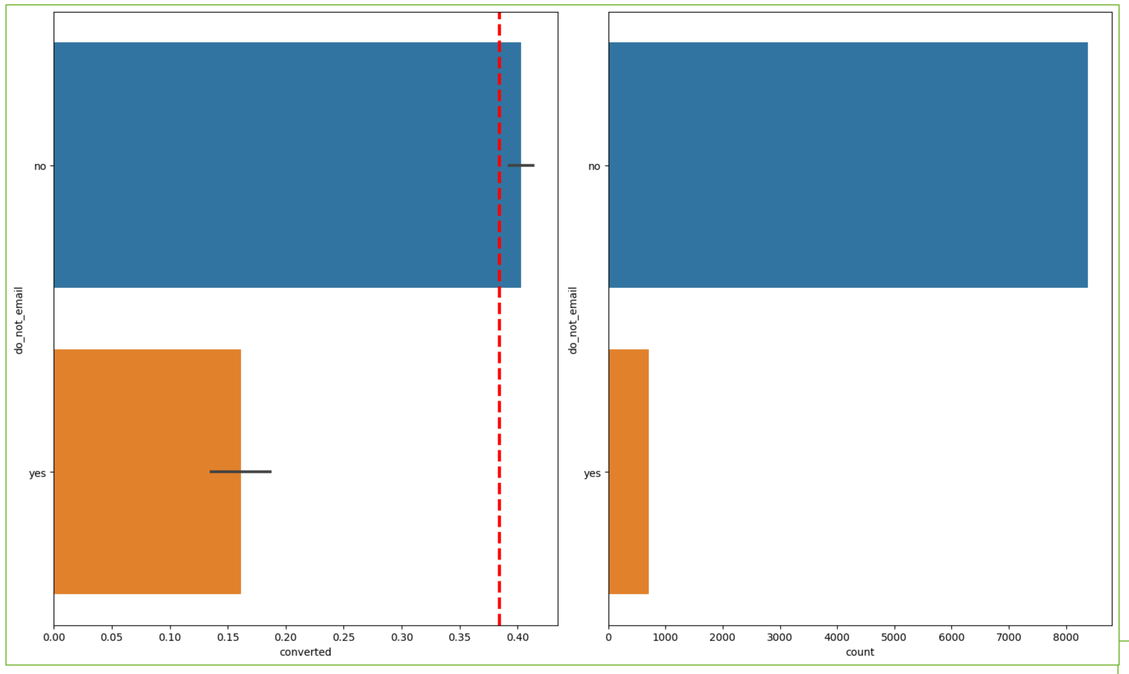
Data Cleanup and Manipulation

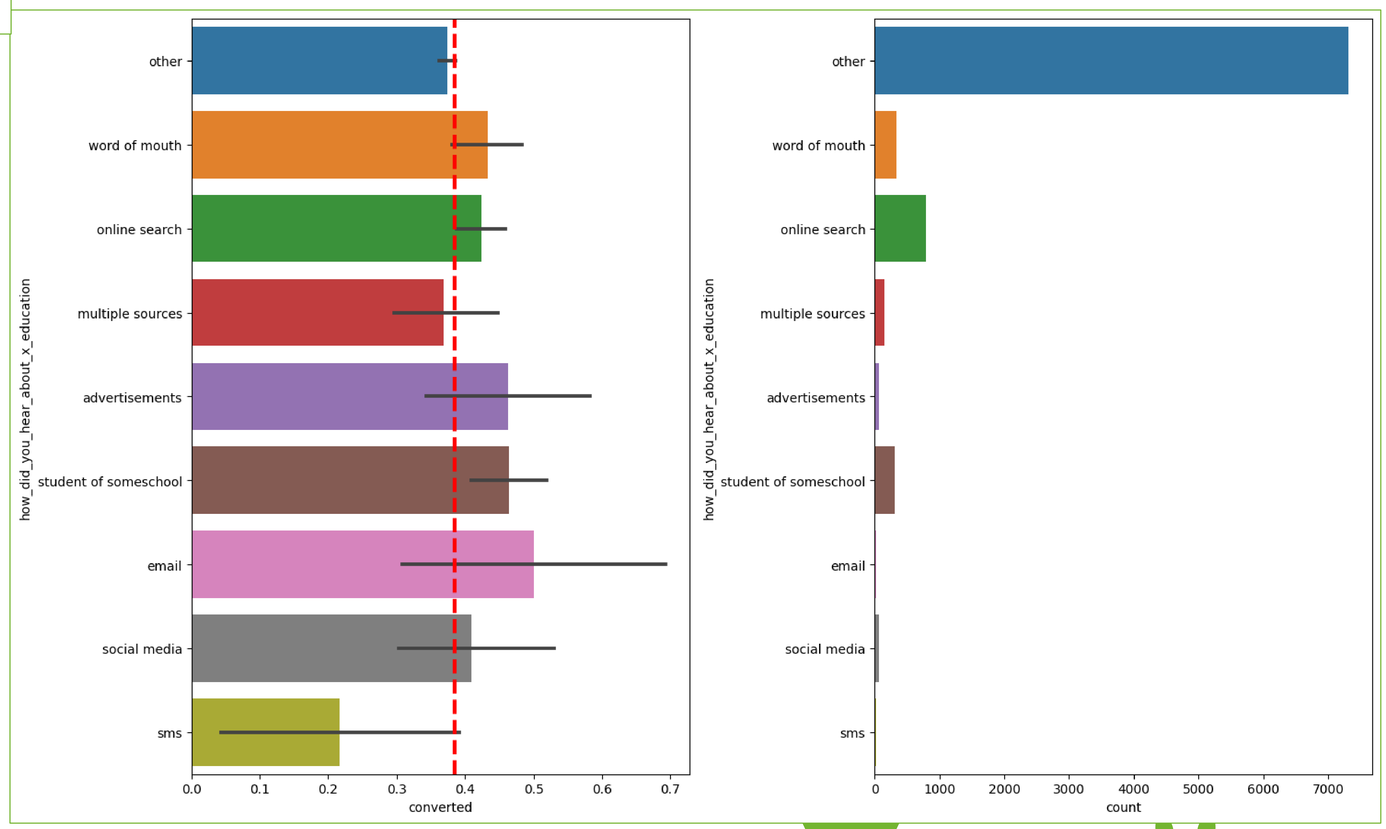
- Total Number of Rows is 9240 and Total Number of Columns is 37
- Dropping the columns having more than 40% missing values

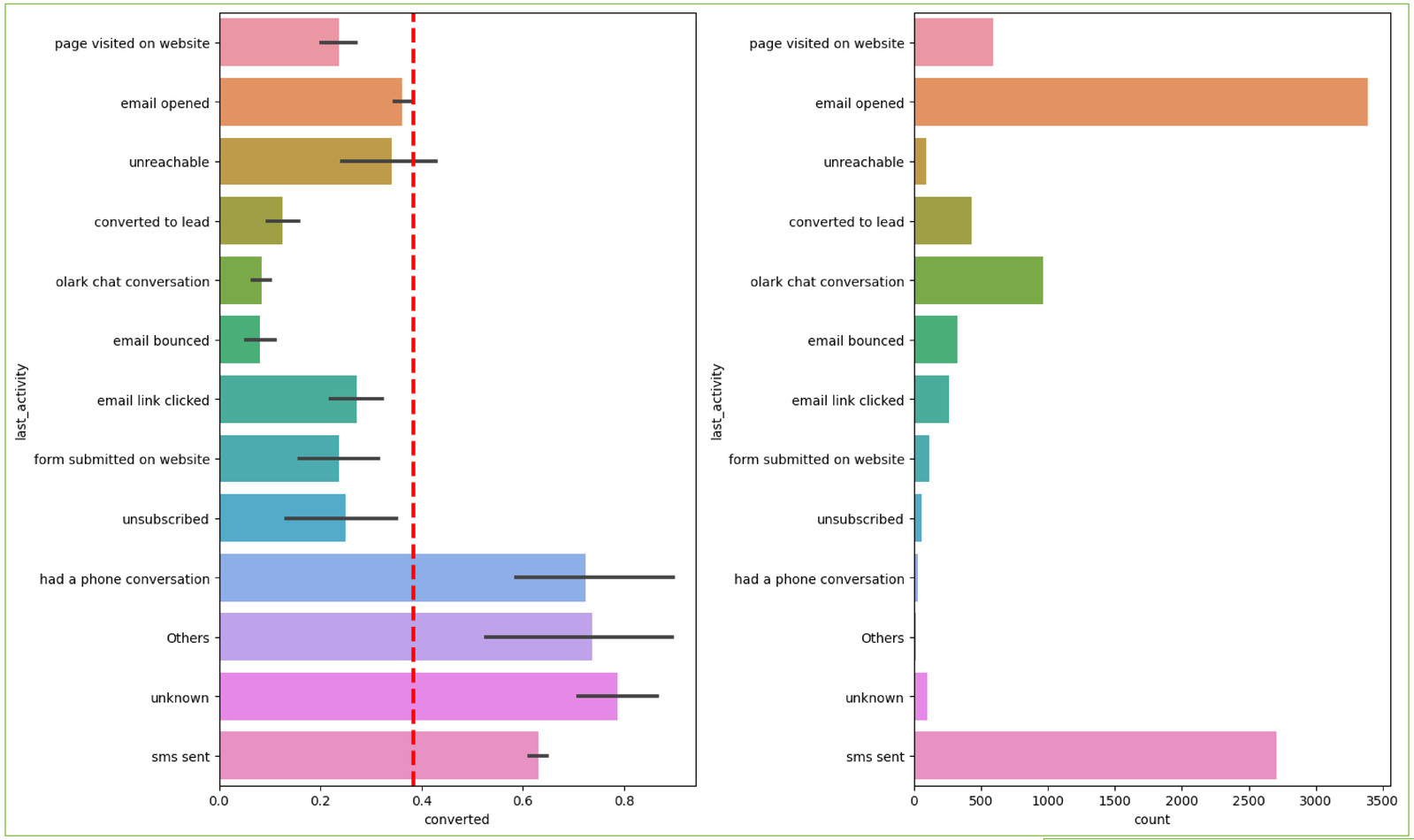
•EDA [Categorical Variable Analysis]



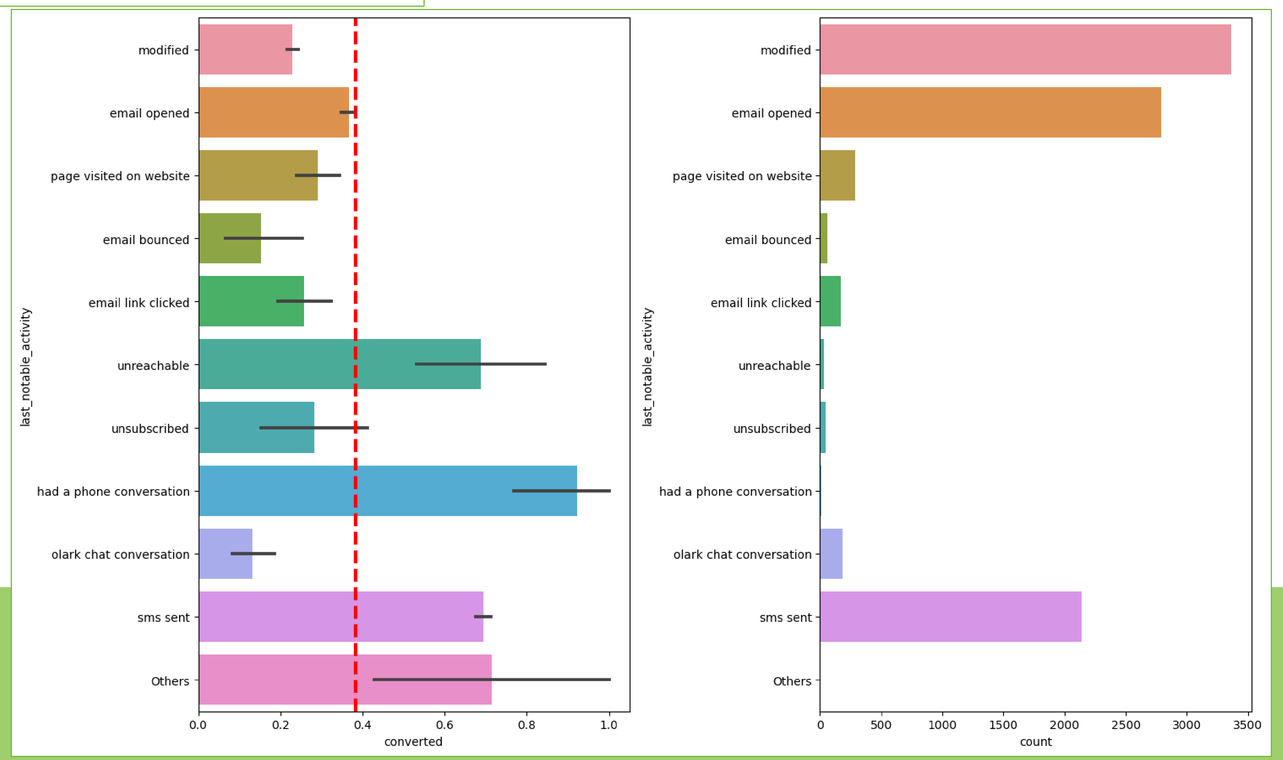
When City is not mentioned,the conversion rate has a drop

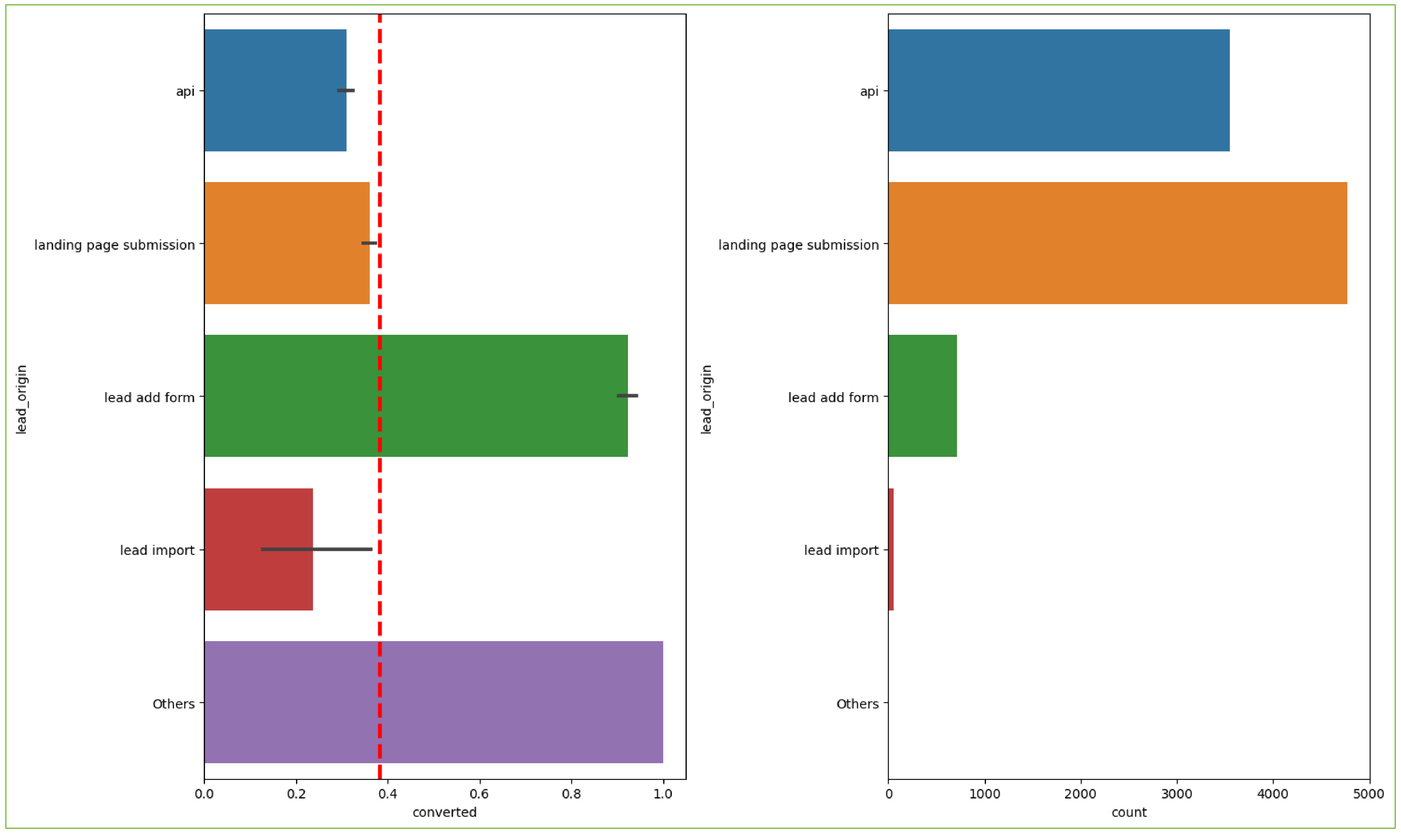

do_not_email
no
yes
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
converted
0
1000
2000
3000
4000
5000
6000
7000
8000
count

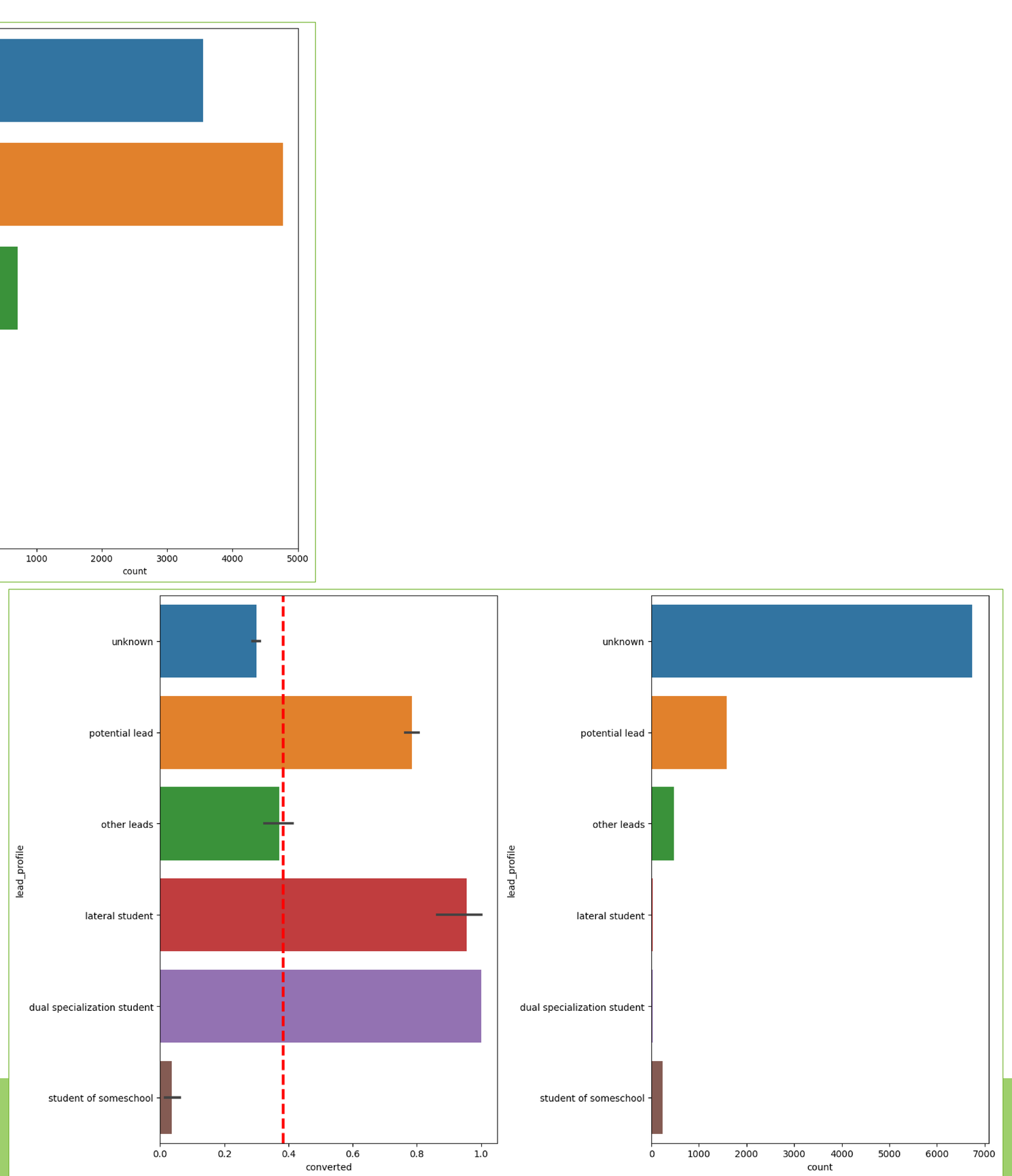

how_did_you_hear_about_x_education
other
word of mouth
online search
multiple sources
advertisements
student of someschool
email
social media
sms
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
converted
0
1000
2000
3000
4000
5000
6000
7000
count

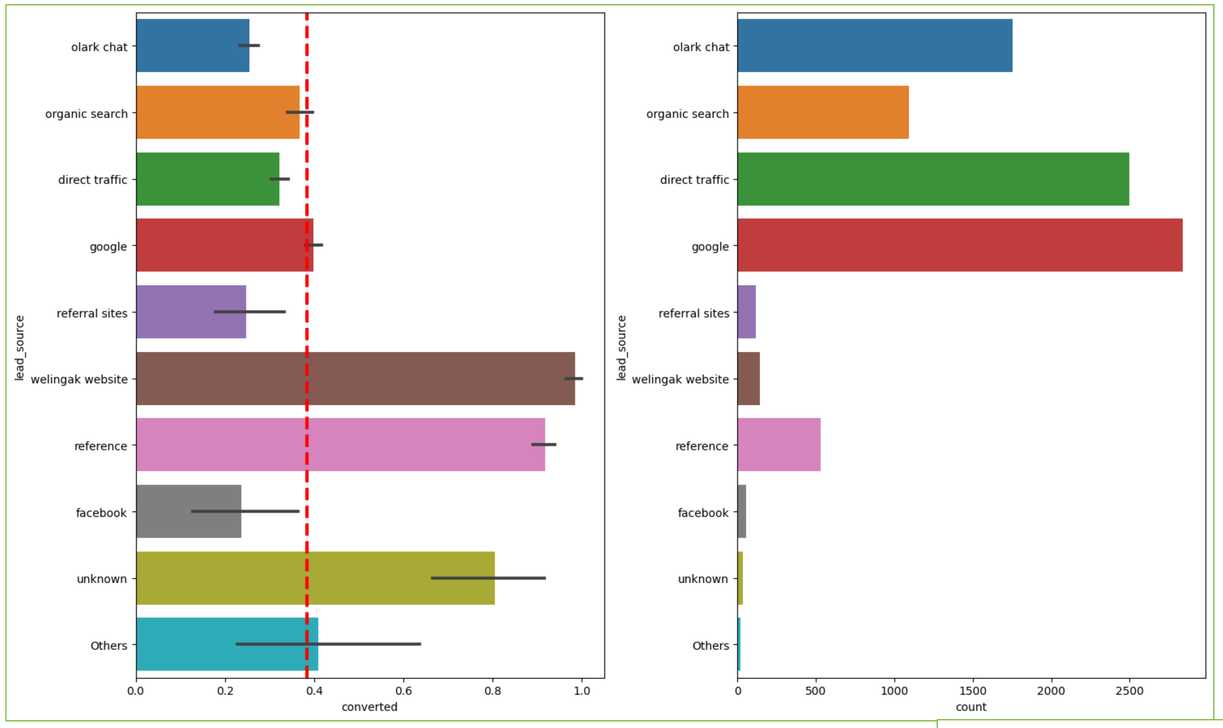


If last activity is sms sent, then there is high chance of conversion



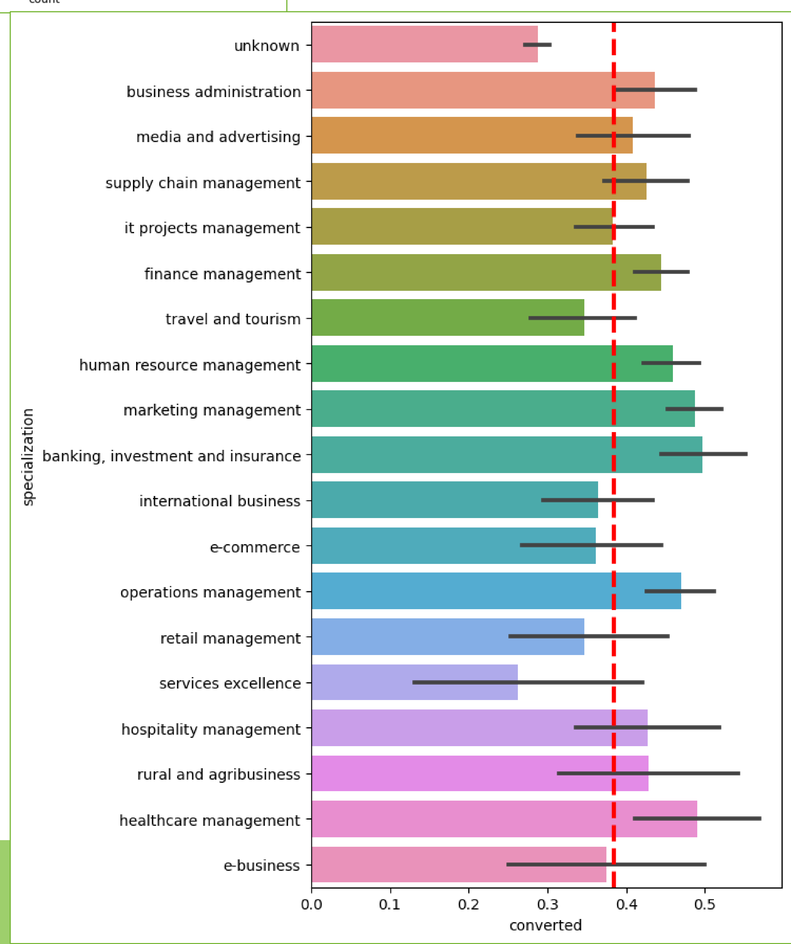

api
landing page submission
lead add form
lead import
Others
lead_origin
0.0
0.2
0.4
0.6
0.8
1.0
converted
0
1000
2000
3000
4000
5000
count

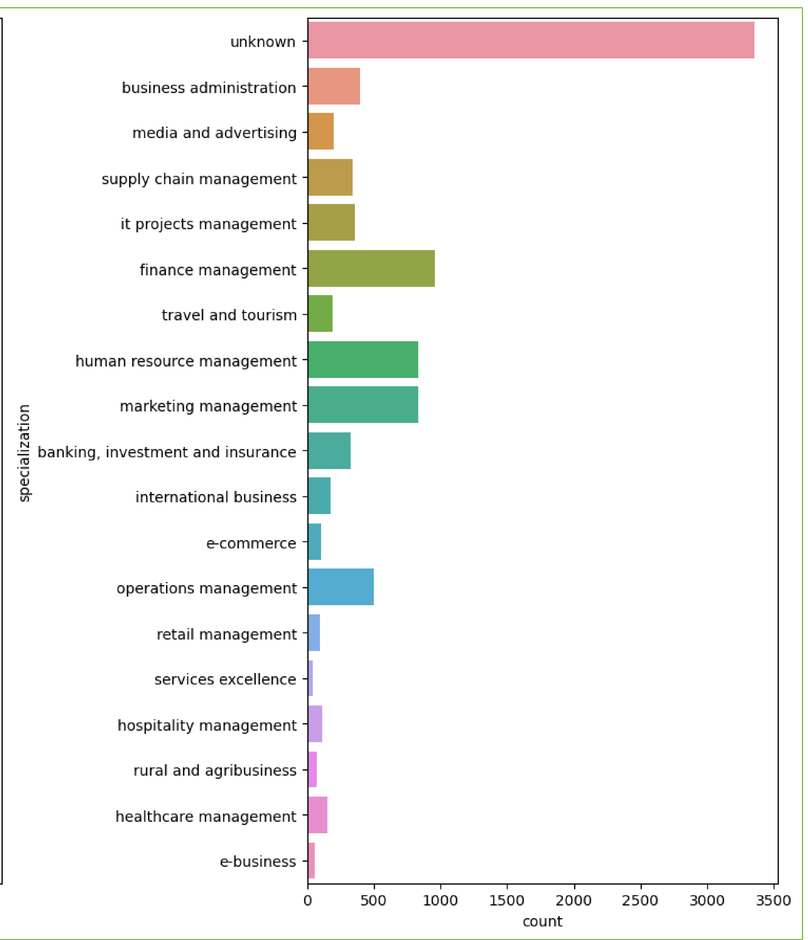

unknown
potential lead
other leads
lateral student
dual specialization student
student of someschool
lead_profile
0.0
0.2
0.4
0.6
0.8
1.0
converted
0
1000
2000
3000
4000
5000
6000
7000
count

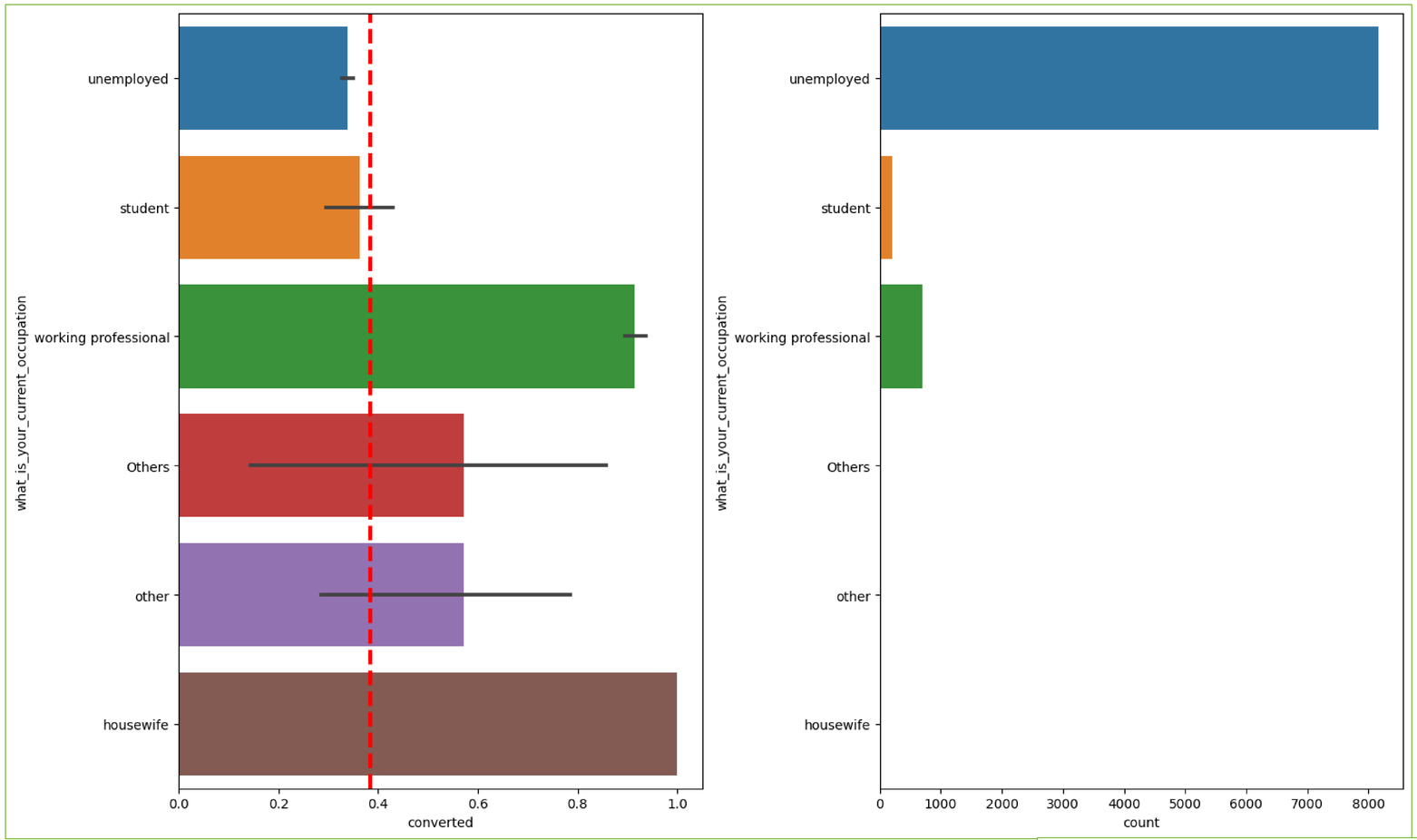


If specialization is unknown then the conversion rate suddenly drops.

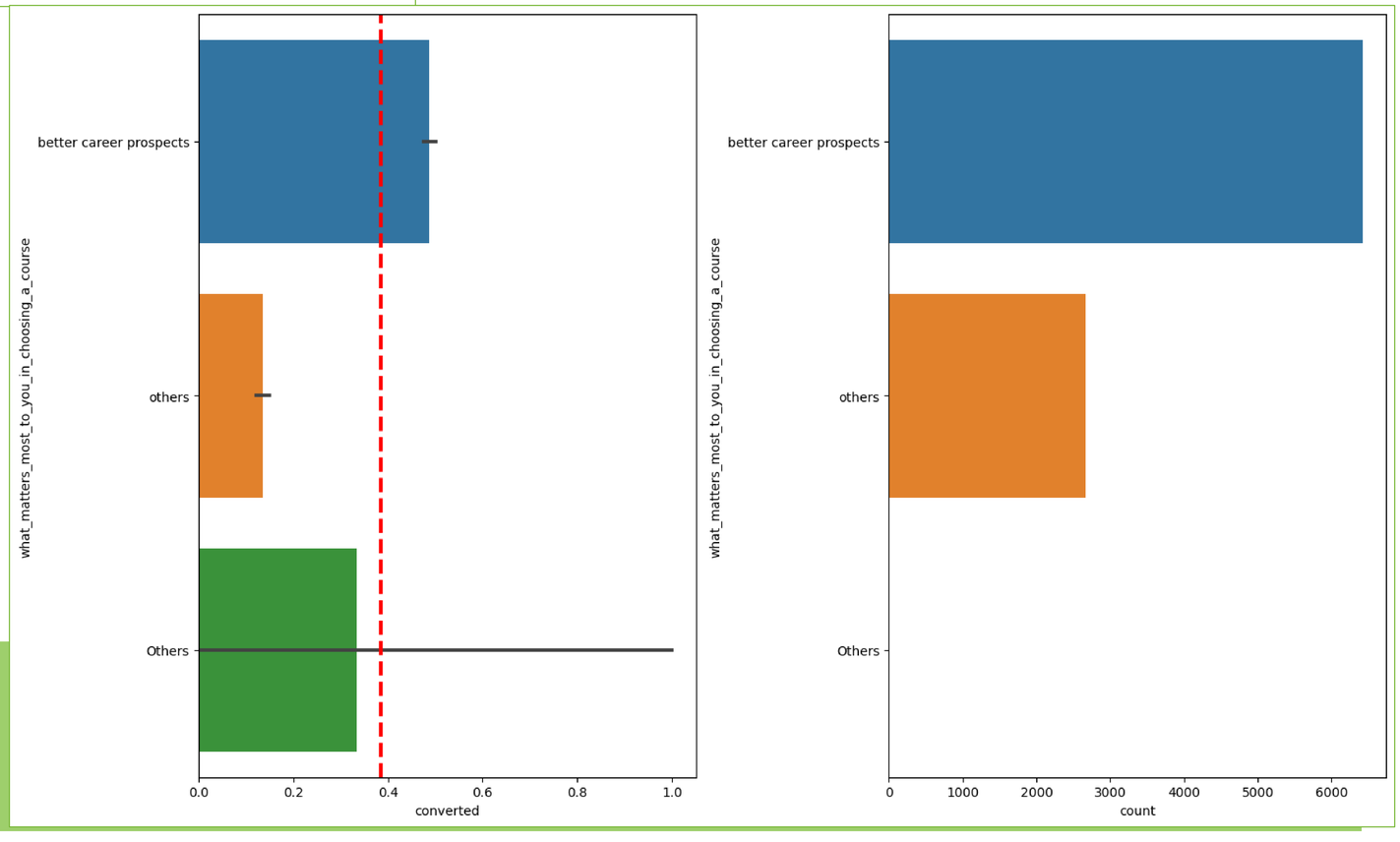
Management studies of all kind have a good conversion rate







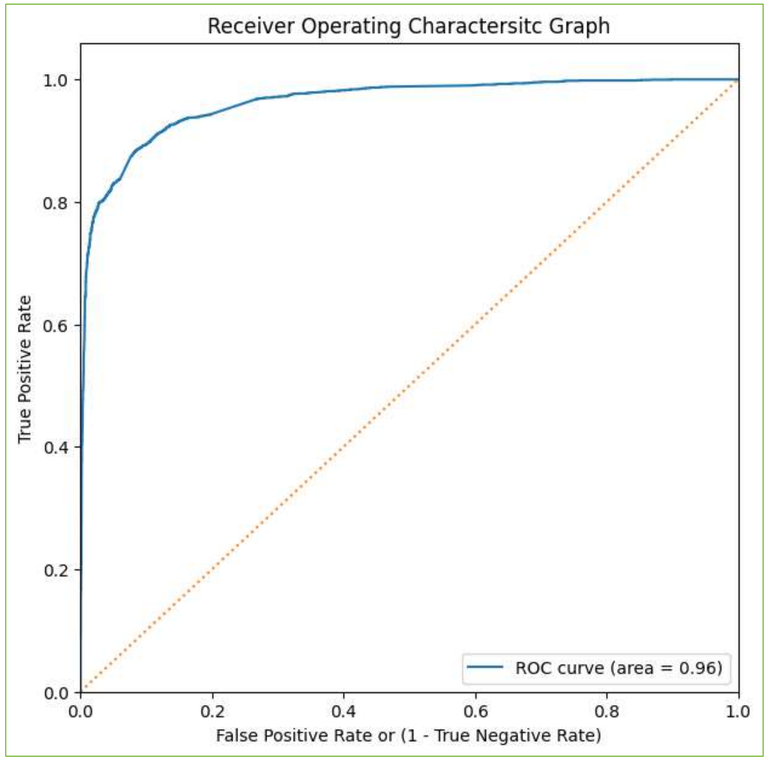
Working Professionals is good area to target

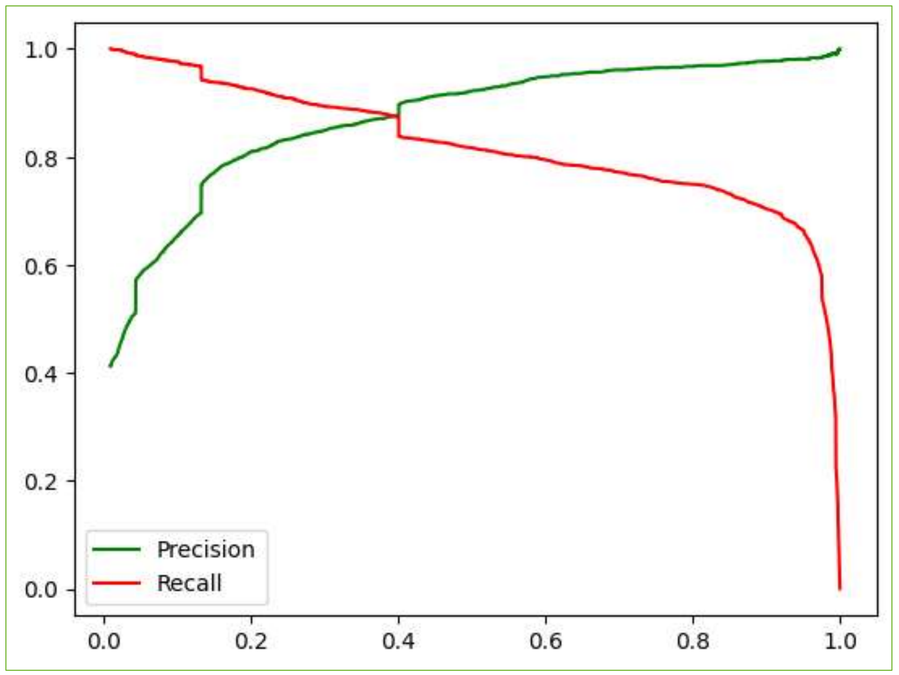


Model Building

- Split data into Train and Test Data
- The first step is to train-test split the data. We did this in ratio 67:33 ratio.
- Used RFE for Feature Selection
- Running RFE with 20 variables as output
- Build the model by removing high p-value and VIF values

•ROC Curve





- Finding Optimal Cut Off Point
- Optimal cut off point is that probability where we get balanced sensitivity and specificity
- From Second Graph we see optimal cut off is 0.40

•Conclusion

Train Data Score:

Accuracy: 90.14% **Sensitivty**: 90.10% **Specificity**: 90.22%

Test Data Score:

Accuracy: 90.14% **Sensitivty**: 90.10% **Specificity**: 90.22%

The Variables that have highest impact in identifying potential buyers are below (In descending order):

- When customer has tag: a. Will revert by email b. Closed by horizzon
- When last activity is sms sent
- Total time Spent on the Website
- When lead source was: a. Welingak b. Direct Trafic c. Google d. Organic Search

Keeping these in mind X Education can make their conversion rate better and get almost all potential buyers to buy their courses.